Get Ready for Open Source: SUSE Linux Enterprise Desktop Book 1

Novell Training Services

2007

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Welcome to "Get Ready for Open Source."

My name is *Geeko* and I am the mascot of SUSE Linux. I will guide you through this Linux course.

The following icons are used frequently:

Read this special hint before proceeding.

Further information is found here.

Check your skills with an exercise.

This course is based on Novell SUSE Linux Enterprise Desktop 10. You will find all required software on the installation media and the course CD.
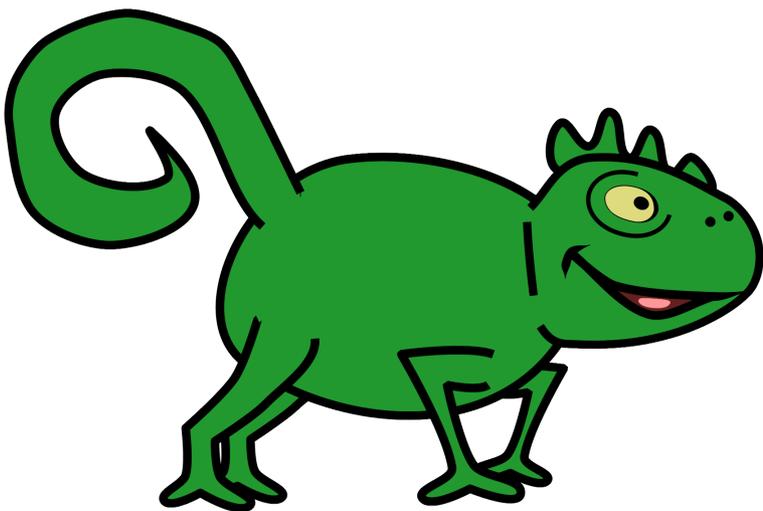
1 Understand the Concept of Open Source Software

1.1 The Historical Development of UNIX

At the end of the 1960s, most operating systems were designed only for batch operations. If you wanted to run a program, you inserted a pile of punch cards or a roll of perforated strips into a reading device and waited until the result was sent to a printer.

If there was an error in the program or if you did not get the required result, you had to rewrite the perforated roll or replace one or several punch cards, reread the stack, and again wait for the result.

This procedure was tedious and inefficient, which led computer developers to look for a way to allow a number of users to simultaneously use an interactive method of working with the system.
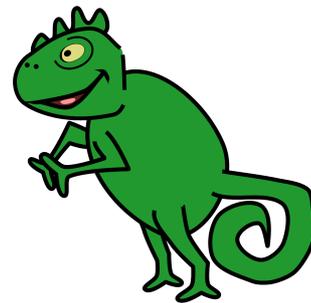
MULTICS was one of the first programs created to meet this demand. It allowed you to work using a dialog with the computer, but it was still very strongly influenced by the batch operation, and it was difficult to operate.

In 1969, one of the MULTICS developers, Ken Thompson, began creating an operating system that, apart from an interactive operation, aimed to provide a high functionality and structural simplicity.

The first version of UNIX was written in Assembler, a programming language which approximates machine type language. To be machine-independent in its further development, UNIX was rewritten in 1971 in the programming language C, developed by Dennis Ritchie.

As Bell Laboratories (a subsidiary company of AT&T) provided documentation and the source text of UNIX to universities at almost no cost, the system spread relatively quickly.

The simple operation of the system, the almost unlimited availability of the source code, and its relative portability motivated many users and companies to become actively engaged in the development. Functionality was added very quickly to UNIX and it reached a very high level of maturity.

At the same time, a series of commercial UNIX derivatives arose including versions from IBM, DEC, and HP (HP-UX, 1982), as well as BSD UNIX (Berkeley Software Distribution, 1978), developed by the University of California in Berkeley.

In 1983, AT&T began marketing UNIX System V commercially via its sister company USL, proclaiming System V as "the" UNIX standard.

As a consequence of this, the licensing of UNIX changed considerably, leading, among other things, to a long-lasting legal battle with BSD. At the same time, with never-ending quarrels between UNIX vendors, a genuine standardization of the UNIX operating system family was prevented.

Modern UNIX operating systems can still be separated as either more System V or more BSD like, although there are no "pure" systems of one or the other kind. Linux tries to combine the best of both worlds.

Linux is written in C, and is applicable to many different hardware platforms, like Intel compatible processors with 32 or 64 bits, AMD and PowerPC.
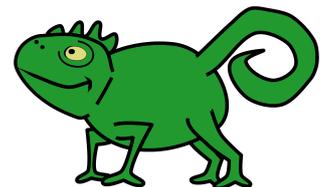
✍ Exercise: The Historical Development of UNIX

Try to find the following information in the Internet:

Year when MS-DOS 1.0 was released	
Year when MS-DOS 6.0 was released	
Year when Windows 1.0 was released	
Year when Windows 3.0 was released	
Year when Windows NT was released	
Year when the Apple I was developed	
Year when the Apple Macintosh II was developed	

1.2 The Development of Linux

In the spring of 1991, the Finnish student Linus Benedict Torvalds began to take a closer look at the memory management of his Intel based 386 personal computer.

A few months later he had developed a rudimentary kernel which he passed on via the Internet as source code to others who were interested.

Linus Torvalds made the source code of his Linux kernel available with the GPL (GNU General Public License; GNU = GNU is not UNIX). The GPL allows everyone to read and edit the source code freely. The GPL license also requires any edited source code to be made available to the public.

Linux rapidly developed into a project involving many people, although the development of the system's core functions ("Linux kernel") is still coordinated by Linus Torvalds. All kernel modifications are integrated by him personally.

The functions of the kernel include input and output control, device control, process management, and file management. Other system components (utilities, network programs, and implementations of the kernel for non-Intel processors) are coordinated by other people or groups.

As a rule, there are two current versions of Linux development: a stable one, identifiable by an even number after the first dot, and a developer version identified by an odd number.

Linux distributions—consisting of the Linux kernel, applications (such as office packages, databases, and network services), and manuals—are based on the even-numbered versions, but they often also provide current development kernels, which, under certain circumstances, are needed for the integration of new hardware components.
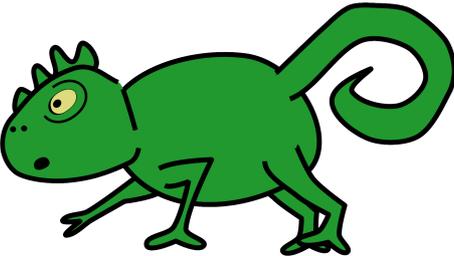
Exercise: The Development of Linux

Try to find the following information in the Internet:

Who developed the GPL?	
When was the first SUSE Linux released?	
When did Novell buy SUSE Linux?	

What other Linux distributions do you know?

_____

_____

_____

_____

_____

_____

_____

1.3 Installation of SUSE Linux Enterprise Desktop 10

1.3.1 Pre-Installation Considerations

Certain aspects of your system configuration can be difficult to change after the initial SUSE Linux Enterprise Desktop 10 installation. Taking time to gather certain information before the installation begins can save you significant re-configuration time.
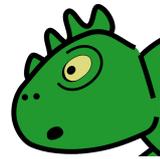
Recommended system requirements:

☞ 512 MB to 3 GB RAM, at least 256 MB per CPU

☞ 4 GB hard disk space

☞ Network interface (Ethernet or modem)

What is the expected role of the system?

☞ The role of a system will determine the software packages that are installed.

☞ While it is easy to install and remove packages after installation, experience has shown that busy administrators often neglect to remove unnecessary software packages after the initial installation.

☞ Every software package installed on the system should be considered a potential security vulnerability.

☞ One of the most important steps in securing a system is simply ensuring that it is not running any services that are not absolutely required.

1.3.2 Basic Installation

Insert the installation DVD of SUSE Linux Enterprise Desktop 10 in your DVD drive and restart your computer.
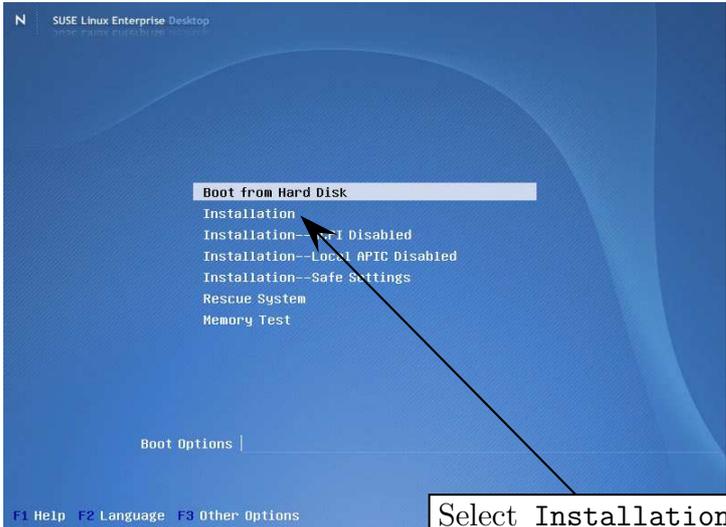
Select `Installation` by using the cursor keys.

The program for installation and configuration is called "YaST" (Yet another setup tool).
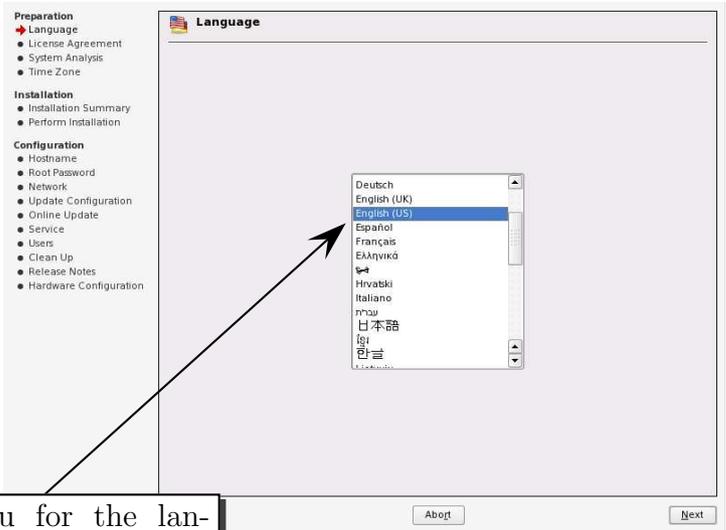
YaST asks you for the language to be used during the installation process. Select your language and select `Next`.

Accept the Novell Software License Agreement and select [Next].
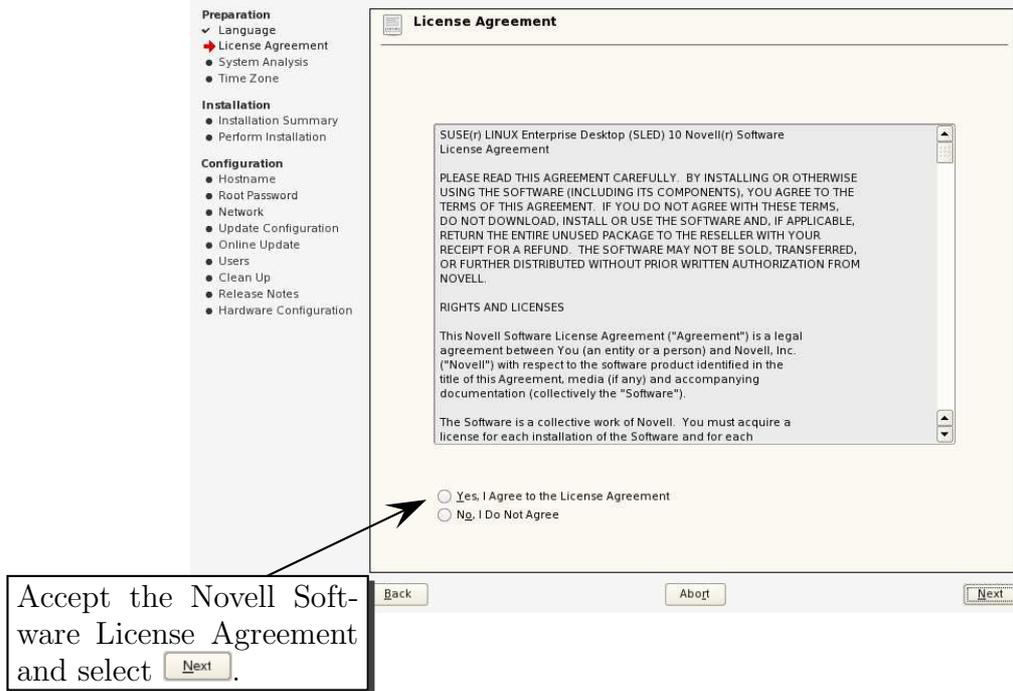
If you have Linux already installed on your computer, the following dialog appears:

If there is no old installation found on the hard drive, only `New Installation` can be selected.
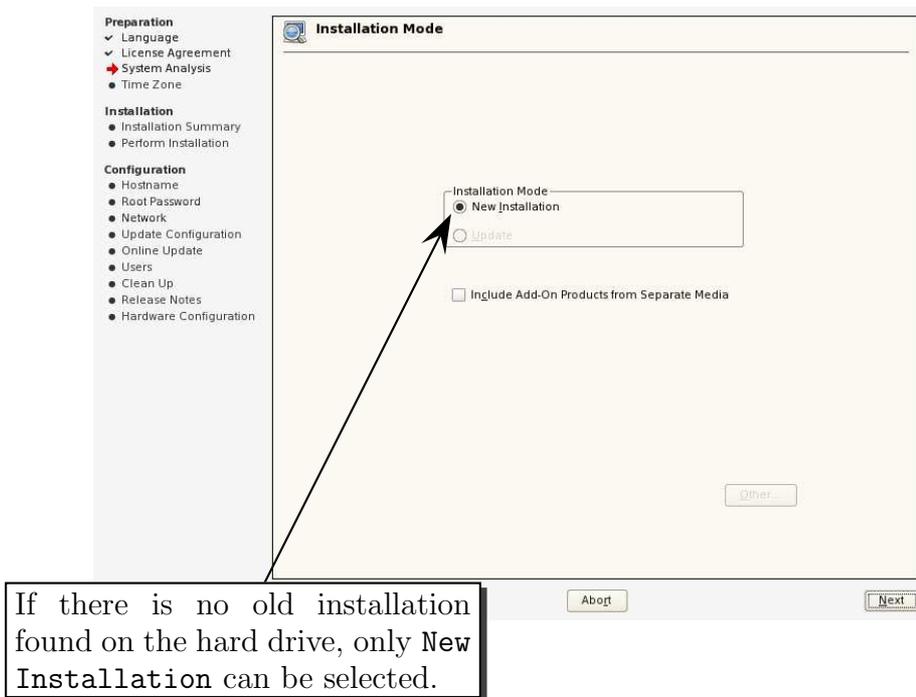
Select the time zone you are living in and the time zone your hardware clock is set to.
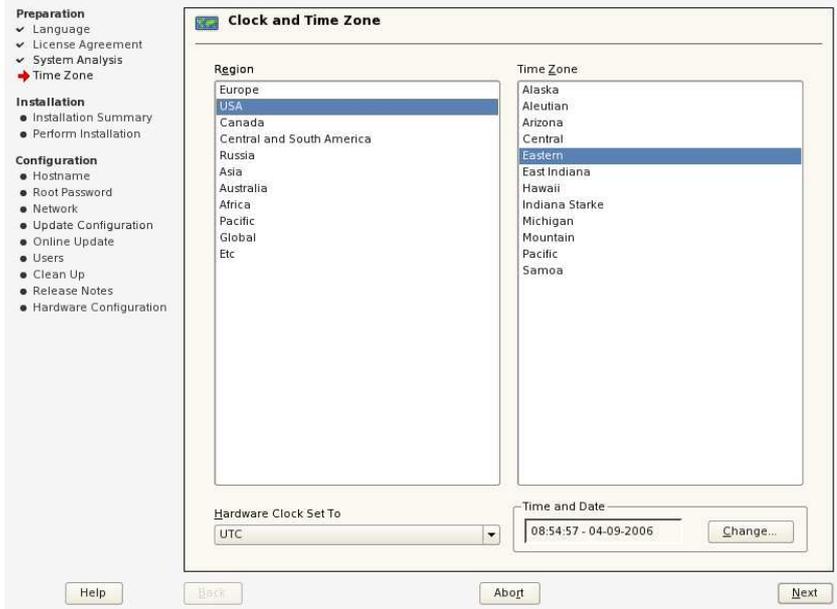
YaST displays the following information on your hardware and makes suggestions for the installation:

The `Expert` tab shows all settings.
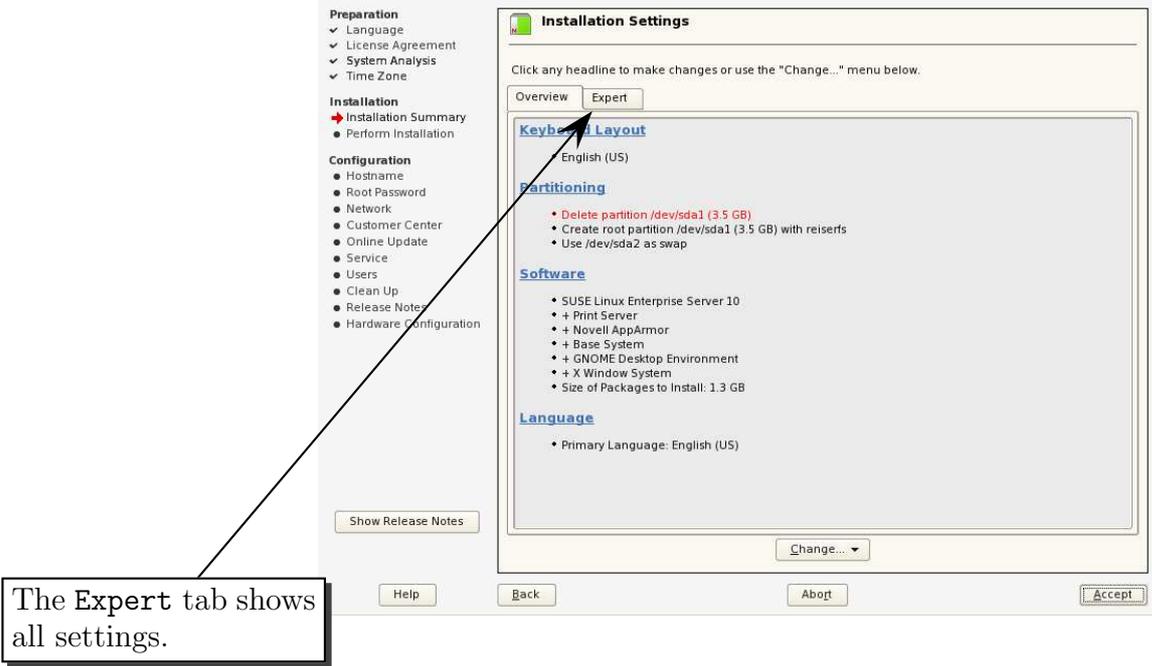
You can change these settings by selecting the headline of each of the sections or by using the `Change...` menu.

The following sections are available:

System   – Lists details about your hardware.

Keyboard layout – Identifies the layout of your keyboard.

Partitioning   – Lets you create and change the partitioning table of your hard disk. If you have free space on your hard disk, the configuration program tries to use it all for the installation.

If a Windows partition exists, YaST tries to resize it. An existing Linux Partition is overwritten. In any case, you should make a backup of any partitions you still need.

Add-On Products – If you have foreign installation media with add-ons, you can add them here.

Software   – Lets you select the software to be installed.

Booting   – Lets you install and configure the GRUB (Grand Unified Bootloader) boot loader.

Time zone   – Lets you select your time zone.

Language   – Lets you select the default language for your installation.

Default Runlevel – Lets you select your default runlevel for SUSE Linux Enterprise Desktop 10.

Runlevels are different modes your system can work in. Runlevel 5 offers full networking capabilities and starts the graphical user interface. Runlevel 3 offers only a text interface.

After selecting Accept, you have to accept the Licenses of Adobe and Macromedia.
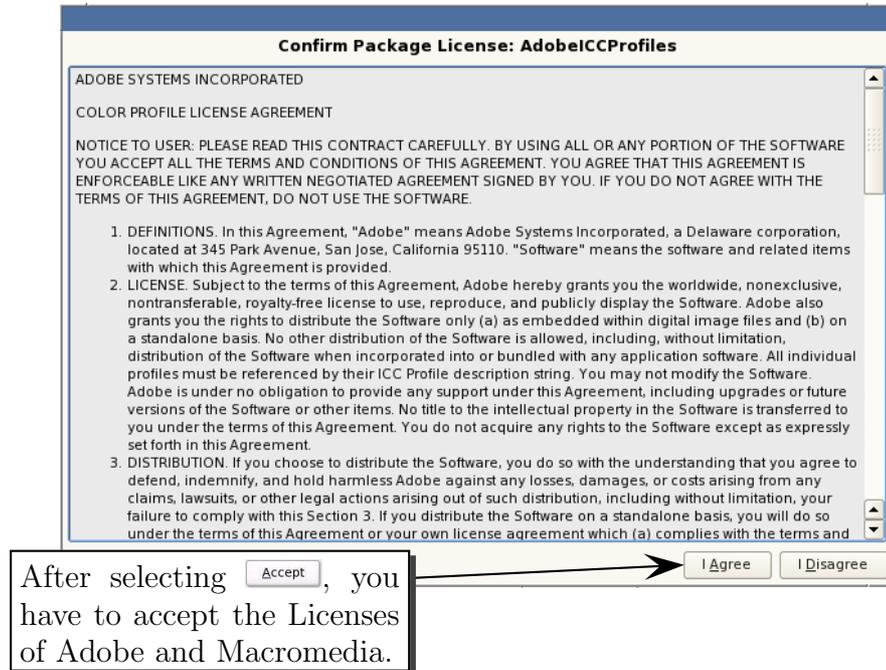
The last confirmation dialog appears, before the installation starts.

Start the installation process here.
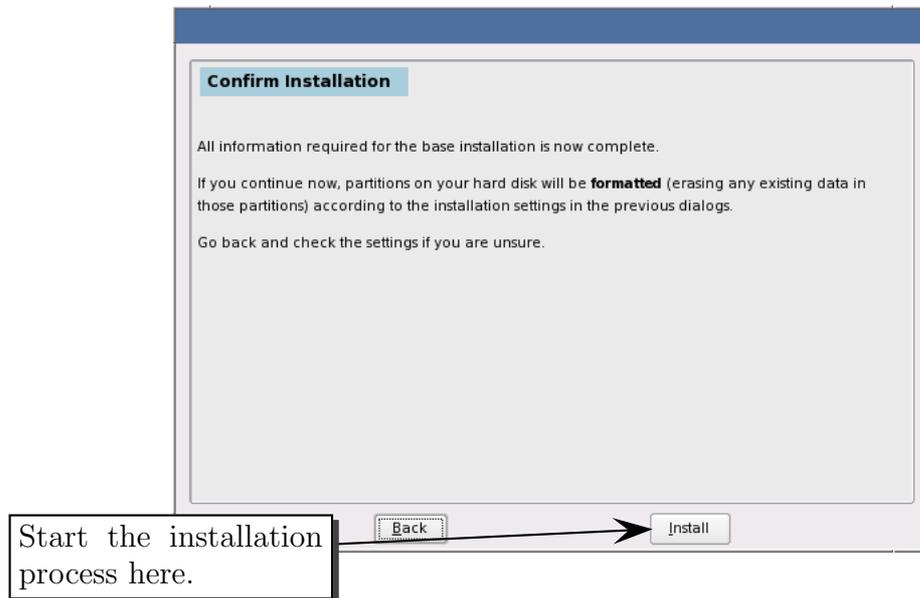
Now the selected partition is formatted and the software is installed. This can take some time, depending on your hardware.
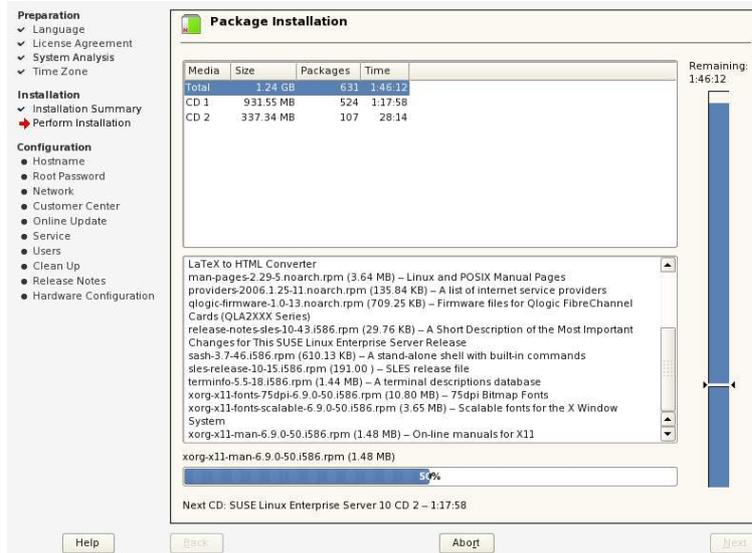
If the installation of the software packages was successful, YaST stores the information and reboots your computer.

Now you have to do some basic configuration.

1.3.3 Basic Configuration

First, specify the name of your host and the name of your domain.
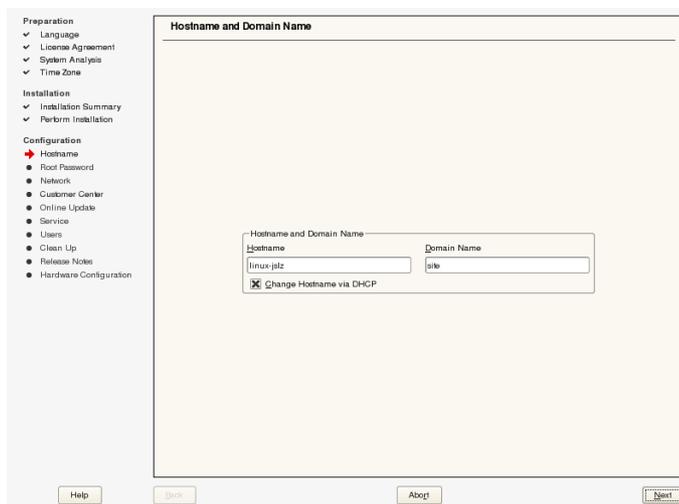
You have to specify the password for the root user.

For security reasons, the letters of the password are shown as stars.
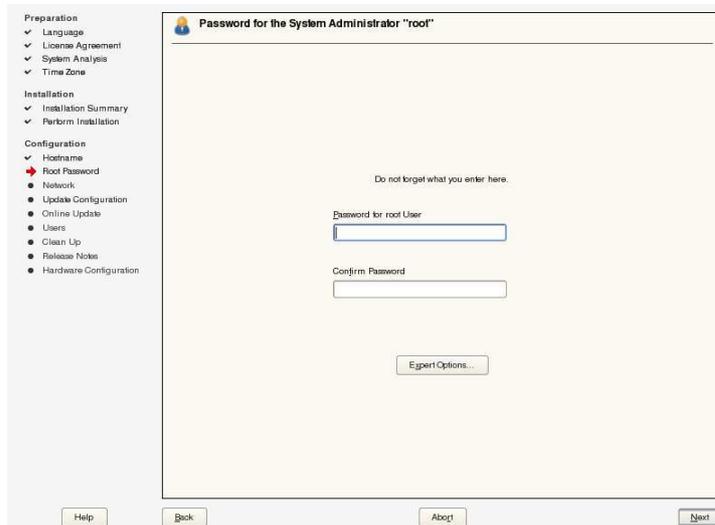
The system administrator of a Linux system is called "root."

Attention! Warnings appear if the password is too simple.

After you have specified a password, you should review your network configuration. YaST displays a summary of the network devices it has discovered:
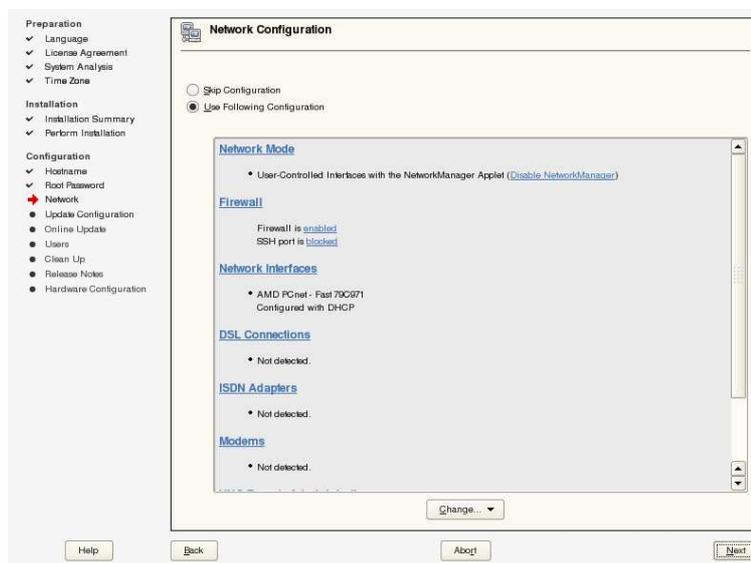
The following types of network devices are displayed if the hardware is available:

☞ Network interfaces

☞ DSL connections

☞ ISDN adapters

☞ Modems

By default, YaST selects the NetworkManager configuration for the network interfaces. You can change the network configuration by selecting the headline of the section or by using the `Change... ▾` menu.

In the next dialog, you can test your Internet connection.
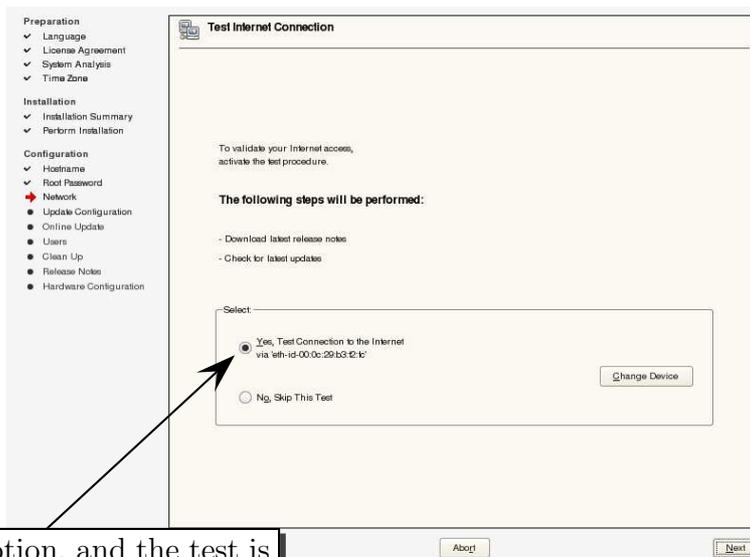
If you select this option, and the test is successful, the latest release notes will be downloaded and YaST will check for new updates.

If the prerequisites have been met to connect to the Internet, you should get a success message.
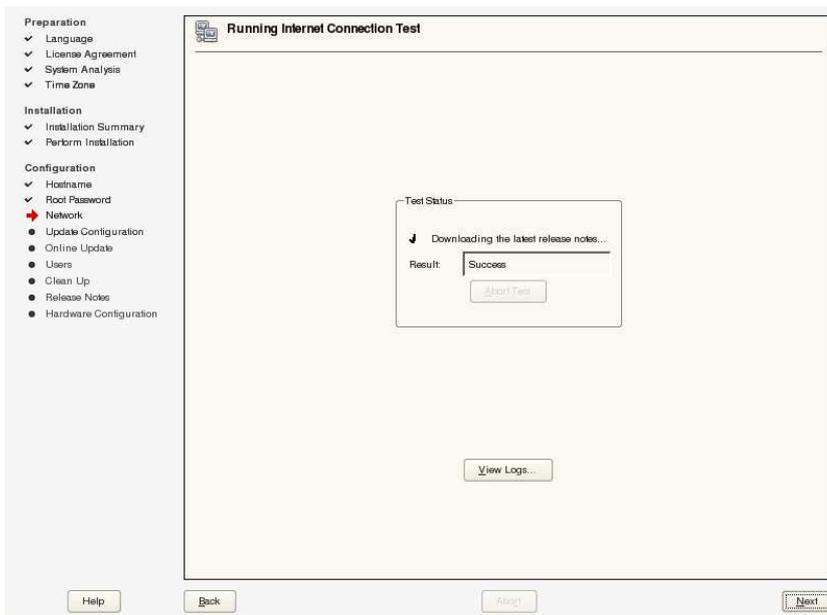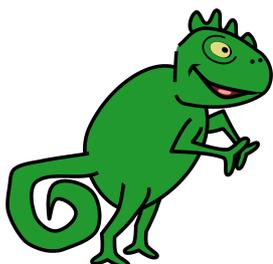
After selecting [Next], you can configure the Novell Customer Center, which helps you to keep your systen up to date.

Select [Next], to configure your Novell Customer Center.

The owner of the key may distribute updates, packages, and package repositories that your system will trust and offer for installation and update without any further warning. In this way, importing the key into your keyring of trusted keys allows the key owner to have a certain amount of control over the software on your system.

A warning dialog opens for every package that is not signed by a trusted (imported) key. If you do not import the key, packages created by the owner of key FF19DF54FB404930 show this warning.

⚠ Import Untrusted GnuPG Key

The following GnuPG key has been found:
ID: FF19DF54FB404930
Fingerprint: AA9F 985C A29A 753A C05F 74B1 FF19 DF54 FB40 4930
Name: ATI Linux Software (ATI-REPO.ZIP) <atilinuxsoftware@ati.com>

You can choose to import it into your keyring of trusted public keys, meaning that you trust the owner of the key. You should be sure that you can trust the owner and that the key really belongs to that owner before importing it.

[Import] [Do Not Import]

> Import the GnuPG (GNU Privacy Guard) keys of ATI Linux Software and NVIDIA Cooperation to be informed about new graphic drivers.

A web browser starts and you enter your email address.

Mozilla Browser

File   Edit   View   Go

Novell Customer Center System Registration
ATI Video Drivers
SUSE Linux Enterprise Desktop 10
nVidia Video Drivers

Please enter the following information to register your product. By completing this simple registration, you will gain immediate access to online updates.

E-mail address:
Confirm e-mail address:

Which e-mail address should I provide and why? ⊕

Activation code for SLED components (optional):

What if I don't enter an activation code? ⊕

System name or description (optional): da51

Help ▶   Cancel ▶   Submit ▶

After clicking through the confirmations of Novell Customer Center, YaST looks for updates and asks if you want to start the YaST Online Update (*YOU*) module.

Select `Run Update` and [Next]
to get the latest updates.
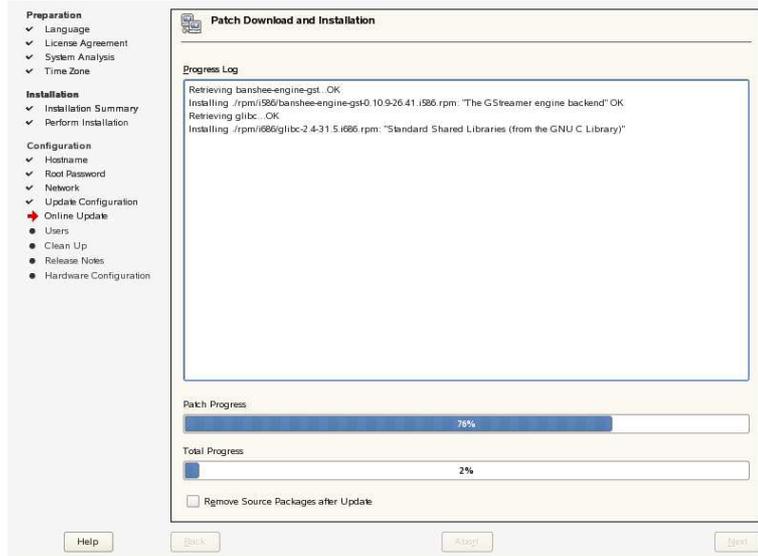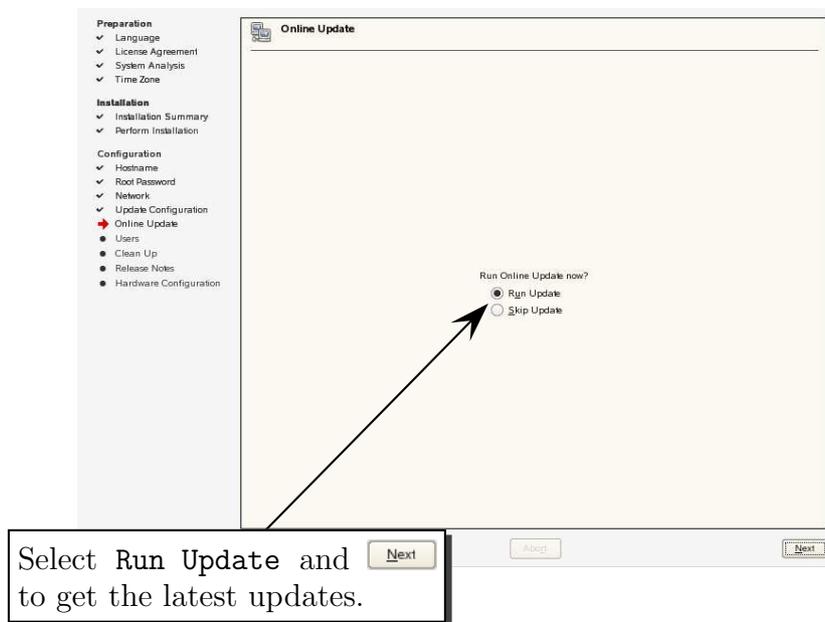
You should apply the available updates to ensure your new system has the latest patches.

If you downloaded a patch for the Linux kernel a reboot is necessary.

Select [Next] to go to select the user authentication method.

Select one of the following user authentication methods:

❶ **Local (/etc/passwd).** This setup is used for systems where no network connection is available or where users are not supposed to log in from a remote location at all. User accounts are managed using the local file **/etc/passwd**.

❷ **LDAP.** (Lightweight Directory Access Protocol) User account data is managed centrally by an LDAP server. Users must be authenticated via LDAP if you are working in a network environment that has both UNIX and Windows computers.

❸ **NIS.** (Network Information Service) User account data is managed centrally by a NIS server. NIS can only be used in pure UNIX environments.

❹ **Windows Domain.** User account data is managed by a Microsoft Windows domain controller.

❺ **eDirectory LDAP.** A special LDAP implementation developed by Novell.
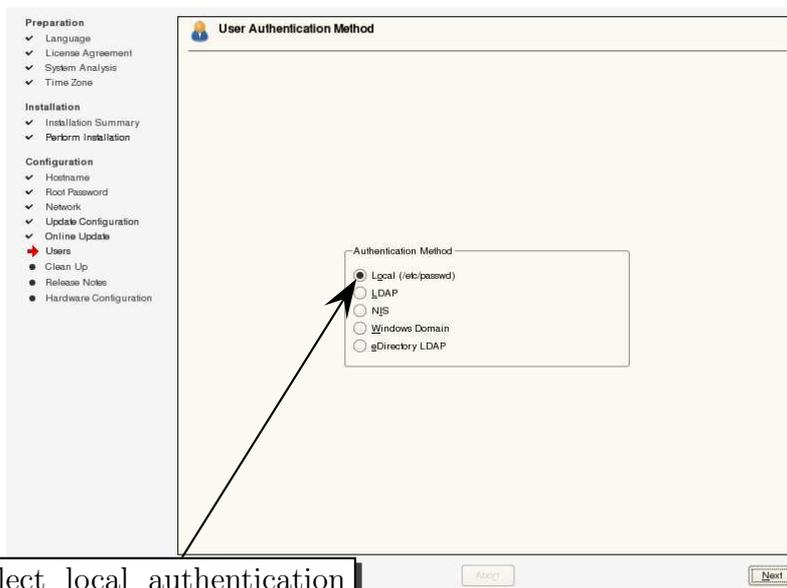
Select local authentication for this course.

If you choose `Local (/etc/passwd)` and select `Next`, you can start creating your first user.
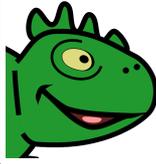
Why do you have to create normal users besides the system administrator root?
It is safer to do daily work as a normal user, because normal users are not allowed to change important system configuration files (intentional or unintentional).

To add a user, provide the following information:

`User's Full Name` – The complete user's name.

`Username` – The user's login name. This name must be unique on the system.

`Password` – The case-sensitive login password for the user. You have to enter the password twice for verification. YaST displays warnings if the password chosen is considered vulnerable or insecure.

For security reasons, the letters of the password are shown as dots.

If you want the user to receive automatically generated email for root, then select `Receive System Mail`.

If you use your Linux computer only at your own desk and you want to avoid the login during the startup, select `Auto Login` option.

Attention! For security reasons, we recommend that you deactivate the auto login option, since anyone who turns on your machine has full access to all the files stored there.

After setting up one or more users, the system information is written to disk. YaST opens a window with the release notes.
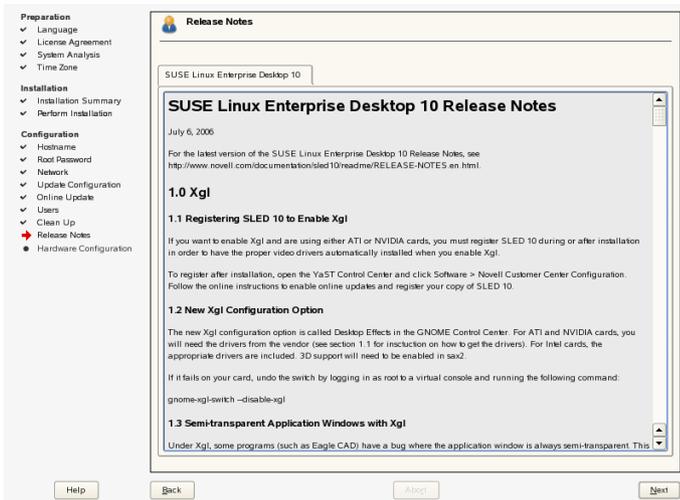
Go to the last step of the installation by selecting Next.
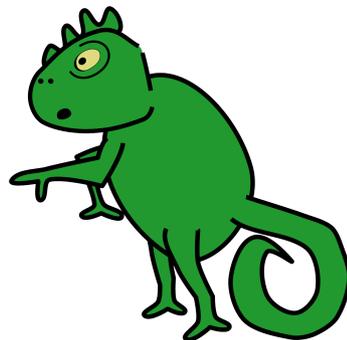
At this point, the final configuration dialog appears (hardware configuration):
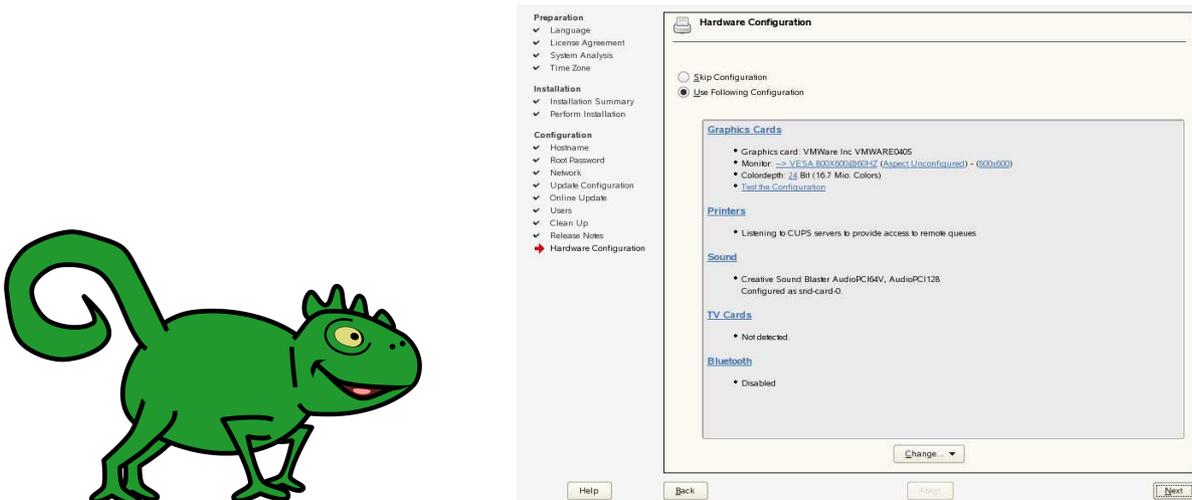
From this dialog you configure additional hardware items such as the following:

☞ Graphic card

☞ Printer

☞ Sound card

YaST configures the graphic card and the sound card automatically. YaST also detects some printers automatically.
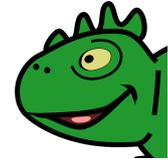
Confirm the settings and write them to the system by selecting Next .

The last dialog tells you that the installation was successful. Select Finish . SUSE Linux Enterprise Desktop 10 is now ready for use.
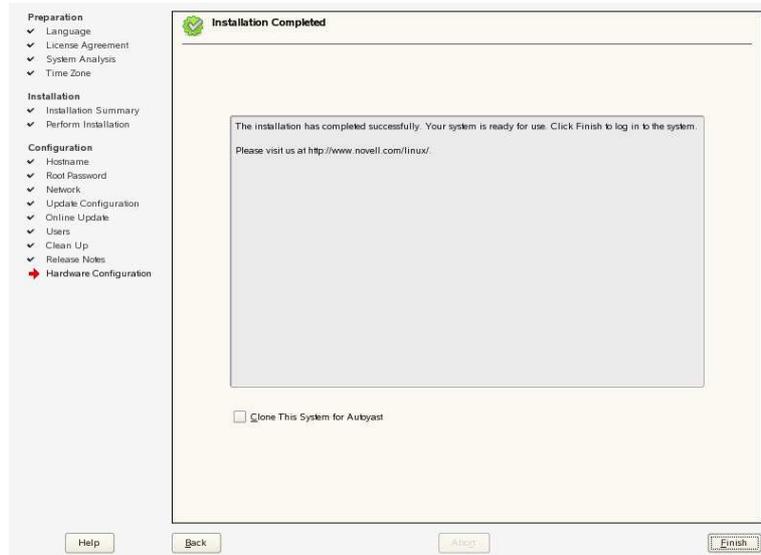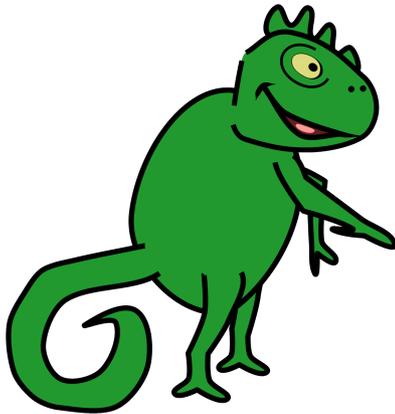
Exercise: Installation of SUSE Linux Enterprise Desktop 10

Install the SUSE Linux Enterprise Desktop 10 on your system.

The following table will lead you through the installation process and information on the data you have to enter.

Language	English
Installation Settings	Accept defaults
Root Password	`novell`
Network Configuration	Accept defaults (NetworkManager)
Test Internet Connection	Yes
Run Online Update	Yes
Service Configuration	Accept defaults
User Authentication Method	Local authentication
Local Users	Name: `Geeko Chameleon` Login: `geeko` Password: `novell`
Hardware Configuration	Accept defaults
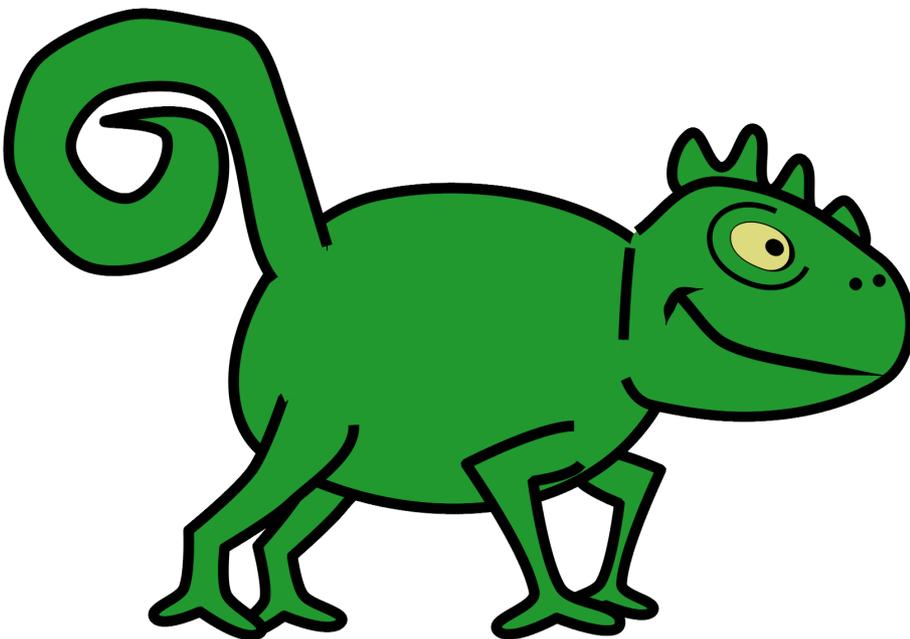
2 Understand the GUI Environment

2.1 Introduction

With Microsoft Windows, it is impossible to install a computer without its graphical user interface (GUI). In Linux, the GUI is a normal application that you can choose whether or not to install, since most functions can also be completed in a text based interface.

Most services in Linux can be configured by editing an ASCII text file, so you do not always need a GUI if you want your computer to act only as a server.

Not installing a graphical user interface has the following advantages:

❶ **Stability.** Every program contains errors that can make your system unstable. The fewer programs that are installed, the more stable your system will be. A graphical user front end is a large program that might contain a large number of undiscovered programming errors, even if the error ratio is low.

❷ **Performance.** Every running program needs system resources. Fewer programs running on your computer means increased performance.

2.2 Overview of the Linux Desktop

The basis of any graphical user interface is the X Window System (simply called X or X11). It allows you to control the input and output of several applications in different windows of a graphical interface.

It is important to distinguish between graphical applications, which run in their own windows, and text-based applications, which are carried out in a terminal window.
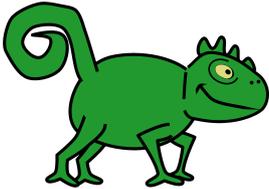
The X Window System was created in 1984 at MIT (Massachusetts Institute of Technology). The aim of the development was to be able to use graphical applications across a network, independent of hardware.

The X Window System allows graphical applications to be displayed and operated on any monitor, without running the applications on the machines to which these monitors are connected.

The basis for this is the separation into a server component (X server) and the application itself (client application). The X server and client application communicate with each other by way of various communication channels.

☞ **X server.** The X server controls the graphical screen. This corresponds roughly to what would be called a graphics driver on other systems. In addition, it manages the input devices, such as keyboard and mouse, and transmits their actions to the X client.

   The X server, however, has nothing to do with the appearance of the window and the desktop; this is the task of the window manager. XFree86 3.3.x and its successor XFree86 4.x are free implementations of the X server. SUSE Linux Enterprise Desktop defaults to using X.Org.

☞ **Client application.** The client application is a graphical application that uses the services of the X server to receive keyboard and mouse actions, and to have its own output displayed on the screen.

The communication between X server and X client uses the network protocol TCP/IP—even if the server and client run on the same computer.
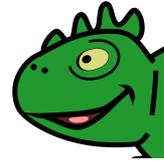
As shown in the following figure, the X server is running on computer da5, while the X applications are running on computers da1 and da2:
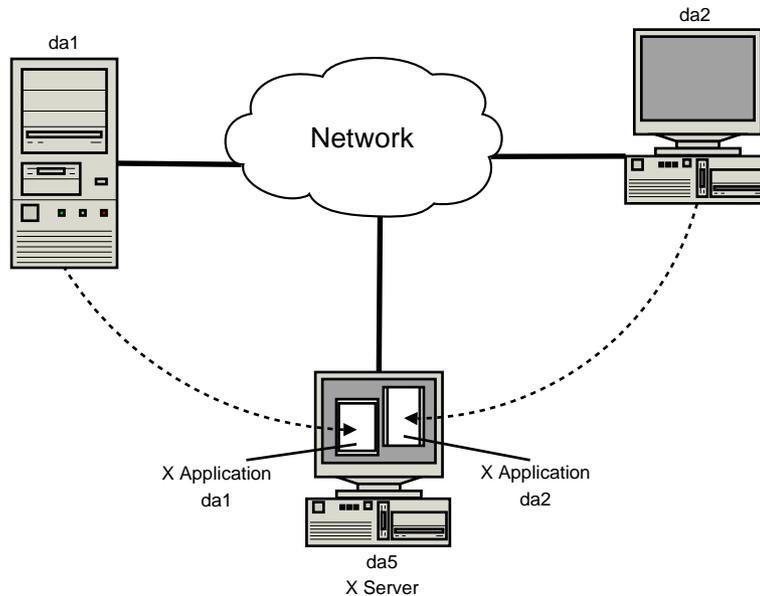
The display of the client applications, however, is performed by the X server on the machine da5. All of these computers can be running different operating systems (at the same time).

Window managers are specialized client applications. A window manager works together with the X server and provides additional functions. The window manager:

☞ Provides control elements

☞ Manages virtual desktops

☞ Provides functions of window frames (for example, changing their size)

The X Window System is not linked to any specific window manager and thus it is not linked to any particular look and feel.

The distinction between the X server, client application, and window manager is not noticed during normal operation; once you have logged in by way of the graphical login, the entire environment is available.

SUSE Linux Enterprise Desktop 10 is currently released with several window managers, including Metacity (the GNOME window manager; GNOME = GNU Network Object Model Environment) and twm (Tab Window Manager).

Desktop environments go far beyond the look and feel which window managers provide for desktops and manipulating windows. The aim is to provide clients with a unified look and feel. GNOME is the standard graphical desktop for SUSE Linux Enterprise Desktop, but you can install the KDE interface instead, if you choose.

Exercise: Overview of the Linux Desktop

To identify the structure more clearly, the components can be started individually.

N Startup Options

SUSE Linux Enterprise Desktop 10
Floppy
SUSE Linux Enterprise Desktop 10 (Failsafe)

Boot Options 3

F1 Help   F2 Language

Enter **3** at the boot option screen when you start your system.
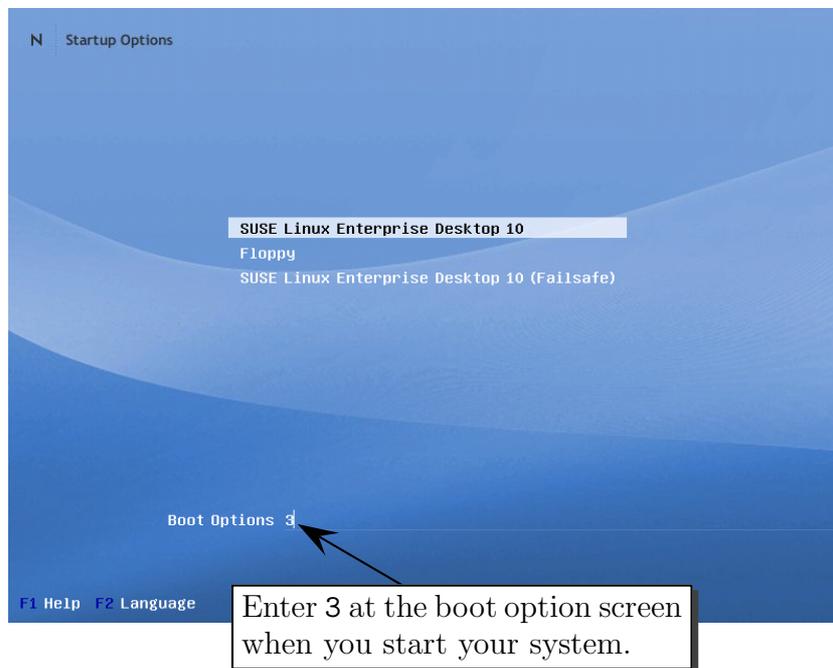
The system will start without any graphical environment.

```
Welcome to SUSE Linux Enterprise Desktop 10 (i586) - Kernel 2.6.16.21-0.25-default (tty1).

da51 login:
```

Enter `root` as login and `novell` as password.

You are logged in successfully as root when you see a prompt like

```
1  da51:~ #
```

Enter `X &` to start the X server.

The result of this command is a gray area with a mouse pointer cross. Users cannot use the pure X server in a meaningful way, but X applications can use the X server for the graphical output.

Press Ctrl + Alt + F1 to switch back to the console from which the X server was started.

If you start a graphical application from this console, the following error message is displayed:

```
1  da51:~ # xterm
2  ...
   xterm Xt error: Can't open display: %s
4  xterm: DISPLAY is not set
```

The application "xterm" lacks the information on the X server to be used. The X server needs to be addressed specifically, as it may be active on the same machine or on a different machine, or several X servers may be active on one machine.
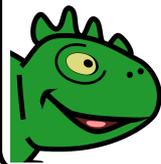
Graphical applications interpret the variable DISPLAY, which contains the necessary information. However, in the above example, this variable is not set.

Enter `DISPLAY=:0 xterm &` and you won't get any errors.

You can switch back to the X server by pressing Ctrl + Alt + F7. Here you can see the xterm window in the top left corner.

```
da1:~ # █
```
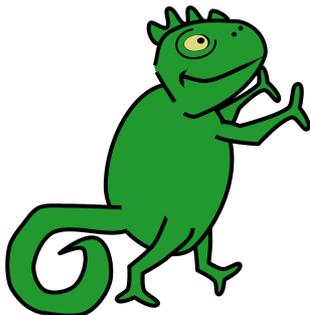
If you move the mouse pointer over the window, commands can be entered within the window, but you cannot move the window by using the mouse.

Enter `twm &` to start the simple window manager twm.

```
  xterm
da1:~ # twm &
[1] 6445
da1:~ # █
```
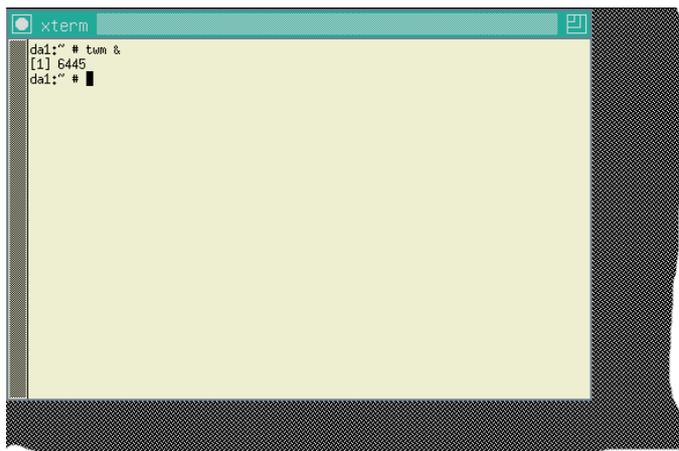
Now you can move the window by clicking the title bar and holding down the left mouse button.

To restart the X server and unload the running X clients, press Ctrl + Alt + Backspace.

To set your computer back into the default state, enter `init 5; exit`.
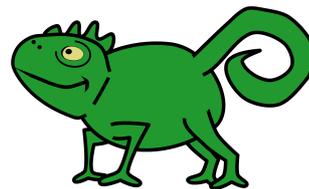
2.3 Use the GNOME Desktop Environment

2.3.1 How to Log In

If computer users want to work with a multiuser-capable operating system, they must first identify themselves to the operating system. For this purpose, they need

☞ A login string or username

☞ A password (usually assigned by the system administrator when a new user is added)

When the computer is booted and ready for work, the following login dialog appears:
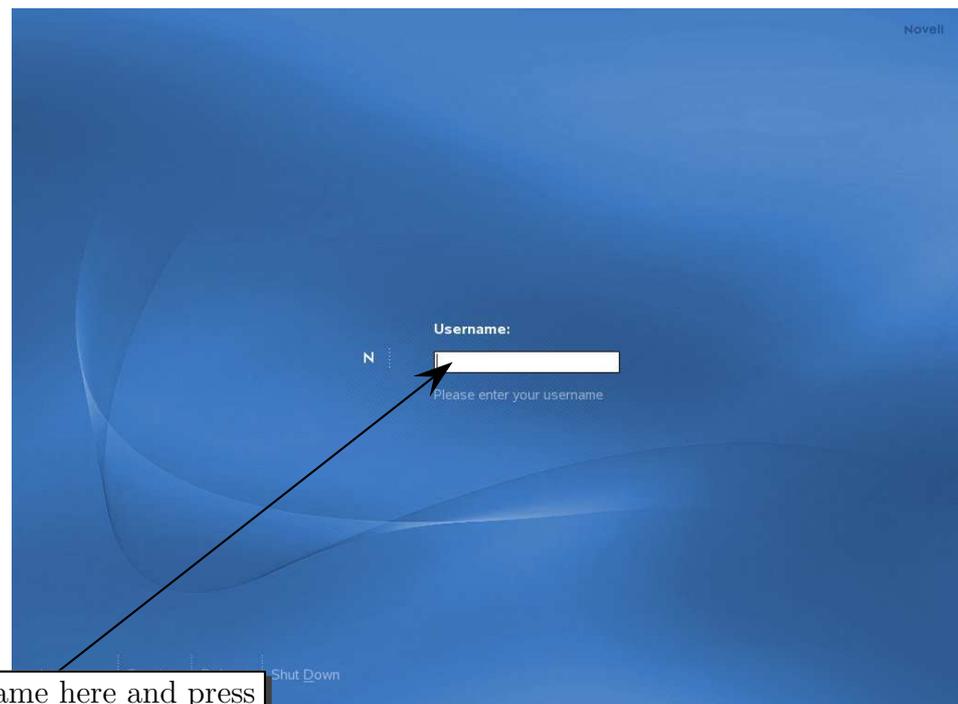
Enter your username here and press `Enter` to enter your password.

After entering a username and password, press `Enter`.

If the login is successful, the GNOME desktop environment appears.
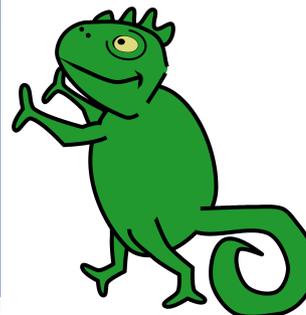
2.3.2 How to Identify GNOME Desktop Components

The GNOME desktop includes a panel at the bottom of the screen:

The panel at the top of the desktop is responsible for launching applications. The following features are available (from left to the right):

Computer	Main menu for launching applications
	Write post-it notes on your desktop
	A task manager
	Applet for NetworkManager
	Displays information and settings
	Informs you when new updates are available
	Volume control
Thu Oct 12, 7:08 AM	A clock
	The board minimizes all open windows or shows them again on the desktop

✍ **Exercise: Identify GNOME Desktop Components**

Label the items of the GNOME desktop on the following screenshot.
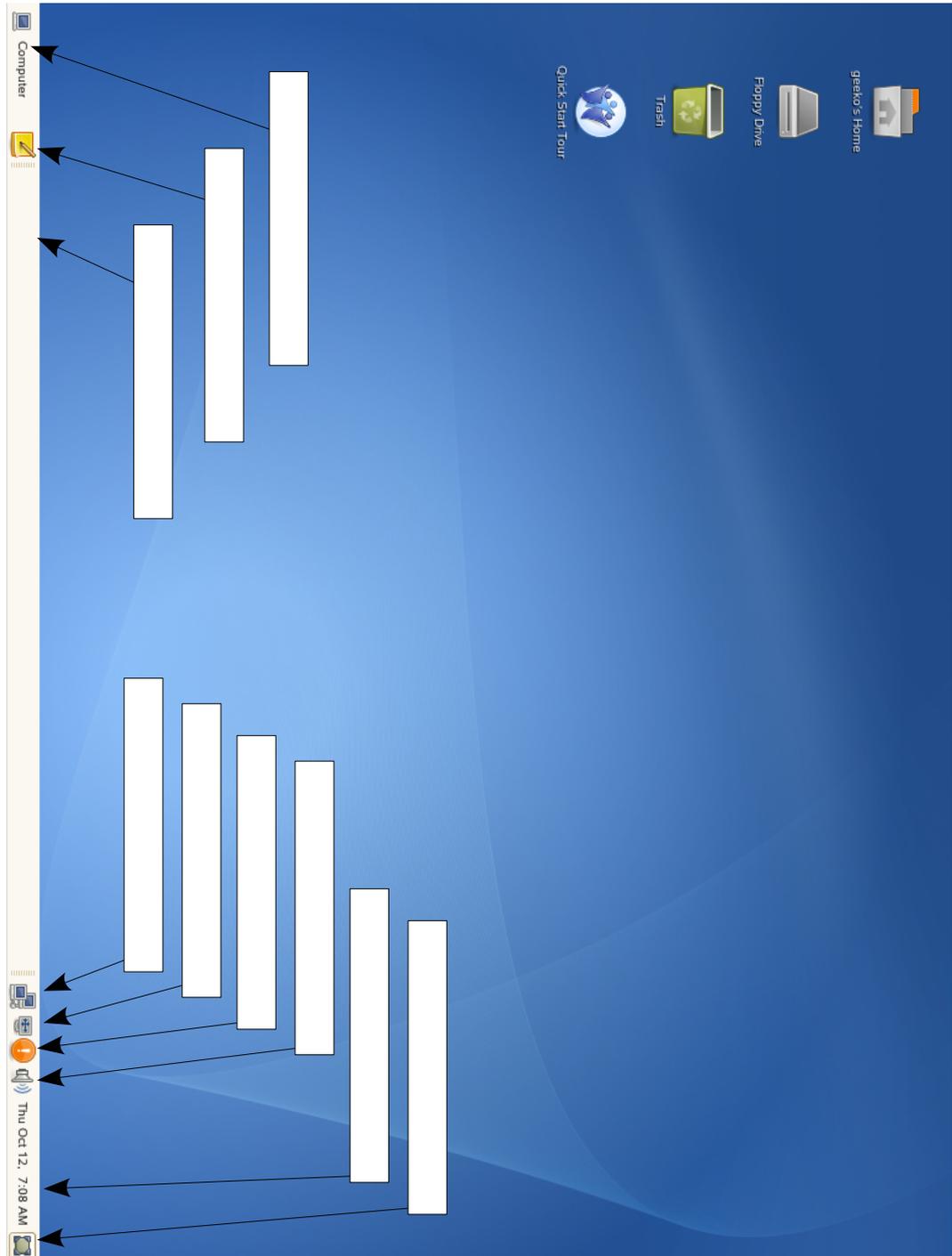
You can start a program with an icon on the desktop by double-clicking the icon. But normally programs are started from the main menu.

In the `Search` textbox you can enter the name of a file or application.
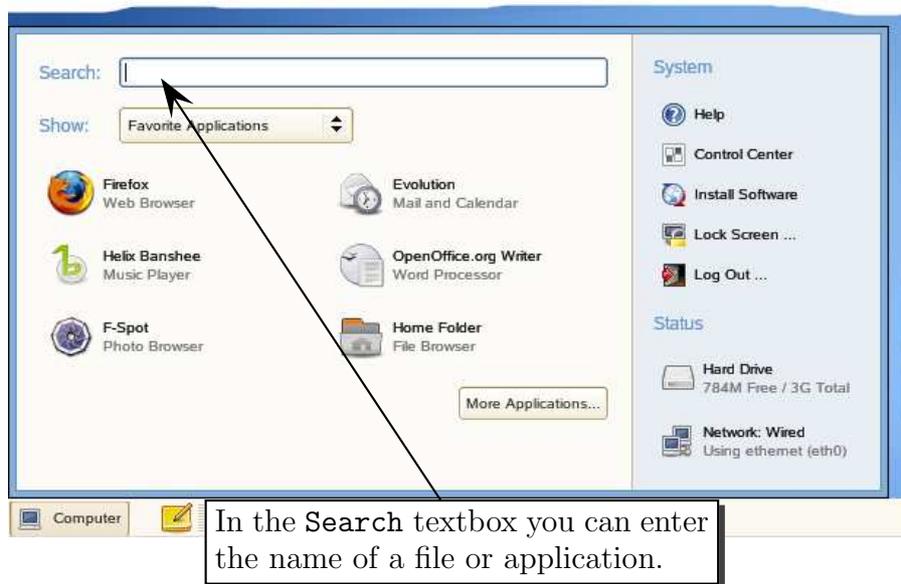
At the top of the left frame there is a pull-down menu labeled `Show` showing three different filters:

☞ `Favorite Applications`

☞ `Recently Used Applications`

☞ `Recent Documents`

In the left frame, there is also a button `More Applications...`. If you select this button, the application browser appears.
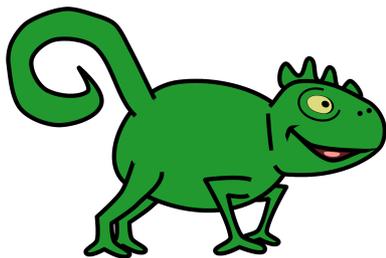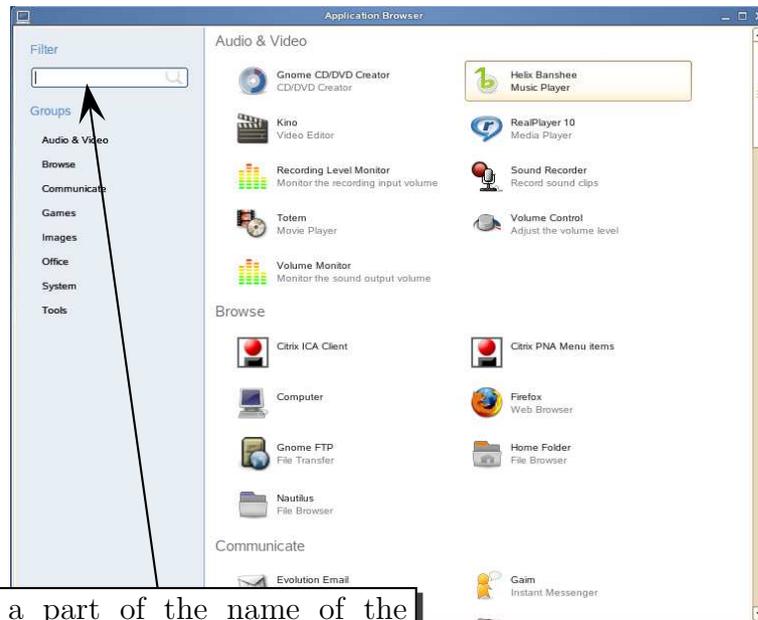
Enter a part of the name of the application you want to start here. The filtered applications are shown immediately in the right frame.

The right frame of the application browser shows a list of the most important installed applications. The applications are grouped and you can see a list of the groups in the left frame. Select a group to see only the applications that belong to this group.

In the right frame of the main menu, there are five system options:

Help – Starts the online help.

Control Center – Starts the GNOME Control Center where you can configure your desktop.

Install Software – Shows a list with the available software on your registered installation media.

Lock Screen ... – Locks the screen. To unlock you have to enter your password.

Log Out ... – Must be selected to log out of the system.

At the bottom of the right frame you can see the status of your hard drives and network.

To start an application select the icon in the main menu or the application browser with a single mouse click.

2.3.3 How to Log Out

When you are ready to log out of the system, open the main menu in the bottom panel. At the right side of the Computer menu, select ![Log Out icon] Log Out ... . A confirmation dialog appears.

If you select Save current setup, your current desktop environment settings are saved and restored after your next login.

Select ![OK button] OK after selecting an action.

2.3.4 How to Manage Icons in GNOME

There are icons in the following three areas on your desktop:

☞ Desktop

☞ Panel

☞ Application Menu

Desktop

You can create a new icon on your desktop in different ways. For the sake of simplicity, we will describe only one method.

To create an icon for an application on your desktop, select the item in your `Applications` menu or file manager and drag it to a free space on your desktop. If you release the mouse button, the new icon will appear on the desktop.
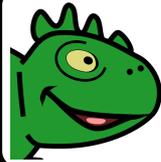
> Notice there is a small plus icon at the mouse pointer when moving the icon. This indicates that a copy of the icon will be created.

To create a new icon right-click a free space on your desktop. A menu pops up.
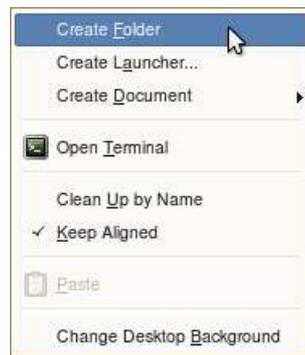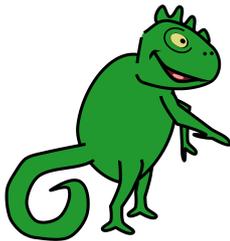
At the top of the pop-up menu there are three entries to create a new item:

Create Folder. Creates a new and empty folder icon. When the icon appears you can enter the folder's name.

Create Launcher. Creates a new application launcher. A dialog appears:

Enter the following information:

☞ `Name.` Name of the launcher.

☞ `Generic name.` (Optional) Enter the class of application to which the launcher belongs (e. g., `Text Editor`).

☞ `Comment.` (Optional) This comment is shown as a tool tip when moving the mouse pointer over the icon.

☞ `Command.` Command that should be executed when double-clicking the launcher icon.

☞ `Type.` You can create launchers for different file types (e.g., application, directory, link, device) using this dialog.

☞ `Icon.` (Optional) Select an icon for the launcher.

☞ `Run in terminal.` Select this option if the application does not have a graphical user interface and runs in a terminal window.

Create Document. You can create an empty document by using this menu.

Depending on your installed software there are various document types available in this menu. After a default installation there is only the possibility to create an empty text file.

When the icon appears you can enter the text file's name.

Panel

You can add new programs to the bottom panel by right-clicking a free area of the panel and then selecting `Add to Panel`. From the dialog that appears, select the application you want to add.
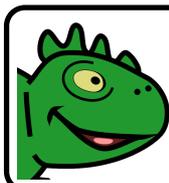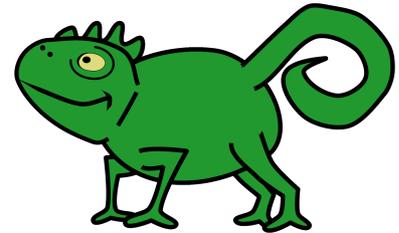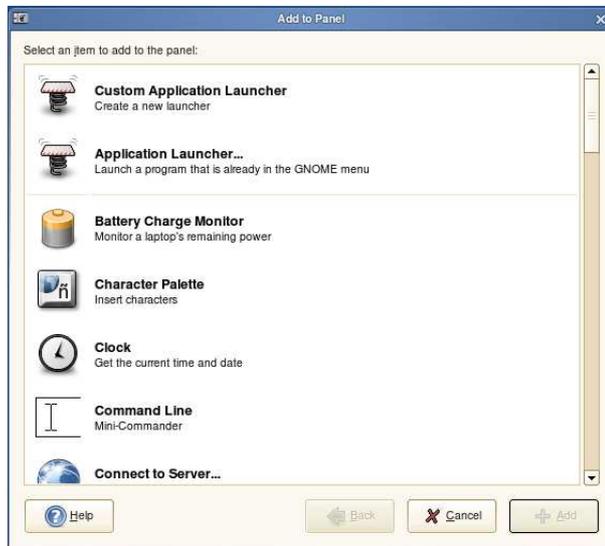
> If you want to add an application laucher, select `Custom Application Launcher` or `Application Launcher` from the top of the list.

You can remove a program from the control panel by right-clicking its icon in the bottom panel and then selecting `Remove From Panel`.

You can move icons in the panel by holding down the right mouse button and selecting `Move` from the context menu.

Main Menu

To add an entry to a menu, do the following:

❶ Open the main menu in the panel. The menu appears.

❷ Select `More Applications...`.

❸ Select an application item in the right frame with the right mouse button.

❹ Select `Add to Favorites` from the pop-up menu.

GNOME provides its own file manager (called Nautilus).

Your favorites are shown when you select filter `Favorite Applications`.
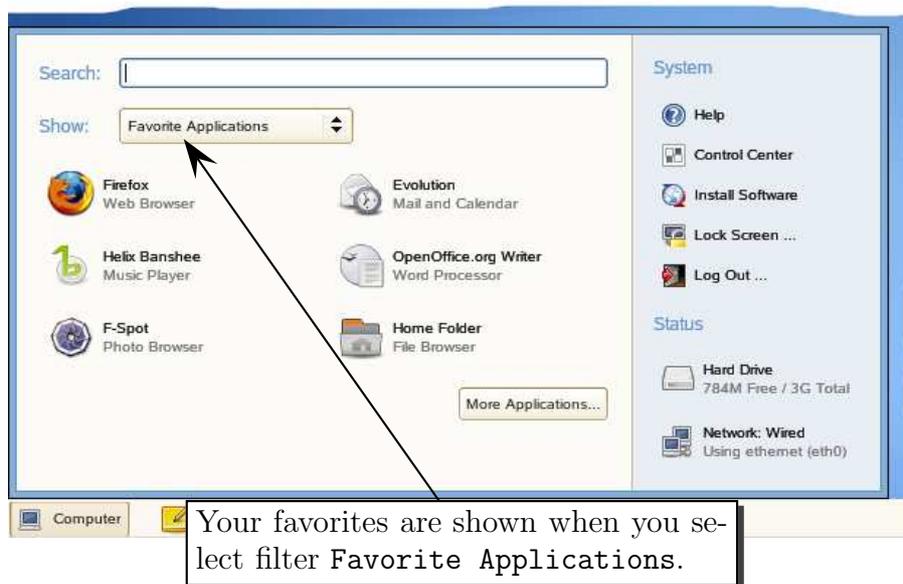
✍ Exercise: Manage Icons in the GNOME Environment

There is a calculator program called "Gnome Calculator". Create an icon to start the Gnome Calculator program

  ☞ at your desktop
  ☞ in the bottom panel
  ☞ in the main menu

2.3.5 Use the GNOME File Manager (Nautilus)

GNOME provides its own file manager (called Nautilus).

Although Nautilus does not provide as many features as other file managers, it contains the features you need for most file navigation tasks. You can start Nautilus by selecting the `username Home` icon on the desktop.
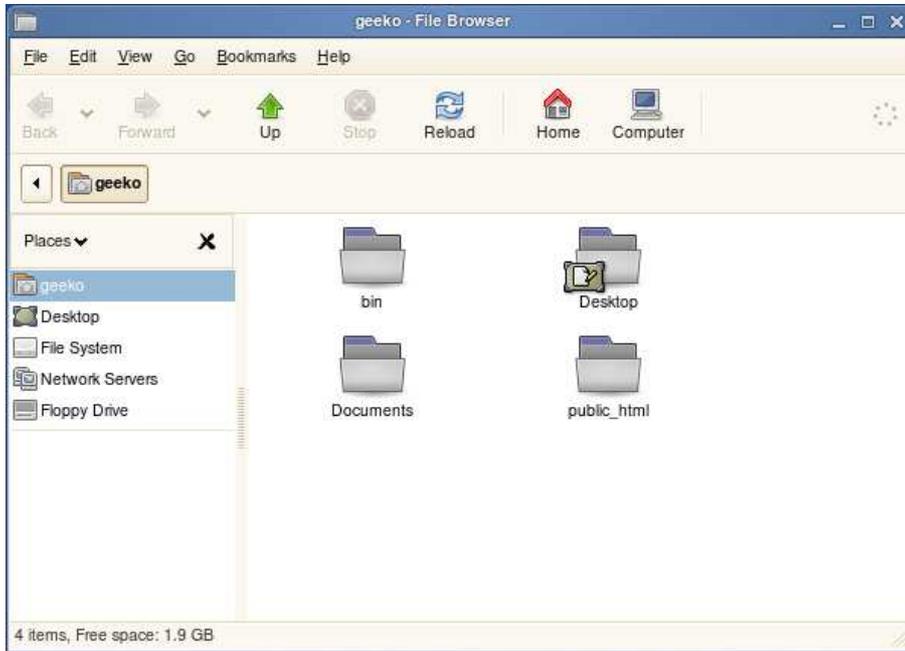
Normally, Nautilus shows the content of the user's home directory after starting.

The left frame of the Nautilus windows shows the content of the current directory.

You can see your current position in the location bar below the tool bar. All higher directories are shown as buttons. Select one of these buttons to switch into the higher directory.
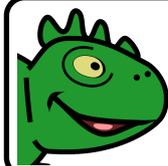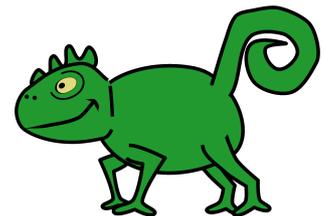
GNOME and its applications try to simplify the work by providing only selected features.

The items on the toolbar are

Back – Go back to the last position

Forward – Go forward (after back)

Up – Go up one level

Stop – Stop loading

Reload – Reload

Home – Go to the home directory

Computer – Shows all available file systems

Search – Search for files
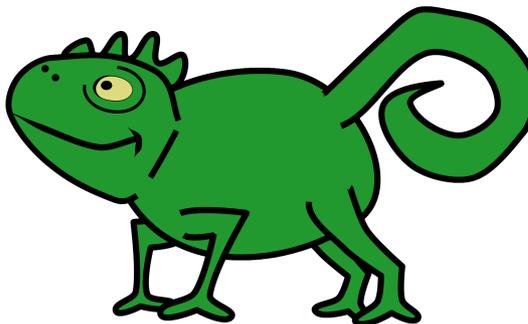
The right frame is called *Side Panel*.

Places ✔   ✗

geeko
Desktop
File System
Network Servers
Flop...

To change the content of the side panel, use this menu.
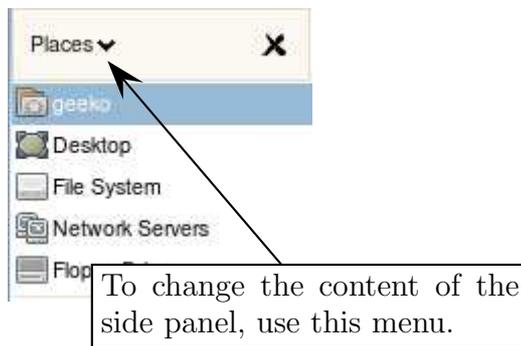
The following side panel tools can be chosen:

☞ **Places.** Shows the most important directories and devices to store files.

☞ **Information.** Shows some information about the current directory.

☞ **Tree.** Shows the file system tree and the tree of the home directory.

☞ `History.` Shows a history of the last visited directories.

☞ `Notes.` Enter notes for the current directory.

☞ `Emblems.` Shows the list of emblems.

To add an emblem to an icon use drag and drop.

Use `Erase` to remove all emblems from the icon.
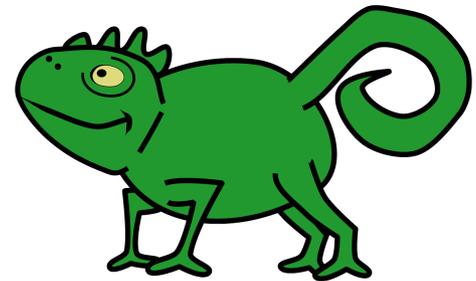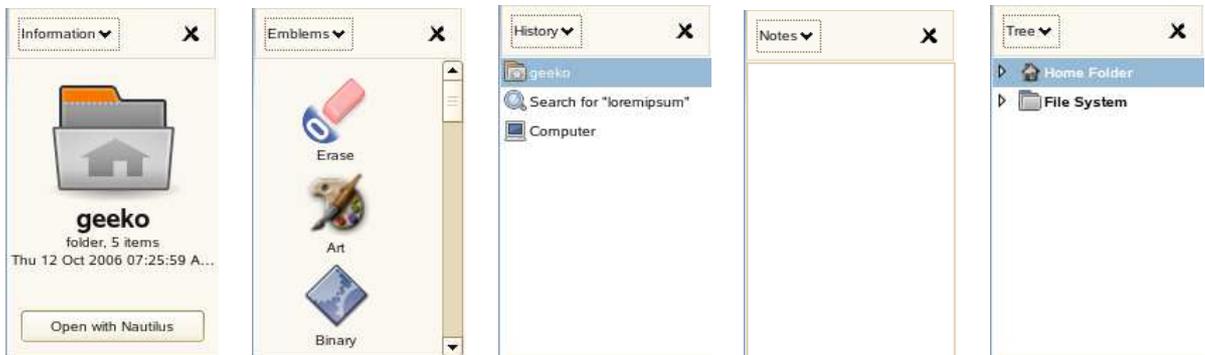
Manage the File System with Nautilus

Before we describe how to manage the file system, you have to know some basics about the Linux file system.

File Names in Linux A file name can be up to 255 characters long. It may contain any number of special characters ("_" or "%", for example). Certain special characters (the dollar sign "$", the semicolon ";", or the space, for example) have a specific meaning. If you want to use one of these characters without the associated special meaning, the character must be preceded by a "\" (backslash) so its special meaning is masked (switched off).

Umlauts, letters with diacritical marks, or other country-specific characters can be used. Using them, however, can lead to problems when exchanging data with people in other countries using other settings if these characters are not present on their keyboards.

> Linux differentiates between uppercase and lowercase letters. For example, `Invoice`, `invoice`, and `INVOICE` identify three different files.

Basic Principles The Linux file system is a hierarchical arrangement of directories and files. The basic structure is the same for all UNIX derivatives. Data is classified according to the following criteria:

☞ Static files (those that are not modified during operation, such as documentation) are distinct from dynamic files (those that can be changed, such as configuration files).

☞ Files are ordered according to their functions, such as executable programs, configuration files, or help files.

☞ Operating system files are distinct from user files.

Structure The hierarchically built file system starts with the root directory (root), which is denoted by the slash, "/". The root directory contains a series of directories and subdirectories ordered and organized according to the above-mentioned principles.

```
/bin
/boot
/dataX
/dev
/etc
/home  ──────►  /home/geeko/
/lib            /home/tux/
/media ──────►  /media/cdrom/
/mnt            /media/usbdisk/
/opt            /media/dvd/
/ ──────►  /proc
/root
/sbin
/srv
/subdomain
/sys
/tmp
/usr
/var
/windows
```
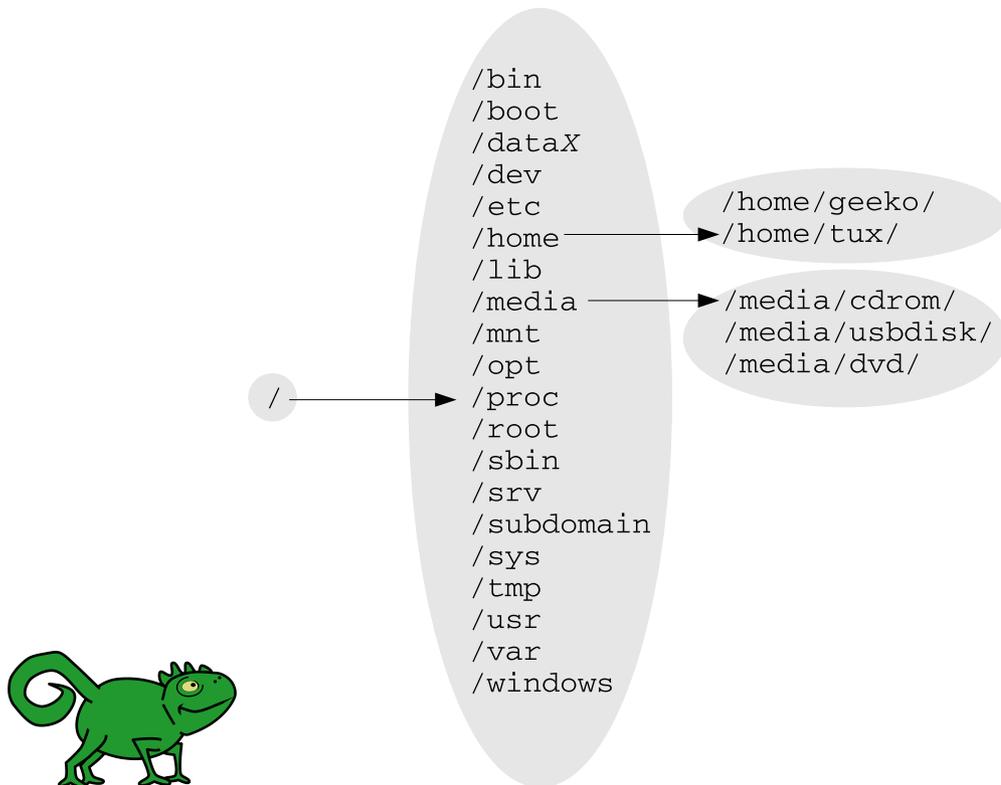
When referring to such a subdirectory, the slash (without a space) is placed in front of the directory (`/home/`, for example). Further subdirectories are also separated from each other by a slash (`/home/geeko/`).

A characteristic of the Linux file system is that the structure does not depend on the physical storage medium in which the directories are actually located.
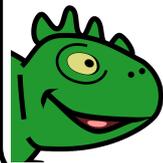
For example, if a computer is equipped with two hard drives, the **/usr/** directory can be stored on one drive and all user data (the **/home/** directory) can be stored on the other drive. Both directories are, however, directly attached to the file system in the root directory, so users do not even notice that the hard drive has changed when they change directories.

The Most Important Directories – Home directories

☞ **The /home/ Directory.** As many people can work on a Linux system at the same time, the data of an individual user must be clearly separated from that of another user. To achieve this, each user is assigned a home area (**/home/name/**). This directory can be organized according to personal requirements. This is where directories can be created, data stored, and personal programs installed.

The path for the user's home directory can be abbreviated with the tilde ("∼"). For example, for the user geeko, ∼/Documents/ corresponds to the path /home/geeko/Documents/.

☞ **The /root/ Directory.** The system administrator (called root in Linux) also needs a home directory. This directory is called **/root/**.

The Most Important Directories – Other storage

☞ **The /media/ Directory.** /media/ contains a subdirectory for each replaceable medium (for example, floppy disk drives, CD-ROM drive, CD burner, USB stick). Here, the contents of such a data storage medium are mounted into the file system.

☞ **The /mnt/ Directory.** /mnt/ is the default directory for temporarily mounting file systems such as other partitions or for accessing directories exported over the network.

☞ **/dataX/ Directories.** Depending on the hardware equipment and the configuration of the computer, the root directory may contain directories like **/data1/**, **/data2/**, **/data3/**, and so on. These directories allow access to other hard disks or partitions.

The Most Important Directories – Temporary files
☞ **The /tmp/ Directory.** In the /tmp/ directory, some programs create temporary files to store data. The content of this directory is regularly deleted, depending on the configuration, sometimes upon system start-up.

Create Directories To create a new file directory, click the white background of Nautilus with the right mouse button. A popup menu appears:
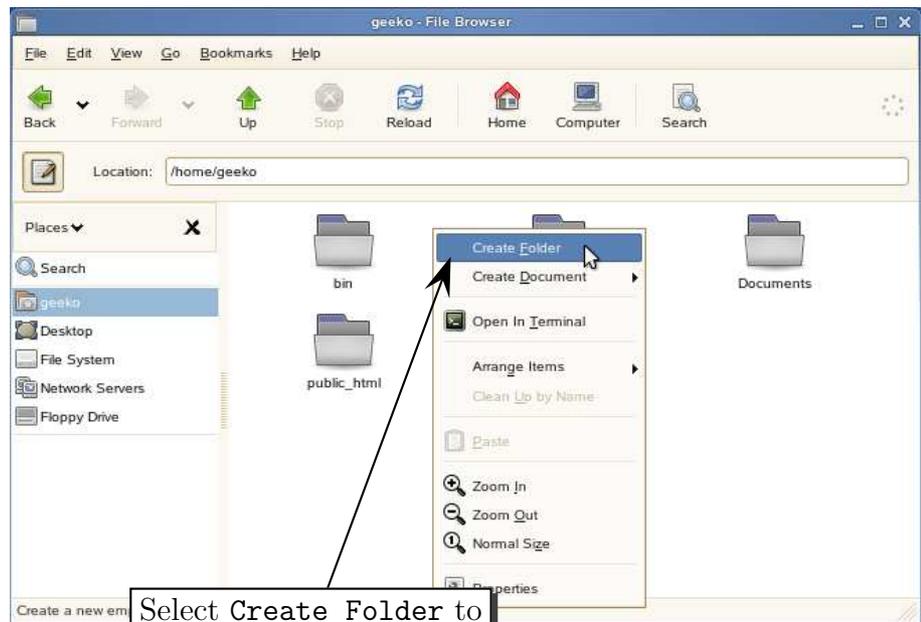
Select `Create Folder` to create a new directory.

Alternatively, you can select `Create Folder` from the `File` menu of Nautilus.

A new folder icon appears and you can enter the directory's name.

✍ Exercise: Create Directories

Create a directory called `GNOMEFiles` in your home directory.

Copy and Move Files
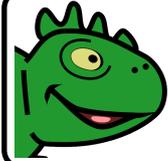
The explanation for using files below is also valid for directories.

One way to copy or move a file is to drag and drop the file icon from one Nautilus window into another.
If you hold `Ctrl` while you are moving the mouse pointer, the file is copied.

You can also use the popup menu. Right-click the icon of the file you want to copy and select `Copy`. If you want to move the file, select `Cut`.

To copy and move several files at the same time, hold down `Ctrl` while you are selecting files.
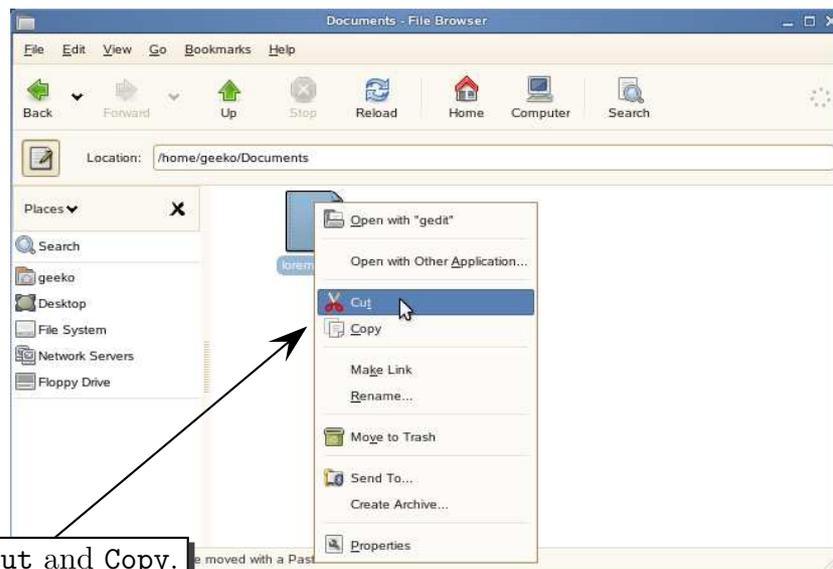
The items `Cut` and `Copy`.

Now you can navigate to the directory you want to copy the file to. Right-click the white window background and select `Paste Files` from the popup menu.
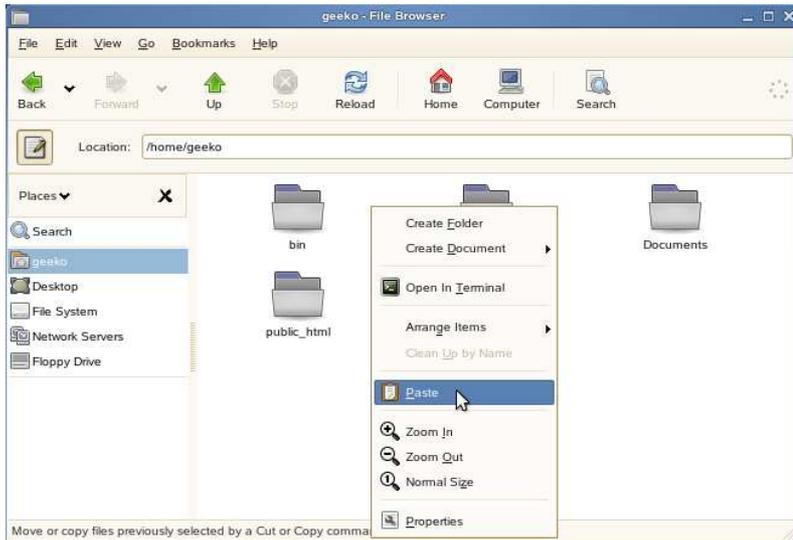
You also can use shortcuts:

☞ **Copy.**
   `Ctrl`+ `C`

☞ **Cut.**
   `Ctrl`+ `X`

☞ **Paste.**
   `Ctrl`+ `V`

✎ **Exercise: Copy and Move Files**

Copy the file `/usr/share/cups/calibrate.ppm` to the directory `~/GNOMEFiles/`.

Rename Files   To rename a file, right-click it, select the entry `Rename` from the popup menu and enter the new file name.
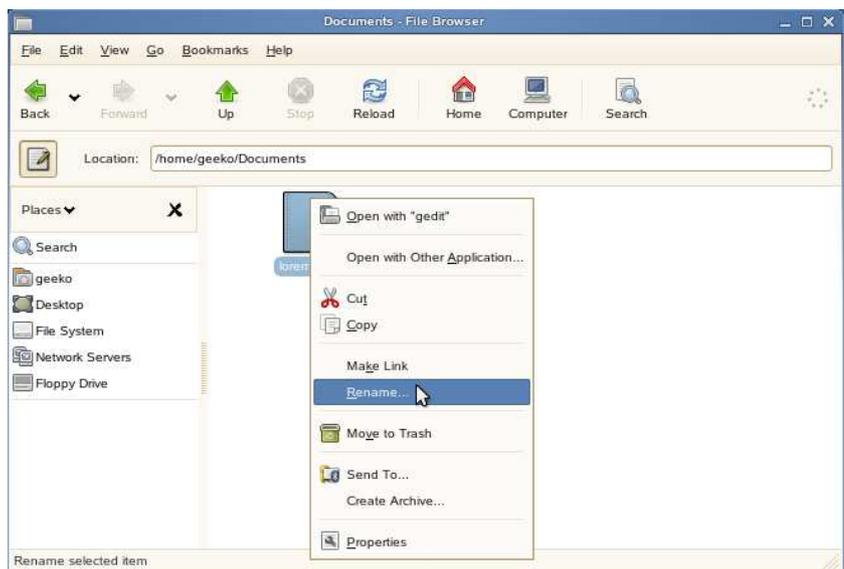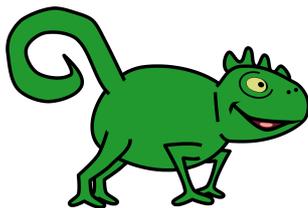
You can also use the entry `Properties` for renaming files. At the `Basic` tab, enter the new name.

loremipsum Properties

| Basic | Emblems | Permissions | Open With | Notes |

Name: loremipsum

Type: plain text document

Size: 0 bytes

Location: /home/geeko/Documents

MIME type: text/plain

Modified: Thu 12 Oct 2006 06:53:51 AM EDT

Accessed: Thu 12 Oct 2006 08:44:52 AM EDT

Select Custom Icon...   Remove Custom Icon

? Help   X Close

Enter the new file name here.
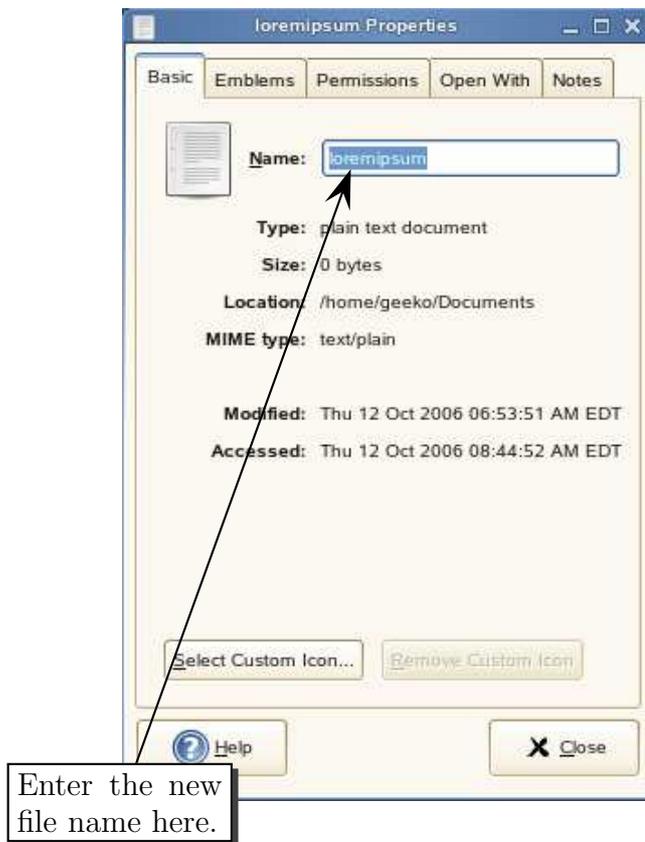
☞ Exercise: Rename Files

Rename the file `calibrate.ppm` in the ∼`/GNOMEFiles/` directory to `first_picture.ppm`.

Delete Files You can prepare to delete files by moving them into the trash.

Files thrown into the trash can be restored before the trash is emptied.

To throw a file in the trash, select `Move to Trash` from the popup menu.
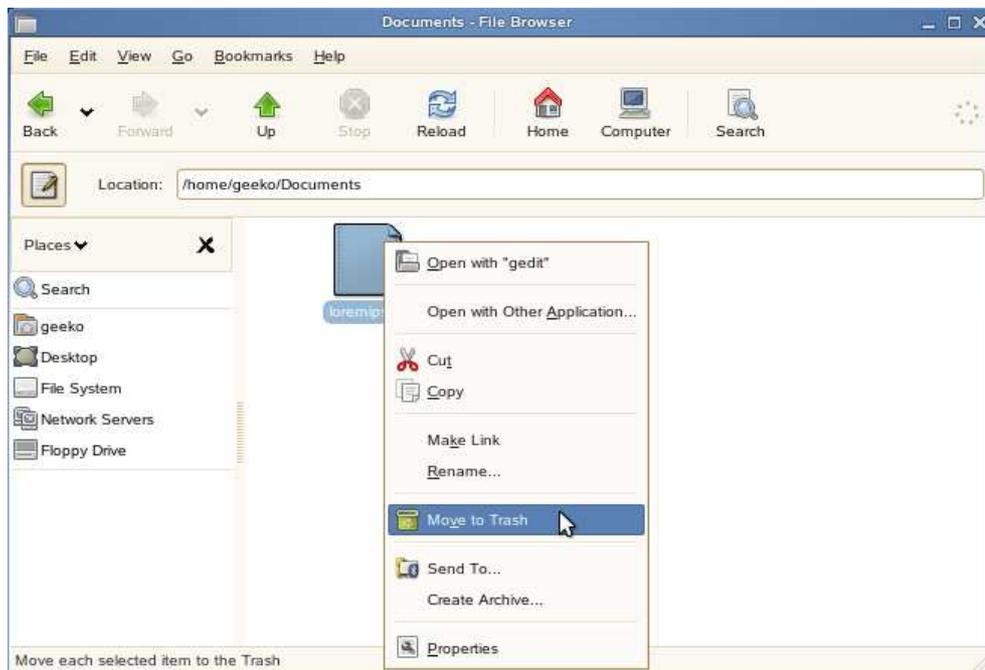
Attention! Nautilus does not ask for confirmation when moving a file to trash.

You can also move a file to the trash by dragging the file with the mouse over the trash icon and then releasing the mouse button.

The trash icon on the desktop changes as soon as it contains something.

To view the contents of the trash, double-click it. You can see the files that have been moved there and you can even retrieve then.

A file that has been thrown in the trash has not really been deleted, so it still takes up hard drive space. To permanently remove or delete the items in the trash, empty the trash.
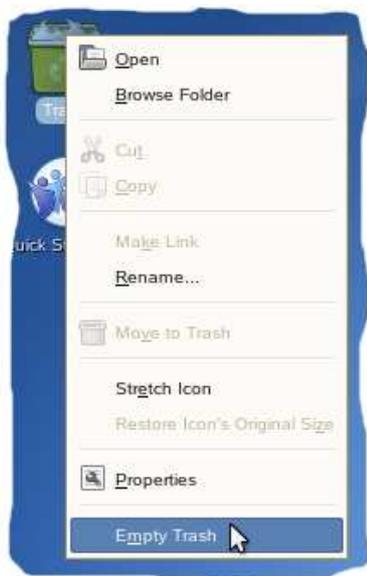
To empty the trash, right-click the trash icon on the desktop. In the popup menu, select `Empty Trash`.

Connect Files Using Links

Links are references to files or directories. Using links, you can access a file multiple times from different locations in the file structure, without the file physically existing in each location. Links are useful to keep order and avoid redundancy.

If you are working with a linked document, the original file is stored in only one directory, but a link to the document may be stored in other directories. The original file can be opened in two ways: by opening the original file or by opening the link. The link is only a pointer to an original file, which is located somewhere else in the file system.
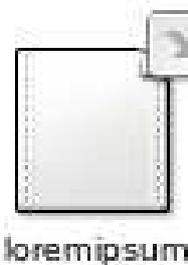
A link can be identified by the small arrow on the icon.

To create a link, select `Make Link` from the popup menu that appears when you rightclick an icon.

You can also create a link by using drag and drop. Therefore, you have to keep `Alt` pressed while moving the mouse. If you release the left mouse button after moving the mouse pointer, a popup menu appears. To create a link, you have to select `Link here`.

Copying, moving, renaming, and deleting links works in the same way for both files and directories.

☞ Exercise: Connect Files Using Links

❶ Create a link to the file ∼/GNOMEFiles/ `first_picture.ppm` in your home directory.

❷ Rename the link's name to `first_link`.

❸ Move ∼/GNOMEFiles/`first_picture.ppm` to trash.

❹ Test what happens when you select the link.

❺ Empty trash.

Use the Linux File Permissions To separate the data of different users on a Linux multiuser system, users are assigned their own home directories in which to store personal data. This separation of data does not protect data effectively against unauthorized access by other users. Owner and access permissions are assigned to stored data and executable programs.

To facilitate data access, users are divided into three categories:

❶ Each directory and each file is first uniquely assigned an *owner*.

❷ In addition, each user belongs to one or more *groups* of users, who might work together on a project and need access to the same data, for example. For this reason, files are assigned not only to an owner, but also to a group.

❸ All other users apart from this group are referred to as *others*.

There are three possible permissions:

❶ Read (short form: `r`)

❷ Write (short form: `w`)

❸ Execute (short form: `x`)

Although they are similarly labeled in the permission dialog, the permissions for files and the permissions for directories are different. For *files*, the permissions mean:

Read – authorized to see the file's content – read access

Write – authorized to change the file's content – write access

Execute – authorized to run the file as a program – execute access

For *directories*, the permissions mean:

**Read** – authorized to list the contents of the directory access

Write – authorized to create or delete files or access

Execute – authorized to enter the directory

For each file, you have to configure these three permissions for the file owner, the associated group, and others.

To view and change the permission, right-click an icon, select `Properties` and activate the `Permissions` tab.
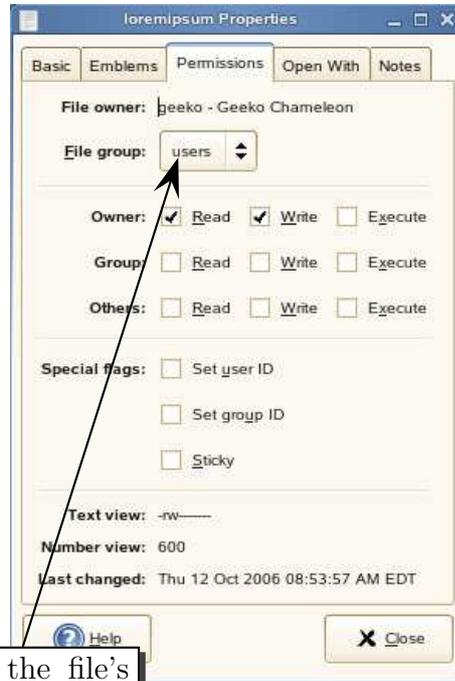
Change the file's group here.

There are also some "special" permissions available.

Name	Meaning for files	Meaning for directories
Set user ID	The program is running with the owner's permissions.	./.
Set group ID	The program is running with the permissions of the group assigned.	The files in the directory belong to the directory's group and not to the user's group.
Sticky	./.	The user can only delete files if they belong to him or if he has explicit write permission.

Attention! These permissions should be used very carefully. They are only explained here briefly.

☞ Exercise: Use the Linux File Permissions

Change the permissions of the directory ∼/GNOMEFiles/ that only you have the permission to view and change the content.

## 2.3.6 How to Search for Files

Sometimes you have to find a file, but you do not know exactly where it is in the file system. You might know the name of this file or only a part of the file content.

"Beagle" is a desktop search engine similar to search engines on the internet. Beagle searches your files not only by name or date, it also creates a search index based on the file content and metadata.

It can index all kinds of files and information on your computer (txt, pdf, doc, emails, images, music, etc.).

Enter the search string here.

One of the exiting features of Beagle is the live query functionality. The search results are updated in real time. For example, if you receive an email with the search term included, the email will be instantly shown in the desktop search window.
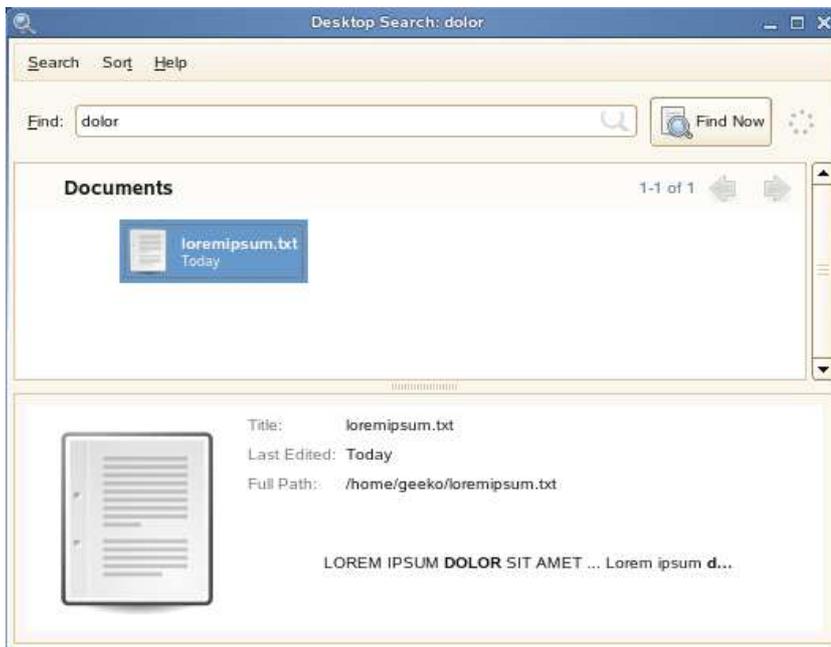
To find files with specific features, select the GNOME Search Tool from the `System` group in the Application Browser.
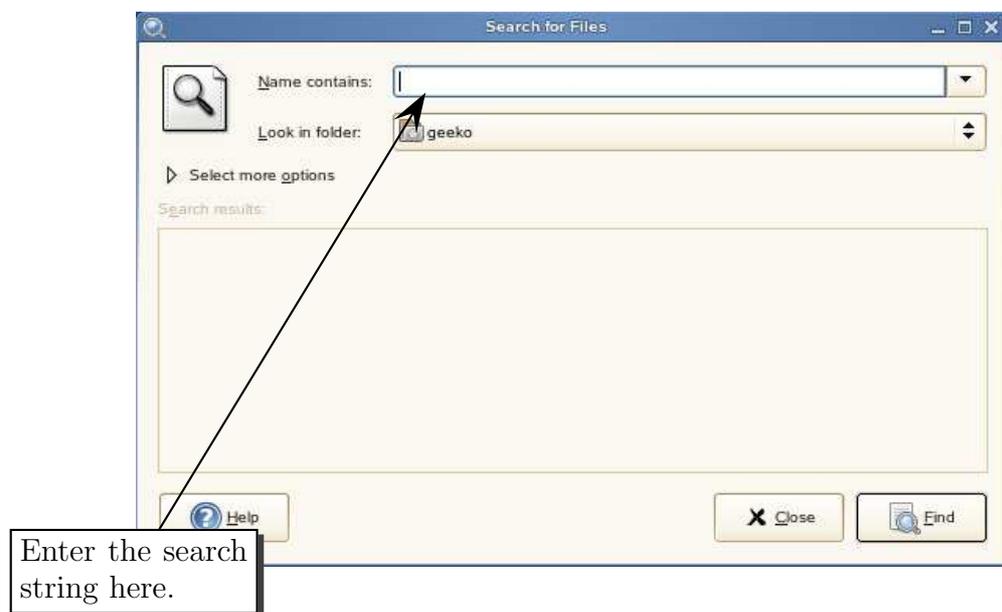
Enter the search
string here.

If you do not know the whole name of the file, you can use the wildcards "?" (for any character) and "*" (for none, one, or several characters) in the GNOME Search Tool.

Example: Suppose the following files exist:

☞ `File`   ☞ `File1a`   ☞ `File2a`

☞ `file`   ☞ `File1b`   ☞ `FILE`

☞ `File1`   ☞ `File2`   ☞ `MyFile`

The following table shows the results of three different search strings:

Search string	File?	File*	?ile*
Found Files	File1	File	File
	File2	File1	file
		File1a	File1
		File1b	File1a
		File2	File1b
		File2a	File2
			File2a

Enter the directory you want to search in `Name contains`. You can also use the menu `Look in folder` to specify the directory you want to search in.

Select [`Find`] to start the search process. All matching files and directories are shown in the lower window with details of their locations.

Further settings can be made when you open the menu under `Show more options`.

After selecting the ⊕ Add , a new text field is added and you can enter the information necessary for the chosen option. To remove a search rule, select the ⊖ Remove next to the rule.

✍ Exercise: How to Search for Files

Use Beagle to search for "novell". Let the search dialog open and create a new OpenOffice document with the following content:

It starts with Novell.

Save the file under the name "testdoc" in your Documents directory.

In your home directory, search for files that are older than one day.

2.3.7 How to Archive Files

With the program File Roller, you can pack multiple files or even entire directories into an archive. This can be very useful to

☞ Back up data

☞ Prepare data to be sent via floppy disk or email by compressing it

To back up files by using File Roller is very useful, because the file structure of a directory will be recreated when you unpack the archive later.
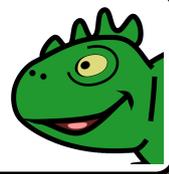
You can start File Roller from the main menu. The launcher is in the `Tools` section of the Application Browser.

File Roller
Archive Manager

The following appears:
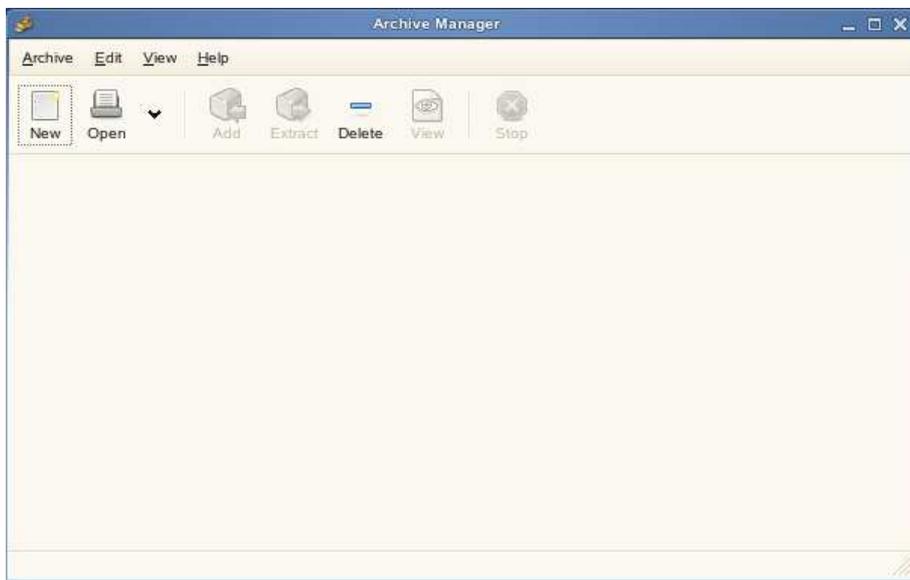
Before you start to archive files, create a new archive. Select the `New` button in the toolbar to open a window to specify the archive's path and name.

When you select [New], an empty archive is created here.

In Linux, the standard file format for archives is .tar (from *tape archiver*; originally this was developed for data backup on magnetic tape).

Sometimes, tar files become quite large, but you can compress them. File Roller carries out archiving and compressing in one step if you use .tar.gz as the file format.

File Roller also handles the .zip format used in Microsoft Windows environments.

File Roller supports the following file formats:

☞ Ar archives (*.ar)

☞ Ear archives (*.ear)

☞ Jar archives (*.Jar)

☞ Tar uncompressed (*.tar)

☞ Tar compressed with bzip2 (*.tar.bz2)

☞ Tar compressed with gzip (*.tar.gz)

☞ War (*.war)

☞ Zip archives (*.zip)

If you select the `Automatic` archive type, you have to enter the suffix (e. g., *.zip) after the file name.

To fill the archive, drag the files you want to archive from Konqueror onto the empty window.

To open an existing archive (whether it is compressed or not), select the file in Nautilus or start File Roller and then select `Open`. The contents of the archive are displayed.

Using the mouse, you can drag individual files from the archive window and place them in a Nautilus window. You can also unpack the entire archive by selecting `Extract`.

✍ **Exercise: Archive Files**

Create archives and include the content of the **/bin** directory.
Use the following file formats for these archives:

- ☞ .zip
- ☞ .tar
- ☞ .tar.bz2

Compare the file size of the different archive types.

2.3.8 How to Customize GNOME

GNOME provides a lot of configuration modules that are accessible via the main menu.

The Contol Center contains four categories with a different number of modules. Some of the listed modules are for system-wide configurations. Only root is allowed to do this. You have to authenticate first.

Hardware Category

Here, you can configure accessibility features for handicaped people.

Bluetooth   Configure Bluetooth. Only root is allowed to do this.

DSL   Configure a DSL connection. Only root is allowed to do this.

Graphics Card and Monitor   Configure your graphics card and monitor. Only root is allowed to do this.

Keyboard   Keeping a key on your keyboard pressed, after a short delay, the output of the keyboard begins to repeat.

In this module, you can specify the delay and the speed of repeat.

The cursor blink frequency can also be configured.

Here, you can test your keyboard settings.
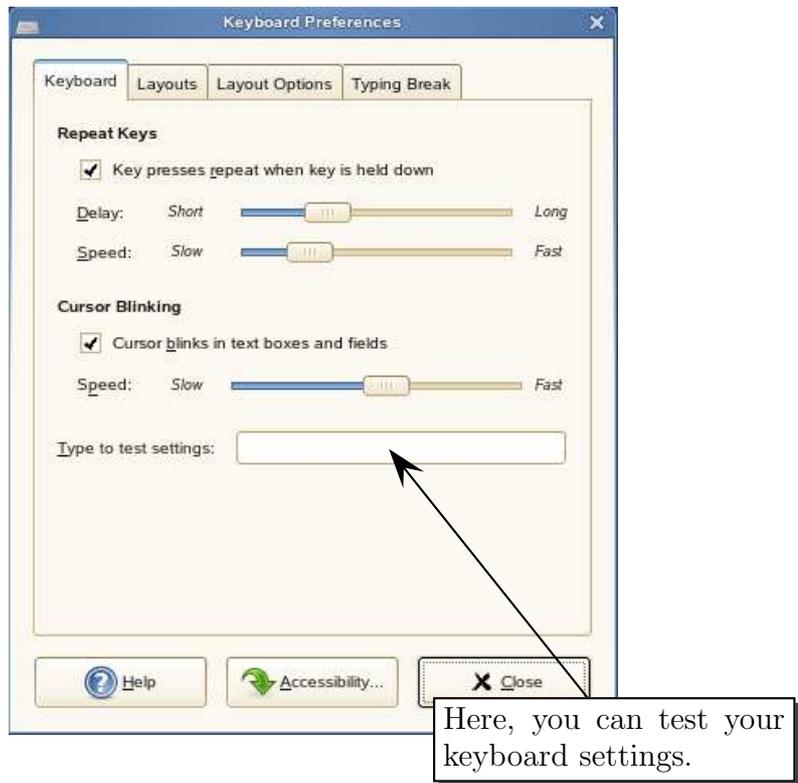
In the `Layouts` tab you can specify your keyboard model and layout. In the tab `Layout Options` you can configure the behavior of special keys, e. g. Win key. If you want to enforce typing breaks, configure them at the `Typing Break` tab.

Modem   Configure a modem connection. Only root is allowed to do this.
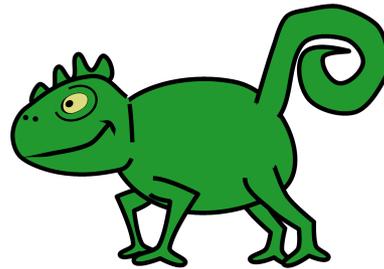
Mouse   In the `Buttons` tab, you can swap the mouse buttons if you are left-handed. You can also change the speed for double-clicks.

Here, you can test the double-click speed.
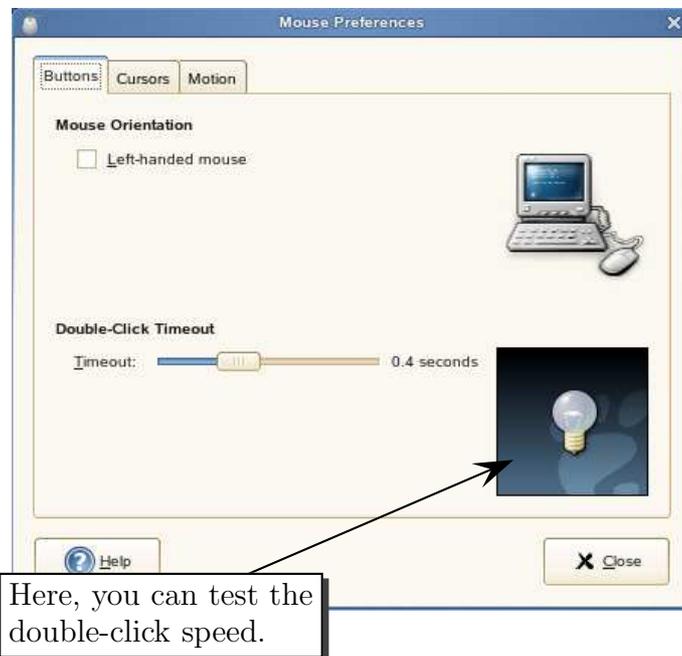
In the `Cursors` tab there are three sizes for the mouse pointer available.

If this checkbox is activated, the mouse pointer is highlighted when you are pressing `Ctrl`.
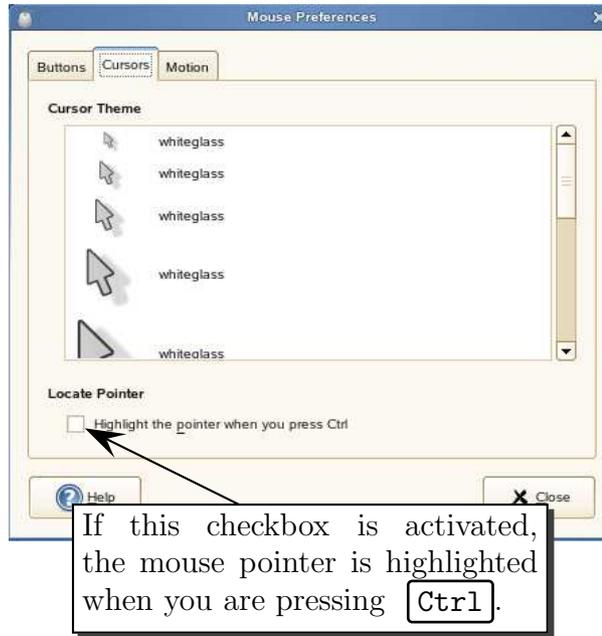
In the `Motion` tab change the mouse speed and sensitivity.

Network Card Configure network card and connection. Only root is allowed to do this.

Printers Manage your printers and view the print queues.

Double-click a printer icon to see the queue.
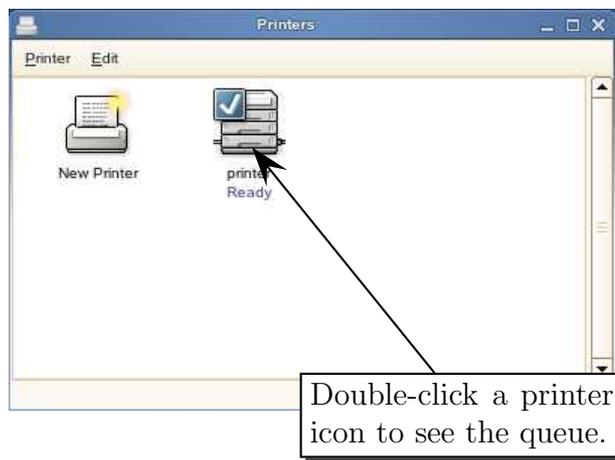
Removable Drives and Media   When you insert an audio CD into your CD drive, the player Banshee starts automatically. This automatism you can configure here for the following devices and medias:

☞ Removable storage

☞ Blank CDs and DVDs

☞ Audio CDs

☞ Video DVDs

☞ Portable music players

☞ Cameras

☞ PDAs

☞ Printers

☞ Scanners

☞ Mices

☞ Keyboards

☞ Tablets
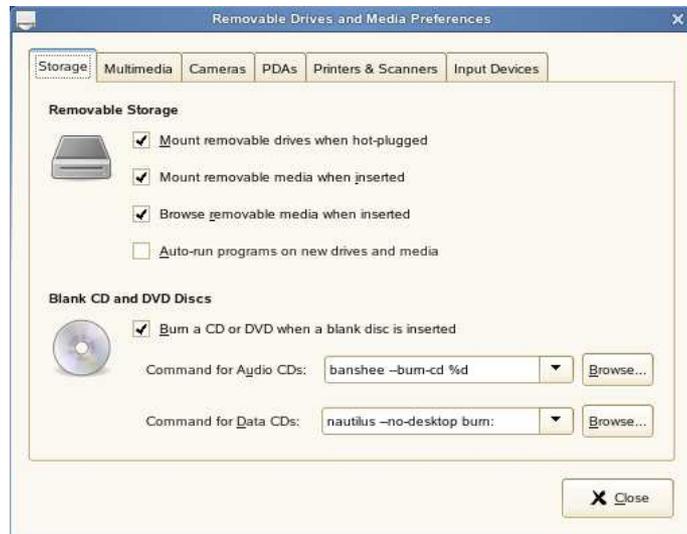
Scanner   Configure a scanner. Only root is allowed to do this.

Screen Resolution   Here, you can switch to another screen resolution or select a different refresh rate.

Look and Feel Category

Desktop Background   In this module, you can specify your desktop background.

Select a background picture in the upper frame..
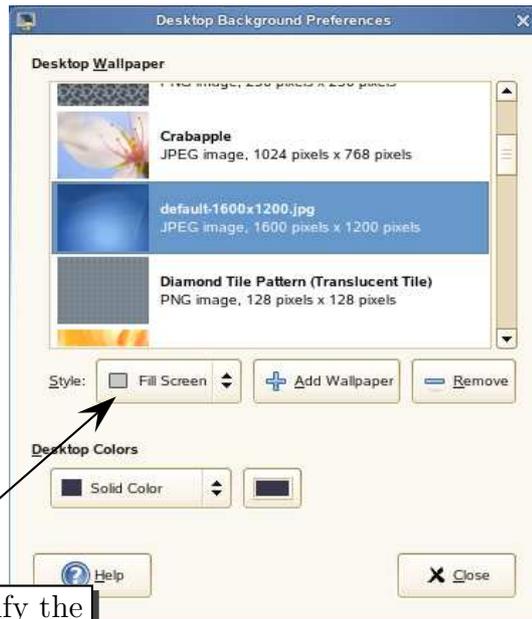
In this menu, you can specify the alignment of the selected picture.

Instead of a picture, you can select a solid color background or a gradient background.

Desktop Effects   If you activated 3D acceleration for your graphic card, you can enable various desktop effects here. Only root is allowed to do this.
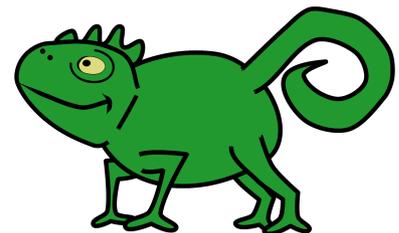
Fonts   In this module, you can select fonts for your desktop and the kind of font rendering you prefer.
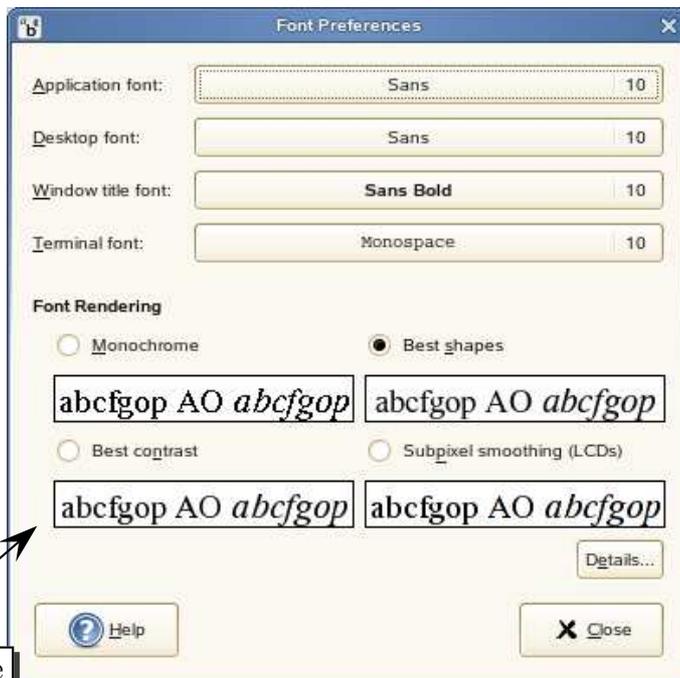
Select the render type that looks best.

Select one of the four font buttons to change the font or its size.

A new dialog appears.
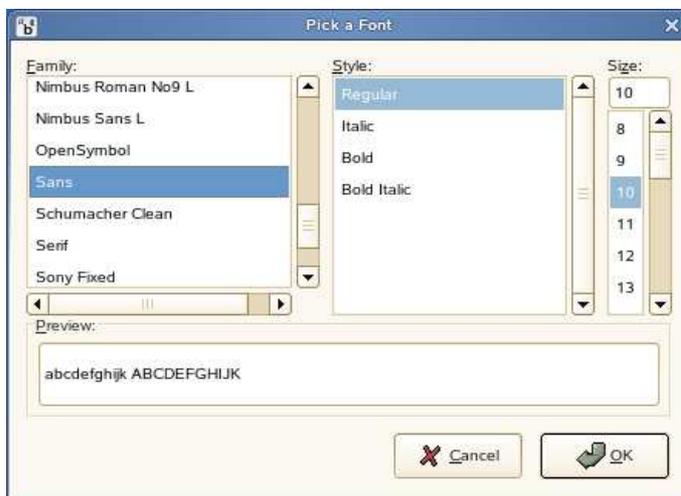
Menus & Toolbars This module offers some features concerning the appearance of menus and window toolbars.
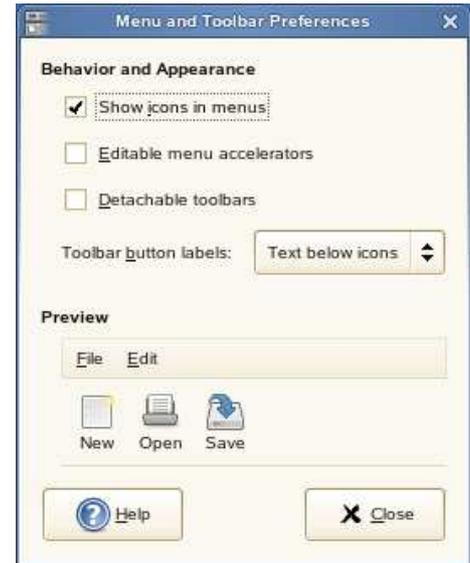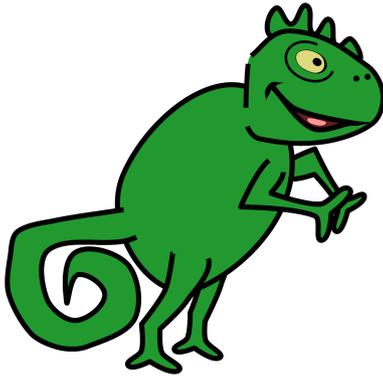
Screensaver Select a screensaver and an idle time to start the screensaver.

If this option is activated, you have to enter your password to unlock the screen.
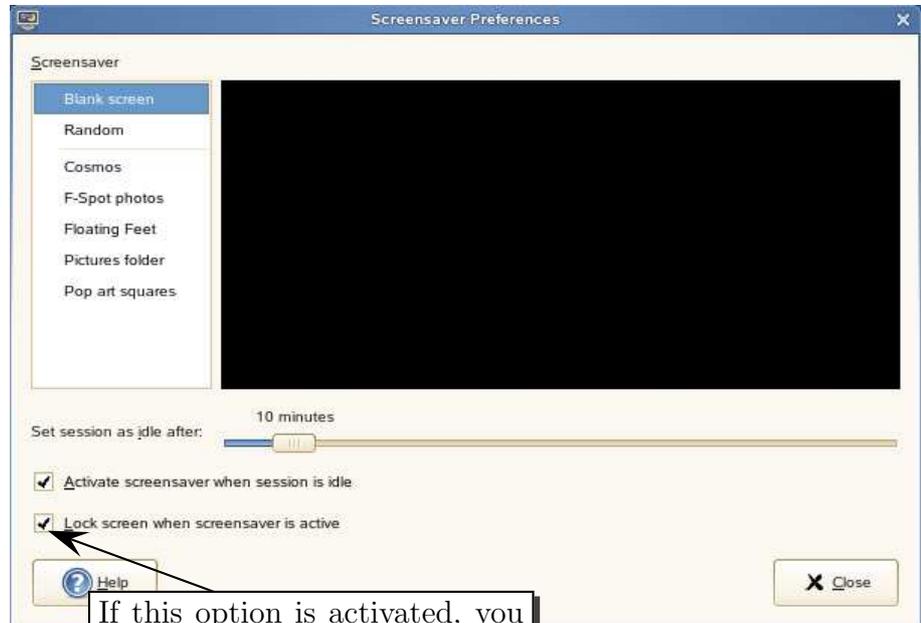
Theme A GNOME theme consists of a set of colors, window borders and icons. You can select a complete theme from the list. If you change a theme, use the item `Custom theme`. To save these settings, select [Save Theme...] .
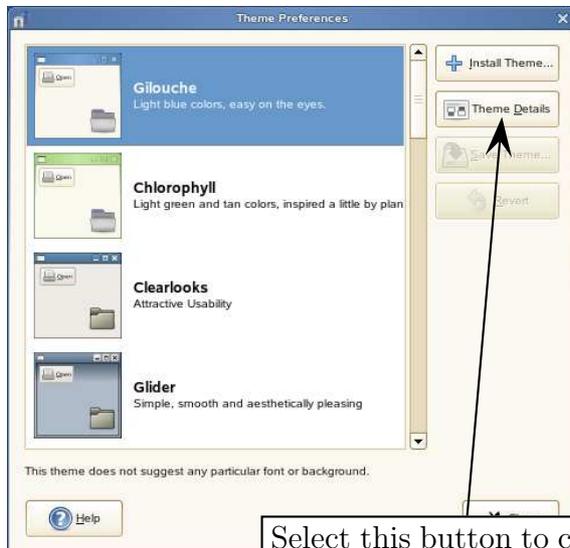
Select this button to change the theme settings.

After selecting [Theme Details] , a dialog appears to change the GNOME appearance.
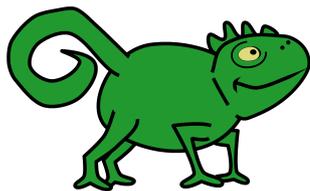

To install a new theme, select [Install Theme...] .

Attention! After installing or creating a new theme, restart the theme module.

At `http://themes.freshmeat.net/`, you find a lot of themes.

Windows In this module, you can configure three things:

❶ In Microsoft Windows and Macintosh OS, windows can be focused by a mouse click. In some GUIs of UNIX, a window gets the focus when the mouse pointer moves onto it.

❷ The action when a window titlebar is double-clicked.

❸ Move a window by pressing the specified key and selecting it with the mouse.
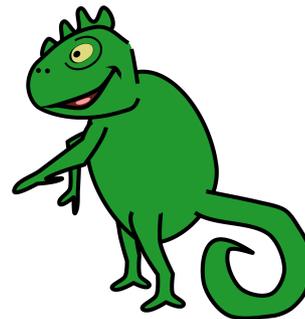
Personal Category

Accessibility Enable keyboard accessibility features, e. g., repeat keys, bounce keys.

Assistive Technology Enable assistive technologies for handicaped people, e. g., screen reader.

Password Change your user password.

Novell CASA Mananger Common Authentication Service Adapter (*CASA*) is used to manage your user credentials. You can configure it here. Only root is allowed to enable CASA.

**Shortcuts** Here, you can configure keyboard shortcuts for system actions.

Select a line and enter your key combination. To disable the shortcut, type backspace.

System Category

Date and Time   Control time zone, date and time. Only root is allowed to do this.

GStreamer Properties   Select a software plugin for audio and video input and output.
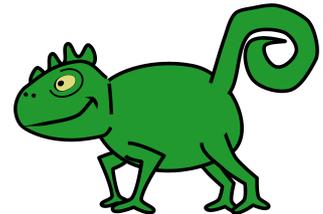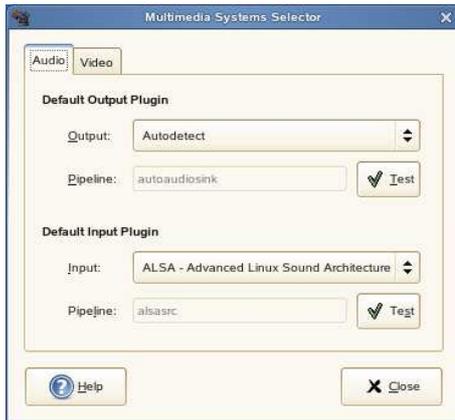
If you want to access the sound output of other computers in your network, or allow others to access to your sound system, you can activate that here.

Language   Select the language of your system. Only root is allowed to do this.

Network Proxies   Configuration for accessing the Internet via Proxy.

Power Management   To save energy (e. g. when using a laptop computer) you can specify the idle time, when the computer is put into sleep mode.
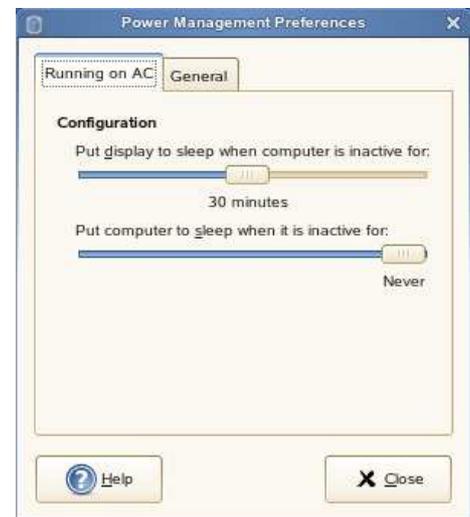
Preferred Applications   Select your preferred web browser, mail client, text editor, and terminal emulation.

Remote Desktop   Here you can allow others to view your desktop over the network. You also can allow them to control mouse and keyboard.
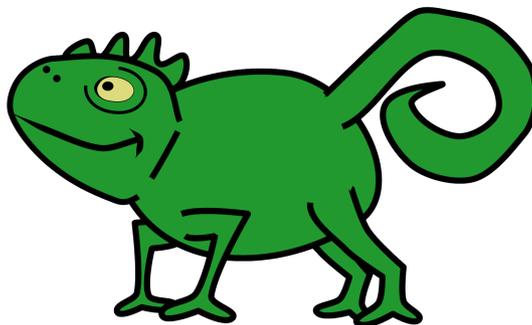
Search Settings   Beagle uses an automatically created index to find files very fast. In the `Search Settings` module you can allow that the index is updated automatically in the background. You also can specify directories that should (not) be indexed.

Sessions   You can save the state of the running applications. When you log in the next time, all windows will be restored.

When you log out of GNOME, you can save your session.
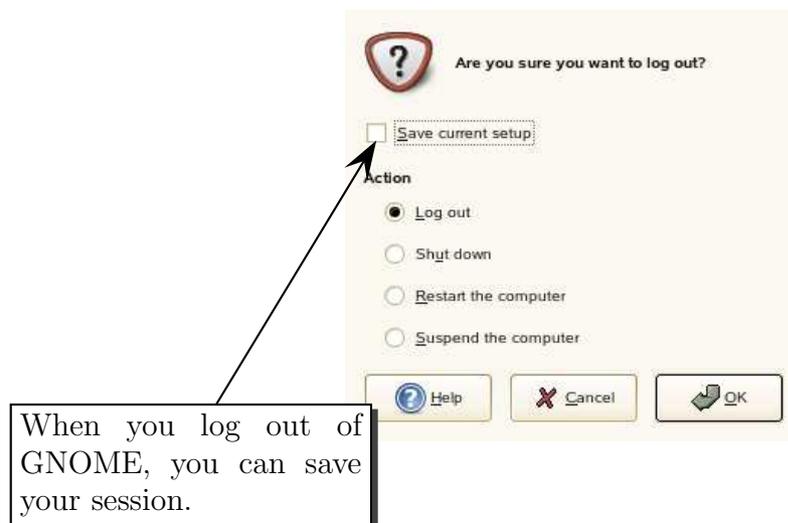
With the `Sessions` module, you can manage your saved sessions.
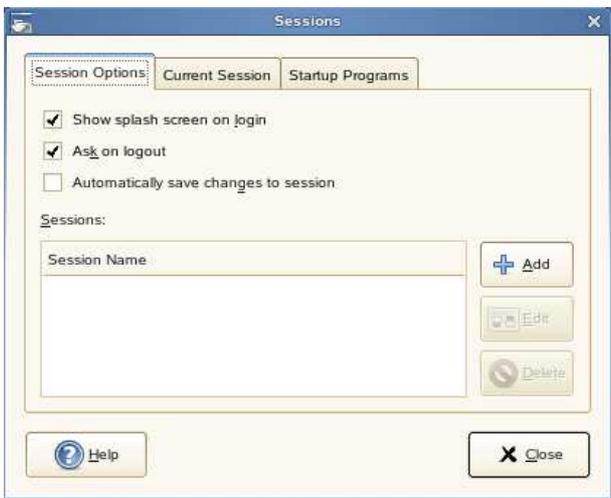
At the tab `Current Session`, you can view the running applications. At `Startup Programs`, you can select programs that should be started automatically after your login.

Sound In the `Sounds` tab , you can configure sounds for some system events. For example, the sound that is played when a warning message appears.
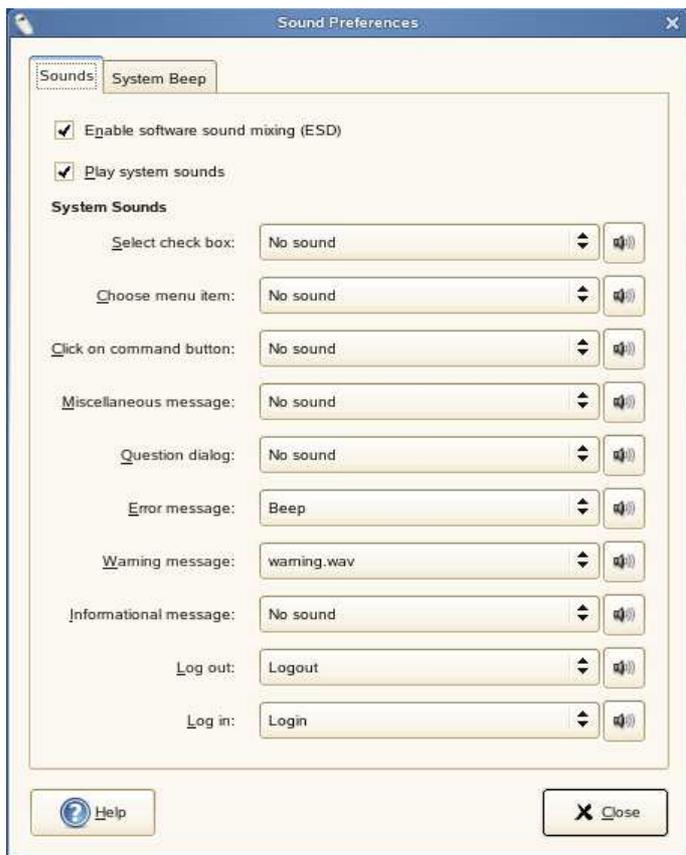
In the `System Bell` tab, you can deactivate the audio bell of the internal PC speaker. You can enable visual feedback instead if necessary.

User Management Manage the user accounts. Only root is allowed to do this.

YaST Start the system configuration tool YaST. Only root is allowed to do this.

☞ Exercise: How to Customize GNOME

Search the Internet for a GNOME theme and install it.
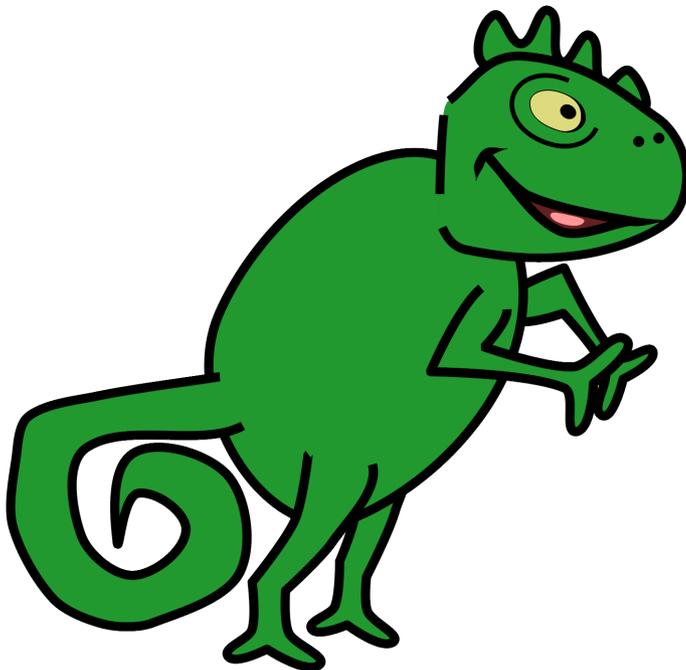
2.4 Use the KDE Desktop Environment

2.4.1 Install the KDE Desktop Environment

GNOME is the default desktop environment of SUSE Linux Enterprise Desktop 10. If you want to use the KDE desktop environment instead, you have to install the KDE software packages first.
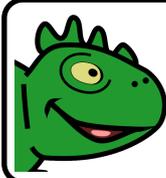
> Normally, you will install KDE during the installation of SUSE Linux Enterprise Desktop 10, but you also can install it later and next to GNOME.

You can install new software using the configuration tool YaST.

YaST can be found in the `System` group in the Application Browser.

Only the root user is allowed to start YaST. To prevent illegal access, you have to authenticate by entering the root password.
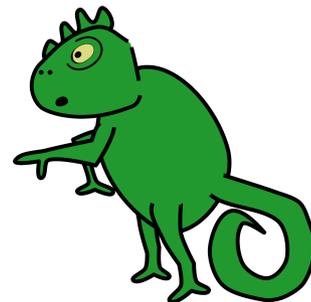
The YaST dialog is divided into two frames. In the left frame you can see seven categories. In the right frame the modules of the selected category are shown.

Select a category to see the modules.
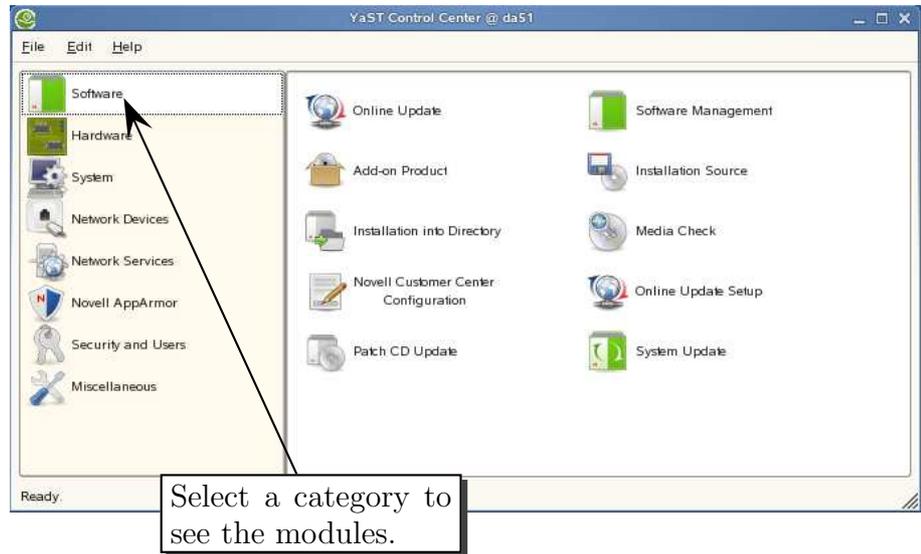
In the Software category, there is a module labeled Software Management.

Select the icon Software Management once with the mouse. After a few seconds, the software module appears.

SUSE Linux Enterprise Desktop contains a broad range of software. When selecting individual packages, you can use different filters to display the available software packages.

Select a filter.
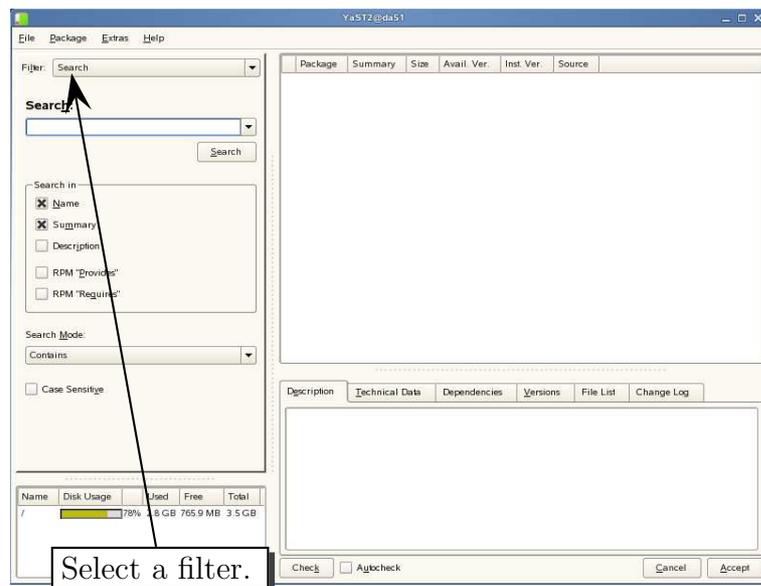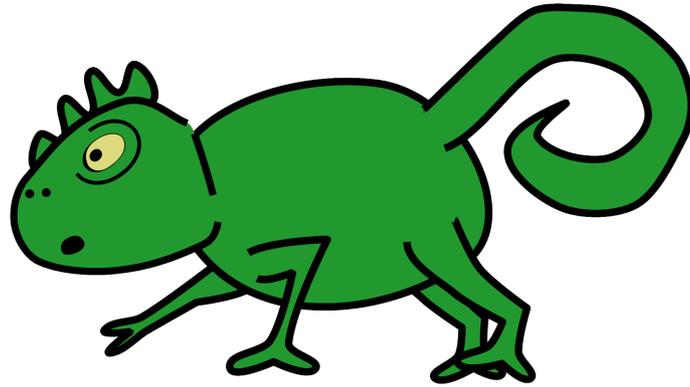
The following filters are available:

☞ **Patterns.** Displays all software that is available on the known installation media. It is grouped in predefined sets of packages that logically belong together.

☞ **Package Groups.** Displays all software packages that are available on the known installation media. It is grouped by category.

☞ **Languages.** Displays all language related files (e. g., spell checker, help)

☞ **Installation Sources.** Lists all registrated installation sources and displays the available packages of this source.

☞ **Search.** Lets you enter a search term and select where you want YaST to search.

☞ **Installation Summary.** Displays all the packages with the marked status.

In most cases you will use `Search` to find the items you want to install. Enter the full package name, part of the name, or keywords in the `Search` text field and select ☐ Search ☐. The results are listed in the right window. The install state is shown by a small symbol in front of the package name.

The most important symbols are shown in the following (get a complete list by selecting `Help → Symbols`):

|			
☐	Do not install	This package is not installed and it will not be installed.
☑	Install	This package will be installed. It is not installed yet.
☑	Keep	This package is already installed. Leave it untouched.
🔄	Update	This package is already installed. Update it or reinstall it (if the versions are the same).
🗑	Delete	This package is already installed. Delete it.
⊖	Taboo	This package is not installed and should not be installed under any circumstances, especially not because of unresolved dependencies that other packages might have or get. Packages set to "taboo" are treated as if they did not exist on any installation media.
🔒	Protected	This package is installed and should not be modified, especially not because of unresolved dependencies that other packages might have or get. Use this status for third-party packages that should not be overwritten by newer versions that may come with the distribution.
☑	Autoinstall	This package will be installed automatically because some other package needs it. **Hint:** You may have to use "taboo" to get rid of such a package.
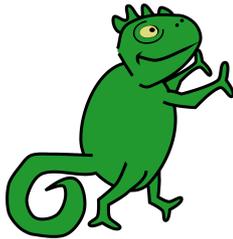
Select the symbol of the package you want to install until the ☑ symbol appears; then select Accept .

You might see a dialog indicating that the dependencies between the packages cannot be resolved and that some other packages need to be installed as well. In most cases, you can confirm this dialog.

If the wrong DVD or CD is in your drive, a warning appears.
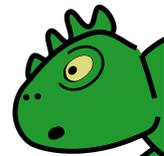
✍ Exercise: Install the KDE Desktop Environment

As the KDE desktop environment consists of a lot of software packages, use the `Pattern` filter to install all KDE packages.


Select the KDE pattern.
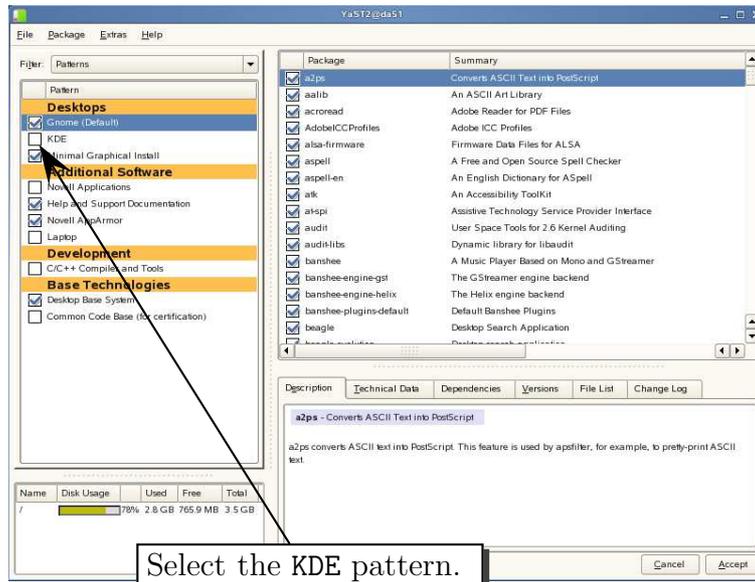
2.4.2 How to Log In

If you want to log into the KDE desktop environment the first time, you have to select `Session` at the login screen.

Select `Session`.

The following login dialog appears:

Select KDE to start the KDE
desktop environment.
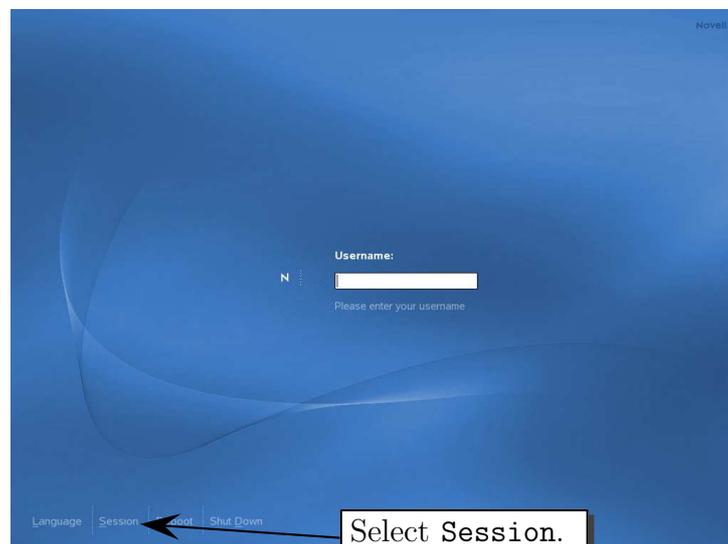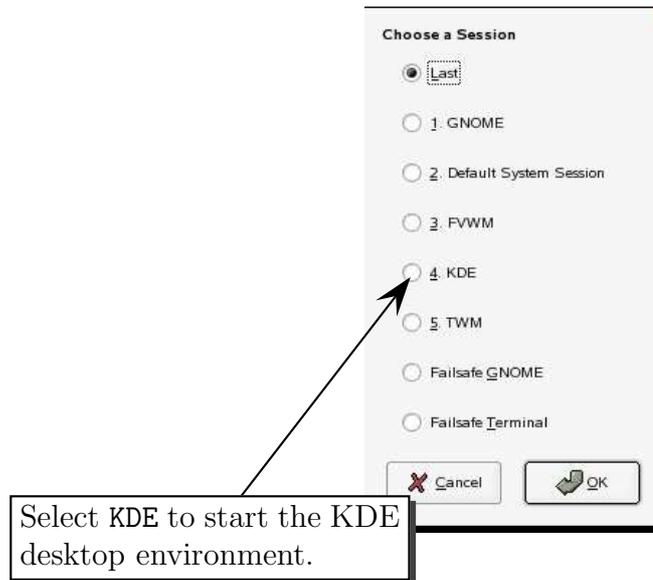
You are asked whether you
want to make KDE your de-
fault desktop environment.
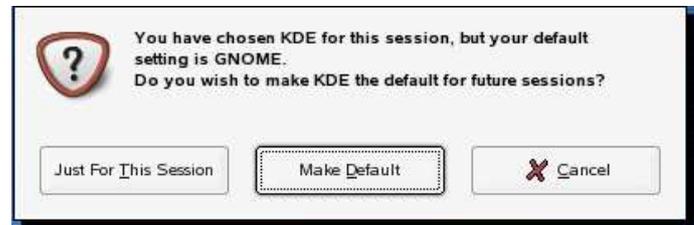
When you enter your login data, the KDE desktop environment appears.
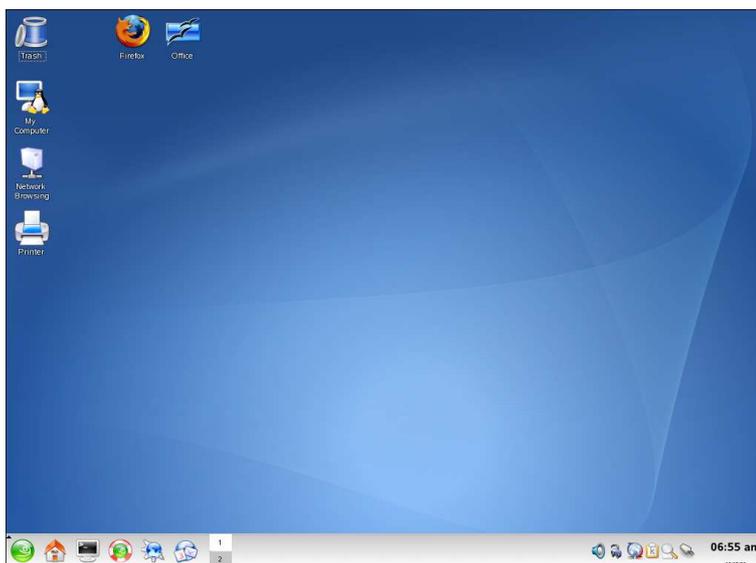
2.4.3 How to Log Out

When you are ready to log out of the system, open the KDE menu by selecting the first (left) icon on the bottom panel:

This menu is called "KDE menu".

At the bottom of the KDE menu, select the `Log Out` entry. You can also right-click on the window background and select the same option from the popup menu.

After selecting `Log Out`, a confirmation dialog appears.

If you select this button, you are logged out and the login screen re-appears, allowing you or another person to log in.

2.4.4 How to Identify KDE Desktop Components

After you log in, your system will start the KDE desktop environment by default. It is composed of

☞ The Desktop

☞ The KDE Control Panel (Kicker)

☞ The KDE Menu

☞ Virtual Desktops
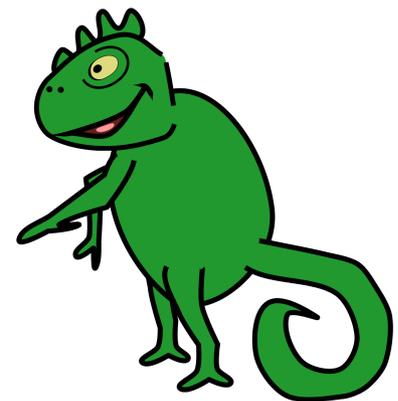
The Desktop

On the desktop you will see only a few icons. You can start the applications associated with these icons by clicking them once with a left mouse

click.

You can move the icons by dragging them with the mouse.
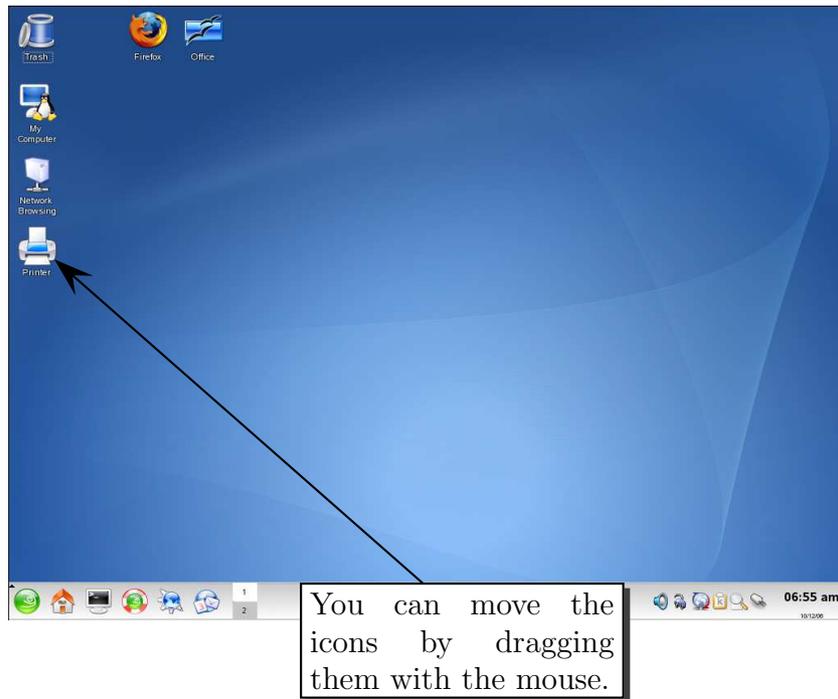
The KDE Control Panel (Kicker)

The KDE desktop is operated by using the mouse on the KDE control panel (called Kicker) located at the bottom of the desktop:

The following are the most commonly used icons and their functions (from left to right):

	Menu of all configured programs and functions (not of all programs and functions installed on the machine). This menu is called the *KDE menu.*
	Konqueror, the preferred KDE file manager
	A terminal window in which to type commands directly
	The SUSE Help Center

|	
	Konqueror, as preferred KDE Web browser
	The personal information manager Kontact (including email, address book etc.)
	Virtual desktops
	A sound mixer
	A tool to control the power management
	Software Updater for automatic updates
	Clipboard
	Beagle search
	Applet for NetworkManager
06:55 am	Current time and date

The KDE Menu

Programs are normally started from the KDE menu. You can select the KDE menu button to open the KDE menu.

In the bottom part of the menu a command line interface, an overview of the recent documents, shortcuts for important positions in the filesystem, an option for locking the screen, and the option for logging out are provided.

The upper section of the menu features an overview of various applications sorted by subjects (such as Office).
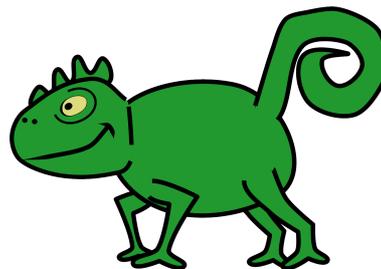
There is a text field for filtering at the top of the menu. When the menu is open, enter "/" and the application you are looking for.
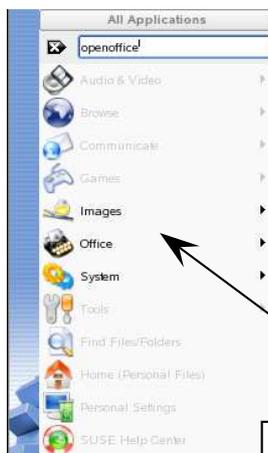
The path to applications that match the entered name are highlighted.

A submenu in the KDE menu is marked by a small black arrow in the right-hand corner. To open a submenu, move the cursor over the menu entry. To start a program, click the corresponding entry once with a left mouse click.
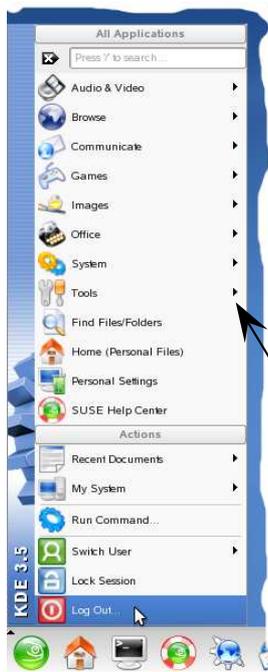
Submenus are marked by a small black arrow.

Virtual Desktops

If you are working with several programs simultaneously, the screen can quickly become cluttered with open windows. In Linux, you can bring order to this chaos by changing to another (virtual) desktop. You can switch between the various desktops via the control panel.

By default, two virtual desktops are configured.
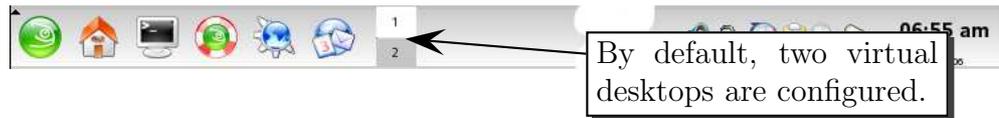
In the KDE control center, you can increase the number of usable virtual desktops up to sixteen. Every virtual desktop can host a virtually unlimited number of applications. Using these virtual desktops, you can easily organize your work.
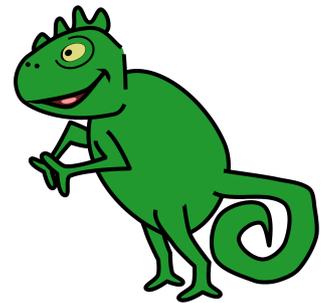

In GNOME there is an applet "Workspace Switcher" you can add to your panel. In the preferences of this applet you can specify the number of virtual desktops.

Exercise: Identify KDE Desktop Components

Label the items in the following screenshot.
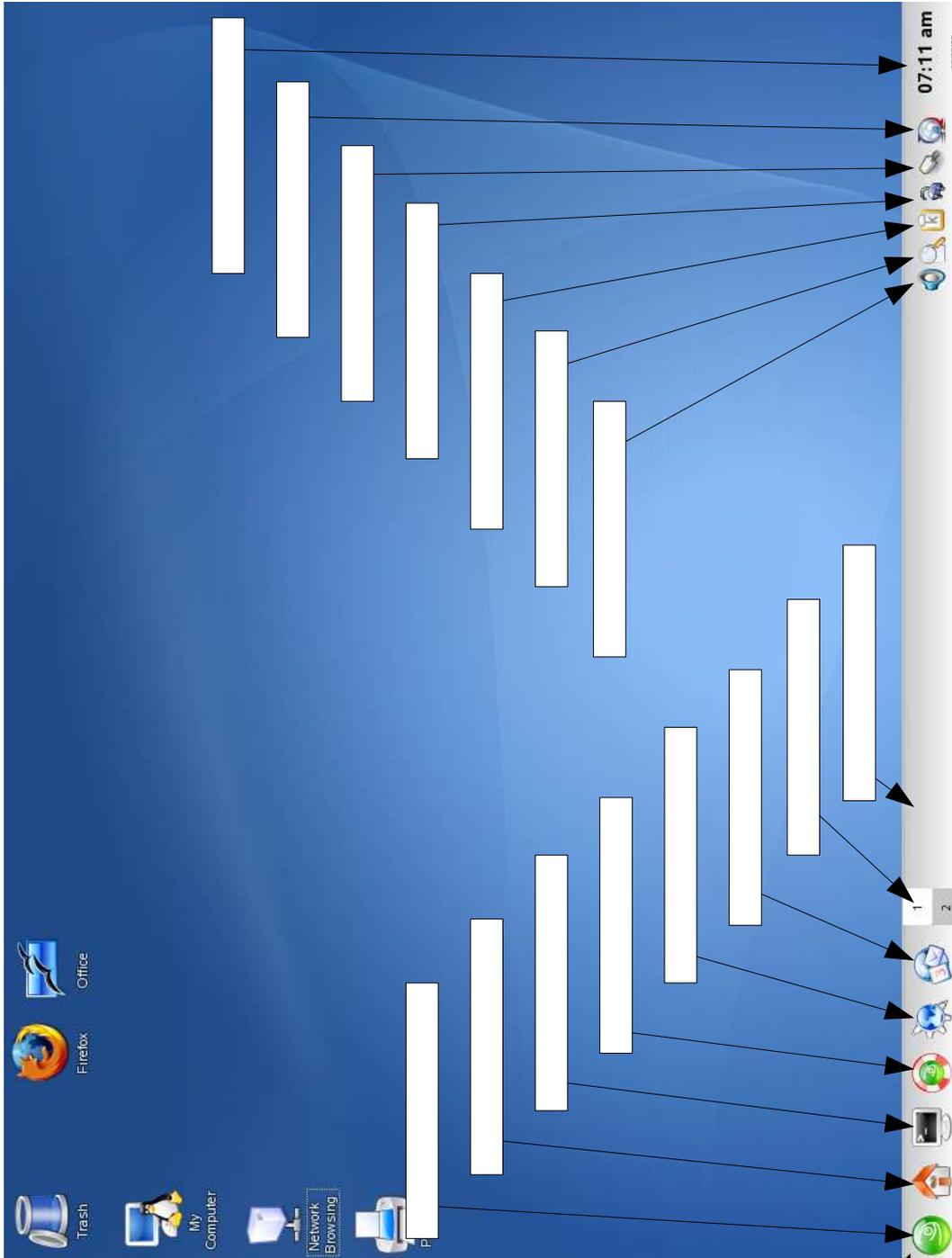
2.4.5 How to Manage Icons in the KDE Environment

You can find icons in your KDE environment in three areas:

☞ Desktop

☞ Kicker

☞ KDE Menu
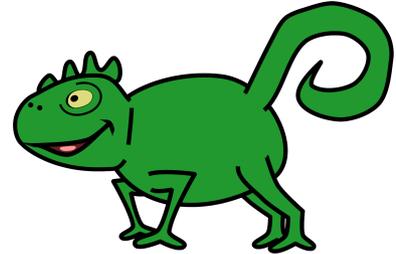
Manage Icons on the Desktop

You can create a new icon on your desktop in different ways. For simplicity, we will describe only one method.

➊ To create an icon for an application on your desktop, select the item in your KDE menu.

➋

Hold down the left mouse button, move the mouse pointer to free space on your desktop, and release the mouse button.

➌

In the menu that appears, select `Copy Here`.
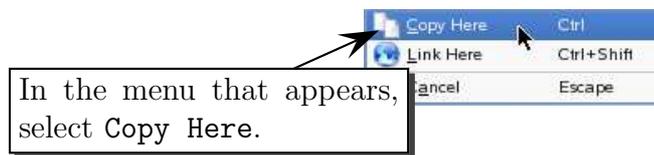
Manage Icons in Kicker

You can add new programs to the control panel by right-clicking on a free area of Kicker and then selecting `Add Applet to Panel` or `Add Application to Panel`.

Right-click on a free area of Kicker.
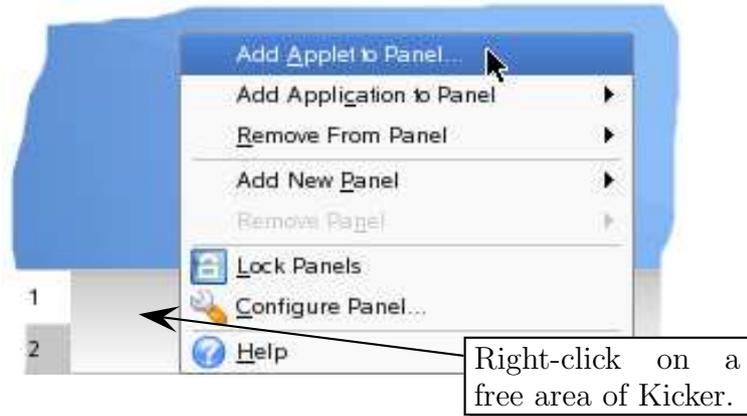
You can remove a program from the control panel by right-clicking its icon in the control panel and then selecting `Remove program name`.

You can move icons in the panel by holding down the middle mouse button or by choosing `Move program name` from the context menu.

Manage Icons in the KDE Menu

To make changes in your KDE menu, start the KDE Menu Editor by selecting the KDE menu icon with a right mouse click and selecting `Menu Editor`.
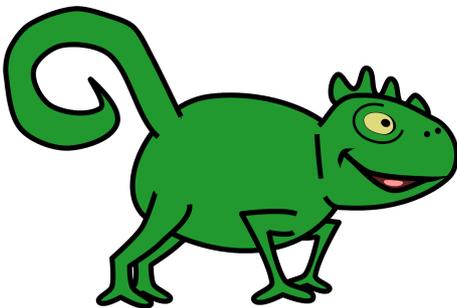
The following appears:
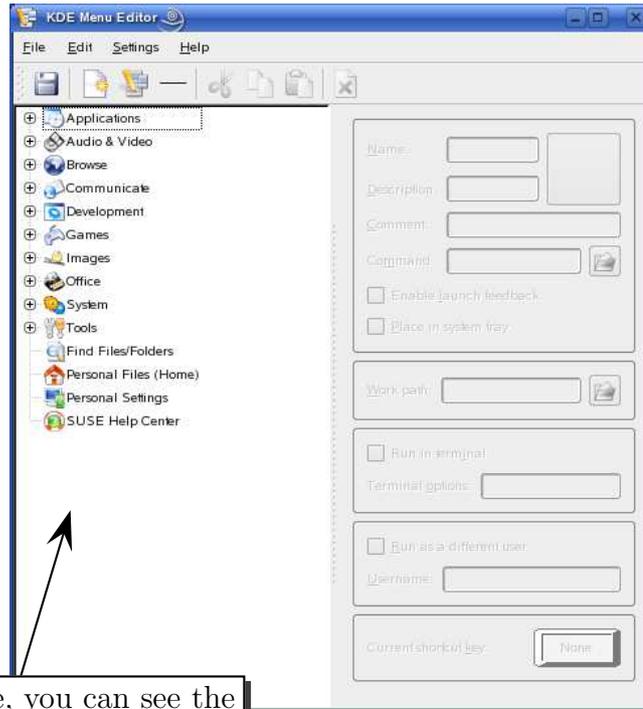
In the left frame, you can see the structure of your KDE menu.

There are three important icons in the toolbar:

	Create new item
	Create new submenu
	Delete marked item

If you create a new item, you are asked to enter a name for the item.

Select ✔ OK when you have entered a name.

The right part of the window become active.

Select this button to choose a new icon for the item.
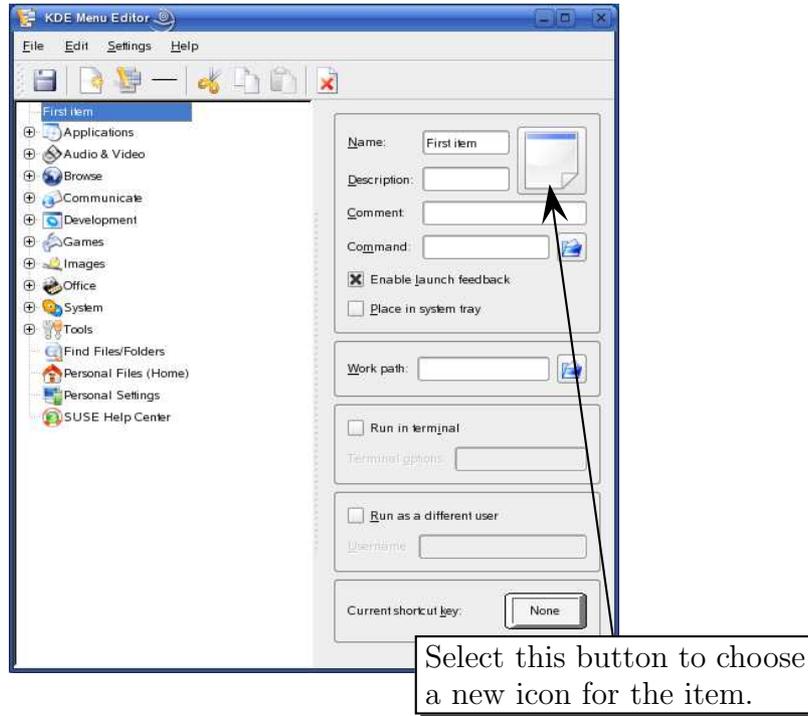
In the `Command` text box, you can enter the path of the program you want to start with this item in the future.

☞ Exercise: Manage Icons in the KDE Environment

There is a program called "xlogo," that simply shows the logo of the X Window System. You will not find any icon or menu entry of this program in KDE.

To view the functions of xlogo, use the command line which can be started from the KDE menu via `Run Command`.

Enter `xlogo` in the text box.

Select `Run` to execute the command `xlogo`.

Create an icon to start the xlogo program

- ☞ on your desktop
- ☞ in Kicker
- ☞ in the KDE menu

## 2.4.6 How to Use the Konqueror File Manager

Customize Konqueror

Almost all work in the file system can be carried out with the KDE Konqueror program. To start Konqueror, select the 🏠 icon in Kicker. The following appears:
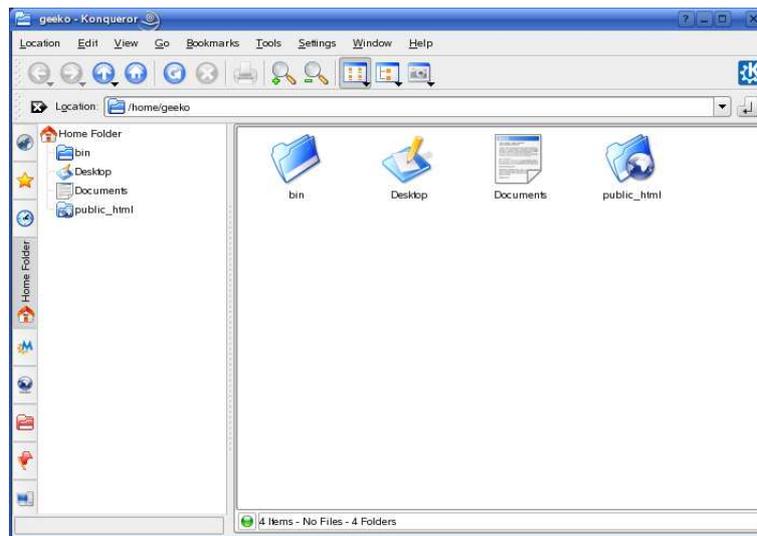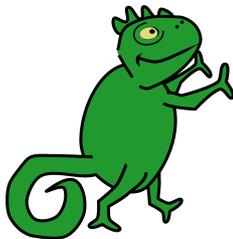
The most important icons in the toolbar are:

🔼	Go up one level	🔍	Enlarge the icons
◀	Go back to the last position	🔍	Diminish the icons
▶	Go forward (after back)	▦	Switch to icon view
🏠	Go to your home directory	▦	Switch to tree view

On the right side of the Konqueror window, you see the *Navigation Panel.*

Clicking on these icons opens a new frame.

	Start multimedia player Amarok		Show bookmarks
	Show history		Show home directory
	Show meta information		Show network
	Show root directory		Show special services
	Show important system directories		

The ⌂ icon on the navigation panel displays the directory tree starting from the user's home directory.
The 📁 icon displays the directory tree starting from the root directory.

You can use several methods to navigate through the file system. Using the three arrows on the left side of the toolbar is the simplest way. The current position is shown in the text box of the address panel (in the following image, `/home/geeko`).

Location: `/home/geeko`

In the address panel, you can see your position in the file system.

If you select ⬆, you will move from the current directory to the next higher directory (from `/home/geeko` to `/home`). The arrow ⬅ returns you to the previously visited location. You can move forward again with ➡. Selecting ⌂ in the toolbar takes you directly to your own home directory (for example, `/home/geeko`).

Another method of navigating is provided by the navigation area. If you select a directory in the navigation panel, its contents are displayed in the file view.

You can double-click the directory in the navigation panel to open it and view all subdirectories contained therein. Double-click the directory again to close it.

Another useful feature of Konqueror is its ability to split the window.

In the `Window` menu, there are `Split View Left/Right` and `Split View Top/Bottom` options used to split the window.
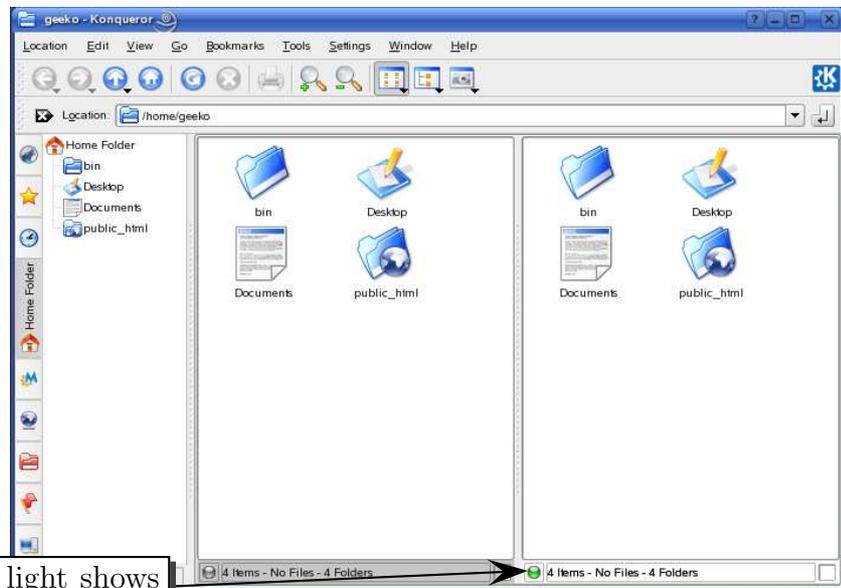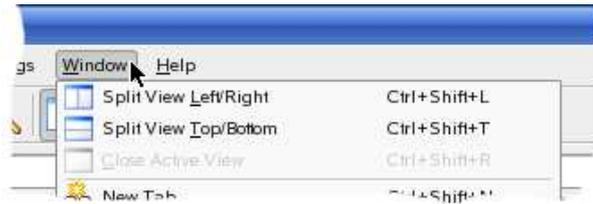
The green light shows the active view.

You can save your settings by selecting `Settings` → `Save View Profile` `''`*profile name*`''`.

Here, you can enter your profile's name.
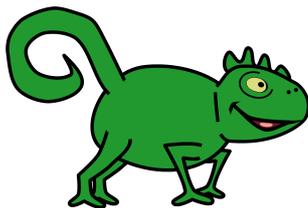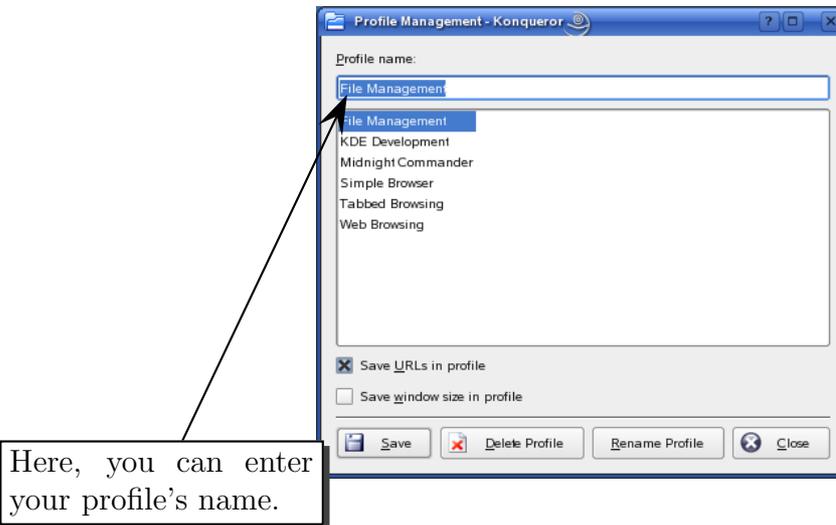
To switch to another profile, choose `Settings → Load View Profile` and select a profile from the submenu.

✍ Exercise: Customize Konqueror
Look at the following Konqueror screenshot.
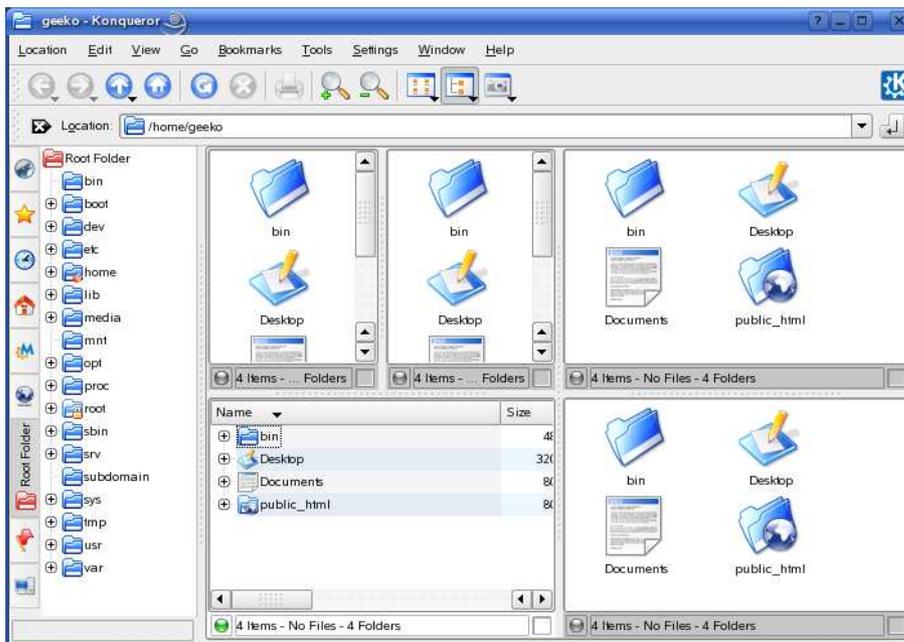
Rebuild it on your computer and save it as a profile labeled "My Profile."

Manage the File System with Konqueror

Create Directories   To create a new directory. Click in the white background of Konqueror with the right mouse button. A popup menu appears:

Select `Create New → Folder`
to create a new directory.
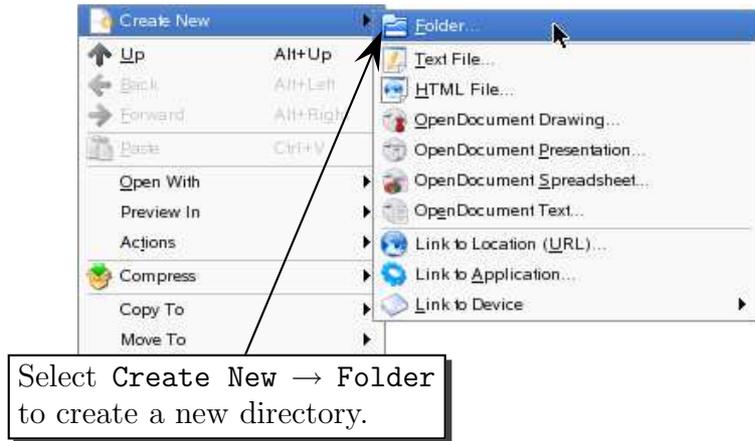
Alternatively, select `Create New → Folder`
from the `Edit` menu of Konqueror.

Then you are asked to enter a name for the new directory.

Exercise: Create Directories

Create a directory labled `FirstFiles` in your home directory.

Copy and Move Files

The explanation below for using files is also valid for directories.

One way to copy or move a file is to drag and drop the file icon from one Konqueror window into another.
If you hold `Ctrl` while moving the mouse pointer, the file is copied.

Another way is to use the popup menu. Right-click the icon of the file you want to copy and select `Copy`. If you want to move the file, select `Cut`.

To copy and move several files at the same time, hold down Ctrl while you are selecting files.

Open in New Window		
Open in New Tab		
Cut		Ctrl+X
Copy		Ctrl+C
Rename		F2
Move to Trash		Delete
Open With		▶
Preview in Embedded Advanced Text Editor		
Actions		▶
Compress		▶
Copy To		▶
Move To		▶
Properties		

The items `Cut` and `Copy`.
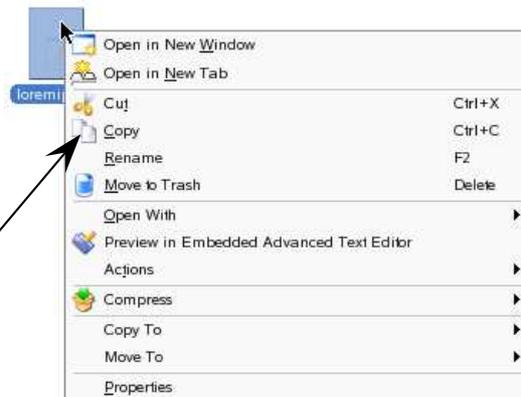
Now you can navigate to the directory you want to copy the file to. Right-click in the white window background and select `Paste` from the popup menu.
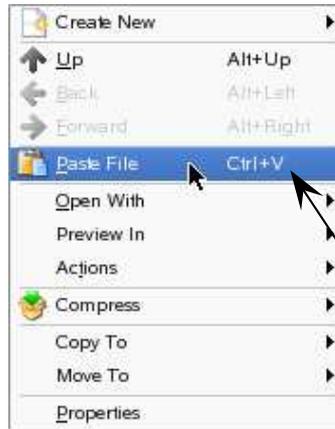
You also can use the shortcuts.

☞ **Exercise: Copy and Move Files**

Copy the file /usr/share/cups/calibrate.ppm into the directory ∼/FirstFiles/.
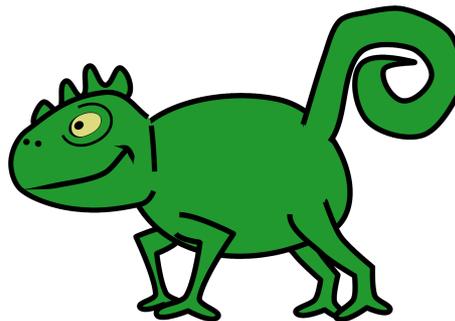
Rename Files   To rename a file, right-click it, select the entry Rename from the popup menu, and enter the new file name.
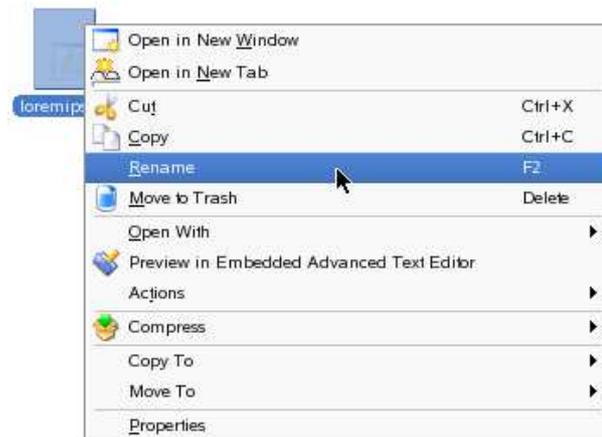
You can also use the entry `Properties` to rename files. At the `General` tab, enter the new name.
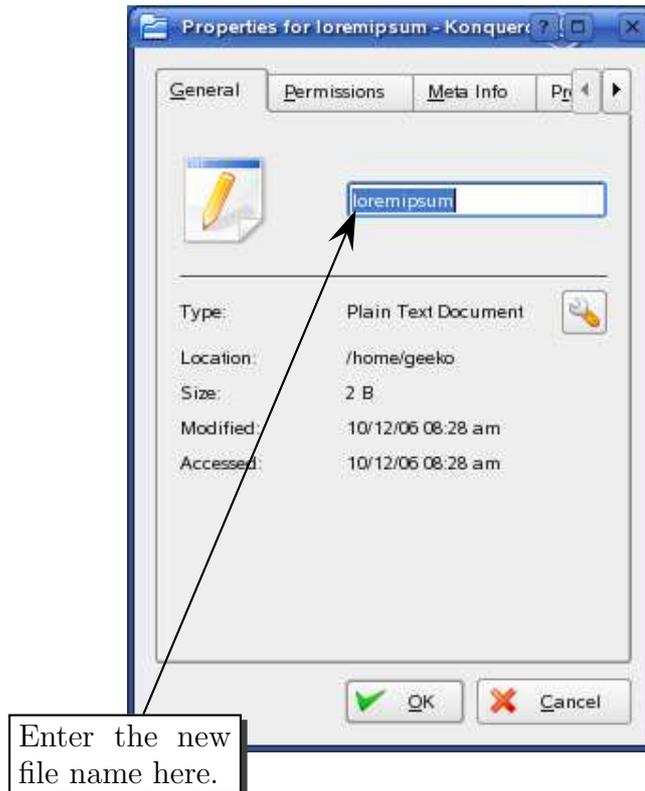
Enter the new file name here.

Exercise: Rename Files

Rename the file `calibrate.ppm` in the ∼/`FirstFiles/` directory to `first_picture.ppm`.

Delete Files   You can delete files directly or by throwing them into the trash.

Files thrown into the trash can be restored before the trash is emptied.

To throw it into the trash, select `Move to Trash` from the popup menu.

Open in New Window	
Open in New Tab	
Cut	Ctrl+X
Copy	Ctrl+C
Rename	F2
Move to Trash	Delete
Open With	▶
Preview in Embedded Advanced Text Editor	
Actions	▶
Compress	▶
Copy To	▶
Move To	▶
Properties	
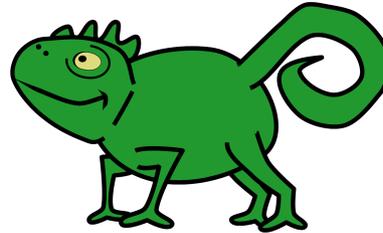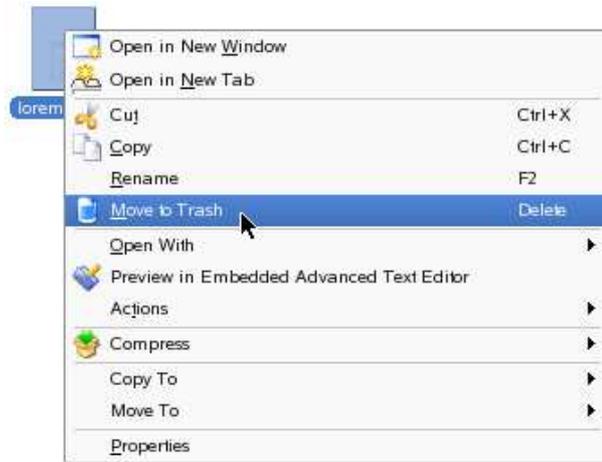
Before moving a file into the trash, Konqueror asks for confirmation.

You can also move a file into the trash by dragging the file with the mouse onto the trash icon and then releasing the mouse button.

The trash icon on the desktop changes as soon as it contains something.

To view the content of the trash, double-click it. You can see the files that have been moved there or you can even retrieve them.

A file thrown into the trash has not really been deleted, so it still takes up hard drive space. To permanently remove or delete the items in the trash, empty the trash.

Open	
Copy	Ctrl+C
Rename	F2
Empty Trash Bin	
Open With...	
Properties	

To empty the trash, right-click the trash icon on the desktop. In the popup menu, select `Empty Trash`.

Connect Files Using Links You can create a link by using drag and drop. If you release the left mouse button after moving the mouse pointer, a popup menu appears. To create a link, select `Link Here`.

✎ Move Here	Shift	
Copy Here	Ctrl	
Link Here	Ctrl+Shift	
✖ Cancel	Escape	
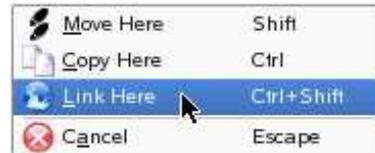
A link differs from a normal file: The icon's label is emphasized (font italic).

☞ loremipsum – Normal file.

☞ *loremipsum* – Link.
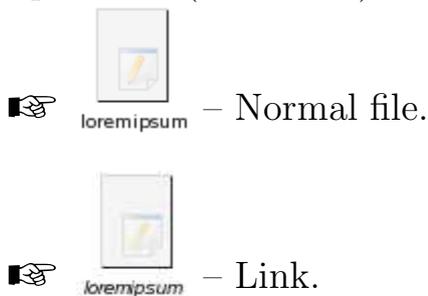
Attention! Be careful when deleting the original file. Do not forget to delete the corresponding links. If the link is not deleted, you will get an error message if you click it.

Copying, moving, renaming, and deleting links works in the same way for both files and directories.

✍ Exercise: Connect Files Using Links

❶ Create a link to the file ∼/FirstFiles/ `first_picture.ppm` in your home directory

❷ Rename the name of the link to `first_link`

❸ Move ∼/FirstFiles/`first_picture.ppm` to the trash

❹ Test what happens when you select the link

❺ Empty the trash

❻ Remove the link directly

Use the Linux File Permissions   To see the file permissions, switch to the tree view in Konqueror by selecting the ⬛ icon.
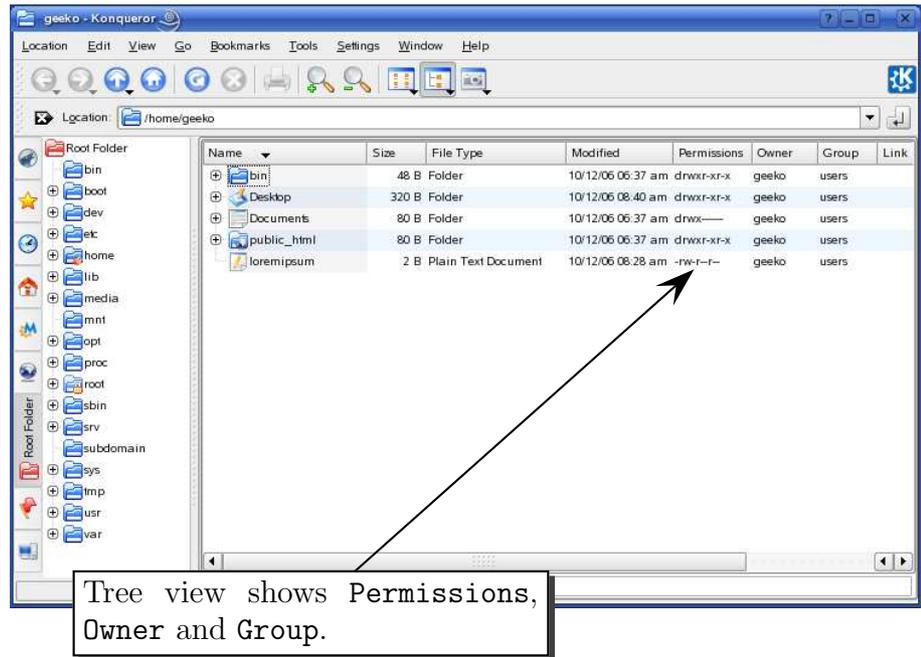
Tree view shows `Permissions`, `Owner` and `Group`.

To change the permission, right-click an icon, select `Properties`, and activate the `Permissions` tab.

Use these menus to change the permissions.
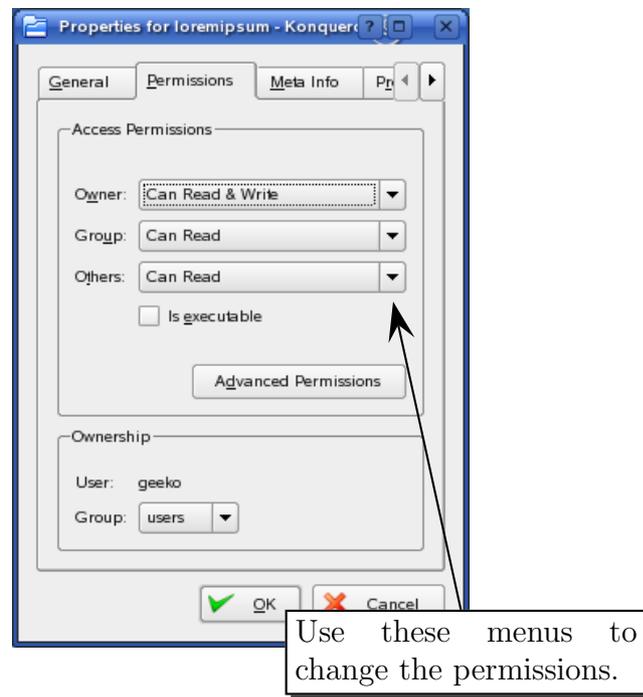
Exercise: Use the Linux File Permissions

Change the permissions of a directory ∼/`FirstFiles/` that only you have the permission to view and change the content.

2.4.7 How to Search for Files

Sometimes you have to find a file, but you do not know exactly where it is in the file system. You might know the name of this file or only a part of the name. You might need a list of all files that have been modified in the last two days or that exceed a certain size.

To find files with specific features, select the KDE menu with `Find Files`.
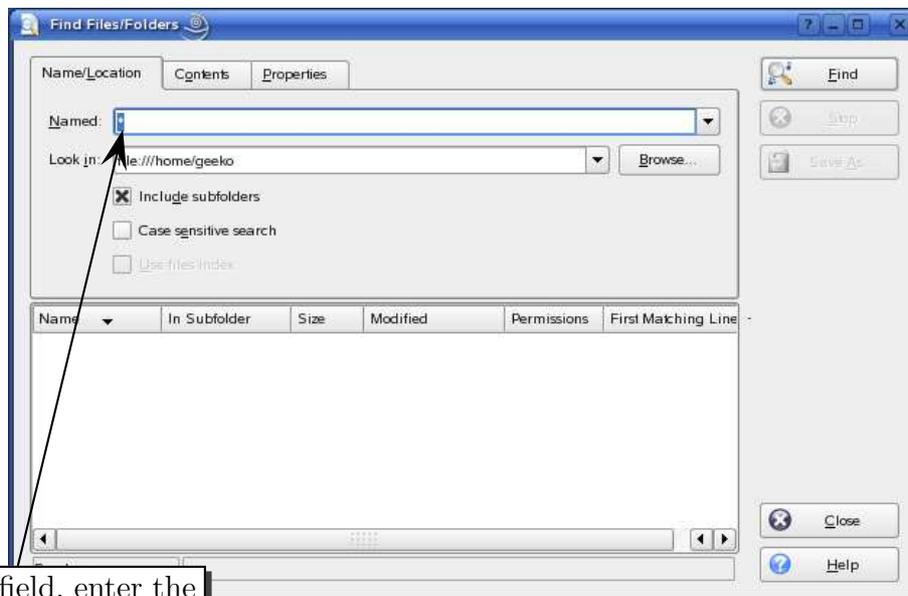
In the `Named` field, enter the name of the file you are looking for.

Alternatively, you can start the search tool directly from Konqueror by selecting `Tools` → `Find Files`.

If you do not know the whole name of the file, you can use the wildcards "?" (for any character) and "*" (for none, one, or several characters).
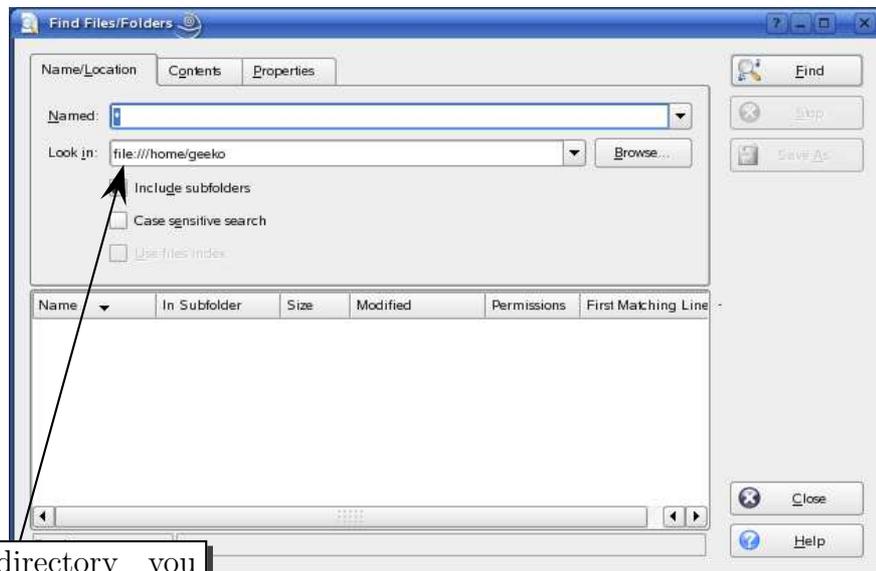
Enter the directory you want to search in `Look in`.

You can also use the button [Browse...] to specify the directory you want to search in. Select [Find] to start the search process. All matching files and directories are shown in the lower window with details of their locations.
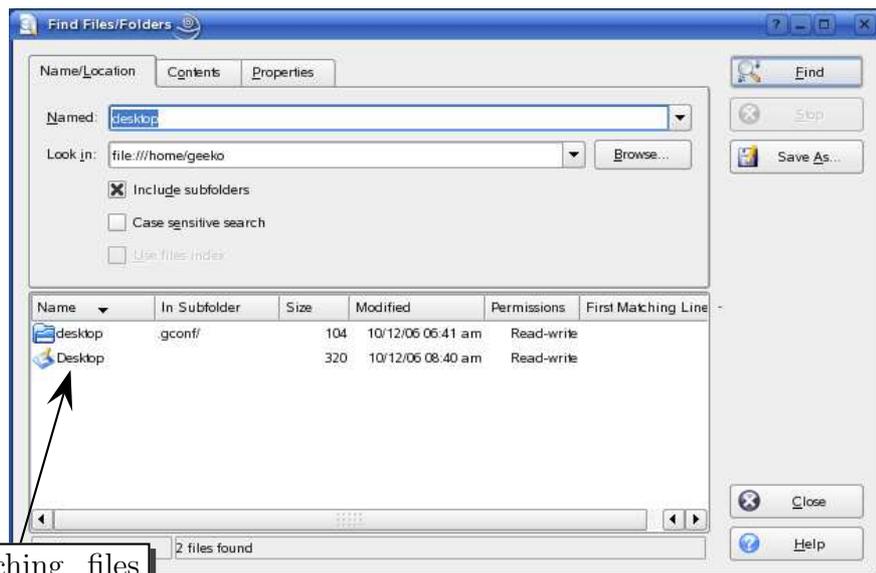
All matching files and directories.

Further settings can be made when you switch to the tabs `Contents` and `Properties`.

If you liked the live search from Beagle, you do not have to miss it when using KDE. The KDE plugin that allows to use Beagle is called "Kerry."

To start Kerry, select the search icon at the right in the KDE Control Panel.
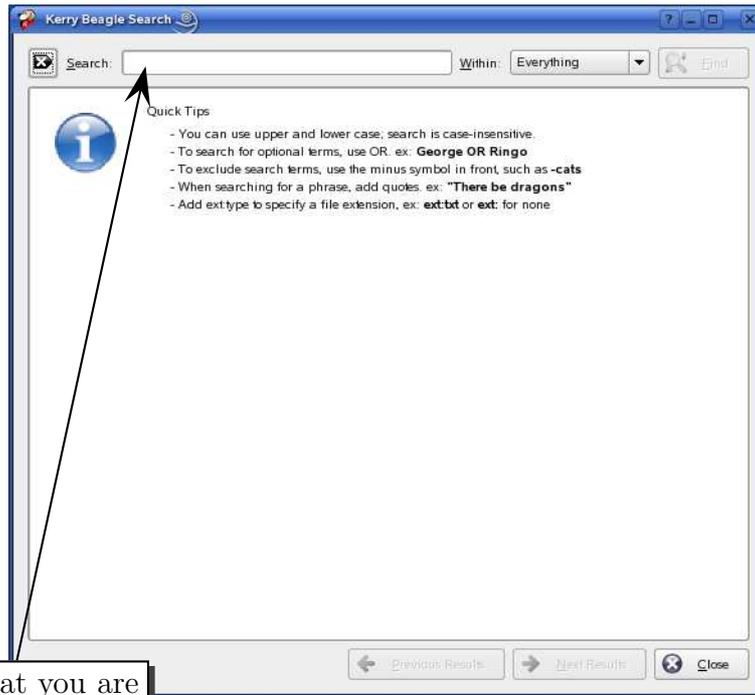
Enter what you are looking for here.

Before you can use Kerry, you have to start Beagle. Enter something in the Search textbox and press Enter or select Find . You will get an error message, that your query failed. At the end of this error message there is a link to start Beagle.
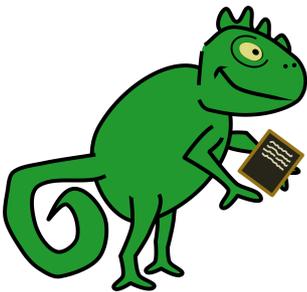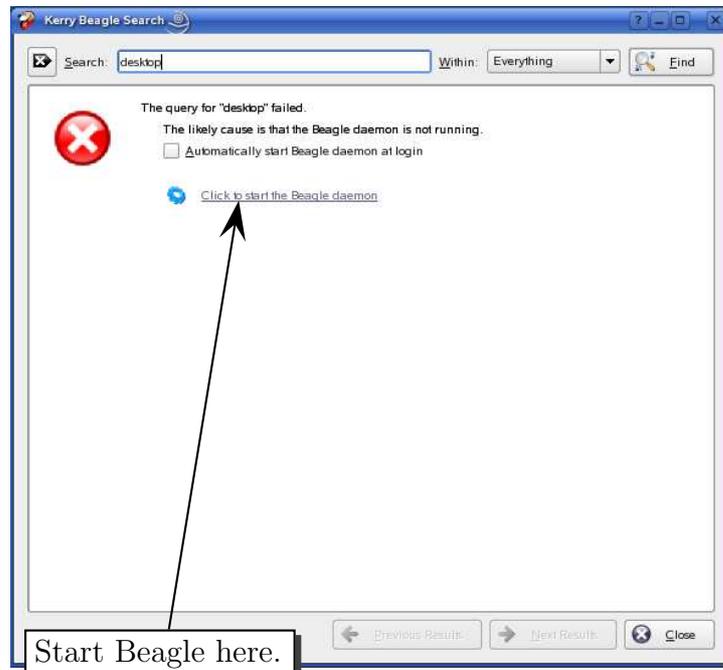
Start Beagle here.

By selecting the option `Automatically start Beagle daemon at login` Beagle is started automatically at login in the future. When Beagle is started, searching for files and file content works quickly.

Specify what file type you are looking for here.
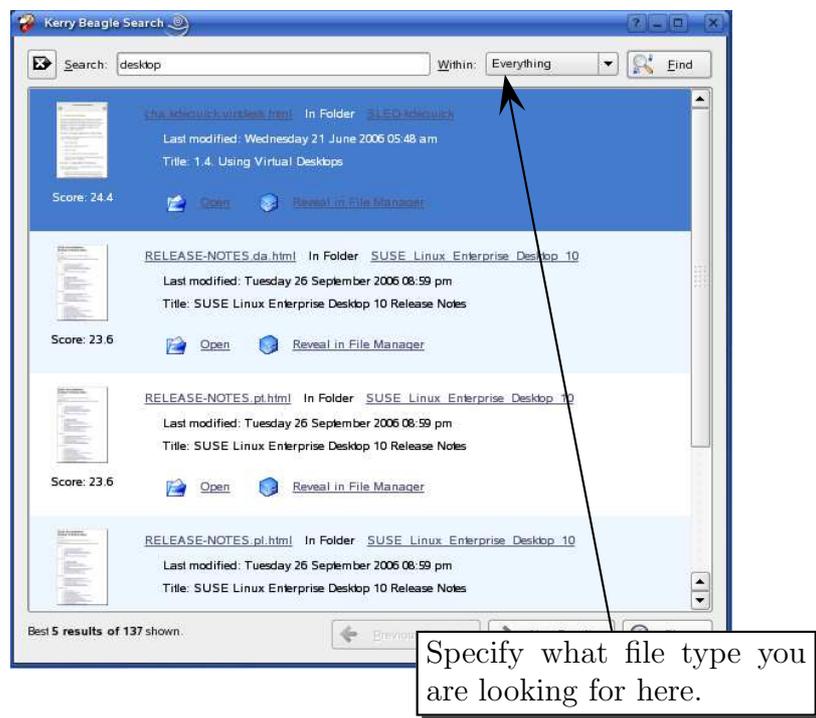
✍ Exercise: How to Search for Files

Start Beagle and search for "desktop." Leave Kerry open and start OpenOffice. In an empty spreadsheet enter `KDE Desktop Environment` into a cell. Save the spreadsheet document under the name "testspread" in your Documents directory.
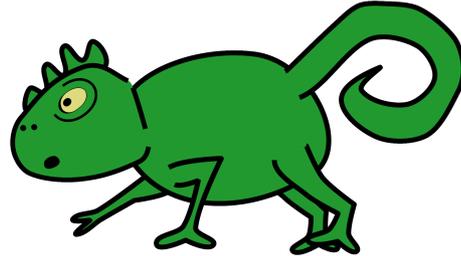
2.4.8 How to Archive Files

With the program Ark, you can pack multiple files or even entire directories into an archive.

You can start Ark from the KDE menu by selecting `Tools` → `Archiving` → `Ark (Archiving Tool)`. The following appears:
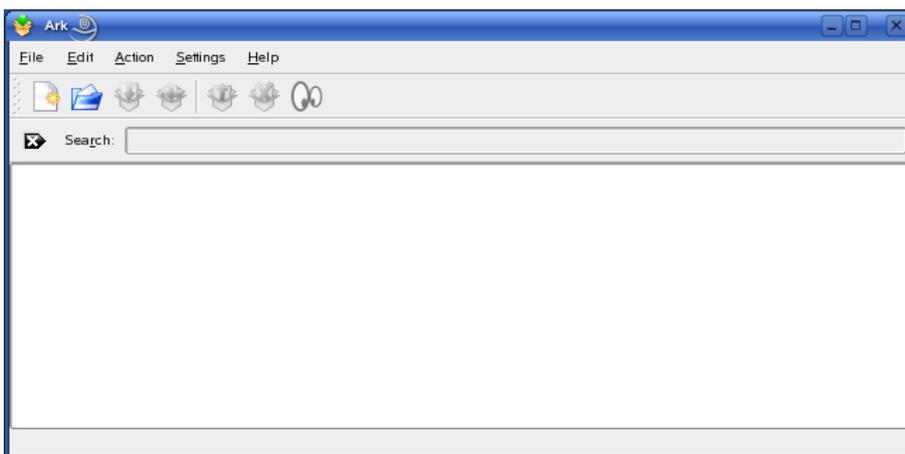
Before you start to archive files, create a new archive. Select `File` → `New` to open a window to specify the archive's path and name.

When you select [💾 Save], an empty archive is created at the given location.

Ark also handles the .zip format used in Microsoft Windows environments. Ark supports a lot of file formats, e. g.:

☞ Tar archives (*.tar, *.tar.gz, *.tar.Z, *.tar.bz2, etc.)

☞ Compressed files (*.gz, *.bz, *.bz2, *.lzo, *.Z)

☞ Zip archives (*.zip)

☞ Lha archives (*.lzh)

☞ Zoo archives (*.zoo)

☞ Rar archives (*.rar)

☞ Ar archives (*.a)

To fill the archive, drag the files you want to archive with the mouse from Konqueror onto the empty window.

To open an existing archive (whether it is compressed or not), select the file in Konqueror or start Ark and then select `File → Open`. The contents of the archive are displayed.

Using the mouse, you can drag individual files from the archive window and place them in a Konqueror window. You can also unpack the entire archive by selecting `Action → Extract`.

Furthermore, you can use the icons in the toolbar:

– Create new archive

– Open archive

– Add file to archive

– Add directory to archive

– Extract selected file(s)

– Remove selected file from archive

– View the selected file

### ☞ Exercise: Archive Files

Create archives and include the content of the `/bin` directory.
Use the following file formats for these archives:

☞ .tar.gz

☞ .bz2

Compare the file size of the different archive types.
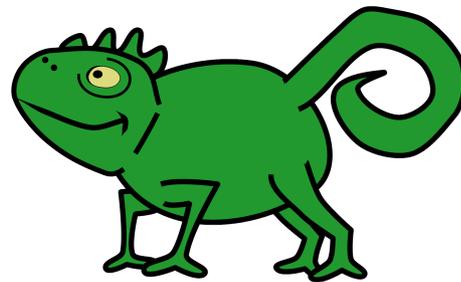
2.4.9 How to Customize KDE

To customize the KDE environment, use the KDE Control Center. It can
be started from the KDE menu by selecting `Personal Settings`.

In the left frame, you can see the available sections.

If you select one of the sections, the modules of this section are shown in the left frame. On the top of the item list, you see the button ⬅Back that brings you back to the main menu.

It is not possible to explain all functions of the KDE Control Center here. But you are invited to explore it for yourself.

We only will introduce some important modules and functions.

Appearance & Themes Section

Background   Here, you can specify the background of your desktop.

In the `Background` section, you can specify the background image.

In the `Options` section, you can define the position of an image, the background color, or the type of blending if you want a slide show.

> You can apply your changes by selecting ☑ Apply .
> To reset, select ↩ Reset .

✍ Exercise: Change the Background

Select another background image.

Colors Here, you can change the colors of the window items.

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Here you can see a preview of the selected color sheme.

You can select a full color scheme from the `Color Scheme` list or change the color of a single window item (*Widget*) in the `Widget Color` section.

☞ Exercise: Change the Colors

Select another color scheme.
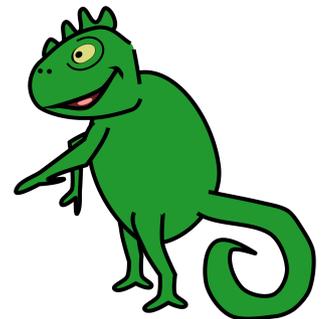
Fonts In this module, you can change the used font types.
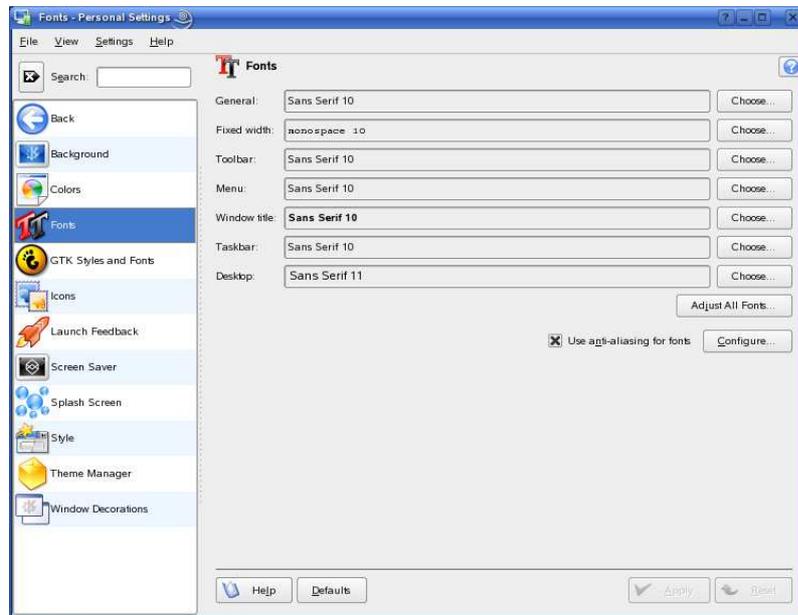
Icons In this module, you can change the icon set.
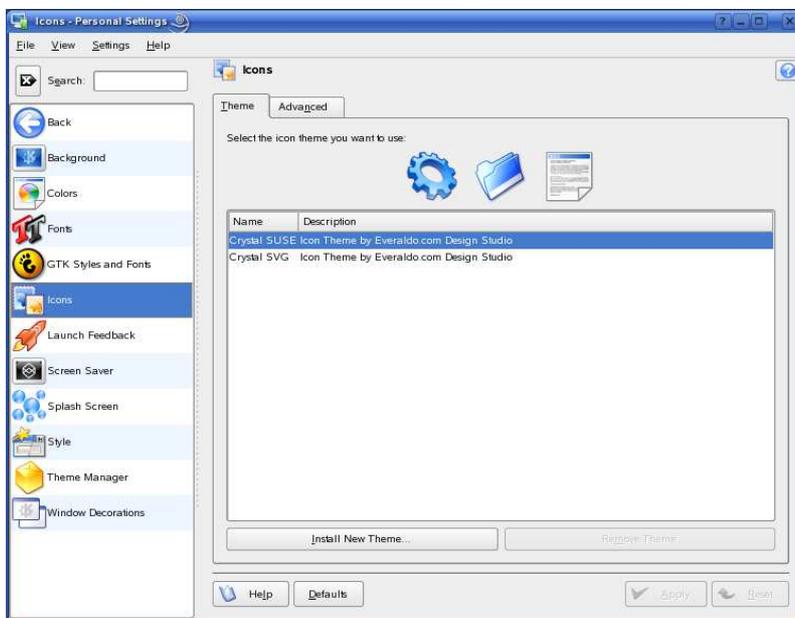
In a standard installation, there are only two icon sets.

Launch Feedback If you start an application, the icon of the application bounces next to the mouse pointer to indicate that the application is loaded.

You can configure this behavior here.

Screen Saver In this module, configure the screensaver.
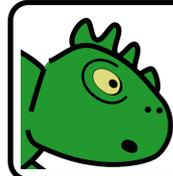
There are a lot of screen savers available after a standard installation.

Splash Screen When you log into KDE, a splash screen indicates that KDE is loaded.

In this module, you can select the splash screen.

Style Here, you can select the style of the KDE widgets.
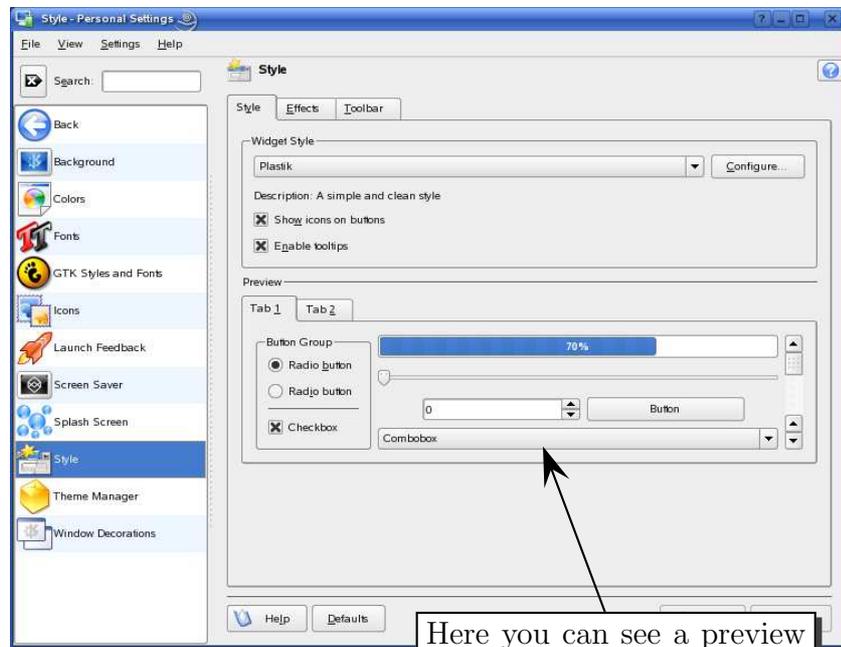
Here you can see a preview of the selected widget style.

Theme Manager A desktop theme is a combination of the following parts:

☞ Background image

☞ Color definitions

☞ Widget Style

☞ Icons

☞ Fonts

☞ Screensaver
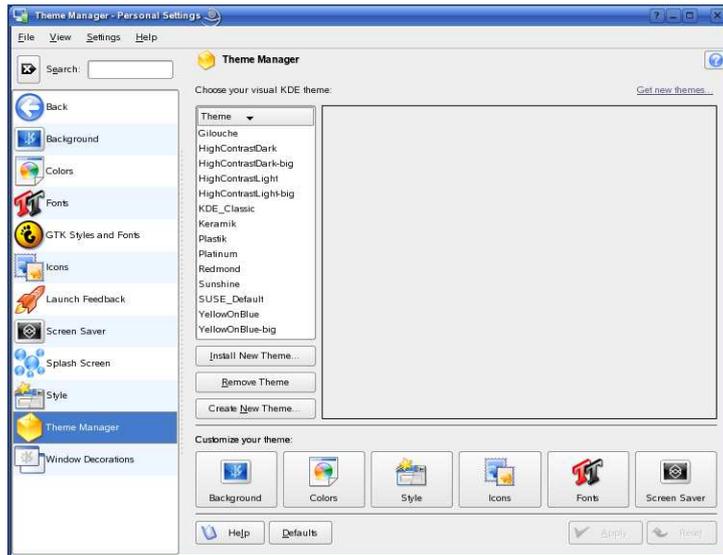
Start the corresponding modules by selecting the buttons at the bottom of the window.

Window Decorations
Select the style of the window decoration (tab `Window Decoration`) and the style of the buttons in the window title (tab `Buttons`).
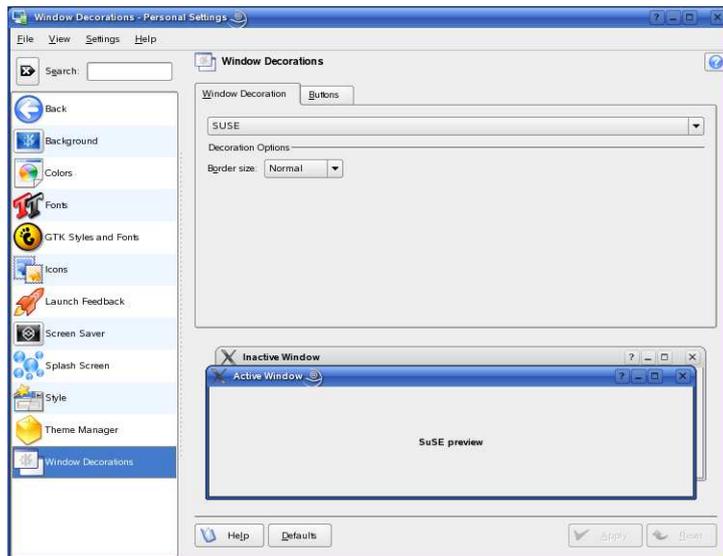
✍ **Exercise: Change the Appearance of KDE**
Configure KDE that it looks like Windows XP or Windows 95.

Desktop Section

Behavior To configure a menu bar at the top of the screen (like the Macintosh OS) and the behavior of KDE, click with a mouse button on the desktop.

(De)activate tooltips.
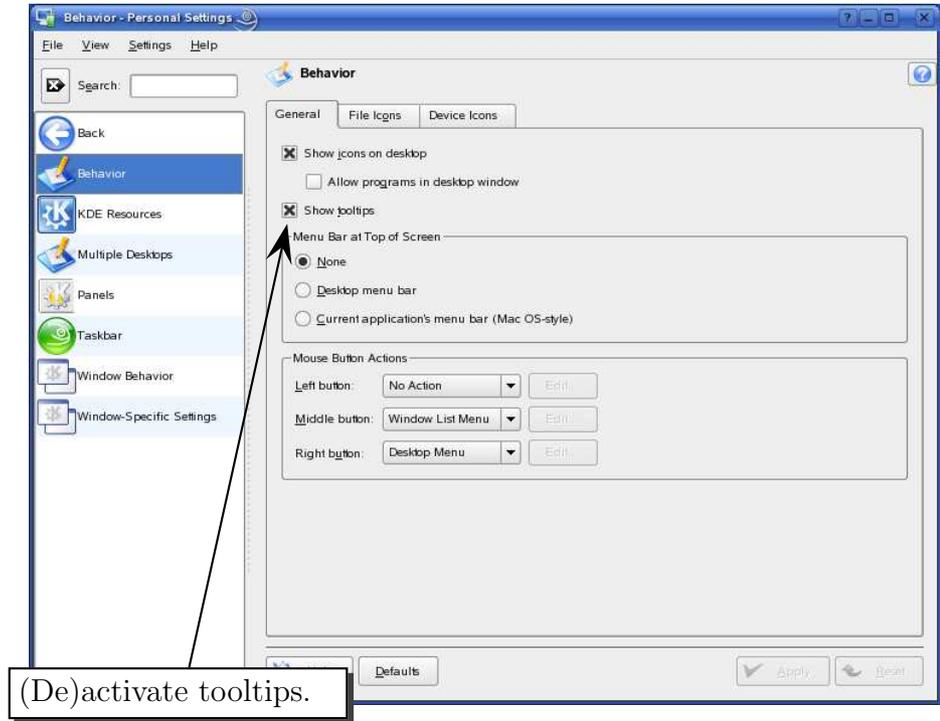
In the tabs `File Icons` and `Device Icons`, you can activate icons for special file types or devices at the desktop.

Multiple Desktops
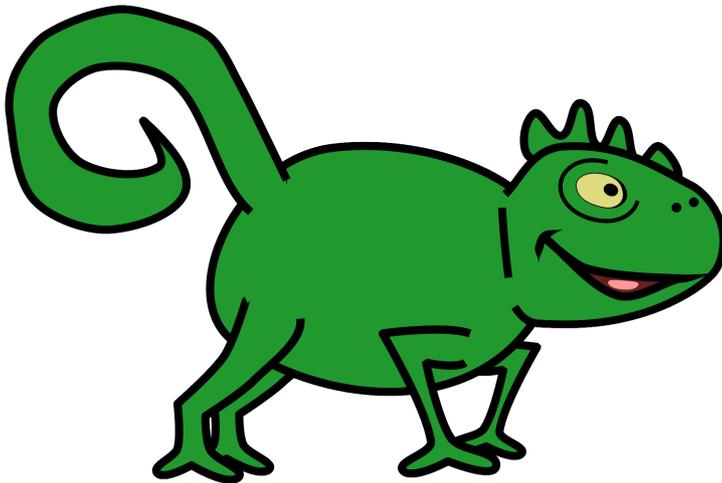
Specify the number of the virtual desktops.
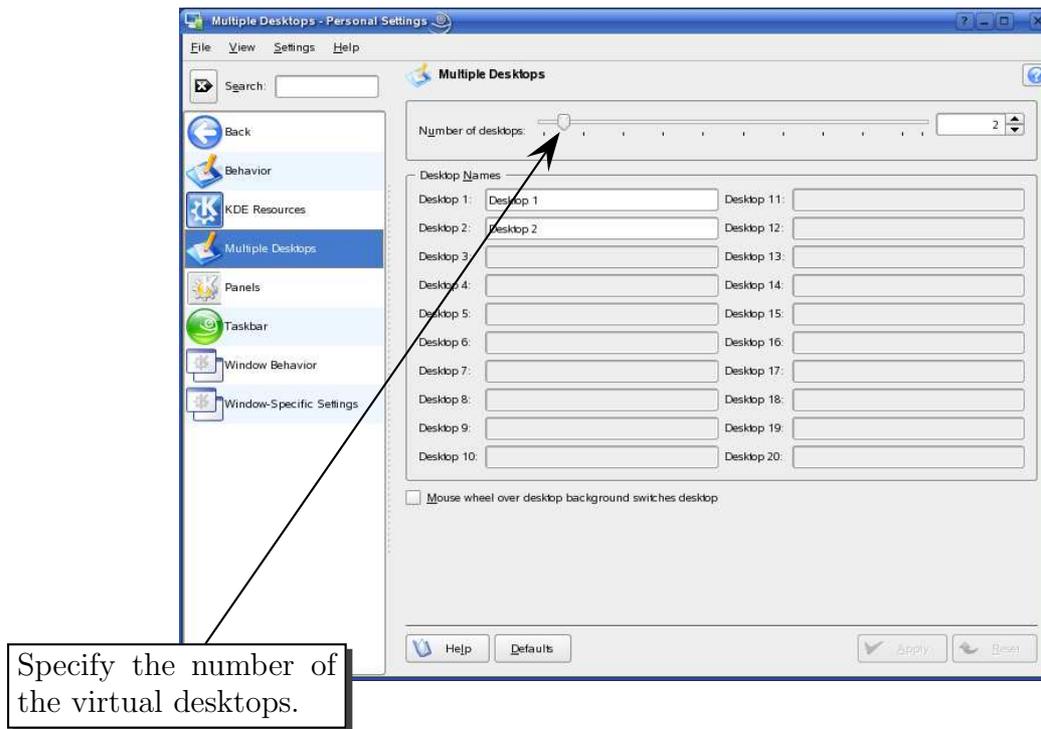
It is possible to label each desktop in the `Desktop Names` section.

Panels   In this module, you can configure Kicker.

The dialog contains four tabs:

`Arrangement` – Position and size of Kicker

`Hiding`   – Hide Kicker automatically

`Menus`   – Add special menus to the KDE menu

`Appearance` – Add background images for the icons in Kicker

> You are not limited to one panel in KDE. To add further panels, right-click Kicker and select `Add New Panel` → `Panel`.
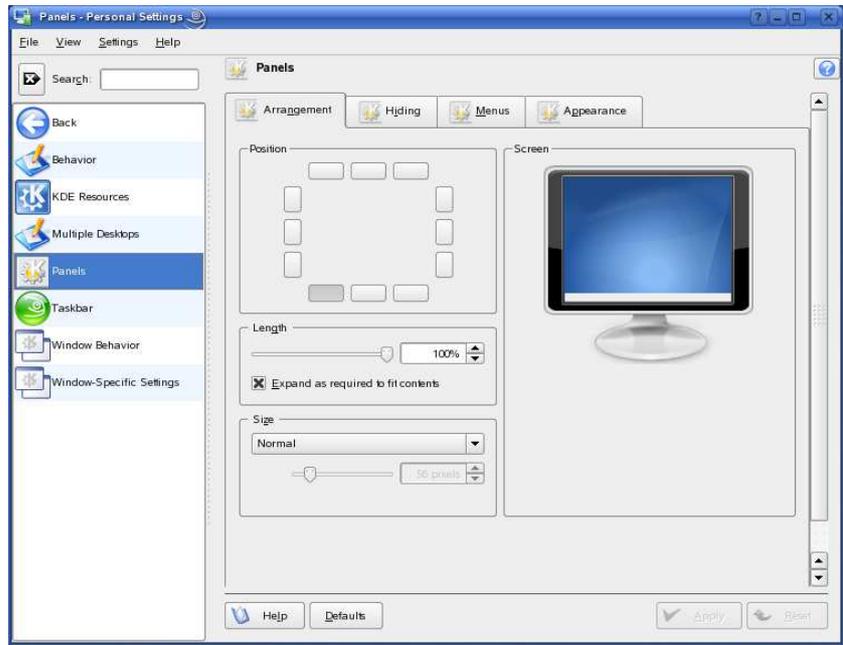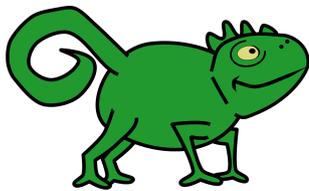
Taskbar   The taskbar is available in Kicker and shows a list of the windows from all desktops.

In this module, you can configure the taskbar and specify the actions: Click the taskbar with your mouse.
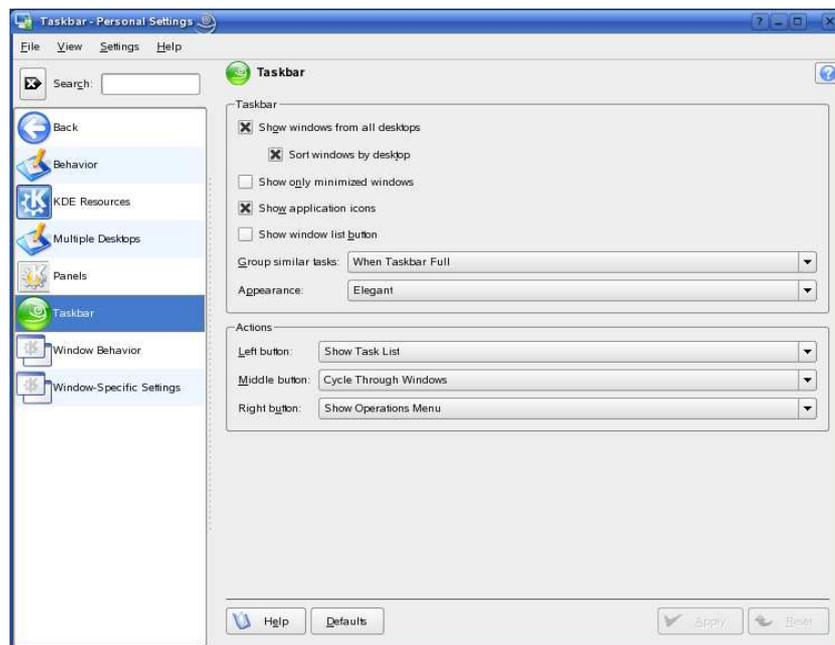
Window Behavior In this module, you can configure what will happen if you double click the title bar of a window.

`Focus`   – Microsoft Windows and Mac OS users are accustomed to focus a window by mouse click. Some flavors of UNIX use other methods. Here, you can select the focus policy.

`Titlebar Actions` – Here, you can change the actions for clicking a titlebar of a window with the mouse.

`Window Actions` – Here, you can specify a modifier key and the actions of it.

`Moving`   – In some cases, you used to see the content of a window when it was being moved. If you have an older computer it could be necessary to change this setting.

`Advanced` – Advanced features.
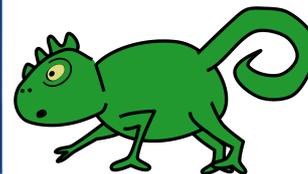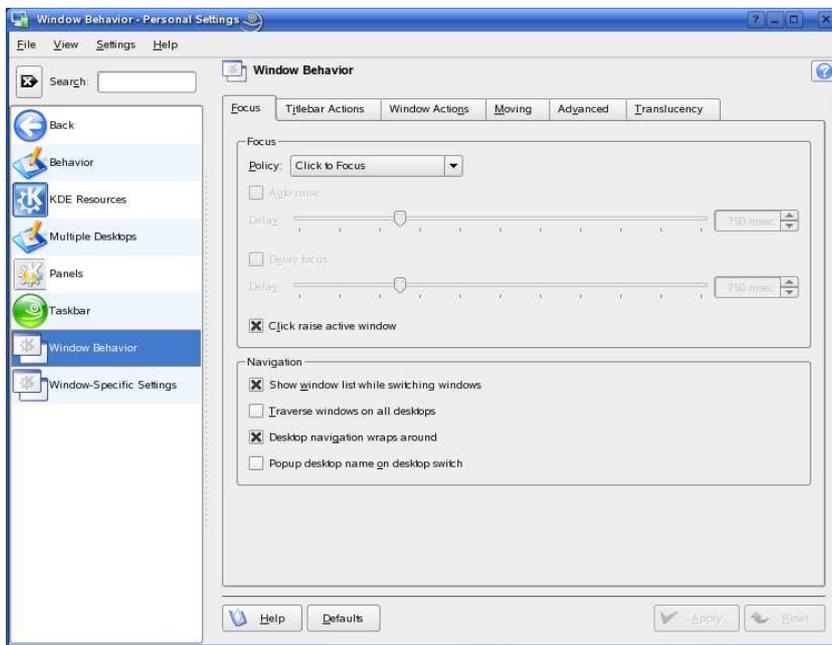
☞ **Exercise: Change Window Behavior**
    Change the focus policy to `Focus Follows Mouse`. Open some more windows and see the differences.

Internet & Network Section

Briefly review some of the modules of the `Internet & Network` section here, because going through them all would be out of the scope of this course. For some of the modules you have to get root permissions.

This is an overview:

`Web Browser` – Configure the Konqueror web browser.

`Desktop Sharing` – You can allow access to your desktop via the network.

`File Sharing` – Allow file sharing with Windows computers. You need to be the system root user for this.

`Local Network Browsing` – View user information for accessing Windows shares.

`Proxy` – Configure access to the Internet via Proxy.
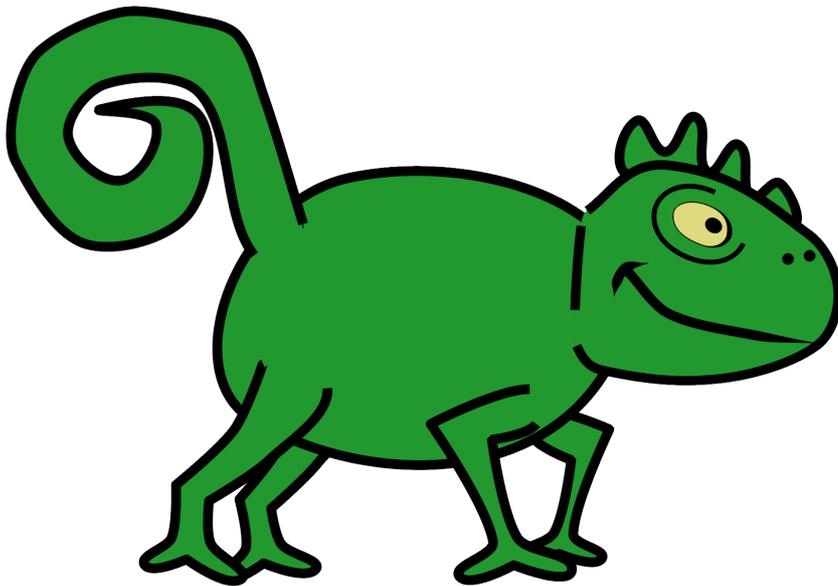
KDE Components Section

We do not want to discuss all modules of the `KDE Components` section here, because they are also beyond the scope of this course.
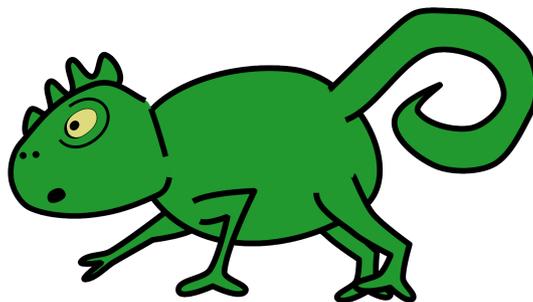
Here is an overview:

`Component Chooser`	– Choose your default mail client, text editor, and terminal emulator
`File Associations`	– Choose an application for each file type to open the file
`File Manager`	– Settings concerning appearance, behavior, and preview of the Konqueror file manager
`KDE Performance`	– Minimize memory sage and configure the preloading of Konqueror
`KDE Resources`	– Configure resources for KDE
`Service Mananger`	– Start and stop KDE services
`Session Manager`	– Default settings for starting (log in) and terminating (log out) a session
`Spell Checker`	– Configure the spell checker

Peripherals Section

Display Here, you can switch to another screen resolution and refresh rate.
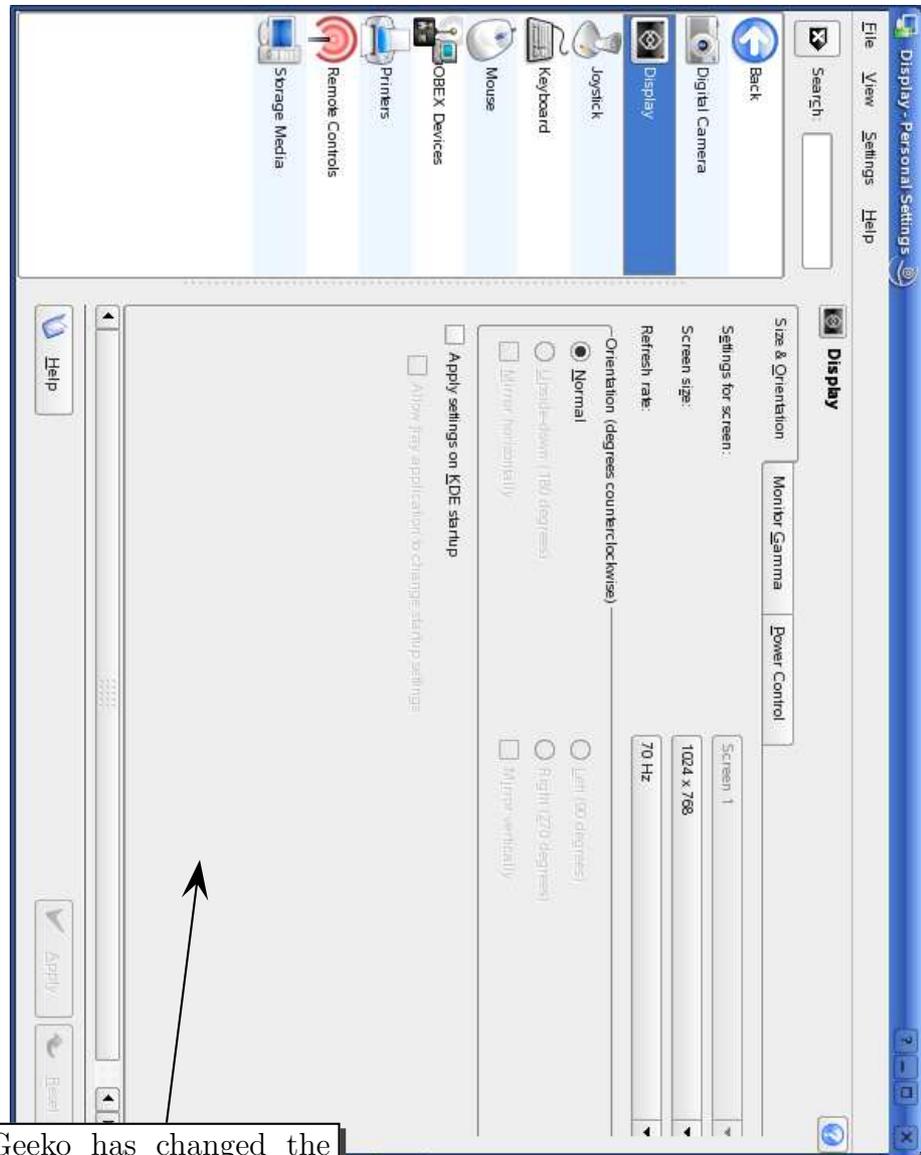
Geeko has changed the display's orientation.

If your hardware supports more than one monitor, you can configure them in the tab `Multiple Monitors`.

In the tab `Power Control` you can select the time for standby, suspend, and power off.
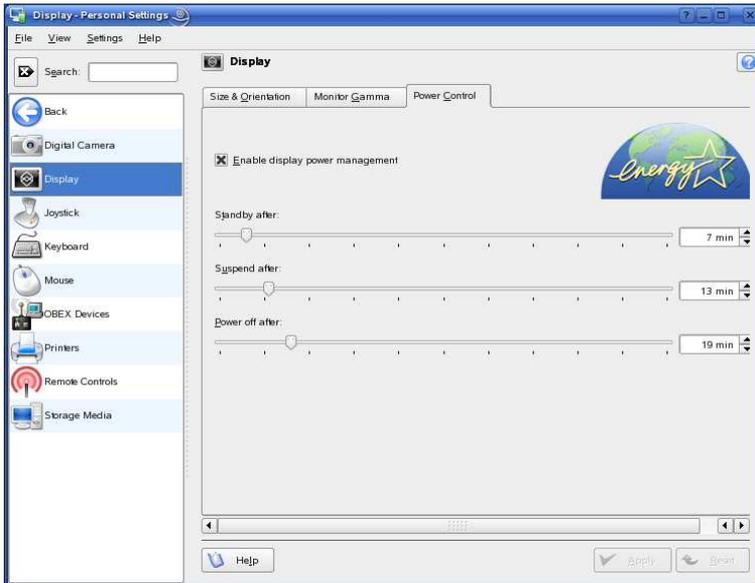
Keyboard   Keeping a key on your keyboard pressed, after a short delay, the output of the keyboard begins to repeat.

In this module, you can specify the delay and the rate of repeat.
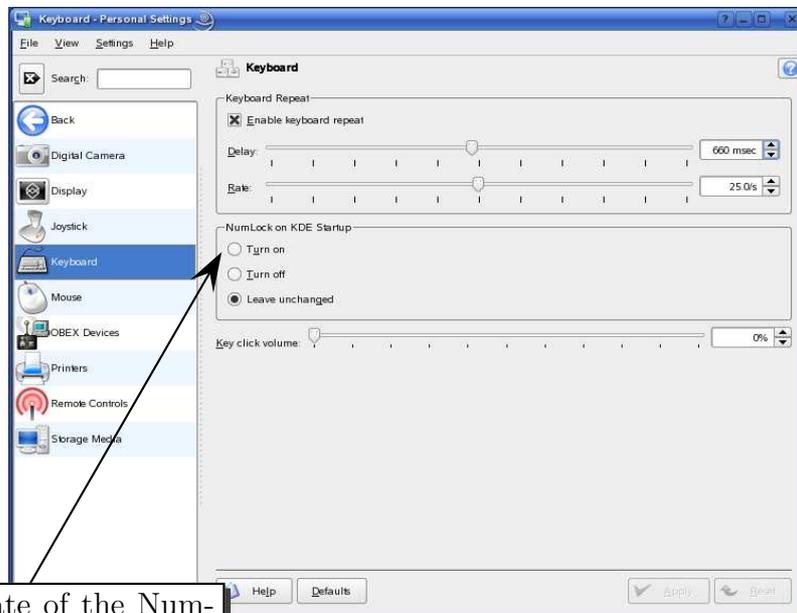
Choose the state of the Num-Lock key on KDE startup.

Mouse The mouse module of the KDE Control Center contains four tabs:

❶ `General.` Left handed people may prefer to swap the left and right mouse buttons.

❷ `Cursor Theme.` There are some themes for the mouse pointer available.

❸ `Advanced.` Here, you can select some advanced features, e.g., the pointer acceleration and the speed for double-click.

> Be careful with these settings. It can be hard to hit the `Defaults` button with a high speed mouse pointer.
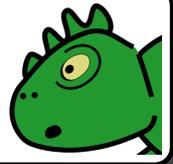
❹ `Mouse Navigation.` To navigate the mouse pointer by using your keyboard, enable it here.
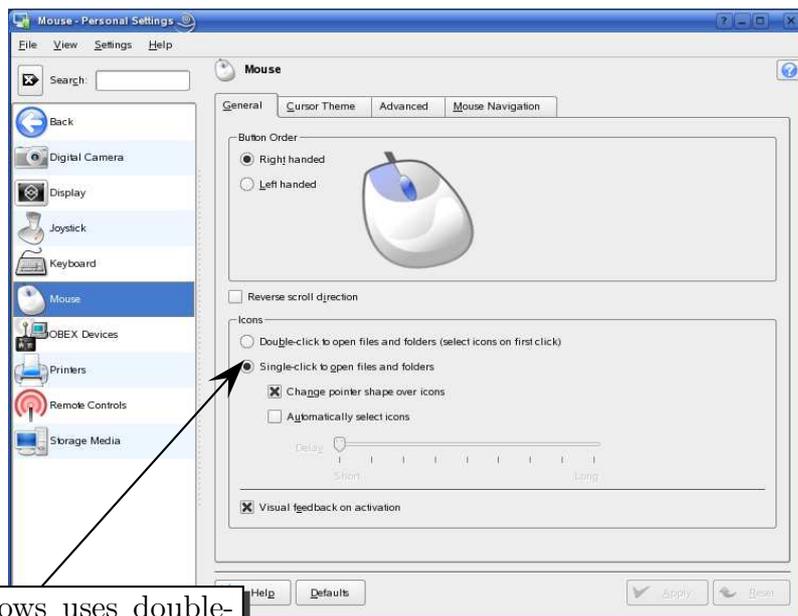
Microsoft Windows uses double-clicks to open files. KDE uses single-clicks by default.

Printers This module helps to manage your printers.
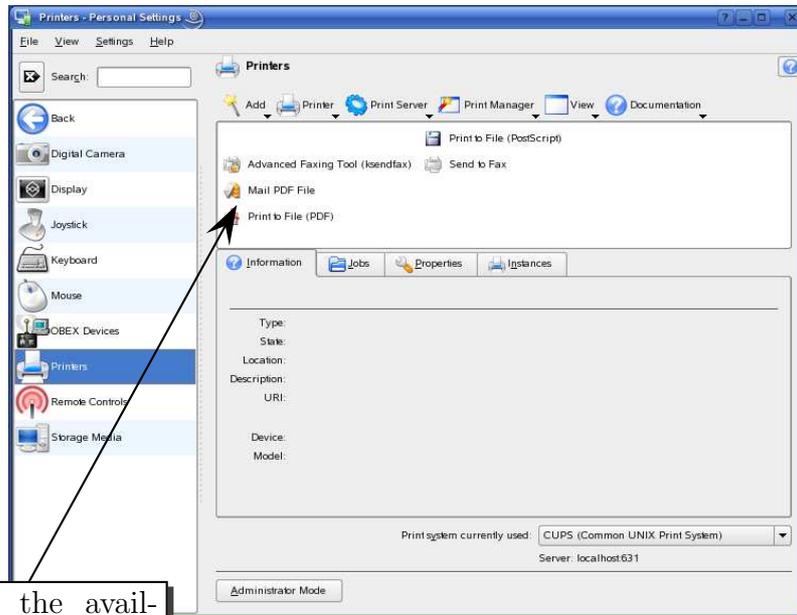
These are the available (pseudo) printers.

You can add, remove, and modify printers. You also can manage your print jobs.

For a lot of functions, you have to be logged in as the root user, e.g., to add a new printer or to change the configuration of a printer.

To get root permissions, select the `Administrator Mode` button.
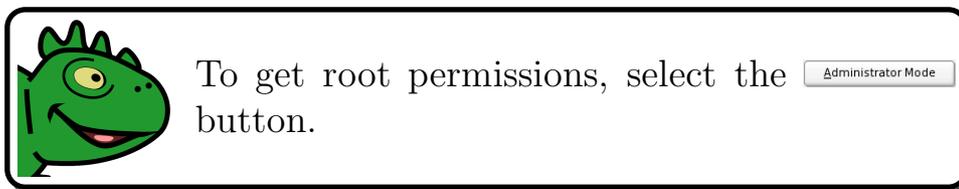
You will learn to manage printers and print jobs later.

Remote Controls You need infrared hardware inside your computer to use this module. Otherwise you get a notification.

Regional & Accessibillity Section

Accessibility   Functions for handicapped people.

Country/Region & Language   Every region has its own standards for formatting numbers, date, and time. In this module, you can select the one you prefer.

Here, the current settings are shown.
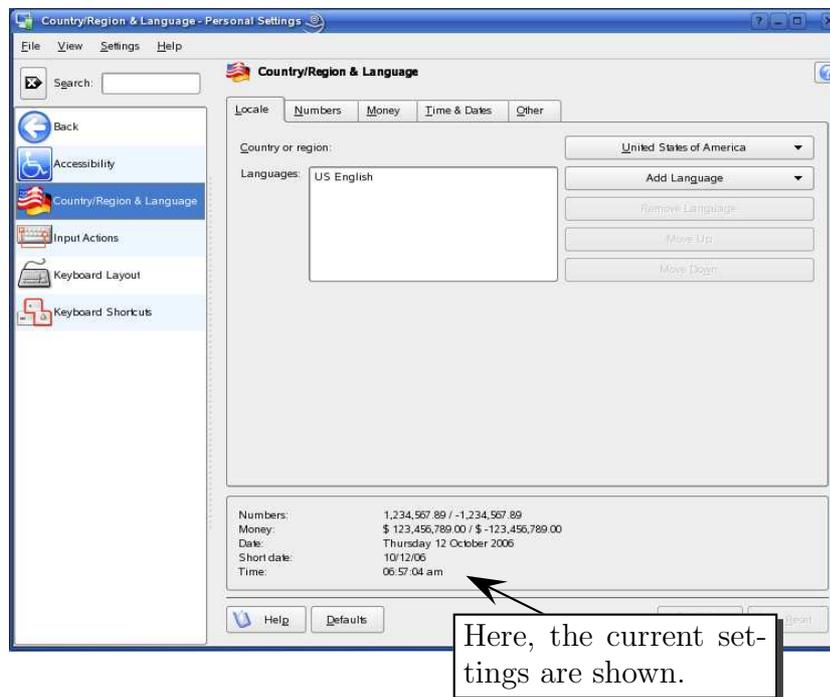
If you select your country from the `Country or region` menu, on the `Locale` tab, the settings should be correct.

If you want to change the default settings, change them on the other tabs.

☞ Exercise: Change Region

Compare the standards for writing numbers, date and time of three different countries. Compare North America, Europe, and the standards of Asia.

Keyboard Layout   Different regions use different keyboard layouts. In this module, you can select the layout of your keyboard.

Keyboard Shortcuts Here, you can configure keyboard shortcuts for system actions.
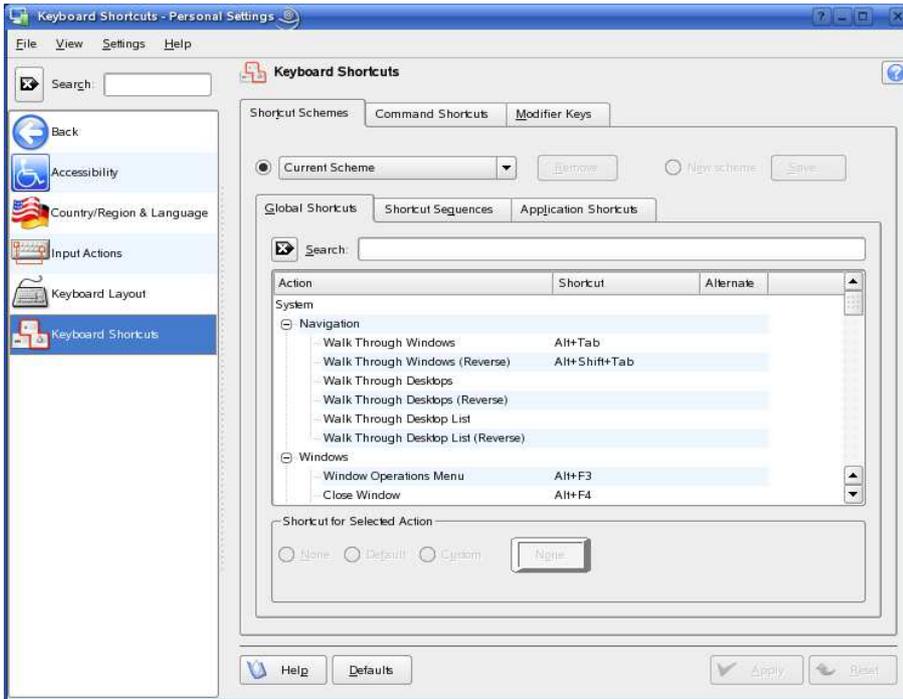

The available system actions are classified into `Global Shortcuts`, `Shortcut Sequences`, and `Application Shotcuts`.

Select an action from the list and activate the `Custom` option below. A dialog appears.

Enter the key combination. Select ![OK] to finish your input.
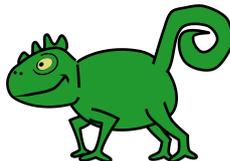
Security & Privacy Section

Crypto Configurations you need for encrypting and decrypting data.

KDE Wallet   KDE Wallet allows you to store your passwords and other personal information on your disk in an encrypted file, preventing others from viewing the information.

Password & User Account   When you log in, your password is shown as stars. In this module, you can configure how passwords should be shown in general.

Privacy   In this module, you clean your desktop environment from all private information that is stored—e. g., by your web browser—on the disk.

Sound & Multimedia Section

**Sound System**   To access sound output of other computers in your network or to allow them to access your sound system, activate it here.

System Bell If you enable system notifications, KDE plays a sound file for system messages.

In this module, you can deactivate the system bell. The internal PC speaker will be used instead. You can configure the volume, pitch, and duration of the system bell.
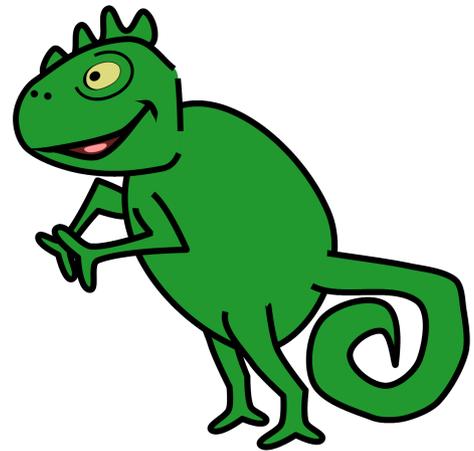
System Notifications In this module, you can configure sounds for a lot of system events, e.g., the sound that is played when you get an email.
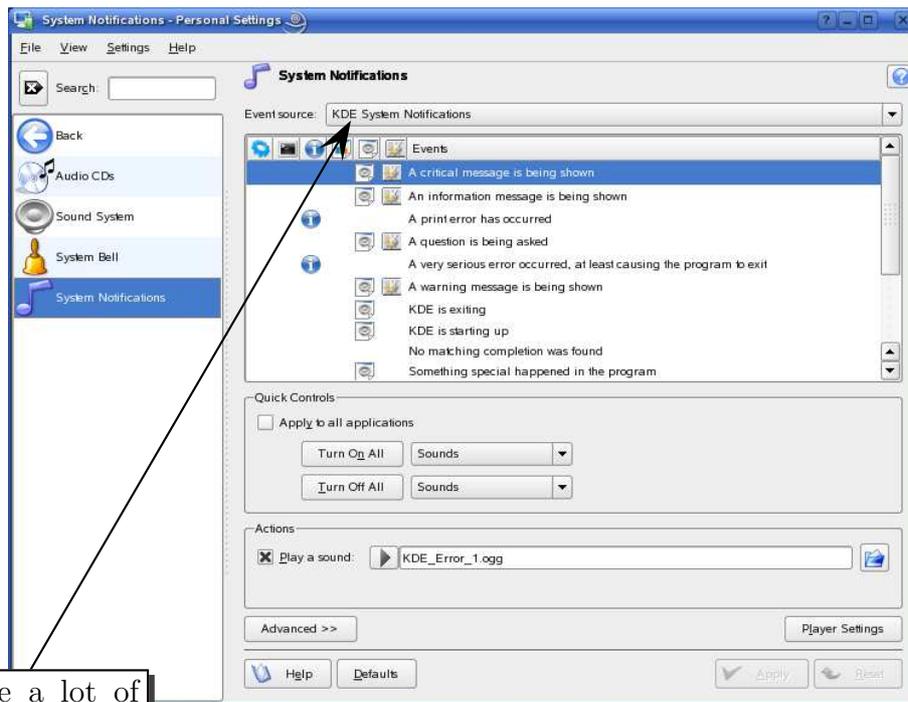
There are a lot of event sources.

An event source can be a program.

In the white frame, the events for the selected source are shown.

The following actions are possible:

    – Execute a command

    – Send an error message to the default error channel

    – Display a message box

   – Write an error message to a log file

– Play a sound

– Flash the taskbar entry of the application

System Administration Section

Font Installer   Normal users are only allowed to install fonts for their own private use. The root user can install fonts that are usable for all users of the system.
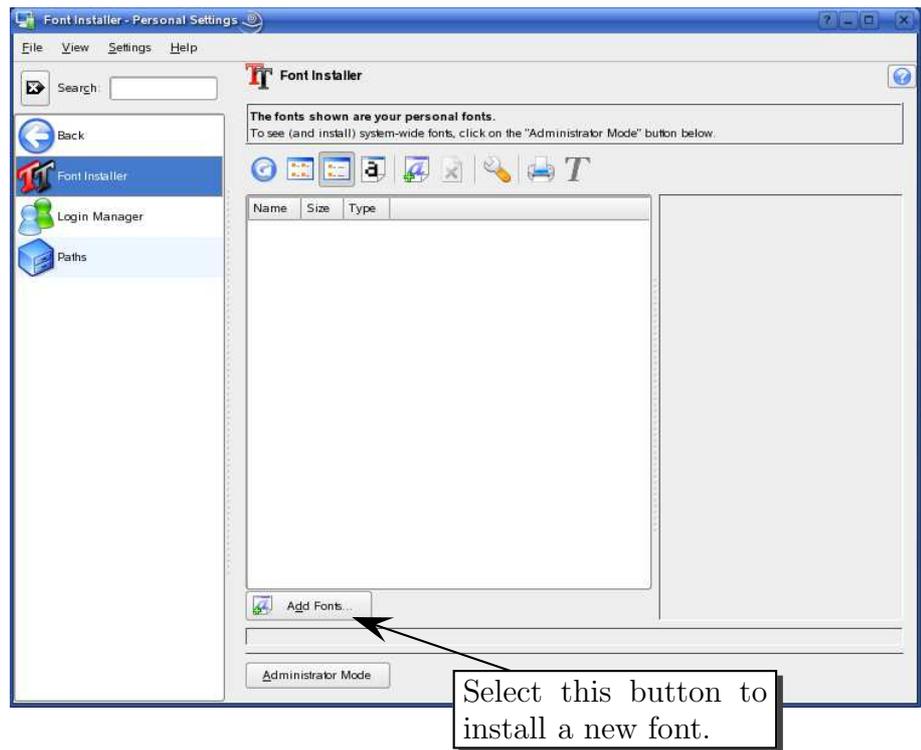

Login Manager   Here, the root user can configure the appearance and funtionality of the Login screen.

**Paths**   Specifies the path of important KDE directories:

☞ **Desktop path.** Includes the item of your private desktop.

☞ **Autostart path.** The programs in this directory are started automatically after logging in.

☞ **Documents path.** When saving documents, this directory is set as the default.
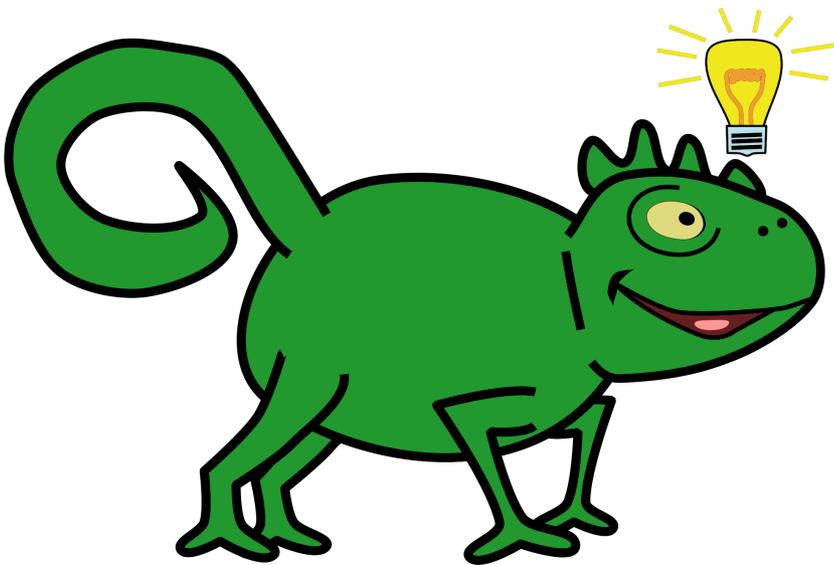
3 Use Open Source Tools

SUSE Linux Enterprise Desktop 10 is a desktop product. That means that much of the software included is for needs in a office, such as word processing, email and presentations.

SUSE Linux Enterprise Desktop 10 based on the same code like the SUSE Linux Enterprise Server 10. The server product is delivered with software especially for server needs, e. g., DNS, DHCP, security tools

We want to introduce the software in this book to convince you of the quality of open source software. If you are comfortable in using this software, you can increase your productivity in school.

Exercise: Use Open Source Tools

What kind of software typically runs on a server and what on a desktop workstation? Consider five.

Software on Servers	Software on Desktop Workstations

3.1 Use Firefox

An incredible amount of information is available on the world wide web (WWW) (also called the Internet). You must have a web browser to access the Internet and everything it offers. The Firefox web browser is one of the more common web browsers and it is an open source applications.

> After a standard installation of SUSE Linux Enterprise Desktop 10, Firefox is your default web browser. In this section you learn how to use Firefox.

The Firefox web browser was developed by the Mozilla Foundation. You can find more information about Firefox and the development process on the following web site: `http://www.mozilla.org/`

3.1.1 Understand the Firefox User Interface

Firefox looks a lot like the other major web browsers on the market.
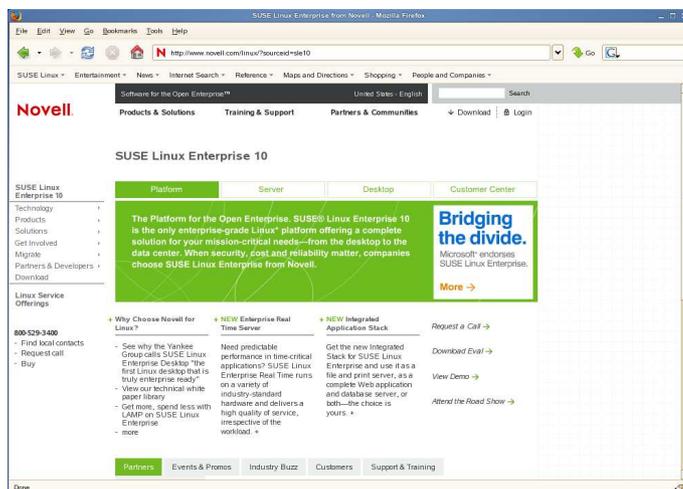
Probably the most important part of the user interface is the address bar where you can enter web page addresses (URLs).

Select ⬇Go or press Return to load the web page.

Use the ⬅️ · and ➡️ · to jump back to the previous page or forward to the next page in the browser history.

Use 🔄 to reload or refresh a web page.

Use ❌ to end the loading process of a page.

Selecting 🏠 brings you dirctly to your default web page.

The text box at the far right of the toolbar allows you to use a search engine (Google by default). Enter the words you want to search for and press Return.

Select this triangle if you want to change the search engine.
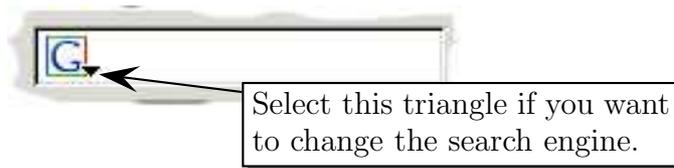
☞ Exercise: Understand the Firefox User Interface
Use the search text box in the Firefox toolbar to search for Firefox's share of the installed web browser market.

3.1.2 Use Tabbed Browsing

When you browse the web, you may need to open more than one web site at the same time. Firefox offers tabbed browsing to help you manage multiple open web sites.

With tabbed browsing, you can switch between open web sites by selecting different browser tabs instead of opening and closing multiple windows.

Select ❌ to close the active tab.

You can open a new browser tab in three ways:

❶ Select `File → New Tab` from the menu bar

❷ Press the key combination `Ctrl`+`T`

❸ Select a link with your middle mouse button

✍ Exercise: Use Tabbed Browsing
Practice the three ways of opening a tab.

3.1.3 Use Bookmarks

Understand the Advantage of Using Bookmarks

If you find an interesting web site and you want to be able to easily find it again later, Firefox lets you store the web site's address. A stored web site address is also called a bookmark.
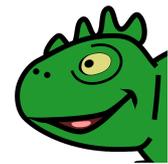
You can complete the following tasks with bookmarks:

❶ Set a Bookmark: Save the address of a web site

❷ Use a Bookmark: Use a stored web address to access a web site

❸ Manage Bookmarks: Sort bookmarks into folders

Set and Use Bookmarks

To save the address of the current web page, select `Bookmarks →
Bookmark This Page` from the Firefox menu bar or press Ctrl+D.

The following dialog apears on the screen:

Select [Add] to add the current address to the list of bookmarks.

To access a stored web site address, select `Bookmark` in the Firefox menu bar. Then select the bookmark for the web site you want to open.

Manage Bookmarks

If you set a lot of bookmarks in Firefox, finding a particular bookmark can be difficult. To simplify the search, Firefox lets you sort your bookmarks into folders.

> Managing bookmarks in folders is similar to managing files on your computer.

Firefox provides the Bookmark Manager to help you manage your bookmarks. To access the Bookmark Manager, select `Bookmarks → Manage Bookmarks` from the Firefox menu.
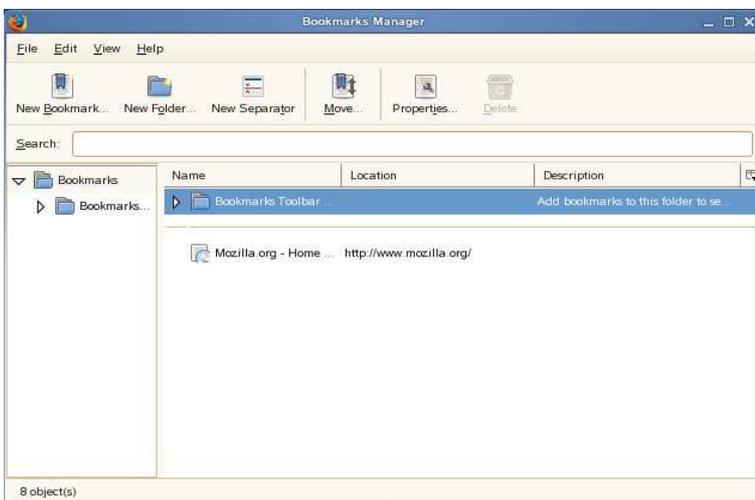
The icons in the Bookmark Manager are described here briefly:
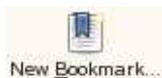
**New Bookmark...** — Creates a new bookmark. A dialog appears and you have to enter at least a name and a location.
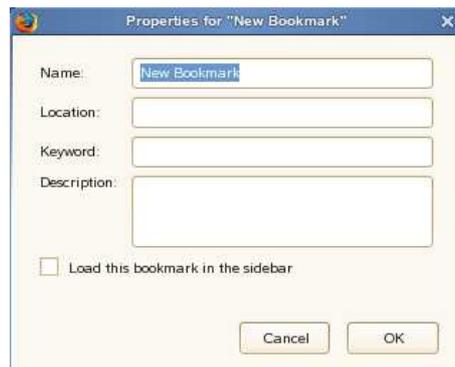
New Folder... — Creates a new folder for bookmarks. A dialog appears so you can enter a name for the folder.

New Separator — Inserts a separator.

Move... — Moves bookmarks or folders. If you select a bookmark and select `Move` a dialog appears and you can select a folder you want to copy your item into.
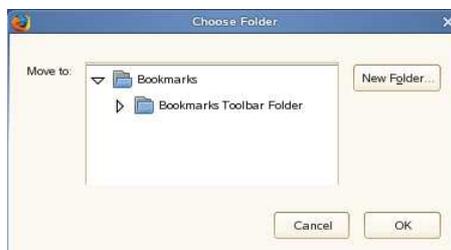
> Using drag & drop to move bookmarks and change their order is easier.

Properties... — Changes the name, location, or description of a bookmark.

Delete — Deletes the selected bookmark or folder.

Use the Bookmarks Toolbar

Firefox provides a Bookmarks toolbar for quick access to your bookmarks.

The Bookmarks toolbar contains single bookmarks and bookmark folders. Select a bookmark on the toolbar to load the corresponding web site. Select a bookmark folder to see a list of the bookmarks stored in that folder.

To access your bookmarks through the Bookmarks toolbar, add the bookmarks to the Bookmarks Toolbar Folder using the Bookmark Manager.

☞ Exercise: Use Bookmarks

Create a new bookmark folder in the Bookmarks toolbar and add bookmarks to three of your favorite web sides.

3.1.4 Print Web Pages

Print a Web Page

Like other browsers, Firefox lets you print web pages. To print a page, select `File → Print` from the menu bar, or press `Ctrl`+`P`.

A print dialog appears on the screen:
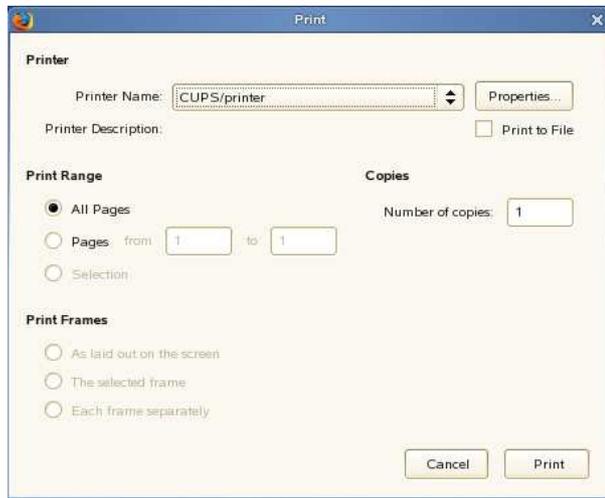
The print dialog lets you change the print settings for individual print jobs. In the upper part of the dialog, you can specify which printer should be used.

In the middle of the print dialog, you can specify which pages you want to print (the print range) and how many copies you want to make.

The third part of the dialog lists three options for printing web pages or parts of web pages that are made with frames:

☞ `As laid out on the screen.` Print the web page as it is displayed on the screen.

☞ `The selected frame.` Print only the selected frame. You can select a frame by clicking it.

☞ `Each frame separately.` Print out each frame of the web page separately.

You can start the print job by selecting ⌑Print⌑.

✍ Exercise: Print Web Pages

Print something from your favorite web site.
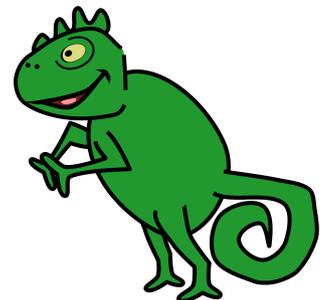
3.1.5 Manage Cookies

Understand What Cookies Are

Some web sites are personalized, which means that their content is especially adapted for your visit. The following is a list of some web sites that are often personalized:

☞ The web site you use to read your emails

☞ The online shop where you order books or other products

☞ The news web site which allows you to choose which kinds of news stories you are interested in

☞ The search web site which stores your personal preferences

Personalized web sites all have one requirement in common: they need to be able to identify you. Otherwise, they would not be able to display your emails, your ordered products, your site preferences, or whatever personalized information or products they are offering.

One way a web site can identify you is by using cookies. A cookie is a little piece of data which the web site stores on your computer. Each time you return to this web site, the data is transferred to the site and used to identify you.
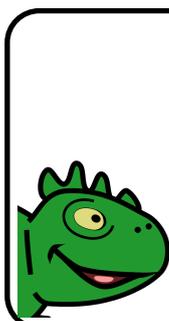
> Identify, in this case, does not necessarily mean that the web site knows your name, your address, or any other personal data. It means that the computer or the browser installation you are using is identified. Personal information is handed to the web site only when you enter it in a form and submit it to the site.

Understand the Risks of Cookies

Although cookies enable a lot of useful features, you have to understand the risk associated with allowing them to be used.
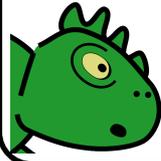
Whenever a web site sets a cookie on your computer, everything you do on this web site can be traced by the company or organization which runs the site. This could affect your privacy, especially if you give your personal information to the site. That personal information could then be combined with the cookie.

Using cookies in a reasonable way is therefore an important part of secure web browsing.
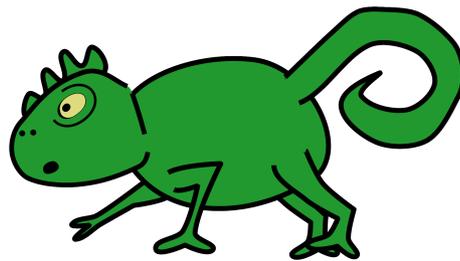
Manage Cookies

Firefox offers powerful cookie management features that you can use to control how cookies are used on your computer.

You can manage cookies through the Firefox Preferences dialog. To open this dialog, select `Edit → Preferences` from the menu bar.

To access the cookie management option, select `Privacy` at the top of the dialog.

Privacy
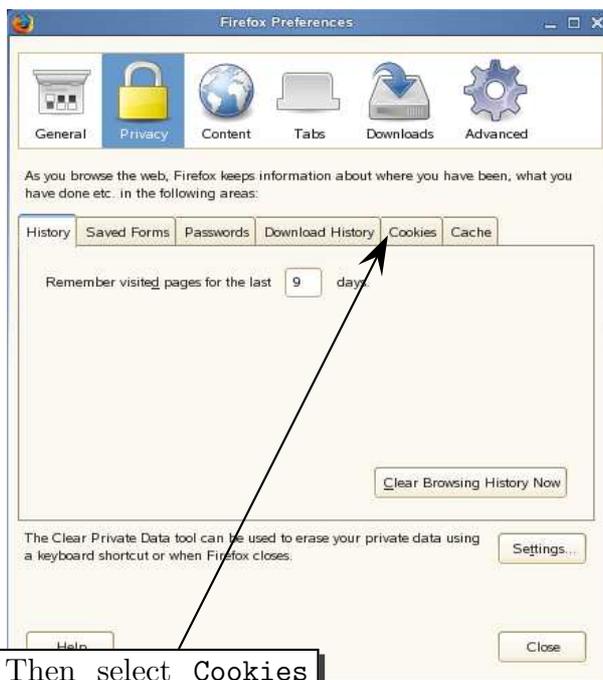
Then select `Cookies` in the list on the right side of the dialog.
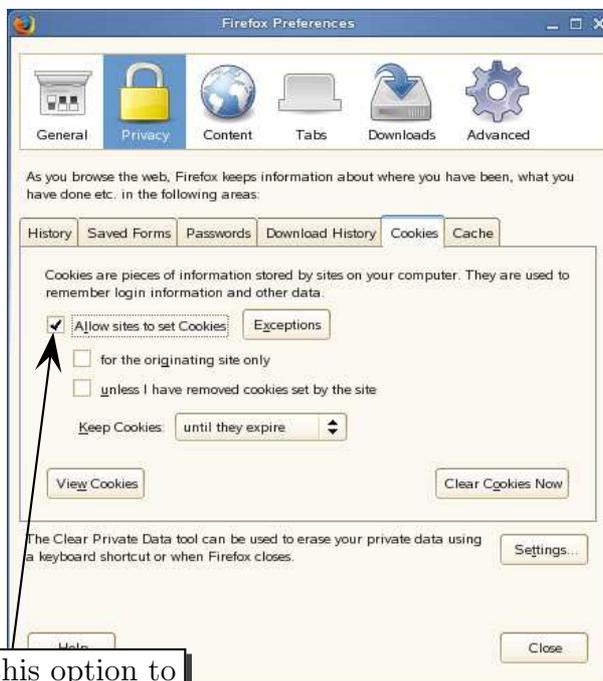
Deactivate this option to prohibit setting Cookies.

Select `Clear Cookies Now` to remove all cookies.

If you select [View Cookies] you get a list of all of the stored cookies, and you can organize the cookies.

☞ **Exercise: Manage Cookies**
Count the number of cookies that are stored on your computer.

3.1.6 Delete Stored Data

Understand What Kind of Data Is Stored

Firefox stores several types of data when you are browsing web sites. The following is an overview of these different types of data:

☞ **History.** A list of visited web sites.

☞ **Saved Forms.** Information you have entered into forms on a web site.

☞ **Passwords.** Passwords for web sites.

☞ **Download History.** A list of downloaded files.

☞ **Cookies.** Cookies that have been set by web sites.

☞ **Cache.** Web site data which is stored to save network bandwidth.

Understand the Risks of Stored Data
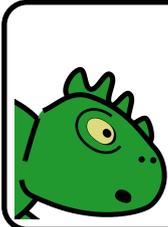
In general, the fact that Firefox stores data is not a problem. Stored data can enhance Firefox's performance when you are browsing web sites. However, you have to make sure that the stored data is not misused.

The following list contains some examples of when the stored data could be at risk of being misused:

☞ You share one computer account with other people.

☞ You cannot trust the administrator of a computer (in an Internet Cafe, for example).

☞ You do not want a web site owner to use cookies to trace your visits to the web site.

☞ Another person is sitting at your computer (browser history).
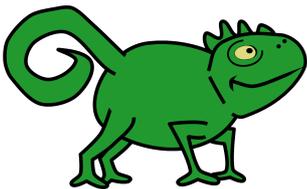
Delete Stored Data

Firefox allows you to delete all kinds of stored data. Select `Edit` → `Preferences` from the menu bar. In the Preferences dialog, select `Privacy` on the left side.
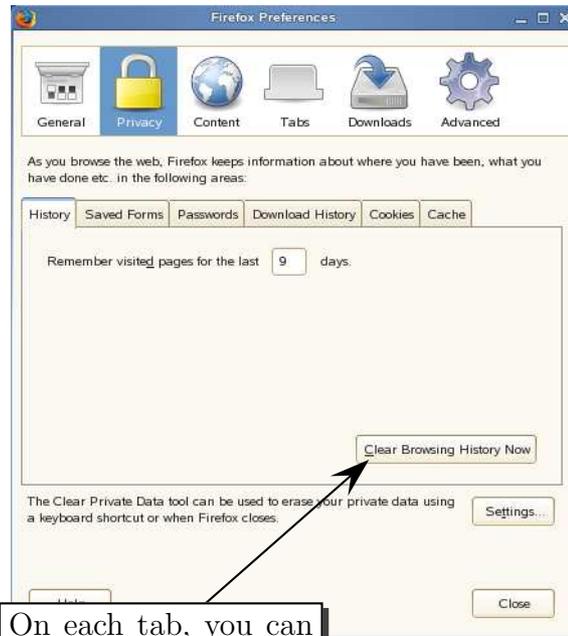
On each tab, you can delete the stored data.

Alternatively, you can select `Clear Private Data` from the `Tools` menu.

3.1.7 Handle SSL Connections

Understand What SSL Is

Usually, the data which is transferred to and from the web browser is not encrypted. Anyone with the right technical equipment and knowledge could intercept and read the transferred data.

> In some cases, you need to send or receive data that shouldn't be intercepted, like passwords or credit card information. To prevent unauthorized access, you must encrypt the data.

The following is a list of some of the situations in which encryption is strongly recommended:

☞ You are reading email through a web site.

☞ You are doing online banking.

☞ You are requesting confidential documents from your company's intranet site.

Firefox uses a technology called Secure Socket Layer (SSL) to encrypt the tranferred data.

Understand How Firefox Handles SSL

If a web site offers an encrypted connection, Firefox displays a dialog which indicates that the connection is encrypted.

Firefox indicates that you are on an encrypted web site by the following hints:

❶ The background color of the address bar changes to yellow.

❷ A lock icon is displayed at the end of the address bar.

❸ A lock icon is displayed at the bottom left corner of the window.

3.1.8 Install Themes

To change the appearance of Firefox, you can download themes from the Internet and install them locally.

To do this, select `Tools → Themes`. A dialog appears.

Here, the installed themes are listed.
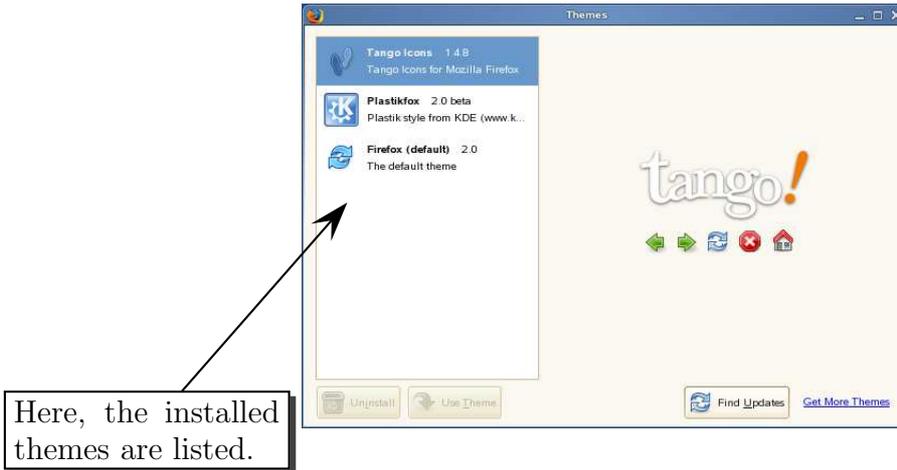
If you select `Get More Themes`, a Firefox window opens and shows a mozilla.org's web site, from where you can download a lot of themes. On each theme description, you will find a link `Install Now`. If you select this link, Firefox asks for confirmation.

To downloaded the theme file, select the new theme in the list of themes and select `Use Theme`. You have to restart Firefox to activate the new theme.
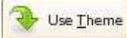
To uninstall a theme, select `Uninstall`.

If you want to look for a newer version of an installed theme, select `Find Updates`.
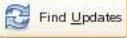
Exercise: Install Themes
Install a new theme and change the appearance of Firefox.

3.1.9 Install Extensions

There are a lot of extentions for Firefox. Using extensions, you can add powerful functions to the web browser, like a preview for search engines.

To do this, select `Tools` → `Extensions`.

The dialog is similar to the theme dialog.
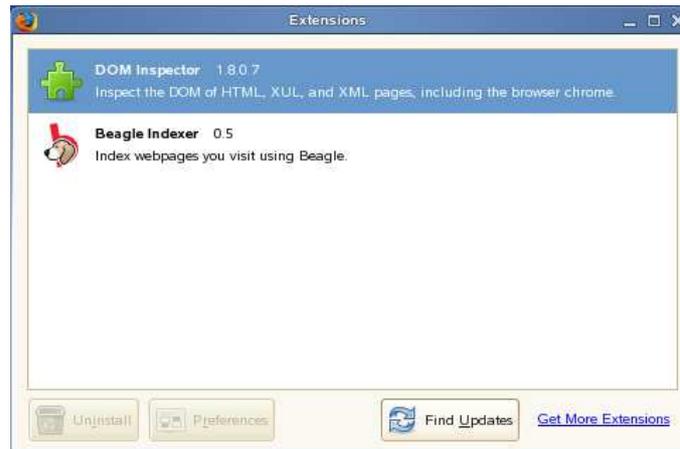
Select `Get More Extentions` to get a list of available extentions from mozilla.org.

Some extentions allow configuration. In this case, [Preferences] is activated.

☞ Exercise: Install Extensions

Install and test an extention.
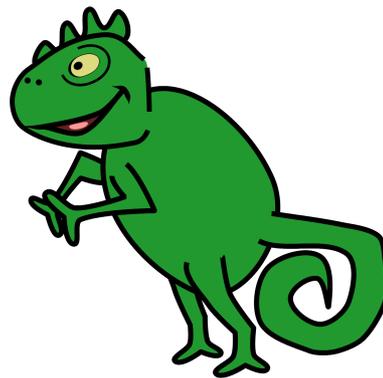
3.2 Use OpenOffice.org

OpenOffice is the most used office software on Linux. With OpenOffice, you can do the following:

☞ Create and edit text documents

☞ Calculate and manage data in spreadsheets

☞ Create and deliver presentations

☞ Create paintings and illustrations

You may have worked with other office suites such as Microsoft Office. OpenOffice provides you with a similar set of tools and features to help you complete your work.

OpenOffice is not included on the SUSE Linux Enterprise Server, because you normally do not use office software on a server.

OpenOffice is based on a software program called *StarOffice*, which was developed by Star Division, a German software company. A few years ago, Sun Microsystems acquired Star Division and released StarOffice as open source software.

The software was renamed to OpenOffice and the OpenOffice organization was founded. OpenOffice manages the development process of OpenOffice and works, together with the worldwide OpenOffice developer community, on further improvements.

From time to time, Sun Microsystems adds some new components to the current OpenOffice version and then releases this modified version under the name StarOffice. OpenOffice and StarOffice files are completely compatible and can be exchanged without any problems.

⚑ For more information about the development of OpenOffice, or to download the latest version, visit the OpenOffice website: `http://www.openoffice.org`

3.2.1 Basics about OpenOffice

Understand the Components of OpenOffice

OpenOffice can be used to complete many different tasks. OpenOffice is split into several sub-applications, each of which is used for a dedicated task.

The following table lists these OpenOffice sub-applications and gives a brief description of their functions:

OpenOffice Base	Create databases similar to Microsoft Access
OpenOffice Calc	Create spreadsheets similar to Microsoft Excel
OpenOffice Draw	Draw pictures and create illustrations
OpenOffice Impress	Create and deliver presentations similar to Microsoft PowerPoint
OpenOffice Math	Create complex mathematical formulars
OpenOffice Writer	Write text documents, reports, and letters similar to Microsoft Word
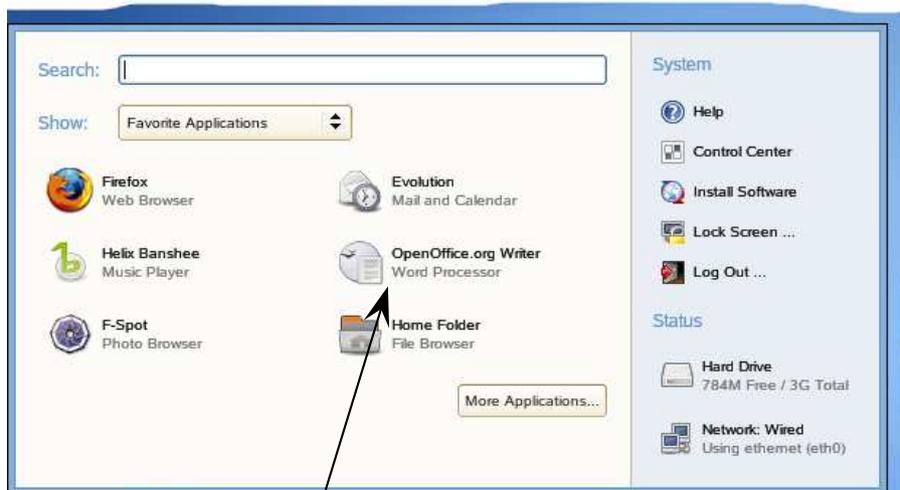
By default, there is a launcher for OpenOffice Writer in the main menu.

Understand the OpenOffice File Formats

OpenOffice uses the OpenDocument file formats approved by OASIS – the standards body for XML data formats in business; OASIS is sponsored by all the leading names in the computing industry, including Microsoft. OpenDocument is a genuine, vendor-neutral, open-standard specification, free from intellectual property challenges.
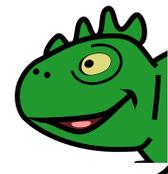
Each file type has a different file extension. The following table lists each file type and its associated OpenOffice application and file extension.

File Type	OpenOffice Application	File Extension
Text File	OpenOffice Writer	.odt
Spreadsheet File	OpenOffice Calc	.ods
Presentation File	OpenOffice Impress	.odp
Drawing File	OpenOffice Draw	.odg
Database	OpenOffice Base	.odb

OpenOffice can import and export most important formats of other office suites, allowing you to collaborate and exchange documents with people who are not using OpenOffice.
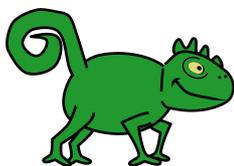
3.2.2 Get Help and Support

If you need to find out how to use a particular feature of OpenOffice, but neither your friends nor the teacher can help you, you can use the built-in help system or online OpenOffice resources.

Use the OpenOffice Help System

You can reach the integrated OpenOffice help system by selecting `Help →
OpenOffice.org Help` from the menu bar. The OpenOffice help system
opens up in a separate window.
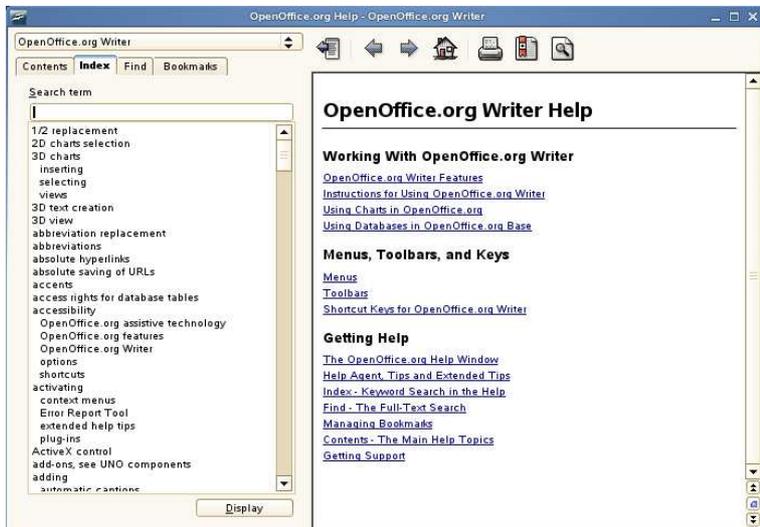
The help text is displayed in the right-hand frame. The help pages are
cross-referenced with links, just like web pages. The left-hand frame offers
four tabs for finding information about the topic of interest:

`Contents` – This tab features a table of contents with all of the chapters
available for help.

`Index` – This tab features keywords like an index of a book. A search
function helps you find a keyword.

`Find` – This tab lets you search the contents of all help chapters for
specified terms.

`Bookmarks` – Use the icon to the far right to mark interesting help pages
with a bookmark. The tab `Bookmarks` lists all previously
set bookmarks.

Know the Help Agent

OpenOffice features a context-sensitive help function. Certain actions
activate the Help Agent in the lower right corner of the application.
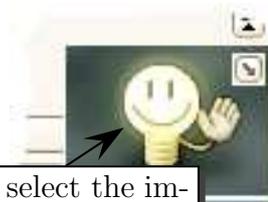
You can also select the image of a light bulb to get context-sensitive help.

Use the OpenOffice Web Forum

The OpenOffice Help System contains a lot of information that can help you solve many kinds of challenges that may occur when you use OpenOffice. However, in some cases, the interaction with other users is much more efficient.

You can go to the website `http://www.oooforum.org`. This site hosts many web forums where you can discuss questions and challenges with other OpenOffice users.

An overview of the available forums appears on the start page of the site. You can read the forums for free. If you want to post your own questions or respond to someone, you need to set up a free account by selecting the Register link in the upper right corner of the start page.

3.2.3 Customize OpenOffice

The configuration of OpenOffice can be done by `Tools → Options`.
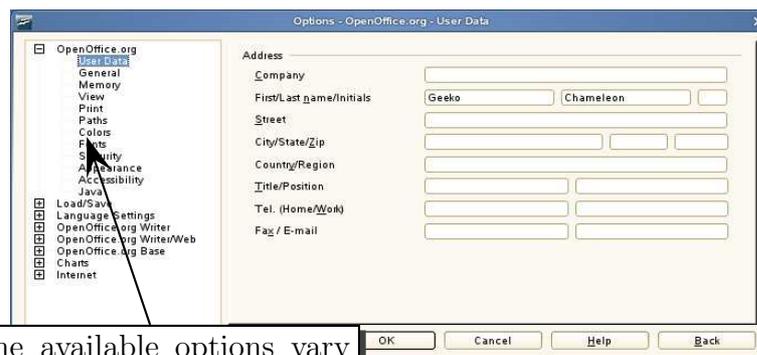
The available options vary between the OpenOffice components.

Menus, keyboard shortcuts and toolbars can be customized via `Tools →`
`Customize`.
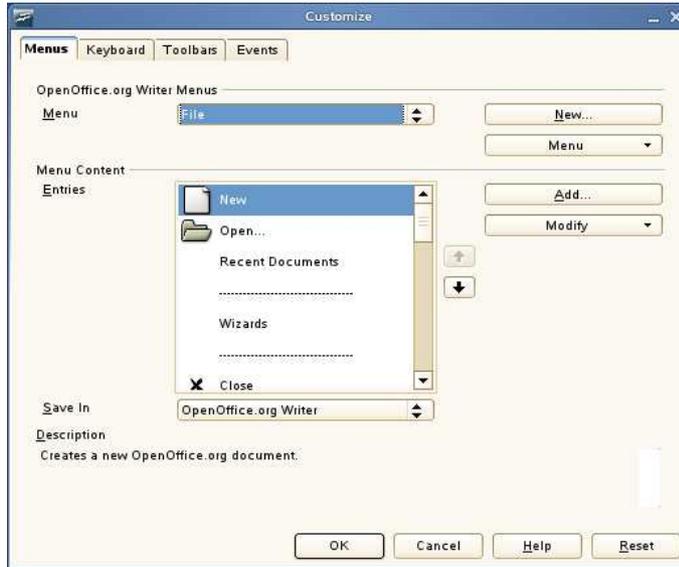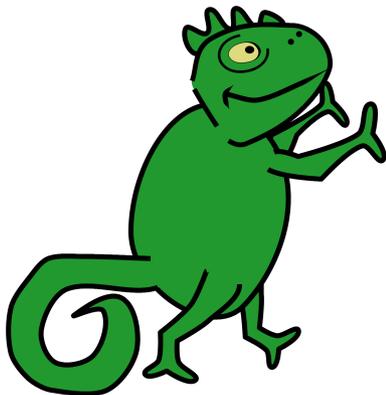
3.2.4 Work with Text Documents

We will start with OpenOffice Writer, because
this will be the component you use the most.
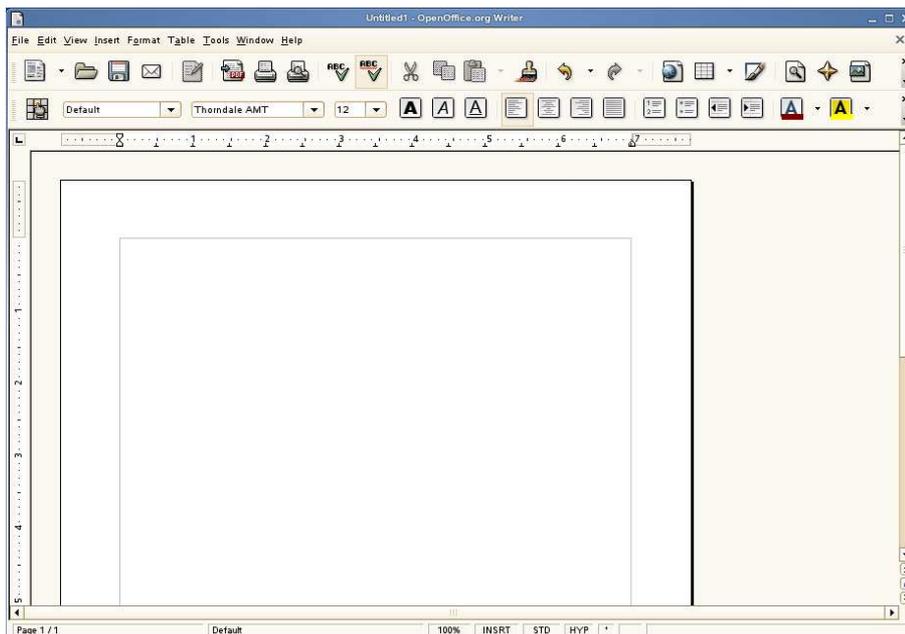
Create a New Text Document

By default, OpenOffice Writer opens a new text document. You can start creating text in the new document immediately. To create another new document, select `File → New → Text Document` from the OpenOffice menu bar.

You can also select the first icon in the toolbar to create a new text document.
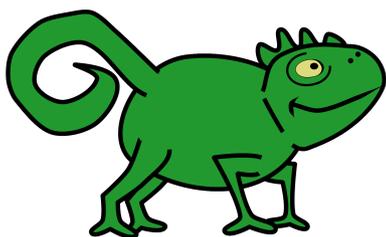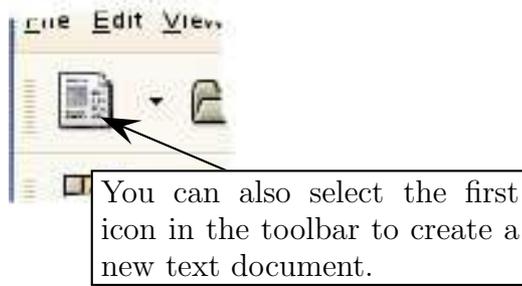
Save a Text Document

When you create or modify a document in OpenOffice, you need to save it using one of the following commands from the `File` menu:

`Save As` – This command lets you name your document and select a file type for it.

`Save` – This command lets you save changes to an existing document (a document that has been saved before in OpenOffice).

You can also press the key combination Ctrl + S to save a file or click on the floppy disk icon in the toolbar.

The `Save As` command opens a dialog that allows you to enter a file name and select a file type.

If the option `Automatic file name extension` is checked, the .odt extension is automatically added to the file name you have typed in.

The first time you save a new document, `Save` also opens the Save As dialog. After that, you can use `Save` to write your changes to the file.

You can also choose a file location and a file type for your document. By default, files are stored in ∼/`Documents/`.

The following is a list of the most important file types supported by OpenOffice. All file types are listed, if you open the `File type` menu in the Save dialog:

OpenDocument Text. Native file format for OpenOffice. You should always save one copy of your document in this format to make sure that your document formatting is saved correctly. The file extension is .odt.

OpenOffice 1.0 Text Document. Native file format for old OpenOffice versions. The file extension is .sxw.

Microsoft Word 97/2000/XP. Text document type of the current versions of Microsoft Word. Use this file format to exchange text documents with Word users. The file extension is .doc.

Rich Text Format. File type that can be opened by many word processors. It is a good choice when you need to exchange documents with someone, but you are not sure which word processor the other person uses. The file extension is .rtf.

Text. Stores documents in plain text. Other elements, such as images and formatting, are not saved. This is the simplest way to store a text document. The file extension is .txt.

OpenOffice is able to create PDF files without installing an external PDF creator. You can create a PDF file of your document by selecting the icon in the toolbar or selecting `Export as PDF` from the file menu.
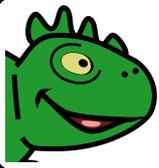
> In most cases you should use PDF files when you send a document to others.

To close a document after you have saved it, select `File → Close`. To exit OpenOffice Writer completely, select `File → Exit`.

✎ Exercise: Work with Text Documents – Part 1
What are the benefits of PDF?

- _____

- _____

- _____

- _____

- _____

In which cases does it not make sense to give your friend a PDF file?

_____

_____

_____

Open a Text Document

To open a text document, select File → Open from the menu bar. OpenOffice displays the Open dialog.

The Open dialog lets you browse the file system for files.
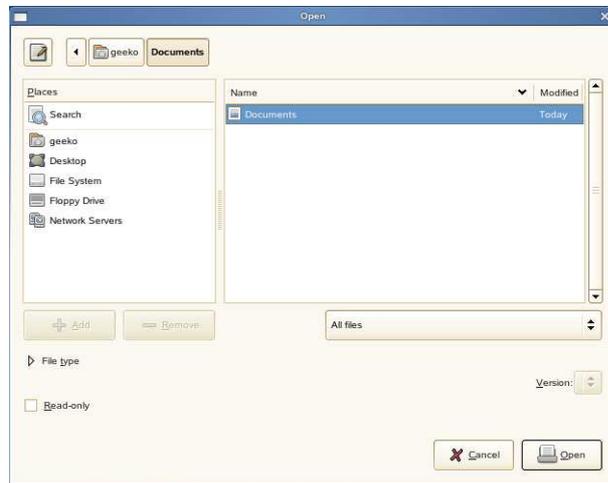
You can open any file type (not just word processing files) that can be used in any OpenOffice program. OpenOffice then opens the appropriate OpenOffice program for the file you selected.

Alternatively you can select the folder icon in the toolbar.

☞ Exercise: Work with Text Documents – Part 2

On the CD with your course materials, in the directory examples/OpenOffice/ you find a file loremipsum.odt. Open this file and save it in Microsoft Word format.

3.2.5 Understand the Structure of Writer Texts

Before you start writing with OpenOffice writer, you have to know how text is stuctured in Writer.

The smallest unit of text is a character. The biggest unit of text is a document. Between document and character there are some more units:

❶ **Character.** A character

❷ **Word.** One or more characters build a word. In most cases, a word is separated by white spaces.

❸ **Paragraph.** Several words build a paragraph. A new paragraph always starts on a new line and finishes with a line break (also known as a "hard return").

❹ **Frame.** A frame normally contains of something that is not included into the textflow, like a graphic, or a formula.

❺ **List.** Two or more items. Each new item is introduced by a bullet point or a number.

❻ **Page.** Equivalent of one sheet of paper.

❼ **Document.** The whole text.
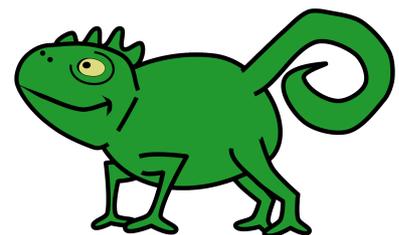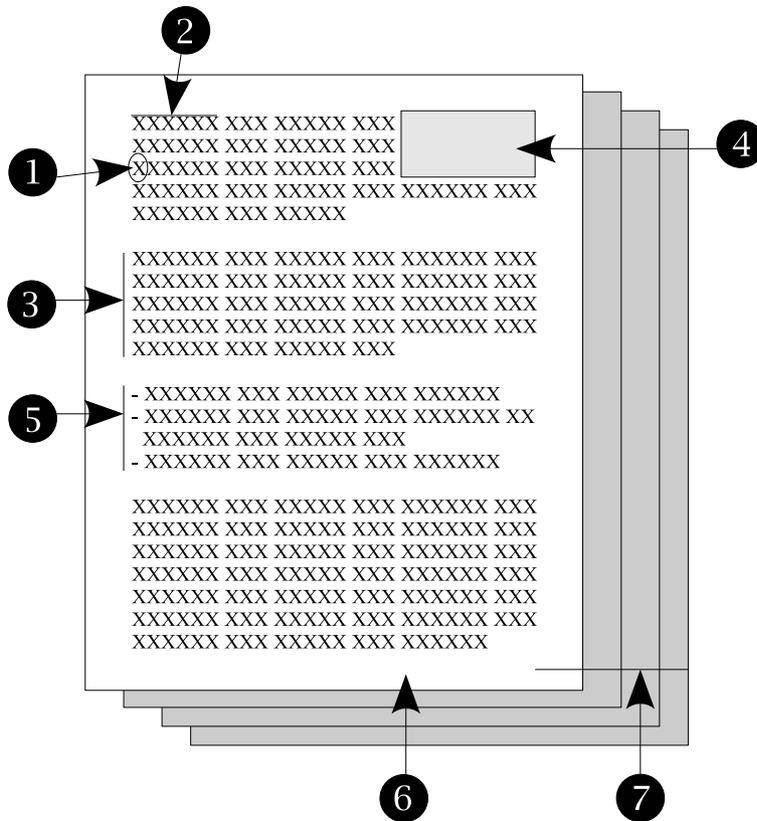
Change Character Formats

The most common character formats are available in the OpenOffice formatting toolbar.

☞ `Thorndale AMT ▾` Select a font from the pull-down menu
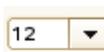
☞ `12 ▾` Select a font size from the pull-down menu

☞ **A** Enable/disable bold font weight

☞ *A* Enable/disable italic font

☞ A̲ Enable/disable underline

☞ **A** ▾ Select a font color from the pull-down menu

☞ **A** ▾ Select a background color from the pull-down menu

If you select `Format → Character` a dialog appears from which you can select more character formats within the tabs.

Here you can see a preview.
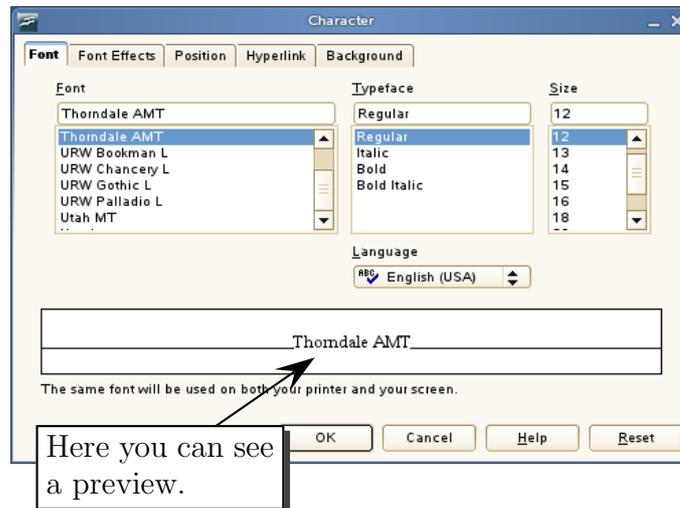
You can adjust the font properties before you start writing. You can also change the font properties of existing text by selecting the text first and then adjusting its font properties.

Exercise: Change Character Formats

Change the font in the file `loremipsum.odt` to Lucida Sans.

Change Paragraph Formats

Some formats refer to paragraphs and not to characters, e.g. alignment.

For the most important paragraph formats there are icons in the formatting toolbar available.

Default	– Style of the paragraph
	– The lines of the paragraph are aligned to the left
	– The lines of the paragraph are centered
	– The lines of the paragraph are right aligned
	– The lines of the paragraph are filled with whitespaces so that they build a block

	– Numbered list
	– Bullet list
	– Decrease indent
	– Increase indent
	– Select a background color from the pull-down menu

When you change a setting, it affects the paragraph in which the cursor is currently positioned.

For more detailed paragraph settings, activate `Format → Paragraph`. A dialog appears and you can specify indents, borders, and much more.
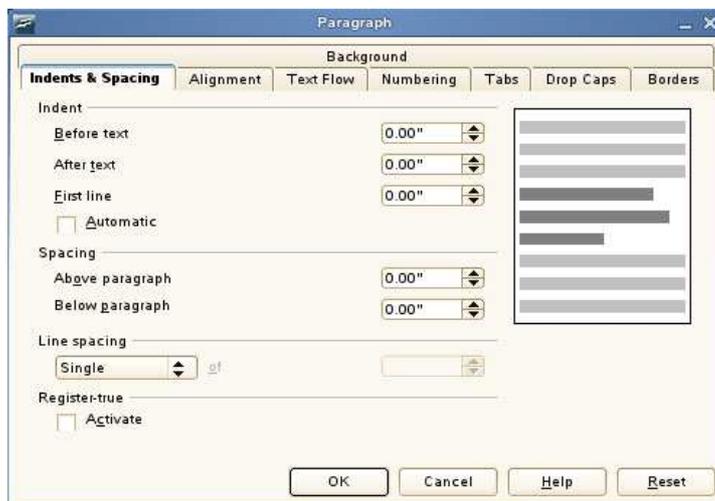
Use Lists

Lists are special kinds of paragraph formats. OpenOffice supports two different kinds of lists:

☞ Numbered Lists: In these lists, every item starts with a number.

☞ Bulleted Lists: In these lists, every item starts with a bullet point.

You can activate the List function using the list buttons or in the toolbar.

After you have activated the list function for a paragraph, a new item is inserted whenever you press the Enter key. To disable the list function, select the corresponding list button again.

You can change the way a list looks by selecting `Format → Bullets and Numbering`. In the Numbering/Bullets dialog that appears, select a numbering or bulleting scheme for your list.
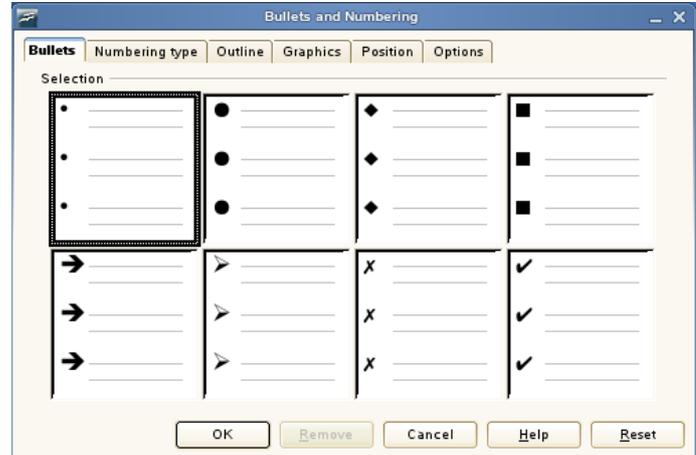
OpenOffice creates a list automatically if you start a new paragraph with `1.` (for a numbered list) and `-`, `*` or `+` (for a bullet list). You can deactivate this option by selecting `Tools → AutoCorrect → Options` and deactivating the option `Apply numbering - symbol:●`.

Use Tabs and Indents

One important paragraph formatting tool is tabs. You can use tabs to align text in columns. There are four types of tabs available.

Icon	Alignment	Example
∟	left	Duis te feugifacilisi. Lorem ipsum Duis autem dolor. Ut wisis enim ad minim veniam
⌐	right	Duis te feugifacilisi Lorem ipsum Duis autem dolor Ut wisis enim ad minim veniam
⊥	decimal	102.64 3.995 0.95343 647.55 88.0
⊥	center	Duis te feugifacilisi Lorem ipsum Duis autem dolor Ut wisis enim ad minim veniam

Here you can select the type of tab.
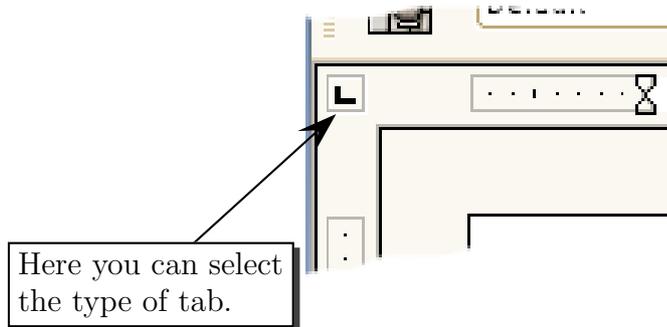
To set a tab perform the following two steps:

❶ Select the type of tab.

❷ Position the tab in the horizontal ruler.

In the text press $\boxed{\text{Tab}}$ to jump to the next tab stop.

> To delete a tab, select it with the mouse and release the mouse button when you are out of the horizontal ruler.

By default OpenOffice Writer sets a left alignment tab stop every 0.49". These tab stops are removed automatically if you set your own.

This is the mark for a default tab stop.
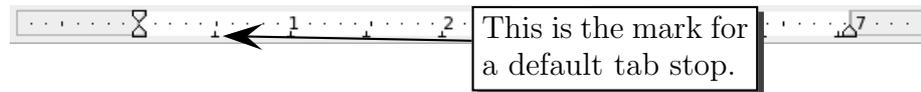
In the horizontal ruler there are some more icons:

❶ The first line indent:

The left indent of the first line of the paragraph.
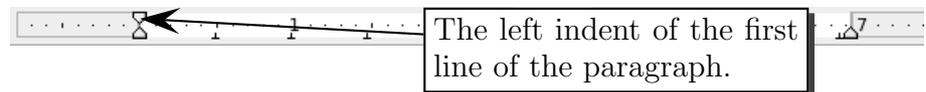
❷ The before text indent:

The left indent of the paragraph.
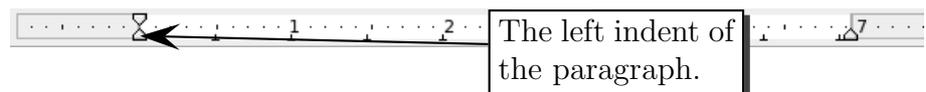
❸ The after text indent:

The right indent of the paragraph.
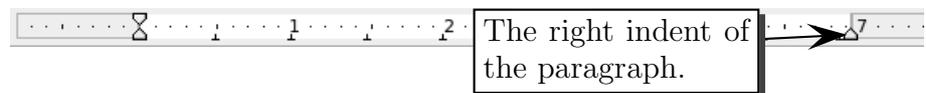
Use Defined Paragraph Styles
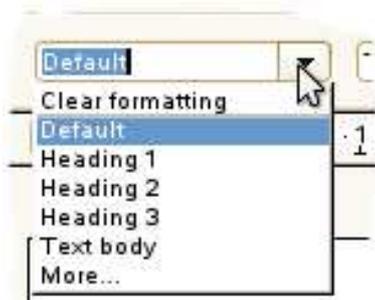
The leftmost pulldown menu in the formatting toolbar includes a list of predefined paragraph styles.

These styles include definitions for font, font size, typeface, indents, spacing, line spacing and more.

`Default` represents the default style. The other styles are based on the default style.

The heading style should be used for headings. `Heading 1` is the top level heading. `Heading 2` the second level heading and `Heading 3` the third level heading.

`Text body` should be used for the text body.

If you select `More` from the pulldown menu, the Stylist dialog appears. We will explore this dialog later.

Using styles for headings has a lot of advantages:

☞ You need only one mouse click to format headings.

☞ You do not need to keep in mind the font attributes of your headings.

☞ OpenOffice can use these styles to create a Table of Contents automatically.

✎ Exercise: Use Defined Paragraph Styles

Change two paragraphs of the file `loremipsum.odt` to `Default` and the first line to `Heading 1`.

Change Page Settings

When you are working with a text document, you will often need to modify the document's page setup. The most important page parameters that you can change in OpenOffice are listed below:

☞ Paper format   ☞ Page background

☞ Page margins   ☞ Page borders

☞ Headers and footers   ☞ Text columns

To change a page setting, select Format → Page. The Page Style dialog appears:
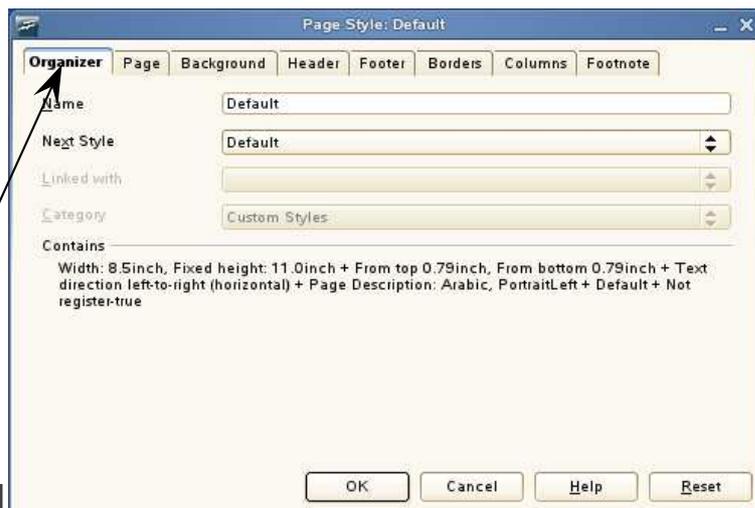
The dialog includes several tabs.

Use the Stylist

You can start the Stylist by selecting the very left icon in the formatting toolbar.
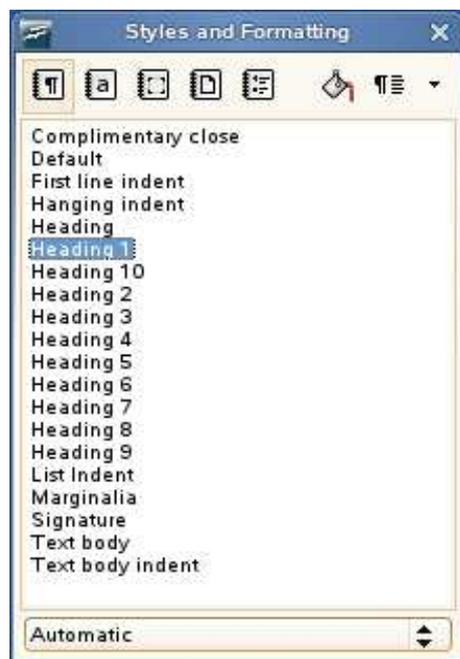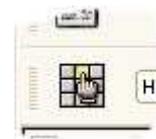
The Stylist shows all defined styles in a separate dialog. Use double-click to assign a style. The styles are grouped.

– Paragraph styles

– Character styles

– Frame styles

– Page styles

– List styles

Furthermore you can use the pulldown menu at the bottom of the dialog to filter the defined styles.

The fill icon ( ) can be used to "pour" the selected format into the text. Select the icon a second time to deactivate the fill mode.

The icon at the very right ( ) can be used to create new styles. Open the menu. You have three possibilities:

❶ `New Style from Selection.` Enter a name for a new style. The new style contains the formats of the selection in the text.
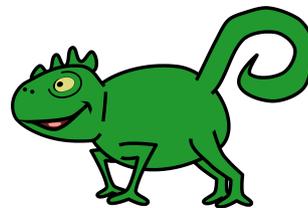
❷ `Update Style.` The formats of the selected style are overwritten with the formats of the selected text.

❸ `Load Styles.` Import a style from another template or file.

> Styles are stored in a template file. You can create a new template if you save a file as the file type `OpenDocument Text Template (.ott)`

☞ Exercise: Use the Stylist

Create a new paragraph style from a paragraph you changed the font to Lucida Sans. Label this style "Body Sans".

Change all paragraphs (except the heading) of the file `loremipsum.odt` to style "Body Sans".

☞ Exercise: Work with Text Documents

Create your private letterhead with your name, your address and your telephone number.

The default font should be Lucida Sans in size 14.

Save your template as `OpenDocument Text Template (.ott)`

3.2.6 Adjust the Zoom Factor

With the zoom factor, you can control the scale (100%, 75%, 150%, and so on) with which a document is displayed in the OpenOffice Writer window. For example, you might want to view the document layout on a different scale (50%) than the scale you would use to enter text (100%).

You can control the zoom factor in OpenOffice by opening the zoom menu in the toolbar.
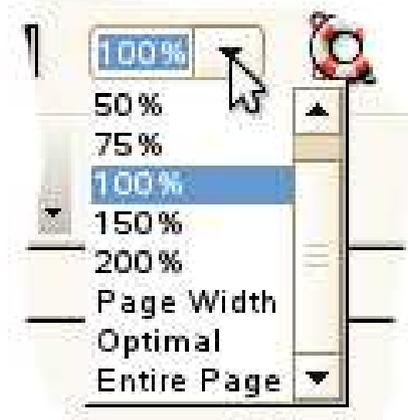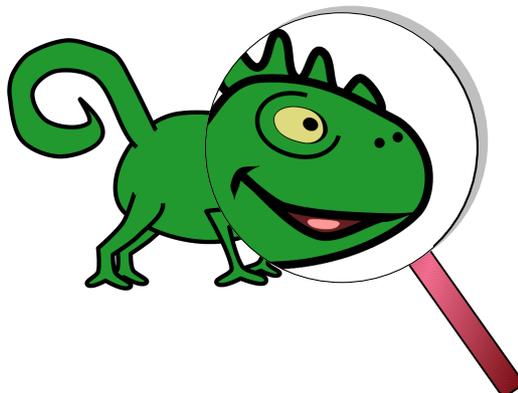
Alternatively, you can control the zoom factor by right-clicking on the status bar at the bottom of the program window.
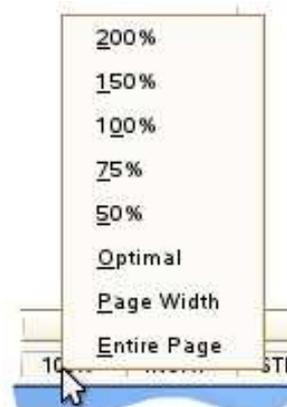
You can specify the zoom factor as a percent value (such as 150% or 75%) of the original size of the document, or you can select one of the automatic settings. The following settings are available:

`Optimal` – Adjusts the zoom factor automatically so that it's optimal for entering text.

`Page Width` – Adjusts the zoom factor so that you can see the whole width of a page.

`Entire Page` – Sets the zoom factor so that you can see the entire page. This setting is also useful when you want to check the layout of a page or several pages at one time.

3.2.7 Enable the Spell Checker

The spell checker in OpenOffice Writer helps you identify misspellings in your text documents.

You have two possibilities when using the spell checker:

❶ Activate the AutoSpellcheck icon in the toolbar.

When the spell checker is enabled, OpenOffice marks every misspelled word it finds, is underlined in red.
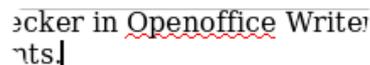
To fix a misspelled word in a document, right-click the word. The spell checker will suggest the correct form of the word in a pop-up menu. If you select the correctly spelled word in the pop-up menu, the misspelled word will automatically be replaced by the correct one.

❷ You can enable the spell checker by selecting `Tools → Spellcheck` or the Spellcheck icon in the toolbar.

A dialog appears:

Suggestions made by the spell checker.
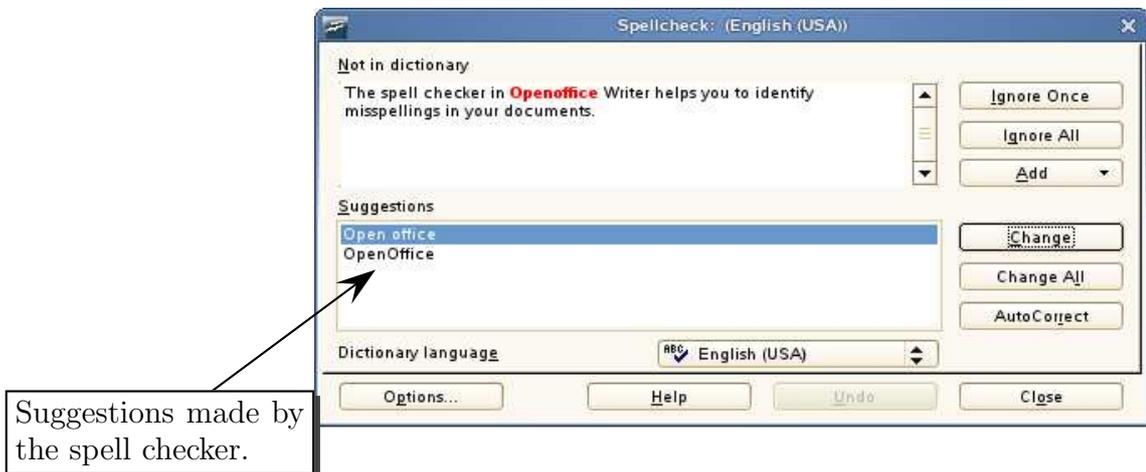
3.2.8 Insert Image Files

Writers often add image files to their text documents. To insert an image, select `Insert → Picture → From File`. The Insert Picture dialog appears. It allows you to select an image file from your hard disk.

Select this option for activating preview.
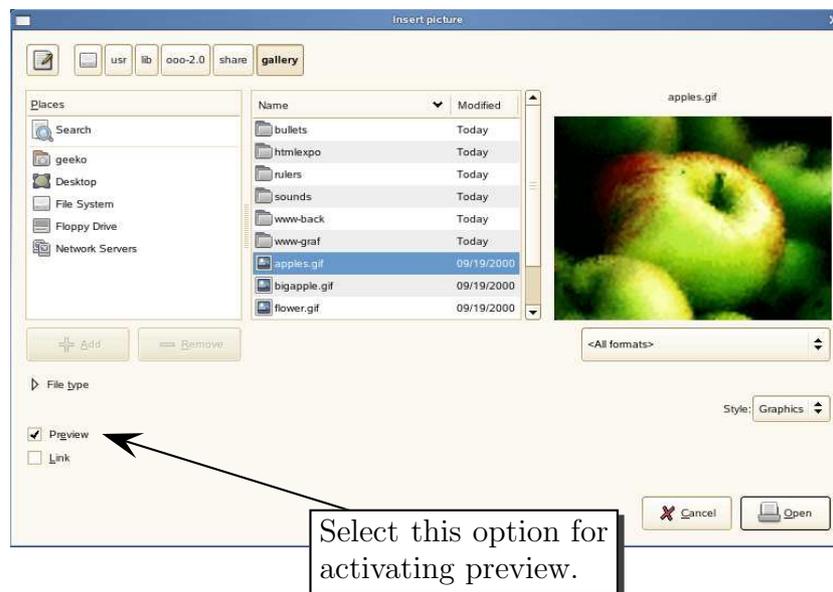
If you select the option `Link`, the graphic file itself is not included in the OpenOffice file. This is useful if the graphic file is very large. If you do not select `Link`, the graphic file will be included in the document. This allows you to share your document with other people.

After you select a file, click `Open`. The graphic will be inserted into the document. You can change the size of the image by selecting and moving the border of the image. Hold down the Shift key while resizing the image to ensure that the width-to-height ratio of the image is not changed.

After you have inserted an image file, you can determine how the image is integrated into your text document. For instance, you might want to change how the image is anchored to the page (where it appears on the page) and how the text flows around the image.

When you select an image with a left mouse click, green dots are displayed around the image. If you now right-click the selected image, a context menu appears. This menu allows you to configure several image settings. When you move the mouse over the Anchor entry, a sub-menu appears. It lists several options for anchoring the image on the page.
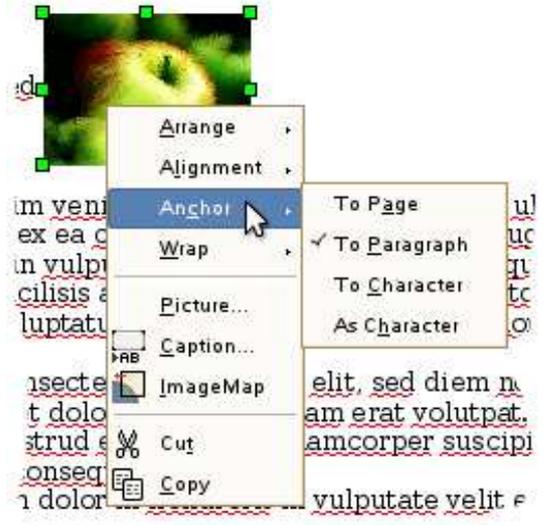
The anchoring options are explained below:

To Page   – Anchors the image to the current page. No matter what you do with the text on the page, the image stays on this page.

To Paragraph – Anchors the image to the current paragraph. When the paragraph is moved, the image moves, too. This is the default setting.

To Character – Anchors the image to the currently selected character.

As Character – Interrupts the text flow at the position where the image is inserted.

You can also configure how the text flows around the image. Right-click the image. Select `Wrap` from the pop-up menu that appears.
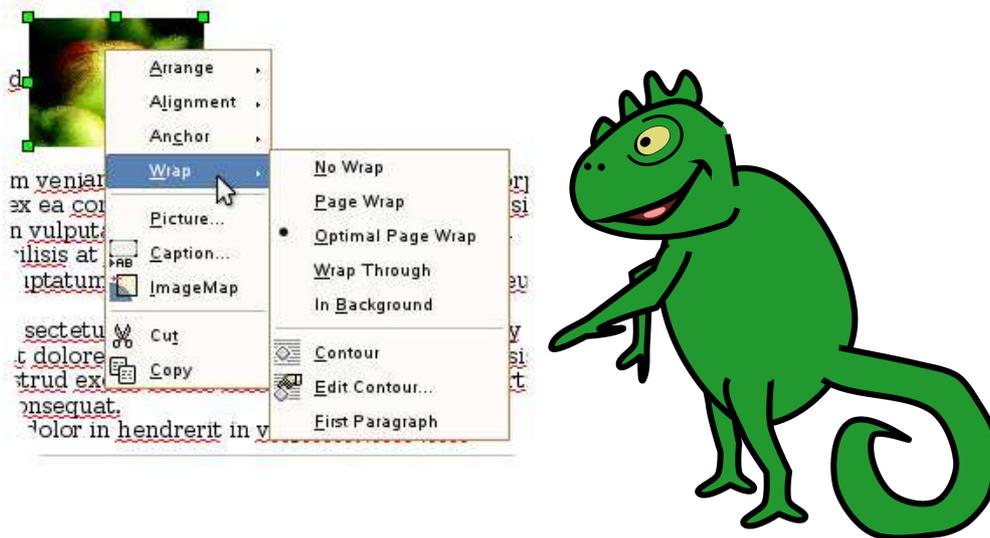
The Wrap options are explained below:

No Wrap
– The inserted image splits the text into two paragraphs (above and below the image). No text will appear to the left or right of the image.

Page Wrap
– The text flows around the image on the left and right sides.

Optimal Page Wrap
– Similar to Page Wrap, but OpenOffice decides how the text is wrapped.

Wrap Through
– The text continues behind the image and is not interrupted.

In Background
– The text flows over the image instead of behind the image.

Contour
– Trys to detect the contour for wrapping the text around the image.

Edit Contour
– Opens a dialog that allows you to define an exact contour for wrapping the text around the image.

First Paragraph
– Starts a new paragraph below the object after you press Enter .

3.2.9 Insert Tables

A table allows you to display information in a text document in a structured form. To insert a table in OpenOffice, select `Insert → Table`. The Insert Table dialog appears. It allows you to configure the table.
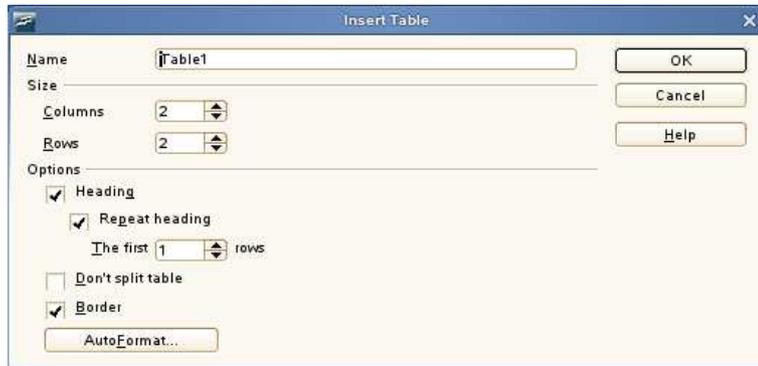
The `Columns` and `Rows` fields are the most important fields in this dialog. You can specify how large your table is going to be. After you have defined your table and selected [OK], the table is inserted into the document.
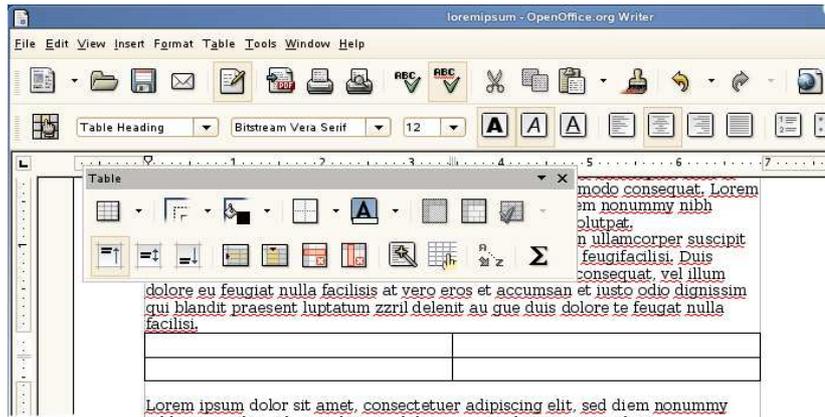
To add text to a table, you simply select a field and type in the text. You can format the text just as you would regular text in the document. If you right-click in a field, you can format the text in that field with the menu that appears.

To format more than one field at once, select multiple fields by clicking in one field and then moving the mouse over the table while holding down the left mouse button.

When you select a table or a cell in a table, a new toolbar appears.
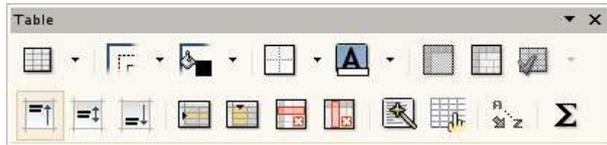
The most important tools are:

⊞ ▾	– Create new table	=↕	– Center cell content vertically
▯ ▾	– Style of the lines	=↓	– Align cell content at the bottom
▧ ▾	– Color of the lines		
⊡ ▾	– Borders	⊟	– Add new line
A ▾	– Background color	▤	– Add new column
⊞	– Split cell	⊟	– Remove line
=↑	– Align cell content at the top	▥	– Remove column
		▦	– Table properties

3.2.10 Embed Other Office Documents

To embed another OpenOffice document (e.g., an OpenOffice Draw image) in a text, select `Insert → Object → OLE Object`. The Insert OLE Object dialog appears. OLE is also a very old concept, and stands for Object Linking and Embedding. It asks you what kind of object you want to embed.
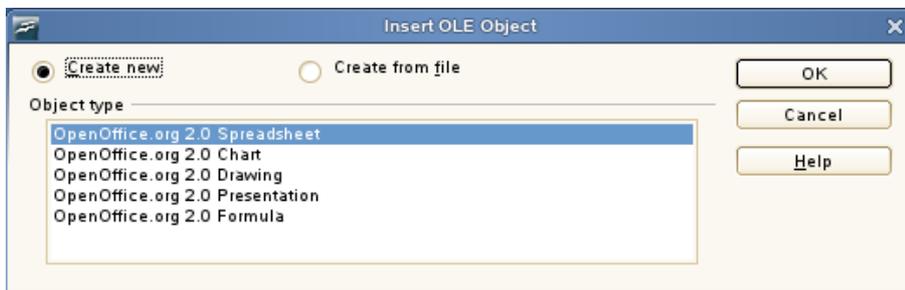
You can select `Create new` or `Create from file`. If you select the `Create from file` option, you can load and embed existing OpenOffice documents.

`Object type` lists the available object types corresponding to the documents that can be created with OpenOffice.

After you have embedded a document, you can edit the embedded document by double-clicking it.

3.2.11 Embed Table of Contents

If you use the styles Heading 1, Heading 2 and Heading 3 in your document, it is easy to let OpenOffice create a Table of Contents.

Select `Insert → Indexes and Tables → Indexes and Tables`.

Preview of the table of contents.
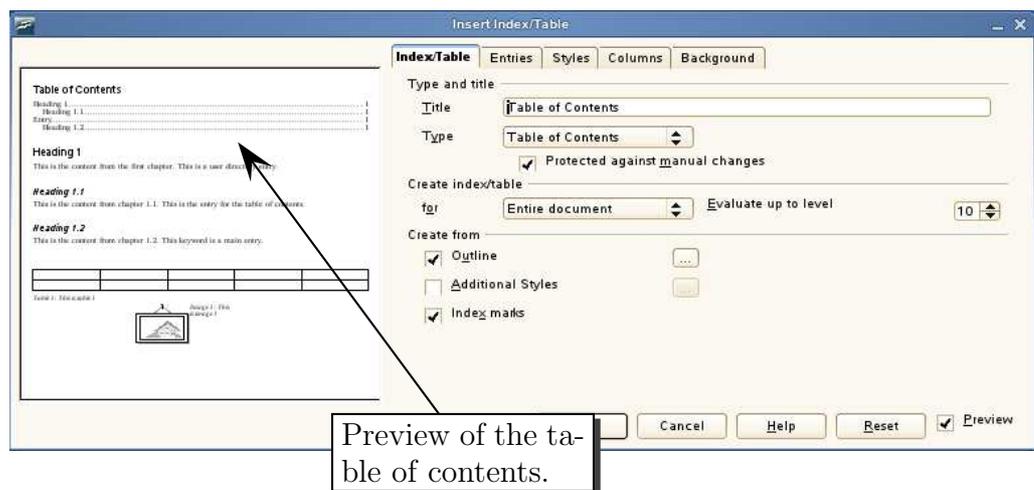
The dialog has five tabs:

`Index/Table` – From the `Type` pull-down menu you can select what type of index or table you want to create.

Entries – With `Structure` you can configure the structure of the entries for each level. The following abbreviations are used:

E# Chapter number

E Entry text

T Tab stop

Page number

LS Hyperlink

Use the five buttons below to change the structure. To delete an element press `Del`.

Styles – Select a paragraph style for each level.

Columns – If you want a more than one column layout for your table, you can select it here.

Background – Select the background color.

If you do not deactivate the option `Protected against manual changes` in the `Index/Table` tab, it is not possible to modify the Table of Contents manually.

The table of contents.
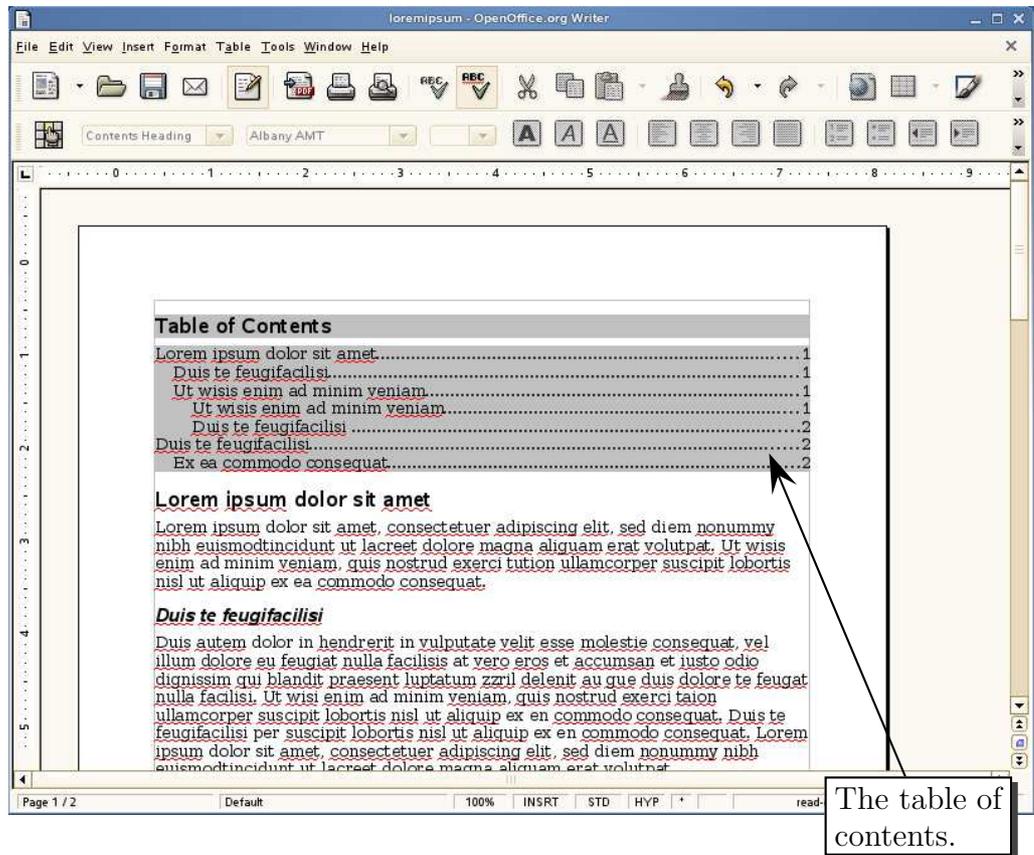
3.2.12 Print Text Documents

Learn About Basic Print Procedures

> Printing a text document in OpenOffice is simple. In some cases, however, you might need to change some printing options to get the results you want.
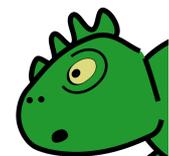
The basic procedure for printing a text document in OpenOffice is explained below:

❶ Save your document before you print it.

❷ Select `File → Print` from the menu bar. A Print dialog appears on the screen.
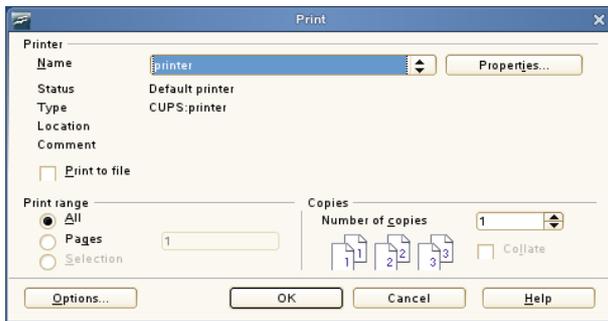
❸ You can change three different settings in the Print dialog:

☞ The `Printer` that will be used to print the document

☞ The `Print range` of pages that will be printed

☞ The `Number of copies` that will be printed

❹ Select `OK` to start the printing process.

The OpenOffice Print dialog lists the printers that are currently installed in your system.

Change Printer Properties

Depending on the printer model, you can adjust some printer settings in the OpenOffice Print dialog. Select `Properties...` on the Print dialog. The following is a list of the options that commonly appear on the Print dialog:

☞ `Paper size`. Which paper size (like U.S., Legal, or A4) the printer will be printing on.

☞ `Paper tray`. Which tray the printer should use as the paper source.

☞ `Scale`. Whether the document will be printed at 100% or in a reduced size.
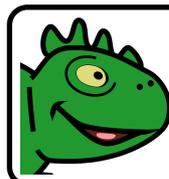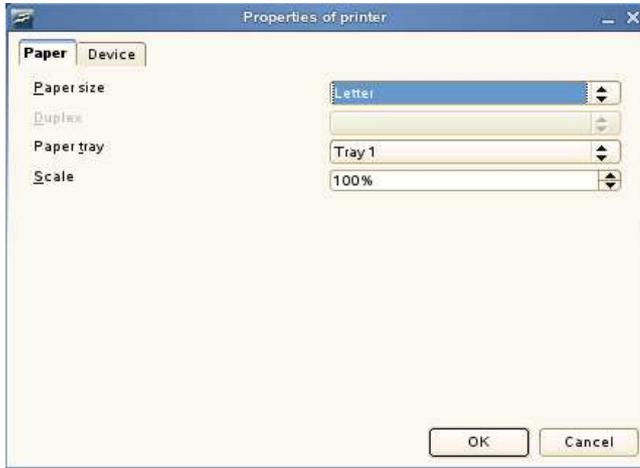
The options that you see depend on the printer that is installed in your system.

Use the Print Preview Feature

OpenOffice lets you preview your document before you print it, so you can see how it will look when it is actually printed on paper. To preview your current document, select `File → Page Preview`.
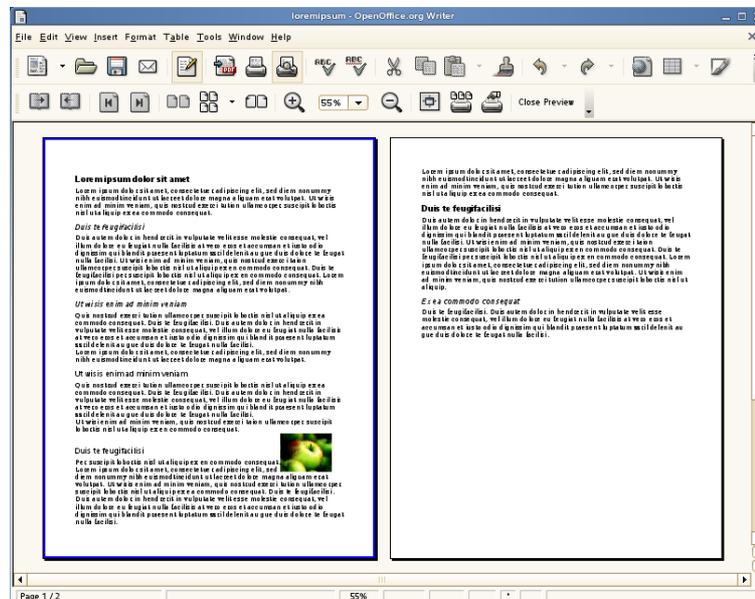
When you have finished previewing your document, select `Close Preview` from the preview toolbar again to return to the normal edit mode.

3.3 Work with Spreadsheets

A spreadsheet is basically a large table in which you can enter different kinds of data. This data can be text, numbers, prices, or anything else that can be processed by a computer. In spreadsheet programs like OpenOffice Calc, you can use formulas to process the data you have entered. This makes a spreadsheet program a very powerful tool for all kinds of data processing.

The following is an example of how a spreadsheet could help you in your daily work. Suppose you want to create a table about the whereabouts of your allowance. This table contains several positions.

Position	Price
Position 1	123.95
Position 2	93.45
Position 3	45.90
Position 4	23.50
Position 5	160.75

It sometimes makes sense to have a sum of all positions at the end of the table. In this example, you could add all positions manually and type in the sum at the bottom of the table. If you use a spreadsheet program, however, you can solve the problem in a more convenient way. Simply add a formula to the spreadsheet! The formula then sums up the positions and writes the result in the field at the bottom of the invoice.

Position	Price
Position 1	123.95
Position 2	93.45
Position 3	45.90
Position 4	23.50
Position 5	160.75
Sum:	447.55

Another advantage to using a spreadsheet: If you change one of the prices, the sum is automatically recalculated and adjusted.

3.3.1 Start OpenOffice Calc

You can start OpenOffice Calc by selecting `OpenOffice.org Calc` from the `Office` group in the Application Browser. After a while the Calc window appears on the screen.
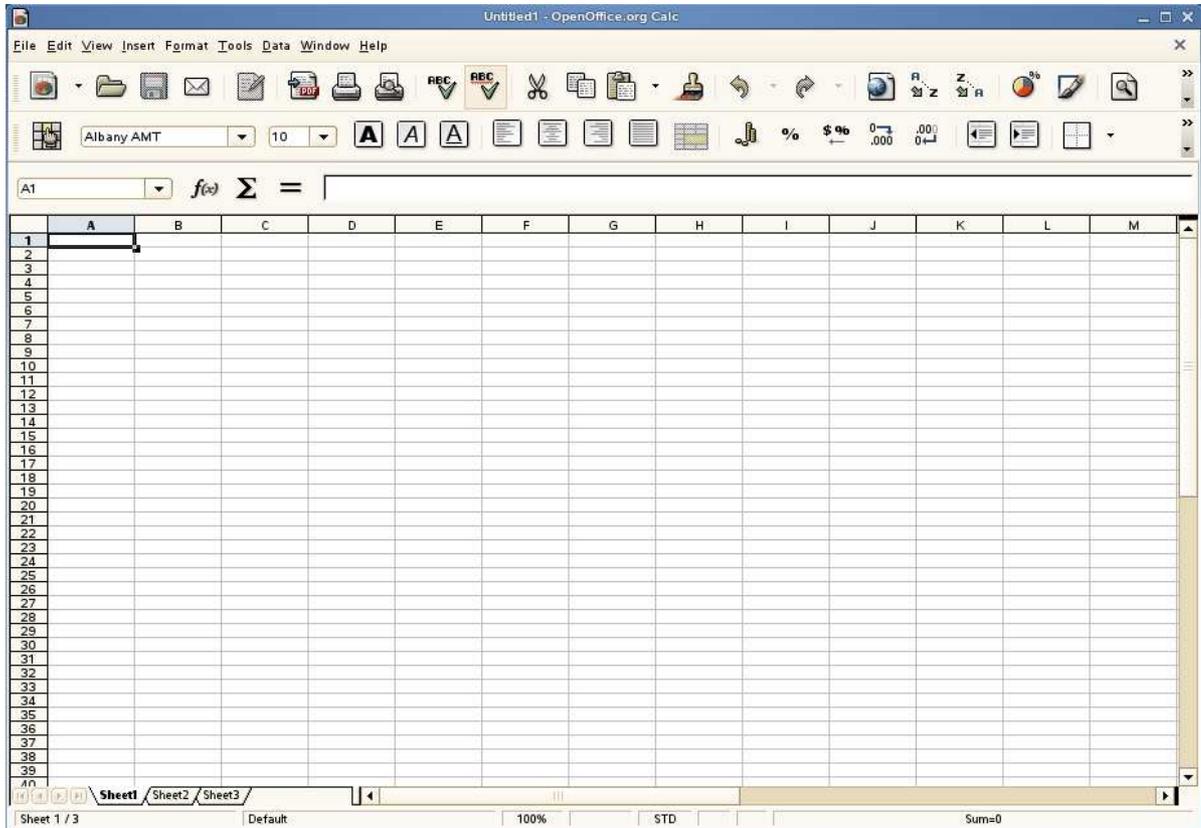
If you have already opened another OpenOffice window, you can select File → New → Spreadsheet from the menu bar in OpenOffice.

3.3.2 Work with Multiple Sheets in One Document

Each OpenOffice Calc document contains several spreadsheets. You can switch between these sheets using the spreadsheet tabs at the bottom of the Calc window.
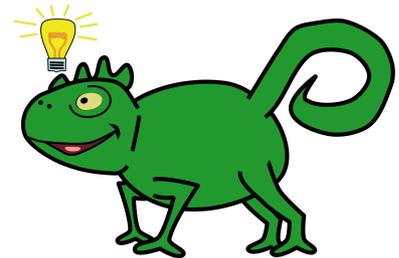
If you right-click a spreadsheet tab, the following menu appears:
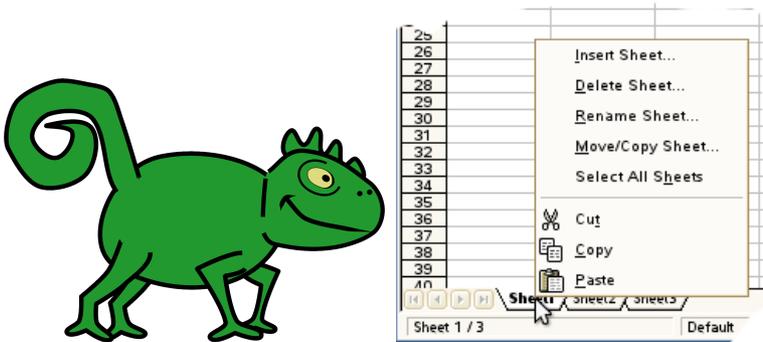
This menu allows you to complete the following tasks:

`Insert Sheet.` Adds a sheet to the current document. You can give the new sheet a name and decide whether it's inserted before or after the current sheet.

`Delete Sheet.` Removes the currently selected sheet from the document.

`Rename Sheet.` Allows you to rename the current sheet.

`Move/Copy Sheet.` Allows you to move the current sheet to a different position in the tab list.

`Select All Sheets.` Selects all sheets in the document. Then, any changes (like formatting changes) made to one sheet are also applied to all other sheets. To deselect a sheet, click on its tab while holding down the Ctrl key.

Save and Open Spreadsheet Files

OpenOffice Calc files use the .ods file name extension. To save a file, select `File → Save As`, `File → Save`, or ⊟. To open a file, select `File → Open` or 📂. The Open and Save dialogs in OpenOffice Calc are very similar to the dialogs in OpenOffice Writer.
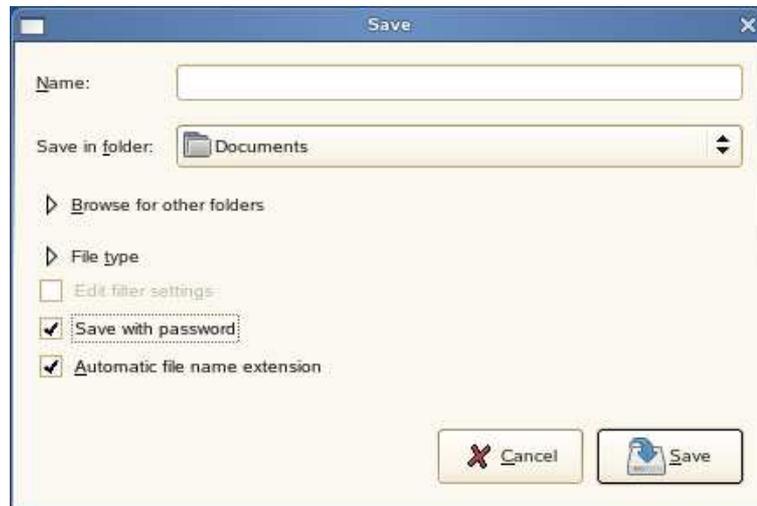
OpenOffice Calc can import and export Microsoft Excel files. Opening and saving these Excel files in OpenOffice Calc is simple. To export your OpenOffice Calc document, you simply select the Excel format in the Save As dialog.

When you create an Excel spreadsheet in OpenOffice Calc, you should always save one copy in the .ods format to make sure that all formatting is saved correctly.
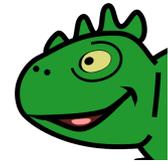
Use Your Excel Knowledge

If you have worked with other spreadsheet programs such as Microsoft Excel, you will see that the basic concepts are the same in OpenOffice Calc. With very few exceptions, Calc can do everything that Excel can do, but sometimes Calc accomplishes a task in a different manner. However, most of your knowledge about spreadsheets can be reused when working with OpenOffice Calc.

3.3.3 Enter and Format Data

Entering data into a spreadsheet is easy. Simply select a cell with a single click and start typing data. The data you are typing appears on the screen

in two locations: in the cell itself and in the formula input line above the spreadsheet.

Select this button to accept your input.
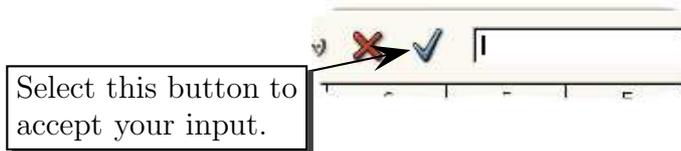
Attention! Calc distinguishes cell content between two data types: numbers and text. With numbers Calc is able to compute. With texts not. Using number formats you can append characters to a number (e.g., a currency sign).

You can format the data using the Format bar of OpenOffice Calc.

The options in the Format bar are similar to those in OpenOffice Writer. The options include font family, font size and face, and alignment of the data in the spreadsheet cell.

Some new icons are introduced here:

– Merges the selected cells to one cell

– Adds the default currency symbol behind a number

– Adds a percent symbol behind a number

– Resets to the default number format

– Adds a decimal place to a number

– Removes a decimal place

– Specifies the border for the selected cell(s)

– Specifies the background color for the selected cell(s)

– Specifies the font color for the selected cell(s)

When the data is too large for a cell, you can adjust the width of the column by selecting the right column border in the column header and moving the border while holding down the mouse button.

Select this line to resize column A.
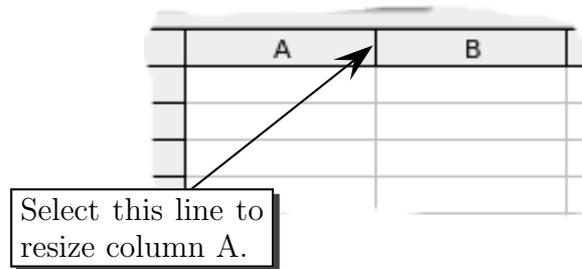
Resizing rows works in the same way: select the lower line border in the line header.

You can access advanced cell formatting options by right-clicking a cell. Select **Format Cells** in the pop-up menu that appears to access several advanced formatting options. (You can format more than one cell at a time by marking multiple cells.) Alternatively you can select **Format → Cells**.
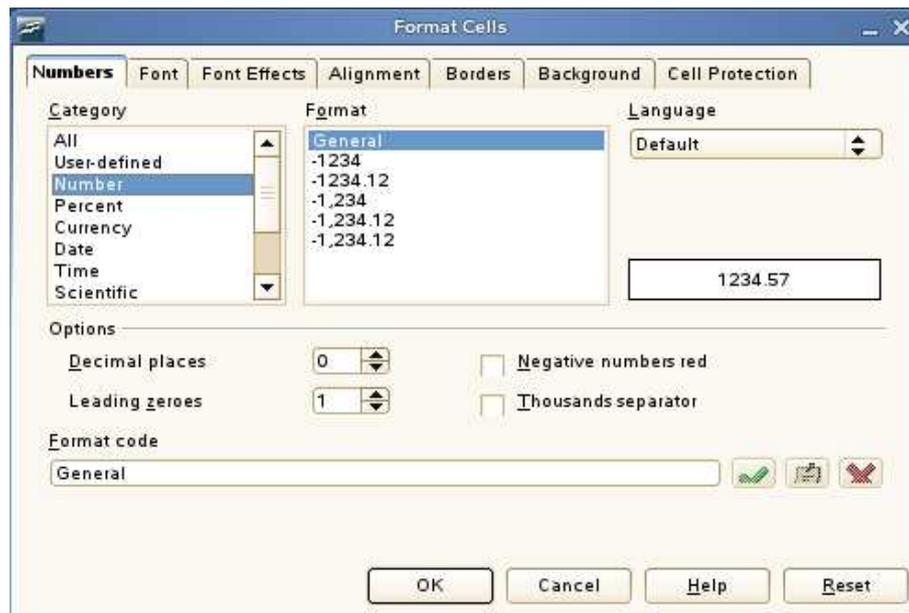
To edit the existing content of a cell, double-click the cell. Then you can position a cursor in the cell and make your changes. Instead of double-clicking the cell, you can just select the cell and then edit its content in the input line.

Adjust Data Types

> An advantage of defining the data types correctly is that OpenOffice can format the data correctly. In the example, the price is displayed without a currency symbol such as "$" or the Euro symbol, so you don't have enough information.

To format the cell containing prices, right-click the cell and select Format Cells. The Format Cells dialog appears:

Here you can see a preview.
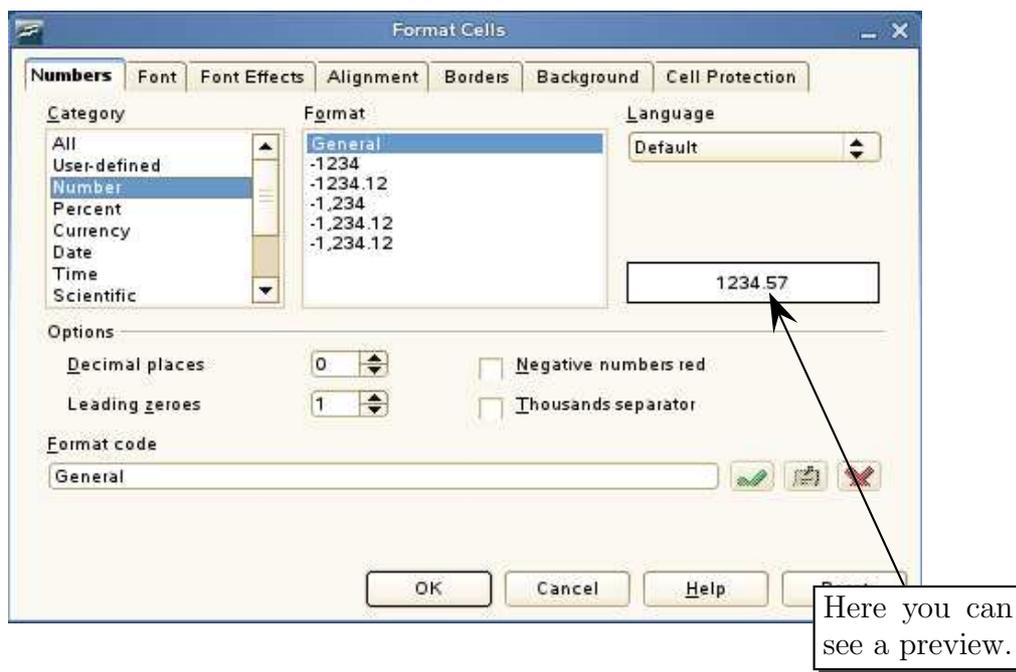
To configure the data type that will appear in the selected cell, make sure the `Numbers` tab of the dialog is selected.

You can select a data type from the `Category` list of data types in the upper left corner of the dialog.

Under `Format`, you can select the format of the selected data type.

As with all formatting, you can apply the data type to more than one cell at a time by selecting multiple cells before starting the Format Cells dialog.

✍ **Exercise: Enter and Format Data**

Create a spreadsheet containing your school time table and class schedule. Use different fonts, alignments, borders and colors.
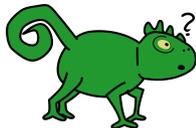
3.3.4 Work with Formulas

Address Spreadsheet Cells

To work with data in a spreadsheet, you must be able to refer to a particular cell in the spreadsheet. If you could not specify a particular cell, how could you enter a formula which says, "Take the values from cells x and y and write the sum in cell z"?

Spreadsheet programs identify each column with a letter and each row with a number. Each cell can therefore be identified by a letter/number combination. The cell B2, for example, is in column B and row 2.
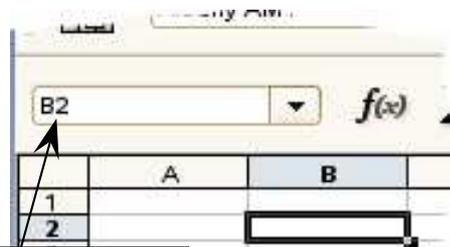
Here the address of the selected cell(s) is shown.

Understand the Formula Syntax

A formula can basically be seen as a box that processes input from other cells and displays the result. OpenOffice Calc provides many different kinds of formulas for all kinds of data processing. Each formula has

a unique name. For example, the formula that sums up the values of multiple cells is called "SUM".

To use a formula, you must first select a cell to which the result of the formula can be written.

Then you can start defining the formula with =*formula_name*. In the example, this would be =SUM.

Each formula needs to be told which cells should be processed. You need to identify the parameter(s) of the formula. In the example, the SUM formula needs to know which cells it should sum up. The parameters are added to the formula in parentheses after the formula name.

In the example, the SUM function needs to know which cells contain the information that is to be summed up. One way to provide this information is to type each cell address, followed by a semicolon.

=SUM(A2;A3;A4;A5;A6)

This formula would sum up the cells A2, A3, A4, A5, and A6. If the input cells are numbered sequentially, you can specify them using the ":" character.

=SUM(A2:A6)

The =SUM(A2:A6) formula will sum up the values in cells A2 to A6. After you have entered the formula, press Enter to display the result in the target cell.
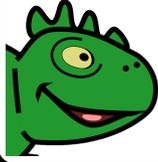
SUM is one of the most common formulas. Therefore, there is a icon for SUM on the left of the formula input line. Select **Σ** and then you can select the cells using the mouse.
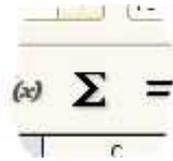
Use Basic Arithmetic

Instead of using pre-defined formulas such as SUM, you can use basic mathematical operators ("+", "–", "/", and "*") in a spreadsheet. The following list explains how to use these operators:

☞ `+`. Adds two cell values. For example: `=D6+F8`

☞ `-`. Subtracts one cell value from another. For example: `=E4-F5`

☞ `/`. Divides two cell values. For example: `=A3/D4`

☞ `*`. Multiplies two cell values. For example: `=F5*F6`

You can also combine multiple operators in one expression. For example, you could specify `=C7+C8/F6`.

Be aware that OpenOffice processes division and multiplication operations before addition and subtraction operations. Thus, if you specified `=C7+C8/F6`, C8 would be divided by F6 and the result would then be added to C7.
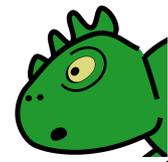
You can use parentheses to change the order in which operators are processed. The operations inside the parentheses are processed first, and thereafter the operators outside the parentheses are processed. For example, if you specified `=(C7+C8)/F6`, C7 and C8 would be added first and the result would then be divided by F6.

Use the Functions AutoPilot

OpenOffice Calc provides hundreds of formulas for all kinds of purposes. If you have used other spreadsheet programs, you should not have any problems using the formulas in Calc. OpenOffice Calc provides a Function Wizard to help you browse and use the available formulas.
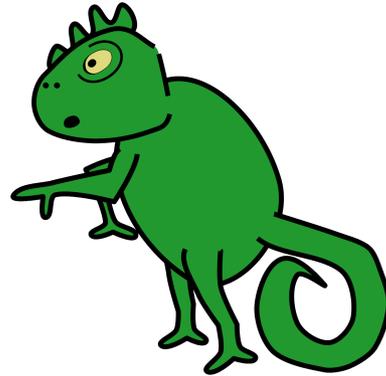
To use the Function Wizard, select the target cell for the function; then select $f(x)$ in the tool bar.

You can pick a formula from the `Functions` tab on the left side of the dialog. First, you can choose a category from the `Category` drop-down menu to narrow the formula search, or you can browse all available formulas by selecting `All`.
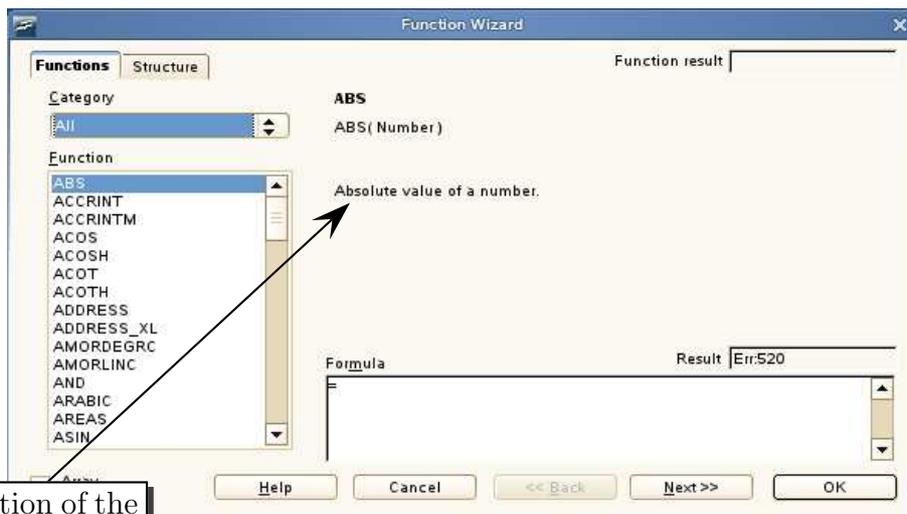
A description of the selected function is displayed here.

If you select `Next >>` or double-click a function, the AutoPilot shows you input fields for parameters that can be used with the selected formula.

The input fields for the selected function.
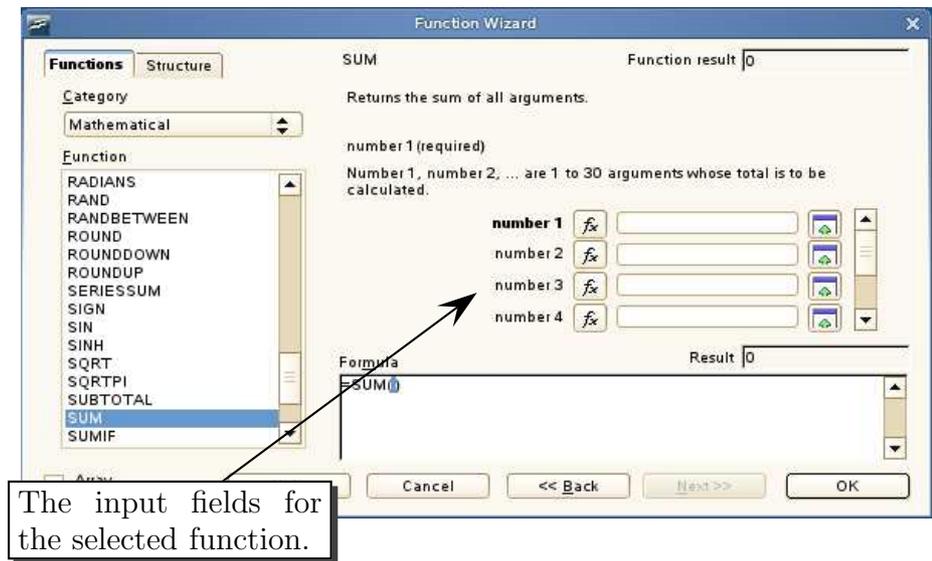
You can fill in the fields manually or you can select areas in the spreadsheet. To get more space on the screen, you can select ⬆ to shrink the Function Wizard dialog.
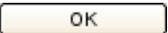
When you select [OK], the formula is inserted into the spreadsheet.

☞ Exercise: Work with Formulas

Ask your parents for the receipt of their last shopping trip, or think of the things you need to buy when you go to the store the next time. Rebuild the receipt in OpenOffice Calc. The sum and the taxes should be computed using Calc formulas.

3.3.5 Create Charts

OpenOffice Calc also helps you with creating charts. For this, you need the information in a simple table.

Select the cells of the table.If you want you can select the table including the labels of the rows and columns.

Select `Insert → Chart` from the menu or ⬤ from the toolbar.

The mouse pointer changes and you can draw a rectangle, that will include the chart when you finish using the wizard. After releasing the mouse pointer, a chart wizard appears.
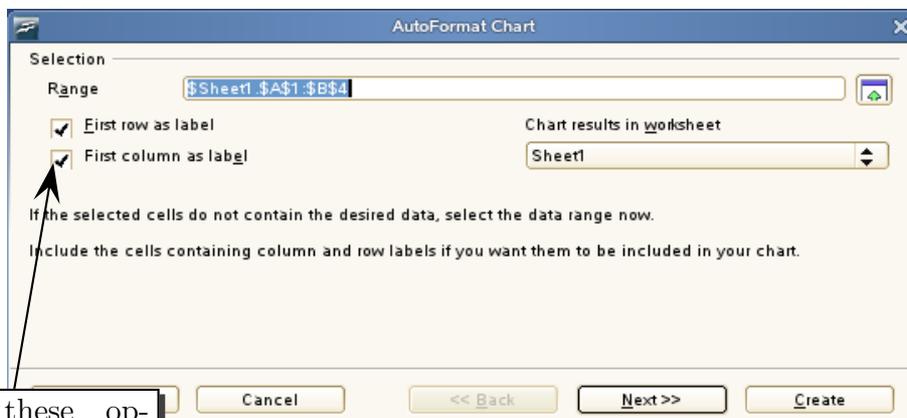
Deselect these options if you have not selected any labels.

Normally, the `Range` of cells is taken from your selection correctly and you can select [Next >>].

In the next dialog you can select the type of your chart.
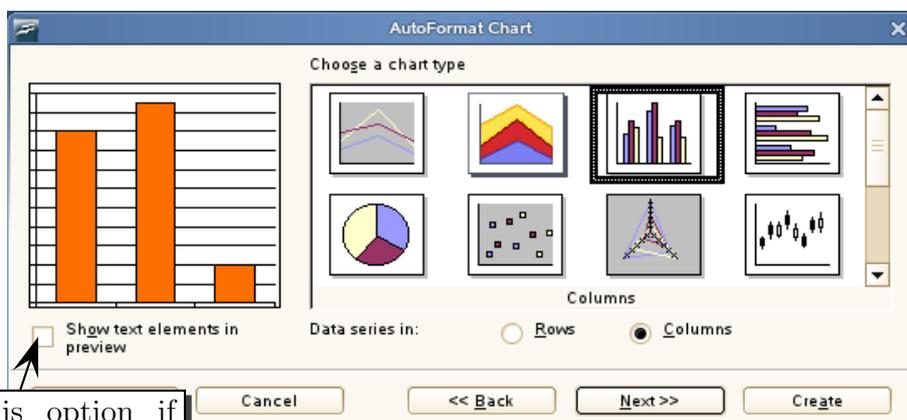
Activate this option if you want to see text elements in the preview.

Depending on the kind of data, not all type of charts make sense for charting all kinds of data.

 Lines

 Areas

 Columns

 Bars

 Pies

 XY Chart

 Net

 Stock Chart
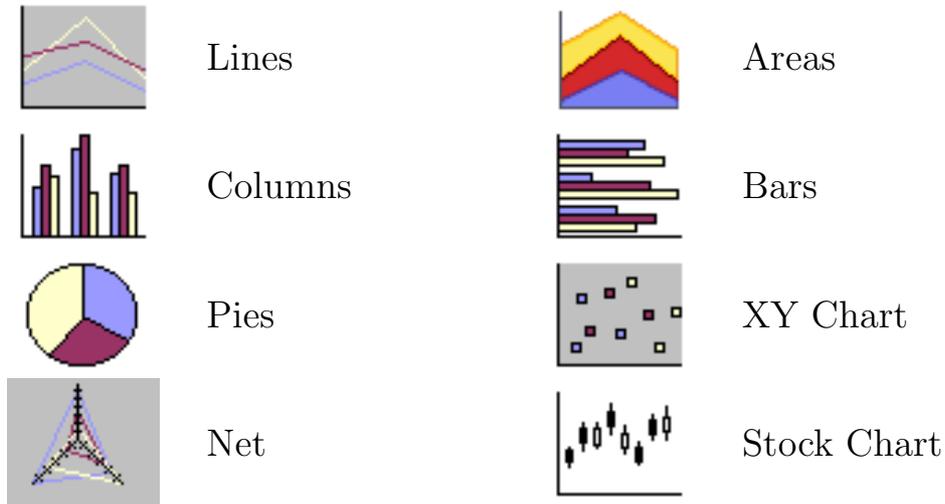
Very important in the dialog is also the option, whether the data series are in `Rows` or `Columns`.

In the next dialog you can select a variant of the selected chart type. Here you also can add grid lines.
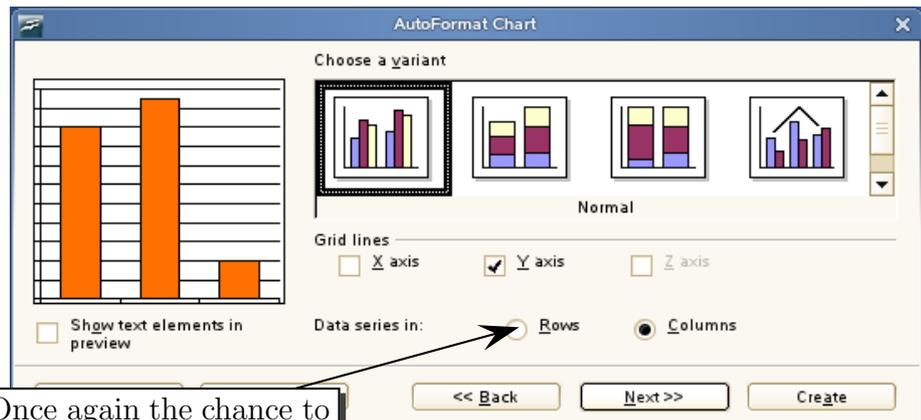
Once again the chance to select whether data series are in `Rows` or `Columns`.

In the last dialog you can enter a chart title and axis titles.
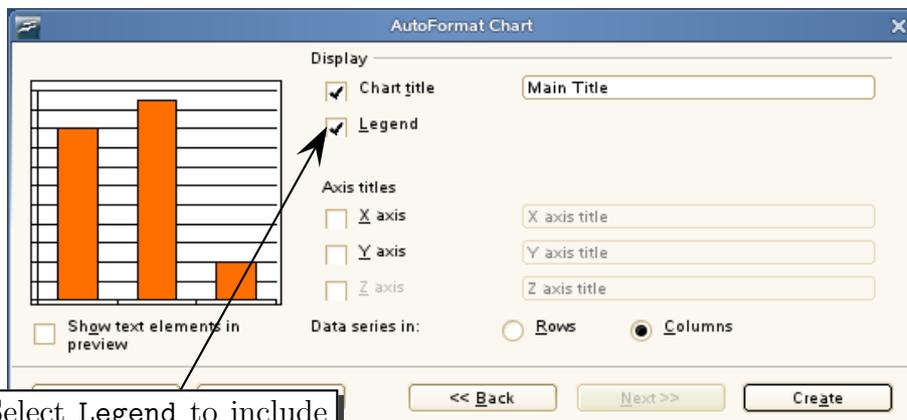
Select [Create] to create the chart.
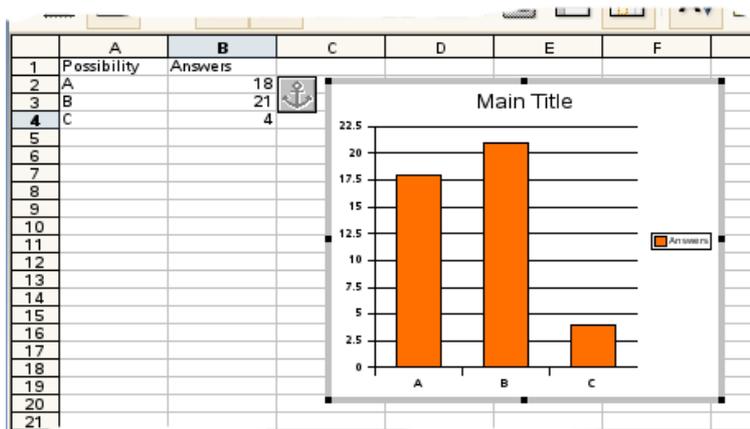
You can move and resize the chart after you select it. It is also possible to change the colors if you double-click the chart.

✍ Exercise: Create Charts

Look in your school reports for your grades in mathematics over the last few years.

Create a small spreadsheet with a chart that shows your progress in mathematics.

3.3.6 Print Spreadsheets

Understand the Basic Printing Procedure

Printing a spreadsheet is very similar to printing a text document. Select `File → Print`. A Print dialog appears.
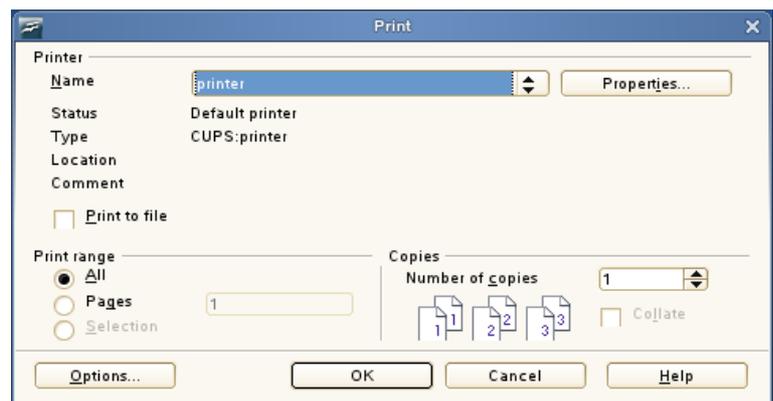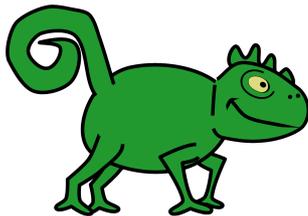
In the Print dialog, you can choose a Printer, specify the Print range (how much of the document you want to be printed), and select the Number of copies to be printed. When you click ⌈ OK ⌉, you actually send the print job to the printer.

Adjust the Page Settings

By adjusting the page settings, you can control exactly how your spreadsheet is printed. To adjust page settings, select `Format → Page`. The Page Style dialog appears.
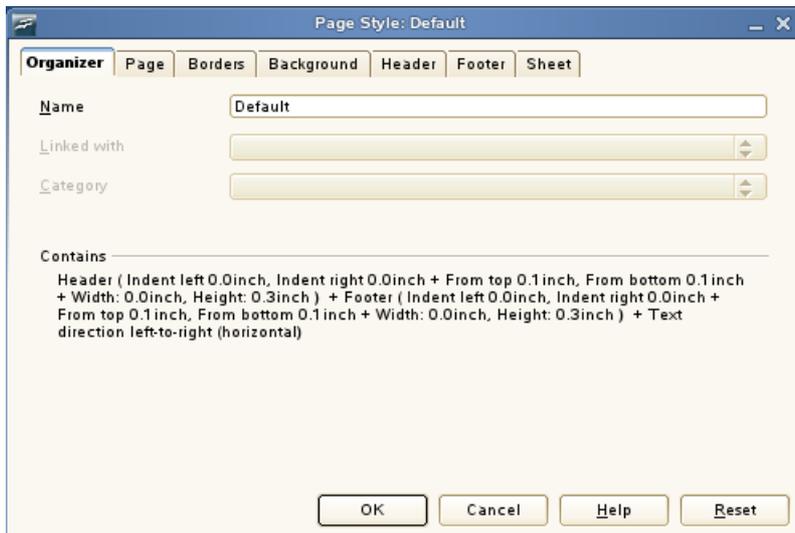
The most important options affecting the printing of a spreadsheet can be found on the `Page` tab of the dialog. Here you can configure the paper format, the paper margins, and some common layout settings.
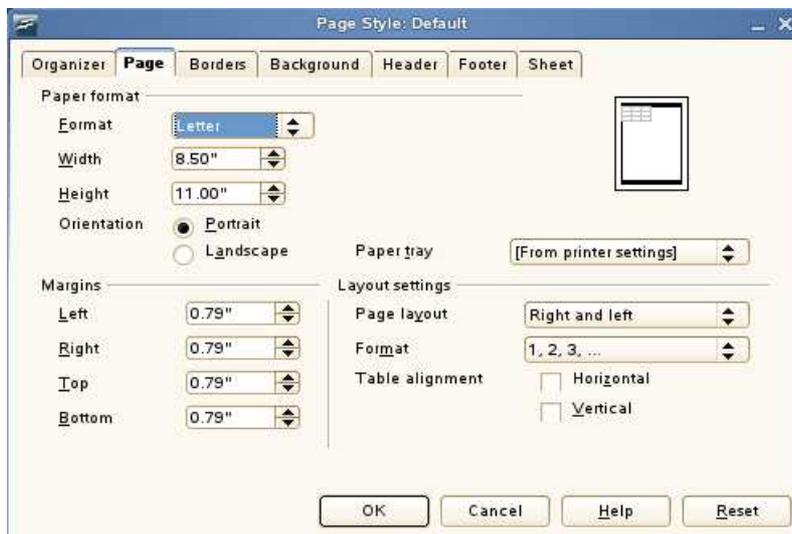
Other printing options can be found on the `Sheet` tab.
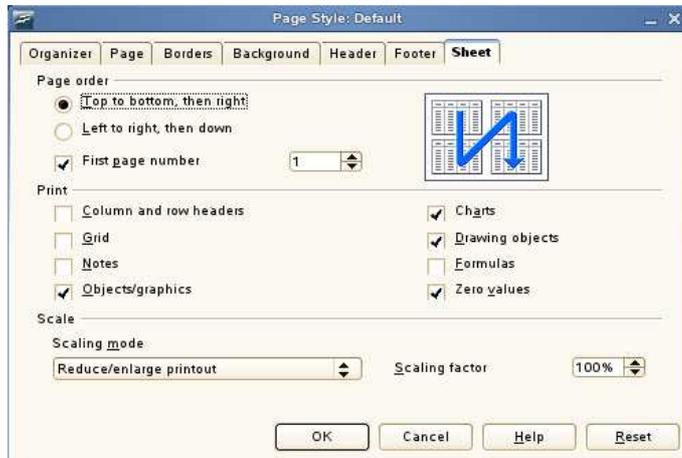
The dialog offers options in three different groups:

Page order. Here you can specify how the spreadsheet is printed when it does not fit on one page. The Top to bottom, then right option prints vertically from the top to the bottom. The Left to right, then down option prints first from left to right. The graphics on the dialog help illustrate the settings.

Print. Here you can control which elements of the spreadsheet should be printed in addition to the content of the sheet.

Scale. This option lets you control how the spreadsheet is scaled to fit on the paper. You can either adjust a percentage value to reduce or enlarge the printout, or you can specify the number of pages which should be used for the printout.

3.3.7 Create Serial Letters

Using serial letters you can send one letter to different people. The names and addresses are inserted automatically.

Before you can create a serial letter in OpenOffice Writer you need a source for the input data. This could be a Calc table or a database, for example.

To show how to create a serial letter, we use a simple table that only contains a few names.

	A	B
1	Last Name	First Name
2	Chameleon	Geeko
3	Penguin	Tux
4	Bailey	Kate
5	Torvalds	Linus

When finished with your table you can save it and close OpenOffice Calc.

Start OpenOffice Writer and write your letter. Sometimes you will come to the position where the names should be set in. You have to insert a field. Select `Insert → Fields Other` and activate the `Database` tab.

To add your Calc table to the available databases, select `Browse...`. Now you can select the Calc file you created before.

The file should be added to the `Database selection` list.

Select `Mail merge fields` in the `Type` list and open the tree of your file in the `Database selection` list.
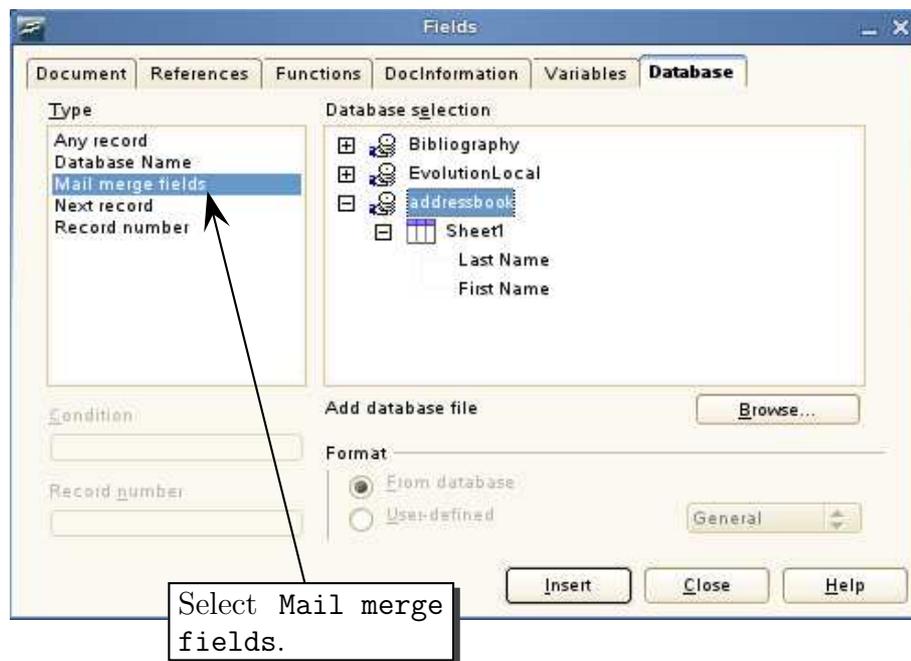
Select `Mail merge fields`.

The column heads should be shown in the tree like in the previous screen shot.

Now you can select the field, you want to insert. Select [Insert].

To: <First Name> <Last Name>
Dear <First Name>

The fields are shown in the letter with brackets and grey background.

If you select `File → Print` a message appears.

If you select [Yes] the Mail Merge dialog appears.
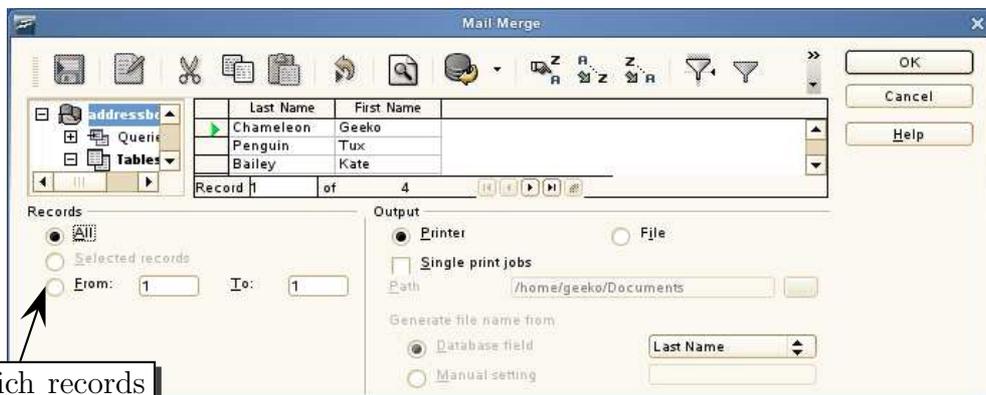
Select which records you want to print.

Select [OK] to print the serial letter for the selected records.

☞ Exercise: Create Serial Letters

Write an invitation to your next birthday party. This invitation should be a serial letter to ten of your friends. Include the following information in your serial letter:

- ☞ Last Name
- ☞ First Name
- ☞ Street
- ☞ City
- ☞ ZIP Code
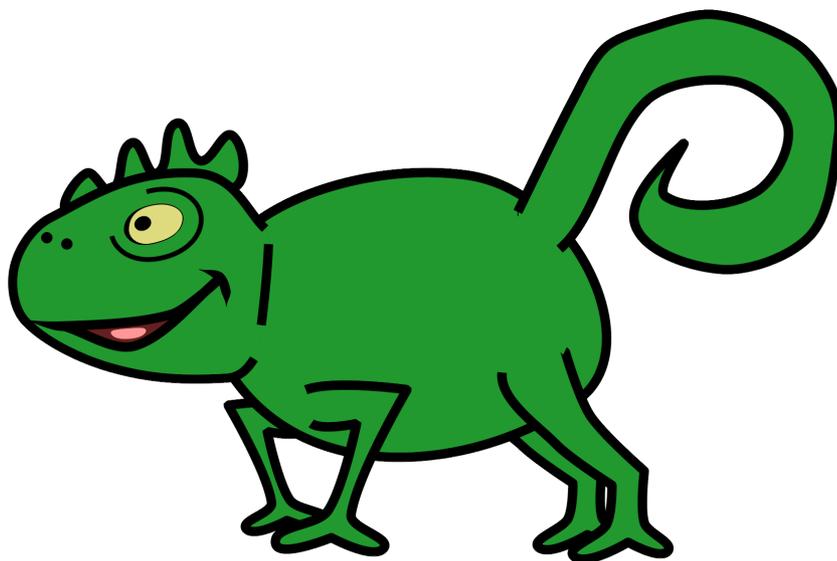
3.4 Create Formulas using Math

OpenOffice Math is an easy tool to help you write formulas. You can start the tool in two ways:

❶ Select `Insert → Object → Formula` from the menu of an OpenOffice component.
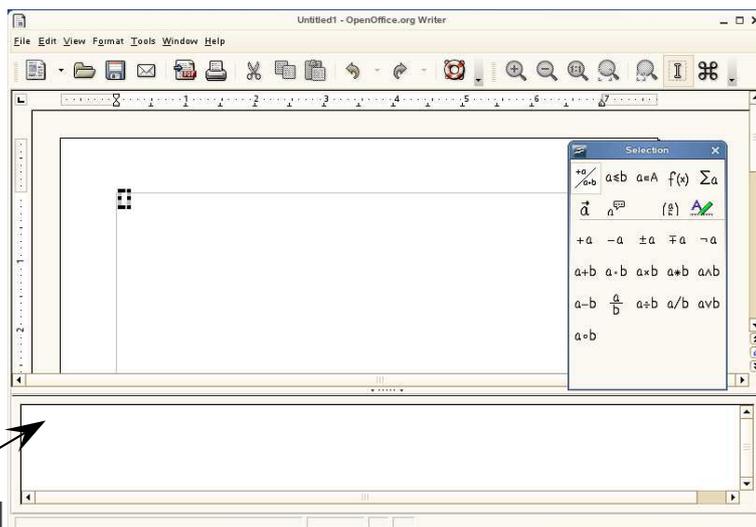
In this frame you create the formula.

❷ By searching in the main menu. (OpenOffice Math does not have an icon in the Application Browser by default.)
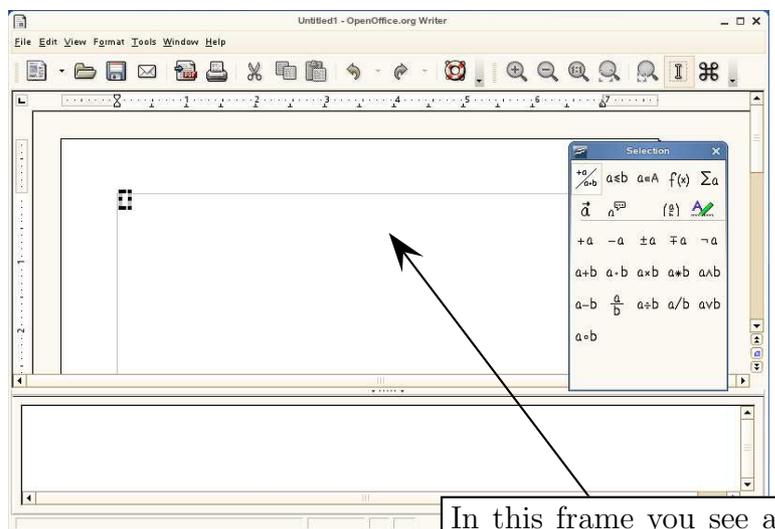
In this frame you see a preview of the formula.

The Selection window is devided into two parts.

☞ The top part shows eight icons of mathematical categories:

$\dfrac{+a}{a \cdot b}$ – Unary/Binary operators

$a \leqslant b$ – Relations

$a \in A$ – Set operators

$f(x)$ – Functions

Σa – Operators

$\vec{a}$ – Attributes

$a^{\Box}$ – Others

$\left(\frac{a}{b} \right)$ – Brackets

A – Formats

☞ The items of a category are shown in the bottom part of the window.

Selecting one of the items inserts a symbol or a command in the lower frame. This symbol or command represents the selected operation.

E.g., $\frac{a}{b}$ from the $\dfrac{+a}{a \cdot b}$ category, inserts `<?> over <?>`

Replace the `<?>` with numbers, variable names, other operators or expressions.

To refresh the preview manually click the frame once with your mouse.

If you know the symbols or commands, you can enter them directly into the lower frame.

To group parts of the formula, use curly brackets $\{\ldots\}$. For example, the formula `a + b over 2` creates:

$$a + \frac{b}{2}$$

To get the formula

$$\frac{a+b}{2}$$

you have to group $\{$`a + b`$\}$. The text of the formula should look like this: $\{$`a + b`$\}$ `over 2`

If you need greek symbols, select `Tools` $\rightarrow$ `Catalog`.
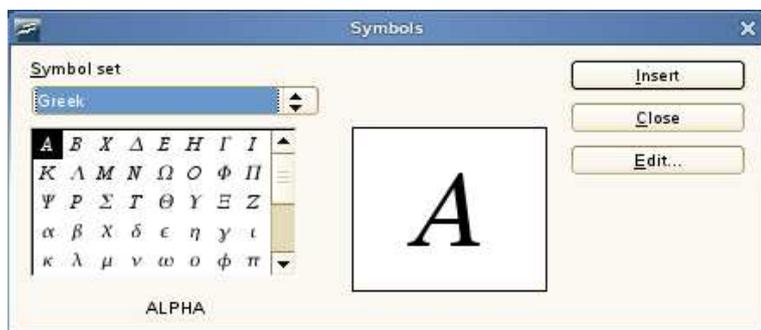
You can save a formula as an .odf file and include it in other OpenOffice documents.

Exercise: Create Formulas using Math
Build the following formulas:

☞ $$\frac{\dfrac{a}{x-y} + \dfrac{b}{x+y}}{1 + \dfrac{a-b}{a+b}}$$

☞ $$\sqrt[n]{\frac{x^n - y^n}{1 + u^{2n}}}$$

☞ $$\cos\left(\frac{\pi}{2} z^2\right)$$

3.5 Work with Presentations

You can use a presentation program to prepare electronic presentations. These presentations can be displayed on a computer screen or projected on a large screen using a video projector. You can also print your presentations on paper or transparencies.

OpenOffice Impress is similar to Microsoft PowerPoint, another commonly used presentation program. If you have worked with Power-Point before, you can use a lot of your Power-Point skills and knowledge when working with OpenOffice Impress.
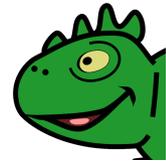
Presentation files in OpenOffice Impress are saved as .odp files. Impress can also import and export PowerPoint files.

To save a presentation file, select `File → Save`. You should save your presentation files frequently so you can avoid losing too much data if the program crashes.

3.5.1 Start OpenOffice Impress

To start OpenOffice Impress, select `OpenOffice.org Impress` from the `Office` group in the Application Browser. After a moment, the Presentation Wizard dialog appears.

You can choose from the following Type options:

☞ `Empty presentation.` Creates a new blank presentation.

☞ `From template.` Creates a new presentation based on a template. (OpenOffice Impress comes with two sample templates.)

☞ `Open existing presentation.` Lets you open an existing presentation from a file.

To begin creating a new presentation, select the `Empty presentation` option or the From template option. Then select ⸢ Next >> ⸥.

Now you can configure a slide background.

Select your output medium here.

There are some predefined backgrounds available in the upper section, but you will learn how to create your own design later.
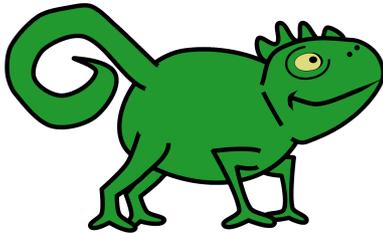
In the next dialog you can select the transition effects and other presentation options.

When you have reached the last step, select [Create] to create your new presentation.

To work on an existing presentation, select **Open existing presentation** at the first Presentation Wizzard dialog and then [Create]. You can choose an existing presentation file from the dialog that appears.

3.5.2 Insert and Edit Slide Content

Choose a Slide Layout

When you select [Create] in the Impress screen appears.

The screen is divided into three parts:

❶ List of slide previews

❷ Current slide

❸ Task frame
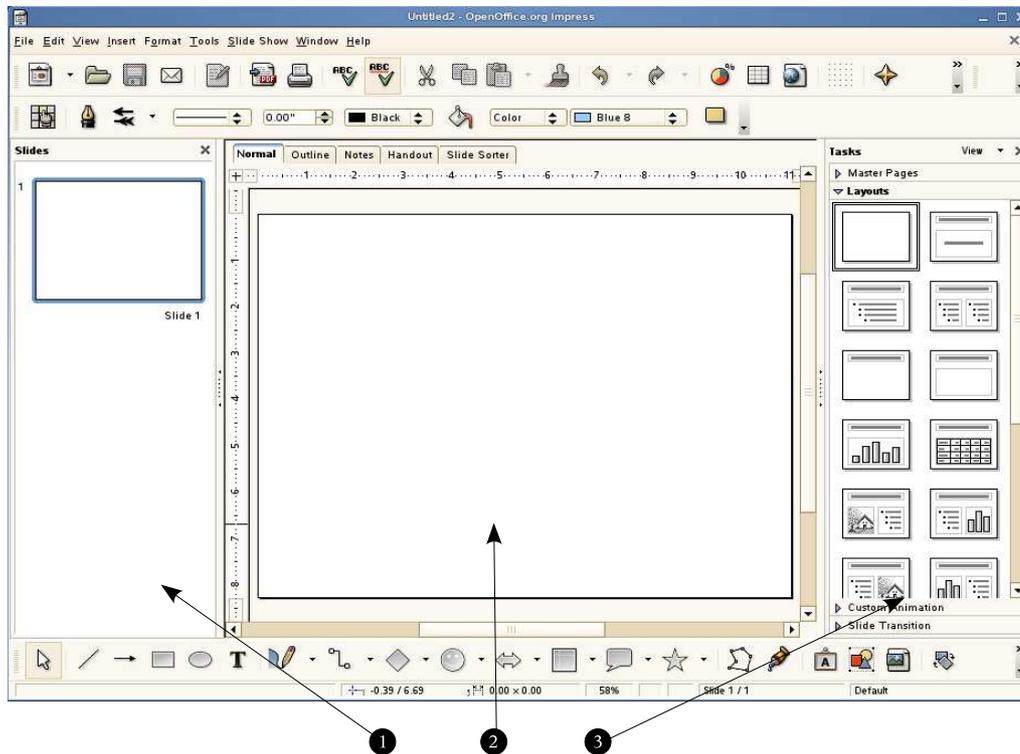
In the task frame there is a menu `Layouts`. From there you select a slide layout for the slide you are creating. The layout of the slide you select determines how text and images will be placed on your slide. To use a particular slide layout, select the layout icon. The layout is inserted into the current slide immediately.

This layout was selected.
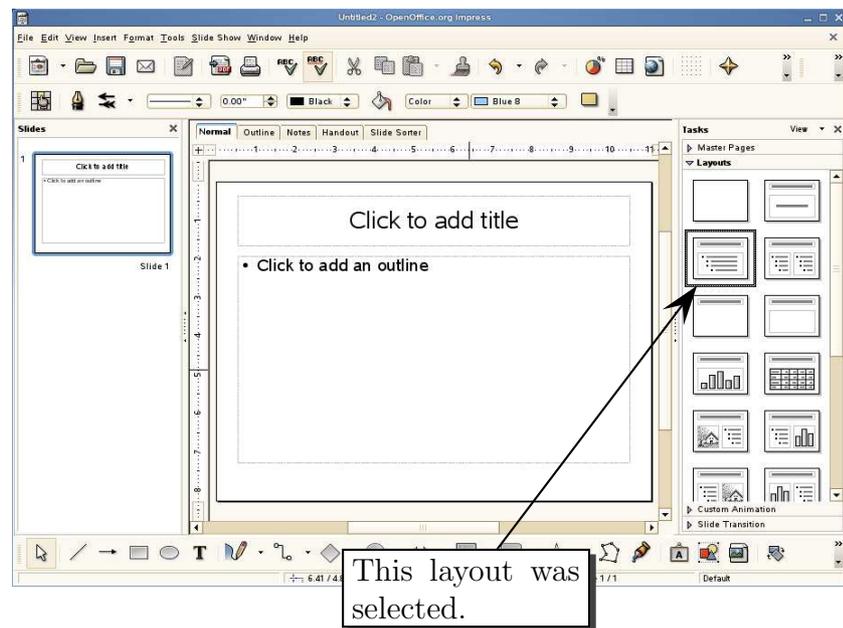
Each time you want to add a slide to the presentation you are currently working on, select `Insert → Slide` or ⚙ Slide from the toolbar.

Insert and Edit Text

To insert text on a presentation slide, select a text frame—inserted by the layout—with the mouse. The frame is highlighted and you can start typing text in this frame.
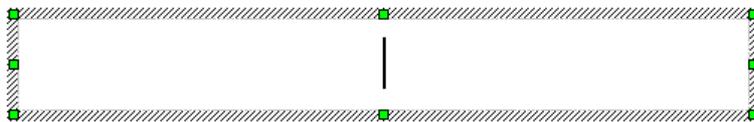
To finish your input, click somewhere outside the frame.

To edit an existing text frame, move the pointer over the text frame. When the pointer changes its shape into a cursor, you can select the text frame and edit its content. When you move the pointer over the frame border, you can select the frame itself instead of its content.

When the frame is selected, you can move the frame to a different position on the page. You can also change the size of the frame by selecting and moving one of the green dots in the frame border.
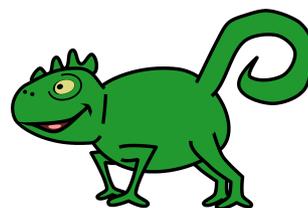
Format Text

You can format text in text frames just as you would format text in OpenOffice Writer. Use the pointer to turn on the edit mode in the frame and mark the text that you want to format. Then use the Text toolbar to change font, font size, alignment, and other text formatting features.

You can also format the text frame. For example, you can format the border around the text frame or the background color of the frame. To format a text frame, you first have to select the frame. Select just the frame border; do not turn on the edit mode. Then, using the Frame toolbar, you can (from left to right) adjust the border thickness, border color, and background color.

Insert Graphics

To add a graphic to a slide in your presentation, select a layout including a graphic. Double-click the graphic frame. Alternatively you can select `Insert` → `Picture` → `From File` from the Impress menu or from the bottom toolbar.

Then select a graphic file from your hard disk. After the graphic has been inserted, you can format it just as you would format a graphic in a text document.

Insert Drawings

OpenOffice Impress offers drawing tools which you can use to add basic elements to the slides. You can access these tools in the toolbar on the bottom of the program window.

The drawing tools allow you to create different kinds of drawing elements such as rectangles, ellipses, 3D objects, and lines. Most tools come with a set of variations. To see a tool's variations, select the tool and hold down the mouse until a small selection window pops up. You can select a tool variation from this window.
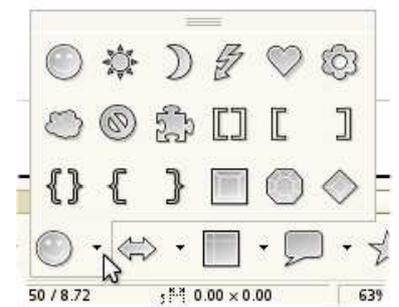
After you have selected a drawing tool, move the cursor to the position on the slide where you want to insert the drawing. Then press the left mouse button. If you move the cursor while still holding down the mouse button, you can determine the size of the drawing element. When it reaches the correct size, you can release the mouse button.

Exercise: Insert and Edit Slide Content

Create a presentation about OpenOffice Calc with five slides.

3.5.3 Manage Slides

Rename and Delete Slides

Each slide has a name which is displayed at the bottom of the preview.

By default, the slides are numbered Slide 1, Slide 2, Slide 3, and so on.

These default names are not very helpful if you have a large presentation and you are trying to locate a particular slide.

Name of an empty slide. → Slide 1
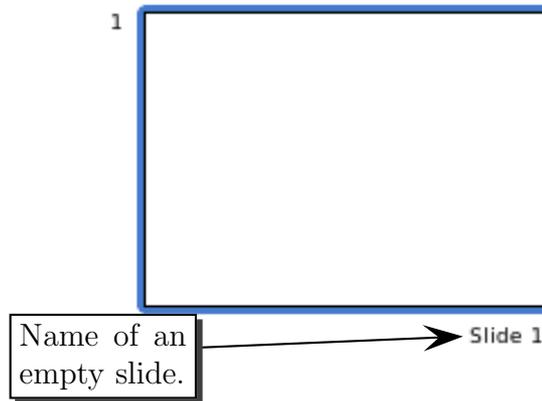
You can give a slide a more descriptive name by right-clicking its entry in the tab bar and selecting `Rename Slide` in the pop-up menu that appears.
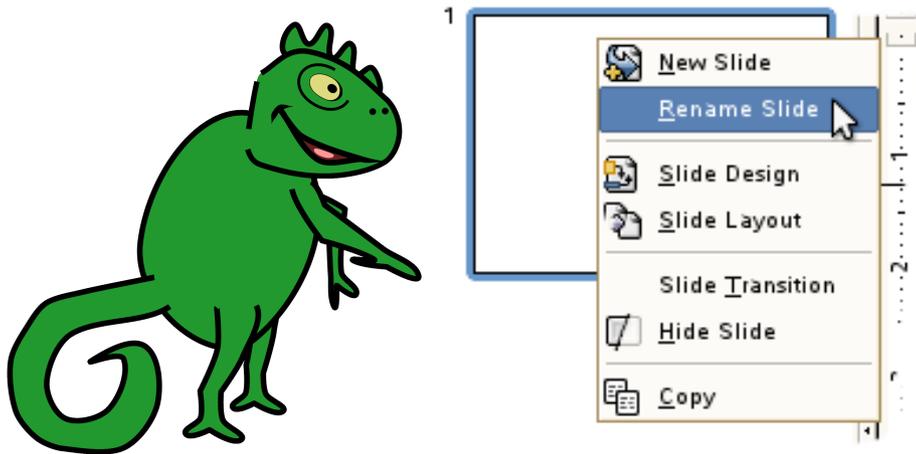
Type a new name in the Rename Slide dialog that appears and select `OK`.

To remove a slide from your presentation, right-click the slide's preview and select `Delete Slide` from the pop-up menu that appears.

Change Slide View

The view you have been working is called the Normal view. In this view, you see a single slide that can be edited.

OpenOffice Impress also provides some other views which can be accessed by the tabs in the frame of the current slide.

Select a view.

`Normal`	Change the content and layout of a slide
`Outline`	Create an outline for your presentation
`Notes`	Add notes to each slide
`Handout`	Create a handout with smaller sized slides
`Slide Sorter`	Change the order of the slides using drag and drop

Change the Slide Background

To change the background of a slide, select `Format → Page` and activate the `Background` tab.
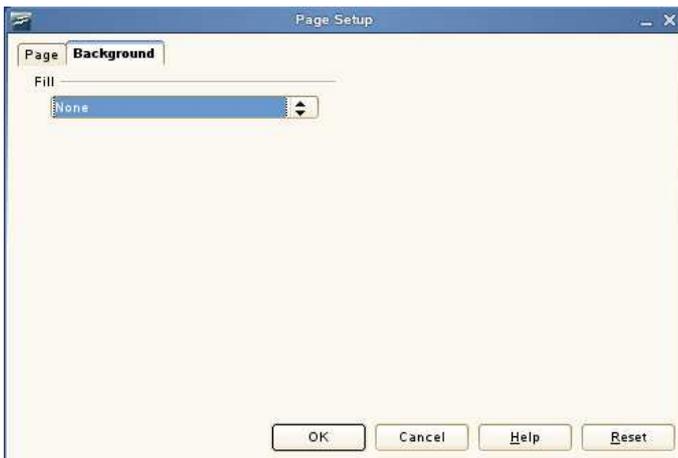
Under `Fill`, you can select

☞ `None`

☞ `Color`

☞ `Gradient`

☞ `Hatching`

☞ `Bitmap`

The dialog changes depending on your choice. You can scroll through the list of colors, gradients, hatchings or images.
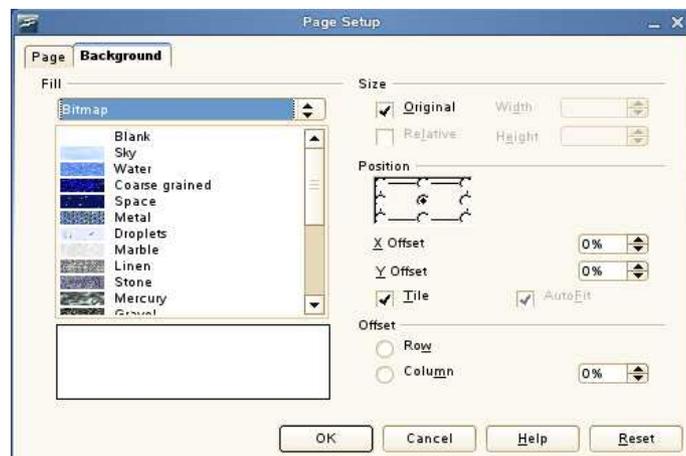
When you select [OK] to confirm your selections, the Page Settings prompt appears, asking you if you want to apply the background settings to all of the slides in the presentation.

If you select [Yes], your changes to the slide background will be applied to all of the slides in the presentation.

Use the Master Page

In addition to changing the background color of all slides in a presentation, you can also configure other presentation-wide settings. For example, you can add a logo or set up common font sizes.

Switch to the Master Page by selecting `View → Master → Slide Master`.
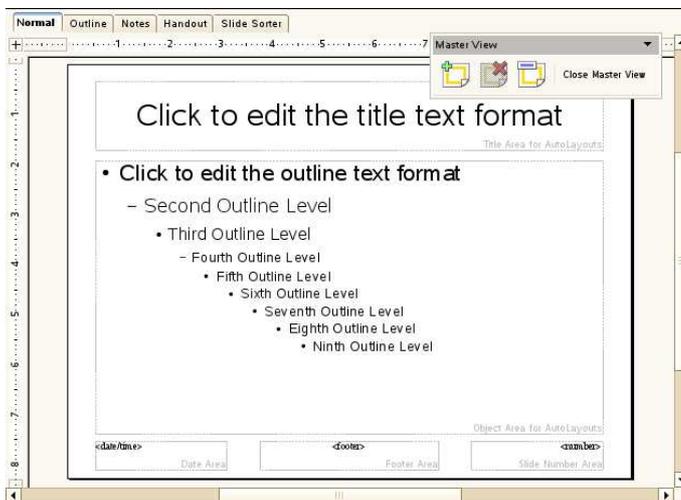
Instead of real slide content, the Master Page displays only a schematic view of a slide. Everything you change in the Master Page is automatically applied to all slides in the presentation.
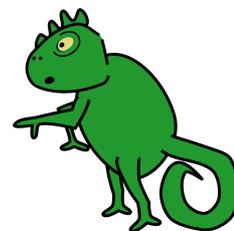
If you insert a graphic into the Master Page slide, for example, the graphic will be visible on all slides in the presentation. Likewise, if you adjust the font size for titles in the Master Page, the font size of titles on all slides will be adjusted.

To switch back to normal mode, which allows you to edit each slide individually, select `Close Master View` .

The available Master Pages are shown in the task frame.

Change Slide Transitions

To beautify your presentation, you can use effect transitions between the slides.

The available transitions.

The frame contains three sections:

☞ **Apply to selected slides.** Choose one of the available transitions from the list.

☞ **Modify transitions.** Select the speed for the transition. It is also possible to play sounds during the transition.

☞ **Advance slide.** If you want to play your presentation automatically you can activate it here.

✍ **Exercise: Manage Slides**

Change the background and transitions of your Calc presentation.

3.5.4 Give a Presentation

Start the Presentation Mode

After you have created all of the slides for your presentation, you can start the presentation mode by selecting `Slide Show → Slide Show`. You can also press the F5 key or select 🖼 Slide Show to start the presentation. In presentation mode, the slides are displayed in full screen without any window borders.

> To leave the presentation mode, press `Esc`.

Navigate in Presentation Mode

When you are in the presentation mode, you can switch to the next slide in the presentation by clicking the left mouse button or by pressing `Right arrow`.

To go back one slide in your presentation, you can click the right mouse button or press `Left arrow`.

Print Presentations

Although presentations are designed to be viewed on a screen or presented with a video projector, sometimes you may want to print them on paper. For example, you might want to use a printed version of the presentation as a handout for your audience.

To print your presentation, select `File` → `Print`, choose a printer, and confirm the print job by clicking [OK].

To print the presentation outline, the slides with your notes or the handout, activate the corresponding tab and select `File` → `Print` then.

☞ Exercise: Give a Presentation
Show your presentation to your classmates. Print a handout.

3.6 Draw Images Using Draw

3.6.1 Basics of Computer Graphics

There are two types of computer graphics:

❶ Bitmaps

❷ Vector images

Bitmaps are built from a matrix. Each field in the matrix is called a *point* or *dot*.

The finer the matrix the higher the quality of the image. The number of points per inch is called *resolution*.

Each point has a defined color.

Low resolution   Higher resolution   Highest resolution

In vector images everything is described in geometrical shapes, like lines, curves. A line can be described by the coordinates of the beginning and the coordinates of the end. It has a certain thickness, and can be dotted or not.

Enlargement of a vector image means only that the computer has to compute the new coordinates. The quality of the image is not effected.
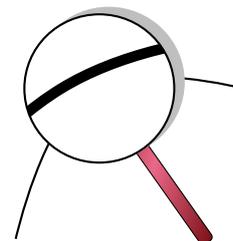
Exercise: Basics of Computer Graphics

Think about the advantages and disadvantages of bitmaps and vector images. Complete the following table.

	Bitmap	Vector Image
File size of large images		
Quality after zooming		
Used computing time for zooming		
Suited for photo manipulation?	*yes*	
Suited for technical graphs?		

3.6.2 Start OpenOffice Draw

OpenOffice Draw can be used to create vector images.

You can start OpenOffice Draw by selecting `File → New → Drawing` from the menu of another OpenOffice component or be selecting `OpenOffice.org Draw` from the `Images` group in the Application Browser.

3.6.3 Create a Drawing

You can launch OpenOffice.org Draw from the `Programs` menu using `Office → Drawing` or from any running OpenOffice.org application using `File → New → Drawing`.
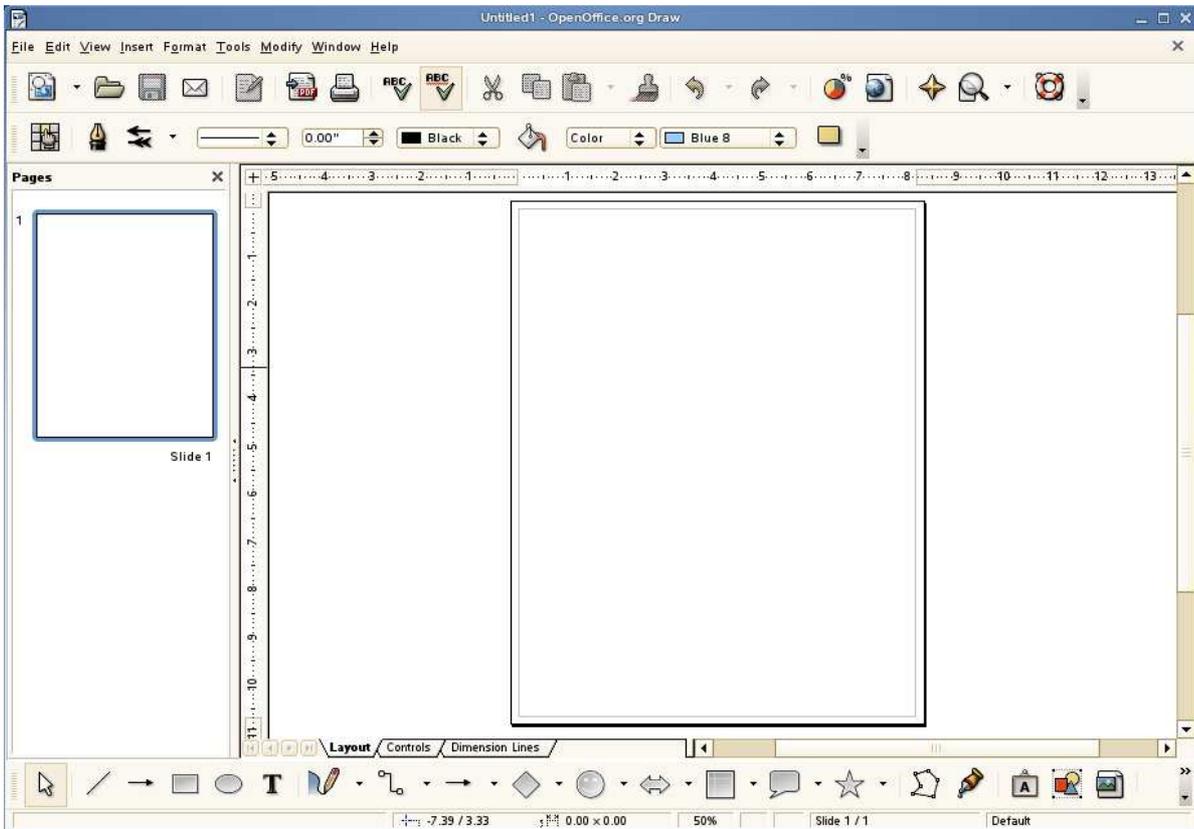
In the left frame you see a preview of the pages. The current page is shown in the right frame.

OpenOffice Draw offers drawing tools which you can use to add basic elements. You can access these tools in the toolbar on the bottom of the program window.

The drawing tools allow you to create different kinds of drawing elements such as rectangles, ellipses, 3D objects, and lines. Some tools come with a set of variations. To see a tool's variations, select the tool and hold down the mouse until a small selection window pops up. You can select a tool variation from this window.

Select an existing object.

> If you select an object once, small green dots at the corners indicate that the object is selected. You can resize the object if you click one of these squares, keep the mouse button pressed and move the mouse.

Resize the rectangle here.
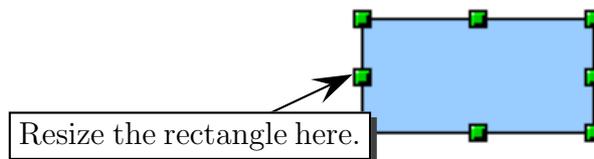
Draw a line

Draw a line that ends with an arrow

Draw a rectangle

Draw an ellipse

T Write text

Menu that contains eight variants of curves. You can finish a curve by double-click
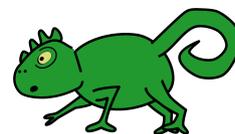
Menu that contains twelve variants of connectors. Connectors are lines between objects. If the object is moved, the line stays connected.

Points for connection.
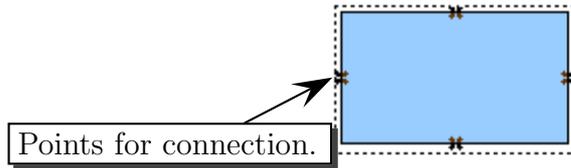
Menu that contains ten variants of lines and arrows.

Menu that contains a lot of simple geometrical figures.

Menu that contains some symbol shapes.

Menu that contains a lot of shapes for block arrows.

Menu that contains shapes for flow charts.

Menu that contains shapes for callout balloons.

Menu that contains twelve shapes for stars.

Some tools allow you to manipulate the points of the shape later, e.g. rectangle. Select this tool to switch to point manipulation.

Manage glue points. A glue point is a custom connection point where you can attach a connector line.
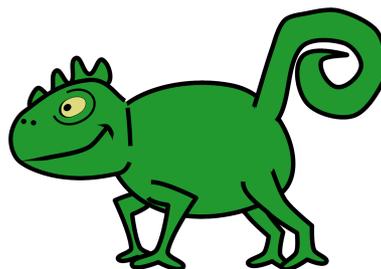
Create text with graphical effects.

You can select a style from the font gallery.
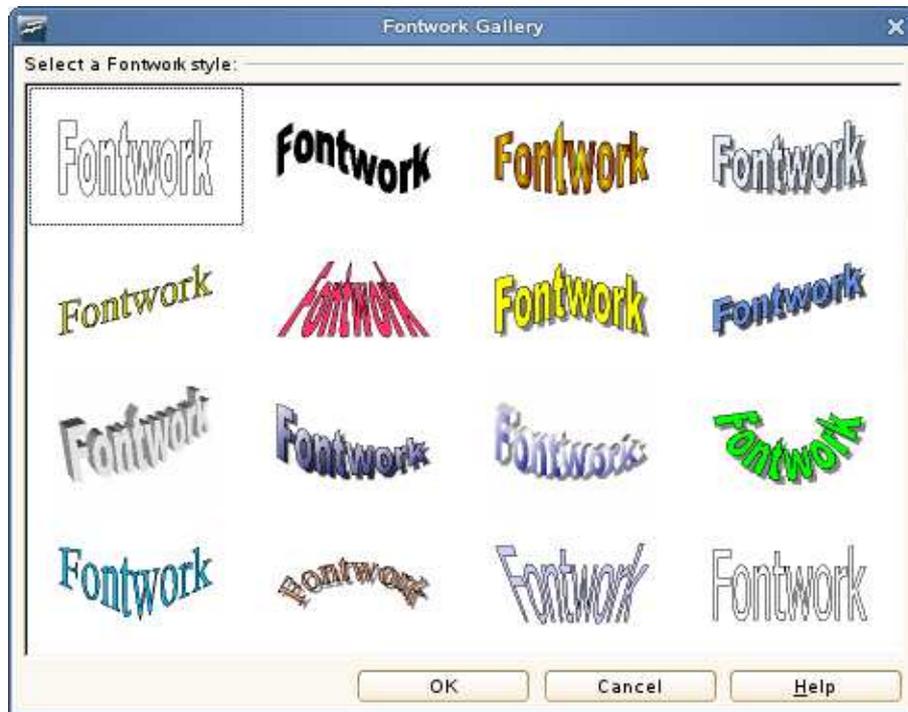
Include a picture from file.

Include an image from the OpenOffice gallery.
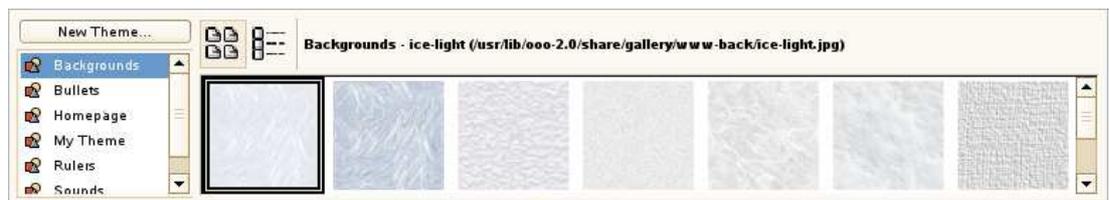
Menu that includes eight effects, like rotate, mirror and 3D rotation.

Select the alignment for the selected object from this menu.

A new object always lays on the top of the older objects. You can change the order of the objects using this menu.

Use extrusion to create a 3D object out of a 2D object.

✍ Exercise: Create a Drawing

For a lot of drawing tools ⌨Shift⌨ and ⌨Alt⌨ can be used as modifiers. Write down the functions of ⌨Shift⌨ and ⌨Alt⌨ for the following tools.

Tool	⌨Shift⌨	⌨Alt⌨

/		
→		
▭		
◯		
〰🖊 ▾		./.
☺ ▾		
☆ ▾		
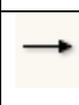
3.6.4 Specify Lines and Fills

To specify the poperties of a figure, there is the line and fill toolbar at the top of the OpenOffice window.

If there is an object selected, you can change the line and the fill for the selected object here.

If there is no object selected, the properties are valid for all subsequently created objects.

The items are described briefly here.

Open the Stylist. As in OpenOffice Writer, the Stylist in OpenOffice Draw allows to define styles for fonts.
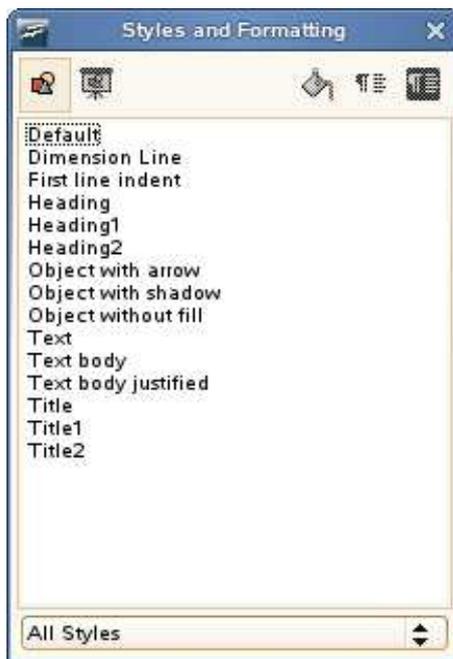
Open a dialog to configure lines.
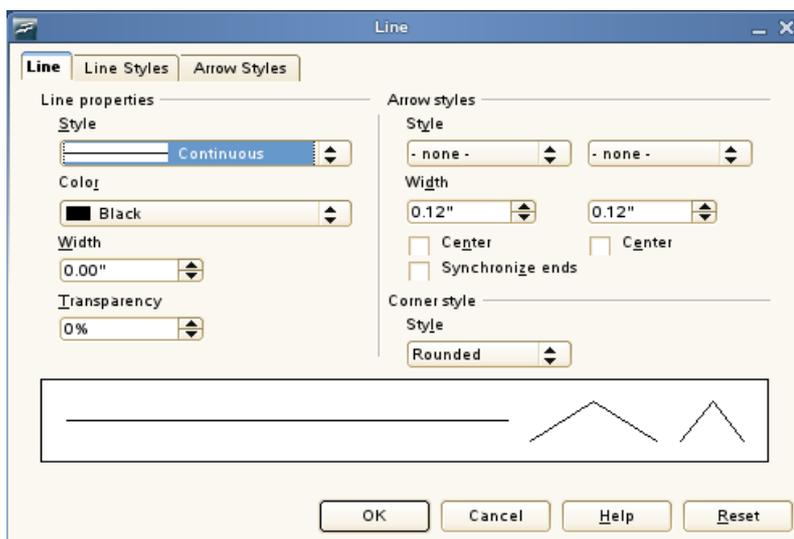
Select the ends of arrow from this menu.

Select the style (e.g., dotted, dashed, solid) of a line or border from this menu.
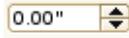
`0.00"` ⬍   Specify the width of lines and borders.

`■ Black ⬍`   Select the color of lines and borders.

🪣   Open a dialog to configure the fill of areas.
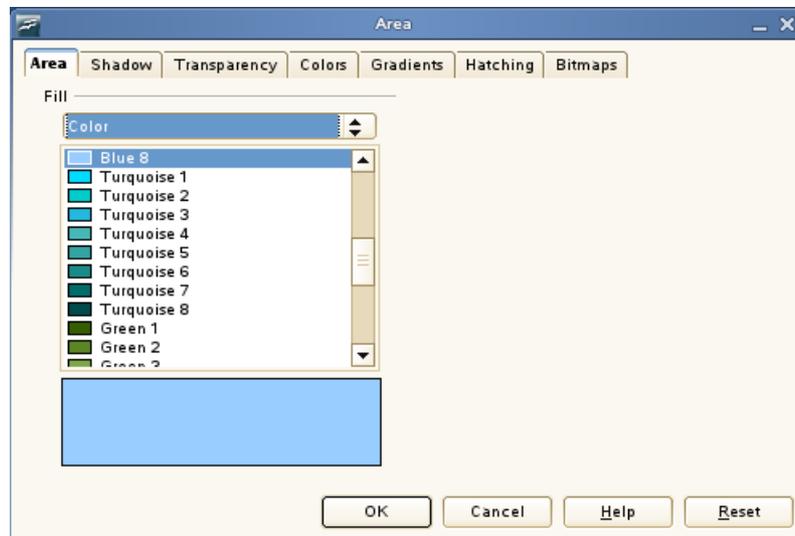
`Color ⬍`   Select the style of the fill (e.g.,solid color, gradient) from this menu.

`□ Blue 8 ⬍`   Select the color of the fill.

◻   Add a shadow to the selected object.

✍ Exercise: Specify Lines and Fills

Draw a woman and a man.
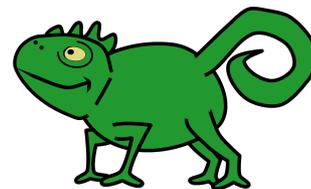
3.6.5 Group Objects

You can select objects with a mouse-click. If you want to select more than one object, keep `Shift` pressed, when selecting the second object.

Alternatively you can click on the background, keep the left mouse-button pressed and drag the mouse. A rectangle appears on the screen. If you release the mouse-button all objects inside the rectangle are selected.

You can see how many objects are selected in the status bar at the bottom of the OpenOffice window.

2 Shapes selected

If you finish a part of your image and you do not want to change the arrangement anymore, it is a good idea to group the objects. Then you can handle the group as one single object.

To group the selected objects, select `Modify → Group`. To ungroup a selected group of objects, select `Modify → Ungroup`.

✍ Exercise: Group Objects

Create the following groups for your woman and man figures:

    ☞ Face

    ☞ Arms

    ☞ Legs
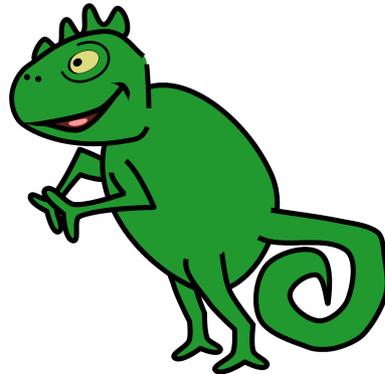
3.6.6 Use Grid

A grid is very helpful to align objects. You can configure a grid by selecting `Tools → Options`.
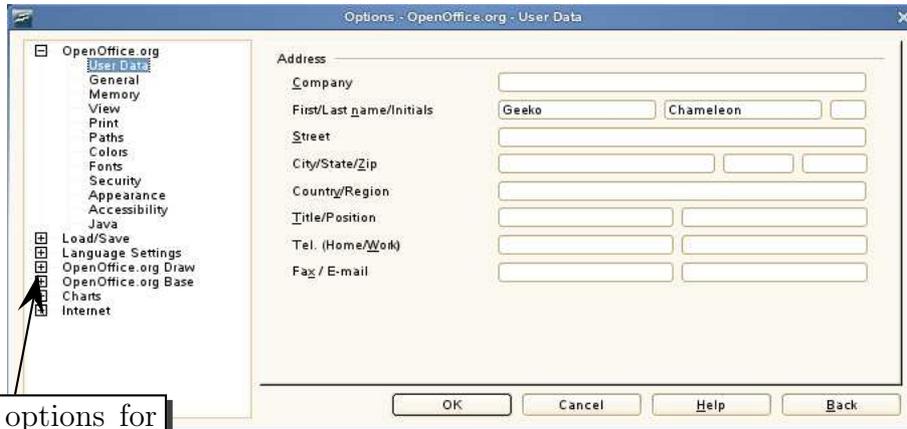
Select the options for OpenOffice.org Draw.

Open the menu for OpenOffice Draw and select `Grid`.
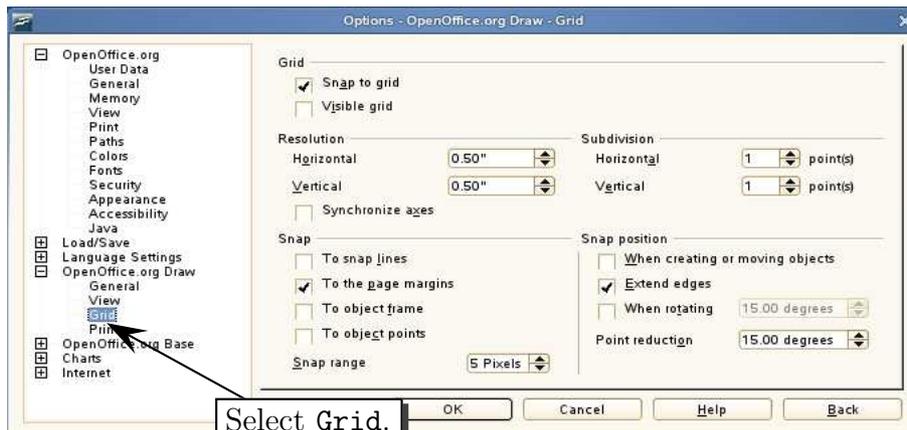
Select `Grid`.
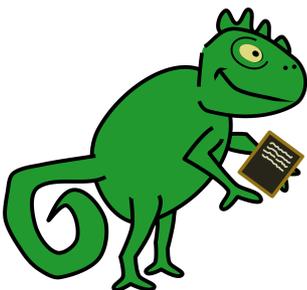
There are five important options:

❶ Select `Snap to grid`, if you want to align your objects to the grid.

❷ Select `Visible grid`, if you want to see the grid on the screen.

❸ Specify the horizonal resolution of the grid at `Horizontal`.

❹ Specify the vertical resolution of the grid at `Vertical`.

❺ If you want to use snap lines to align your objects, activate `To snap lines`.

A horizontal snap line can be created by clicking on the ruler at the top. Keep the mouse button pressed and move the mouse pointer down.
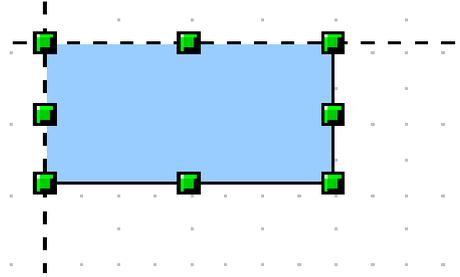
A vertical snap line can be created by clicking on the ruler at the left. Keep the mouse button pressed and move the mouse pointer to the right.

A snap line is not printed.

To remove a snap line move it back to the ruler.

✍ Exercise: Draw Images using Draw

Draw a landscape with mountains, trees, and clouds. Copy your woman and man figures into your landscape.

3.7 Use Gaim

IRC (Internet Relay Chat) is one of the first standards from the begining of the internet. Communication via IRC is called "chatting."

Instant messaging (IM) is a newer development of chatting, and has become more popular than IRC. The advantages of instant messaging in contrast to IRC are:

☞ You can create a list of your contacts

☞ You can see who of your contacts is online or ready for chatting

☞ You can send files

There are a lot of instant messaging standards (protocols) available. The most common are:

☞ AIM/ICQ (from AOL/Mirabilis)

☞ Yahoo

☞ Groupwise (from Novell)

☞ MSN (from Microsoft)

The Linux application Gaim supports all these protocols and some more.

i You can get a free instant messaging account for yourself from any of these websites:

☞ `http://www.icq.com`
☞ `http://www.yahoo.com`

3.7.1 Create an Account

When you select `Gaim` from the `Communicate` group in the Application Browser, three windows appear on the screen. One window is labeled "Add Account."

Gaim
Instant Messenger

Select the protocol you own an account.
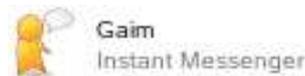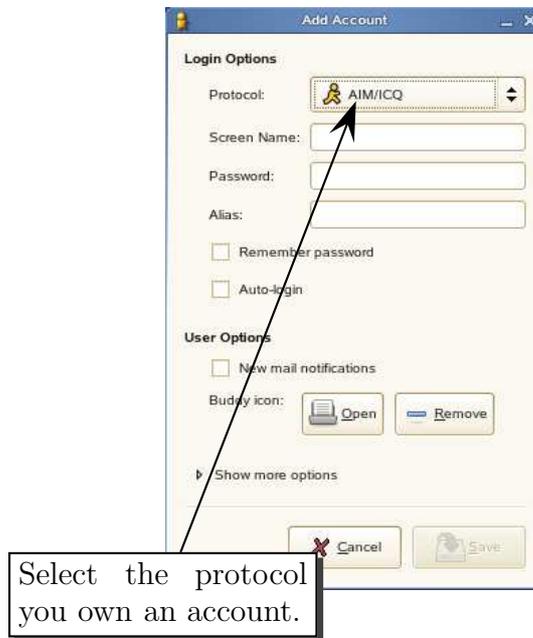
Depending on the selected protocol the dialog changes because each protocol requires different parameters. But there are some parameters you need to enter for each protocol:

Screen Name   – Your login for the instant messaging provider.

Password   – Your password.

Alias   – An alias for your account which is visible for your communication partners.

Remember password – If this option is not activated you will always need to authenticate when you connect to your instant messaging provider.

Auto-login   – If this option is selected the connection to your instant messaging provider is built automatically after starting Gaim.

When you have configured your account, select [Save] and your account is added to the Accounts window.

Activate `Online` to establish the connection to the instant messaging server.

3.7.2 GNOME Password Keyring

You know the problem of keeping dozens of passwords in mind:

- ☞ for mail access

- ☞ for FTP space

- ☞ for instant messaging

GNOME provides a tool that stores all the (encrypted) passwords and provides them if necessary. The advantage is, you only have to keep the password for accessing the keyring in mind.

When the keyring is called the first time, you have to enter a password for it twice.

☞ Exercise: Create an Account
Create an ICQ account at `https://www.icq.com/register` for yourself and configure Gaim.

3.7.3 Manage Buddies

After you have configured your own account and have established a connection to your instant messaging server, you now need to configure the accounts of your buddies.

Do this inside the Buddy List window.
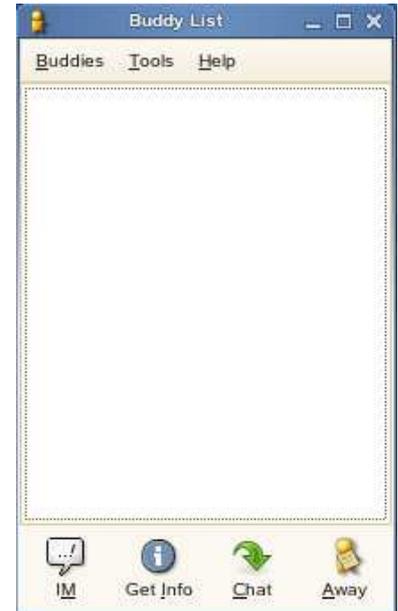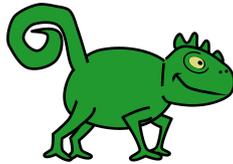
Add a Buddy

Select `Buddies` → `Add Buddy` to add a new buddy.

Enter the screenname of your buddy. You also can enter an alias name and a group this buddy belongs to.
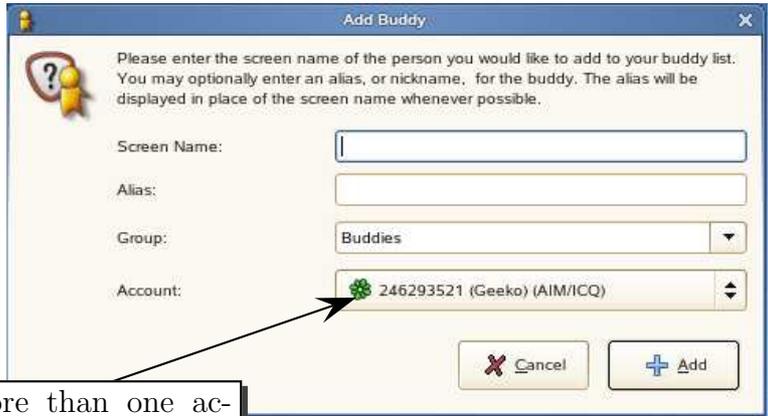
If you have more than one account, you can select the one you want to use for this buddy.

✍ Exercise: Manage Buddies

Add three of your class mates as your buddies to Gaim.

Your buddy gets a notification that you added him to your buddy list, and he can add your account by selecting ⊞ Add .
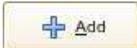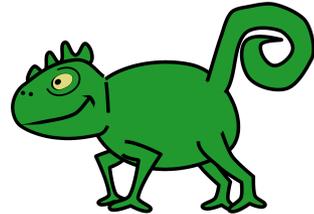
After entering an alias name, your buddy is added to the Buddy List.
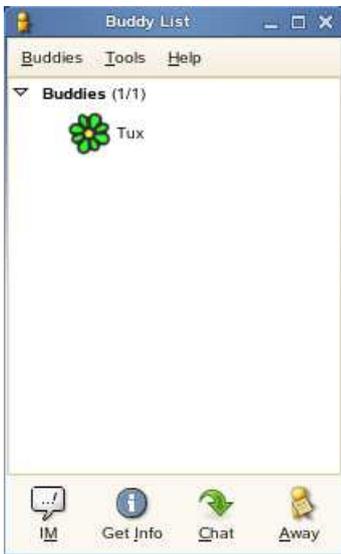
If you want to remove a buddy from your Buddy List. Right-click the entry and select `Remove`. You are asked for confirmation.

Add a Group

If you have a lot of buddies it is good to build groups to organize them. You can add a group by selecting `Buddies → Add Group`.

You are asked to enter a group name.
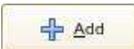
Select to add the group to the Buddy List.

> You can use drag and drop to put a buddy into a group.

3.7.4 Chat

Communicate with Buddies

Double-click the buddy you want to chat with in the Buddy List.

Enter your text here.
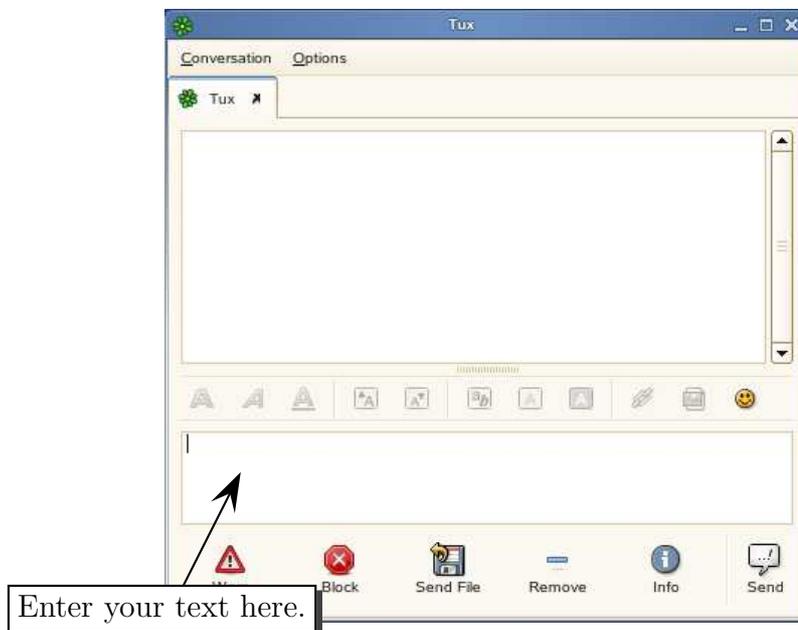
Depending on you IM protocol, the icons between the two text boxes can be used to format your text. The meanings are:

A – Bold font

A – Italic font

A – Underline

A – Enlage font

A – Reduce font size

a – Select font

A – Change text color

A – Change background color

– Insert link

– Insert image

– Insert smiley

If you select the `Send` icon, your message is sent. Alternatively you can press `Enter`.

To create a line break in your message, press `Shift` + `Enter`.

Block a User

If you are annoyed by another instant message user, you can block their account by selecting the `Block` icon in the conversation dialog.

You are asked for confirmation.

To remove this block, select `Tools → Privacy`.
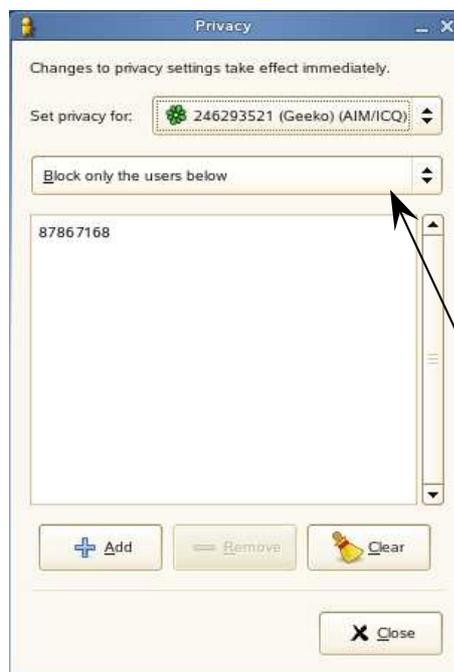
Select a rule from
this menu.

There are five rules available:

❶ `Allow all users to contact me`

❷ `Allow only the users on my buddy list`

❸ `Allow only the users below`

❹ `Block all users`

❺ `Block the users below`

☞ Exercise: Block a User
Block one of your users and test the effects of a block.

Change your Status

When you go online with Gaim, the people who added you as their buddy
can see that you are online and ready to chat.

If you want to stay online but not be disturbed, you can leave a message for your buddies. Select the `Away` button in the Buddy List window. A menu pops up showing a list of predefined messages.

If you want to create your own message, select `New Away Message` from the menu.

Alternatively you can select `Away` from the `Tools` menu.

A message looks like this.
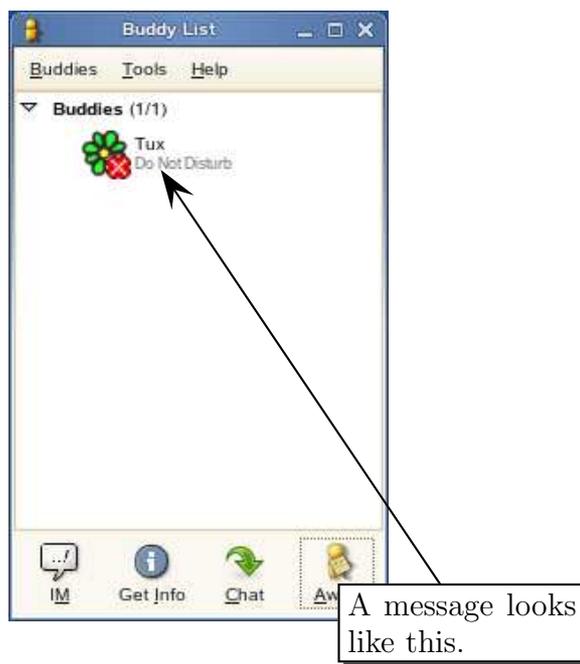
☞ **Exercise: Chat**

Discuss via Gaim with one of your classmates about "the benifits of using instant messaging at school."

3.7.5 Customize Gaim

You can customize Gaim by selecting `Tools → Preferences`.
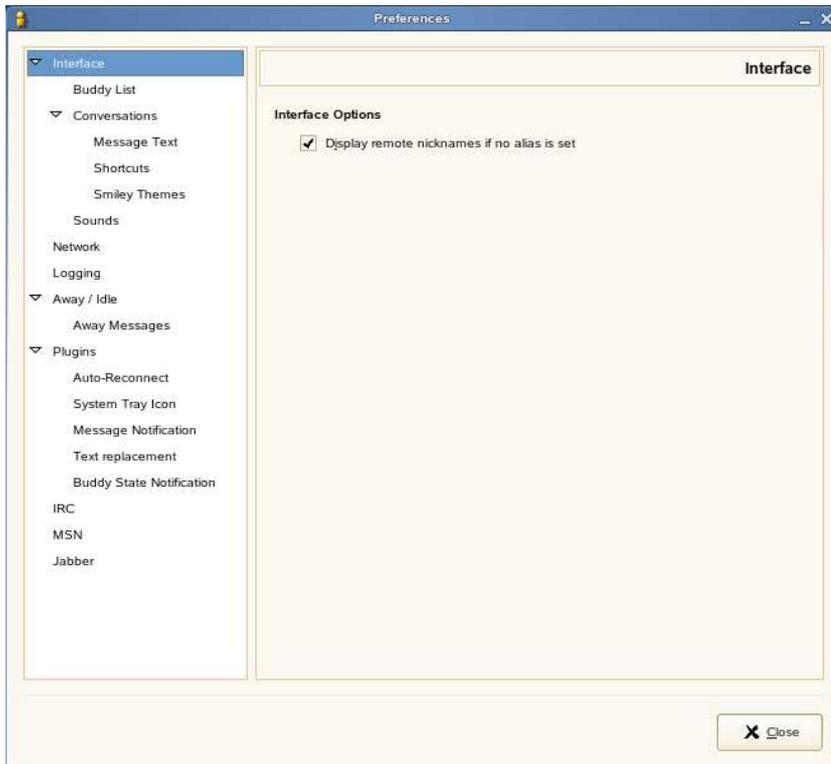
When you close all Gaim windows there will be still an icon in the bottom panel and you are visible for others.

To exit Gaim, rightclick this icon and select `Quit`.
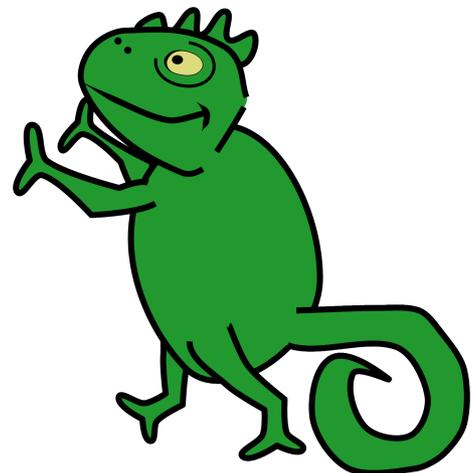
3.8 Use the Collaboration Software Evolution

Collaboration software is very important in companies today. It allows you to manage emails, contacts and appointments. You can share it with your colleages. Using collaboration software at school can make it a powerful tool to manage your work.

There are a several collaboration software packages available for Linux, such as:

☞ Evolution

☞ Novell Groupwise

☞ OpenExchange

Here we will talk about the open source project Evolution. It was developed by Ximian, before Novell bought their company and released Evolution as an open source product.

3.8.1 Configure Evolution

You can start Evolution by selecting `Evolution` in the main menu.

Select `Evolution`.

The first time you start Evolution, a wizard runs to help you configure the program.
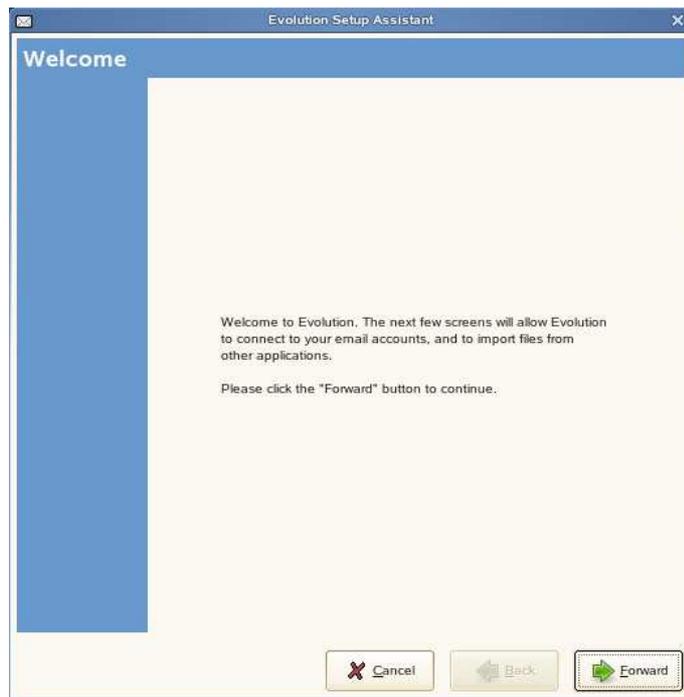
Select ![Forward] to begin the configuration.

In the Identity screen, type your full name and email address.

Under `Optional Information`, you can enter the name of your school and another email address to which replies to emails will be delivered. Select | ➡ Forward | to go to the next screen.

> Next, you need to provide information about your incoming mail server.

You can get the internet mail settings from your school's network administrator.

Evolution Setup Assistant ✕

Receiving Email

Please select among the following options

Server Type: None   ▲▼

Description:

✕ Cancel   ◀ Back   ➡ Forward
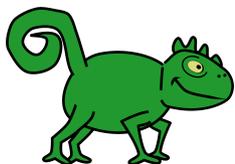
Choose the appropriate settings for your account from the `Server Type` pull-down menu.

Possible server types are:

☞ `Hula.` Choose this option if you want to access a Hula server.

> ℹ️ You can find more information about the open source groupware Hula find at `http://www.hula-project.org`.

☞ `IMAP.` Choose this option if you want to access an IMAP mail server.

☞ `Microsoft Exchange.` Choose this option if you want to access a Microsoft Exchange server.

☞ `Novell GroupWise.` Choose this option if you want to access a GroupWise server.

☞ `POP.` Choose this option if you want to access a POP mail server.

☞ `USENET news.` Choose this option if you want to access a news server.

☞ `Local delivery.` Choose this option if your workstation or server is working as a mail server or if it is not connected to a network.

☞ `MH-format mail directories.` Choose this option if your email messages are already delivered to a spool using the MH format.

☞ `Maildir-format mail directories.` Choose this option if your email messages are already delivered to a mounted mail directory.

☞ `Standard Unix mbox spool or directory.` Choose this option if your email messages are already delivered to spool using the mbox format.

☞ `None.` Choose this option if you do not want to receive email.

You might need more information for the Configuration part of the dialog. For instance, you might have to specify the host of your email, your username on that host, and a password. You might have to select a mail directory where new email messages can be stored. You can get these settings from your network administrator or your internet service provider.

> In most cases, you have to choose between `IMAP` and `POP`.
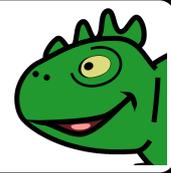
Select [Forward] to continue configuring incoming mail.

The options in the next dialog will vary slightly, depending on the server type that will be receiving mail.

In most cases, you have to specify how often your mailbox will be checked for new mail.

Select [Forward] to go to the next dialog.

Now decide which type of transport you want to use to send email:

SMTP   – Configure the details of your mail servers manually.

Sendmail – Apply the settings if your workstation or server already acts
            as a mail server. Choose this option if your machine is not
            connected to a network.
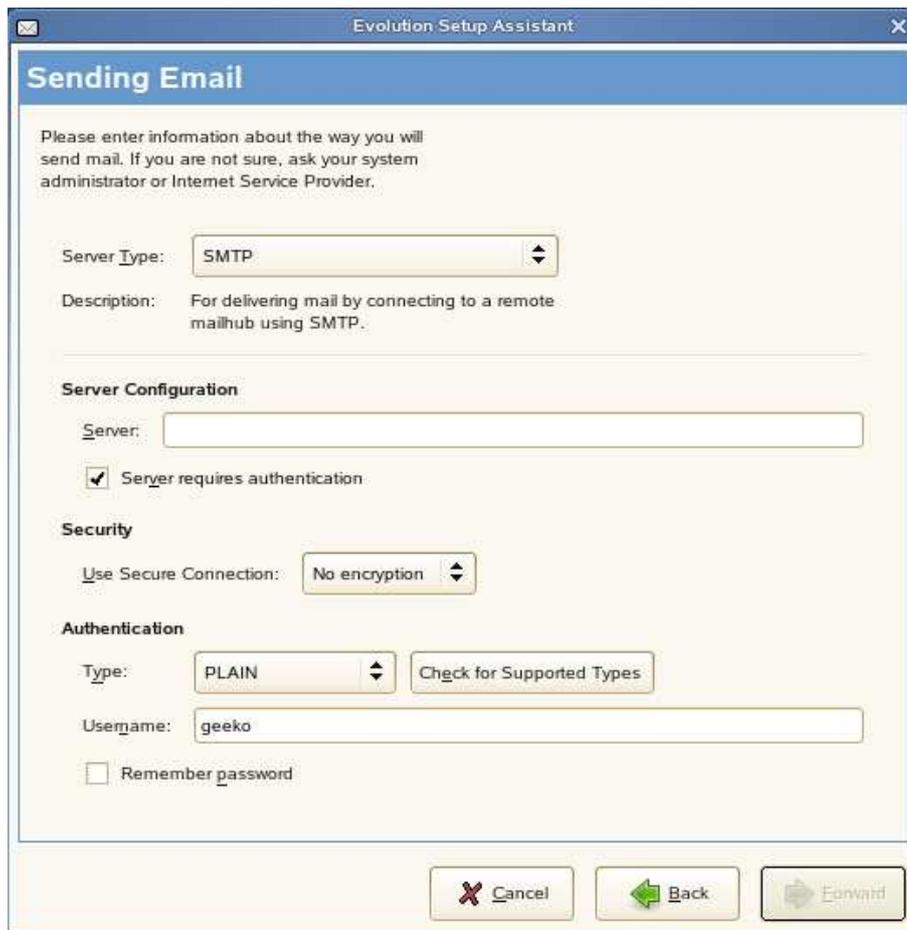
In most cases you will select SMTP. If you
are not sure which option to select, ask your
school's network administrator.

You can enter the server settings for sending email by

☞ Entering the host name of the server `Host`.

☞ If the server requires authentication, specifing

⇨ `Type.` The type of authentication.

⇨ `Username.` Your login name.

Select [➡ Forward] to continue.

You can enter a name for your configuration in this dialog. Naming your configuration is useful, particularly if you have to manage multiple mail accounts (one for private mail and one for business mail, for example).
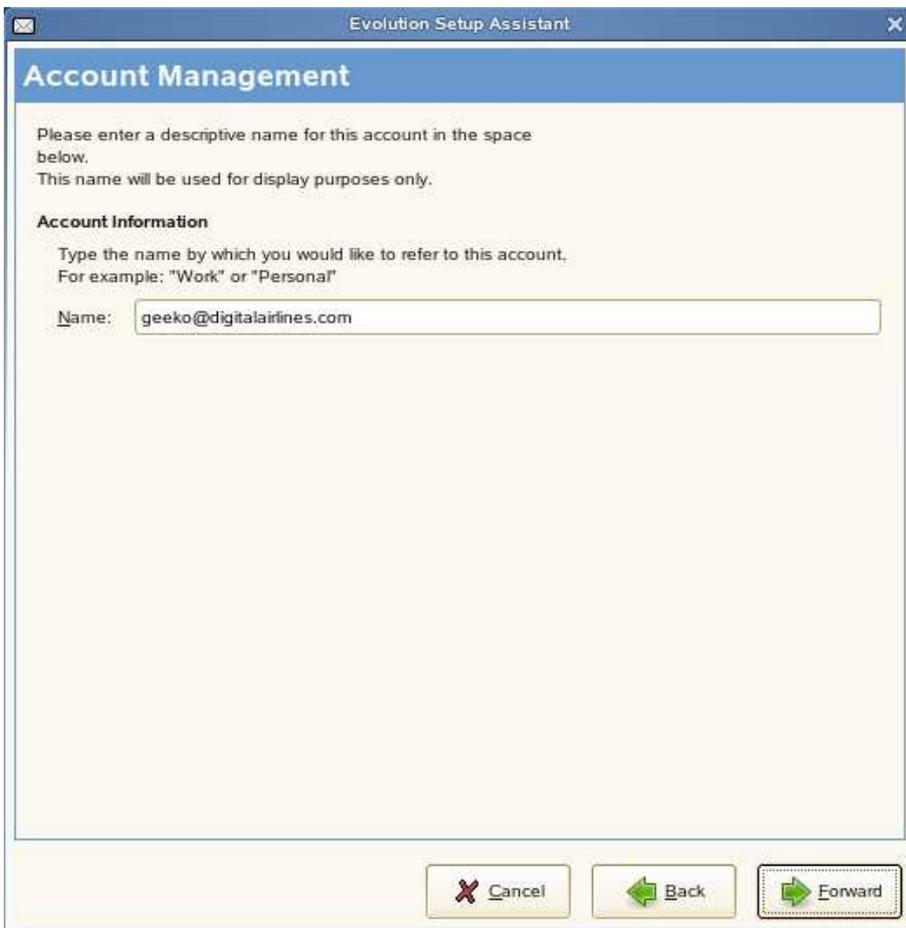
Select [➡ Forward] to go to the last configuration dialog.

Specify the time zone in which you will receive mail.

You can select the time zone by clicking the map or by choosing a time zone from the `Selection` menu.

Select [⇒ Forward]. You should receive a confirmation that the configuration was successful. Now you can start Evolution by selecting [✔ Apply].

☞ Exercise: Configure Evolution

Configure Evolution so that it allows you to receive and send email from your school email account.

3.8.2 Read Email Messages

When you start Evolution, the email dialog appears.

Start the modules of Evolution with these five buttons.
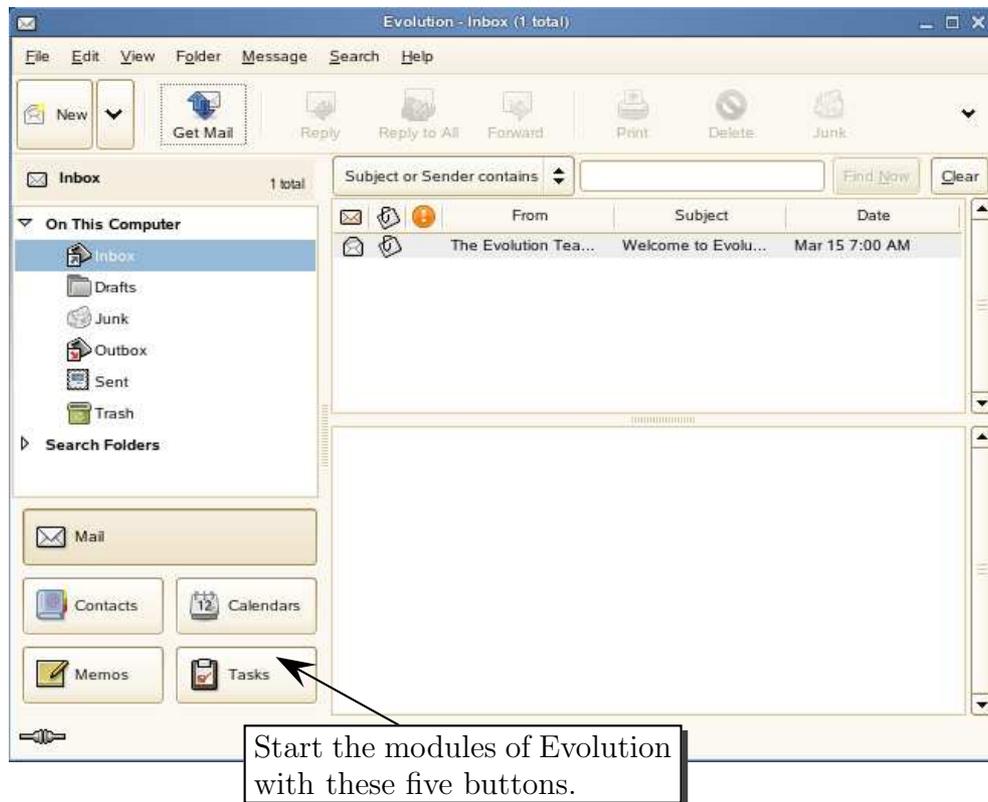
You can see the list of available mail folders in the left frame above the module buttons.

If you select a folder, all mail inside this folder is listed on the right. In addition, you can see who the email is from, the subject of the email, and the date the email was sent.

The icons at the beginning of each email entry indicate the following:

- – Unopened envelope: If the envelope is closed, the email is new and unread.

- – Attachment: The email includes an attachment.

- – Exclamation mark: The email includes important information.

When you select an email message in the list of email messages, it is displayed below the list.

☞ Exercise: Read Email Messages
Read the welcome mail from the Evolution team.
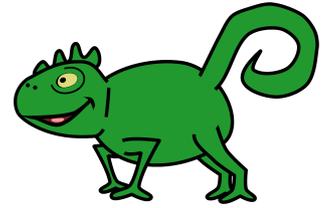
3.8.3 Compose and Send Email Messages

After you have configured Evolution, you can begin writing and sending email messages. To write a new message, select ☒ New in the Evolution toolbar.

The Compose Message window appears.
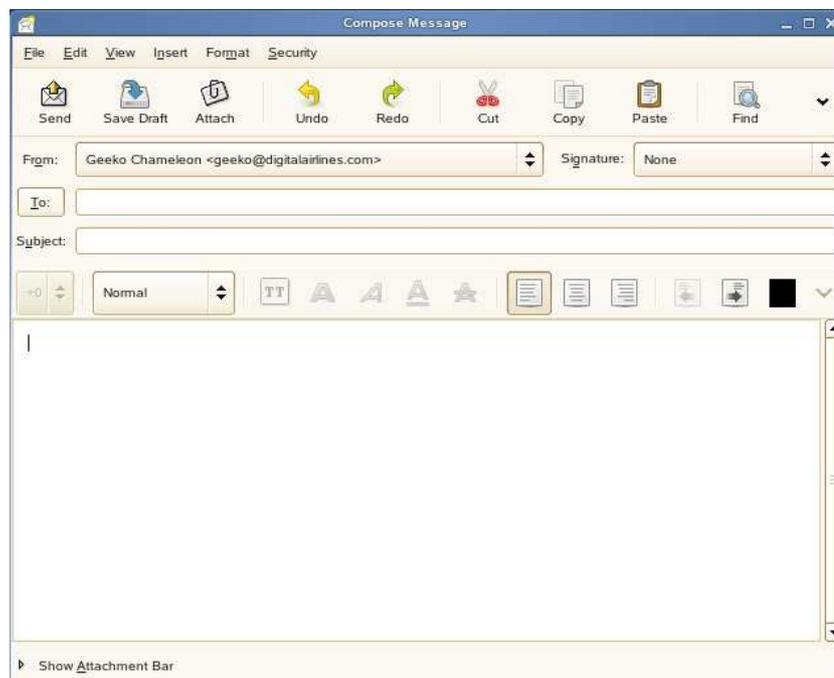
Type the recipient's email address in the To field, and type a title in the Subject field. After you type your message, select `Send` to send the message.

If you want to send a carbon copy of your message to another recipient, select `View → Cc Field` or `View → Bcc Field`. (By default, Evolution does not show text boxes for carbon copy (Cc) and blind carbon copy (Bcc).)

Email messages are created in plain text by default. Formatting buttons are visible, but you can only use them if you send mail in HTML format.

To activate the HTML format, select `Format → HTML`.
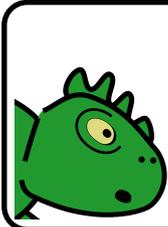
> You can write email messages to a user of your local machine by using the email address *login*`@localhost`. You do not need to be connected to a network.

3.8.4 Reply to a Message

You received an email from a friend and now you want to send him an answer. Maybe you want to refer to parts of your friend's email in your response.

To reply to a message, select the message in the list of email messages and select `Reply`.

The original message appears as quoted text for editing. The sender of the original message is automatically set as the recipient. The subject of the original message is also copied.

If the original email was sent to more than one person and you want to reply to everyone that received it, select `Reply to All`.

Sometimes you will receive messages that you want to send to another person. If you want to forward an email to a friend or classmate, select `forward`.

The original email will be attached to the email message automatically. Address the email message as usual. You can send the forwarded email with or without including your own message in the body.

3.8.5 Handle Attachments

Receiving Attachments

When you receive an email with an attachment, it will be marked with a small paperclip icon (🖇) in the list of email messages.

The attachment is also marked with icon at the top and at the bottom of the message body.

The kind of icon that appears at the end of the body depends on the attachment's file type. An image is identified by a thumbnail icon of the image.

When you click the icon, Evolution displays the content of the attachment (if possible).

If you select the triangle button next to the attachment icon, a pop-up menu appears asking whether the attachment should be opened with a specific application or saved as a file.

Sending Attachments

You can attach a file to your email message before you send it. To add an attachment, select `Attach` in the toolbar.

A standard file selection dialog appears. You can navigate through the directory structure and select the file you want to attach to the email message. Then select Attach .

A new frame at the bottom of the Compose window indicates which files are attached to the email.

Each attached file is identified with an icon. Image file icons are usually thumbnails of the images themselves.

☞ **Exercise: Handle Attachments**

In the directory `/opt/gnome/share/pixmaps/backgrounds/` there are a lot of wallpapers. Send one of these image files to a classmate.

If you receive a email with an attached wallpaper, you could save it into your home directory.

3.8.6 Manage Email Folders

If you are receiving many email messages a day, you probably need more than one folder in which to store your messages, and you probably need a system to organize them.

To create a new mail folder, select `File → New → Mail Folder` or select `Mail Folder` from the New pull-down menu.

A Create folder dialog opens.

Type the name of the new folder in the `Folder name` field.
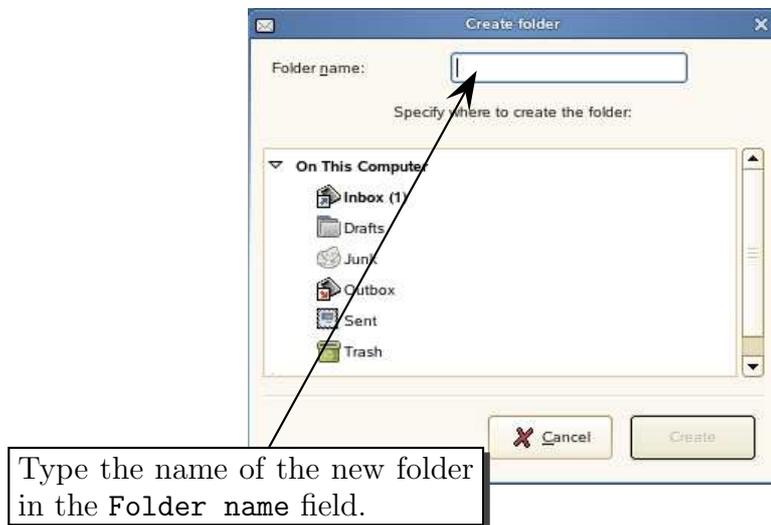
Under `Specify where to create the folder`, indicate where you want the folder to be located.

> If you select `On This Computer`, the new folder will be created at the same level as the Inbox folder.
>
> If you select one of the other folders, such as `Drafts`, the new folder will be created as a subfolder of the selected folder.

✍ Exercise: Manage Email Folders

Create a new folder "Classmates" inside the Inbox folder.

3.8.7 Filter Incoming Emails

Basics of Filtering Email Messages

Suppose you are receiving several email messages every day. You already created several mail folders, but manually sorting the messages into these folders each day is difficult and time-consuming.

You can filter your incoming email messages automatically. Message filtering has the following advantages:

☞ You can easily separate important and unimportant email messages

☞ You do not need to sort your email messages manually

☞ You can eliminate some of the spam and junk email automatically

You can filter your email by setting up filter rules. A filter rule contains two parts:

❶ The condition or criterion (the "if" part) describes what should be filtered out.

❷ The action (the "then" part) describes what should happen to the email message if it meets the condition.

For example: *If* the sender is Tux, *then* move the mail into folder XYZ.

Manage Filter Rules

To create a new filter rule, select `Edit → Message Filters`.
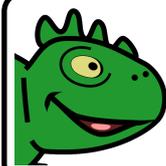
You can select an item from `Message → Create Rule` to shorten the process of creating filter rules, but we want to describe the full filter creation process here.

The Manage Filters dialog appears. This dialog allows you to manage your filter rules.
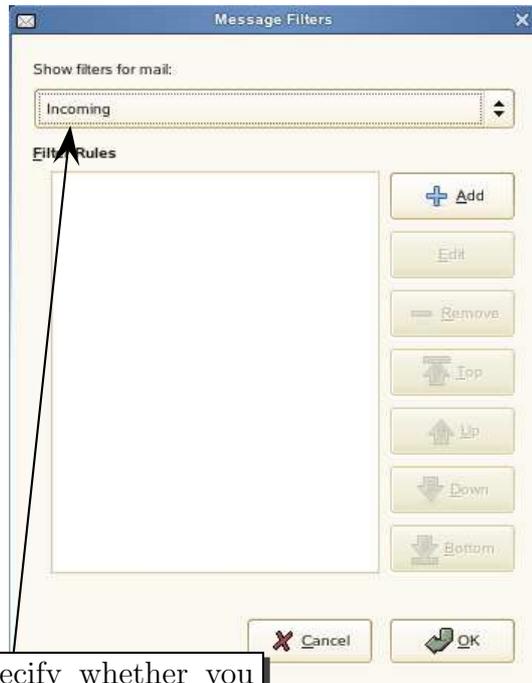
Here you can specify whether you want to manage the filters for incoming or outgoing email messages.

The seven buttons on the right side of the Filters dialog let you do the following:

Add – Create a new filter rule

Edit – Edit the selected filter

Remove – Remove the selected filter

Top – Move the selected filter to the top of the list

Up – Move the position of the selected filter up one item

Down – Move the position of the selected filter down one item

Bottom – Move the selected filter to the bottom of the list

Each email message is filtered starting with the filter rule at the top. If the first filter condition matches, that filter is used. If the first filter condition doesn't match, the next filter is checked, and so on down the list until a match is found. When a filter condition matches, the associated action will be taken, and the search for a filter will end.

Create a New Filter Rule
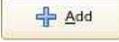
To create a new filter rule, select [✚ Add] on the Filters dialog. The Add Rule dialog appears.

In the `Rule name` field, type a name for the rule you want to create.

In the window area labeled `Find items that meet the following criteria`, specify one or more filter conditions.

In the window area labeled `Then`, specify one or more filter actions.

Create a Filter Condition

To create a filter condition, you need to understand the following information.

One filter can check each email message for a specified condition. Each condition is represented by one line in the If area on the Add Rule dialog.

By default, a filter has only one line, so you can only specify one filter condition. If you want to create a second line for a second filter condition, select [➕ Add].
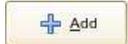
If you list more than one condition in your filter, the `Find items` pull-down menu becomes complicated. You must specify whether the action will be executed

☞ If all criteria are met or

☞ If any criteria are met

Each condition is made of three pieces of information:

❶ What part of the email contains the information that is being considered? (for example, the sender, the subject, the body, the size of the mail, and so on). You must select an item from the Sender menu (explained below).

❷ What must this part do or be? (For example, it must be equal to something, or not equal to something, or it must contain something.) You must select an option from the contains menu (described below).

❸ What is the criterion (the something)? You must define the something (explained below).
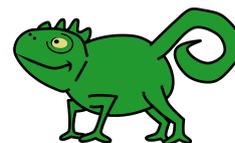
When you create a filter condition in the Filters dialog, you must first select an item from the `Sender` pull-down menu. You can select one of the following options:

☞ `Sender`

☞ `Recipients`

☞ `Subject`

☞ `Message Body`

☞ `Date sent`

☞ `Date received`

☞ `Size (kB)` (of the email message)

☞ `Attachments` (did the email have an attachment)

The `contains` pull-down menu lets you select the criteria which the item you selected from the `Sender` menu should meet. The menu includes the following options:

☞ `contains` something

☞ `is` equal to something

☞ `starts with` something

☞ `ends with` something

☞ `sounds like` something

You must define the "something" (criterion) in the empty text box next to the contains menu. The something could be an email address, a date, a file size, and so on, depending on what you selected in the `Sender` pull-down menu.

If you want to delete a condition, you can select ⊟ Remove at the end of the condition's line.

Create a Filter Action

After you have defined the filter condition, you can start defining the filter action (the Then part of the filter).

If you want more than one action, you can add a new action by selecting
[➕ Add] under Then.

Each action is written on one line and consists of one or two items.

From the `Move to Folder` pull-down menu, you can specify what should
be done with an email that meets the filter condition. For example, you
can choose to:

☞ Move the email message into a special folder

☞ Copy the email message into a special folder

☞ Change the color of the email title in the list of email messages

☞ Assign the email message a special status

☞ Have the computer beep or play a sound

☞ Start a special program

Some of these actions require additional information (the name of the
folder the email will be moved or copied to, or the name of the sound
to be played, for example). You can enter this information in the `click
here to select a folder` pull-down menu.

If you want to delete an action line, select [➖ Remove] at the end of the line.
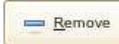
✍ **Exercise: Manage Filter Rules**
Create a filter rule that moves mails
from your classmates into the email
folder "Classmates."
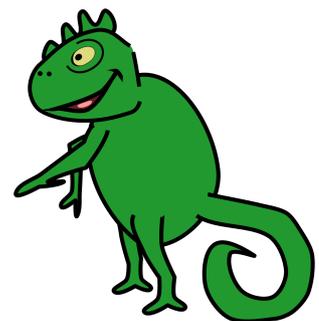
3.8.8 Add an Address Book

[📖 Contacts] Evolution provides a Contacts module that you can use to
manage your address books and contacts.

You can start the Contacts module by clicking the Contacts button in the bottom left corner of the Evolution dialog.

The Contacts dialog appears:
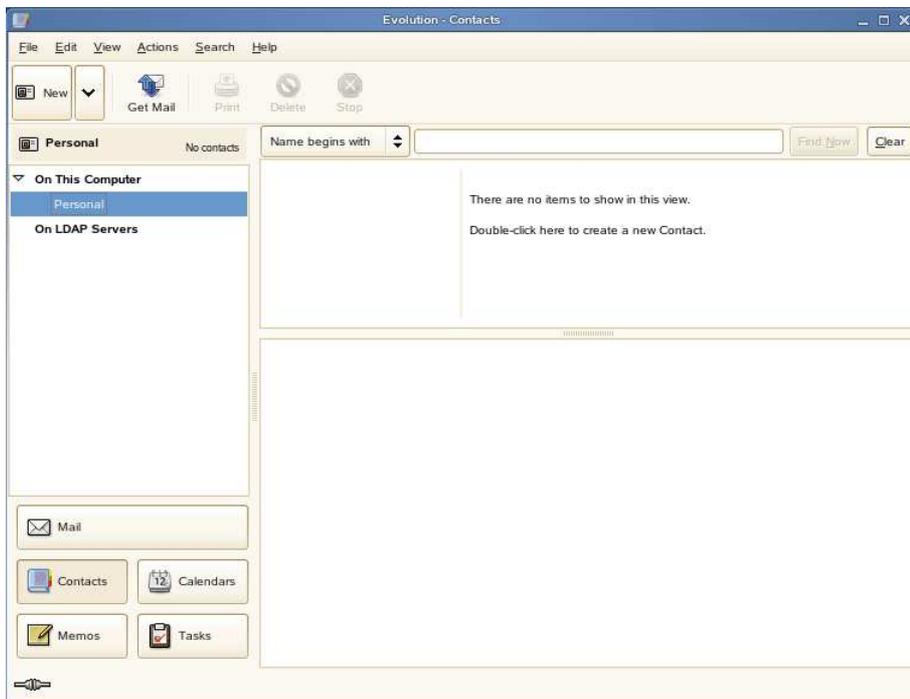
The content of the address book appears in the large frame on the right side of the window.

To search for a particular contact, open the `Name begins with` pull-down menu.
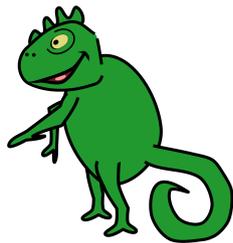
When selecting `Name begins with` you see a pull-down menu with the following items:

☞ `Name begins with`

☞ `Email begins with`

☞ `Category is`

☞ `Any field contains`

☞ `Advanced Search` (for a more complex search)

Add a New Address Book

You might want to keep your contacts in different address books. For example, you could store school contacts in one address book and personal contacts in another address book.

To create a new address book, select `File → New → Address Book` or select `Address Book` from the ⬛ `New` pull-down menu.

A Create folder dialog opens, which is similar to the dialog to create a new mail folder (see page 256).

Under `Type`, indicate where you want the address book to be located. Under `Name` you can enter a name for your new address book.

> Then you can right-click the address book in the list and select `Delete` from the pop-up menu.

☞ **Exercise: Add an Address Book**
Create a new address book "Classmates" inside the Contacts folder.

3.8.9 Add a Contact

To create a new contact, select ▦ New . The Contact Editor dialog opens.

The Contact Editor dialog displays three tabs:

- ☞ `Contact.` Includes the contact's name, email telephone numbers (work, home, mobile, and fax), and instant messaging accounts.

- ☞ `Personal Information.` Includes the contact's web addresses (if any), job information, and birthday.

- ☞ `Mailing Address.` Includes three addresses (home, work, other).

Most of the items on the Contact Editor tabs are self-explanatory. Some of the special items are described below:

- ☞ Full Name: To enter the name of your contact in more detail, select `Full Name...`.
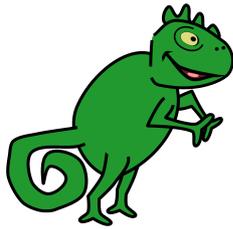
☞ Categories: To separate a large number of contacts into categories, select ⌈Categories...⌋ .

To add new category, select the `Edit Master Category List` button in the Category dialog.

☞ Telephone: To list more than four telephone numbers for a contact, select the triangle button (▸) next to the telephone label.

✍ Exercise: Add a Contact

Add ten of your classmates to your address book "Classmates."

3.8.10 Add a Contact List

If you communicate with a particular group by mail regularly, you can build a contact list for this group. With a contact list, you will no longer need to select all addressees manually.

To create a new contact list, select `New → Contact List`. The Contact List Editor appears.

The items in the Contact List Editor dialog are described below:

☞ `List name.` Assign the contact list a name.

☞ `Where.` Address book where the contact list is stored.

☞ `Members.` Add a member to the list by dragging a contact into the text box, by using [✚ Add] and [━ Remove] or by typing in an email address.
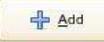
☞ `Hide addresses when sending mail to this list.` Hide the mail addresses in the mail header so contact list members cannot see the addresses of other contact list members.

☞ **Exercise: Add a Contact List**
Create a contact list that includes your classmates.
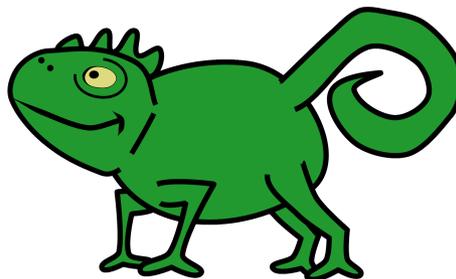
3.8.11 View the Calendar

Evolution contains a Calendar module that you can use to manage your appointments.

To start the Calendars module, select the `Calendars` icon in the left frame of the Evolution dialog.

The Calendars dialog appears:
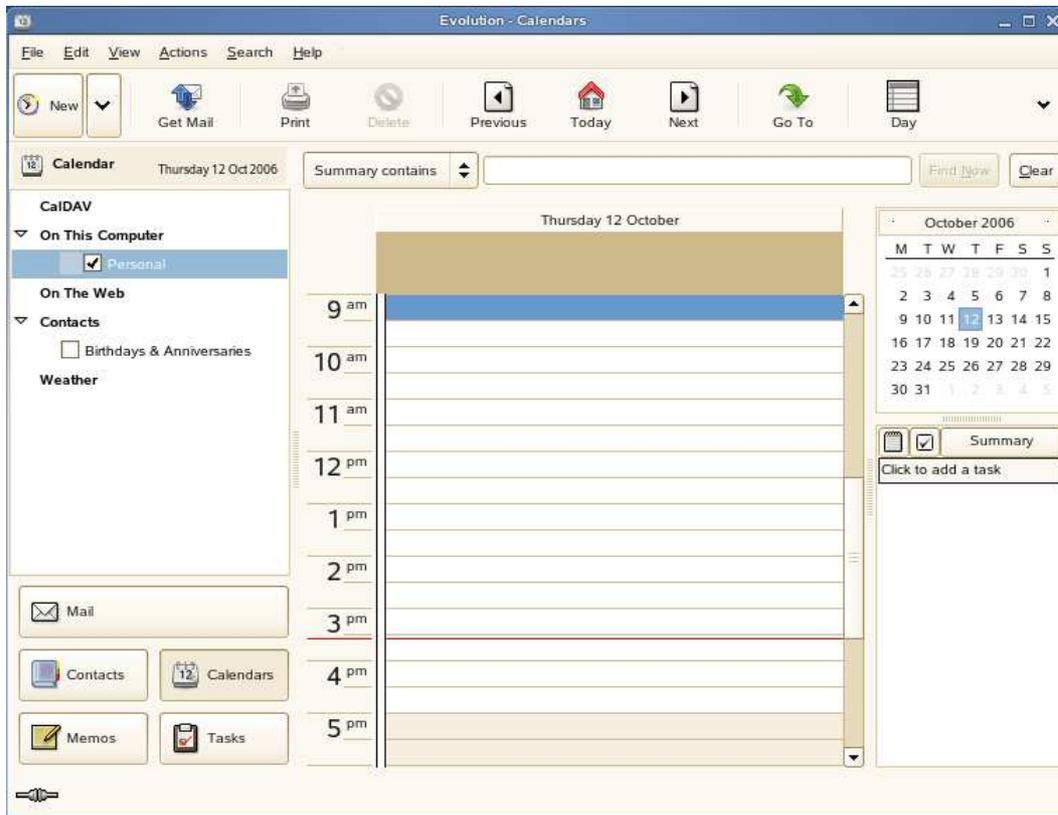
Select the calendars you want to see by activating the checkboxes in the left frame.

The content of the selected calendar appears in the center of the window.

You can use the small calendar on the right to quickly navigate through the calendar.

The small frame in the lower right corner lists tasks that need to be completed. Managing tasks is described later in this chapter.

Evolution supports four views of the calendar:

☞ Day: A single day is displayed in the main frame of the calendar dialog.

☞ Work Week: Five days (Monday to Friday) are displayed in the main frame.

☞ Week: Seven days (one week) are displayed in the main frame.

☞ Month: One month is displayed in the main frame.

☞ List: A list of all appointments with start and end.

Use the following icons to switch between the different views:
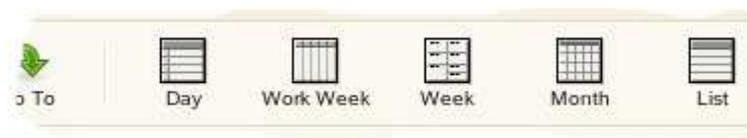
3.8.12 Navigate Through the Calendar

You can navigate through the calendar in several ways.

First, you can use the four navigation icons that appear in the icon bar of the Calendar module:

 – Jump to the previous day

 – Jump to today

 – Jump to the next day

 – Select the day you want to jump to from a small calendar that is displayed

You can also navigate the Calendar using the small calendar on the right side of the dialog:

To view a different month in the small calendar, select the small dots on either side of the month.

In the small calendar, select the day you want to view. The selected day will be displayed in detail in the center of the Calendar dialog.

☞ Exercise: Navigate Through the Calendar

What day of the week are the following dates? Practice selecting them.

Date	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
2nd Jan. 2009							
14th Oct. 2007							
30th Nov. 2004							
8th Mar. 2008							
6th Feb. 2030							
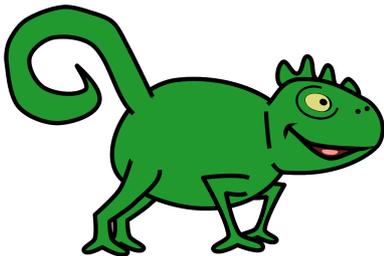
3.8.13 Add a New Calendar

You might want to store private appointments and school appointments in separate calendars.

To create a calendar, select `File → New → Calendar` or select `Calendar` from the ⚙ New pull-down menu.

A New Calendar dialog opens.

CalDAV is a protocol that allows you to access calendar files on other computers.
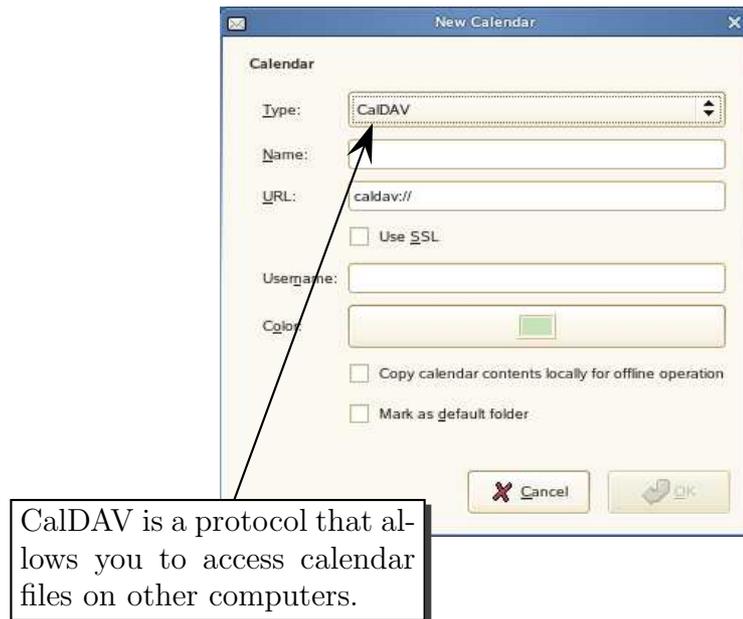
Under `Type` you can indicate where you want the calendar to be located. Under `Color`, you can select a background color for the appointments shown in the calendar view. The other information depends on the type of the calendar.

Then you can right-click the calendar in the list and select `Delete` from the pop-up menu.

☞ Exercise: Add a New Calendar

Create a new calendar "Classmates" inside the Calendar folder.

3.8.14 Create a New Appointment

To create an appoint-
ment, select ⊙ New in
the tool bar. The Ap-
pointment dialog ap-
pears.
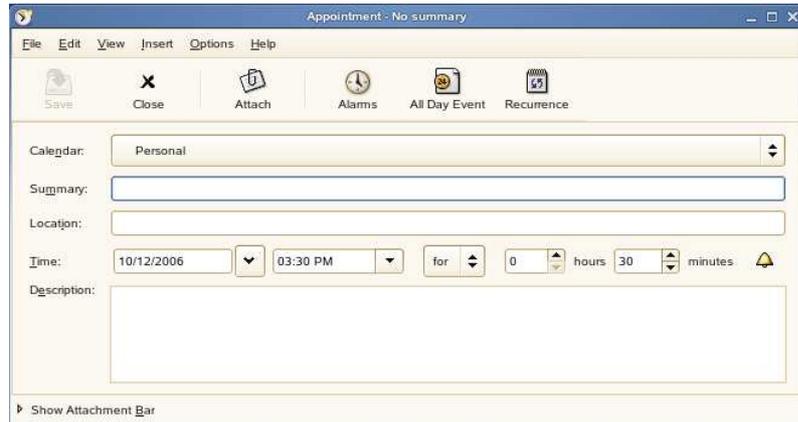
The dialog has three important icons in the toolbar:

- – Select this icon if you want to configure a reminder for the
  appointment.

- – Select this icon if your appointment is an all day event (e. g., a
  birthday).

- – Select this icon if the appointment recurs (described later).

The other items of the dialog are described here:

☞ **Calendar.** Select a calender where the appointment is stored.

☞ **Summary.** Type the name or a short summary of the appointment.

☞ **Location.** Type the location of the appointment (optional).

☞ **Time.** In the first textbox, specify the start date and in the second
text box the starting time. From the following menu, you can select
whether you want to specify the duration of the appointment (select
`for`) or the date and time when the appointment ends (`until`).

☞ **Description.** Description of the appointment.

☞ **Show Attachment Bar.** Like an email, you can add attachments to
an appointment by selecting the **Attach** icon in the toolbar.

Evolution can alert you before the appointment starts. Select the
Alarms icon in the toolbar.

You can select the time of the alarm from the `Alarm` menu:

☞ `1 hour before appointment`

☞ `1 day before appointment`

☞ `15 minutes before appointment`

☞ `Customize`

☞ `None`

When selecting `Customize`, you can configure the time and kind of the alarm in detail. To configure a new alarm, use ⊞ Add .
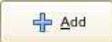
A lot of appointments recur. You can easily configure recurrences by selecting the `Recurrence` icon of the Appointment dialog.

First, select this checkbox.
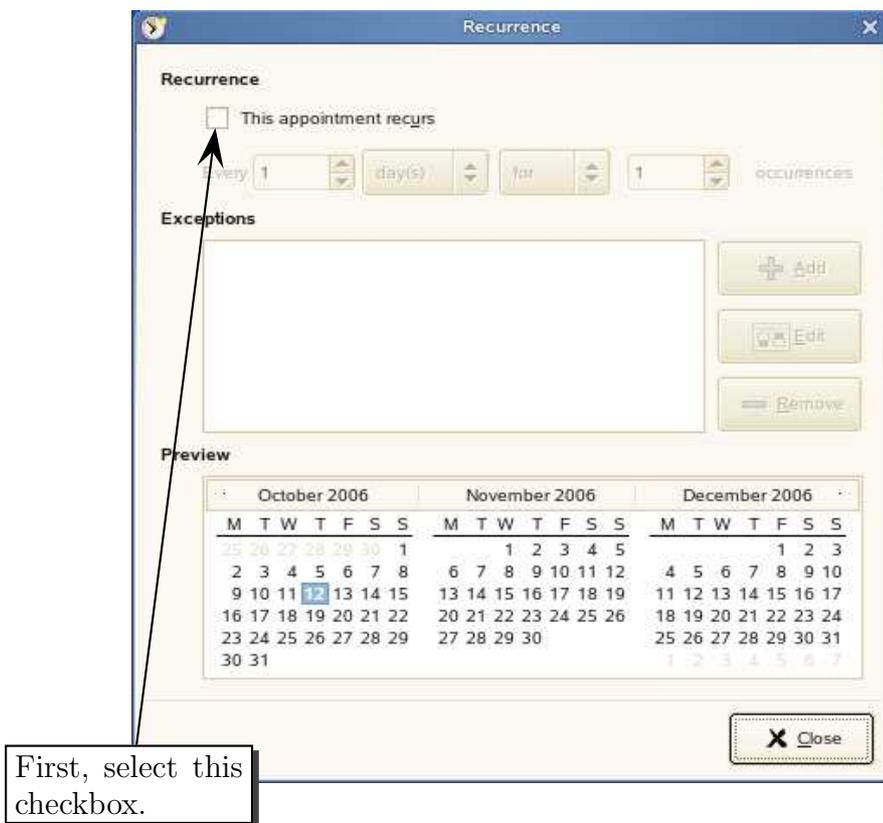
In the line beginning with `Every`, specify the interval of the recurrences (how often the appointment recurs). In the field next to `Every`, type a number. Then select the interval from the `day(s)` pull-down menu. The minimum is one day; the maximum is several years.

You also have to specify when the appointment stops recurring. This can be a date or a number of recurrences. If you don't know when the last appointment will take place, select `forever` in the `forever` pull-down menu.

You can enter exceptions for the recurrences in the Exceptions area. You can add new exceptions by selecting `+ Add` or you can remove a selected exception by selecting `— Remove`.

The Preview at the bottom of the `Recurrence` dialog highlights all appointment recurrences with a bold font.

Preview

October 2006

M	T	W	T	F	S	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	**12**	13	**14**	15
16	17	**18**	19	**20**	21	**22**
23	**24**	25	**26**	27	**28**	29
30	31					

✍ Exercise: Create a New Appointment

Create appointments for the birthdays of your classmates or family members.

Create appointments for your Linux course.

3.8.15 Filter Appointments

Categories are useful if you have a large number of appointments and you want to filter them. When creating an appointment you can select `View → Categories`.
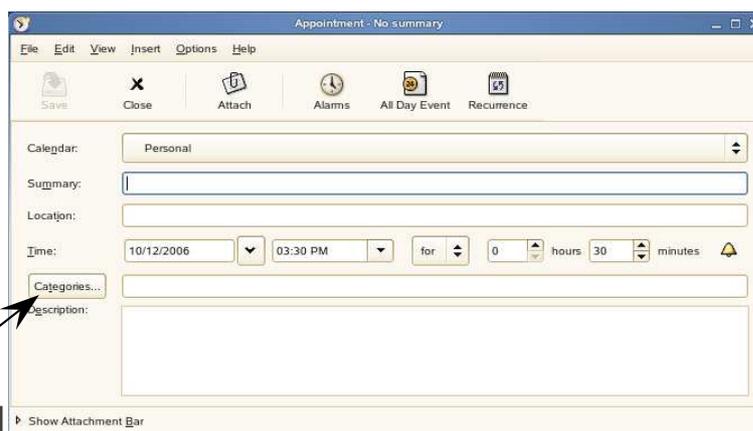
A new line is added to the dialog.

To view the list of available categories, select `Categories...`.

The Calendars module lets you decide whether you want to display or hide your appointments. To display the appointments, select the checkbox in front of the calendar name. The appointments will be listed on the right side. If you don't want to see the appointments, deselect the checkbox.

If you manage a large number and variety of appointments, you might want to filter them. Then you can view only those appointments that you need to at a given time.

To filter appointments, you can use the menus above the right frame.

The left pull-down menu contains the following options:

- ☞ `Summary contains.` Filter the appointments based on the summary of the appointment.

- ☞ `Description contains.` Filter the appointments by the description of the appointment.

- ☞ `Category is.` Filter the appointments by category.

- ☞ `Location contains.` Filter the appointments by the location of the appointment.

- ☞ `Any field contains.` Filter all configuration fields of the appointment.

After you have selected an option from the `Category is` menu, select an option from the `Any category` menu. Your `Category is` menu choice determines what options are available in the `Any category` menu.

☞ **Exercise: Filter Appointments**

Use filters to see in the calendar only the appointments for your Linux course.

3.8.16 Set Up a Meeting

You can use Evolution to set up a meeting with a classmate.

To set up a meeting, select
`Meeting` from the ⊙ `New` menu.
Alternatively, you can select
`File → New → Meeting`.
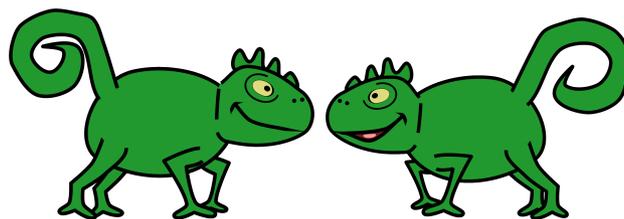
The standard Appointment dialog opens. However, now it has two more items:

❶ a `Free/Busy` icon in the toolbar

❷ an area to manage the attendees of the meeting
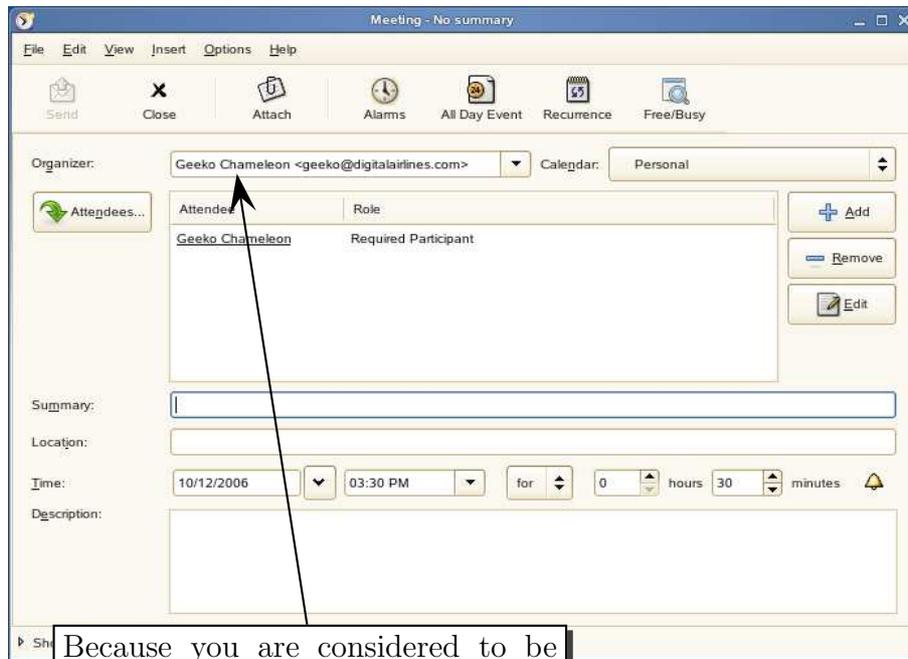
Because you are considered to be the appointment organizer, your email address should appear in the `Organizer` field.

If you have more than one email account configured, you can select a different address from the `Organizer` pull-down menu.

The main frame lists the people who have been invited to the meeting.

The table displays the following information. (You can change an item in the table by clicking on it.)

☞ **Attendee.** Name or email address of the attendee. You can type in the information or you can select the attendee from your address book by clicking the Contacts button.

☞ **Role.** You can assign a special role to an attendee. The attendee can be the chairman (select `Chair`), a `Required Participant`, an `Optional Participant` or a `Non-Participant`. If you don't know the role of the attendee, select `Unknown`.

You can add attendees by selecting 🕂 Add . Enter the mail address (or the name in the address book) of the attendee and specify the attendee's role. Alternatively you can select 🔁 Attendees... and another dialog opens and allows you to select the attendees.
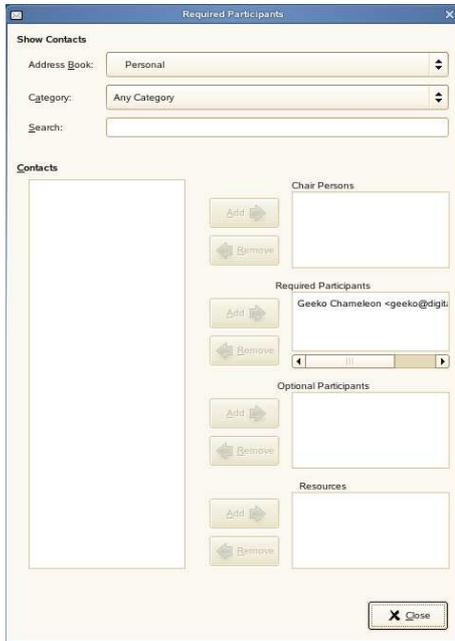
The new button Busy/Free in the appointment can be used
to determine when the people you invited to the meeting
have free time.
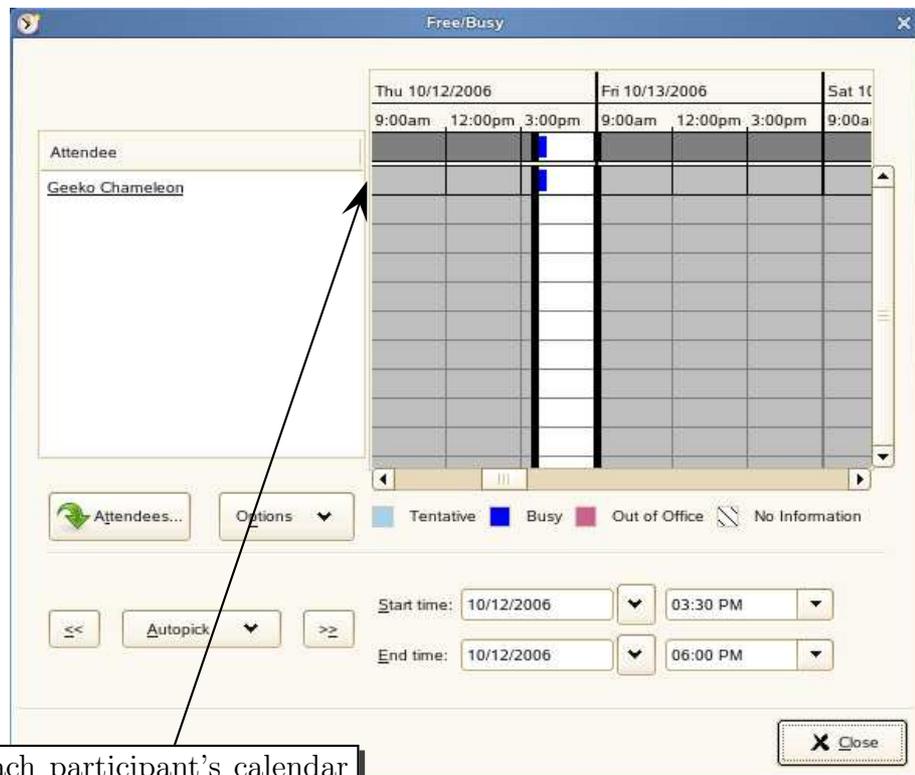
Each participant's calendar
is displayed in a single line.

Possible meeting times are marked with a white column in the diagram. You can use the `<<` and `>=` buttons to jump to an earlier or later times.

The options in the `Autopick ▾` pull-down menu let you specify whether the meeting time should match

☞ `All people and resources`

☞ `All people and one resource`

☞ `Required people`

☞ `Required people and one resource`

After you have configured the **Free/Busy** dialog, you can close it. When you are done with the other meeting information, select **Send**. The Evolution Query dialog appears:
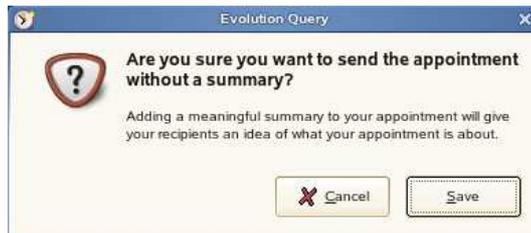
When you receive an email invitation to a meeting, the email includes all important information about the meeting.
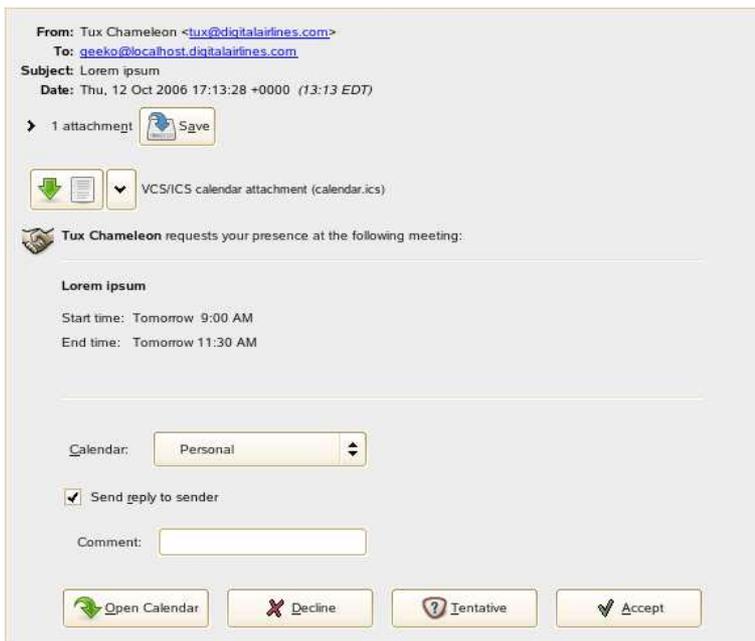
Using the buttons [✔ Accept], [? Tentative], and [✗ Decline] indicate whether you accept, tentatively accept, or decline the meeting invitation.

✍ Exercise: Set Up a Meeting

Create a meeting to preparate the next Linux course lesson. Invite five of your classmates.

3.8.17 Create a New Task List

Evolution contains a Tasks module for managing your tasks.

To start this module, select the `Tasks` button in the left frame of the Evolution dialog.

The Tasks dialog appears:
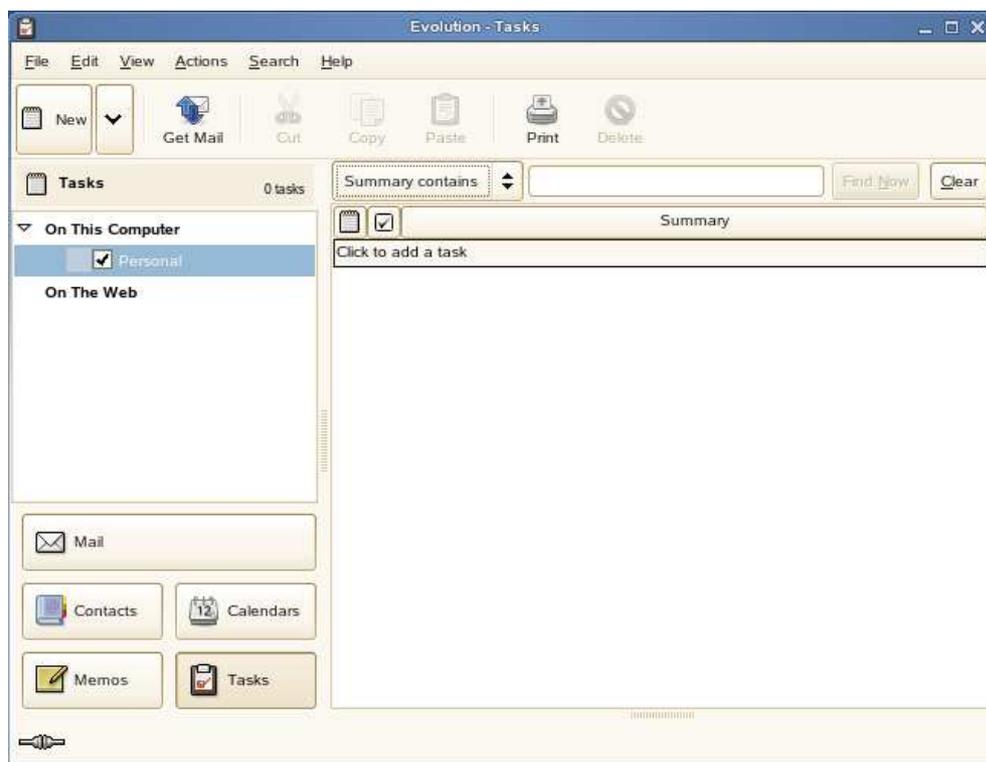
The available tasks are listed in the small frame above the module buttons on the left side of the window. The large frame on the right shows the individual tasks.

You might want to store private tasks and school tasks in separate task lists. Create a new task list by doing one of the following

☞ Selecting `File → New → Task List`

☞ Selecting `Task List` from the 🗋 New pull-down menu
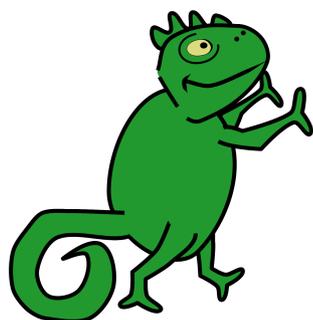
Under `Type`, indicate where you want the task list to be located. Under `Name` you can enter a name for your new task list. Under `Color`, you can select a background color for the tasks shown in the tasks view.

To remove a task list, right-click the task list and select `Delete` from the pop-up menu.

👉 **Exercise: Create a New Task List**
Create a new task list "Classmates" on your computer.
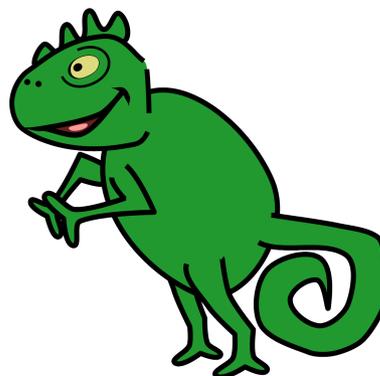
3.8.18 Create a New Task

To create a new task, select 🗋 New in the tool bar.

The Task dialog appears:
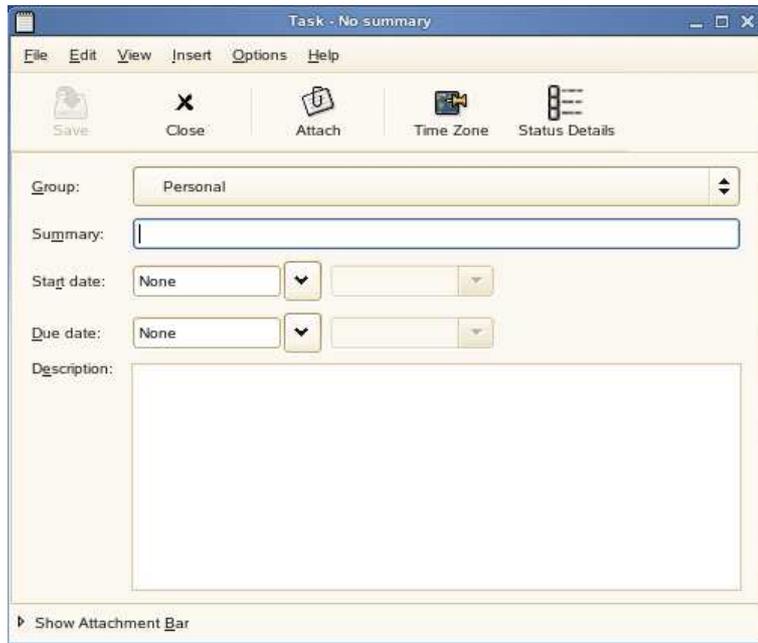
The dialog includes the following items:

☞ **Group.** Name of the task list the task should be stored in.

☞ **Summary.** Type the name or a short summary of the task.

☞ **Start date.** You can use the Start Date menu to specify by when (what date) the task needs to be started. The second menu on the Start Date line lets you specify a start time.

☞ **Due date.** You can use the Due Date menu to specify when (what date) the task must be completed. The second menu on the Due Date line lets you specify a completion time.

☞ **Description.** Type a detailed description of the task.

When you have finished configuring the task, select **Save** to create the new task.

✍ Exercise: Create a New Task

In the next two weeks you have to do the following tasks:

❶ Mow your lawn

❷ Prepare a presentation for your Latin course

❸ Buy a birthday present for your friend

❹ Phone your grandmother

❺ Clean your room

Enter these tasks into Evolution.

Filter Tasks

Categories are useful if you have a large number of tasks and you want to filter them. When creating a task you can select `View → Categories`.
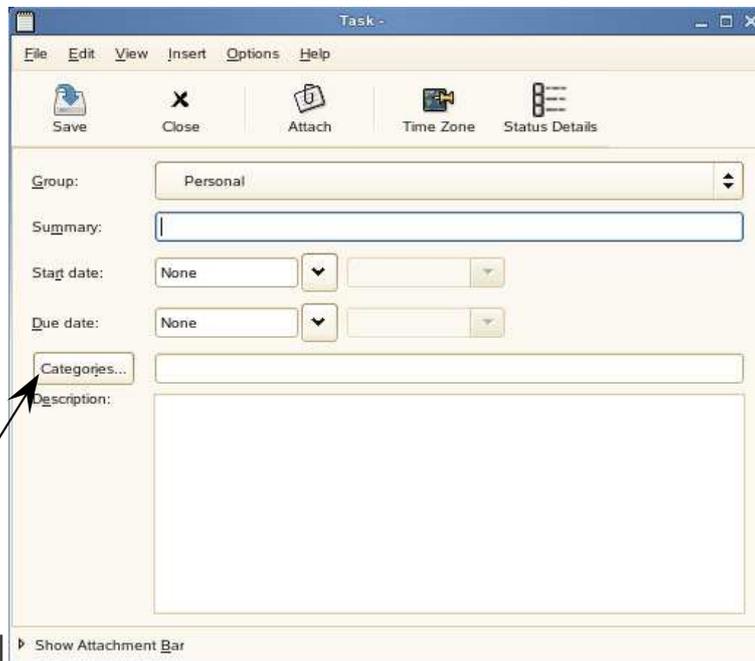
A new line is added to the dialog.

To view the list of available categories, select `Categories...`.

Evolution supports task lists. If you select the checkbox in front of the task list name, the items of the task list are shown in the right frame. If you deselect this checkbox, the items are not shown.

If you have to manage a large number and variety of tasks, you might want to filter them. Then you can view only those tasks that you need to at a given time.

To filter the tasks, you can use the menus above the right frame:

The left pull-down menu contains the following options:

☞ **Summary contains.** Filter the task based on the summary of the task.

☞ **Description contains.** Filter the task by the description of the task.

☞ **Category is.** Filter the task by category.

☞ **Any field contains.** Filter all configuration fields of the task.

After you have selected an option from the left menu, select an option from the `Any Category` menu. Your `Category is` menu choice determines what options are available in the `Any Category` menu.

3.8.19 Manage Tasks

When you are working on a task, you may want to track its progress or status.

Double-click the small notepad icon (▥) in front of the task name. The Task dialog appears again.

To change or configure the status of a task, select the `Status Details` icon in the toolbar.

You can configure the following items:

☞ `Status.` The status of the task. Here you can choose between the following settings:

⇨ `Not Started`

⇨ `In Progress`

⇨ `Completed`

⇨ `Cancelled`

☞ `Percent complete.` Select the percentage of completeness. This value may influence the `Status` menu.

☞ `Priority.` Specify the priority of a task (`High`, `Normal`, `Low`, or `Undefined`).

☞ `Date completed.` Type the date and time the task was completed. If you select `Completed` from the `Status` menu, the current date and time are inserted.

☞ `Web Page.` To connect the task with a web page, type the URL here.

Close the dialog to finish configuring the status of the task.

To delete a task, right-click the task and select `Delete` from the pop-up menu.

☞ Exercise: Manage Tasks

You already started with your tasks from the last exercise (page 284). Enter the following percentage of completenes:

❶ Mow you lawn → 25%

❷ Prepare a presentation for your Latin course → 80%

❸ Buy a birthday present for your friend → 0%

❹ Phone your grandmother → 100%

❺ Clean your room → 0%

3.8.20 Assign Tasks

You can use the Evolution Tasks module to assign a task to a classmate or to members of your team. Assigning a task is very similar to setting up a meeting.

Open the ▯ New menu and select `Assigned Task`. Alternatively, you can select `File → New → Assigned Task`.

The standard Task dialog opens. However, now it has an Attendees area.
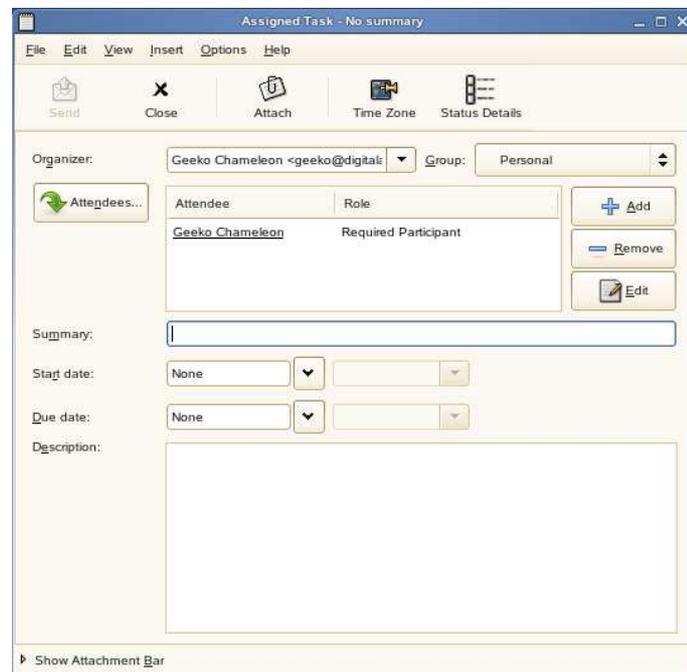
☞ **Exercise: Assign Tasks**

Use what you have learned in the section about setting up a meeting (see page 278) and assign a task to a classmate. Your classmate should accept the task.

3.8.21 Use Memos

Evolution contains a Tasks module for managing memos.

To start this module, select the `Memos` button in the left frame of the Evolution dialog.

The Memo dialog appears:
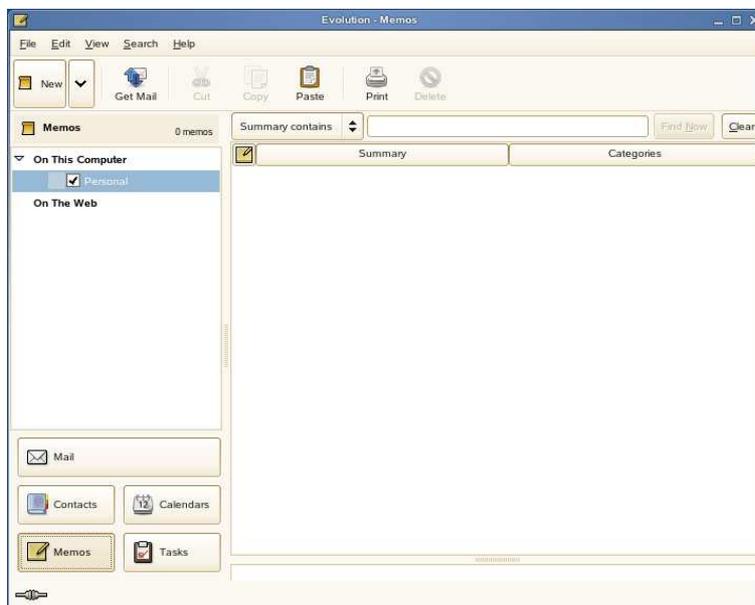
The available memo lists are listed in the small frame above the module buttons on the left side of the window. The large frame on the right shows the individual tasks.

You might want to store private memos and school memos in separate memo lists. Create a new memo list by doing one of the following

☞ Selecting `File` → `New` → `Memo List`

☞ Selecting `Memo List` from the 🔲 New pull-down menu

Under `Type`, indicate where you want the memo list to be located. Under `Name` you can enter a name for your new memo list. Under `Color`, you can select a background color for the memos shown in the memo view.

To remove a memo list, you have to right-click the memo list and select `Delete` from the pop-up menu.

✍ **Exercise: Create a New Memo List**

Create a new memo list "Classmates" on your computer.

3.8.22 Create a New Memo

To create a new memo, select ▢ New in the tool bar.

The Journal dialog appears:

The dialog includes the following items:

☞ `Group.` Name of the memo list the memo should be stored in.

☞ `Description.` Type the content of the memo.

When creating a memo, you can select `View → Categories` to select categories for the memo.

3.8.23 Customize Evolution

You can customize Evolution by selecting `Edit → Preferences`. A new dialog appears.
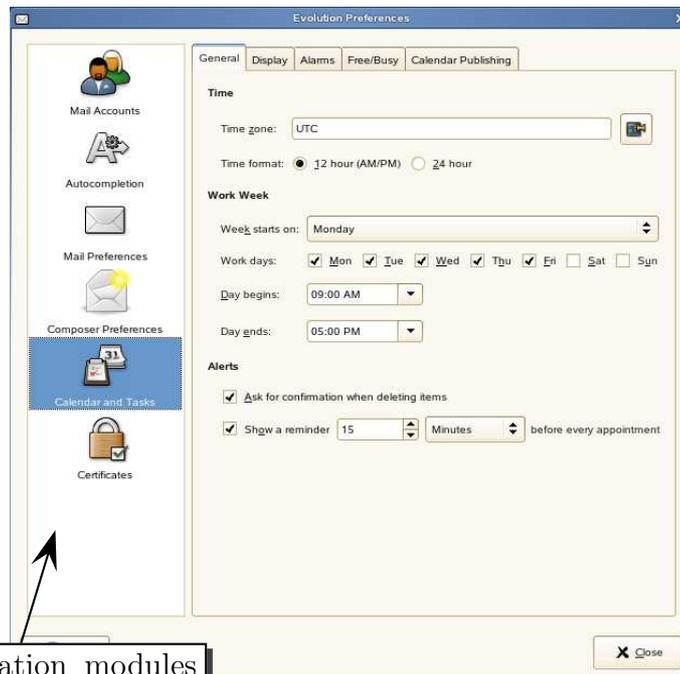
The configuration modules are listed here.

Most of the modules contain several tabs. Here you can change the data you entered into the wizard when started Evolution the first time.

3.9 Use Gimp to Manipulate Images

You can use Gimp, a free graphics application, to process scanned photos or images from the Internet. "Gimp" is an acronym for "GNU Image Manipulation Program." The application is very powerful, but it requires some practice to use effectively.

ⓘ The web pages for the Gimp project can be found at `http://www.gimp.org`.

At `http://www.gimp.org/docs` you can find the official Gimp user manual.

3.9.1 Start Gimp

To start Gimp, you can select the icon labeled `The GIMP` in the `Images` group of the Application Browser.

When you start Gimp the first time, some files are created in your home directory. For this, a wizard starts.

Select `Continue` to go to the next dialog.
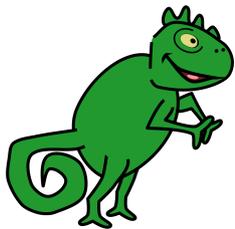
Gimp creates a new directory `.gimp-2.2` inside your home directory. This includes several files and subdirectories. You can select a file in the left frame of the dialog and the wizard shows some more information about it.

Files and directories with a name that begins with a dot (".") are hidden. To see them in Nautilus you have to select `View → Show Hidden Files`.

Select `Continue` to go ahead.

The next dialog shows a log of the file creation. Everything should be fine.

Select `Continue` again.
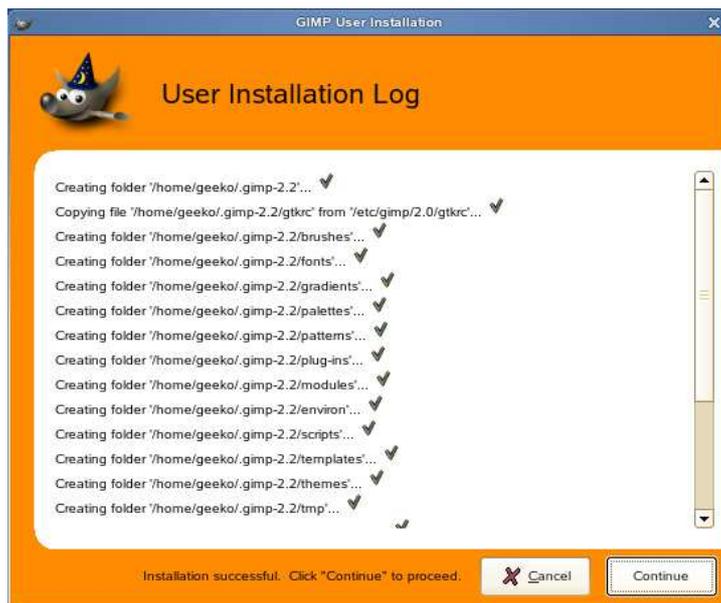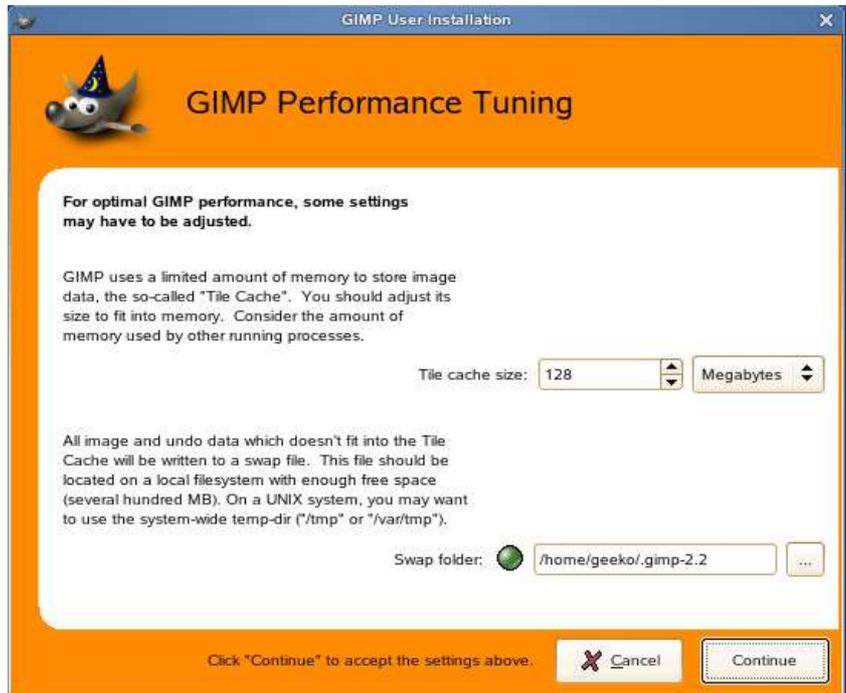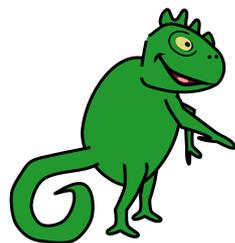
In this dialog you can adjust the memory usage of Gimp to store image data. Also, you can enter a swap directory where the data that does not fit into the memory is stored.

Normally, it is not necessary to change anything and you can proceed by selecting [Continue] and Gimp starts the first time.

☛ **Exercise: Start Gimp**

Start Gimp and proceed through the wizard.

3.9.2 Know the Gimp Windows

Three windows appear on the screen:

❶ GIMP Tip of the Day

❷ The GIMP

❸ Layers, Channels, Paths, Undo...
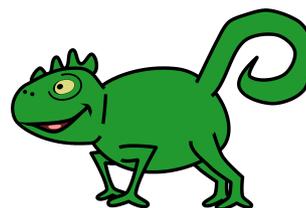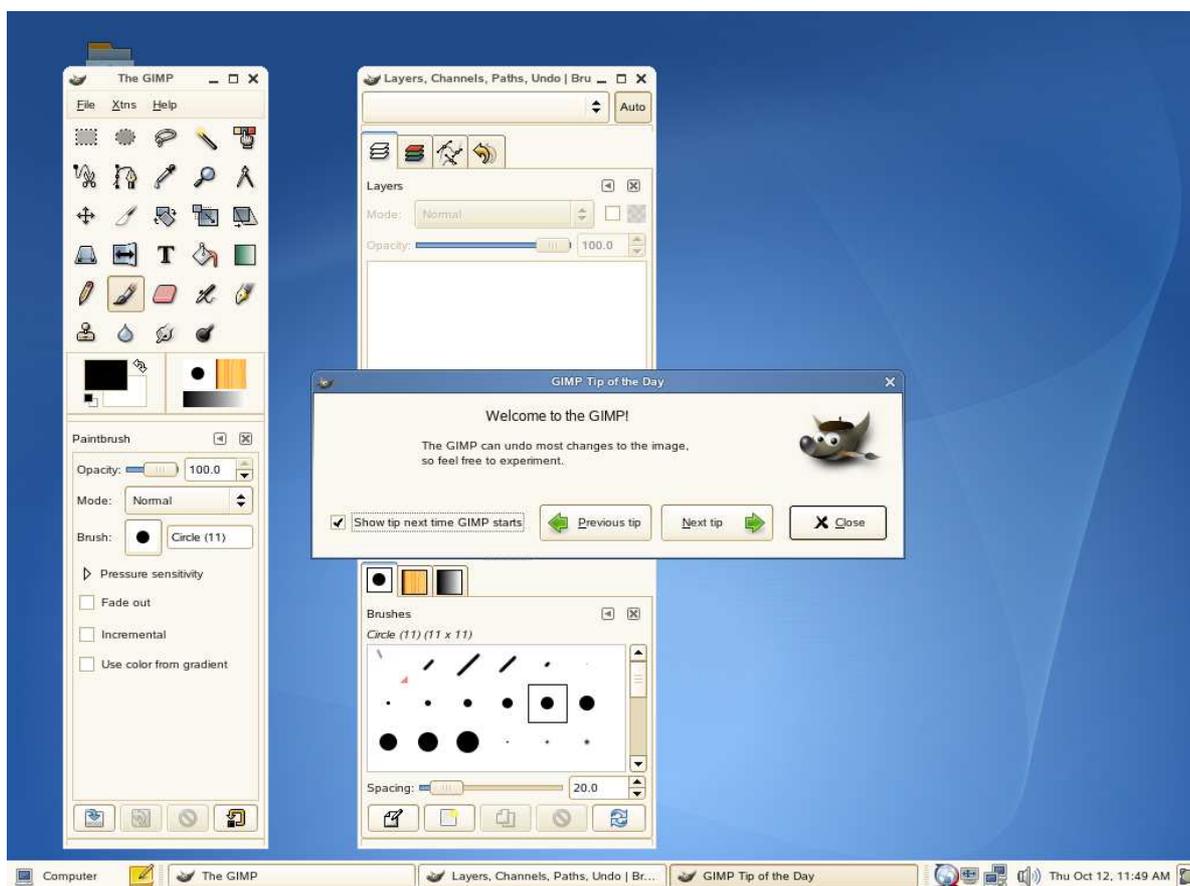
❶ GIMP Tip of the Day

Gimp shows a tip. The Tip of the Day is very useful to become more comfortable with the program over time.

Select [✗ Close] to close the dialog.
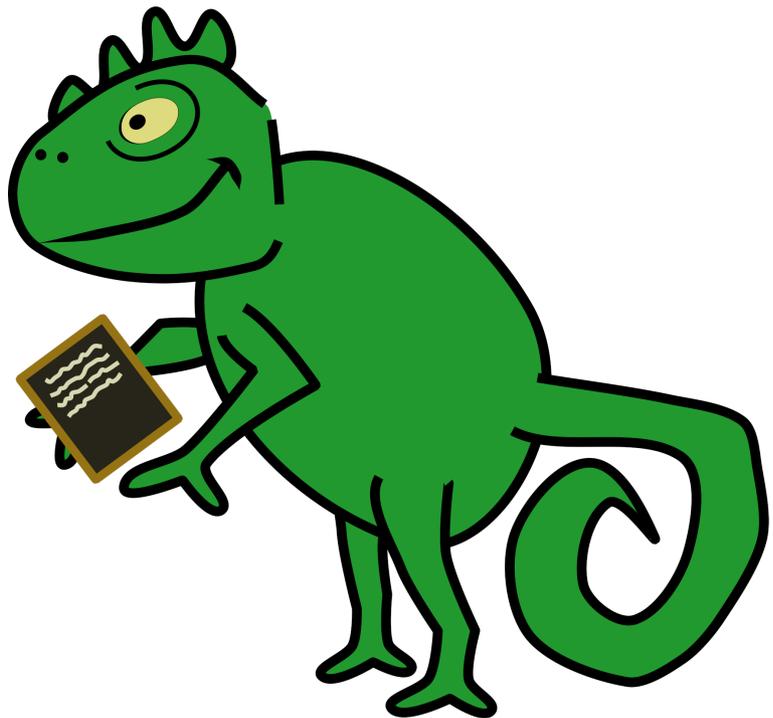
❷ The GIMP

The GIMP window is the main window of Gimp. Here you can select the tools and specify more detailed tool options in the lower part of the window.

Rectangular Regions
Elliptical Regions
Hand-drawn Regions
Contiguous Regions
Select Regions by Color

f. l. t. r.

Shapes from Image
Select Regions Using Curves
Select Colors
Zoom
Measure Distances and Angles

f. l. t. r.

Move Layer
Crop and Resize Image
Rotate Layer or Selection
Scale Layer or Selection
Shear Layer or Selection

f. l. t. r.

Change Perspective of Layer or Selection
Flip Layer or Selection
Insert Text
Fill with Color or Pattern
Fill with Color Gradient

f. l. t. r.

f. l. t. r.

Draw Sharp Pencil Strokes
Draw Fuzzy Brush Strokes
Erase
Airbrush
Draw with Ink

Clone
Blur or Sharpen
Smudge
Dodge or Burn

f. l. t. r.

Foreground Color
Background Color
Active Brush
Active Gradient
Active Pattern

Additional Options

Save Options
Restore Options
Delete Saved Options
Reset to Default Values

You can categorize the tools into four groups:

Selection tools	Layer tools	Draw tools	other tools

☞ Exercise: Know the Gimp Windows
In the table above, insert the name of each tool.

❸ Layers, Channels, Paths, Undo...

The upper frame of the window has four tabs:

– An image has at least one layer, labeled `Background` by default. A layer is comparable with a transparent foil. The upper layers hide or overlay the lower ones.

– Each color on the computer screen is a mixture of the three colors red, green, and blue. A channel shows how much of each basic color is used. Regions with lots of basic color are shown in white. Regions with little basic color are shown in black.

> If you mix 100% red with 100% green with 100% blue you get the color white.

– A path is a bezier curve like you may be familiar with from vector oriented draw programs. You can create a selection from a path and vice versa.

– List of the last actions. To undo select the last valid step.

> To undo one step you can press `Ctrl` + `Z`.
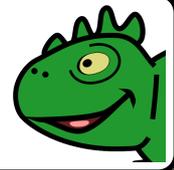
The lower frame of the window has four tabs:

■ – Select a brush from this menu.

▌ – Select a fill pattern from this menu. To fill a selection with a pattern, use ⬙ and select fill type `Pattern Fill` in the lower frame of the GIMP window.

▨ – Select a gradient from this menu. To fill a selection with a gradient, select ▢ in the lower frame of the GIMP window.

3.9.3 Open and Save Image Files

To open a file in Gimp, you must first choose `Open` from the `File` menu of the GIMP window. This opens the standard Gnome dialog from which you can select the file you want to open. The loaded image is displayed in a new window.

Most functions of Gimp can be accessed by the menu bar on the top of every image window.

This menu is available by right-clicking the image.
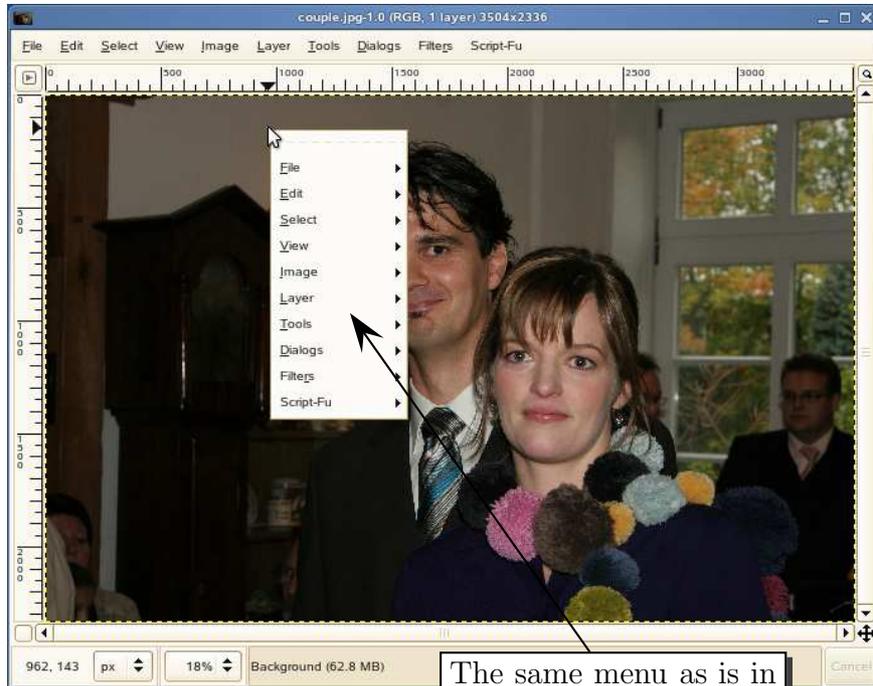
The same menu as is in the top of the window.

To save the image, you select `File → Save as` from the image menu.

The default file format of Gimp is XCF. All selections and layers are stored.

☞ Exercise: Open and Save Image Files

Open the file `examples/Gimp/couple.jpg` from the course CD. Save the opened photo as XCF file into your home directory.

3.9.4 Select Regions

The most important thing you have to know for photo manipulation is how to create a selection. Before you can copy a person from one photo

into another or before you can change the color of a person's clothes you have to select the region you want to use.

You may already know how to use the selection tools:

– Rectangular selection

– Elliptical selection

– Hand-drawn selection

– Contiguous selection

– Color selection

– Select a shape at it contours

– Curves selection

Rectangular, elliptical, and hand-drawn selection are very easy. They work as expected.

☞ Exercise: Select Regions – Part 1

Create an elliptical selection. What are the changes in behaviour when you keep the following keys pressed while moving the mouse?

☞ Shift
☞ Ctrl
☞ Alt

Normally a new selection replaces the old one. If you press Shift before clicking the mouse button to start the second selection (a small

plus appears next to the mouse pointer), both selections are combined. If you press $\boxed{\texttt{Ctrl}}$ before clicking the mouse button to start the second selection (a small minus appears next to the mouse pointer), the second selection is removed from the first one.

Alternatively you can use the icons in the lower frame of the GIMP window:

– The new selection replaces the old one

– The old selection is enlarged by the new one

– The old selection is reduced by the new one

– Only the region that is part of both selections is selected

With the contiguous selection tool, you can select a point in the image, and a region around that point with similar colors is selected.

✎ Exercise: Select Regions – Part 2

What happens if you select the contiguous selection tool, keep the mouse button pressed and move the mouse to the right and to the left?

The color selection tool selects all points in the image that have the same color as the selected point.

Using the shape selection tool select some points around a shape. The tools try to detect the contours of the shape. The last and the first point must be identical. If you click in the center of the shape, the shape is selected.

✎ Exercise: Select Regions – Part 3

Select all windows.

The curve selection tool is not really a selection tool. You can also use it for drawing.

It works similar to the bezier tool you might know from vector oriented graphic programs. Select a point, keep the mouse button pressed and move the mouse. If the curve is fine, release the mouse button and select the next point.

When you want to finish the curve, there are two buttons in the lower frame of the GIMP dialog you can select:

❶ | Create selection from path | Creates a selection from the path you draw.

❷ | Stroke path | Draws a path. For this a dialog appears where you can specify the options of the path.
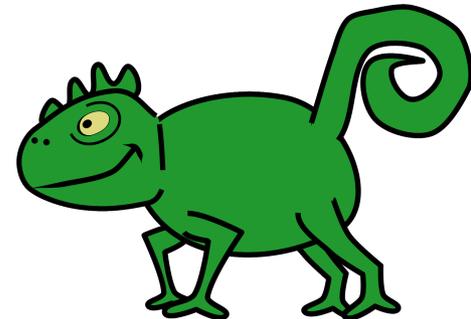
☞ Exercise: Select Regions – Part 4

Select the brush drawing tool (🖌) and try to scribble inside and outside the selection. What happens?

As you see, a selection can be used to protect regions of unintended manipulation or to limit a manipulation only to a part of the picture.

Concerning selections, there is a menu item `Select` in the image menu. We can not describe all of the menu items here, but the most important items are:

`All`   – Selects the whole picture.

None   – Removes all selections.

Invert – Inverts the selection.

Shrink – Shrinks the selection. You can enter how much the selection is shrinked into the appearing dialog.
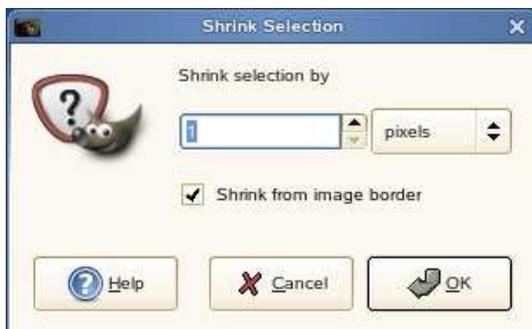
Grow   – Enlarges the selection. You can enter how much the selection is enlarged into the dialog, which is very similar to the shrink dialog.

Border – A border is drawn around your selection and maked as the new selection. You can enter the thickness of the border into the dialog.

3.9.5 Use Layers

You can copy the region you selected into the clipboard by selecting `Edit` → `Copy`. Or select `Edit` → `Cut` to cut your selection.

To paste there are three menu items available:

Paste   – Normal paste

Paste Into   – Pastes the content of the clipboard into the current selection.

`Paste as New` – Creates a new image from the content of the clipboard.
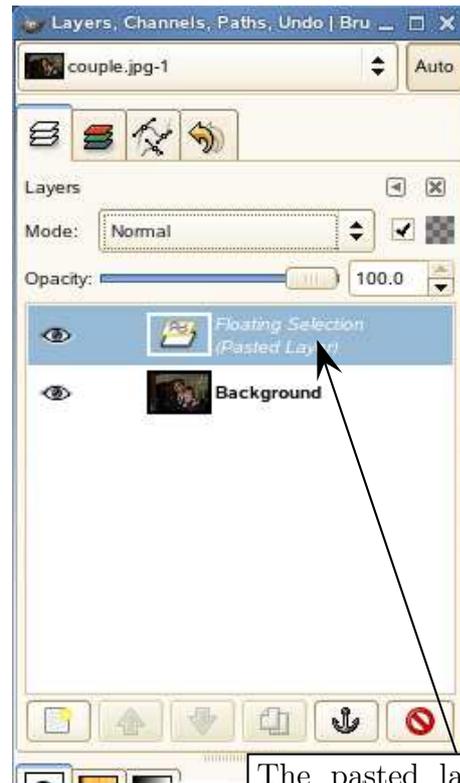
> The pasted layer appears in the Layer dialog and is selcted.

Select the Move Layer tools ($\oplus$) from the toolbox to move the pasted layer.

Now you have the following possibilities:

❶ You can select the white paper icon below the layer frame (🗋). The pasted layer is made into a new "real" layer.

❷ You can select the anchor icon below the layer frame (⚓). The pasted layer is added to the background.

❸ You can select the trash icon below the layer frame (🗑). The pasted layer is deleted.

If you have more than one layer you can select the mode which controls how the layer on the top influences the layers below. For this, use the `Mode` menu.

Modes other than `Normal` produce interesting effects.
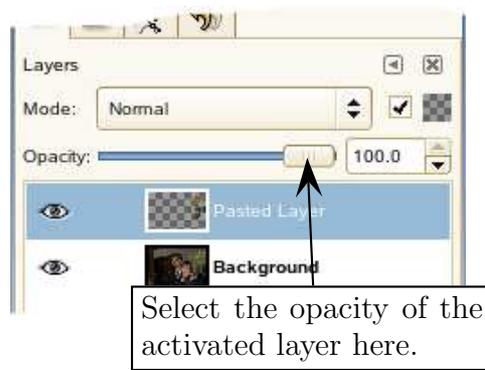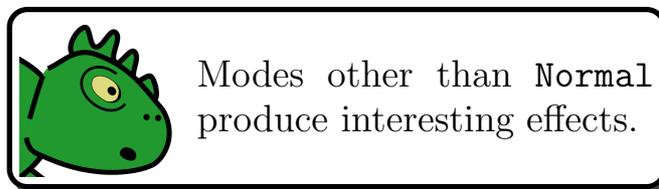
When selecting the eye icon (👁) in front of each layer entry, the layer is made invisible.

If you select the label of the layer, you can rename it.

☞ **Exercise: Use Layers**

Create a new layer labeled "Test Layer" and select it. Now you can start testing the draw tool in the next section without destroying the original image.

3.9.6 Use Draw Tools

We can not cover all of the drawing tools here in detail, but we want to introduce the most important features.

Use the pencil 🖉 , the brush 🖌 and the airbrush 🖋 tool to draw free-hand.

☞ Exercise: Use Draw Tools
Describe the difference between the pencil, the brush and the airbrush tool.

Before you start drawing you can select a brush from the lower part of the Layers dialog.
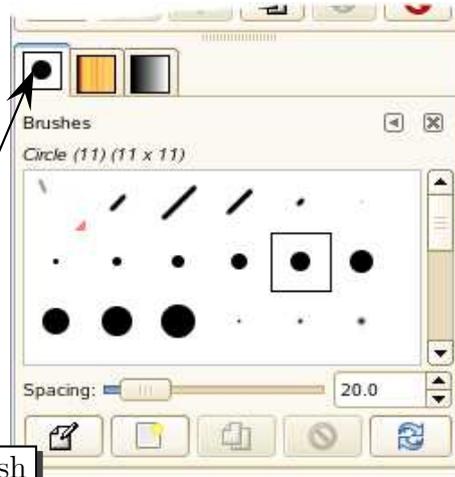
Make sure that the brush tab is selected.

First, select the color in which you want to draw. In the GIMP dialog there is a area where you can select the color of the foreground (the left box) and the color of the background (the right box).
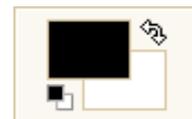
If you select one of the boxes, the color selection dialog appears.
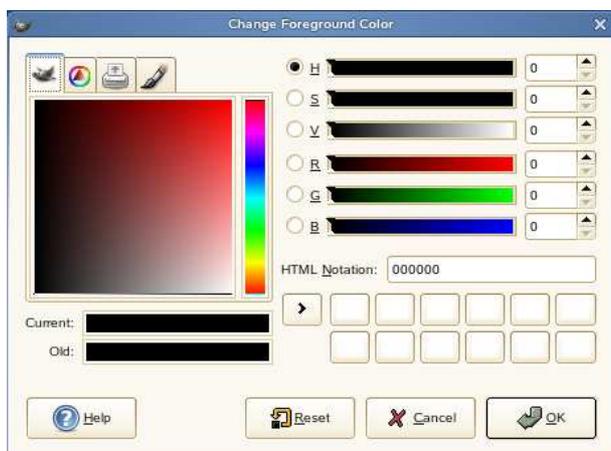
You can select the color from the vertical rainbow bar in the center of the dialog. The selected color of the rainbow is shown in the top right corner of the left square.

Now you can select the saturation (vertical axis of the left square) and the brightness of the color (horizontal axis of the left square).

In the bottom right color there are twelve small empty squares, which can be used to store colors. For this, select ⌞ ›⌟.

When you finish, select ⌞ 🖳 OK⌟.

To change foreground color and background color, select 🖑.

To switch back to black and white, select 🖸.

The erase tool (⬚) works similarly to the brush tool, with the exception that all colors are removed from the selected layer and the content of the lower layers appears.

To "draw" text, select the text tool (**T**). In the lower part of the GIMP dialog, you can specify text options such as

- ☞ Font

- ☞ Font size

- ☞ Color

- ☞ Alignment

If you click inside the image, a simple dialog appears and you can enter the text.
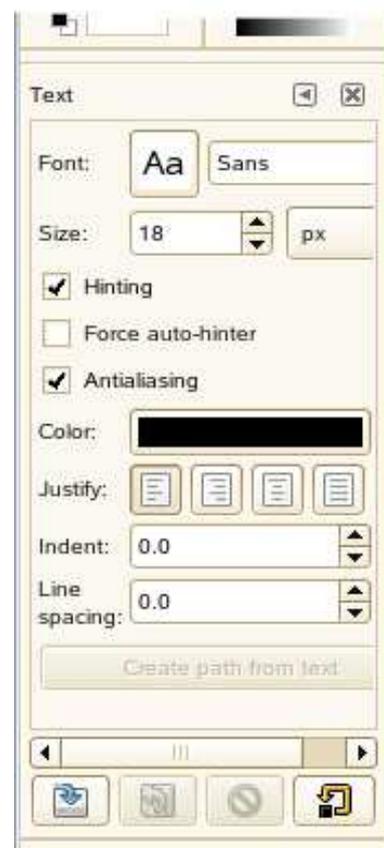
For each bit of text you enter, a new layer is added. The name of the layer is the same as the entered text.

Opacity: 100.0

Lorem ipsum

Background
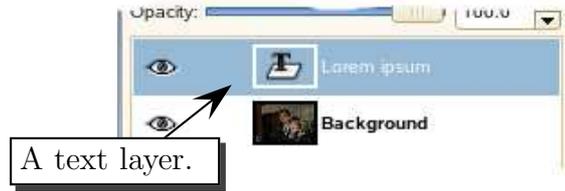
A text layer.

To use the filling tools ⚱ and ◻ it is helpful to make a selection first. For pattern fill you can select a pattern from the lower part of the layers dialog.

Patterns
Pine (64 x 56)
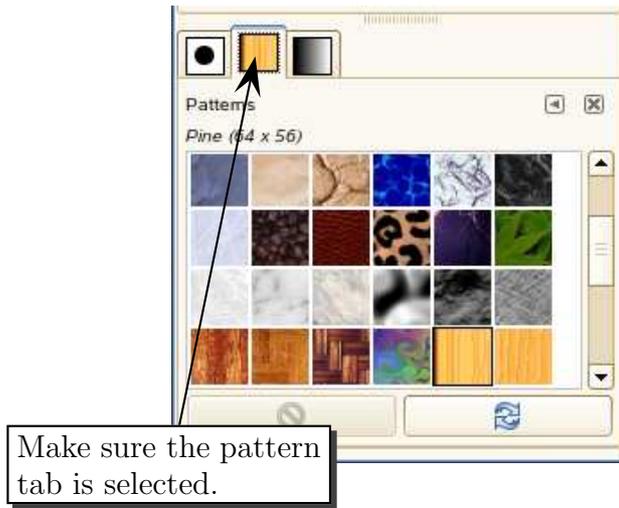
Make sure the pattern tab is selected.

For gradients, the frame looks like this:

Gradients

FG to BG (HSV clockwise hue)
FG to BG (HSV counter-clockwise)
FG to BG (RGB)
FG to Transparent
Abstract 1
Abstract 2
Abstract 3
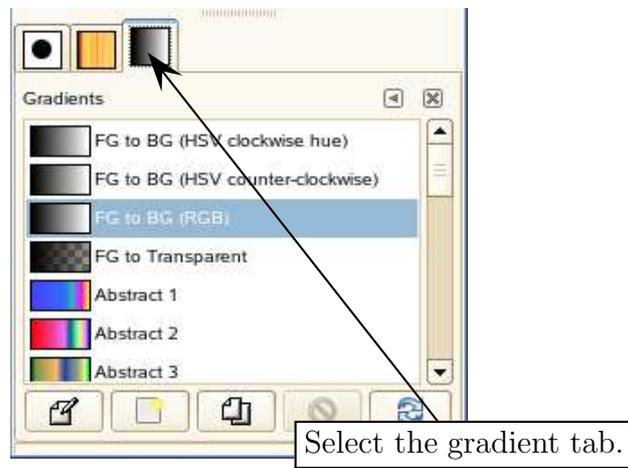
Select the gradient tab.

In the tool options of the pattern fill (lower frame of the GIMP dialog) you can select whether you want to fill your whole selection, or select similar colors.

Select this option to fill the whole selection.
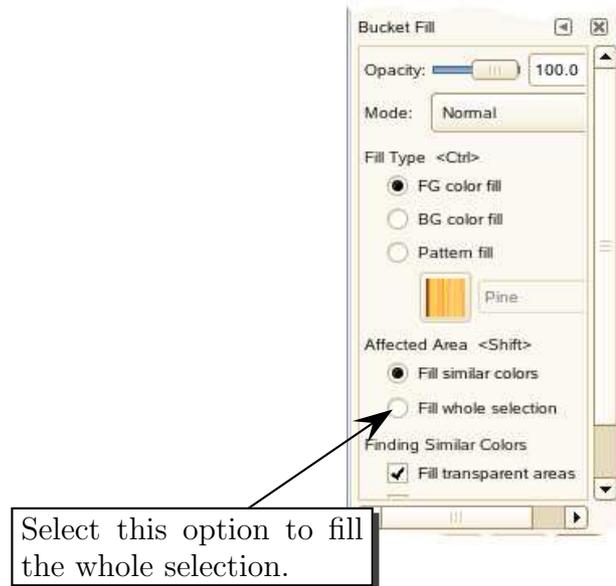
To fill a selection with a gradient, click inside the selection, keep the left mouse button pressed and move the mouse in the direction of the gradient. When you release the mouse button, the selection is filled.

You can select different types of gradients here.
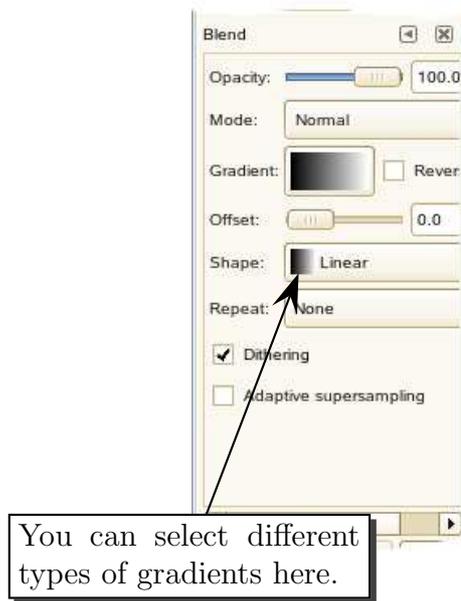
There are several different types of gradients available:

☞ `Linear`

☞ `Radial`

☞ `Square`

☞ `Conical`

☞ `Shaped`

☞ `Spiral`

The clone tool (🔲)is useful for copying a texture in the photo to a new location. This is needed when you have created things you want to duplicate.

First, position the cursor into the area you want to copy. Then press `Ctrl` and click into the image. Thereafter you can release `Ctrl` and start painting.

3.9.7 Know Other Important Tools

There are two more tools you will use very often:

☞ Color selection tool (🖊)

☞ Zoom tool (🔍)

Use the color selection tool to pick a color from the image. A dialog appears and the picked color is shown.

By default the foreground color is replaced by the picked color. You can change this in the lower frame of the GIMP window.

Select what to do with the picked color.
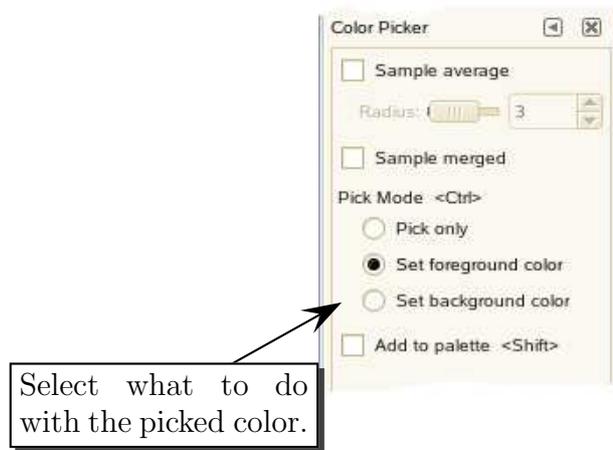
You can pick a color directly by pressing $\boxed{\texttt{Ctrl}}$. This works not for all but for a lot of tools (e.g. pencil, brush).

The zoom tool by default zooms in the image. If you keep $\boxed{\texttt{Ctrl}}$ pressed, the tool zooms out.

More zoom options are available at `View` → `Zoom` in the image menu.
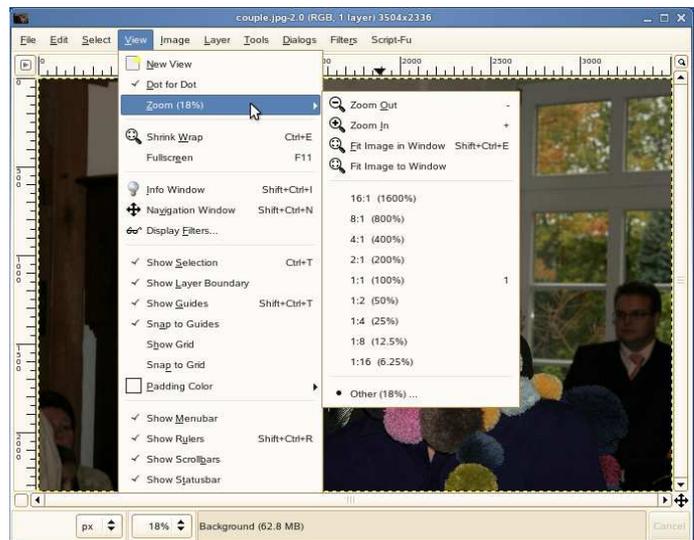
Press ⬚1 to switch to 100% view.

✍ Exercise: Use Gimp Tools

Open the file `examples/Gimp/house.jpg` from the course CD.

Remove all the cars and refill the "holes" with the wall behind.

3.9.8 Improve Colors

Sometimes the colors of an image are not ideal. A picture might be discolored by flash overexposure or might have received an odd tint during the scanning process. In other cases, bad lighting might have led to underexposure. Gimp offers various options for postprocessing and color correction. You can access the color correction options by selecting `Layer` → `Colors` in the image menu.
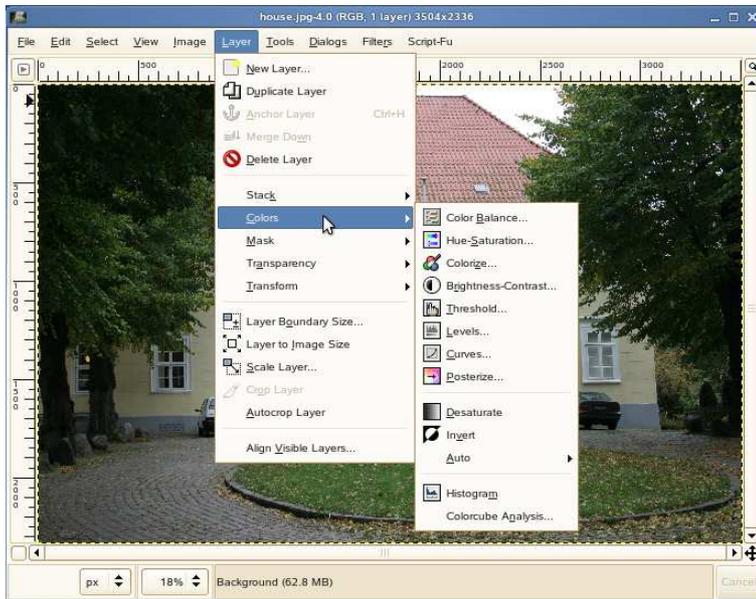
Make sure that the correct layer is selected.
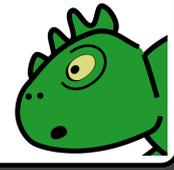
Lets take a brief look at some of the dialogs:

☞ `Color Balance.` Change the colors for shadows, midtones and highlights. You can add:

  ⇨ Cyan or red
  ⇨ Magenta or green
  ⇨ Yellow or blue

Remember that it is possible to mix colors. Red and blue generates magenta. Blue and green generates cyan. Green and red generates yellow.

Red and cyan are *complementary colors.* Also, magenta and green, and yellow and blue.
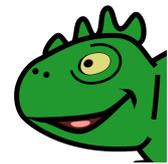
☞ **Hue-Saturation.** You can change hue, lightness, and saturation for the whole image or the six basic colors:

⇨ Red

⇨ Magenta

⇨ Blue

⇨ Cyan

⇨ Green

⇨ Yellow
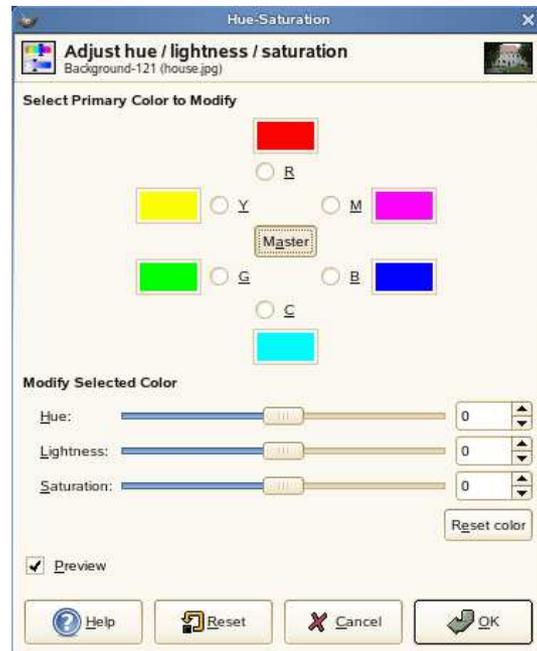
☞ **Colorize.** The image is converted to grayscale. In the colorize dialog you can change hue, saturation, and lightness of the main color.
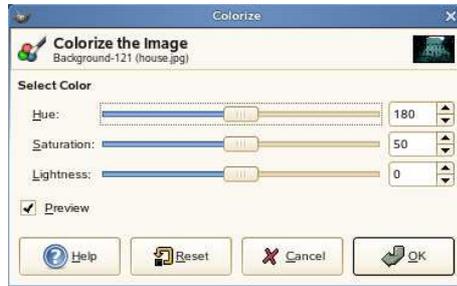
☞ `Brightness-Contrast.` You can use `Brightness-Contrast` to darken bright images (Brightness) and brighten dark images. You can make colors appear stronger by raising the value with `Contrast`.
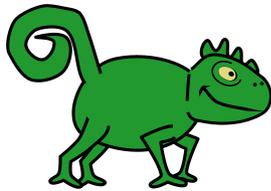
This figure illustrates the difference between the original color in the upper left half of the image and a slightly increased contrast in the lower right half.

☞ `Curves.` In this dialog you see can change the brightness of the image. At the left you see the dark colors, at the right the light colors.
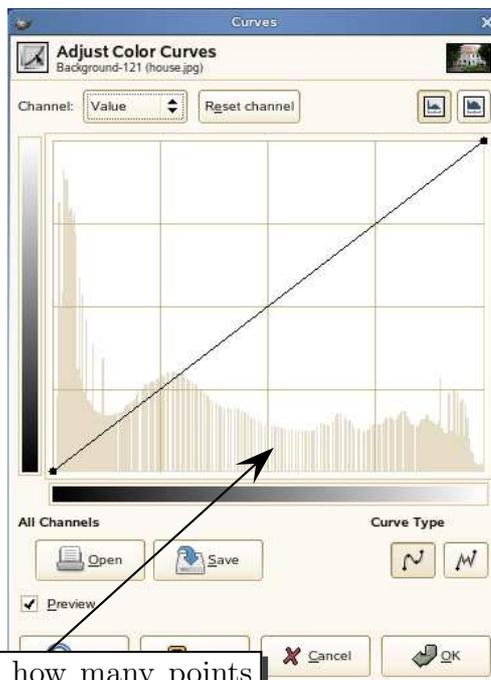
This curve shows how many points in the image have this brightness

If you click the black diagonal line, you can add points and twist the line. If you twist the line higher than the diagonal, the effected colors are lightened. If you move it down to the diagonal, they are darkened.

☞ **Posterize.** Use this dialog to reduce the number of colors.

☞ **Desaturate.** Converts the image directly to grayscale.

☞ **Invert.** Inverts the image.

The `Layer` → `Colors` → `Auto` option offers you five proven color enhancement procedures to try. These procedures produce variable results depending on the source image, but trying these automatic procedures may be worthwhile. If the changes are not acceptable, you can undo them by right-clicking the image and then selecting `Edit` → `Undo` or, alternatively, using the keyboard shortcut `Ctrl` + `Z`.

✍ **Exercise: Improve Colors**

Improve the colors of the house photo.

The color of the sky is nearly white on the house photo. Change it to blue.
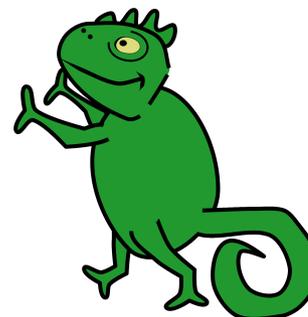
3.9.9 Use Effects

Gimp provides several special-effects tools. `Filters` in the image menu offers a number of submenus that contain various special-effect functions.
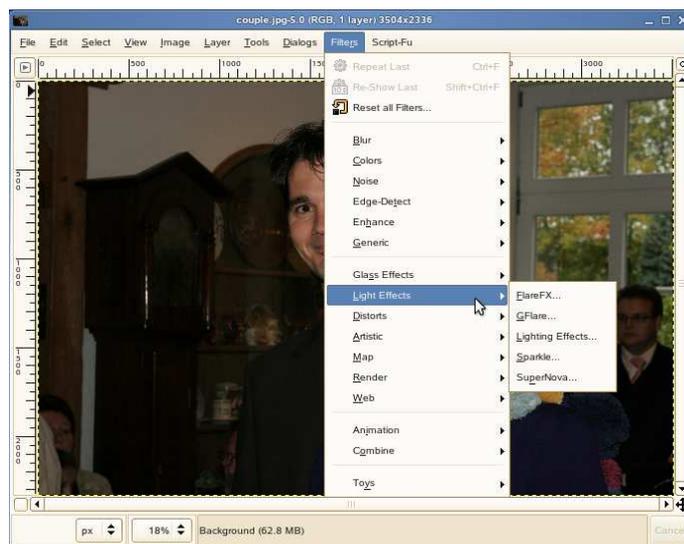
Not all effects can be applied to all image modes. Some effects require a selection; some do not. Some only make sense when applied to a color image, some only when applied to monochrome images. Many filters require a lot of processing power, so you may have to wait for the results to be displayed on slower computers.
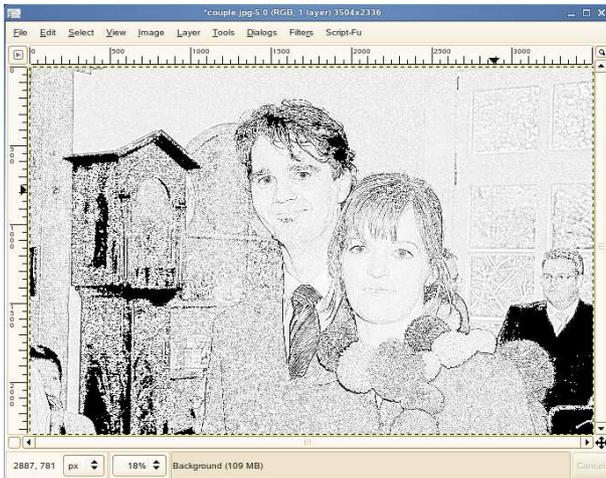
☞ **Exercise: Use Effects**

Create five variations of the house.jpg photo using five different effect filters.

3.9.10 Use Script-Fu

Gimp can be extended by "Script-Fu" modules. These modules are stored in the directory `/opt/gnome/share/gimp/2.0/scripts/` and written in a Gimp specific language, called "Script-Fu."

These scripts often simply combine different Gimp tools and effects. So you can automate complex tasks, such as creating a slide with your image or to create a logo for your website.

You can find the predefined Script-Fus under `Script-Fu` in the image menu or at `Xtns → Script-Fu`

☞ **Exercise: Use Script-Fu**

Test five Script-Fu scripts.

3.9.11 Create a Screenshot

You can create a screenshot directly in Gimp via `File → Acquire → Screen Shot` from the GIMP menu.

Screen Shot

Grab

○ a Single Window

Select Window After 0 Seconds Delay

○ the Whole Screen

Grab After 0 Seconds Delay

Help   Cancel   Grab
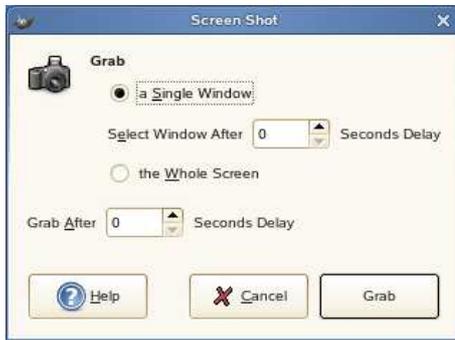
You can select whether you want to capture the whole screen or a single window. Also, you can specify whether the screen should be captured immediately or after a delay.

Exercise: Create a Screenshot

Create a screenshot from you GNOME environment showing an opened main menu.
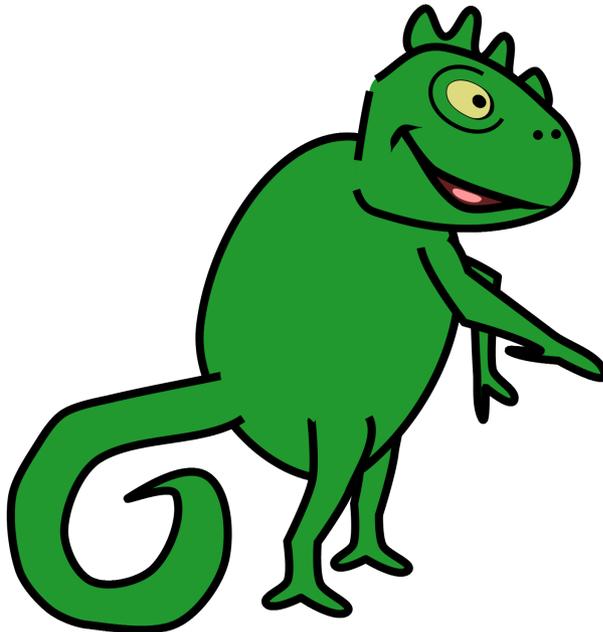
3.10 Enable Multimedia

3.10.1 Use a Sound Mixer

To control the volume, select the small loudspeaker icon in the bottom right corner. Clicking with the left mouse button it opens a slider to control the volume.

If you want to manage the volume of the different sound devices in detail, select the loudspeaker icon with the right mouse button and select `Open Volume Control` from the popup menu. You also can select `Volume Control` from the `Audio & Video` group in the Application Browser.

> The dialog that appears may look different on your computer, depending on the available sound hardware.

The `Playback` tab shows volume sliders for the available output devices.
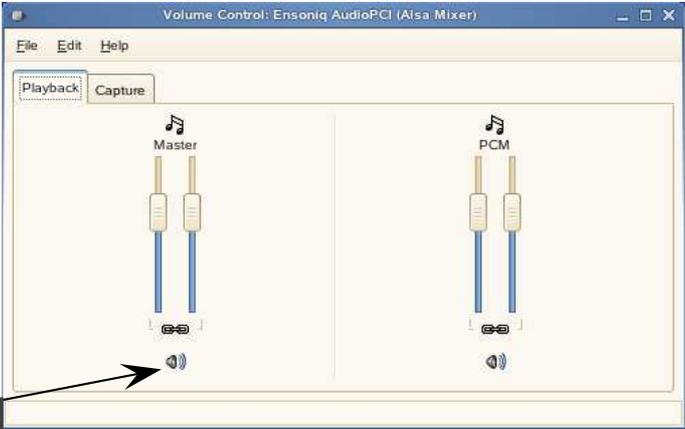
Mute a device here.

The two sliders in the previous image are:

Master – The master volume control

PCM – The volume of the PCM device (*Pulse Code Modulation*)

The `Capture` tab normally shows more icons.
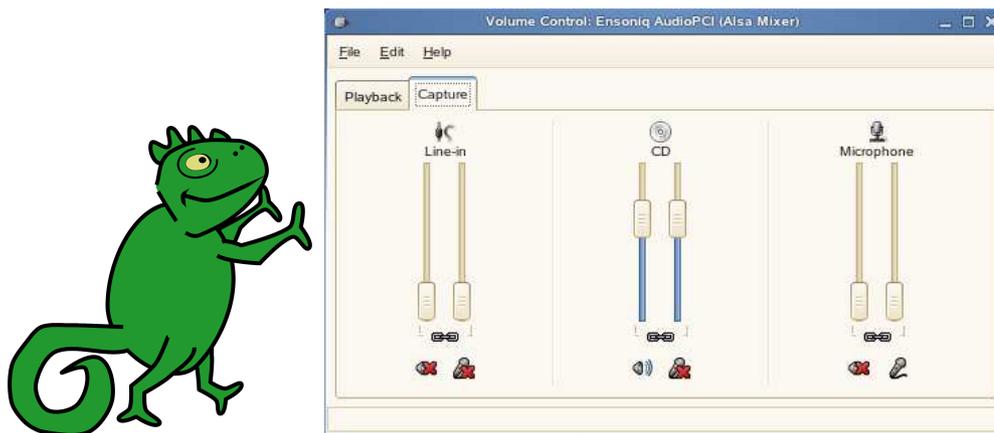
There are only the most important input devices shown. If you want to add other devices, select `Edit →` `Preferences`.
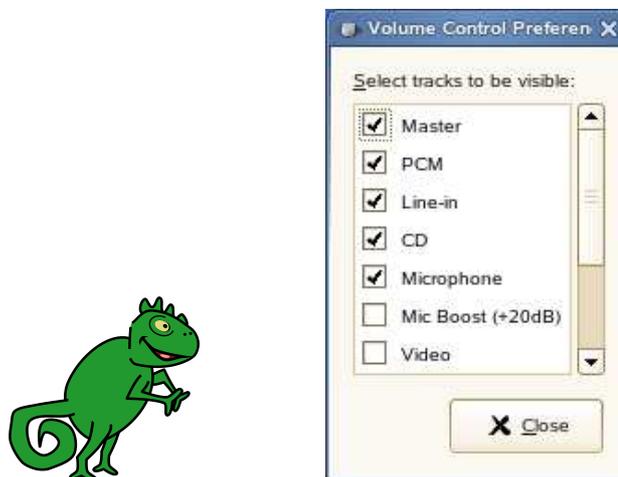
To mute a device select the loundspeaker icon of the corresponding slider. If you want to record from a device, activate the corresponding microphone icon at the bottom of the slider.

3.10.2 Play Music

To play music files (such as Ogg Vorbis or MP3) or Audio
CDs, run the Banshee program from Helix. You can do this
by selecting the `Helix Banshee` icon in the main menu.

A dialog with the Banshee license appears, when you start Banshee the
first time.

After accepting the license, the Banshee dialog appears.
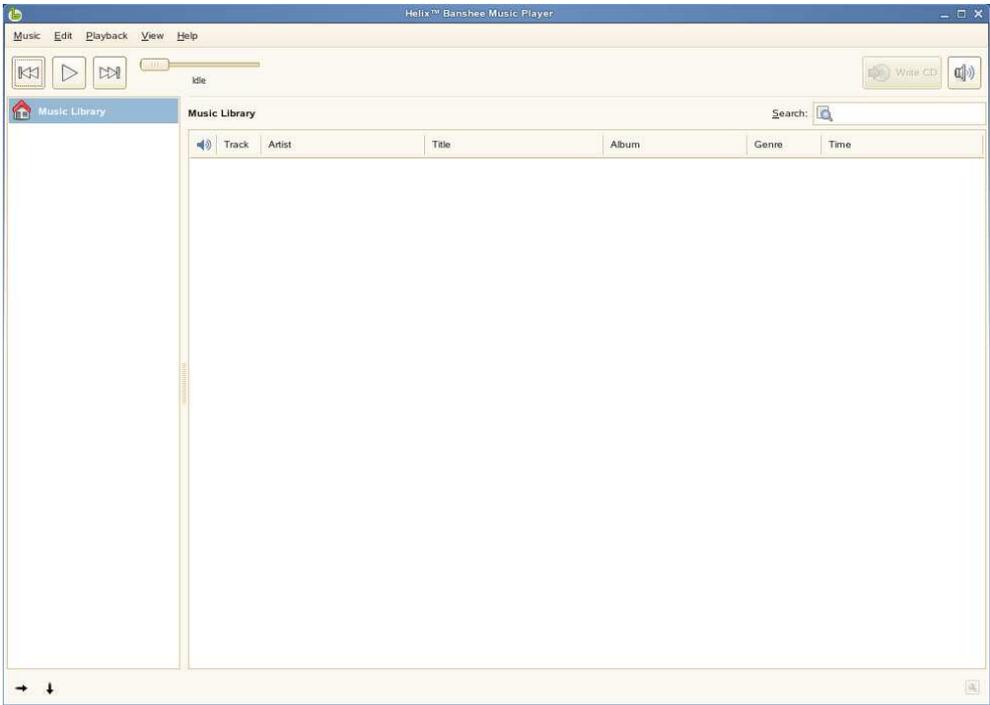
It also appears a small dialog in the foreground, that asks whether you want to import existing music files from your hard disk.

If you do not want to import music, select ⟨ ✗ Cancel ⟩. To import later, you can select `Music → Import Music`. The imported songs should be listed in the right frame.

Also if you put an audio CD into your CD-ROM, the songs should be listed in the right frame.
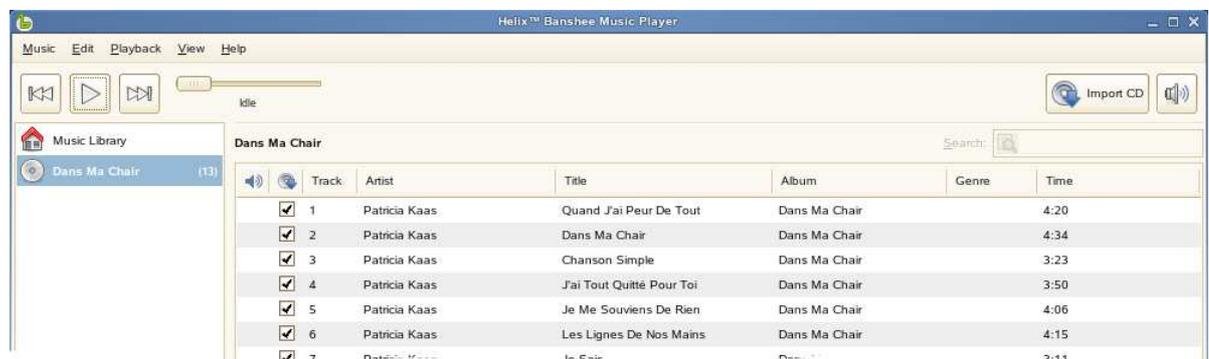
If you select the button ⟨ Import CD ⟩ the selected songs of the CD are ripped and imported.
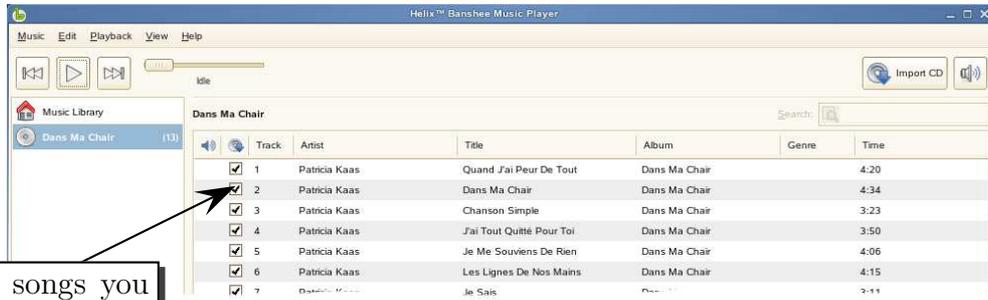
Select the songs you want to import.

The songs are stored as MP3 files in the directory ~/Music by default.

You can arrange songs in a playlist. Select `Music → New Playlist`.
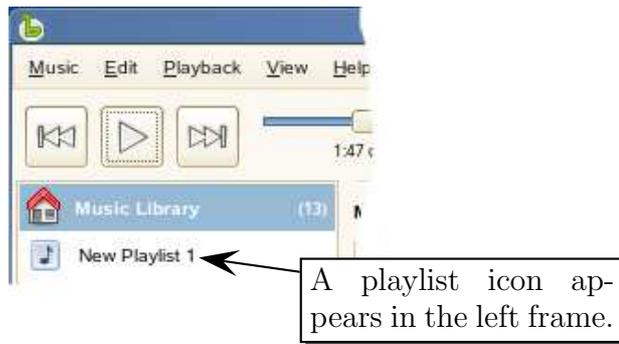
A playlist icon appears in the left frame.

To rename the playlist, rightclick the icon and select `Rename Playlist`. To remove a playlist, select `Delete Playlist` from the popup menu.

Use drag and drop to fill the playlist with songs from the music library. You also can use drag and drop to change the order of the songs in the playlist.

To start playing the music, select $\triangleright$.
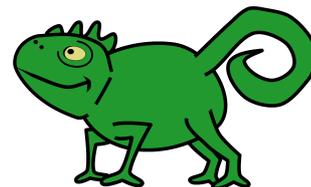
3.10.3 Watch Movies

Although it is technically possible to watch movies with Linux, a lot of legal issues must be considered. The movie on a DVD is encrypted and cracking encrypted information is illegal. Applications are available on the Internet to watch DVDs. However, these programs are illegal; therefore Novell is not allowed to include them in the distribution or on the course CD.

Another problem is proprietary file formats. Quicktime is a format that was developed by the Apple Computer, Inc. Because Apple has not made Quicktime available for Linux, you must use either illegal tools from the Internet or use an emulation utility like CrossOver Office from Codeweavers Inc. to view a Quicktime movie.

You can watch Real movies without any problems using the Linux version of the RealPlayer.

To start RealPlayer, select `Multimedia → RealPlayer`.

Before you can start RealPlayer the first time, you have to set it up. A welcome dialog appears.

Select [➡ Forward] and the release notes are shown.

Select [➡ Forward] to see the license for RealPlayer.
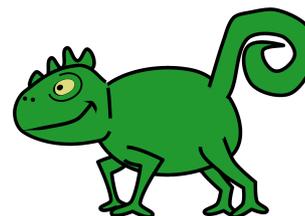
Here select Accept .
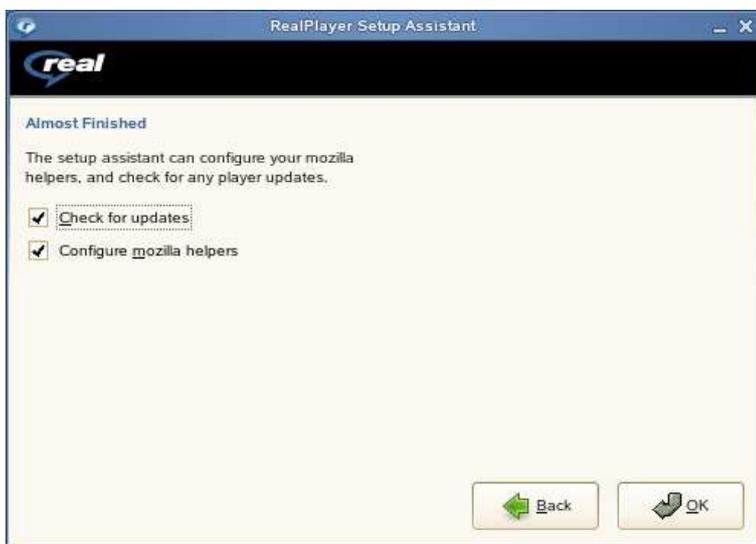
In this dialog you can select whether RealPlayer should look for new updates and whether tools should be installed that simplifies to see Real videos included in web pages.

Select OK to start RealPlayer.

Change the volume here.
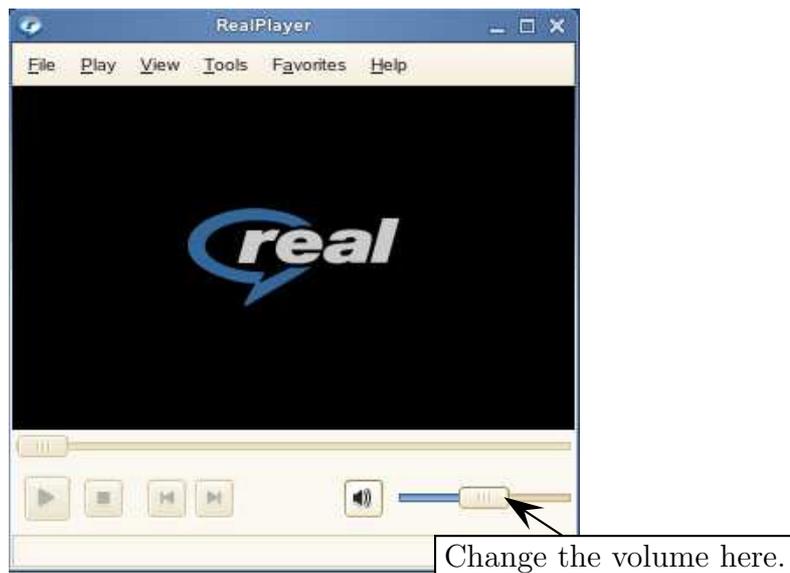
You can open a file on your harddisk by selecting `File → Open File....` With `Open Location...` you can open a file somewhere on the Internet by entering the URL.

It is also possible to hear sound files like WAV with RealPlayer. If you open an audio file, the RealPlayer dialog changes a little bit.

Another program, you can use to play unencrypted DVDs, see videos or audio files is Totem. You can start it by selecting the Totem icon in the `Audio & Video` group of the Application Browser.
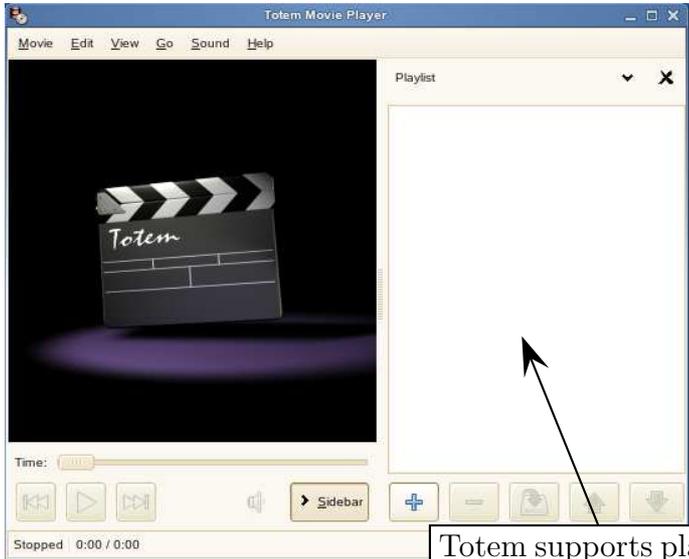
Totem supports playlists.

Use the `Sidebar` to activate and deactivate the sidebar with the playlist.

In the `View` menu you can switch between normal window size and fullscreen by selecting `Fullscreen`. You can leave the fullscreen mode by moving the mouse. In the top right corner a button `Leave Fullscreen` appears.

> Much more easier to switch between normal window size and fullscreen is to press F.

Appendix

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