

Learning Unit Excel Basics

1. Creating and processing tables

1.1 The Excel-Screen

As all Office applications Excel 2000 has **menu** and **symbol** and **status bar**. The **table sheet** of an Excel-Job Map is divided up in columns and rows. The cells are addressed about the combined **cell address** from column letter and row number. The cell marked by the **cell pointer** is described **active cell**. Data inputs, commands etc. refer to this cell.

1.2 Activating, Storing and terminating

Excel can be started about the submenu "Programs" of the **start** menu, as well as through a double click on an already available Excel-File. A file is stored among other things by click on **Storing**. You store the document for the first time on this a dialog box appears in which the name can be indicated to the file. The program can be closed in several ways. The fastest possibility is a click on **closing** in the title bar.

1.3 Entering Data

Inputs are always carried out into the **active**; this is called the marked **cell**. You confirm the input with the ENTER-Key, one of the arrow-keys or by a click into another cell.

At the data input into the cells the program supports with different automatic helpers, e.g. the **AutoInput**. By dragging at the column delimiter in the column head to the right or to the left the column width can be changed. A quick info indicates the exact width to this.

A new line is inserted above the active cell, if you activate the command rows over inserting menu.

2. Printing spreadsheet

2.1 page view

The page view offers a preview on the print view of a table to be expected.

With a click on the side view the side view is activated.

A dialog box opened about the button **Layout**, which shows all options to the layout of the printed table sheets.

The dialog box **Printing** can directly called out of the side view.

2.2 setting up page

In the menu **File**, submenu **setting up page ...** on the register card **forms format** the scaling of the table can be changed among other things. This has no influence on the representation of the table on the table sheet.

A user defined **head and footer line** can be entered over the corresponding register map.

Margins can be defined millimetre exactly on the register map of the same name. By Drag & Drop the margins can be changed in the side view.

2.3 Printing

You open the dialog box **Printing** with click on the button **Printing** in the submenu **setting up page** or the call of the same name command in the menu **file**.

Individual printer parameters can be adjusted there.

The printing is activated without further demand by a click on the button **Printing** in the symbol bar. The marked area is then printed in simple explanation with the default options.

2.4 Page break preview

The **page break preview** is called about the menu **view** or the corresponding command in the side view. In the page break preview page turning as well as the print area of the spreadsheet are shown. The lines, which symbolize the page turning, can be moved by Drag & Drop to change the break.

3. Job Maps

3.1 The construction of job maps

A job map contains three table sheets per default, which you can enlarge to 255 spreadsheets in the menu **Extras** submenu **options ...** and the selection in the register card **General**. In a job map the sheets are lying like in a letter file in the register bar behind each other and are saved in a file. Through this an open structure and filing of the information is possible. To be able to access fast the different spreadsheets, a job map structured well is presupposed. You can add, delete, relocate, group or blind out or display spreadsheets.

3.2 blinding out and display table sheets

Blinding out table sheets

If your **job map** has a large number of **table sheets**, it can be meaningful to have only the table sheets often needed displayed to be able to change so faster between these. This is carried out via menu **window** submenu **blending out**. Blended out table sheets aren't visible in the display, nevertheless they can refer to blended out table sheets in formulas. Blended out table sheets can be displayed at any time about the menu **window** and with that to be made visible again.

3.3 References to other job maps

Creating external references

Through references, which refer to another job, map (external references) a firm **combination** can be made **between the job maps**. Through this no copy of the data but a **reference** to the cell contents of the other job map is produced.

If changes are carried out in the **source file** (on which refer to in the formulas) these are automatically or on question carried out also in the target table. Combinations have the following advantages:

- ✍ The source files can be produced and processed separately and at different places.
- ✍ The target table is saved as standalone job map.
- ✍ The manual transmission of the values from one to the other table is dropped. Through this transmission errors are avoided.

4. Formulas

4.1 Formulas

The instructions for a calculation are given to Excel in form of a **formula**. Formulae are started with an **equality sign**. As **operands**, this is said as values with which Excel shall calculate can you enter single cell addresses, cell areas or fixed numerical values. The most essential **operators** besides the minus sign for the subtraction and the plus sign for the addition are the signs "*" for the multiplication and "/" for the division. "normal" arithmetical rules are valid into formulas, such as the rules for the bracket placing or point- to dash calculation.

4.2 The display mode

Alternative to the manual input about the keyboard addresses can be entered into formulas or functions also with help of the mouse. To this you click on the corresponding cell. Cell areas can be registered by marking the corresponding cells. Shall already inserted cells be extended by a not coherent area as argument you mark this at depressed **Ctrl.-Key**.

4.3 Copying

There are several possibilities in Excel for copying cells, which contain formulas. Besides the usual ways over buttons in the symbol bar's **standard**, menu commands and keyboard contractions it can also be copied by dragging the pad box. As long as the copied area is indicated by a run frame, the copying process can be repeated. For the completion of the copying event Esc or Enter must be depressed. When copying references are adapted into formulas: If you copy the formula "A4 +B4" e.g. from the cell C4 into the cell C5, this turns to "A5+B5".

5. Data Protection

5.1 protecting job maps

Assigning access permission for job maps

Tables with data, which shall to not everybody accessibly you can protect with a password. This is carried out via the menu **File** Submenu **Save as**, pull-down menu **Extras** and the submenu **general options**.

- ✍ **Read-/ Write authority:** The user must enter the corresponding password to open the job map. After opening, the user is authorized to carry out changes and to type over the existing job map.
- ✍ **Write protection:** The job map can be opened without input of the corresponding password only in the write protection mode. The existing job map cannot be typed over in the write protection mode. The user can save changes only under another job map name.
- ✍ **Protection from inadvertent changes:** Excel displays a dialog window when opening the document, in which you can indicate whether you want to open the document to the processing or write-protected.

IMPORTANT: Write down the password **considering the case sensitivity**. If you open the files at a later time, you must use the same entries exactly.

5.2 Protecting Table sheets, cells and objects

What is a table sheet protection?

With a Table sheet protection Excel offers the possibility to protect table contents from inadvertent changes. This is particularly meaningful, if a complex table is used by several users to carry out calculations with various results.

The table protection is also useful, if you liked to use a table as form. You can protect the layout of the form from changes by the fact that you close the cells with text or formulas by Table sheet protection.

Before you activate the table protection, it is possible to cancel the blocking for definite cells or areas and to make the input possible in the input cells provided for this under table protection therefore.

Activating table sheet protection:

? Open the concerning table sheet? Calling the menu item **EXTRAS-PROTECTION-PROTECTING SHEET**? Enter a password in the entry field to prevent that other users cancel the table sheet protection? Activate the control fields of the actions which shall be permitted despite the table protection? The table protection only can be assigned, if the control field is activated? Press the button **OK**? Confirm the password in the entry field of the following dialogue window.

Cancelling table protection

? Open the desired table sheet and call the menu item **EXTRAS-PROTECTION-CANCELLING SHEET PROTECTION**? If the Table sheet protection was provided with a password, you must enter and confirm the password in an additional dialogue window.

5.3 Determining protection size for definite cells

You can make possible changing single cells, cell areas or graphic objects in a protected table sheet. For this you must define the areas which may be changed and then activate the table protection.

? Mark the cell, the cell area or the graphic object, which may be changed? Call the menu item for **FORMAT CELLS**? Select the register **PROTECTION** in the open dialogue window? Deactivate the control field to allow changes at the cells? Activate the control field, if the formula shall not be reported to the active cell in the processing bar? Press the button **OK**? You activate **EXTRAS-PROTECTION-PROTECTING SHEET** the table protection to protect the rest of the table about the menu item.

IMPORTANT: Fast processing of a protected table.

After activating the table protection you can change very fast to the next not closed cell of the current table sheet with the tabulator key. With the key combination shift and tabulator key you reach the previous not closed cell.

6. Diagram

6.1 Diagram Assistant

To create a Diagram, at first the relevant cells must be marked. Besides the desired numbers the accompanying lines and column headings also should be included so that the diagram elements get markings. With a click on diagram the diagram assistant is called. The diagram assistant admits gradual instructions for making the diagram. In the single steps you can select the **diagram type**, check the selected table area and determine the **diagram options**. Whether the diagram is placed on the table sheet or a new spreadsheet is defined last.

6.2 formatting diagram

All elements of the diagram can be formatted afterwards. One double-click on the desired element or the corresponding command, open a dialog field with all respectively applicable formatting possibilities in the context menu. The symbol bar **Diagram** offers a selection from the diagram processing fields. Depending on select element various options are available in the dialog field for formatting the diagram elements. Text can for example revolved freely or the diagram area provided with a fill text.

6.3 placing diagram

A diagram embedded on the table sheet can be moved freely with the mouse. To this the mouse pointer must be set on the **diagram area**. The diagram then can be moved at depressed mouse button. Beyond this the size of the diagram can be changed by dragging the pulling points of the diagram window. At the placing **as a new sheet** the diagram is set in screen filled as own sheet. This diagram can then neither be moved nor scaled.

7. Functions

7.1 The sum function

A click on the button sum puts the function **sum** into the active cell. Excel types an area as argument to be calculated lying of the formula cell above or on the left in simultaneously. The area registered by Excel as argument should always be checked and must correct if necessary. Corrections can be carried out in the Display-Mode by the fact that the cell is marked and clicked into the **processing bar**. As arguments you can enter e.g. single cell addresses, cell areas or concrete numerical values. If several arguments are entered in a function, you separate these by semicolon. Coherent areas are connected by a colon.

7.2 The functions-assistant

Excel provides more than 200 functions for most different calculations. These can comfortably be called and processed about the function assistant. The function assistant is activated with a click on FA.

A function is a predefined formula, which executes calculations under use of certain results, which are called **arguments**.

7.3 AutoCalculate

Is an area marked filled in with numbers Excel automatically executes calculations with these numbers and displays the result on the status bar. About the context menu of the status bar the manner of the calculation -- e.g. sum or mean average value can be adjusted.

8. Working with functions

8.1 functions

Functions are predefined formulas, which are used for the execution of simple or complex calculations.

As every formula functions also start with an **equality sign**. The **function name** follows this in which the mode of calculation is often described into shortened form. Of brackets locked up the **arguments** follow. Arguments frequently used in functions are e.g. numbers, cell or area references, formulas or functions. Arguments succeeding one another are separated by semicolons.

8.2 Functions-Assistant

The **function assistant** makes the selection and input of the needed function easier. More than 200 functions are lying ready here organized in **categories**, from which the desired can be selected. As soon as a function is marked, a description of the syntax and the operation of the same appear.

8.3 copying functions

You can copy a function made once, which shall be valid also for further cells. Relative cell references in the function are adapted automatically at this. If the formula shall be copied into directly neighbouring cells the fast Auto-Fill-Method is useful. The cell with the formula is marked, the mouse is moved to the fill box and the marking frame enlarges at depressed left mouse button on the area to which the formula shall be copied.

9. Working with date and time

9.1 Dates and Time

Bases of the time calculations

To be able to calculate with dates, Excel counts internally with an ongoing (serial) integer number every day. It goes out at this of 1.1.1900 standardized. The number 1 corresponds to the date 1.1.1900. The 1.1.2001 gets the number 36892. To be able to calculate with times, Excel subdivides an integer into decimal numbers.

The calculations itself are executed with the serial numbers. So that the result is recognized as the time or date, the serial number is formatted only correspondingly. Excel recognizes the date and time entries and formats they into the corresponding formats automatically.

9.2 Entering the current date or the current time fast

- ✍ Mark the cell in question.
- ✍ Press the button combination of **Ctrl + .** (dot) for the date and the button combination **Ctrl + SHIFT + .**(dot) for the time.
- ✍ Confirm the entry with the return button.

9.3 Date Formats and simple calculations

Assigning of the date and time formats

Excel assigns a default time format to an entered date or an entered time automatically.

In addition you get numerous formats to the individual lay-out of dates at the disposal from Excel.

- ✍ Mark the cells, which contain dates
- ✍ Call the menu item for **FORMAT CELLS** and activate the register **NUMBERS**.
- ✍ Select the desired category from the list field (the date or time). Activate in the list field (type): the corresponding format. You see in the area **EXAMPLE** how the selected time format affects the first cell of the marked cell area provided that the marked cell area contains numbers.

At time formats, which marked with an asterisk in the list field (Type:), the type of representation goes by the formats in the locales (system control) of Windows.

If you should need others as the formats offered by Excel, you can make user defined formats.

Cells which already have a special number format and a date afterwards is entered into, they don't get the right time format automatically but their contents are displayed as number. You must change the time format manually here.

9.4 Date and time functions

Arguments of date of the button "function assistant"

For the calculation of the date and time Excel provides various functions. Permitted arguments for the Date functions are:

- ✍ The serial number of a date or the decimal number of a time
- ✍ A date in quote mark signs (time text) or with preceding apostrophe
- ✍ References to cells, which contain dates

Date functions:

TODAY()	?	today's date
YEAR(number)	?	determining year
MONTH(number)	?	determining month
DAY(number)	?	determining day in the month
WEEKDAY(number; type)	?	determining weekday, in which type fixes the week beginning 1 for Sunday = 1 to Saturday = 7 2 for Monday = 1 to Sunday = 7 3 for Monday = 0 to Sunday = 6