

Working with Spreadsheets - Microsoft Excel 2010

Notes

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Working with Spreadsheets - Microsoft Excel 2010, notes

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Preface

Today's society is shaped by a sudden growth and development of information technology (IT), which resulted in a great dependence of society, in a wider sense, on individual's knowledge and competence in the IT area. And despite the growth of that dependence, human right to education and information is not extended to that area. Problems, affecting society as a whole, have appeared, creating gaps and distancing people from the main reason and motivation for advancement, from opportunity. Today, to be a person who is computer illiterate, means to be a person who is unable to participate in a modern society, a person without opportunity and, in spite of acknowledged necessity and benefits of inclusive computer literacy by, for instance, the European Commission, UNESCO, OECD, there are still groups of people with hindered access to basic computer education (persons with disabilities, persons with learning difficulties, migrant workers, unemployed, persons who live in remote (rural) areas, where IT education is not accessible).

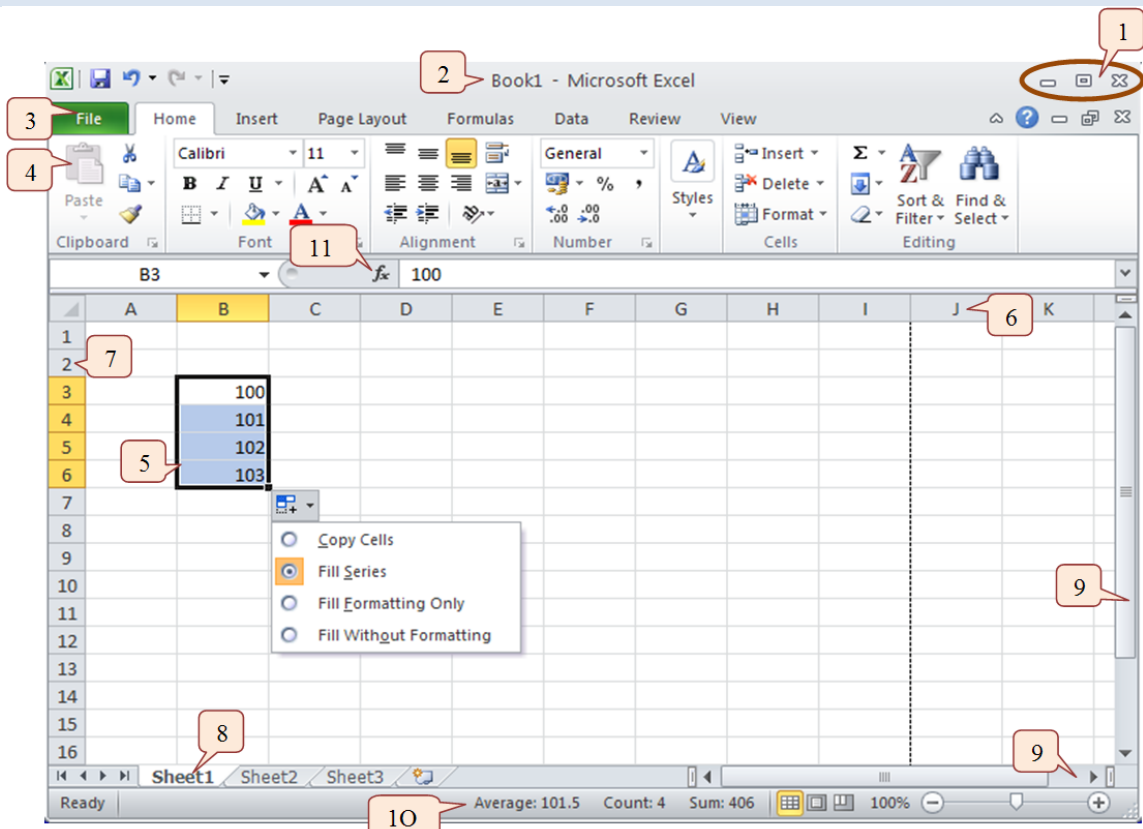
Materials published on the web site www.ITdesk.info, represents our effort and contribution to the realization and promotion of human rights to education and information, encompassing the IT area. We hope this education will help you master basic computer skills and, with that hope, we want you to learn as much as you can, to become an active member of a modern ICT society.

Sincerely yours,

ITdesk.info team



MICROSOFT EXCEL 2010 BETA – INTERFACE ELEMENTS



1. Window manipulation buttons - minimize, maximize and close window

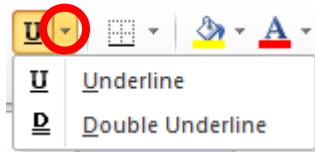
2. Title bar - contains document's name, extension (.xlsx) and the program name

3. Tabs:

- File
- Home
- Insert
- Page layout
- Formulas
- Data
- Review
- View

4. Toolbar

- some tools have hidden tools. If they do, they have an arrow in their lower right corner which, when clicked, displays additional options
- tools that cannot be applied to a selected object are greyed out:
 - Greyed out
 - Same icon active
- tools that have an downward arrow lead to another sequence of commands when pressed



5. Selected cells – before we can enter a text, number, “Sparkline” (chart contained within one cell) or other data, we must first select a cell or cells



6. Column titles (letters)
7. Row titles (numbers)
8. Sheets – can be renamed
9. Scroll bars for horizontal and vertical navigation (sliders)
10. Status bar - displays information about some special functions of Microsoft Excel
11. Formula Bar – for cell contents including formulas or text

Spreadsheet or Workbook: a Microsoft Excel file which contains any number of worksheets (3 by default)

Worksheet: consists of a large number of cells arranged in columns and rows that form a table

Cell: basic element in Excel for data entry (text, number, formula)

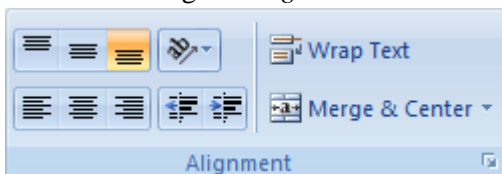
- cell address: column letter and row number on a worksheet, e.g. A1, C7, F25

Selecting cells - press the left mouse button on a cell in order to select it.

Enter data – data can be added cells and existing content can also be edited.

- Add content to cell – single-click with the left mouse button on a cell and enter any extra data.
- Change the existing content – single click on the selected cell and then click on the formula bar to make changes to the data. Alternatively, press F2 after selecting the cell to move the cursor into the formula bar

By default numbers align to the right side and the text aligns to the left side of the cell. However this can be customised using the *Alignment* tools in the toolbar.



If entered content exceeds cell width, it will be displayed over adjacent cells, provided that the adjacent cells have no data entered. However this can also be customised using the *Wrap Text* option in the *Alignment* toolbar (see picture above).

To move to another cell: you can use the TAB key to move to the right, the ENTER key to move down, the keys with arrow on the keyboard, or the left mouse button.

To select a range of cells:

- select the first cell in a range, press and hold the left mouse button, move the mouse to the last cell and release the left button, or
- select the first cell in a range, press and hold the Shift key, select the last cell in the range and release the Shift key

Select a row or column: press the mouse button on the row number or column letter.

Select several adjacent rows: press the left mouse button on the row number, press and hold the left mouse button, move the mouse to the last row and release the left button (or use the Shift key, while it is pressed, select the first then the last row and then release the Shift key).



Select several non-adjacent cells, rows and columns: press the left mouse button on the row number in order to select it, press and hold the Ctrl key, select other rows and then release the Ctrl key.

Rename worksheet:

- while we are positioned in the worksheet, we want to rename: press the Format button on the Home ribbon, choose the Rename Sheet option, enter a new name and press the Enter key, or
- press the right mouse button on the tab of the worksheet and from the quick menu choose the Rename option, or
- double click on the tab of the worksheet and type the new worksheet name.

Copying and moving worksheets within or between spreadsheets (spreadsheets must be open):

1. press the right mouse button on the worksheets sheet tab and choose the Move or Copy sheet option
2. within the dialog box that appears, choose the workbook you want to move the sheet to, and the sheet before which it will be placed

If you want to copy the sheet, mark the checkbox next to the Create a Copy option, otherwise the worksheet will be moved.

Deleting cell content – select one or more cells (with the Shift key if they are adjacent, or with the Ctrl key if they are not), and press the Delete key or Delete button on the Home ribbon.

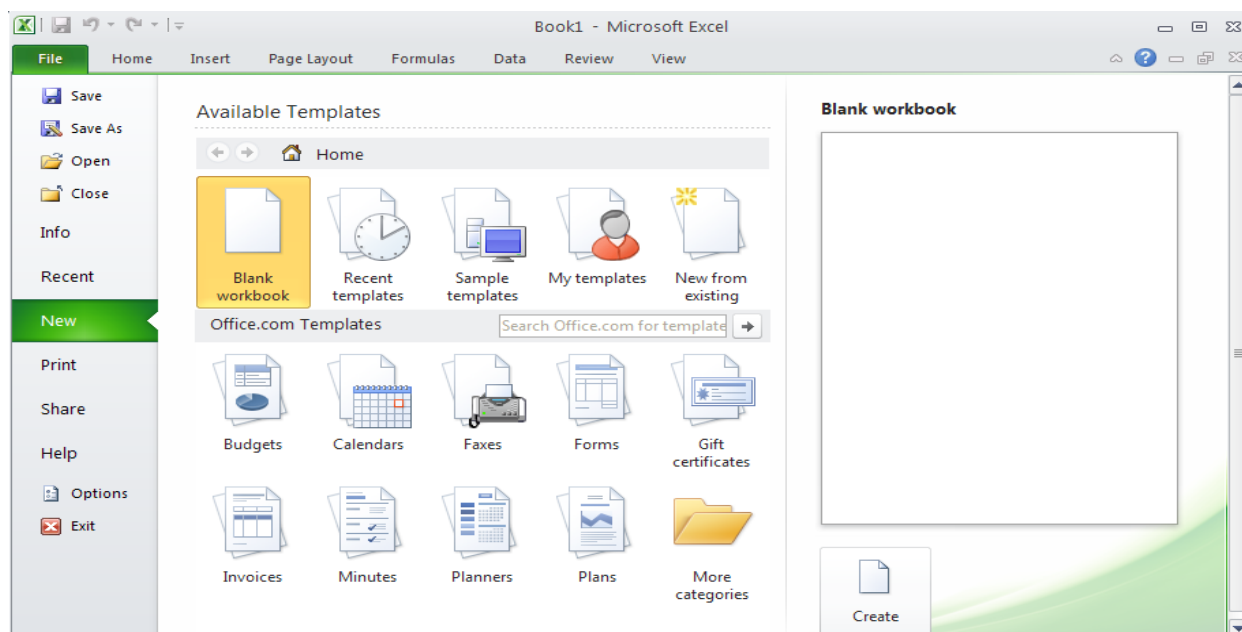
Always select the cells first and then the desired tool. Arrow in the lower right corner will provide you with additional options

Undo change and redo change



Pressing the arrow next to the tool opens a drop-down list of all the changes that we have made.

File menu




Tool Save  (keyboard shortcut Ctrl + S)

- Save in - choose the location where the file will saved
- File name - type in the file name
- Save as type – choose the file type - format in which file will be saved

Creating a new workbook: press the Office button, choose the New option, then Blank workbook, and then press the Create button (or use the keyboard shortcut Ctrl + N)

Creating a new file can be facilitated by using a template – extension .xltx

Creating a new spreadsheet using template: after choosing the New option, select the Sample Templates option

Open an existing file  - to open several files at once, use the Ctrl key or the Shift key to select them

Print:

- Printer – choose printer
- Copies – number of copies to be printed
- Range
 - Print active sheets
 - Print entire workbook
 - Print selection
- Orientation
 - Portrait - vertical paper
 - Landscape- horizontal paper



- Margins: - Normal - Narrow - Wide
- Scaling:
 - No scaling
 - Fit all columns to one page
 - Fit sheet to one page
 - Fit all rows to one page
- Collated – will print the entire worksheet from start to finish, then will make copies according to the selected number of copies;
Uncollated - will print the first page according to the selected number of copies, then the second page, etc.
- Page setup
 - Page – on the drop-down menu, choose paper size
 - Margins –manually set the margins
 - Header / Footer – enter header / footer information within the fields
 - Sheets – select a cell range that will automatically print and rows that will repeat on each page of the worksheet

Share – there are new features that make it easy to share documents:

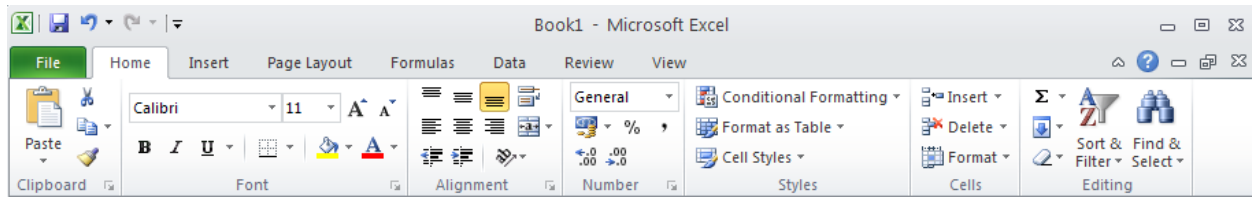
- Change File Type – save the file in another file type - format
- Create PDF/XPS Document – save the file in a fixed format, cannot be easily changed

Options  Options


- on the General tab, you can enter a username
- on the Save tab > there are fields to enter “AutoRecover file location” and “Default file location”



Home tab



Font: (drop-down menu) Times New Roman, Verdana, Arial, Calibri etc.

Font Size: (drop-down menu) 

Text formatting 

Bold

Italic

Underline

- Ctrl + B


- Ctrl + I


- Ctrl + U → keyboard shortcuts


Font Color  - choose Font color (drop-down menu)

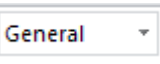
Text alignment: - horizontal alignment:  - top, middle or the bottom of the cell


- vertical alignment  -Align Left, Center, Align Right, Justify


 Merge and center – tool to merge the selected cell range and center the content


 Orientation – tool for setting the direction of the content in a cell


 Wrap Text – wraps text within cells width in order to make it visible contain the text within the cell and ensure visibility when next cell (horizontally) is not empty.

 Number Format – set the number format in which numbers will be displayed

 Increase / decrease number of decimal places displayed

 Conditional Formatting – tool for automatically setting the format of a cell based on the inputted conditions. The formatting and conditions can be customized.

 Insert – tool for inserting cells, columns, rows, worksheets

 Delete – tool for deleting cell content and/or cell formatting; deleting columns, rows, worksheets

 Format

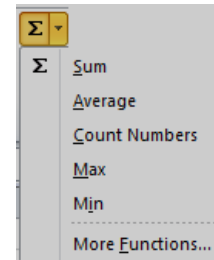
- Format – tool for formatting selected cells, columns, rows, worksheets



- Protect sheet – enter a password and protect the entire or a part of a sheet (cell range)
- Rename Sheet - enter a name and press the Enter key
- Lock cell – functional only if we protect the worksheet first

Enter function:

1. select a cell range
2. enter a function via menu shown on the right



Or: 1. select the cell in which you want to enter function value
2. enter the symbol „=“

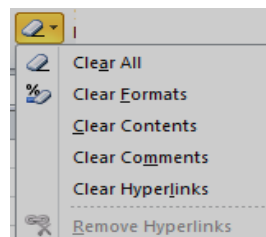
3. enter the function manually (e.g. „sum“), and the cell range to which the function will apply, respecting syntax

Most often used functions:

- =SUM(cell range) → adding the numbers in selected cells
- =AVERAGE(cell range) → finds the average value
- =MIN(cell range) → finds the smallest value
- =MAX(cell range) → finds the biggest value

Deleting options:

- Clear All
- Clear Contents
- Clear Formats




Sort A to Z - sort data within a table from minimum to maximum value, or
Sort Z to A – sort data within a table from maximum to minimum values



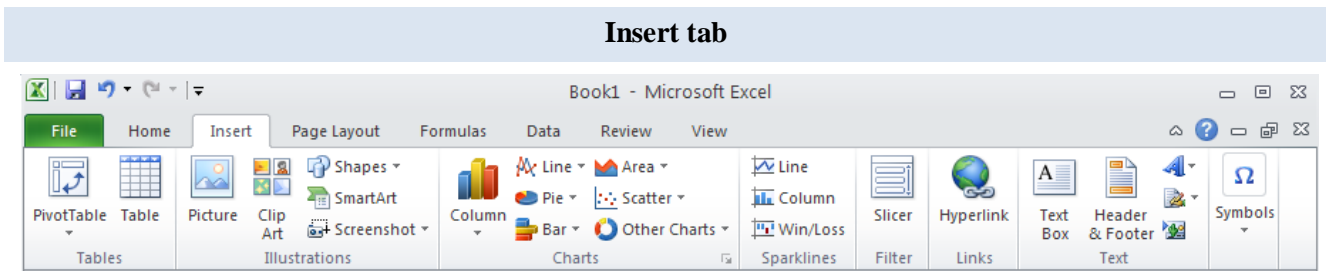
Find: enter a word or phrase and press the Find button




Replace: - Find What – field to enter the word we are searching for;
- Replace With - field to enter the word that we want to use as a replacement

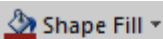
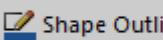
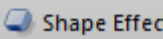
Format Painter  - copy formatting from one part of the text to another

Help in MS Excel , or F1 on the keyboard



 **Shapes** – after selecting a shape, we can insert it in the sheet using the drag-and-drop method, which automatically defines its size and position.

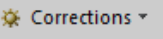
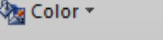
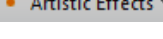
Arrange – sets elements in front of (option Bring forward) or behind (option Send to back) other elements.


-  **Shape Fill** – opens color palette
-  **Shape Outline** – opens color palette and options for choosing type and thickness of lines
-  **Shape Effects** – effects: 3D, shadow, reflection, rotation etc.

 **Pictures**



- to select a picture: press the left mouse button on it, the picture will get squares on the border called control points which allows the size of the image to be manipulated.
- set object size:
 - manually: select an object, move some of the control points using the drag-and-drop method
 - enter values: press the right mouse button on the object and choose the Format Picture option; on the Size tab, enter values for height and width

While the object is selected, we can open the Format tab, that contains some new formatting options

-  **Corrections** – Corrections - tool for contrast, brightness, sharpness correction
-  **Color** – Color - change color of the images in order to better match the rest of the content
-  **Artistic Effects** – Artistic effects - tools that can make an image appear as if it was a drawing or painting

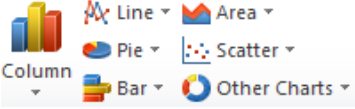
 **Text Box** – tool for inserting a text box; after selecting this tool, we can set the position and the size of the text box in the worksheet via the drag-and-drop method

Header and Footer - edit: press the left mouse button within the header or footer field, or: press the right mouse button and from the quick menu, choose the Edit Text option

-  - insert date and time
-  - insert page number



Insert symbol  € £ © ∞ ☺ ≠ ⚙️ 🏠 ❤️ 🗨️ 📄 🎵 🌐 etc.

Chart 

Charts are graphical representations of table data in various forms, like column graph. Tabular data and graph are connected - therefore changes in the table are reflected in the chart

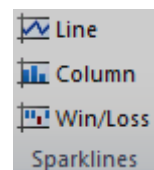
- when we insert a chart, a table for data entry opens in Microsoft Excel and we can enter data. Also, if we select a cell range filled with data, the chart will be automatically filled with the selected data.
- to change chart size: select a chart and move (drag-and-drop) the control points to the desired direction
- changes in the chart can be done via the Chart Tools toolbar, that appears when the chart is selected; via the quick menu or by double-click with the left mouse button on the chart
 - Format Chart Area – effects like color fill, 3D, rotation, shadow etc. are accessible
 - Change Chart Type – choose chart type
- move the chart: within the Chart Tools toolbar, select the Design and choose tool Move chart:
 - > New sheet (and there is a field to enter the worksheet's name), or
 - > Object in > on the drop-down menu, choose the worksheet in which you want to place the chart

„SmartArt“ 

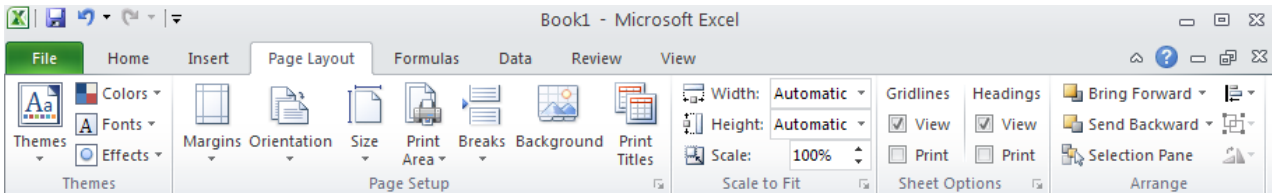
- fields can be moved in order to edit its structure: press the left mouse button on the fields border, via the drag-and-drop method, move it to the desired position
- add new field: press the right mouse button over the field, upon which you want to add a new field and choose the Add Shape option on the quick menu, then choose where to add it “below” or “above” (hierarchical)
- deleting: select a field and press the Delete button

Sparklines

- chart within one cell;
- needs to have a defined position (cell address that contains it) and data cell range (data to display)



Tab name: Page Layout



The *Page Layout* settings change the look of the Excel file when it is printed.

Margins: - Normal - Narrow - Wide

Orientation: Portrait (vertical) and Landscape (horizontal)

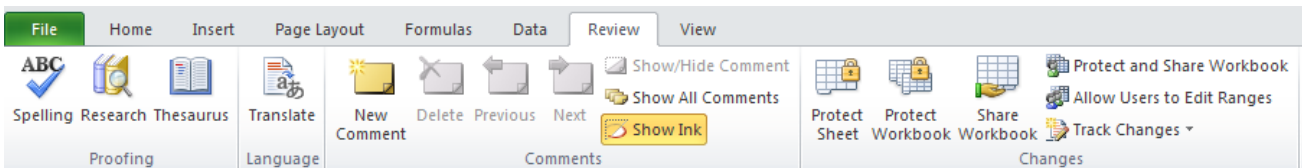
Scale: tool for fitting data for print to a paper

Breaks – it is recommended that user sets the breaks manually:

- Insert Page Break
- Remove Page Break

Tools for organizing content: - Bring Forward
- Send Backward

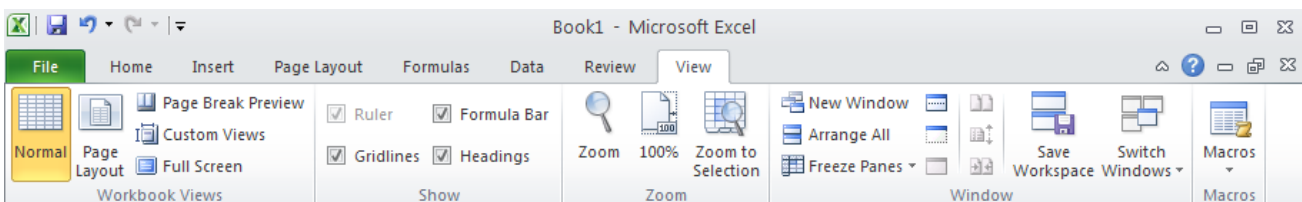
Review tab



Spelling  - opens a dialog box with options: Ignore once, Ignore all, Change, Change all

- the word that is not in the dictionary can be added: press the right mouse button over it and choose the Add to dictionary option

View tab



Normal - for creating a worksheet

Page Layout – for print preview of the data set for printing, header and footer



Zoom – choose offered or enter value



Freeze and unfreeze rows and columns in order to always be visible. This is useful when the data in the worksheet does not fit on the computer screen but the user needs to see the row and column labels:

- freezing columns and rows: select a cell within the sheet and choose the Freeze Panes button. Columns to the left and rows above will be “frozen” meaning that as the user scrolls left and right in the worksheet, the frozen cells always remain visible.
- freezing top row: choose the Freeze Panes button and choose freeze top row
- freezing first column: choose the Freeze Panes button and choose freeze first column

FORMULAS

Formula uses numerical data found in the chosen cell range (the value entered in a cell range)

Enter the formula:

1. select the cell where you want to enter a formula
2. enter the sign „=“
3. enter numeric values or cell addresses and arithmetic operator
4. press the Enter key to complete

Basic arithmetic operators:

- addition = A1 + A2
- multiplication = A3 * C5
- division = C5/C3
- exponentiation = F15^ A2

Microsoft Excel follows the mathematical order of calculation operations.

Formula can be seen in the formula bar when the cell, that contains it, is selected or if we position the cursor with a double click in the cell, that contains the formula (that way it will be visible in the cell and edited too). The formula result will be displayed in the cell that contains the formula and where the cursor is not positioned.

Relative cell referencing (e.g. C5)

- when the formula is copied with AutoFill and it has relative cell references, cell references are going to adapt, for example:

If we use Auto fill to copy the following formula: =C5+B5, it will change to: =C6+B6, =C7+B7 etc.

Absolute cell referencing (e.g. \$C\$5)

If the cell is referenced absolutely in a formula, then applying the Auto fill tool will result in:

= \$C\$5+B5, = \$C\$5+B6, = \$C\$5+B7 etc.

You can change the selected cell reference from relative to absolute and vice versa by using the F4 key

Logical function if

= logical function that compares cell values with some expression or value. We define the appropriate action depending on the result



Syntax:

- IF(logical _condition;value_if_true;value_if_false)
 - logical function checks if the condition is met, and returns true or false
 - logical operators:

greater than	>	less than	<	equal	=
greater than or equal	>=	less than or equal	<=		
-



***These notes are intended for learning in conjunction with materials
published on the following links:***

****Video presentations for a basic use of Microsoft Excel 2010:***

- <http://www.itdesk.info/en/microsoft-excel-2010-spreadsheets-1/>
- <http://www.itdesk.info/en/microsoft-excel-2010-spreadsheets-2/> and
- <http://www.itdesk.info/en/microsoft-excel-2010-spreadsheets-3/>

****Sample exam:***

[http://www.itdesk.info/sample exam/sample exam module 4.pdf](http://www.itdesk.info/sample%20exam/sample%20exam%20module%204.pdf)

****Exam solution for the sample exam:***

<http://www.itdesk.info/en/exam-solution-module-4/>

****Quiz for self-evaluation is published at:***

<http://www.itdesk.info/en/spreadsheets-quiz/>

(to open the link contained within a PDF document, just press the left mouse button on one of the above links. The web page that a link points to will open in a browser that you have installed on your computer.)



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