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METHODOLOGICAL INSTRUCTIONS
for laboratory works from the course
“FUNDAMENTALS OF COMPUTER SCIENCE AND
COMPUTER ENGINEERING”
for foreign students

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CONTENT

Introduction	4
Laboratory work № 1. SYSTEM SOFTWARE. OPERATING SYSTEMS. WORK IN THE ENVIRONMENT WINDOWS...	5
Laboratory work № 2. TEXT FORMATTING IN THE EDITOR WORD	24
Laboratory work №3. TABLES. SORTING TABLES. CALCULATIONS IN TABLES	33
Laboratory work № 4. CREATING A PRESENTATION FOR THE COURSE "INFORMATICS"	43
English-Turkish dictionary	50
List of references	55

INTRODUCTION

The manual contains instructions for studying laboratory works from the course “Fundamentals of computer science and computer engineering”.

In this work each laboratory work contain the topic, purpose, questions for self-preparation, tasks of laboratory work, content of the report, sample of work performance and literature for selfstud-ing.

The nature of the material presentation is determined by the fact that foreign students have not sufficient vocabulary and have a limited set of speech scientific style constructions to describe these expirience.

As the course topics are presented, the information material gradually becomes more complicated and approaches standard language styles. Presented in the guidelines English-Turkish dictionary simplifies and facilitates work on new vocabulary.

Laboratory work № 1

SYSTEM SOFTWARE. OPERATING SYSTEMS.

WORK IN THE ENVIRONMENT WINDOWS

The goal of the work: As a result of laboratory work, the student must know the basic functions of the operating system (OS) WINDOWS, its composition, the ability to manage information files, graphical interface, as well as get skills in working with standard programs in the WINDOWS operating system.

The content of the theoretical minimum

1. The main OS functions of the WINDOWS family.
2. Desktop. Desktop tools.
3. The structure of the WINDOWS. Window management.
4. Organization of the file system. Files and folders. Work with files.
5. Shortcuts and work with them.
6. Standard WINDOWS programs:
 - a) Notepad text editor. Screen view. Creating and editing a document.
 - b) WordPad text editor. Screen view. Creating and editing a document.
 - c) Paint graphic editor. Screen view. Editor panels. Creating and editing an image file.

d) Other standard programs.

Brief theoretical information

1. THE WINDOWS OS is a set of programs that perform the following functions:

- computer boot (checking the performance of computer devices, providing system programs for working with files, directories and disks);

- memory management and input-output operations;
- file system management;
- ensuring the correct execution of tasks (programs);
- ensuring the protection and preservation of information;
- controlling working application programs;
- providing user interaction with the computer (interface).

WINDOWS combines the functions of the operating system and the operating shell.

As an operating shell, WINDOWS provides the user with tools such as:

- graphical interface;
- a set of standard embedded software;
- the ability to display multiple documents on the screen and work with multiple programs in different windows simultaneously.

2. Desktop

The WINDOWS screen is called the Desktop, which contains various icons - shortcuts, windows and taskbar. The Desktop is the root folder of the file system, which is always displayed on the monitor screen.

Mandatory elements of the desktop are:

My Computer is a program for working with your computer's file system, disks, folders and files. It allows you to move, copy, rename and delete file system elements.



Recycle Bin is a program that stores deleted files, folders, and other items. Until you knowingly "Clean" the Recycle Bin, you can recover any deleted items.



Network environment - a program for working on a local network.

The Taskbar is a rectangular bar, usually at the bottom of the desktop. The Taskbar contains the Start button and buttons for all open programs and documents.



3. The concept of window. Window management

When you double-click the left mouse button, each icon opens in a window. A window is a frame-bounded rectangle on the screen. All windows have a standard structure:

The first line - the name of the window. If the title bar is highlighted, the window is active. Clicking the left mouse button on the title bar and not releasing it, you can move the window to any desktop area.

At the end of the title bar three rectangles, allowing you to control the window:



- Collapse button (the dash on it shows, when you click which you will compress the window to the line);
- Button expand/collapse the window (clicking which enlarges the window to the screen size and returns the windows to their previous size);
- Close button (pressing this button closes the window).

The second line - operation menu that includes the **File command groups** (file management commands), **Editing** (operation for working with files), **View** (screen view commands), **?** (Help about WINDOWS). Selected commands are marked with a check mark. To change the set, just click on the commands with the mouse.

If the information contained in the window exceeds the size of the window, then to the right and bottom of the window there are scroll bars with arrows.

If several overlapping windows are open on the screen, that clicking on any part of the overlapped window will bring it forward.

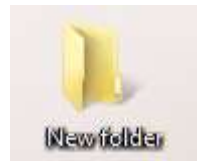
Window control - move, resize, use scroll bars, collapse, close with the mouse pointer.

Opening a minimized window or going from window to window is done using the taskbar that appears at the bottom of the screen of the ruler with the names of open windows.

The location of the windows on the screen is controlled using the context menu. To do this, right-click on an empty space on the screen. A context menu will appear, which includes commands to arrange the windows: cascade (one after another with an overlap), from top to bottom (one under the other), from left to right (one by one in the line).

4. Organization of the file system. Files and folders

The OS works with information files. Files can be collected in folders (analog: catalogs, directories - names in earlier OS). You can save any number of files in a folder. You can move a file from folder to folder.



In WINDOWS you can view the contents of existing folders, create new folders, rename or delete existing folders. You can create one folder inside another.

View file system

You can use My Computer or Windows Explorer to view your computer's file system.

In the first case it is necessary:

- 1) Double-click the My Computer icon. All drives on your computer are represented in this window by drive icons and names.
- 2) Select the drive name and double-click this icon.
- 3) Select the desired folder and double-click on this icon.

The contents of the folder will open in a new window.

Each file type has a special designation in the window. Program files are indicated by rectangles with a thickened upper border and text files are a rectangle with a curved left corner.

In the second case it is necessary:

- 1) in the start menu, select "Programs";
- 2) select "Standard";
- 3) select "Explorer". The Explorer window, which consists of two halves, opens. To view the contents of a disk or folder, you need to click on the icon in the left half, and in the right half of the window its contents will open.

Files are stored on external memory devices, usually a hard drive. However, storage backup and transfer of information needed floppy disks. To work with a floppy disk, it must be formatted.

Working with folders

To create a folder you need:

1) Double-click the My Computer icon, and then on the disk name and, if necessary, the folder where you will need to place the new folder.

2) In the "File" menu, select the "Create" line. A new unnamed folder will be created in the window. You must enter a folder name in the box under the icon Folder. You can use the File command group to rename and delete folders and files.

3) After entering the name, press the "Enter" key.

Working with files

WINDOWS allows you to create files, copy them to folders and floppies, rename them, search for the necessary files, delete and restore files.

A File is a named area on a disk or other machine media.

The file is created using an application program - text or graphic editor, etc..

You can copy files in one of the following ways:

1. Use the Edit commands in the My Computer window:

- 1.1. Open the folder with the required file;
- 1.2. On the Edit menu, click Copy. The file will be placed on the Clipboard;
- 1.3. Open the folder where you want to copy the file. On the Edit menu, click Paste.

2. Using the "context menu" and "keyboard shortcuts":

2.1. Click on the desired file, then using the key combination "Ctrl+C" or right-click on the icon of the desired file and select "Copy" in the context menu;

2.2. To insert, you need to open the desired folder, then use the key combination "Ctrl+V" or click on the desired window and select "Paste" in the context menu.

3. Using the "mouse" (a special case of the drag-and-drop method - drag and drop):

3.1. Open two windows. The first, which contains the required file, the second - the window where you want to copy this file;

3.2. Press the "Ctrl" key and the left mouse button on the file icon. Without releasing these keys, drag the file icon to another window. This will add a "+" sign to the mouse pointer, indicating that the file is being copied.

When copying from a hard disk to a floppy disk, open the floppy disk window by clicking on its icon.

Context menu - this menu appears when you select an object and right-click.

To transfer a file in the "Edit" menu, use the "Cut" command, and in the method using the mouse instead of the "Ctrl" key, the "Shift" key.

The file is deleted either by using the Menu command → Editing → Cut out, or using "Recycle Bin":

- 1) Open the required folder.

- 2) Click the left mouse button on the file icon and, without releasing it, move the icon to the " Recycle Bin".

The file is searched by the "Search" program ("Find"):

- 1) In the start menu, point to "Search". The program menu opens.

- 2) Select the line "Files and folders". The Find dialog box opens. You can search for a file by: name, date, and advanced settings such as file type, text, or size.

- 3) In the name bar, type the name of the file and click "Find". A list of all files in the name of the typed combination will appear at the bottom of the dialog box.

5. Shortcuts and work with them

Shortcuts - an icon that represents a program, folder, or file and is a pointer to it. The shortcut allows you to easily open the element whose address is written in it (ie on which it is "glued").

The shortcut can be placed on the Desktop, in the start menu or in the Applications menu.

Create a shortcut

Method 1:

- 1) place the cursor on the file/folder for which you want to create a shortcut;
- 2) right-click and in the context menu item "Create shortcut";
- 3) a shortcut will appear next to your file/folder;
- 4) transfer it to the desktop.

Method 2:

- 1) place the cursor on the file/folder for which you want to create a shortcut;
- 2) by pressing and holding the right mouse button, transfer the file/folder to the desktop. A context menu will appear;
- 3) in the context menu, click "Create shortcut". A folder shortcut will appear on the desktop.

!!! Remark: If you move a folder or document while holding down the left mouse button, another copy of the document or folder will appear on the Desktop instead of a shortcut to that object.

Rename shortcuts

1) Right-click on the program shortcut. A context menu will appear.

2) In this menu, click "Rename". The highlighted caption changes color, and a blinking insert cursor appears.

3) Type a new name and press "Enter".

Working with shortcuts.

In order to "shortcut method" on the "Desktop" in the required order, you must:

1) open the context menu;

2) select the line "Arrange icons", "By name" (shortcuts are arranged in alphabetical order) or "By date" (shortcuts will be sorted by time of their creation).

In order to run the program using the shortcut, it is enough to double-click on it with the left mouse button.

Delete shortcuts

You can delete a shortcut in several ways:

- transfer the shortcut to the "Trash" icon;

- right-click on the shortcut, in the context menu - on the "Delete". In the "Confirm deletion" dialog box, click the "Yes" button;

- Click on the shortcut, and then press the "Del" key. In the "Confirm Delete" dialog box, click the "Yes" button.

6. Standard WINDOWS programs

The WINDOWS package includes a whole set of so-called "standard" computer programs. These are text editors - WordPad and Notepad, graphic editor - Paint, programs - Calculator, Dialer, CD player, Clipboard preview, Explorer, Communication programs, etc.

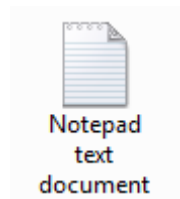
Standard programs are launched, usually using the start menu - by clicking the Start button, then selecting the Programs line and in the next menu - the Default lines. In the menu of standard programs, select the desired line (program name) and left-click to launch it.

Notepad text editor

Notepad Editor - allows you to create and view short unformatted text documents, up to 64 KB.

When you start the text editor Notepad, a standard window opens with the following structure:

- the first line includes the name of the document and the name of the program;



- the second line - the command menu, consisting of the following group of commands - "File", "Edit", "Format", "View", "Help";

- below "Working window" for typing.

The File command group allows you to work:

1) with text files - "Create" a new text file (selecting this command leads to the opening of a new Working window); "Open" an existing text document (in the window you will need to select the folder name, type the file name and select the file type); "Save" the typed document, specifying the name of the file and folder for storage, change the existing name by selecting the command "Save as";

2) print the finished document, preparing a page layout. Commands - "Print", "Page Options".

The command group "Edit" allows you to edit the created document - "Cut" or "Delete" part of the text, "Copy" or "Paste" part of the text, "Find" and "Replace" the desired word in the text, allows you to insert into the text document the current date and time.

The group of commands "Format" allows you to: select a font using the command menu (command "Font") and insert where you want to transfer text to words.

The command group "View" allows you to have only one section of the status bar.

Create and edit a document using the Notepad editor. When you download a text editor, a clean working window opens, allowing you to immediately create a new text document.

You need to save the edited text using Menu → File → Save or Save As.

In order to print the finished text you need:

1) set the size of the fields - in the menu "File" select the line "Layout" ("Options") of the page, in the input fields specify the size of the left, right, top and bottom fields, click "OK";

2) view the document before printing - in the "File" menu, select "Preview";

3) print the document - in the menu "File" select "Print", set the print settings, specifying how many pages to print ("all", "from ... to ...", "selected text"), the number copies when printing, and in the group of properties - the size of the paper, the placement of text on the sheet and the type of paper feed.

To set Page Options, File Properties, and Page Numbering in this editor, see Word Text Editor.

Paint graphic editor.

Graphic editor Paint is designed to draw simple sketches, diagrams, graphs. It allows you to create, edit, scale the image and change its location on the sheet.



To start the program, you need to open the start menu, select the line "Programs", in the next menu - "Standard", then the line "Graphic Paint Editor".

The editor window consists of:

- the first line of the window includes the name of the document and the name of the editor;
- the second line - the command menu;
- in the center of the window is a workspace where you can create documents;
- on the left field - the toolbar;
- in the bottom field - a color palette.

The command menu includes the following groups of commands:

"File" - commands for working with graphic files - "Create", "Open", "Save" and "Save As" (with a new name) and print commands - "Preview", "Page Options", "Print" .

Corrections - commands to edit the image, as well as the command to cancel the previous action and the ability to insert from another file text, image.

View - commands to adjust the appearance of the screen and connect panels, as well as the scale of the image on the screen.

Picture - commands to resize the image ("Atri-be"), rotate ("Reflect/Rotate") and tilt ("Stretch/Tilt") of the image, as well as

change colors to opposite ("Invert colors") and clear the screen ("Clear").

Palette - commands to change the palette (to create a custom color).

? (Help) - help information about programs.

The toolbar consists of the following keys: "Select any area", "Select rectangular area", "Eraser", "Fill", "Color selection", "Scale", "Pencil", "Brush", "Spray", "Inscription", "Line", "Curve", "Rectangle", "Polygon", "Ellipse", "Rectangle with rounded corners".

In order to insert text into a picture you need:

1) click on the "Inscription" button on the "Toolbar";

2) appeared icon ("+") must be set at the angle of the beginning of the inscription and stretch it (inscriptions) size. The typing area is called a text block;

3) a text menu will appear at the top of the window, which contains a window with a font name, a window with a font size and buttons for printing in bold, italics and underlined font. If necessary, you can choose the necessary parameters of the inscription.

The following programs are also standard programs:

Calculator - a program that works in the modes of a simple calculator and engineering for scientific calculations;

Character table - offers a set of special characters that can be inserted into documents;

Clipboard View - shows the contents of the clipboard - the items that you cut or copied while working with programs;

Telecommunication means (Modem, Direct connection, communication program, Dialer) - allow to connect computers either by telephone lines, or by means of a special cable;

Tools for working with fax (Creating a fax message, Cover Page Editor, Request a fax message);

Multimedia tools (Laser Player, Universal Player, Phonograph, Level Control) - allow you to play audio and video animation files, create, edit, insert and play sound effects in documents.

TASKS FOR LABORATORY WORK

Follow the steps to work in Notepad text editor

1. Open the Notepad text editor. Select the Ukrainian layout and type the text:

As a rule, the documents you have to work with are too large to fit in the document or application window, so many programs use special tools - scroll bars, which are located along the right and bottom edges of the window. The scroll bar has a slider and two end buttons. Scrolling the document is performed in three ways: 1) by clicking on one of the end buttons; 2) dragging the slider; 3) by clicking on the scroll bar above or below the slider.

2. Position the text cursor before the first text character. Press ENTER to insert a blank line before the text. Enter a title for your text:

My first exercise

3. Format the text **using the Edit/Font menu**. In the Font Selection dialog box, select the Arial typeface in the Font section, enter the number 13 in the Size section - the size of the letters in points, or the size. Click the OK button or press the ENTER key to confirm your selection.

4. Insert a blank line before the title. Using **the Edit/Date/Time** command, insert the current date and time values.

5. Save the text in a personal folder. To do this, open the Save dialog box using command **the File/Save As**. In the Save dialog box, select a personal folder:

- click on the Folder selection bar to open the list in which you click drive D;
- Double-click to open **the Study** folder, then **the Group ...** folder, then the personal folder.

Result: The Folder line displays the name of your personal folder.

Name your file Exercise:

- enter the word Exercise in the line File:
- click the Save button.

6. Close the Notepad window.

7. Quickly view the document you created using Quick View (a special Windows tool).

Use the scroll bars when viewing a document in the Quick View window.

CONTROL QUESTIONS

1. What is information?
2. What devices are included in your computer?
3. List the memory devices on your computer.
4. What is an operating system?
5. What are windows?
6. What is a directory?
7. What is a folder?
8. What is a file?
9. What is a file name?
10. What is a label?
11. What is the "windows" desktop?
12. What is "my computer"?
13. What is a "basket"?
14. What are standard programs?

Laboratory work № 2

TEXT FORMATTING IN THE WORD EDITOR

The goal of the work: Gaining practical skills in creating and editing Word text documents, mastering the operations of formatting characters and paragraphs, working with windows, creating and editing tables.

The content of the theoretical minimum

1. Text formatting

Presenting a document in the right form for display or printing is called formatting.

In MS Word, the formatting of a fragment of the selected text is performed using the commands of the Format section of the main menu.

You can use the Paragraph command to set:

- Method of text alignment: On the left edge, In the center, In width, On the right edge;

- The presence and size of the indent of the first line of the paragraph;

- Intervals before and after the paragraph;

- Line spacing.

You can use the Font command to set:

- Type, size and font;

- Text color;
- Spaces between letters of the text;
- Special effects (shadows from letters, flicker of text, etc.).

The space between the lines is indicated by the height of the lowercase letters of the text: single - the size of the space is equal to the height of the letters, one and a half - the size of the space is 1.5 times the height of the letters, etc.

The commands in the Format menu section are duplicated by the Formatting toolbar buttons.

1. Styles

Styles are used for simultaneous setting of all formatting parameters:

- Normal (normal);
- Topic 1;
- Topic 2 and others.

Heading styles are also used to automatically create content.

You can create your own styles using the Style menu section of the Format menu.

In the window of this command all characteristics of style are established by a choice of the necessary command in the menu of the For-mat button.

The name of a personal style can be any, if it is not used to create content.

2. Lists

Lists are used to organize records.

In MS Word you can use two types of lists:

- Numbered - records are numbered by numbers or letters;
- Marked - records are marked with special signs - markers.

The list can be multi-level - the list may contain another list.

In the numbered list, the entry numbers are automatically adjusted when a new entry is made.

To create a list, you need to select the paragraphs that need to be made elements of the list, and execute the List command from the Format section of the main menu or from the menu of the right mouse button (Fig. 11.4).

You can also create a list of this type with the Formatting Toolbar buttons.

3. Tables

Tables can be used in MS Word for:

- records of data on columns and rows;
- text formatting.

MS Word allows you to insert tables (spreadsheets) into a document with the Insert command in the Table section of the main menu, as well as with the buttons on the Formatting and Standard toolbars.

You can use the commands in the Table section of the main menu to convert a table to text and text to a table.

All cells (cells) of the spreadsheet column have the same width.

All cells in the row of the spreadsheet have the same height.

The table may have a border.

You can change the presentation format of the table and the data in it using the Table Properties command in the Table section of the main menu or the right mouse button.

4. Formatting tables

The text information in each cell of the table can have its own format.

The general format can be set simultaneously for several cells, which they form a block - a rectangular table-face inside the table.

A single block can also be one or more rows of a table (or columns).

The block of cells can be selected with the mouse.

You can convert a block of cells into a single cell by using the Merge Cells section of the Main Menu Table section or the right-click context command.

5. Functions in cells

In numerical data tables, individual cells may contain a function for calculations.

You can insert a function into a cell using the Formula command in the Table section of the main menu.

The function allows you to write to the cell where it is added, the sum of SUM, the largest value of MAX, the smallest value of MIN, the average value of AVG, and others. From the data in other cells selected depending on the argument of the function:

- LEFT marks all cells on the left in the same line,
- ABOVE - all cells at the top in the same column.

TASKS FOR LABORATORY WORK

Follow the steps in the text editor MS Word.

1. Using a text editor MS Word, prepare a business letter.
2. Create a new document in the personal park - a business letter SuppliesVentilators.doc. To do this, use the command File → Create main menu of the editor and select the style of the created document "Gourmet letter".
3. Enter the text of the letter. Insert names and re-details as specified in the template. View the type of document after printing.
4. Save the created document in a personal folder in the format "Word Document" and exit the program MS Word.

5. Start the program MS Word and open the created document for editing.

6. Add to the letter the text: "List of branches in which dividends are paid:"

	Central	Frunzensky	Shevchenkivsky
Name shares	Par (thousands of dollars)	Dividends (thousands of dollars)	
NNN-IHЖЕК	1	50	
NNN-XHYPE	10	560	
NNN-KIII	100	6000	
Total:			

7. Using the standard program "Calculator" calculate the cost of each batch of goods and record the results in the right column of the table. To do this, use the Start button on the taskbar to execute the command Start → Programs → Standard → Calculator, and then use the "Calculator" window in the same way as you use a regular calculator for calculations.

8. Use the SUM table function to calculate the total cost of the order. To do this, execute the command Table → Formula and select or enter the command to call the function SUM (ABOVE).

9. Use the toolbar to create a table border. This requires:
- use the View → Toolbar command to install the formatting bar, if it is not already installed,

- by clicking on the field to the left of the table, hold down the Shift key to select (mark) the table, - click the "External borders" button of the formatting panel and select the desired frame type.

10. Write the text in the table in italics (cursive gray). This requires:

- select (mark) the required rows of the table,
- click the "Italic" button in the formatting panel.

11. View what the document will look like on paper after printing.

12. Save the document in a personal folder and exit the editor.

13. Create the same document without using a template.

14. Use unbound tables to edit the letter header and signature fields.

15. Save the new document in the personal folder with the name.

**To the shareholders
of the company with limited
responsibility NNN Ltd**

*on the annual meeting
of shareholders limited company
under the responsibility of NNN Ltd*

Dear Sirs!

The Board of NNN Ltd Limited Liability Company is honored to inform you that the annual meeting of NNN Ltd shareholders will be held on March 15, 2001 in the Palace of Culture and Recreation of NNN Ltd shareholders at Sunny street, 25.

Carry a passport, documents confirming the rights of shareholders and a bag for dividends. To avoid clutter, please arrive in advance.

The meeting will be followed by a concert of masters of arts and a banquet.

Chairman of the Board

V.O. Koval

CONTROL QUESTION

1. What is document formatting?
2. How to set the text alignment mode?
3. What is a piece of text?
4. How to set the font for a piece of text?
5. How to set the alignment mode of the text?
6. What is a paragraph?
7. In what units is the distance between lines of text set?
8. In what units is the distance between paragraphs?
9. How to set the color of the text?
10. What is the background of the text?
11. What is a list?
12. What types of lists does MS Word use?
13. How to add a new line number to a numbered list?
14. How to change the marker of the bulleted list?
15. What is a multi-level list?
16. What is a table?
17. What is a frame?
18. What is a block of table cells?

Laboratory work №3

TABLES, SORTING TABLES, CALCULATIONS IN TABLES

The goal of the work: Mastering the techniques of work in the spreadsheet MS Excel, gaining skills of practical work on creating and editing spreadsheets, familiarity with the use of formulas and functions, methods of sorting and filtering data, performing calculations.

The content of the theoretical minimum

1. Spreadsheets

A spreadsheet is a program for working with spreadsheets.

The most popular spreadsheets:

- Microsoft Excel for Windows;
- Calc in Linux and Unix.

Spreadsheets are also used in mobile phones.

The spreadsheet works with a spreadsheet.

A spreadsheet is an infinite table, the columns of which are denoted by the letters A, B, ..., Z, AA, AB, ... and the rows by numbers 1, 2, 3, ... (Fig.1)

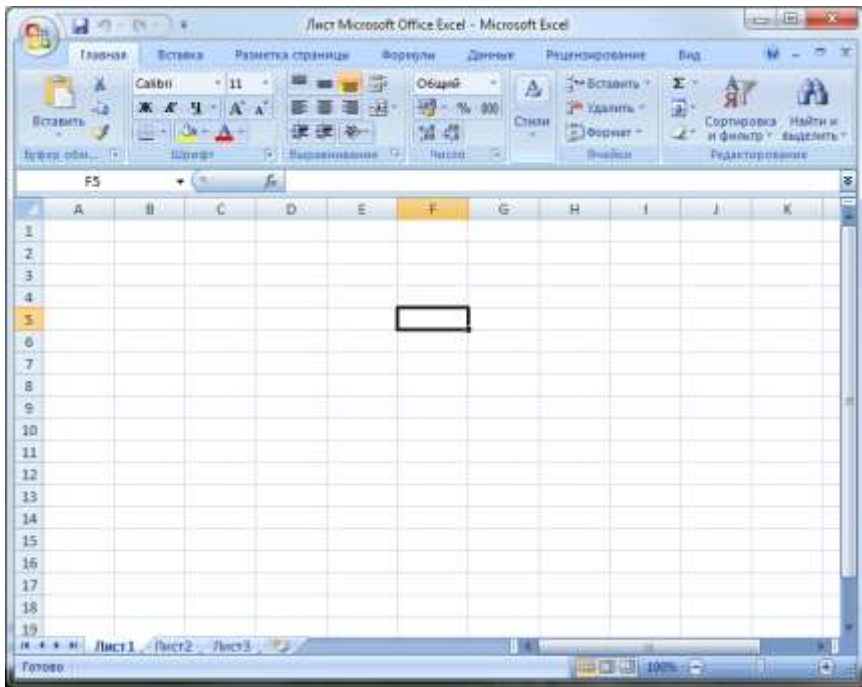


Fig. 1 – Excel window

1. Microsoft Excel

Microsoft Excel is an MS Office application for working with spreadsheets.

The application file has a .xls extension

It's called a Workbook.

The workbook consists of spreadsheets.

It can have up to 16 spreadsheets.

2. Cells

Each spreadsheet is divided into rows and columns. The cell of a spreadsheet is the intersection of a row and a column. Each cell (cell) of the spreadsheet has an address.

The address of the active cell from which the spreadsheet is running is listed at the top left of the table. You can use two methods to record the address.

A1-method: the column is denoted by a letter, and the row is denoted by a number, as the address of cell C5 in Fig. 2.

R1C1-method: rows and columns are denoted by numbers (R - Row row, C-Column column). The same cell has the address R5C3. The addressing method (Style) is set on the File tab of the Parameters command of the Formulas menu section (Fig. 2).

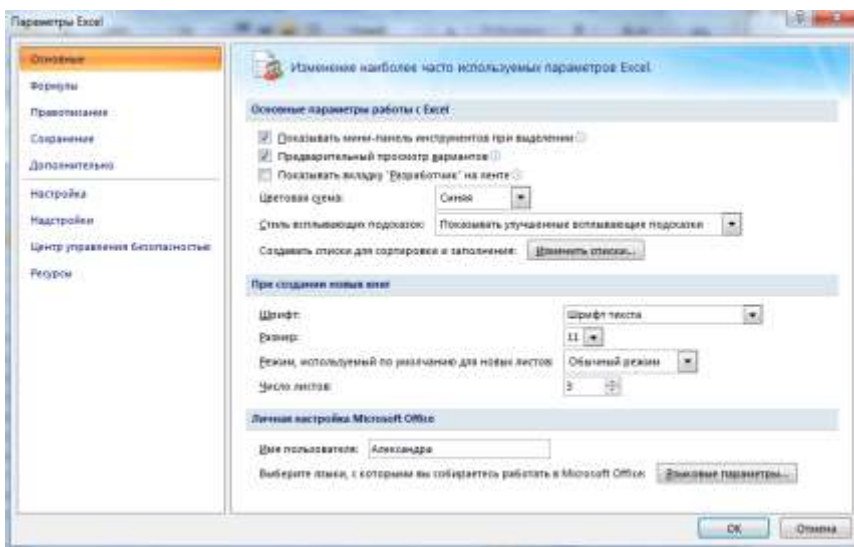


Fig. 2 – Parameters command in Excel

3. Block of cells

A block of cells is a rectangular piece of a spreadsheet.

The block is indicated by the addresses of two cells - the upper left and lower right - separated by a colon or dot. For example: B3.F5, or B2: F5, or R3C2: R5C6 (Fig. 3).

The block can be processed as one object. For all cell units, you can set the same font characteristics, color, border, etc. The cell block is specified as an argument for many spreadsheet functions. To select a block with the mouse, you need to place the mouse pointer in the upper left cell, press the left mouse button and, without releasing the button, move the mouse cursor to the lower right cell.

Several blocks can be combined into one. To do this, when selecting blocks, press the CTRL key and do not release until the selection is complete.

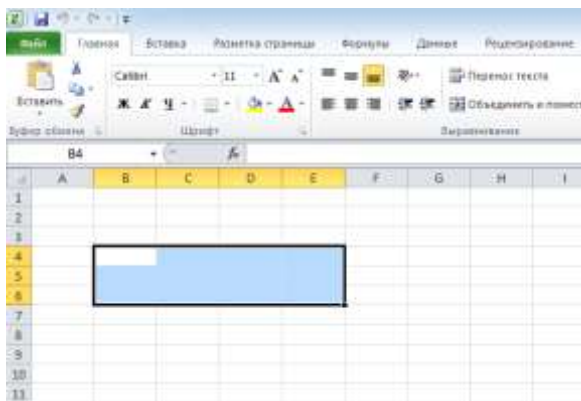


Fig. 3 – Select blocks in Excel

4. Resize cells

In the MS Excel spreadsheet, the height of the cells is specified in paragraphs.

All cells in the row of the spreadsheet have the same height.

To set the line height, select the line by left-clicking on its number, and then set the line height with the right-click context menu command.

In MS Excel, the line width is specified by the average number of digits 0-9 of the standard font, which can be written in the cell.

The default font is the font that is installed in the system by default and is displayed when the program is started.

To set the width of a column, select the column by left-clicking on its number, and then set the width with the right-click context menu command.

The height of the row (column) can also be set with the mouse. To do this, select the row, place the mouse pointer on the line between the rows (columns) and after the appearance of the plus sign, press the left button and move the cursor.

4. The contents of the cells

In a spreadsheet processor, a spreadsheet cell can contain:

- Text. For example, General Sales. The characteristics of the text are set according to the general rules of the MS Office package.

- Number. For example, 234.6. This is a decimal fraction. To write decimal fractions in the Ukrainian version of MS Excel, a decimal point is used. The number of decimal places can be set using the Toolbar buttons.

- The formula (must start with =). For example, = B2+C7. This formula means that the sum of the numbers in cells B2 and C7 is written to the cell where it stands.

- Function (must start with =). For example, = SUM (K3: K9). This formula means that in the cell where it stands, the sum of the numbers in the cells of the block K2: K9 is written. You can insert the summation function into a spreadsheet cell using the Standard toolbar (summation sign Σ).

TASKS FOR LABORATORY WORK

Follow the sequence of steps to work in the MS Excel spreadsheet.

1. Using the MS Excel spreadsheet to create a document "Student Scholarship Statement".
2. Start Microsoft Excel.
3. Draw toolbars in the notebook, find out and write down their purpose.
4. Set the Times New Roman font in column B with a font size of 14 pixels. This requires:
 - a) select the column;
 - b) use the right mouse button to call up the clarifying menu;
 - c) use the context menu command Cell Format→Font to set the desired font. In the same way, use the context command Cell Format→Number to set the desired numeric format in Column C for the Details of the next task.
5. Create the text of the document in the spreadsheet below in the spreadsheet.
6. Use the toolbar buttons to enter the total amount of the scholarship in the last cell of the TOTAL line. This requires:
 - make an active cell in which the amount will be recorded;
 - press the button with the summation symbol Σ in the toolbar;

- check the address of the summation range in the formula, which will appear both in the active cell and in the status bar above the spreadsheet;
- press the Enter key.

INFORMATION

scholarship payments to group students

№ in order	Last name and first name	Sum (UAH)
1	Koval Sergii	227,5
2	Kopach Oleksii	337,5
3	Plaksiy Vita	240,0
4	Shaking Kateryna	500,0
5	Kovtun Andrii	340,0
6	Kornienko Anna	279,0
7	Painter Maksim	240,0
8	Sklyarenko Ivan	235,0
9	Cook Svitlana	235,0
10	Golubov Oleksandr	225,0
11	Shevchenko Iryna	225,0
	Total	3084,0

8. Format the created table. This requires:

- select the block of cells with the table;

- use the main menu command Format → Auto Format to select the document type "List 3".

9. Save the document text to a statement file in a personal folder.

10. Exit Excel.

11. Start Excel and open the Statement file for editing.

12. View the type of document in print using the Preview command in the File section.

13. Using the Page button on the Toolbar of this command window, enter the name (title, footer) of your document.

14. Review the type of document in print.

15. Save the document.

16. Show your work to the teacher.

17. Exit the program.

CONTROL QUESTIONS

1. What is a spreadsheet?
2. What is Excel used for?
3. Which spreadsheet uses the Linux operating system?
4. What is a spreadsheet?
5. How to address the cells of the spreadsheet A1-method?
6. How to address cells of the spreadsheet R1C1-method?
7. What is a cell block?
8. How many cells has the block C2:D6?
9. How many cells has the block R2C2:R4C6?
10. What is an active spreadsheet cell?
11. How does the active cell of the spreadsheet?
12. How to make an active cell in Excel?
13. How to select a column in Excel with the mouse?
14. How to select a row in Excel with the mouse?
15. What is a cell block?
16. How to select a block of cells in Excel with the mouse?

Laboratory work № 4

CREATING A PRESENTATION FOR THE "INFORMATICS" COURSE

The goal of the work: PowerPoint 2010-2013. Exploring the basic capabilities of the MS PowerPoint 2010-2013 environment for creating presentations.

The content of the theoretical minimum.

PowerPoint 2013 is a presentation software that allows you to create dynamic slide presentations. Slideshows can include animation, narration, images, videos, and much more.

When you open PowerPoint 2013 for the first time, the Start Screen will appear. From here, you'll be able to create a new presentation, choose a template, and access your recently edited presentations.

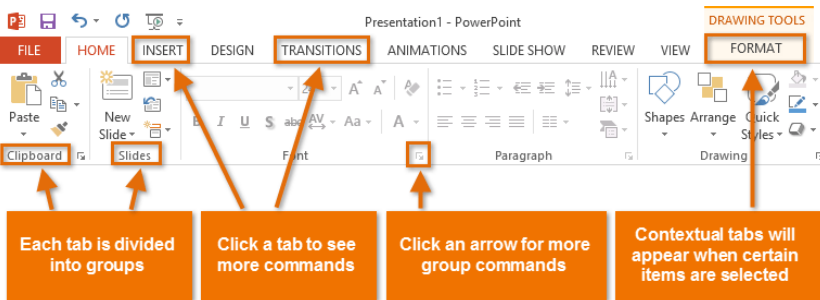
1. From the Start Screen, locate and select Blank Presentation.



2. A new presentation will appear.



PowerPoint 2013 uses a tabbed Ribbon system instead of traditional menus. The Ribbon contains multiple tabs, each with several groups of commands. You will use these tabs to perform the most common tasks in PowerPoint.



Located just above the Ribbon, the Quick Access toolbar lets you access common commands no matter which tab is selected. By default, it includes the Save, Undo, Repeat, and Start Presentation commands. You can add other commands depending on your preference.

TASKS FOR LABORATORY WORK

Follow the steps to create a presentation: My presentation.

Save your work to Google Drive.

1. Start MS PowerPoint.
2. Click the Microsoft Office Button, and then click New.
3. In the Templates section, you can see the settings used to create the presentation.
4. Review all possible options for creating a presentation.
5. Review the templates available on the Microsoft Office Online Web site.
6. To complete this task, go to Last and Last, New Presentation.
7. Set the desired slide theme. To do this: Design tab, Theme group. Select any theme (style) from the list provided. For example - City.
8. Press the F1 button, enter the keyword Topics in the query window. See help for customizing fonts and theme effects.
9. Select the layout of the first slide. To do this, on the Basic tab in the Slides group, select the Layout button. Select the desired layout from the list provided. For example, the title slide.
10. Enter any text in the title slide. For example: your last name, first name, patronymic. Apply animation effects (Animation tab) to the word last name, first name, middle name.
11. On the Basic tab, in the Slides group, click Create Slide.

12. Select a slide thumbnail from the list of layouts and apply it to the newly created slide.

13. Save the presentation as My presentation (Surname, group) on the Desktop. For this run the File Save As command.

14. Insert 2 new slides. To do this on the tab Basic in the Slides group, select Create slide. Follow this operation twice.

15. Select the required markup for the inserted ones slides. On the Basic tab, in the Slides group, select the button Model.

16. Insert 3 new slides using the panel context menu (right-click on last slide and select Create slide).

17. Select the desired layout for the inserted slides. On the Basic tab, in the Slides group, click Layout.

18. Delete the second slide. To do this, click the mouse on the second slide. On the Home tab, in the Slides group, click Delete. You can delete a slide by right-clicking on it and selecting Delete Slide from the context menu.

19. Rearrange slides (reorder). To do this, in the workspace, click the View tab, the Presentation View Modes group, and the Slide Sorter group. For convenience, you can change the number of slides that are displayed in one line. Try repositioning the slides by dragging them with the mouse. A vertical line will appear where the dragged slide is inserted. To select multiple slides, left-click and select a slide group without releasing it, and then drag and drop the entire selected slide group. You can make multiple selections by

holding down the Ctrl or Shift keys. You can drag slides on the slide bar.

20. Change the slide show mode to Normal. View tab, Presentation view modes group, Normal.

21. Fill in the second slide with the topic of the presentation. For example: A little about yourself: childhood, adolescence, adolescence. The font height (font size) of the title is 40 points. Insert an image (any) on the slide of your presentation.

22. To insert an image on a slide, follow these steps:

- Select the Insert tab, the Illustrations group, the Clip button.

- Right-click on the selected clip and select Copy.

- Right-click on the slide and select Insert.

- Select a picture (image) on a slide. On the Work with Pictures tab, select Format.

- Design a picture at your discretion by choosing styles, effects, etc.

23. Go to the third slide and enter the presentation plan. example:

- My family
- My school
- My friends, my hobbies, my ambitions
- My future profession

24. Headings and text of the plan make the size of the font (size) 40 points.

25. The following slides (there should be at least 15) design according to the presentation plan and following the following recommendations:

- Determine in advance how your presentation will be presented: with the speaker or by yourself (after clicking the mouse or automatically after a certain period of time).
- If the presentation is planned as a standalone object - set the slides to change automatically, if the presentation is accompanied by a report - it would be wiser to set the slides to change by clicking (after clicking).
- Do not use complex animated images (gif), do not use complex effects of slide shows or objects.
- Do not overload the presentation. Remember that content is more important than form.
- Prepare the text of the presentation in advance. Write text in a word processor, check spelling, correct presentation style.
- Transfer the finished text from the word processor to the presentation. To do this, select the desired piece of text in the processor, copy it to the clipboard (CTRL+C), and then go to the presentation and paste it into the current slide (CTRL+V). Copying and pasting can be done in other ways known to you.

- The content of the slides should be designed in a font size of 36-38 points.

26. Enter in the presentation 3-4 figures, 1-2 tables.

27. Set the animation to the title and items of the presentation plan.

28. Text, graphic and tabular material for the presentation can be taken on the Internet.

ENGLISH-TURKISH DICTIONARY

English	Tyrkish
paragraph	Paragraf
address	Adres
active	Aktif
annotation	Açıklama
hardware	Donanım
multilevel	Çok seviyeli
block	Engellemek
mark	İşaretlemek
run	Çalıştırmak
turn off	Kapatmak
alignment	Sıra
udent	verim
open	Açık
indent	Çentik
window	Pencere
include	İçermek
manually	manuel
global	Küresel
data	Veri
date	Tarih
colon	kolon

Continuation of Table

English	Tyrkish
decimal	Ondalık sayı
range	Aralık
fraction	kesir
close	Kapat
query	Sorgulamak
save	Kayıt etmek
find	Bulmak
value	Değer
stop	Dur
index	İndeks
interval	Ara
category	Kategori
key	Anahtar
keyword	Anahtar kelime
title	Başlık
cell	Hücre
brief	Kısa ve öz
resources	Olanaklar
logical	mantıklı
local	yerel
bulleted	Madde işaretli

Continuation of Table

English	Tyrkish
border	sınır
network	Ağ
multiplier	Çarpan
moderator	Moderator
setup	Kurma
infinity	sonsozluk
numbered	sayılı
frame of	Çerçevesi
process	İşlemek
calculate	Hesaplamak
single	tek
operator	Operatör
taskbar	Görev çubuğu
check	Kontrol
overload	Aşırı yükleme
transform	dönüştürmek
select	Seçmek
half	Yarım
empty	Boş
send	Göndermek
constant	Sabit

Continuation of Table

English	Tyrkish
stream	Akış
device	Cihaz
software	Yazılım
simple	Basit
advanced	İleri
percentage	Yüzde
rectangular	Dikdörtgen
frame	Çerçeve
registration	Kaydetme
carefully	Dikkatle
desktop	Masa üstü
divided	bölünmüş
line	Hat
row	Sıra
compound	Birleştirme
phrase	İfade etmek
list	Listelemek
spontaneously	Spontane
column	sütun
table	Tablo
character	karakter

Continuation of Table

English	Tyrkish
theme	tema
turn on	Aç
ordering	Sipariş
order	Sipariş vermek
formatting	Biçim
formula	Formül
fragment	Fragman
numerical	Sayısal
icon	İkon

LIST OF SOURCES OF INFORMATION

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