Drohobych Ivan Franko State Pedagogical University

Olha KUTNYAK

INFORMATION AND COMMUNICATION TECHNOLOGIES

METHODOLOGICAL MATERIALS FOR LABORATORY CLASSES

Drohobych

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Дрогобицький державний педагогічний університет імені Івані Франка

Ольга КУТНЯК

ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНІ ТЕХНОЛОГІЇ

МЕТОДИЧНІ МАТЕРІАЛИ ДО ЛАБОРАТОРНИХ ЗАНЯТЬ

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Reviewers:

Kobylnyk T. P., Candidate of Pedagogical Sciences, Associate Professor of the Department of Physics and Information Systems of Drohobych Ivan Franko State Pedagogical University;

Vynnytska N. V., Candidate of Pedagogical Sciences, Associate Professor of the Fundamental Disciplines of Primary Education Department of Drohobych Ivan Franko State Pedagogical University.

Responsible for the issue: Kovalchuk V. Yu., Doctor of Pedagogical Sciences, Professor, Head of Fundamental Disciplines of Primary Education Department of Drohobych Ivan Franko State Pedagogical University.

К95 **O. Kutnyak**

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The methodological materials for laboratory classes are written in the accordance with the programmes of the course "Information and Communication Technologies" for the Field of Study *01 Education/Pedagogy* of the Programme Subject Area *013 Primary Education*, Field of Study *02 Culture and Art* of the Programme Subject Areas *023 Fine Art, Decorative art, Restoration* and *024 Choreography*, approved at the meeting of the Scientific and Methodological Council of the University (Protocol № 10 dated 19. 12. 2025) and the programmes of the course "Information and Communication Technologies" for the Field of Study *02 Culture and Art* of the Programme Subject Areas *023 Fine Art, Decorative Art, Restoration* and *024 Choreography*, approved at the meeting of the Scientific and Methodological Council of the University (Protocol № 2 dated 25. 02. 2025).

Includes the instructions for work with MS Office text and spreadsheet editors, MS Office presentation editor, basic Google services, online services for creating interactive exercises (LearningApps), interactive videos (Edpuzzle), graphic materials (Canva) and SMART Notebook for creating educational demonstration materials.

Recommended for the students of the Faculty of Primary Education and Arts.

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Рецензенти:

Кобильник Т. П., кандидат педагогічних наук, доцент кафедри фізики та інформаційних систем Дрогобицького державного педагогічного університету імені Івані Франка;

Винницька Н. В., кандидат педагогічних наук, доцент кафедри фундаментальних дисциплін початкової освіти Дрогобицького державного педагогічного університету імені Івані Франка.

Відповідальний за випуск: Ковальчук В. Ю., доктор педагогічних наук, завідувач кафедри фундаментальних дисциплін початкової освіти Дрогобицького державного педагогічного університету імені Івана Франка;

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О. Кутняк

Інформаційно-комунікаційні технології / Методичні матеріали до лабораторних занять. О. Кутняк. Дрогобич: Дрогобицький державний педагогічний університет імені Івані Франка, 2025. 82 с.

Методичні матеріали до лабораторних занять написано відповідно до програм курсу «Інформаційно-комунікаційні технології» для галузі знань *01 Освіта/ Педагогіка* спеціальності *013 Початкова освіта*, галузі знань *02 Культура і мистецтво* спеціальностей *023 Образотворче мистецтво, декоративне мистецтво, реставрація* та *024 Хореографія,* затверджених науково-методичною радою Дрогобицького державного педагогічного університету імені Івана Франка (протокол № 10 від 19 грудня 2023 р.) та програм курсу «Інформаційно-комунікаційні технології» для галузі знань *02 Культура і мистецтво* спеціальностей *023 Образотворче мистецтво, декоративне мистецтво, реставрація* та *024 Хореографія,* розроблених англійською мовою (протокол № 2 від 25 лютого 2025 р.). У них висвітлено вказівки до роботи з текстовим та табличним редакторами MS Office, з редактором створення презентацій MS Office, із основними сервісами Google, з онлайн сервісами створення інтерактивних вправ (LearningApps), інтерактивних відео (Edpuzzle), графічних матеріалів (Canva), з програмою створення навчальних демонстраційних матеріалів SMART Notebook.

Рекомендований для студентів факультету початкової освіти та мистецтва.

Contents

Зміст

Preface

In the context of high-tech development of society and digitalization of education, an extremely important criterion for training students is the formation of their ICT competence, that is, perfect mastery by specialists, in particular teachers, of various information and communication technologies for effective professional activity.

The manual is written in accordance with the work programs in the discipline "Information and Communication Technologies" for the students of the Faculty of Primary Education and Art and the methodological recommendations of the Ministry of Education, Youth and Sports for teaching teachers the basics of ICT.

The manual provides the recommendations for performing the laboratory work, thanks to which the students will deepen their knowledge and skills in working with the text and spreadsheet editors (MS Word, MS Excel), with the programs and services for creating the presentations and demonstration materials (MS PowerPoint, SMART Notebook, Canva), with online services for creating the interactive exercises (LearningApps), interactive videos (Edpuzzle), word tags (clouds) (Tagul (WordArt)), with the possibilities of using Google services in the educational activities.

The methodological materials for the laboratory works on Information and Communication Technologies will be useful and interesting both for students and for teachers.

Передмова

В умовах високотехнологічного розвитку суспільства та цифровізації освіти надзвичайно важливим критерієм підготовки здобувачів освіти є формування їхньої ІКТ-компетентності, тобто досконале володіння фахівцями, зокрема, учителями, різними інформаційно-комунікаційними технологіями задля ефективної професійної діяльності.

Посібник написаний відповідно до робочих програм з дисципліни «Інформаційно-комунікаційні технології» для студентів факультету початкової освіти та мистецтва та методичних рекомендацій МОНмолодьспорту щодо навчання вчителів основам ІКТ.

У посібнику наведено рекомендації до виконання лабораторних робіт, завдяки яким студенти поглиблять свої знання та вміння у роботі з текстовим та табличним редакторами (MS Word, MS Excel), з програмами та сервісами створення презентацій та демонстраційних матеріалів (MS PowerPoint, SMART Notebook, Canva), з онлайн сервісами створення інтерактивних вправ (LearningApps), інтерактивних відео (Edpuzzle), тегів (хмар) слів (Tagul (WordArt)), з можливостями застосування сервісів Google в освітній діяльності.

Методичні матеріали до лабораторних робіт з інформаційно-комунікаційних технологій будуть корисними та цікавими як для здобувачів освіти, так і вчителів.

Laboratory work № 1

Work in the text editor MS Word

Purpose: familiarization with the capabilities of the text editor MS Word (2013); editing, text formatting, working with tables and graphic objects.

Theoretical information

To work with text information, the special programs are used – the text preparation systems called text editors or text processors. ***The main functions of the text editors are:***

- entering text into the computer;
- text editing;
- searching the necessary information in the text;
- text formatting;
- transferring and copying text fragments;
- work with several documents at the same time;
- text printing with setting of print parameters;
- saving the text.

The main menu of the text editor Microsoft Word (2013) has the following items: **File (Файл); Home (Основне); Insert (Вставлення); Design (Конструктор); Page Layout (Розмітка сторінки); References (Посилання); Mailings (Розсилки); Review (Рецензування); View (Вигляд)** (Fig. 1)**:**

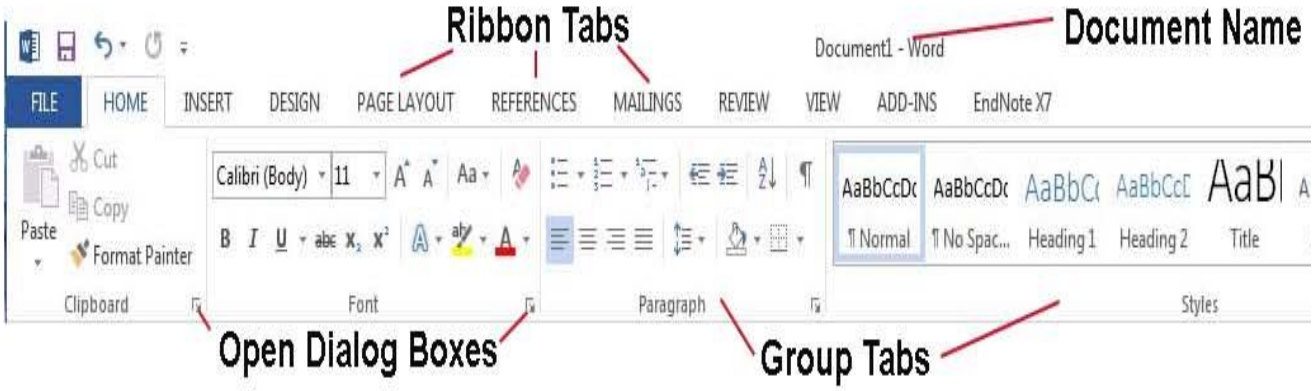


Fig. 1. The main menu of the text editor Microsoft Word (2013)

The text formatting is the process of setting the parameters of a text fragment that determine the appearance of the text in that fragment. Before changing parameters, a text

fragment should be selected. If the text fragment is not selected, then the current parameters (parameters of the text that will be entered from the current position) will change.

Font options

The **Home** tab contains the following groups: **Font, Paragraph, Styles, Editing** To change the parameters of symbols, use the **Font** command or call the context menu. In the **Font** field select the type of font, its size, font color, filling of the text with color, text effects, change case, etc (Fig. 2):

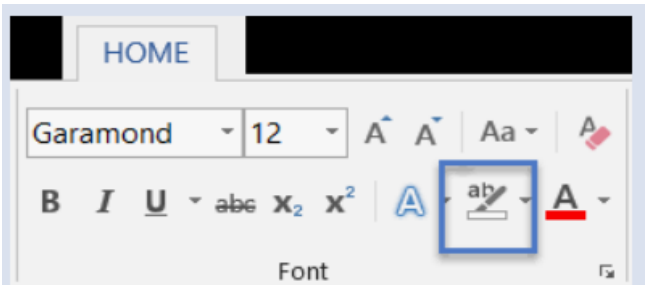


Fig. 2. Font options

The following font images can be installed:

Normal – normal image;

Italic – italic image;

Semi-bold – bold image;

Bold Italic – a bold italic image.

You can also choose ~~Strikethrough~~ font and underline font.

Changing of the intervals

To change the spacing between the lines and paragraphs, use the **Spacing** button of the **Paragraph** group. By pressing the **Spacing** button, the line spacing is set by selecting the appropriate number. To apply a certain spacing to the entire document, you need to use the **paragraph spacing** options on the **Design** tab (No Paragraph Space, Compact, Tight, Double etc.).

Creating lists

Microsoft Word allows you create the bulleted, numbered and multilevel lists with numbering very quickly (Fig.3). A paragraph of text is considered as an element of the list. To create a list, you need to highlight the paragraphs that should be made into list elements or set the cursor to the paragraph from which the list will begin:

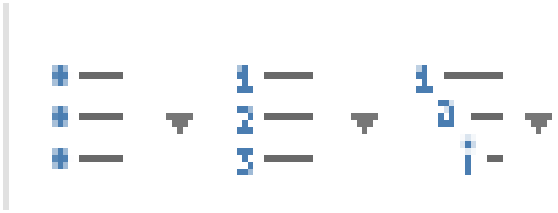


Fig. 3. Buttons for creating lists in MS Word

Bulleted list

To create a list with markers, select the **Markers** button. A small icon to the left of the item itself highlights each bulleted list item. You should select the appropriate one from among the suggested mark options (click on it with the mouse).

To change the type of marker, you can use the **Define a new marker** button. The **Define New Marker** window appears which contains the additional markers. When you click the **Symbol** button, the **Symbol** dialog box appears where you can select a new marker.

Numbered list

To create the numbered lists, use the **Numbering** button on the **Home** tab. Among the proposed list numbering options, you must select the appropriate one and the list will be created. To create a list with several levels of nesting, use the **Multilevel** button on the **Home** tab. Next, select the list design option in the list library. Next, you need to enter the list items, changing their nesting levels as necessary. To do this, use the buttons **Decrease indent** (move to a higher level) or **Increase indent** (move to a lower level), which are located in the **Paragraph** group. The numbering of the list items changes automatically [1], [2], [9].

Page numbering

To insert the page numbers into a text document:

• select the menu item **Insert**;

• click on the **Page number** button. There is an opportunity to choose the location of the page numbers: from **above, below, on the margins of the page**, and then **on the left, in the center, on the right, with figures**, etc.;

• to change the formatting options, click on the **Page Number Format** button and change the page number options in the dialog box;

• it is also possible to start page numbering from a certain number by specifying the desired page number and clicking **OK**.

Instruction:

1. Start the text editor *MS Word*. On the first page of the document, create a title page indicating the name of the higher education institution (Drohobych Ivan Franko State Pedagogical University), laboratory work (Laboratory work № 1) and the data about the performer (surname and first name) and the lecturer.

2. On the second page, enter the text from the keyboard:

Informatics studies the structure, behavior and interactions of natural and artificial systems that store, process and communicate the information.

3. Copy the entered text 4 times; format the texts in 5 ways.

4. Create the table according to the sample and format it:

The average content of vitamins in some vegetables and fruits, mg				
Name	**Carotene**	**B1**	**B2**	**C**
Carrot	18	0,06	0,06	5
Tomato	2	0,06	0,04	40
Apple	0,1	0,04	0,03	7
Cherry	0,3	0,05	0,06	15
Orange	0,3	0,08	0,03	40
Lemon	0,4	0,041	—	40

To create the table you need:

- Select **Insert →Table,** then move your mouse over the number of columns and rows. Click to insert the table (5x8) (Fig. 4):

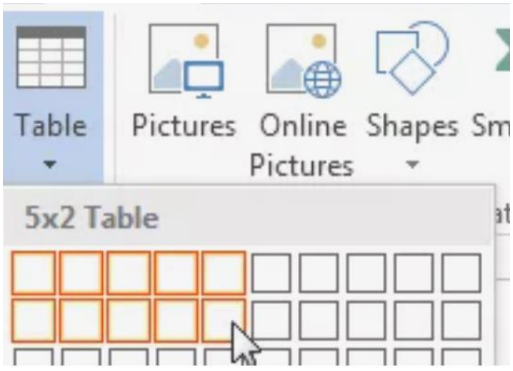


Fig. 4. Creating of a table

- Select **Insert →Table → Insert Table**. Select columns and rows →**Autofit to Windows → OK**.
- Draw a table: **Insert → Table →Draw Table**.

To merge the cells in the first row of the table you need to select these cells and use the context menu of the table, then select the **Merge Cells** item.

5. Based on the table, create a column chart:

• select the **Insert→ Illustrations→ Chart**;

• select **Column→ Clustered chart** (Fig. 5):

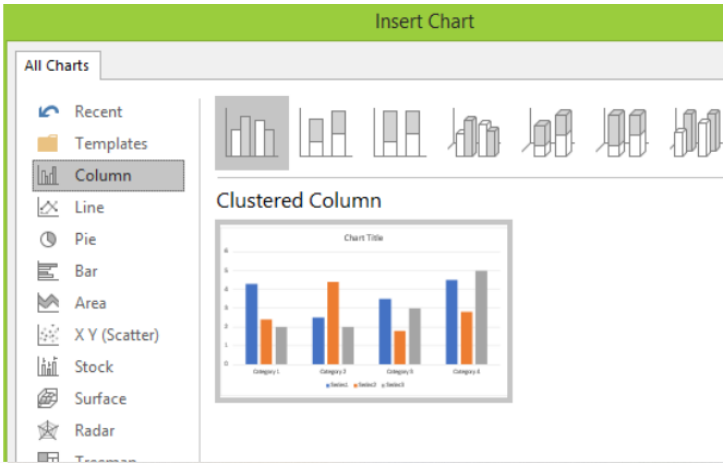


Fig. 5. Creating of a clustered chart

• build the chart based on the columns "Name", "B1", "B2" (Fig. 6):

	A	B	C	D	E	F
1	Name	B1	B2			
2	Carrot	0,06	0,06			
3	Tomato	0,06	0,04			
4	Apple	0,04	0,03			
5	Cherry	0,05	0,06			
6	Orange	0,08	0,03			
7	Lemon	0,041	—			
8						

Fig. 6. Filling data columns to build a chart

Format the resulting chart by double-clicking on the chart areas and on the chart name. Use the **Format chart area** and **Format chart title** context menu (Fig.7):

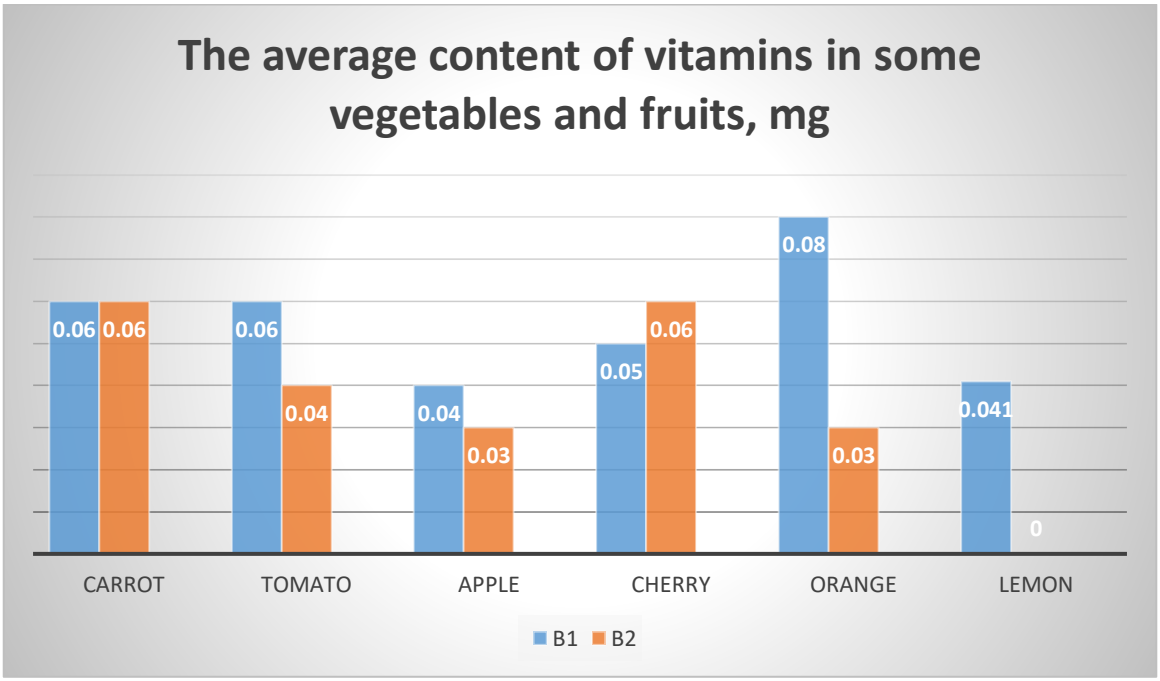


Fig. 7. The chart based on the table

6. Create an advertising letter for your faculty or a certain event. To do this, click **File**, then **New** and among the recommended requests choose, for example, **Education**.

7. Copy any text using the following formatting steps:

- font size – 12, type – Monotype Corsiva, alignment – on the left edge;
- using the **Page Layout** item, adjust the indentation to the left – 2.5, to the right – 1.5;
- interval – before – 3, after – 6, between lines – 1.5;
- convert the text into several columns (Page Layout → Columns → Two (or Three)).

8. Create numbered, bulleted (using different icons) and multi-level lists (at least 3 levels). All lists must have at least 5 lines.

9. Insert the created in Paint 3D picture and:

- add a name to the picture as: Fig. 1. Decorative picture;
- set the font size of the caption as: Courier New 12, line spacing 1, text alignment on the left edge.

10. Set the page colour by selecting the menu item **Design → Page Colour**. Create the page borders at your discretion (**Design → Page Borders**). Choose the type, style, colour, width of the border or its pattern.

11. Number the pages of the document – in the middle of the footer (or with a figure).

12. Save the created documents under the following names: **Surname_Word** and **Surname_Advertising card.**

Control questions

1. What are the main functions of the MS Word text editor?
2. Name the main menu items of the text editor.
3. How to configure the page parameters?
4. How to number the pages in a document?
5. Describe the toolbar buttons of the **Home** Tab and their functionality.
6. Give the algorithms for creating the bulleted, numbered and multilevel lists.
7. How to create a table in MS Word?
8. How to add a chart to a text document?
9. Which item of the main menu of the program allows you to set the colour and the borders of the page?
10. Name the commands for creating a text document based on the template.

Laboratory work № 2

Work in MS Excel. Creating a spreadsheets and its formatting. Spreadsheets structure and basic data types. Building a chart

Purpose: learn how to configure the worksheet settings, enter the text, numeric data and formulas into the table, edit and format the data and table and build the charts.

Theoretical information

To start the MS Excel 2013, use the commands **Start→All Programs→ Microsoft Office 2013→Excel 2013 → New** or click on the MS Excel 2013 shortcut on the Desktop.

The main window of this program looks like this (Fig. 8):

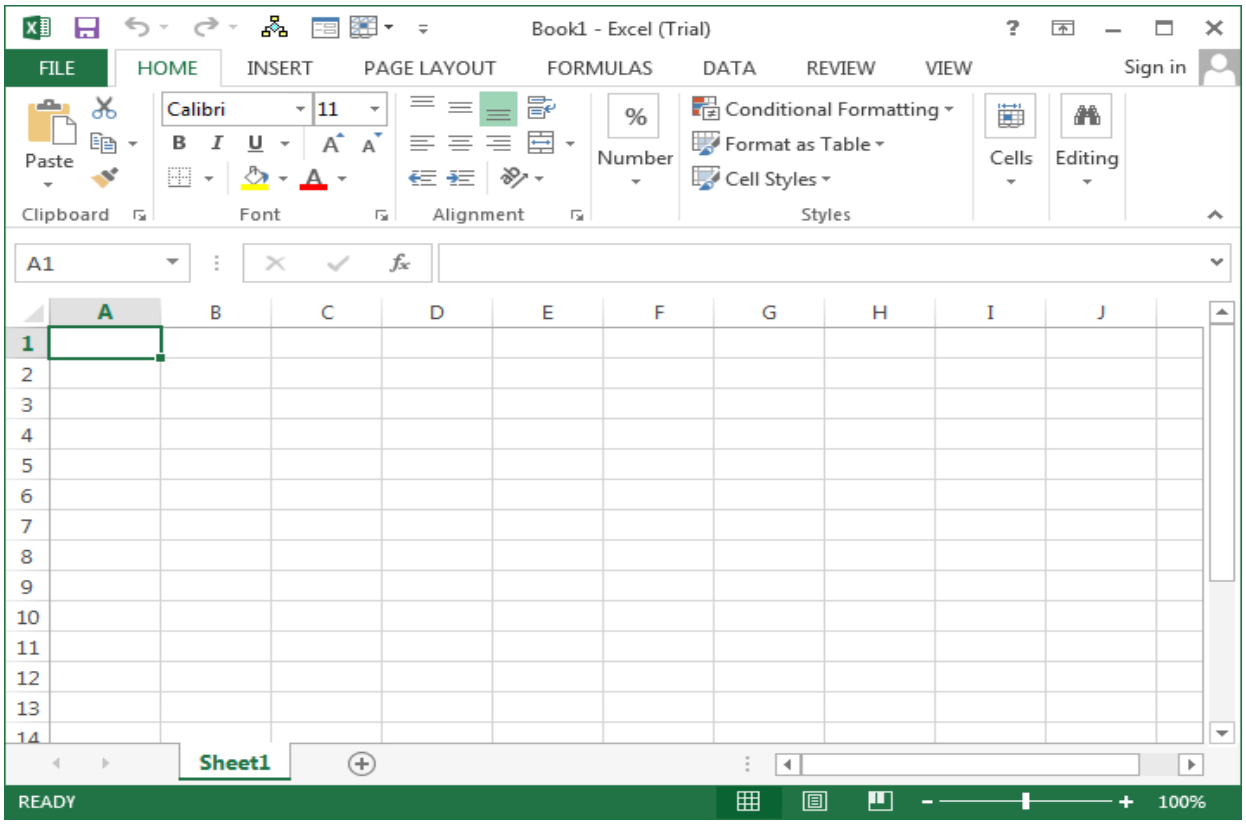


Fig. 8. The main window of the Microsoft Excel (2013)

The main menu of the Microsoft Excel (2013) has the following items: **File (Файл); Home (Основне); Insert (Вставлення); Page Layout (Розмітка сторінки); Formulas (Формули); Data (Дані); Review (Рецензування); View (Вигляд).**

Spreadsheet Structure

Each document in Excel is called a **Workbook**. An Excel book is a file that is designed to store and process data. Workbook files have the extension .xls. [3] describes the capabilities of the Excel main menu items.

The **Home** tab contains the elements that allow to type, edit and format the text: work with the clipboard, set fonts and paragraphs, select the format (style) for presenting data in the cells, search and replace the cell contents.

The **Insert** tab is used to insert the tables, illustrations, charts based on table data and insert the special symbols or formulas into the cells**.**

The **Page Layout** tab contains commands for setting the display format of table elements, document page settings when printing, its size, orientation, margins, etc.

The **Formulas** tab is used to simplify the work with built-in and Excel functions. If the computer can be connected to the network, the spreadsheets allow you to process data from the other external programs or sources (databases). To organize such work, the commands from the **Data** tab are used. Here you can also find the commands for sorting data and setting filters.

The **Review** tab contains the buttons for checking the spelling, working with comments and setting the sheet and workbook protection.

The **View** tab contains the tools for configuring the table view mode, setting the display scale, creating macros etc.

The workbook consists of sheets that are used in Excel to organize and analyze data. The workbook contains one sheet (see Fig. 8). You can change the number of sheets by clicking the + button next to the **Sheet1** tab.

A **worksheet** is a set of rows and columns, which are made up of cells. A **cell** is the smallest element of a spreadsheet that has an address and consists of the column name and the row name at the intersection of which it is located.

A, B, C, D, … are the column names;

1, 2, 3, 4, … are the row numbers;

A1, B1, C1, A2, B2, … are the cell names.

To do the actions with a cell, you must first select it to make it active. Figure 8 shows the active cell **A1**. To enter data, you must double-click the cell.

The cells can save both the text and the numeric information. The active cell is ready for data entry. It can be empty or contain one of the following types of data:

• the number, including date and time;

• the text;

• the formula.

By right-clicking the context menu of the active cell, we select the **Format Cells** item and on the **Number** tab, select the format we need (Fig. 9):

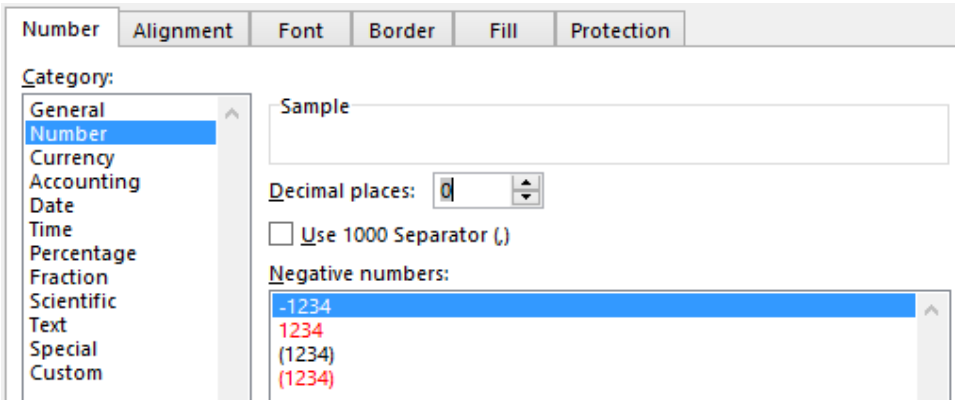


Fig. 9. The number formats

In the **Alignment** tab you can select the options for placing the information in the cell, the text orientation (vertical, horizontal or at an angle), and the boundaries along which the alignment will be performed. Also, using this tab, you can merge the several cells into one (you need to check the box next to the merge cells item), having previously selected the required number of cells. After setting the necessary parameters, click the **OK** button in this dialog box (Fig. 10):

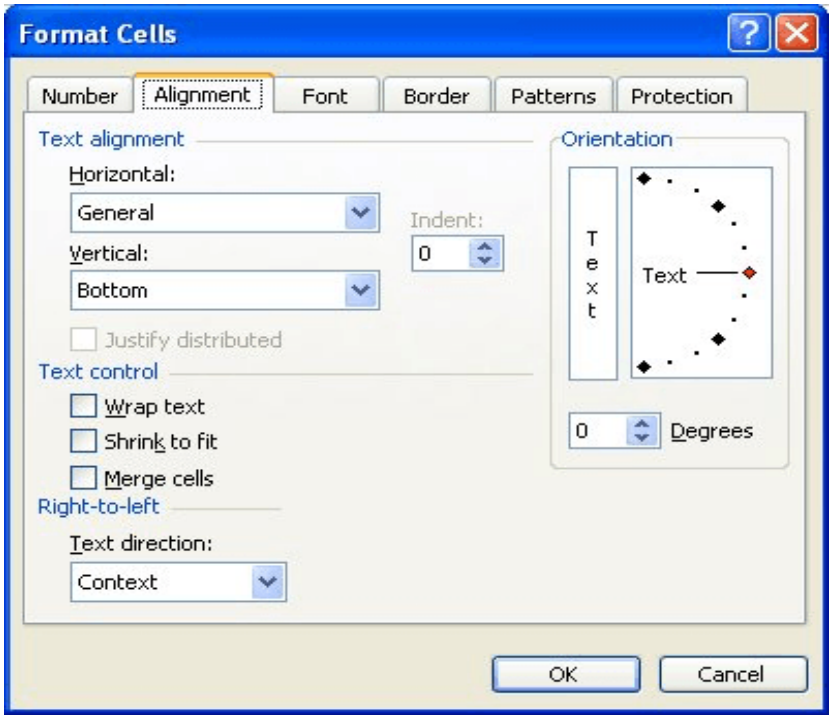


Fig. 10. The **Alignment** tab

The **Font, Border, Patterns** and **Protection** tabs of the **Format Cells** window allow you to select the font style, type, size, and colour for a selected cell or range of cells, select the required line type, line colour, and patterns and also protect a cell from the changes by first protecting the sheet from the changes.

The calculations in the spreadsheets are performed using the formulas. The formula can consist of the mathematical operators, values, cell references and the function names. The result of the formula is some new value that is contained in the cell where the formula is placed. The formula begins with the equal sign "=".

The arithmetic operators +, -, *, / can be used in the formula. The order of the arithmetic operations is determined by the usual mathematical laws. Examples of formulas: =(A4+B8)*C6, =F7*C14+B12. The formula appears in the formula bar when the cell that containing it is selected. After pressing **Enter**, the result of the formula execution or the error message appears. You can edit the entered formula as you would edit the text entered in a cell [1], [9].

Instruction:

1. Start the Microsoft Excel 2013.

2. Turn off/on the gridlines. To do this, on the **View** tab, in the **Show** group, clear the **Gridlines** check box and they will no longer be displayed on the sheet. To restore them again – select the **Gridlines** check box.

3. Add 4 more **Sheets** by clicking 4 times on the + sign next to **Sheet 1** (Fig. 11):

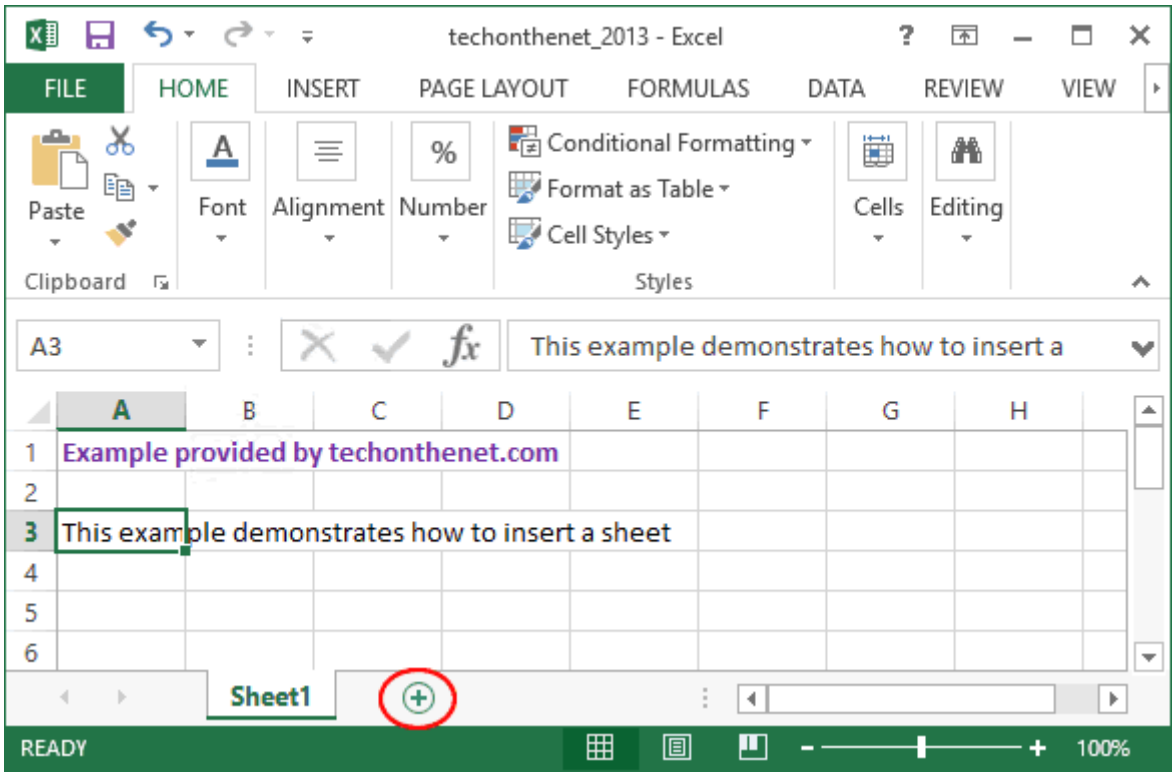


Fig. 11. Adding the Sheets

4. Delete any **Sheet**: to do this, right-click the context menu of the corresponding **Sheet** and click **Delete** (Fig. 12):

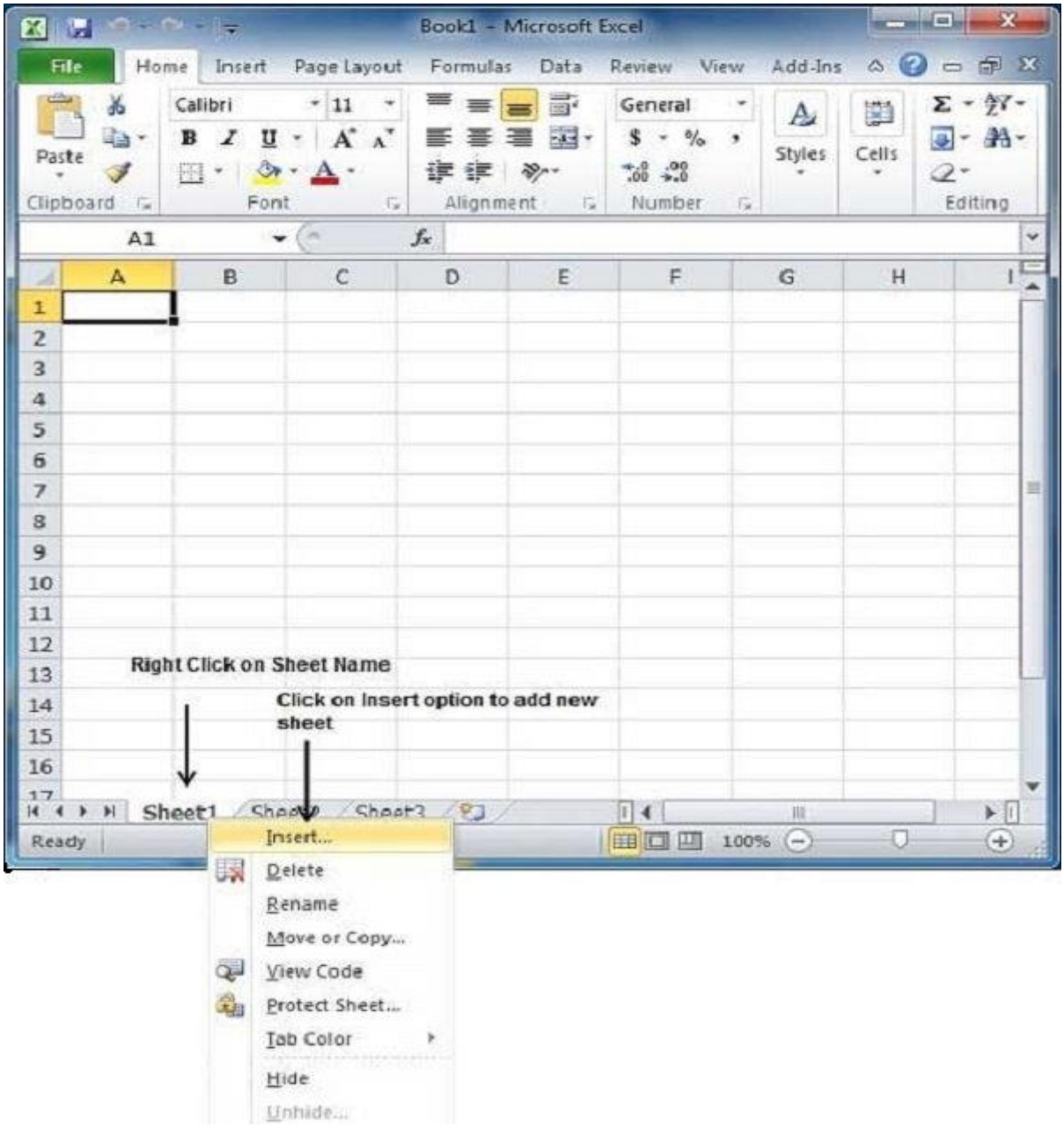


Fig. 11. Deleting the Sheets

Next, add a new **Sheet**.

5. Change the **Sheets** by dragging the appropriate **Sheet** to the desired location.

6. Go to **Sheet 1** and rename it to **"Group List"** by double-clicking on it and entering a new name.

7. Change the color of the sheet label of **Group List** by calling the context menu with the right mouse button and selecting the command **Color of Tab**.

8. Create the table that contains the list of the students in your group, their points of the session (enter the points of the 3 subjects) and the point average (determine with the formula), format it as best as possible (expand or narrow the cells according to the

content, set the borders, patterns, alignment, font, etc.). To calculate the point average, go to the cell named "Point average", select the tab of menu **Formulas**, select **AutoSum** and by clicking on it select the **Average**). After entering the cell range C2:E2, press **Enter** and get the result (Fig. 12 and Fig. 13):

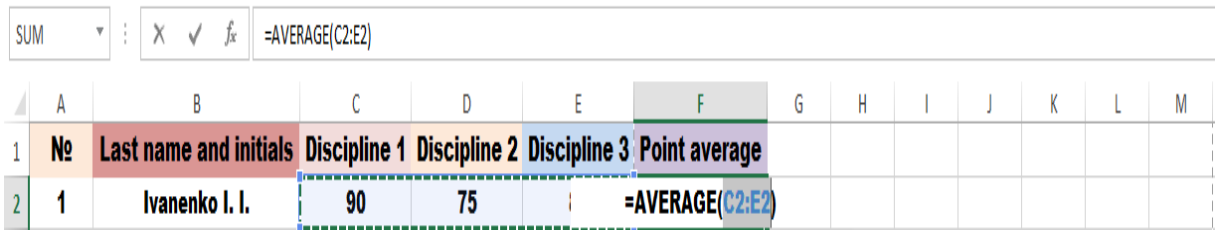


Fig. 12. Inserting the function Average

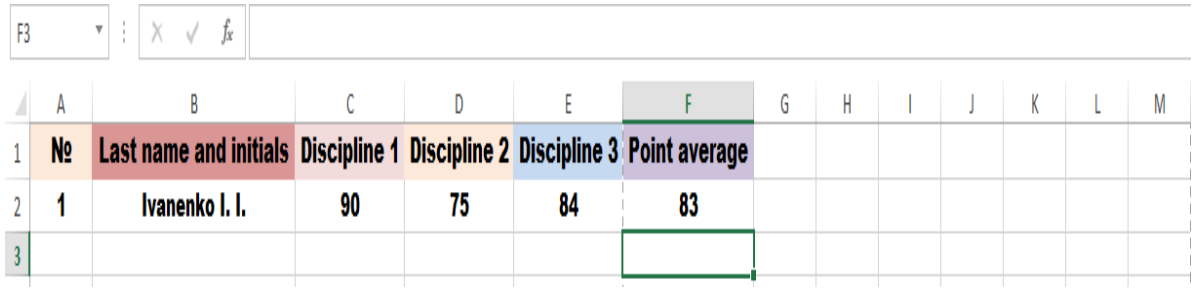


Fig. 13. Result of the formula

Then copy this formula to all other cells.

9. On the sheet 2 (rename it “Goods check”) build the table "Goods check" (Fig. 14):

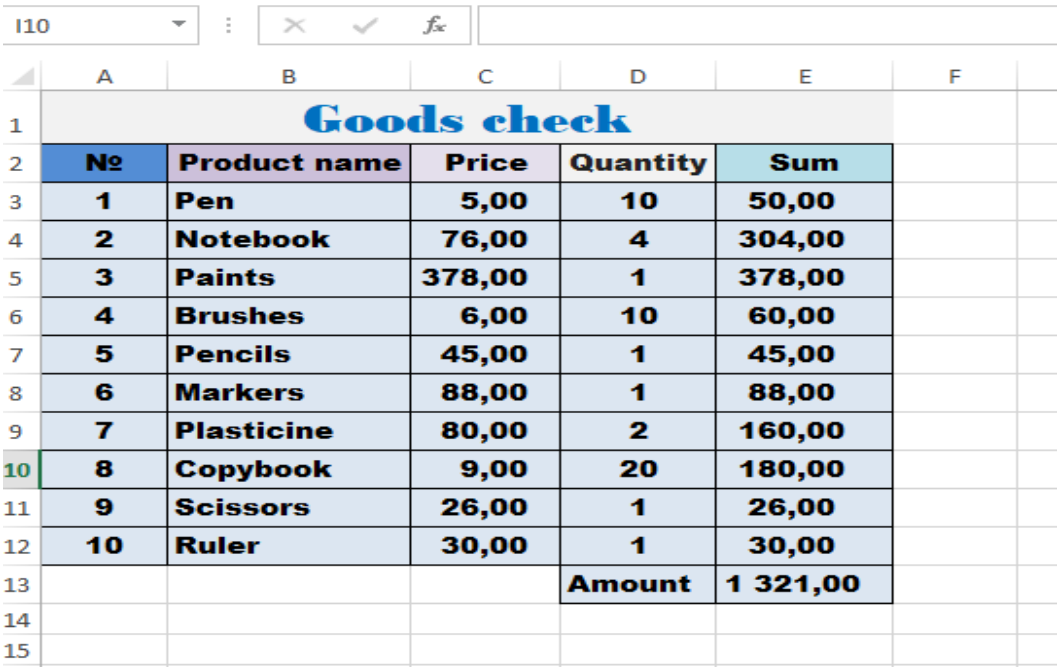


Fig. 14. Table "Goods check"

10. For the cells C3:C12 and E3:E13, set the cell format to **Number**. To do this, select the appropriate range of cells, open their context menu, select **Format Cells**, in the **Number tab**, select the **Number** format, the number of decimal places is **2**, the designation is **None**, and click OK (Fig. 15):

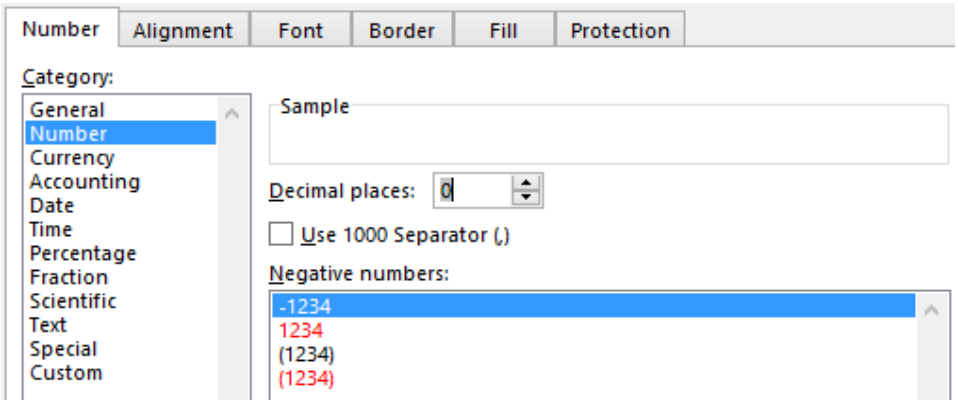


Fig. 15. Select the **Currency** number format for a range of cells

11. Calculate the amount using the formula. To determine the **Amount** in cell E3, you need to make it active and in the formula bar write the formula: =C3*D3 and press the **Enter** (Fig. 16):

Fig. 16. Entering the formula in the formula bar

Copy the formula into the following cells where the amount for the product should be calculated. Calculate the **Amount** using the **AutoSum** function (make cell E13 active, then select **AutoSum**, select the range of cells E3:E12, and press **Enter**.

12. Create a three-dimensional pie chart that displays the products and its price. To do this, select the cells with the product names and prices, then go to the **Insert** main menu item and in the **Charts** group, select **Insert Pie or Donut Chart** (an example of a pie chart is shown in (Fig. 17)). Double-clicking on the chart will open the **Format Chart Area** window.

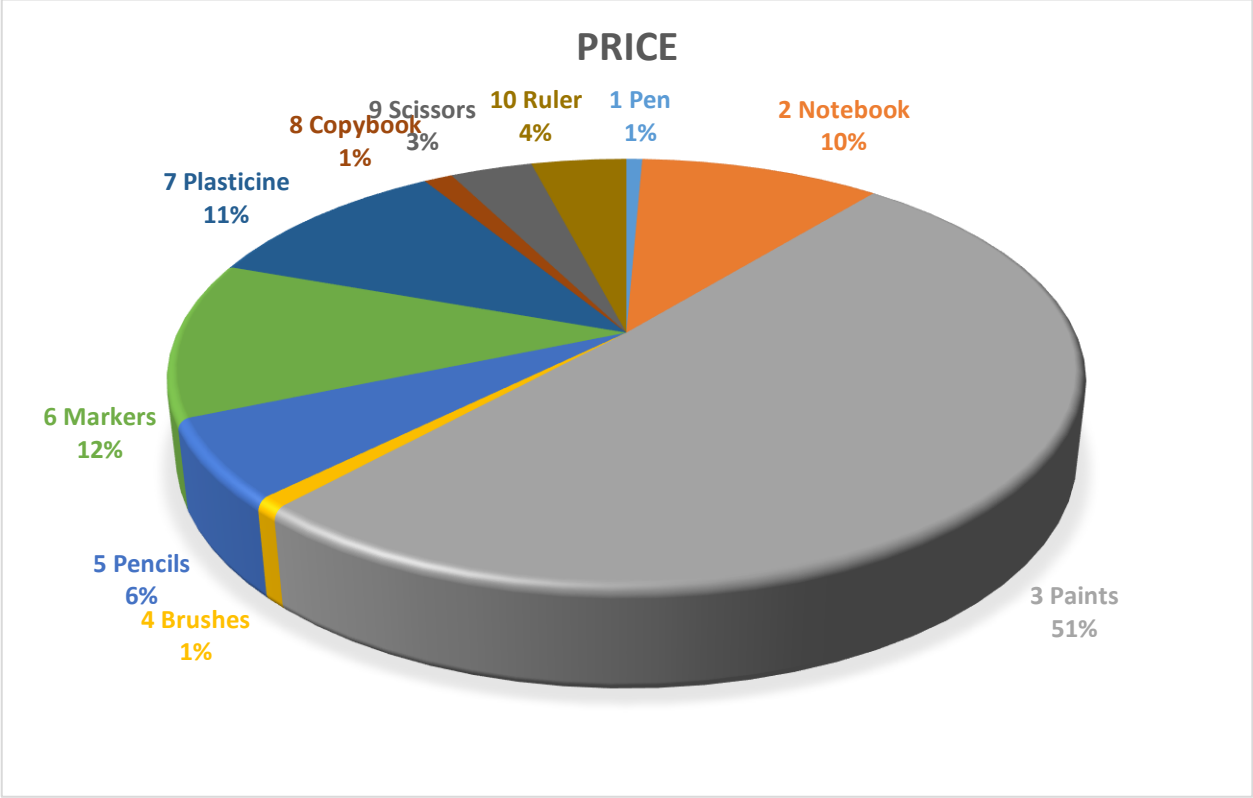
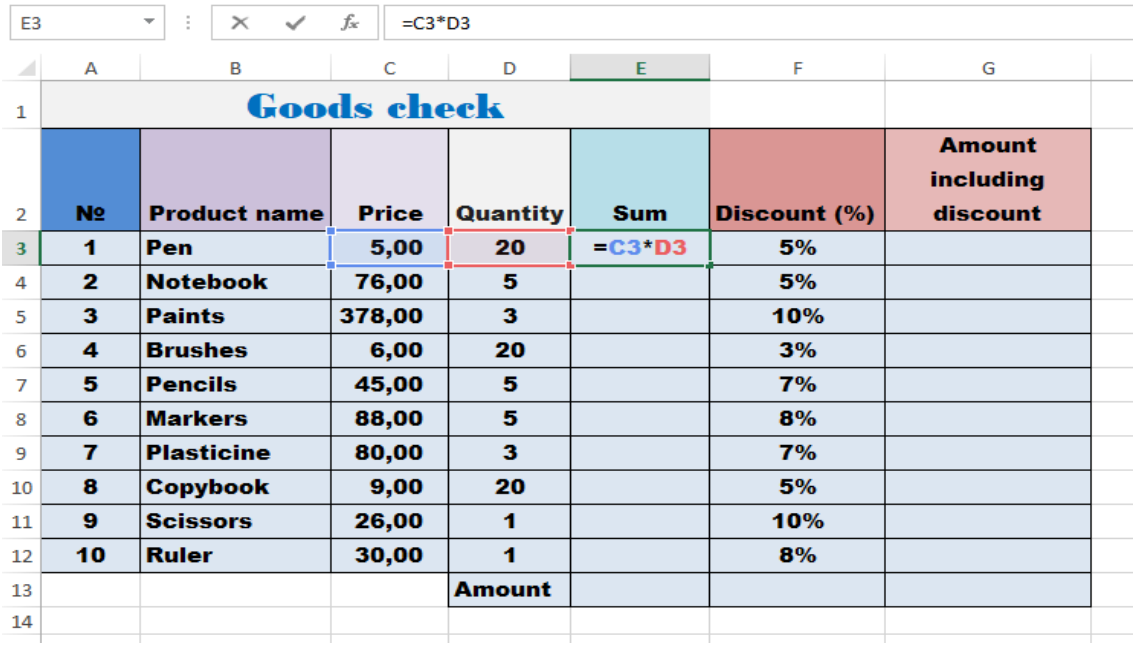


Fig. 17. The chart

Consider the various possibilities of working with the chart: changing the format of the chart title, legend, chart area, etc., changing the color of various chart elements, increasing/decreasing the size of chart elements. By clicking on the + button, you can add, remove or change chart elements. The button with the paintbrush icon allows you to set the styles and the color schemes for the chart.

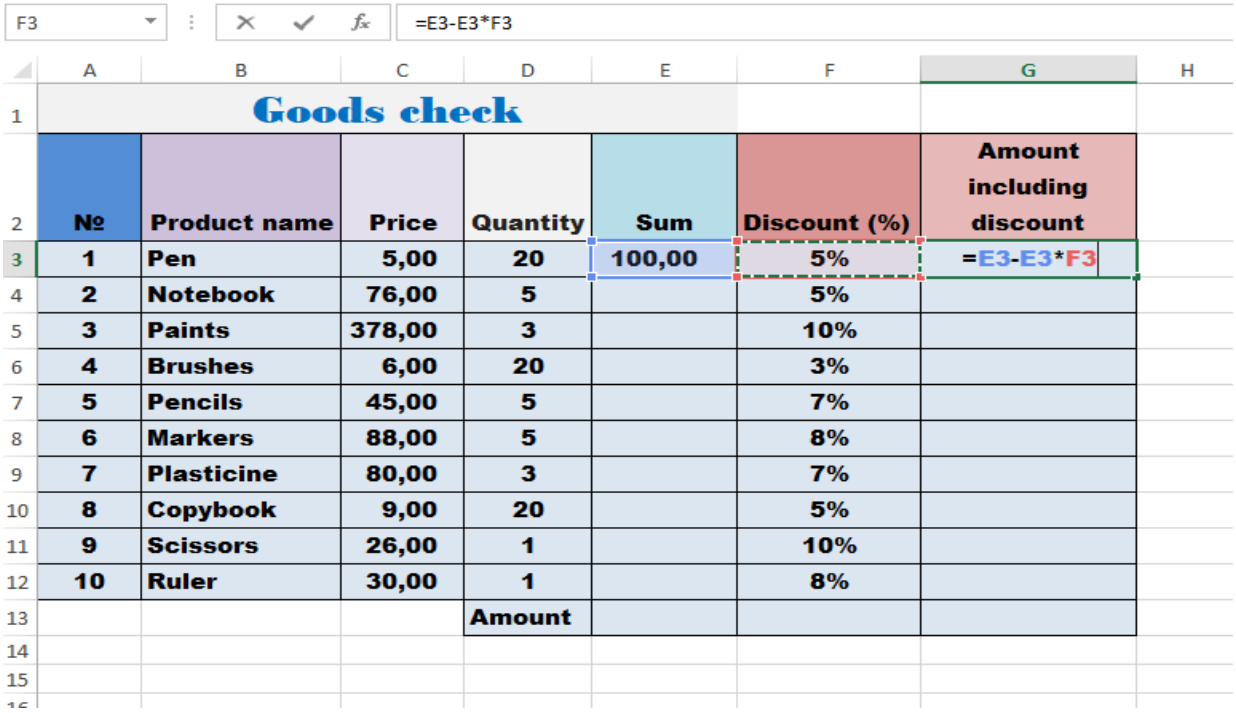
13. Do the necessary calculations in the table (Fig. 18):



E3 =C3*D3

	A	B	C	D	E	F	G
1	Goods check						
2	№	Product name	Price	Quantity	Sum	Discount (%)	Amount including discount
3	1	Pen	5,00	20	=C3*D3	5%	
4	2	Notebook	76,00	5		5%	
5	3	Paints	378,00	3		10%	
6	4	Brushes	6,00	20		3%	
7	5	Pencils	45,00	5		7%	
8	6	Markers	88,00	5		8%	
9	7	Plasticine	80,00	3		7%	
10	8	Copybook	9,00	20		5%	
11	9	Scissors	26,00	1		10%	
12	10	Ruler	30,00	1		8%	
13				Amount			
14							

Fig. 18. Table for performing the calculations



F3 =E3-E3*F3

	A	B	C	D	E	F	G	H
1	Goods check							
2	№	Product name	Price	Quantity	Sum	Discount (%)	Amount including discount	
3	1	Pen	5,00	20	100,00	5%	=E3-E3*F3	
4	2	Notebook	76,00	5		5%		
5	3	Paints	378,00	3		10%		
6	4	Brushes	6,00	20		3%		
7	5	Pencils	45,00	5		7%		
8	6	Markers	88,00	5		8%		
9	7	Plasticine	80,00	3		7%		
10	8	Copybook	9,00	20		5%		
11	9	Scissors	26,00	1		10%		
12	10	Ruler	30,00	1		8%		
13				Amount				
14								
15								

Fig. 19. Entering the formula

The value in the "Sum" column is equal to the product of the columns "Price" and "Quantity". The value in column F is equal to the difference between the values in the "Sum" column and the product of the columns "Sum" and "Discount" (Fig. 19). Also, count the "Amount" before and after the discount. Set the currency (in columns E and G) and percentage (in columns F) formats in the corresponding columns.

14. Save all the data in an Excel file called LastName_Excel.

Control questions

1. Name the tabs of the main menu of MS Excel 2013 and describe their functionality.

2. What are *Book* and *Sheets* in a spreadsheet?

3. What is the minimum element of a spreadsheet and how is it set?

4. What types of data can a cell contain?

5. How to set the numder format of a cell?

6. What are the number formats?

7. How to set the cell borders and the fill?

8. How to enter the formula in MS Excel?

9. What main menu command should you use to calculate the average value of a quantity?

10. How to build a chart in a spreadsheet?

Laboratory work № 3

Preparing a presentation for a lesson in MS Power Point

Purpose: learn to create the presentations for the lessons using MS Power Point (2013), taking into account the methodological recommendations for their creation.

Theoretical information

A presentation is prepared information that is used to demonstrate to a wide audience in a clear and concise form (minimum text, diagrams, charts, tables, etc.) [12]. The computers, multimedia projectors, multimedia and interactive boards, etc. are used to demonstrate them.

To create the computer presentations, the special programs that are designed to create images and display them on the screen, prepare slides and edit them (for example, Microsoft Office PowerPoint, OpenOffice.org Impress, MySlideShow, etc.) are used.

In MS PowerPoint, you can work in two main modes: 1) creating and editing presentations and 2) demonstrating presentations. The each presentation consists of individual **slides**, which are **the main objects of the presentation** and can include the other objects, including text, images, video or audio objects, hyperlinks and buttons to control the demonstration process.

The objects can be animated – the ability to move on the screen in certain ways, which are described in the corresponding menu. It is also possible to set the animated transitions between the slides [2], [9].

Methodological recommendations for creating a presentation [1]:

1. The title slide should contain the information about the author of the presentation (full name, name of the educational institution), the topic of the presentation, the date of the report.
2. The even distribution of the verbal and illustrative material. The amount of the text is minimal. The most important material that requires the mandatory assimilation should be highlighted more brightly and more originally - for the effective use of associative visual memory;

3. For text and titles, a clear large font should be used. Their size and contrast are determined by the need for their clear consideration from the last row of the desks;
4. It is necessary to choose a single “calm” background for all presentations, so as not to cause eye weariness. Dark backgrounds with white text, backgrounds overloaded with images are not recommended;
5. All characters and objects should be made in a single style;
6. All presentations should use the same type of the animation effects. The animation should not be too active;
7. When viewing a slide, at least 2-3 minutes are given for students to absorb the text, graphic and the other type of information displayed on the slide fully. Do not use the automatic slide switching.
8. Audio is unnecessary. The exception is the video fragments that the teacher does not comment on while watching.

Instruction:

1. To start the **MS PowerPoint 2013**, use the commands **Start→All Programs→ Microsoft Office 2013→ PowerPoint 2013 → New** or click on the MS **PowerPoint 2013** shortcut on the Desktop. In the search bar, select **Education** and a presentation layout from the appropriate category, then click **Create** on the layout (Fig. 20):

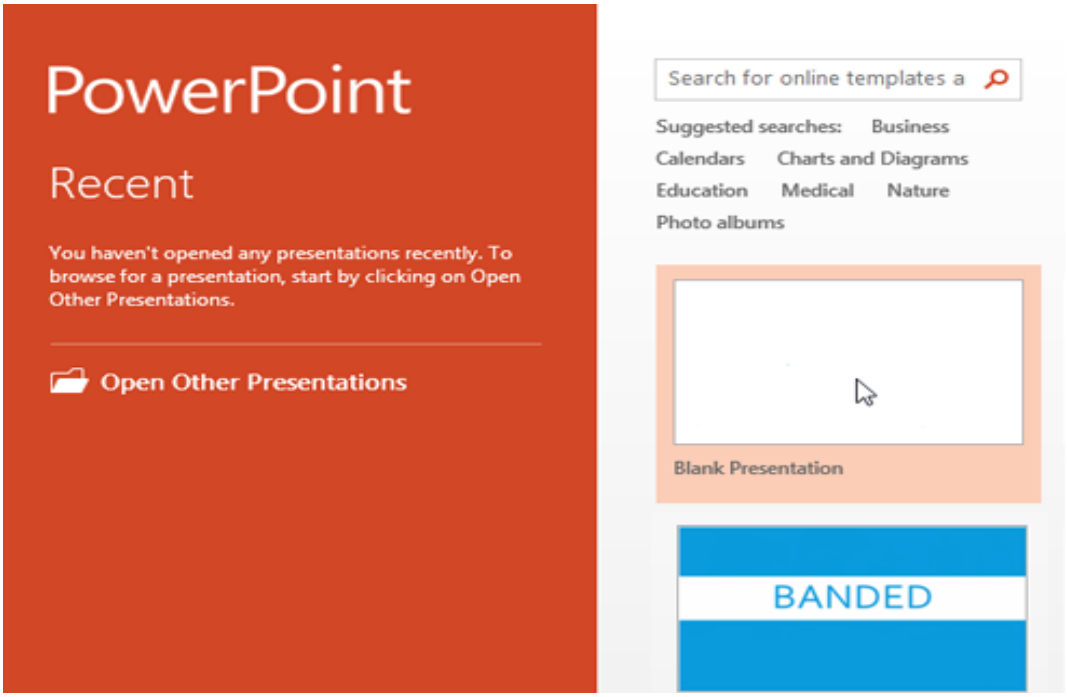


Fig. 20. Creating a presentation file

2. Create a presentation on any topic from the curriculum (in any subject) for primary school students, following all methodological recommendations. In the presentation, set up the slide transition effects, animation effects for individual objects. Also add hyperlinks to the presentation (for example, to interactive exercises, etc.). The presentation should contain at least 10 slides.
3. Check out the main menu of the program, which contains the following items: **File (Файл); Home (Основне); Insert (Вставлення); Design (Конструктор); Animations (Анімація); Slide Show (Показ слайдів); Review (Рецензування); View (Вигляд)** (Fig. 21) and the main commands of these points:

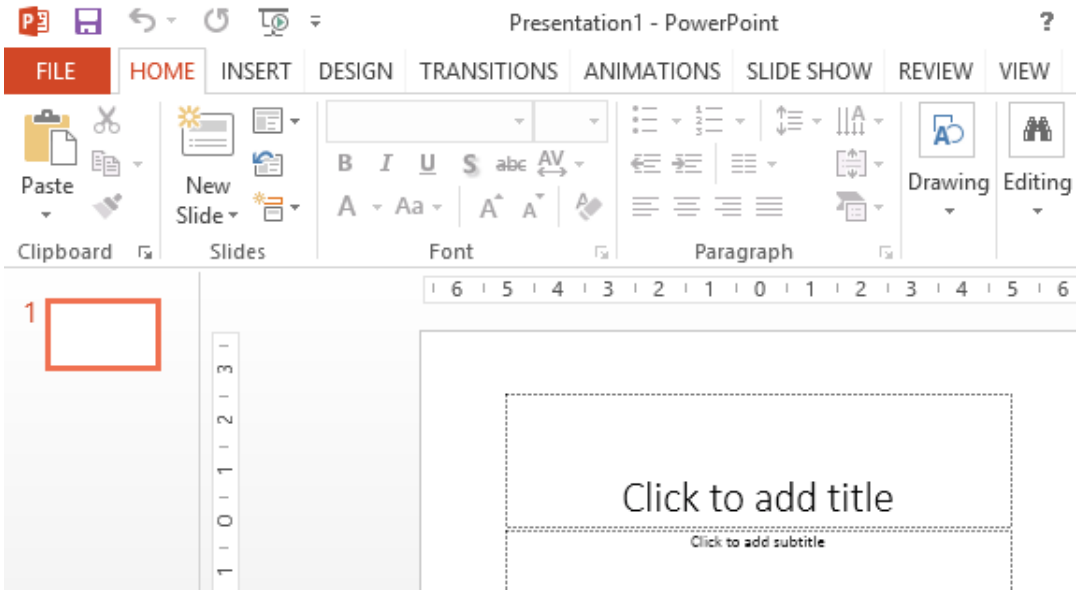


Fig.21. Main menu of MS PowerPoint 2013

Check out the **Home** tab (Fig. 22):

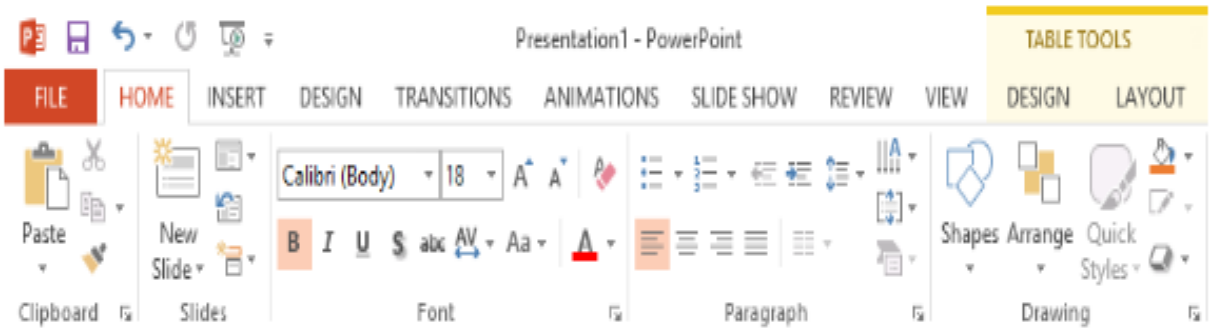


Fig. 22. **Home** tab

4. To add a new slide, click the Create Slide button or press Enter. Enter the text in the appropriate fields. You can also insert text using the **Insert** → **Text Box** command.

5. Using the **Insert** tab, you can also add to slides: Tables, Images, Illustrations, Links, Comments, Media content (video, audio, screen recording), etc. (Fig. 23):

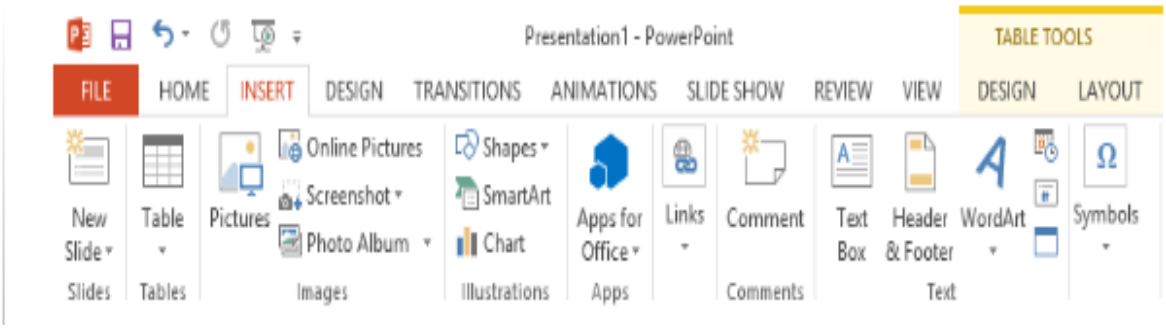


Fig. 23. **Insert** tab

6. Using the **Design** tab, select **Themes**, **Variants**, slide size, and format the background (Fig. 24):

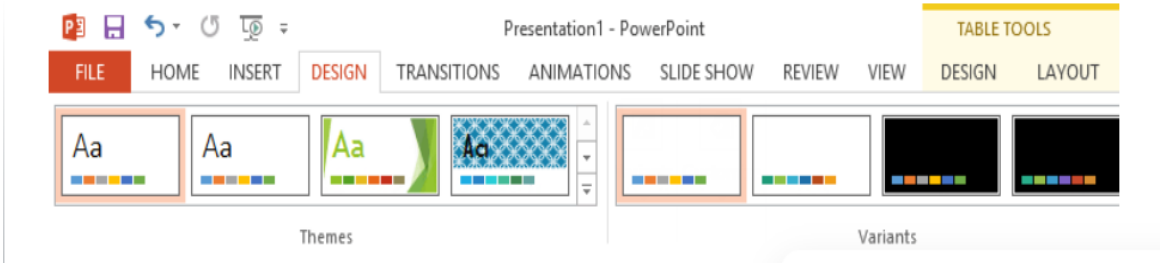


Fig. 24. **Design** tab

7. Configure the transitions between slides – use the **Transitions** main menu item (Fig. 25):

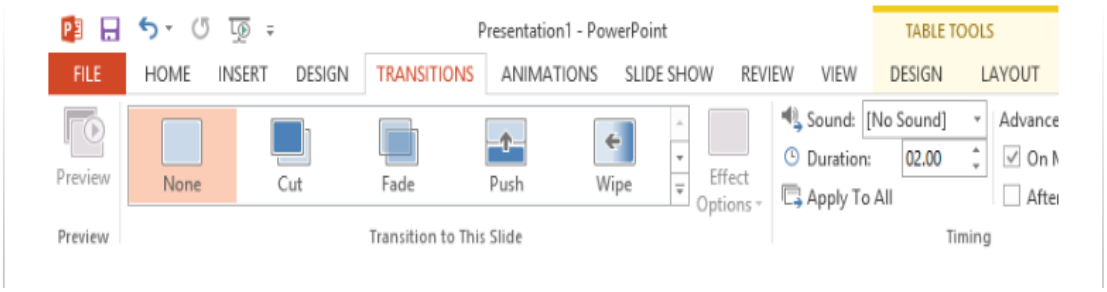


Fig. 25. **Transitions** tab

Here, in the **Timing** command group, you must check the box **On Mouse click.**

8. Check out to know the presentation modes. At the bottom, on the right, there are the icons for the presentation modes: **Normal, Slide Sorter, Reading View, Slide Show**. You can also add **Notes** and **Comments**.

9. Set animations for slide elements. Use the corresponding item in the main menu **Animations** (Fig.26):

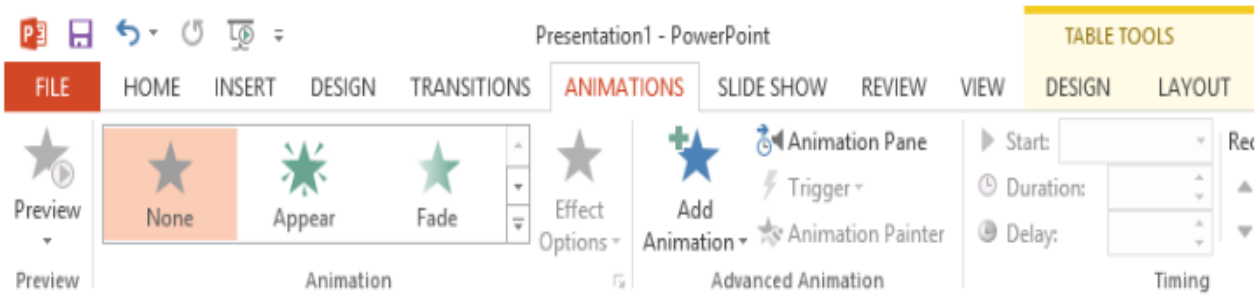


Fig. 26. **Animations** tab

10. Slide show setup is done using the **Slide Show** tab (Fig. 27). In the **Set Up** group, select **Set Up Slide Show** and from the **Change Slides** item, select the **Manually** command:

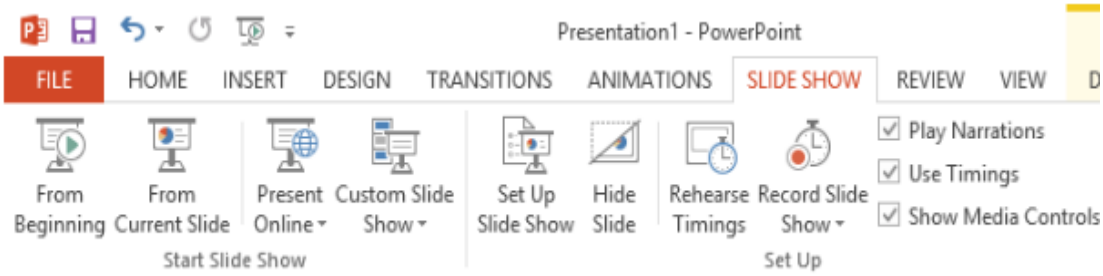


Fig. 27. **Slide Show** tab

14. Save the created presentation with the name LastName_Presentation.

Control questions

1. What are the software tools for creating the presentations?
2. What objects can be placed on the presentation slides?
3. Name the main modes of working with MS Power Point presentations.
4. Describe the main methodological recommendations for creating presentations for lessons.
5. Name the main menu items of the MS Power Point (2013) program.
6. What can be added to slides using the Insert main menu item?
7. How to set a transition between slides?
8. What are the types of transitions between slides?
9. How to create animation for slide elements?
10. How to set up a slide show?

Laboratory work № 4

Work with LearningApps.org.

Creating interactive exercises with LearningApps

Purpose: learn how to create the interactive exercises using the online service LearningApps.

Theoretical information

LearningApps.org is a Web 2.0 service for supporting learning and teaching processes using small interactive modules (Fig. 28).

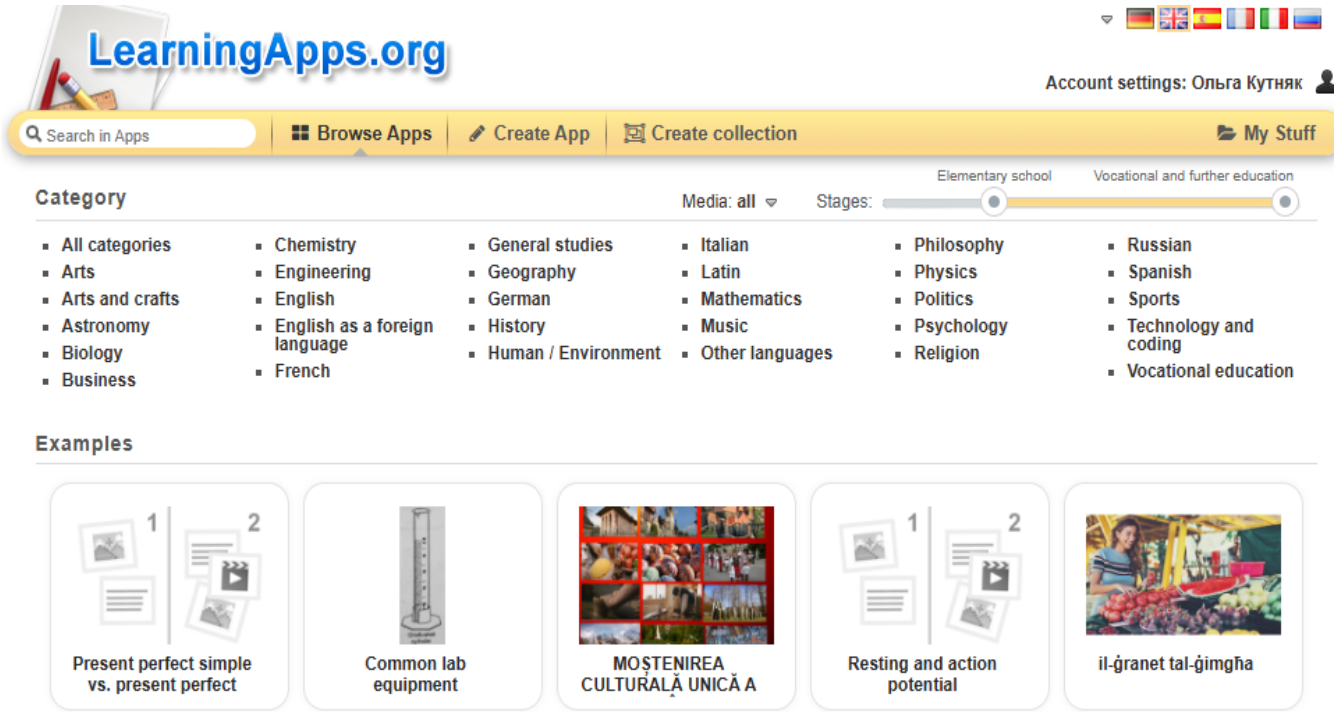


Fig. 28. LearningApps.org Home page

The goal of the service is creating a publicly available library of independent blocks suitable for reuse and modification. The blocks (called Apps) are not considered the complete lessons or tasks, but can be used in any appropriate methodological scenario. This is a constructor for developing the interactive tasks in various subject disciplines for use during the lessons and extracurricular work.

The tasks on the resource can be viewed without registering, however, in order for the created exercises to be saved, you must register by clicking "Create an account".

After registering on the site, the following tabs become available to the user:

• **Account settings** (adding or changing the information about yourself).

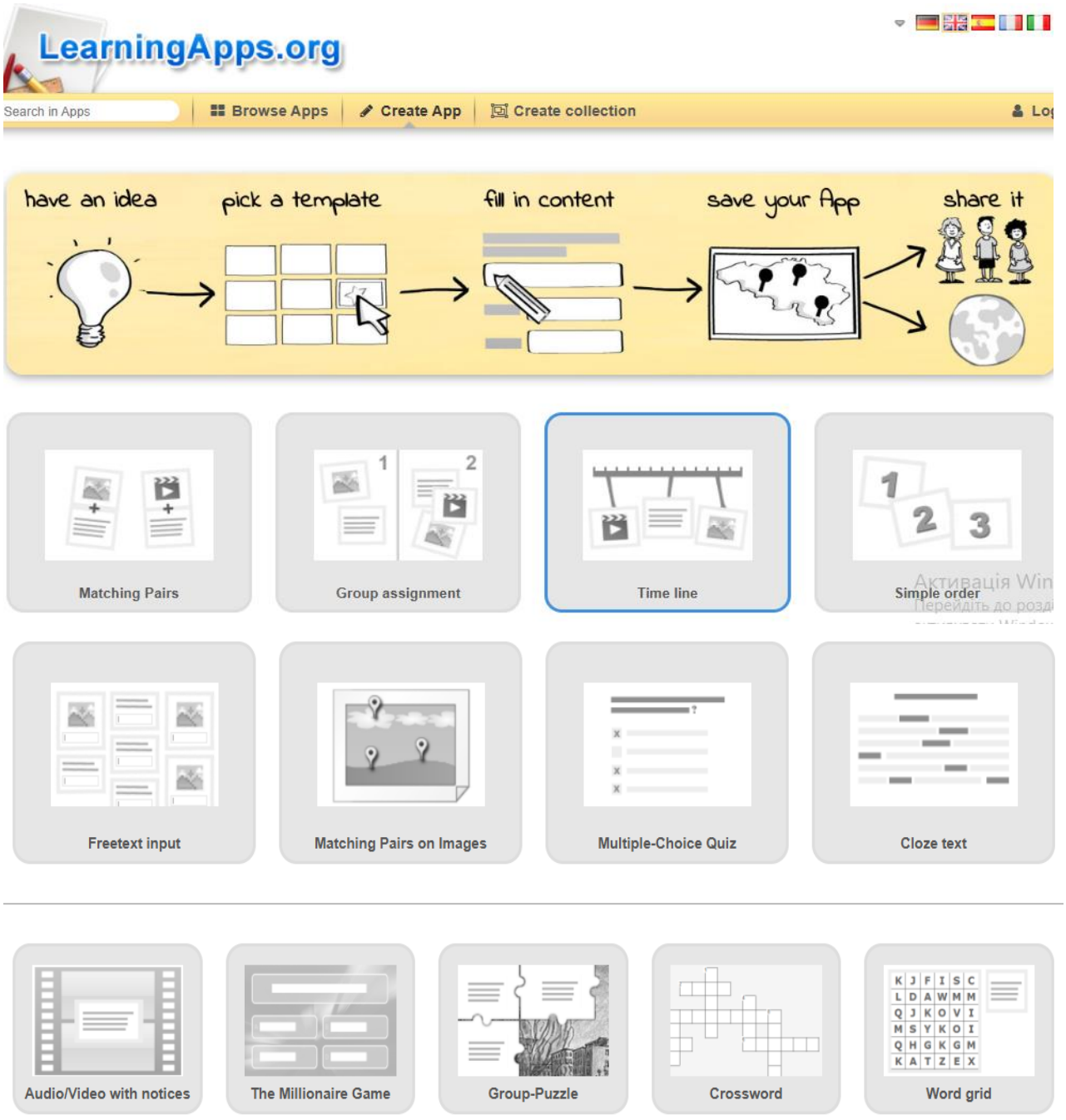
• **Search in Apps** (to find the category by the name).

• **Browse Apps** (a catalog of all apps on the site, divided into categories).

• **Create App** (the ability to choose the type of apps being created).

• **Create collection.**

Here are the templates for creating new exercises by filling out the simple web forms (Fig. 29). We are invited to view an example of such a task from the exercise library or you can immediately go to the "Create App".



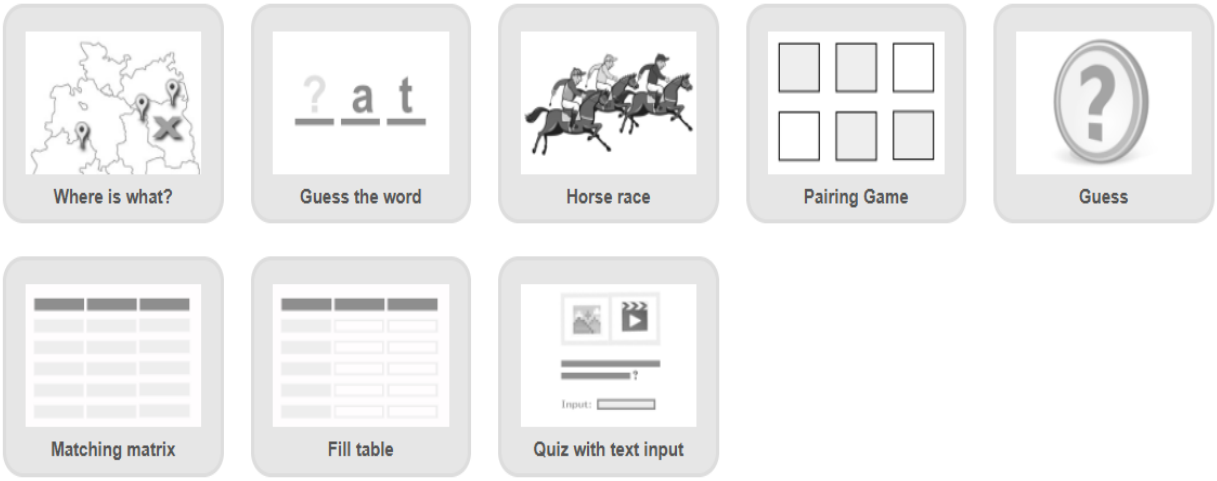


Fig. 29. View of the “Create Apps” tab page

To create the various types of apps, this service uses almost the same algorithm of actions:

1. Enter the name of the app.

2. Write a description of the task of this app. Before doing the app, students will be able to read the conditions for its implementation.

3. Create the pairs, that is, questions and answers. This can be a combination of the texts, images, audio and video clips. Enter the prepared text into the template, add the prepared graphic, audio or video materials. It is also possible to copy the web address of the image into the field.

4. To add new objects, click on "Add another element".

5. To make the task more difficult, you can choose the option “Additional, but wrong elements” that do not belong to the solution.

6. Check the box next to the option “Make matching pairs disappear”. These pairs automatically disappear, otherwise you need to compose pairs until all the correct answers are found.

7. Complete the app creation by writing the text for feedback that will appear when the correct answer is found (for example, “Great, you've found the solution!”).

8. If necessary, write hints about doing the app.

9. Preview the app.

10. You can continue editing this app, or you can save it.

The created app has a private mode. You can offer the result of your work to other users using the "Public app" option. You need to fill out the proposed form and, after sending the app, wait for the response of the service developer. In the case of a positive response, the app will be available to all users.

Let's consider **"My Stuff"** tab. This tab stores the apps created by the user (**"My Apps"**), as well as the apps completed by the students and published by the teacher for the public use. By clicking on the folder with the mouse, we have the opportunity to "manage" the folder: rename, move, choose the colour of the folder, delete [1], [8].

Instruction:

1. Enter the official name of the site https://learningapps.org/.
2. Register on the site by selecting the "Registration" tab. By filling in the appropriate fields, you will create your account.
3. Get acquainted with the interface of this site, consider its tabs and their functions.
4. Set the levels **Elementary school** – **Middle school** (using the slider on the right).
5. Consider the various exercises and tasks created in the following subjects: *Ukrainian, Mathematics, Human / Environment, Arts, Atrs and Crafts, Choreography.*
6. Choose the most interesting exercises and create your own 5 different apps from these subjects using their templates. The exercises should be varied.
7. For example, consider the stages of creating the following app called "Computer Structure" (Fig. 30) according to the algorithm given above:

App title

Display language :

Будова комп'ютера (початкова школа)

Task description

Provide a task description for this App which is shown on start up. If not needed leave it blank.

Оберіть, до якої категорії належить об'єкт та натисність на відповідну стрілочку:

Description

There can be up to 4 categories and contents that belongs to them and has to be classified. Every round there will be one random content element shown and has to be classified until the stack is empty.

Category

Базова конфігурація персонального комп'ютера Hint:

Group 1 - Elements

Element: системний блок Hint:

Element: Монітор Hint:

Element: Клавіатура Hint:

Element: Маніпулятор «мишка» Hint:

+ Add another element

Category

Допоміжні пристрої персонального ком'пютера Hint:

Group 2 - Elements

Element: Принтер Hint:

Element: Модем Hint:

Element: Сканер Hint:

Element: Засоби мультимедіа Hint:

+ Add another element

Category

Носії інформації Hint:

Group 3 - Elements

Element: Вінчестер Hint:

Element: Флеш накопичувач Hint:

Element: Зовнішній жорсткий магнітний диск Hint:

Element: Карта пам'яті Hint:

+ Add another element

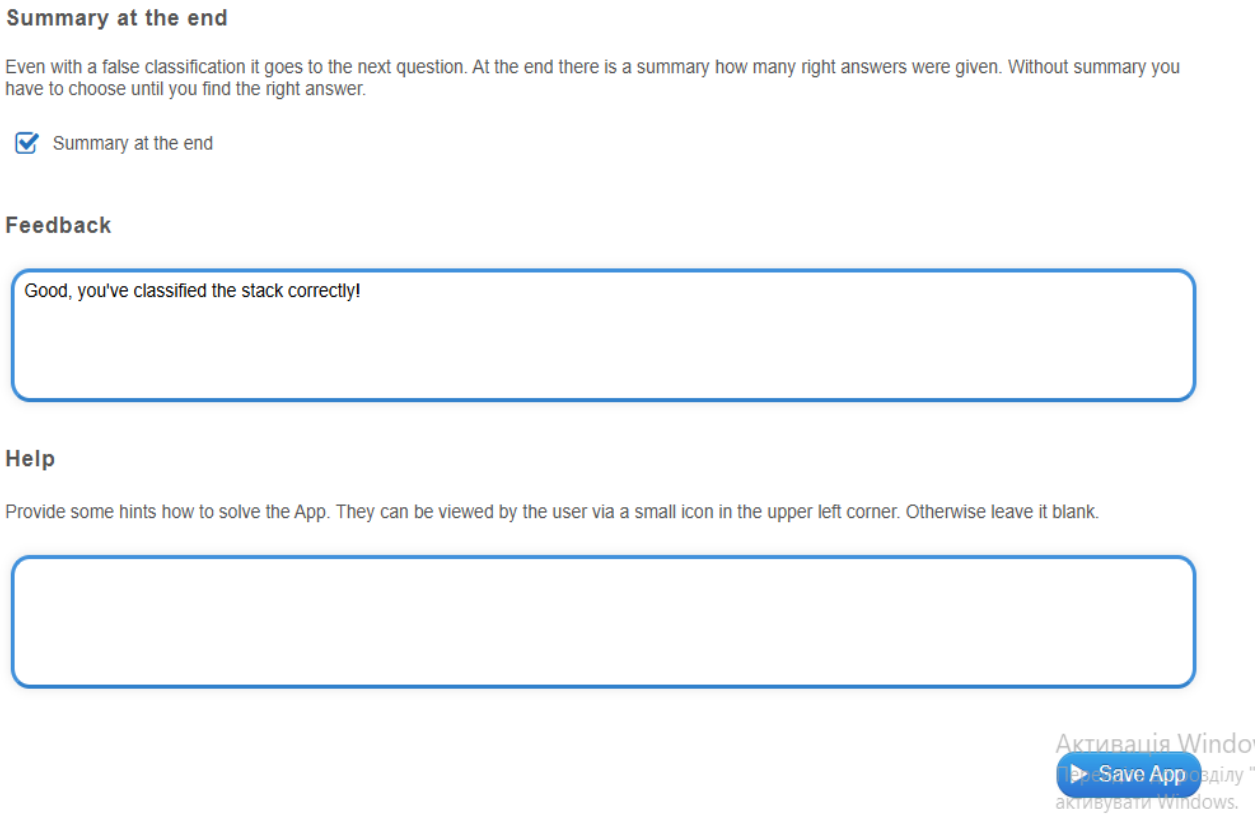


Fig.30. Example of creating app

8. Save your apps. They will be saved in the "My Apps" folder, where you can always view and edit them if necessary.

9. Copy the 5 links of the exercises you created and paste them into a text document named LastName_ LearningApps.

Control questions

1. What is the LearningApps service for?
2. What tabs are on the main page of this service?
3. What task templates are available for creating tasks in LearningApps?
4. Describe the general algorithm for creating an app.
5. What type of information can be added to app?
6. What types of access can an app have?
7. What is contained in the “My Apps” tab?
8. What actions can be performed on the folders and the exercises in folders?

Laboratory work № 5-6

Email. Organizing collaboration in Google services. Google Drive, Google Docs, Sheets, Slides. Creating a Google site

Purpose: learn how to use the capabilities of Google cloud services.

Theoretical information

According to the definition of the US National Institute of Standards and Technology (NIST), *cloud computing* is a model for providing convenient, on-demand access anywhere, anytime to shared computing resources (networks, servers, storage systems, applications, and services) that can be provided quickly and with minimal management effort and interaction with the service provider [13].

The most popular cloud software:

• electronic library;

• data storage (Dropbox, OneDrive, GoogleDrive);

• video conferencing;

• email;

• office services;

• distance learning systems.

Gmail is a free email service with a large amount of storage space and a user-friendly web interface. The service allows you to (Fig. 31):

• write a letter;

• view incoming, sent, and letters with an asterisk;

• view the drafts;

• delete a message;

• view the information in spam;

• highlight individual messages for further work with them;

• start a chat and video call;

• find the necessary messages in the search field by keywords.

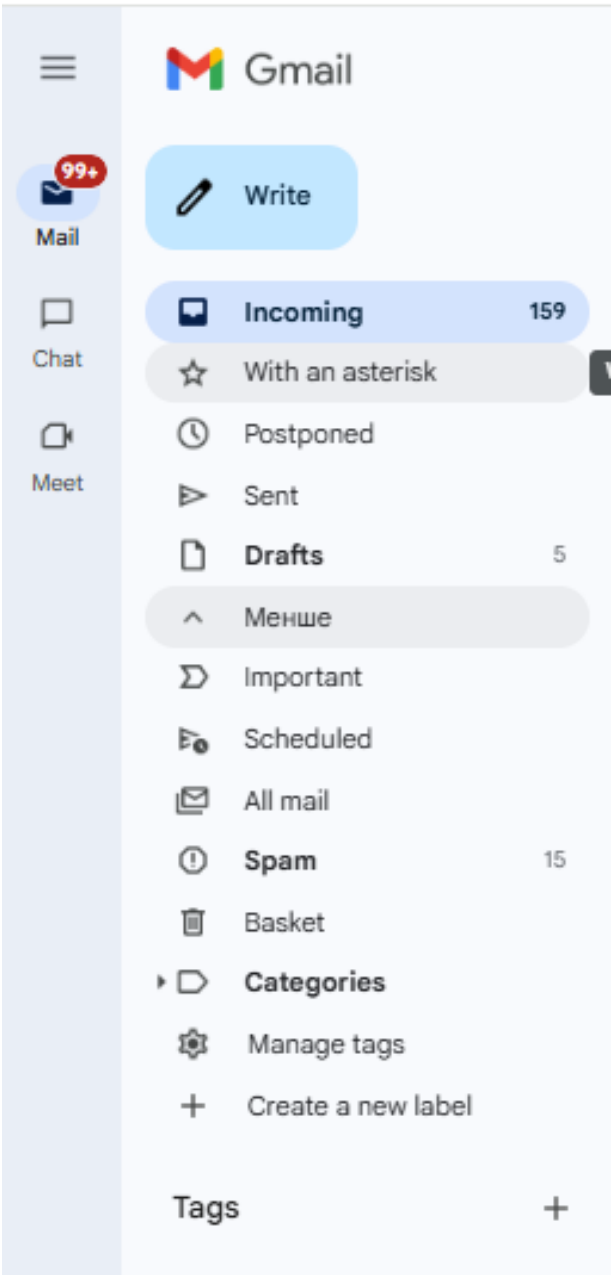


Fig. 31. Gmail

Google Drive is a data storage service that allows users to store their data on servers in the cloud and share it with other users on the Internet. It contains **Google Docs, Sheets, Slides**, etc., which provide the opportunity to work on them together. Public documents on Drive are indexed by search engines. To access the Google Drive, you need to select the Google applications menu  and click on the **Drive icon** (Fig. 32):

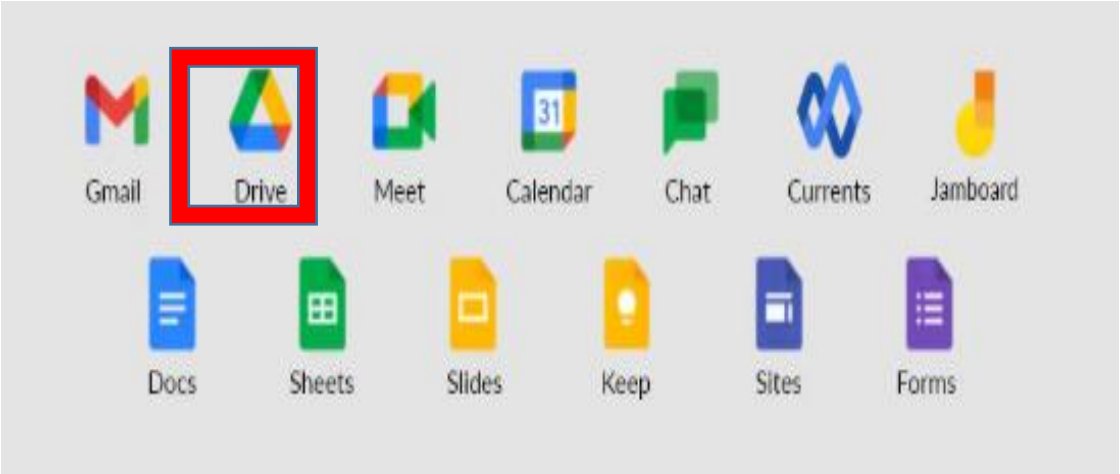


Fig. 32. Logging into Google Drive

A **Classroom** folder will be automatically created in your cloud storage, which will contain another folder with the name of the course you are registered for. This folder will store all the materials that you and your lecturer upload to Classroom. Fig. 33 and 34 show the main page of this service and the page “My disk”:

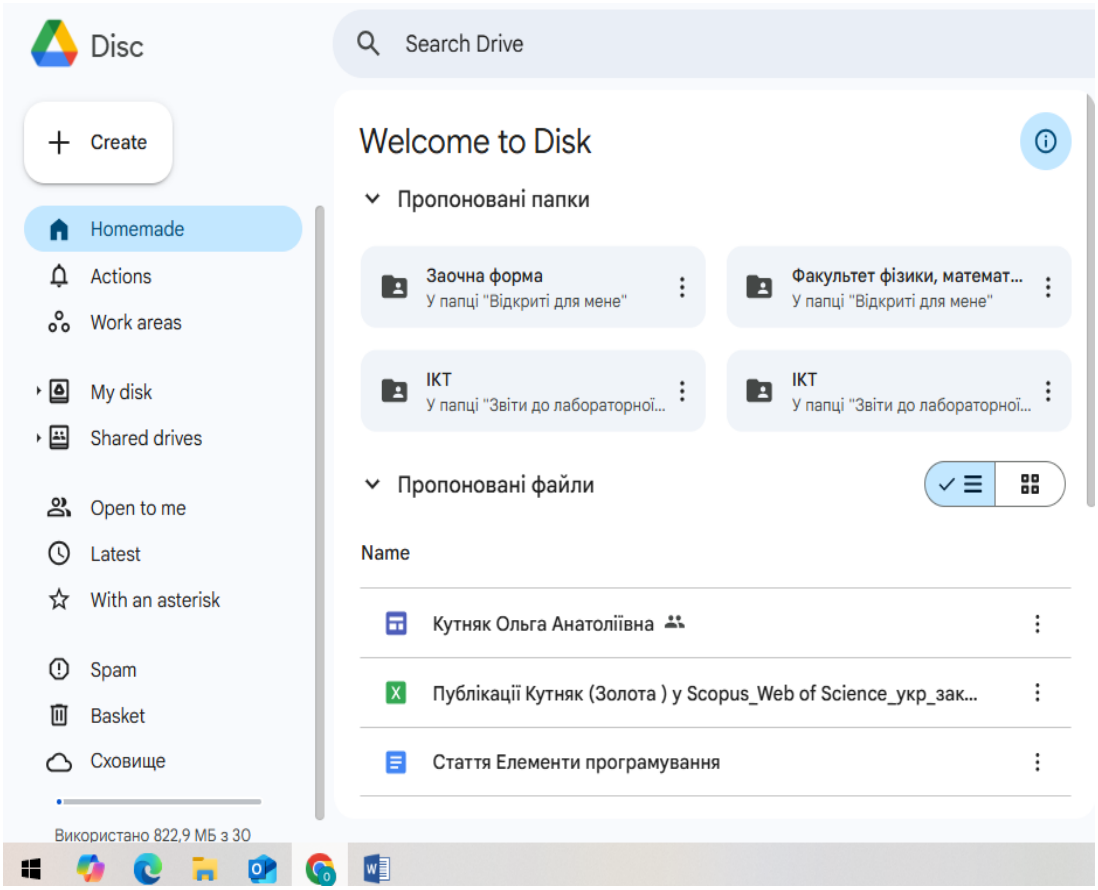


Fig. 33. Google Drive home page

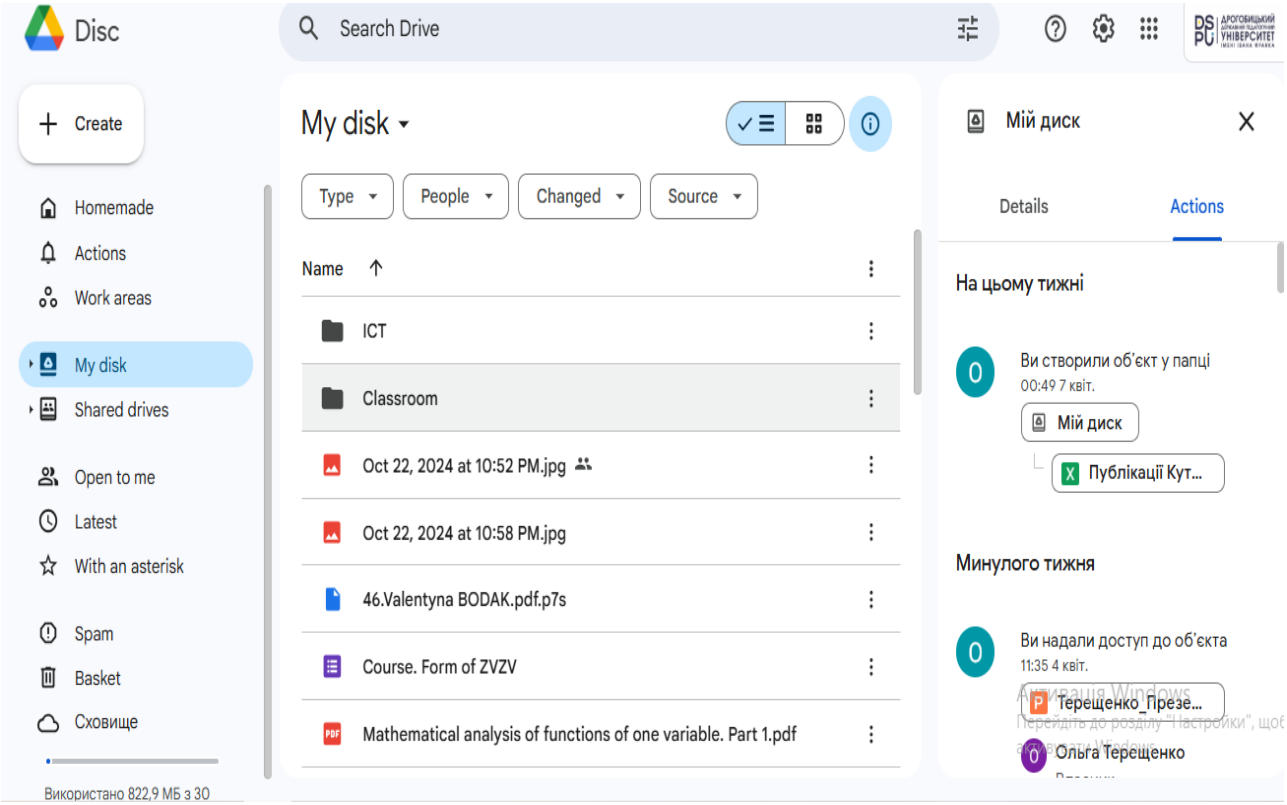


Fig. 34. Google Disk (Drive) home page

Google Drive provides the following possibilities:

• create;

• view My Drive;

• view folders or files open to me;

• basket etc.

To create a folder (folder structure), files of different types or download the files from your computer, you need to click the **"Create"** button (Fig. 34). Google cloud storage provides the following capabilities when you click the "Create" button (Fig. 35):

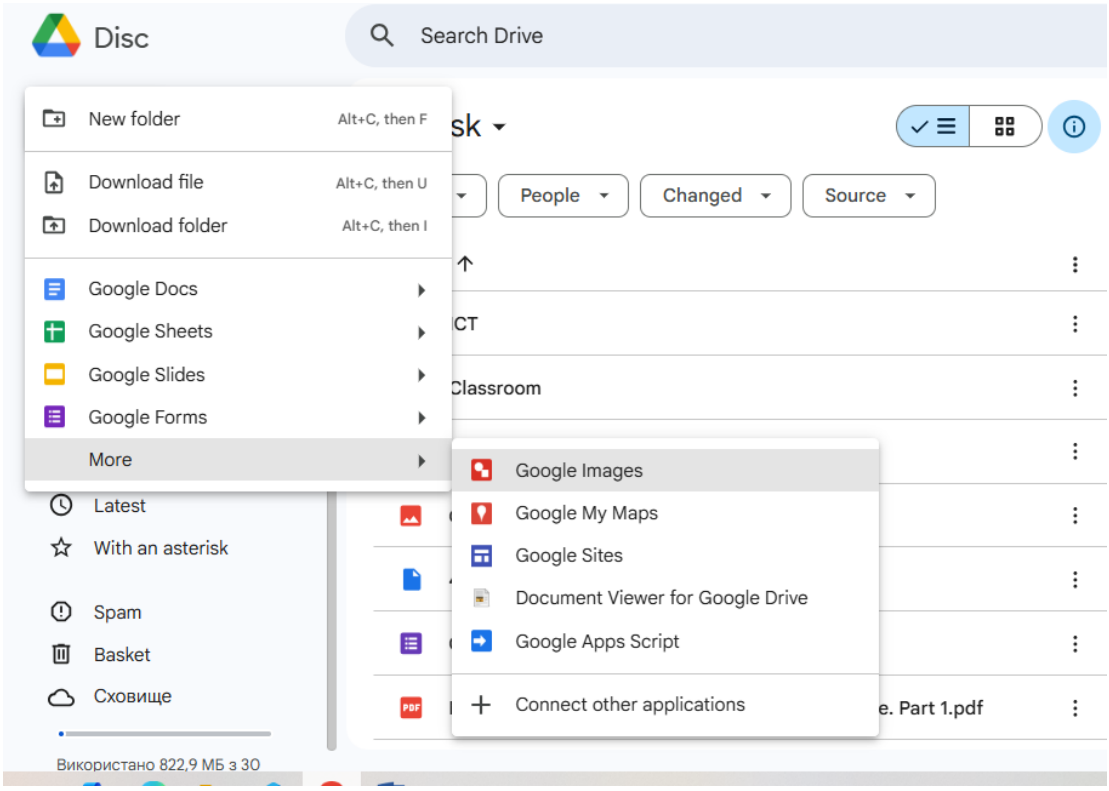


Fig. 35. Creating objects in Google Drive

• create a new folder;

• download a file from your computer;

• download a folder from your computer;

• create a Google Doc;

• create a Google Sheet;

• create a Google Slide;

• create a Google Form;

• create a Google Image;

• create a Google Map;

• create Google Sites, etc.

In the **New Folder** window, enter the folder name and click the **Create** button. To create a folder in an existing folder, first go to the desired folder and create a new one.

To download the files from the computer to a specific folder, go to the desired folder and click **Create** → **Download file**. In the window that opens, select the file(s) you want to download to the folder. For each object created in the cloud storage, you can use the context menu, where you can (Fig. 36):

• open with …;

• download;

• rename;

• grant access;

• organize;

• get folder (file) information;

• move to cart.

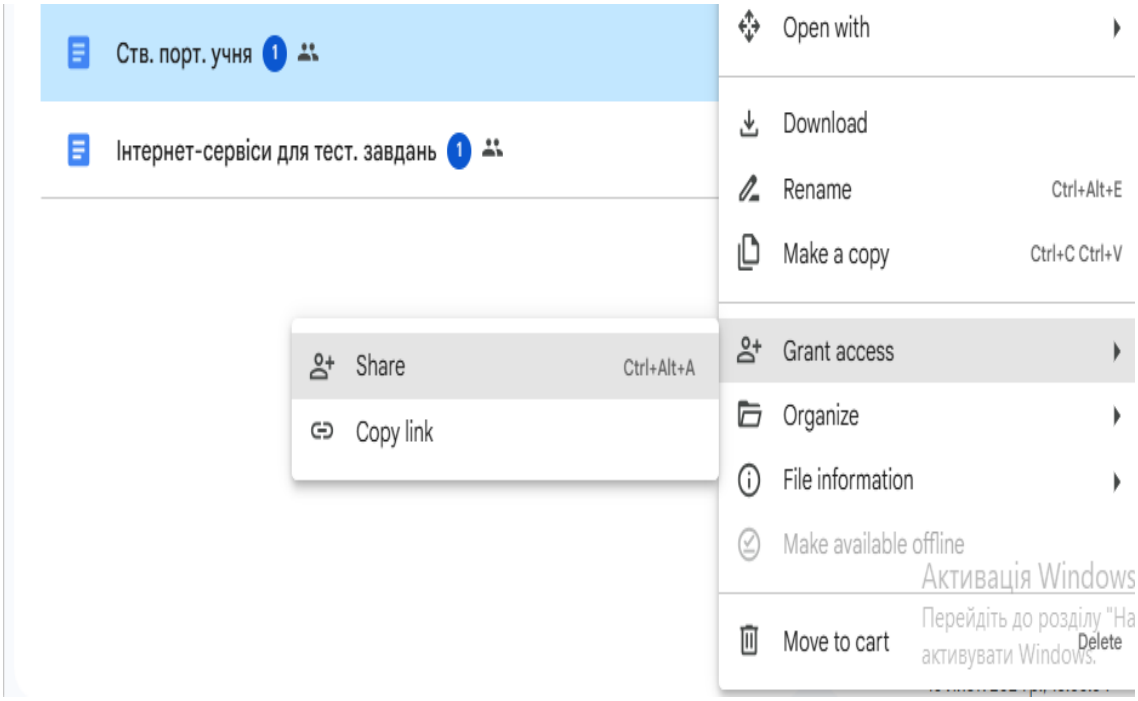


Fig. 36. Folder context menu

To add user access to a folder and files, click **Grand Access → Share** in the context menu, enter the required email addresses, and click **Done.**

The **Google Docs** text editor contains a whole set of convenient tools for editing and formatting documents. You can use different fonts, add links, images, drawings, tables and comments. In the **Google Sheets** spreadsheet processor, you can present data in the form of colorful charts and graphs.

Google Slides is designed for creating the presentation materials. You can use different themes, fonts, add videos, animations, etc. Compatibility with the corresponding MS Office editors is supported. In all of these editors, some users can work on the same document at the same time. When a user edits your document, you can see the cursor where changes are made or text is highlighted [1], [5].

Instruction:

1. Log in to your ***Gmail*** account.

2. Go to the ***Google Drive.***

3. Download any text document to your ***Drive.***

4. Open it and make the changes to the text in the ***Google Docs*** app. Change the font, text size, or line spacing in your document.

5. Insert images, tables and symbols into the document using the **Insert** menu item.

6. Save a copy of the document to your computer's hard drive.

7. Publish the document with the name "Lab. Report 5 (Last Name)" so that it is available to everyone.

8. Create a folder called "ICT" in your Google Drive.

9. Download labs № 1 and № 2 to the folder.

10. Download any 3 photos to the “ICT” folder.

11. Give access to this folder only to the lecturer.

12. Follow the link

https://docs.google.com/document/d/1CNGieRPrUuoWZrIbeRZy8nuF7v5yBuqy4Qd8nUQe_ro/edit

Open this document in the Google Docs app and leave your comment in this document.

13. Collaboration on a document. Follow the link

https://docs.google.com/document/d/1b6_XJC29XN7kT6Moeh-EdYjdsFdvk2O0xKHbDPEcJT4/edit

and open this document in the Google Docs app. You can now edit the document or suggest the changes to it. Let each of you suggest 2 changes that need to be made to the document (fix the errors in the text). Your suggestions will appear on the right side of the document. In the end, you will see all the suggestions from your group.

14. Create the document “Answers to the control questions”, where you answer the control questions and save this document in the “ICT” folder.

Control questions:

1. What is “Cloud Computing”?

2. Name and describe the Google services.
3. Analyze the advantages and disadvantages of using cloud technologies.

Creating a website using Google Sites

1. To create your own website, go to your email inbox and, by clicking on the icon , select **Sites** (Fig. 37):

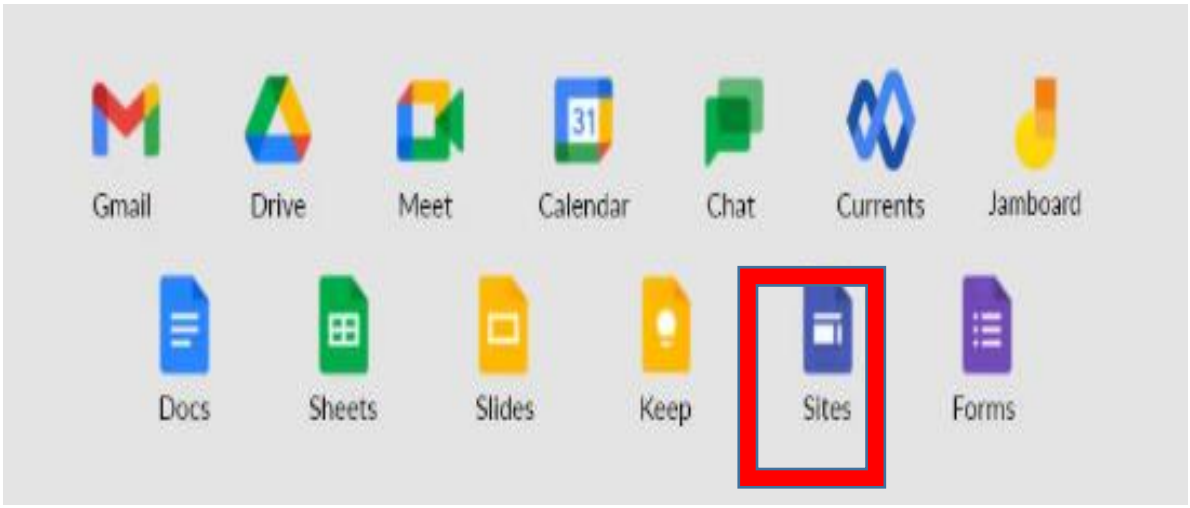


Fig. 37. Selecting the **Google Sites** service

2. View the available website templates located on the home page and in the **Template Gallery** (Fig. 38):

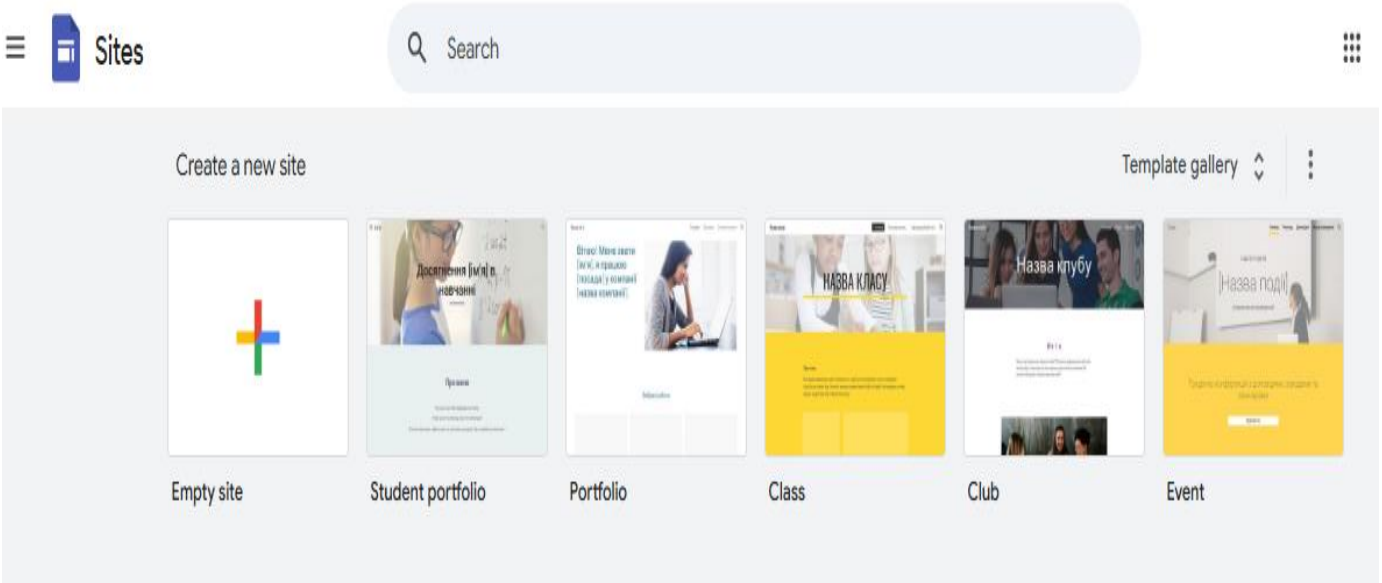


Fig. 38. Templates gallery

3. You need to create a site *"Portfolio of a student of the Ivan Franko Drohobych State Pedagogical University"*. You can choose **Empty site** or **Student portfolio**

from the **Template Gallery**. In the upper left corner, double-click on **Портфоліо учня** and rename it to **Student portfolio** (Fig. 39):

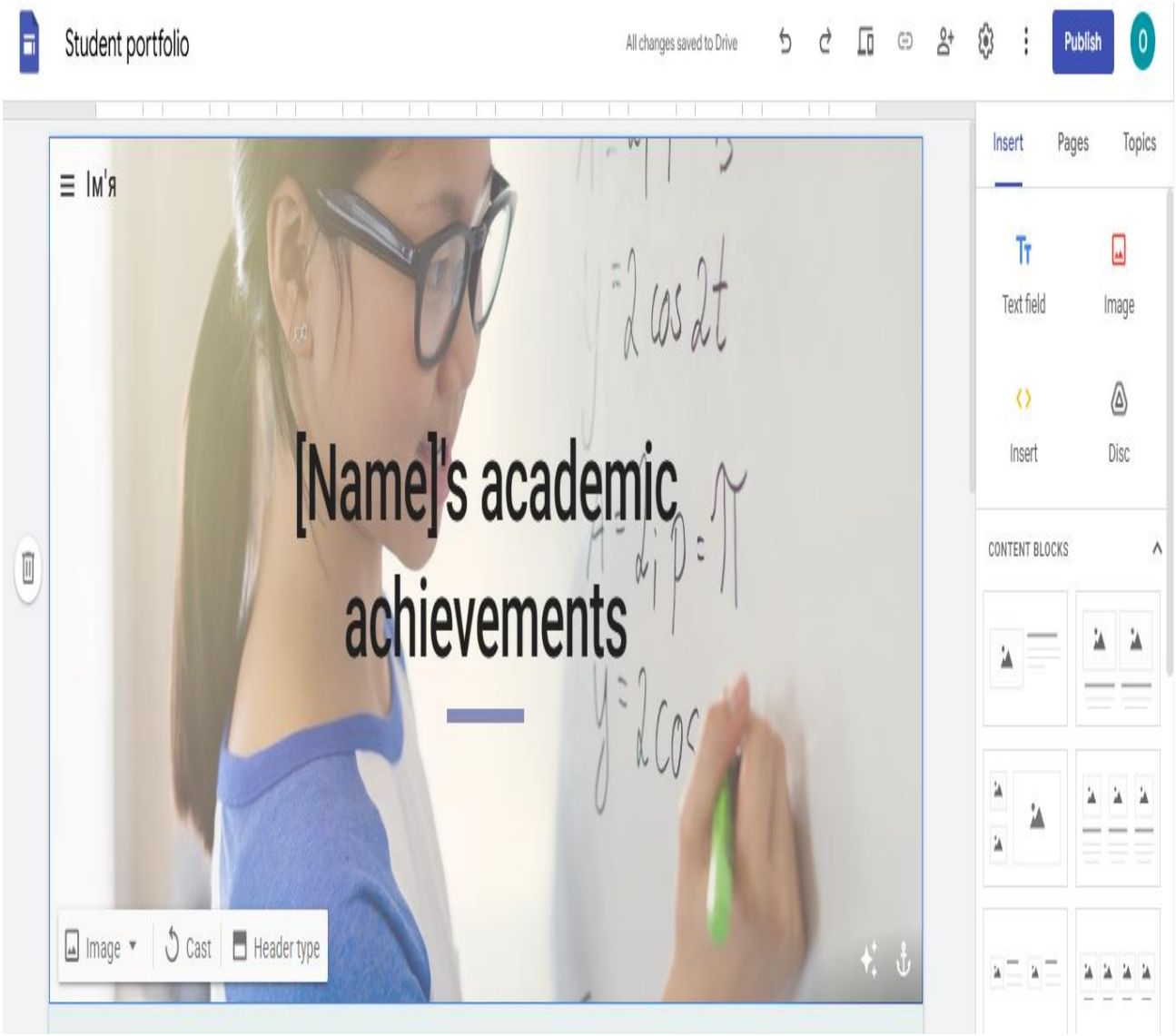


Fig. 39. Creating a Student Portfolio site

Below, by clicking on **Name**, enter your **Last Name** and **First Name.**

4. In the upper right corner are **Insert, Pages,** and **Topics** tabs. The **Insert** tab allows you to add a text box, images, files from Google Drive, insert a URL, and also add a filler, YouTube video, Google Calendar, Google Maps, Docs, Sheets, Slides, Forms, etc. (Fig. 39, 40):

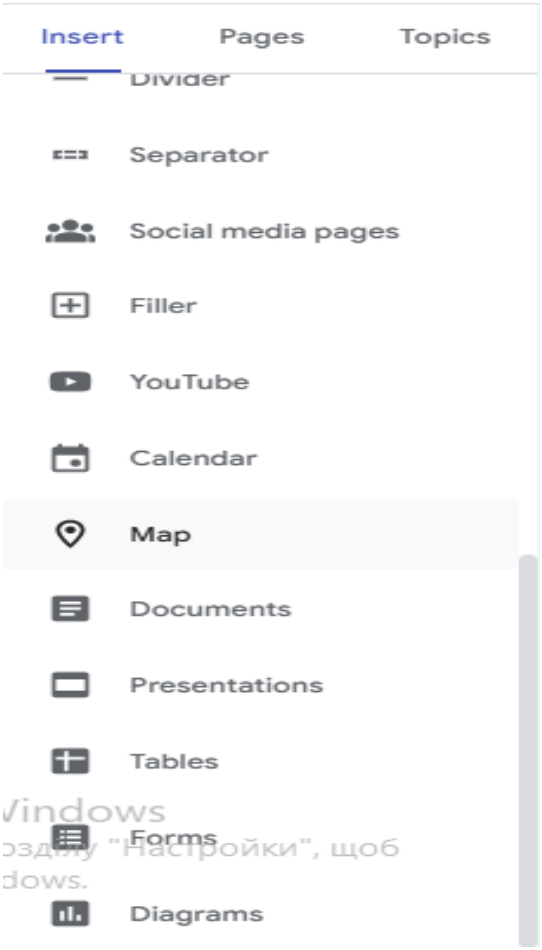


Fig. 40. Insert tab commands

5. Choose a site topic by selecting the **Topics** tab (Fig. 41):

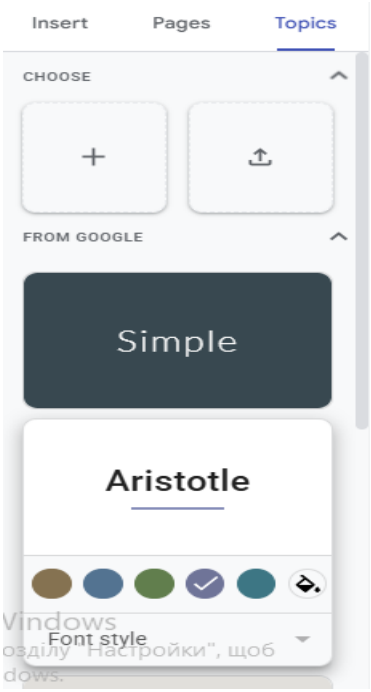


Fig. 41. Creating a site topic

You can also create a topic yourself or download a ready-made one.

6. The **Pages** item allows you to add the tabs that will be on your site. To add a page, click on the + sign, give the name of the page, and click **Done**. Hovering the mouse cursor over the page name, you can call up the context menu by clicking on the icon with dots. It allows you to add a subpage, delete a page, copy it, remove it from the navigation bar, etc. (Fig. 42):

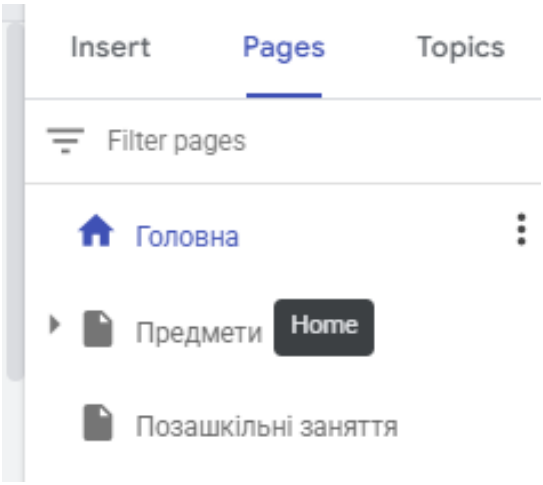


Fig. 42. Pages tab

7. After filling the home page, create more pages with the names **Subjects, Leisure, Group List, Announcements** and **Photo Album.**

8. On the **Subjects** page, create two more subpages (or more if desired) and name one of them the name of an academic discipline (of your own choice), and the second – **Information and Communication Technologies**. All created pages and subpages must be filled with the appropriate text, graphics and multimedia material.

9. Briefly describe yourself by filling in the “About Me” area with text. At the top of this area and on the left are icons with dots. Clicking on the top icon opens the font options, i.e. a panel opens where you can choose the size, font type, text color, align the text, insert different types of lists, etc.

Briefly describe yourself by filling in the “About Me” field with text. At the top of this area and on the left are icons with dots. Clicking the top icon opens the font options, i.e. a panel opens where you can choose the size, font type, text color, align the text, insert different types of lists, etc (Fig. 43):

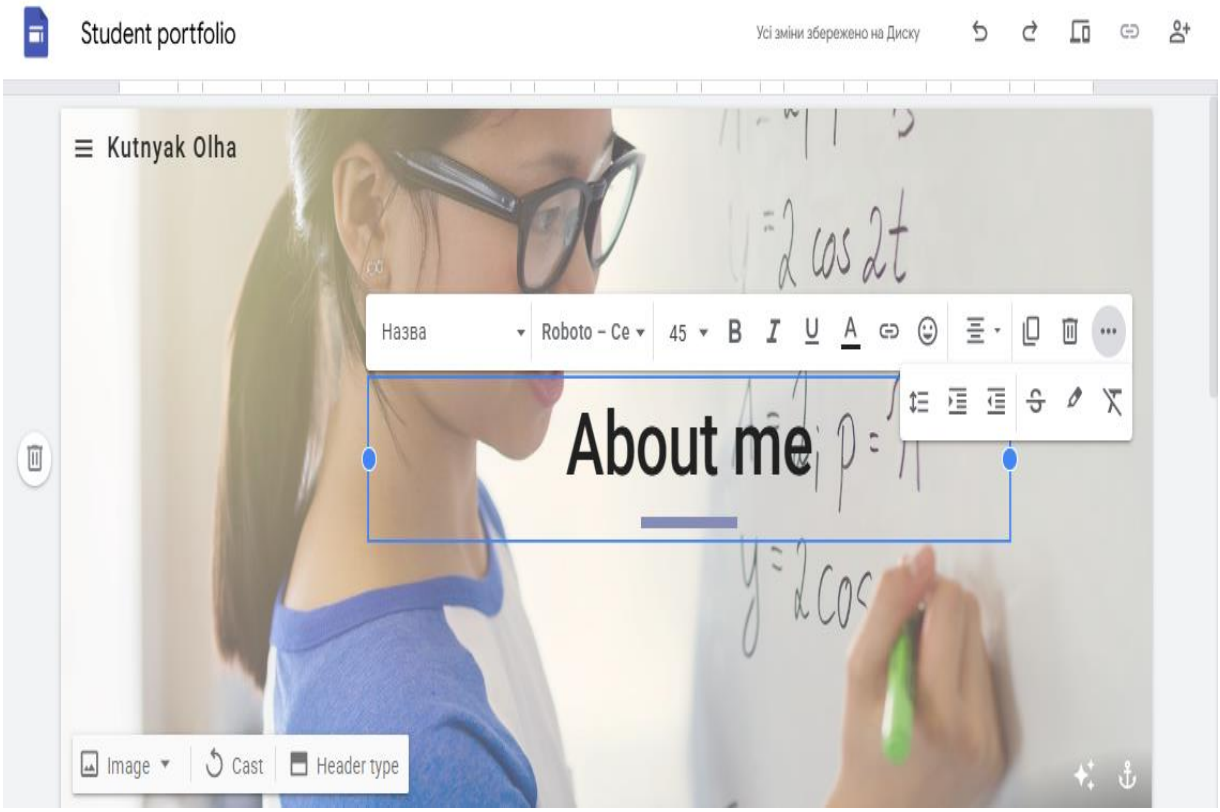


Fig. 43. Filling in the site areas

10. Add a map to the home page with the location of the buildings in which you study using the tab **Insert → Map.**

11. By clicking on the icon in the top line of the site, you can see what the created site will look like on a phone, tablet, and large screen (Fig. 44):

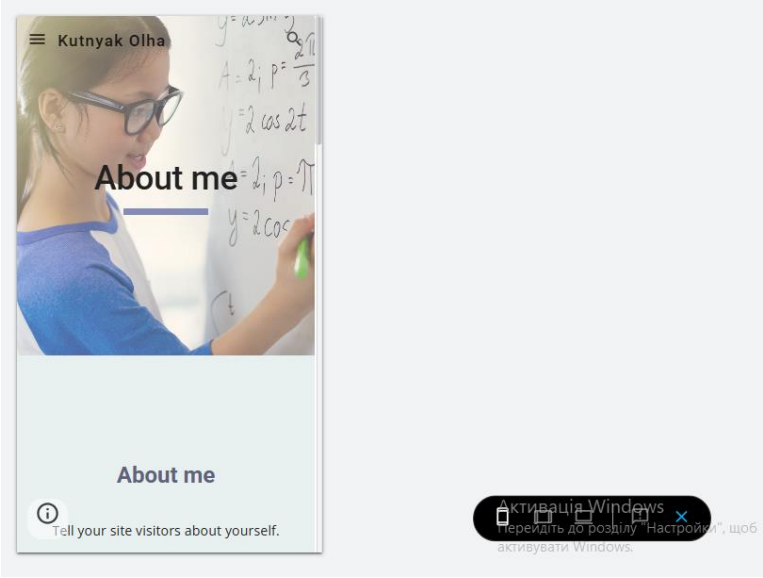
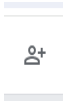


Fig. 44. Preview of the created site on the different devices

If necessary, edit the sizes of fonts, images, etc.

12. To give your site an address, click the **Publish** button and enter the website's web address. You can also choose who can view your site.

13. By clicking on  , grant access to the users (lecturer) and click **Done.**

Control questions

1. What is cloud computing?
2. What are the main services provided based on cloud technologies?
3. List the most popular Google services.
4. What features does Gmail provide?
5. What is Google Drive for?
6. Which items does the Google Drive home page contain?
7. How to create a folder and the main types of documents in this service?
8. How to download the files to Google Drive?
9. What actions can be performed on objects in Google Drive?
10. Describe the “Give access” command.
11. What are Google Docs, Google Sheets, and Google Slides for?
12. How to create a Google Site?
13. What types of templates are available in the Google Site *Template Gallery*?
14. What are the main tabs on the home page when developing a site?
15. What can be added to the pages of the site and using which tab?
16. How to add the pages and subpages to the site?
17. How to choose a site *Topic*?
18. What text formatting options does this service provide?
19. How to assign a web address to a site?
20. How to provide the access to the site for the users?

Laboratory work № 7

Creating and editing a word cloud using the Tagul web service (WordArt)

Purpose: learn how to create the word clouds using the Tagul web service (WordArt).

Theoretical information

A **word cloud** is a visual representation of a list of words, categories, tags or labels in the image. Word clouds can be used to visualize terminology on a topic in a more visual way. This helps to remember information more quickly. In the other words, it is one of the ways to visualize the text information. The keywords are most often the individual words. The importance and significance of each keyword is determined by the font size or color.

Word Art (Tagul) is a multifunctional English-language service for creating the word clouds. It allows you to create bright clouds of the various shapes. However, the disadvantage of this program is the creation of certain fonts when displaying Cyrillic.

Advantages of Word Art:

1. To create a cloud, you can either add text manually or from a specified link;
2. Advanced settings allow you to change a number of parameters in the cloud display (the main shape, select a combination of 8 colors, fonts, word orientation, background color, etc.);
3. The ability to display certain words exclusively in the selected color;
4. Free download of images in jpg or png format;
5. The library of basic templates in 2-3 colors is available [1], [7].

Instruction:

1. Create and edit "word clouds" using the **WordArt.com** web service on the following topics: "*Symbols of Ukraine", "Computer and its components", "Parts of speech", "Continents and oceans", "Art"*, using various keywords for these topics.
2. Go to the link https://wordart.com/ (Fig. 45):

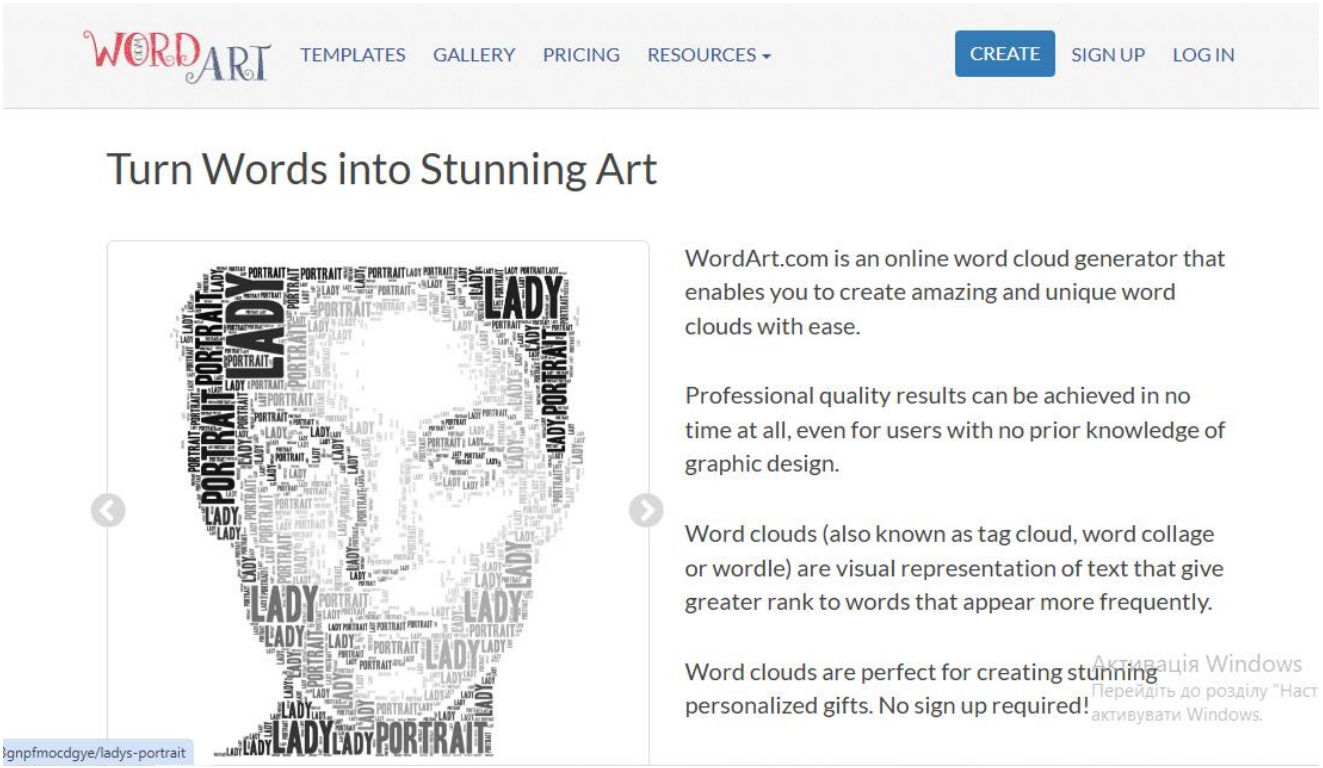


Fig. 45. Home page of the online service WordArt

3. Register on the site and click on the **Create** button to create a word cloud.
4. In the left part of the window, in the **Word** line, write the first word of the cloud, then press Enter and enter the next word, etc. (Fig. 46, Fig. 47). You can also import text by clicking the **Import** button so that the service automatically selects words for the cloud from it:

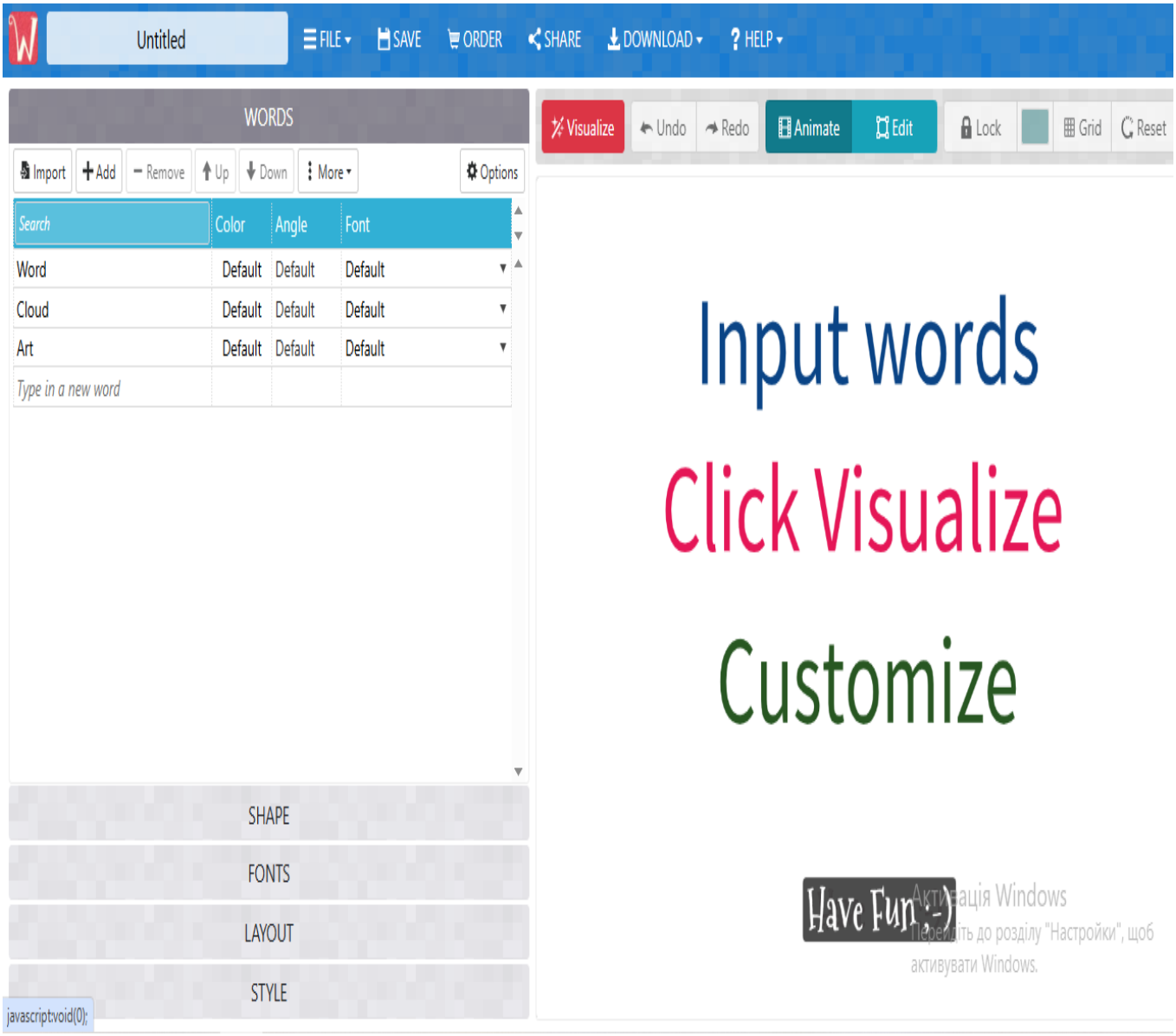


Fig. 46. Filling in words for the future cloud

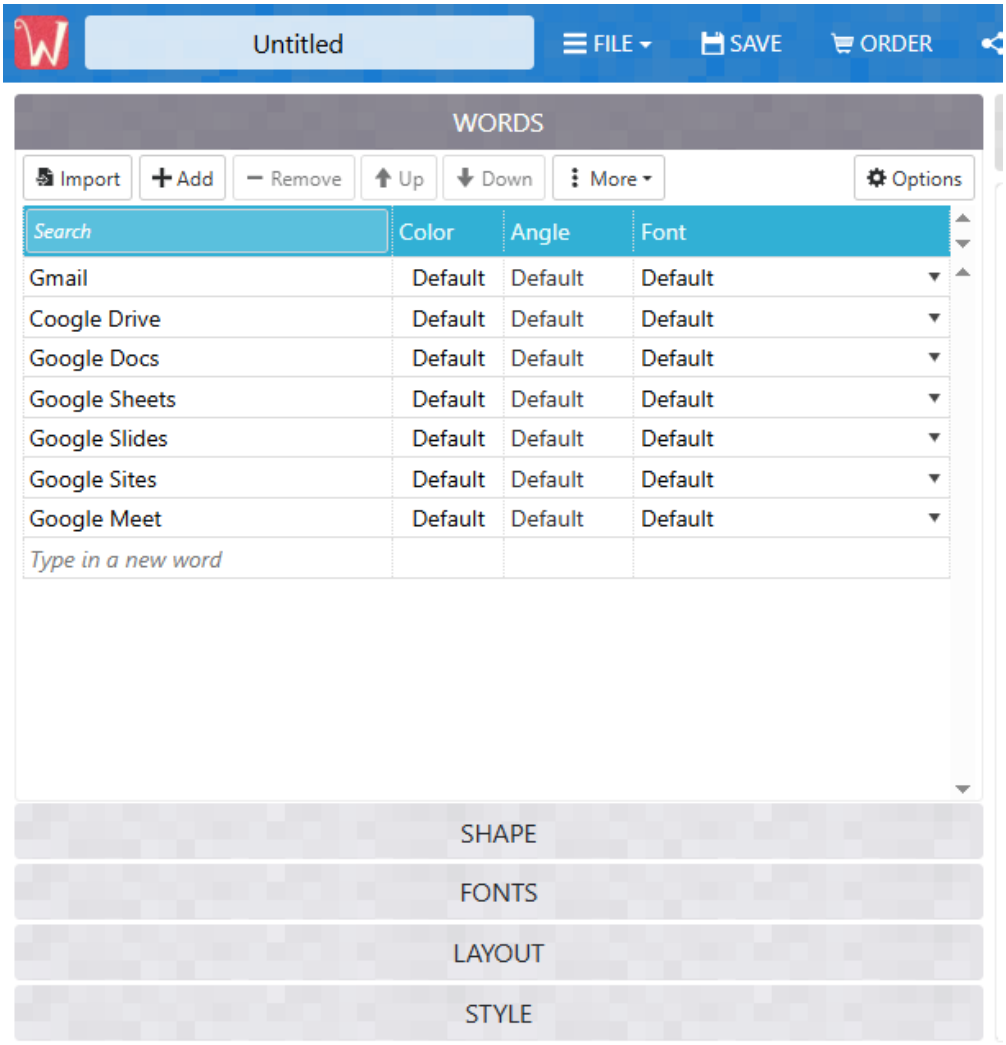


Fig. 47. Filling in words for the future cloud

At the bottom of this window, you can choose the shape of the cloud **(SHAPE)**, the font of the words **(FONT)**, the placement of the words **(LAYOUT)** in the cloud, and the style **(STYLE)**.

5. To choose the shape of the cloud, click **SHAPE** (Fig. 48). On the left, the various form categories appear, which have suggested form templates for the word cloud. In the image, for example, the **"Geometric"** category is selected. To see the resulting word cloud, click on the red button

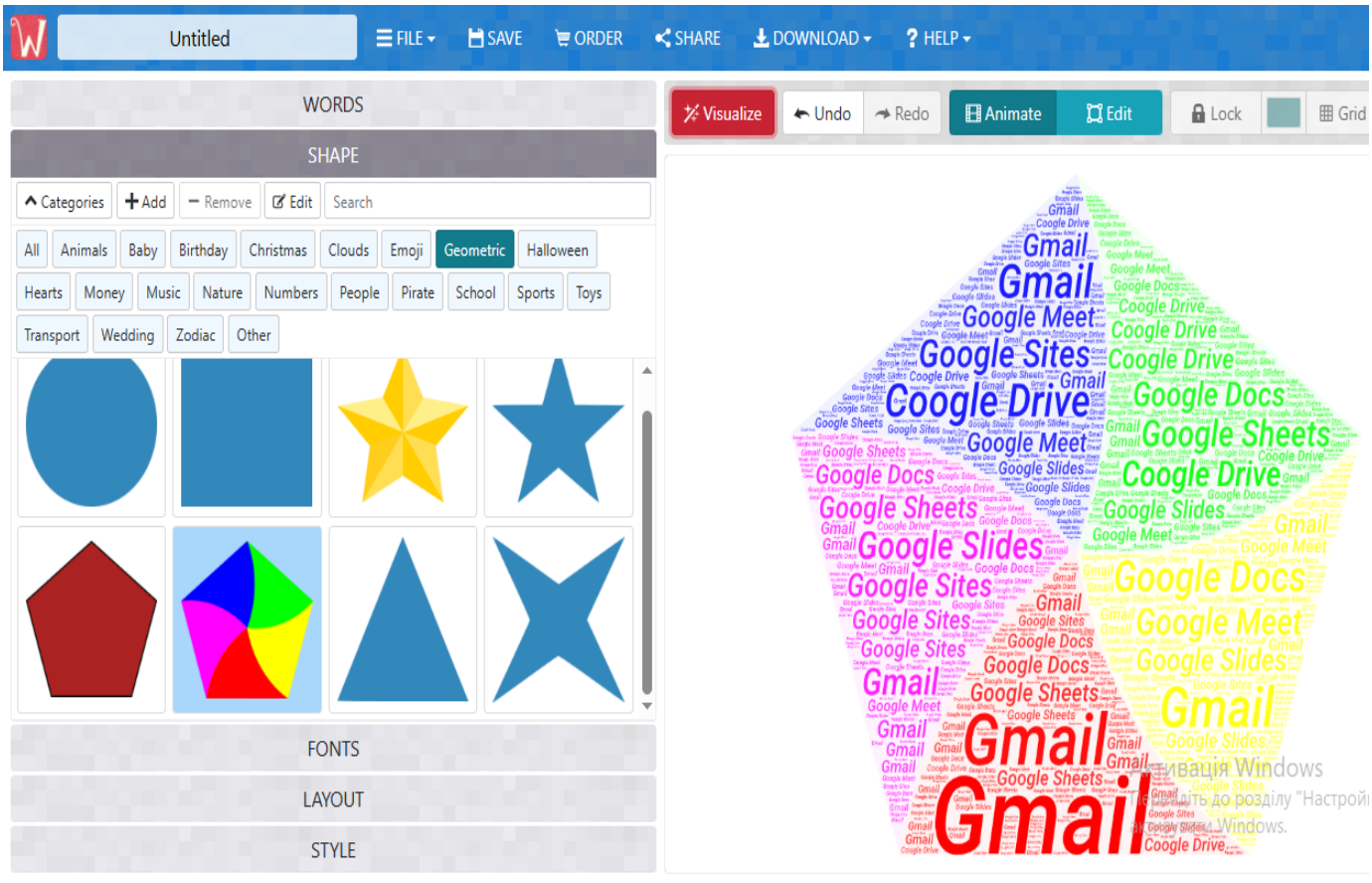


Fig. 48. Choosing a word cloud shape

6. To set the font, use the **FONT** button (Cyrillic is supported by those fonts in white lines) (Fig. 49):

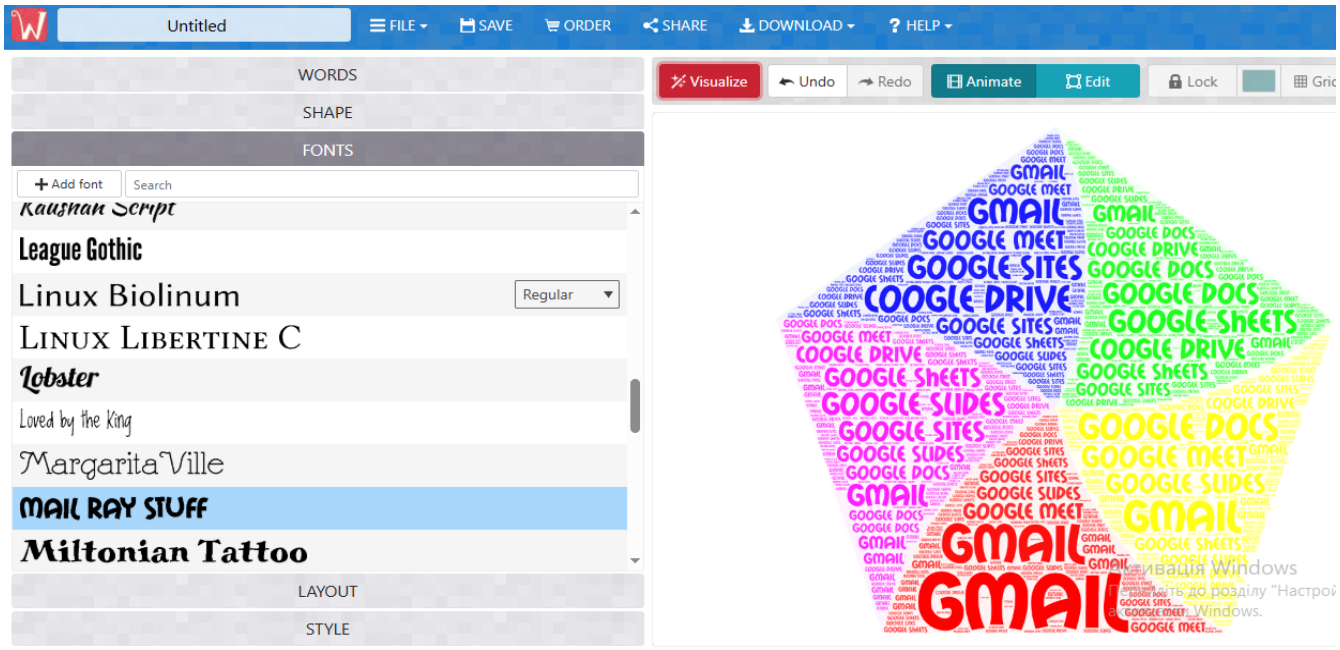


Fig. 49. Font selection

7. To determine the position of the words in the word cloud, click the **LAYOUT** button and select the desired location (Fig. 50):

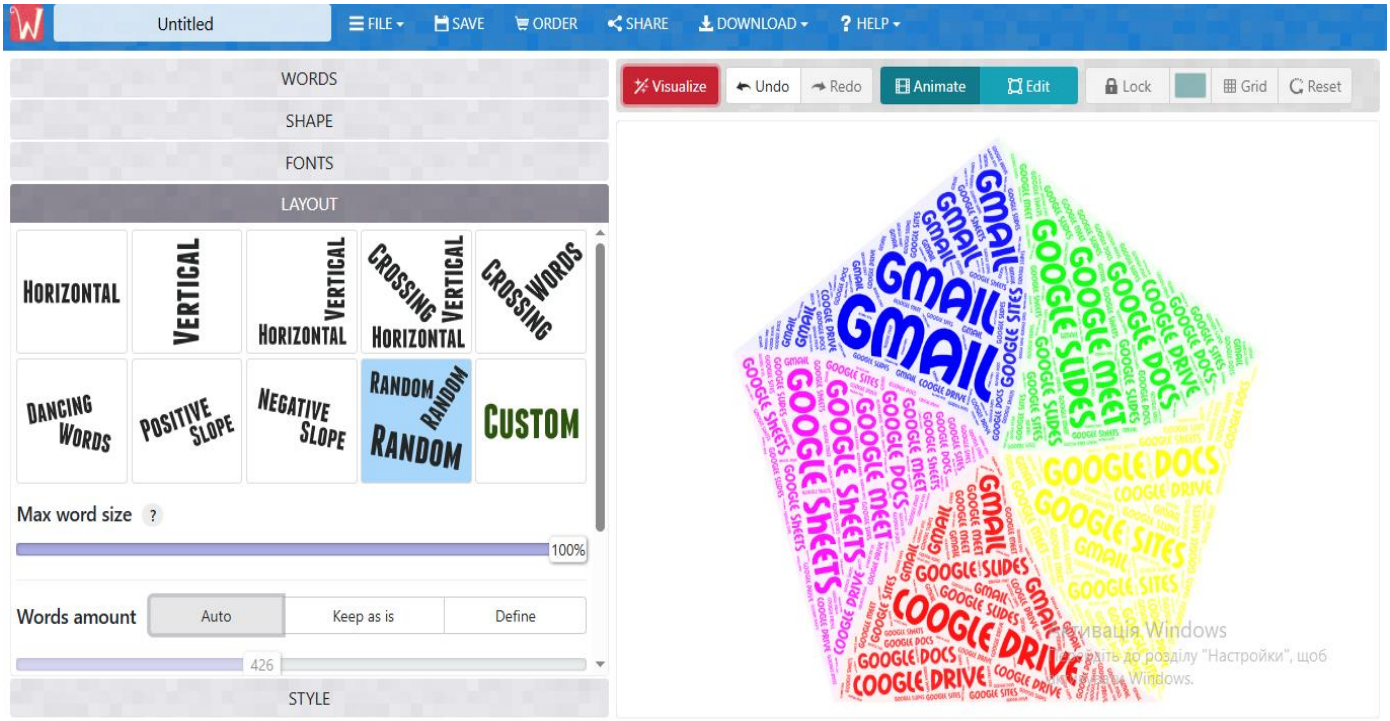


Fig. 50. Selecting the location of words in the cloud

8. To define the style of the word cloud, use the **STYLE** button (Fig. 51, Fig. 52). You can choose the colours of the words, set the background colour, animation speed, the colour of the text of the words when the mouse cursor is hovered over the words, the background colour of the words when the mouse cursor is hovered over the words and also choose whether to enlarge the words when hovering over the words and set their rotation:

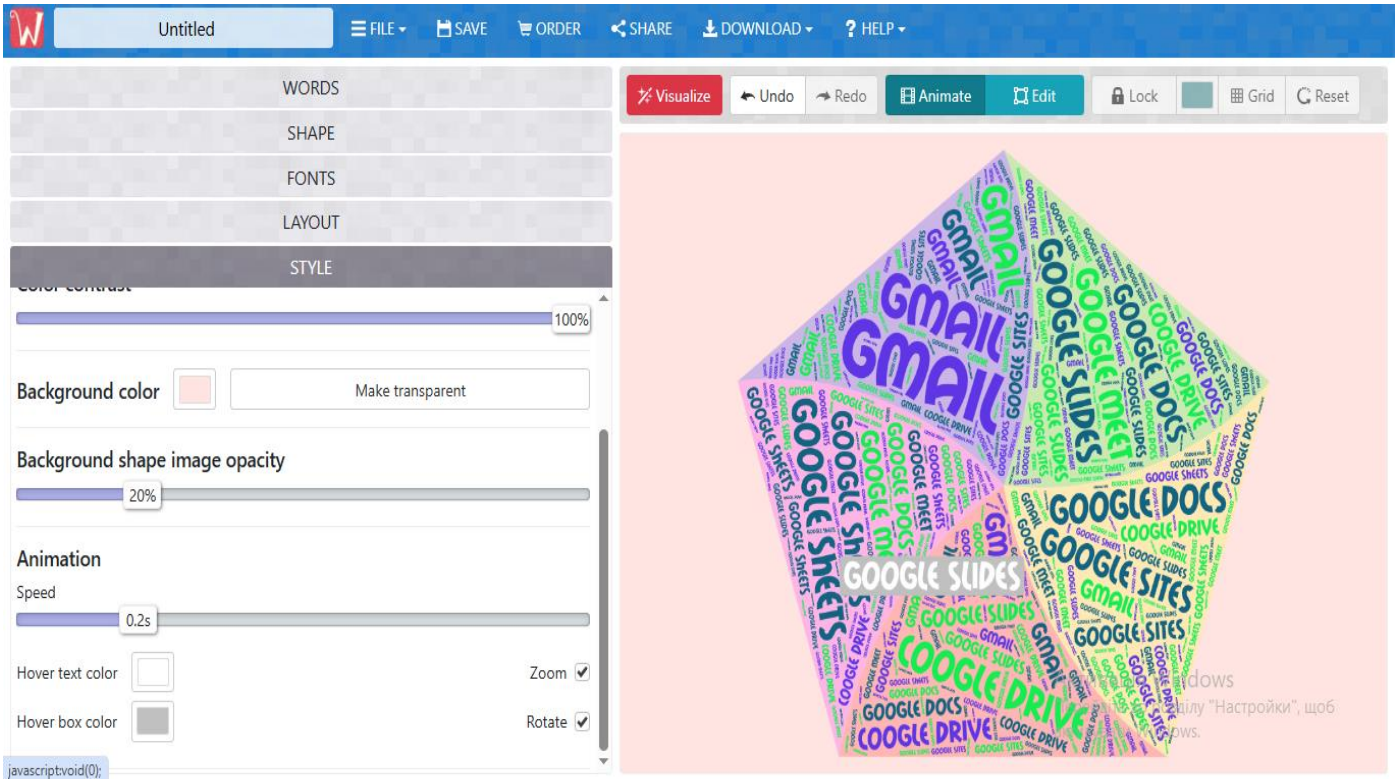


Fig. 51. Parameters of the command Style

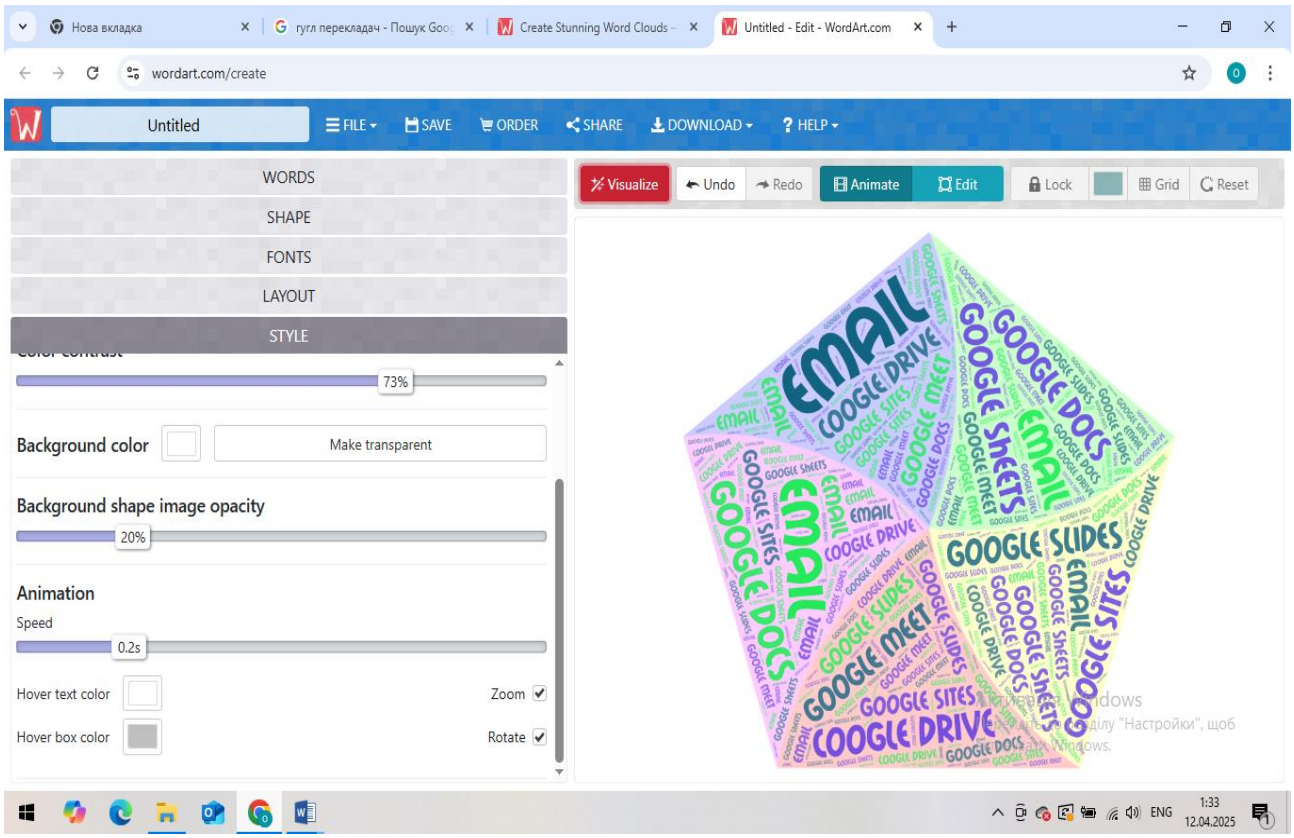


Fig. 52. Parameters of the command Style

9. In the upper left corner, rename the file (Fig. 53):

Fig. 53. Renaming the file

10. Export (download) the created image by clicking the **DOWNLOAD** button in the menu bar and selecting the desired graphic file format (Fig. 54):

Fig. 54. Downloading the file

11. Edit the word cloud by clicking the **Edit** button.
12. Share the link by clicking the **SHARE** button, then selecting **Public** and copying the link to the desired location.

Control questions

1. What is a word cloud?
2. How to start creating a word cloud in the online WordArt service?
3. How to choose the shape, font, layout and style for a word cloud?
4. What types of shape categories are available in this service?
5. How to visualize a word cloud?
6. What settings are available for fonts and word layout?
7. What style settings are there in the WordArt?
8. What command allow downloading a word cloud image?
9. How do I rename the created file?
10. What commands allow editing and sharing a created word cloud?

Laboratory work № 8

Creating an interactive video using Edpuzzle

Purpose: learn how to edit and create interactive educational videos using the online service Edpuzzle.

Theoretical information

The free online service *Edpuzzle* allows users to create the videos with the text elements, audio, questions and notes.

You can use the videos from YouTube, KhanAcademy, TED-Ed, LearnZillio, etc. as a basis, as well as upload from your computer. Edpuzzle is integrated with the Google Classroom.

By selecting a video, you can create a quiz based on it with multiple-choice questions, open-ended questions, add notes for students for better understanding of the material, voice over some fragments of the video or the whole video. You can also cut out the certain fragments from the video that may contain unnecessary information for students.

This service allows you to organize group work, as the teacher can create a class, assign a prepared interactive video to it, and track the results of each student's work.

The link to the video can be shared with the email and social networks. The video lesson can be embedded on a website or blog page [1], [4].

Instruction:

1. Go to the link https://edpuzzle.com
2. Select English and click to **Sign in**. Then click on the **I am a Teacher** button (Fig. 55):

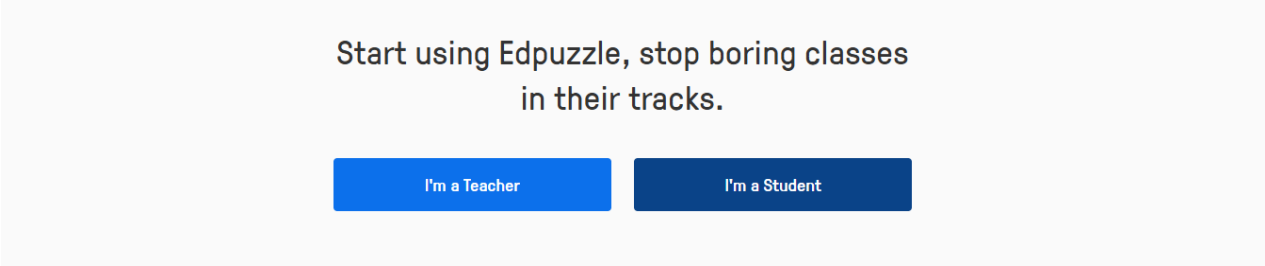


Fig. 57. Login to Edpuzzle

3. Select **Sign in with Google** and enter your corporate email address.
4. The *Edpuzzle* page opens, which contains short videos, as well as a search bar where you can insert a link to YouTube or enter a query to find the video fragment you need (Fig. 58). You can choose the subjects, grade levels, country and other parameters of the video (Fig. 58):

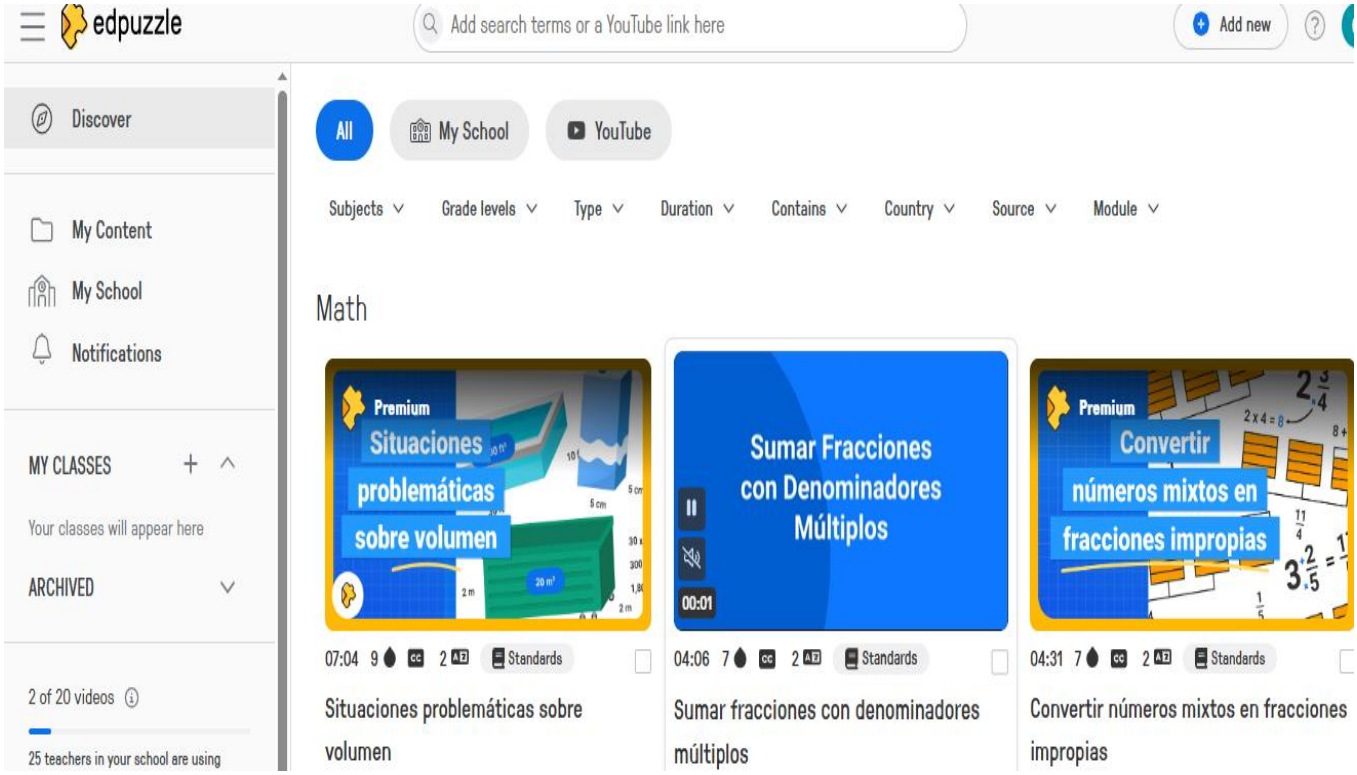


Fig. 58. Edpuzzle home page

5. After selecting the appropriate video, a window opens where you can view the video, and this window also contains the following commands: **Assign, Edit, Copy, Share Preview, Add to Playlist** (Fig. 59). Also on the right side of the page is the **Video Events** window (Fig. 60), which displays what type of question was added to the video and at what second (minute) it was added. While watching the video, when questions arise, review them and click **Skip**:

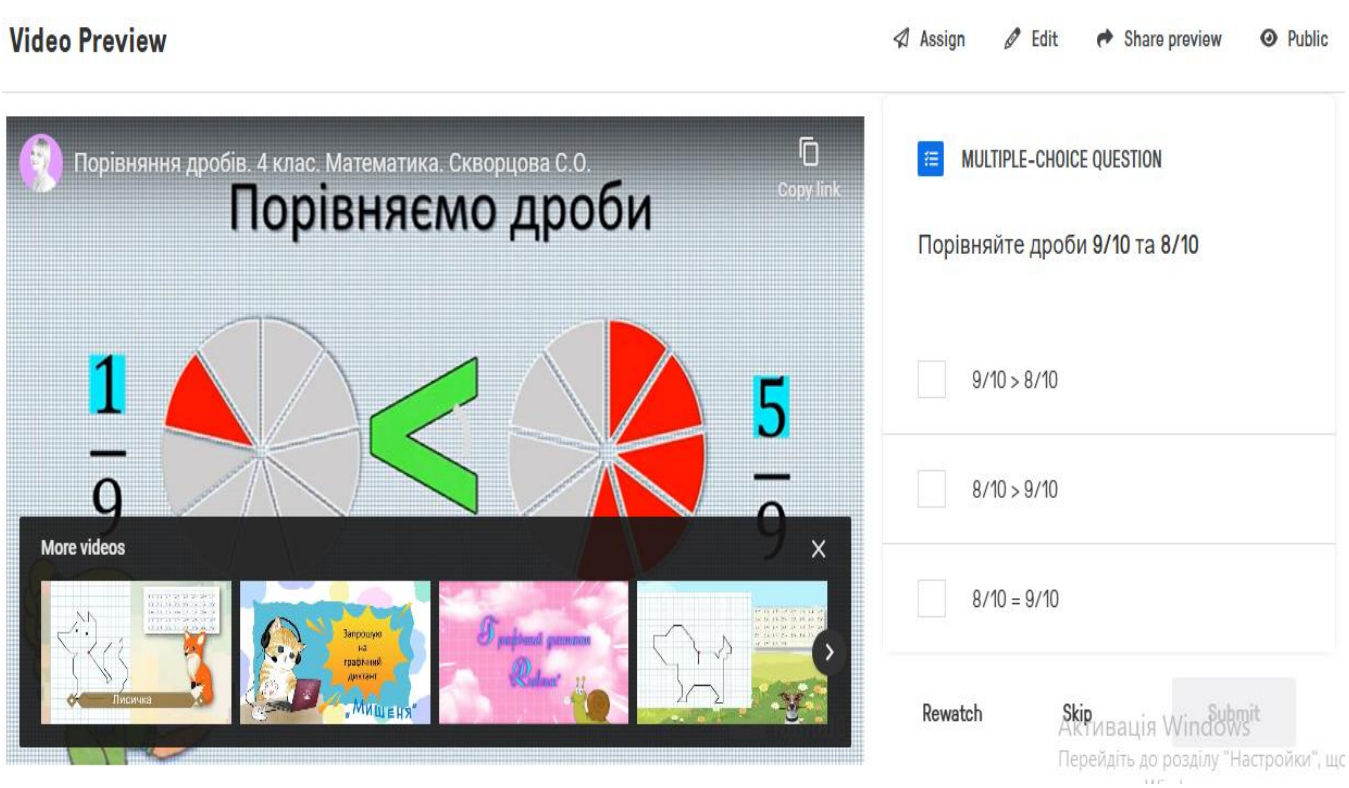


Fig. 59. Video preview

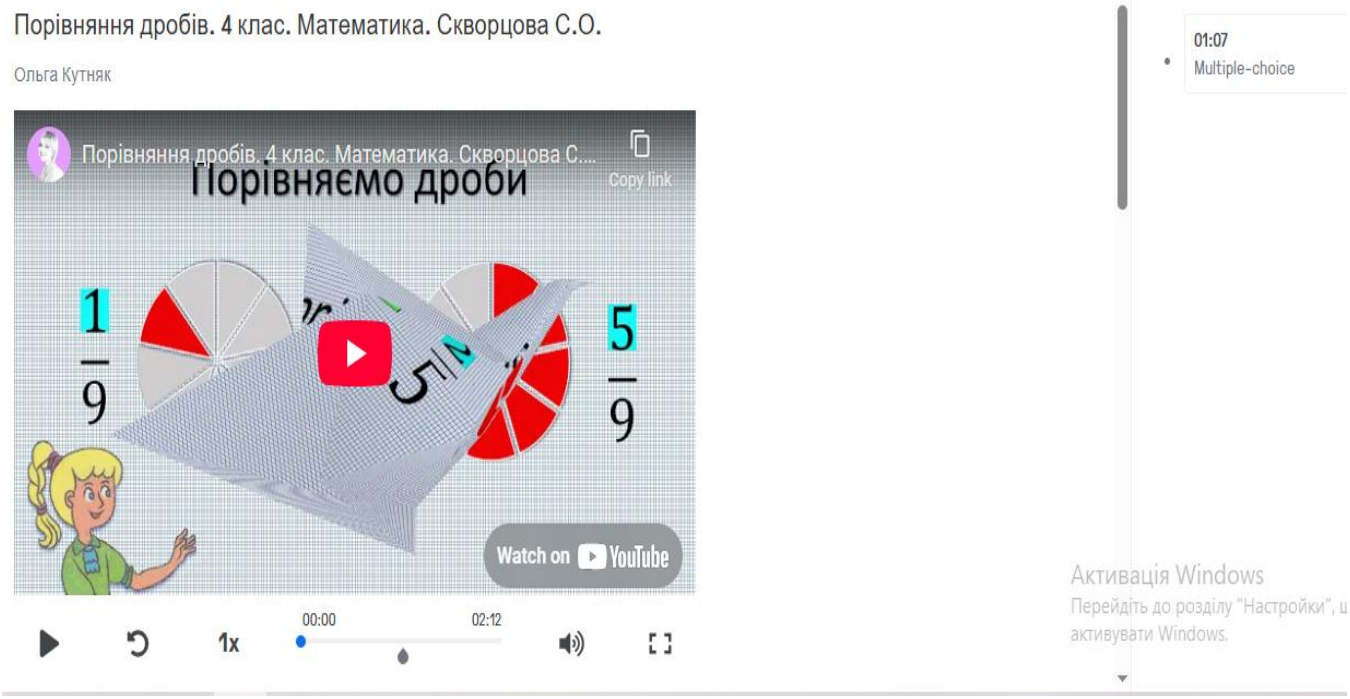


Fig. 60. Video preview

6. Find a video that has not yet added questions, i.e. there will be no information in the right part of such a window. Watch this video and decide where you will insert the question. You will need to pause the video before inserting the question.

7. The algorithm for adding questions and cutting out fragments from a video is described below. You will need to find two videos that are 3-5 minutes long and add 3 questions with different answer options to each of them, as well as add one note to each. To do this: click on the **Edit** button, then select the **Questions** tab and select **Multiple-Choice question** (Fig. 61):

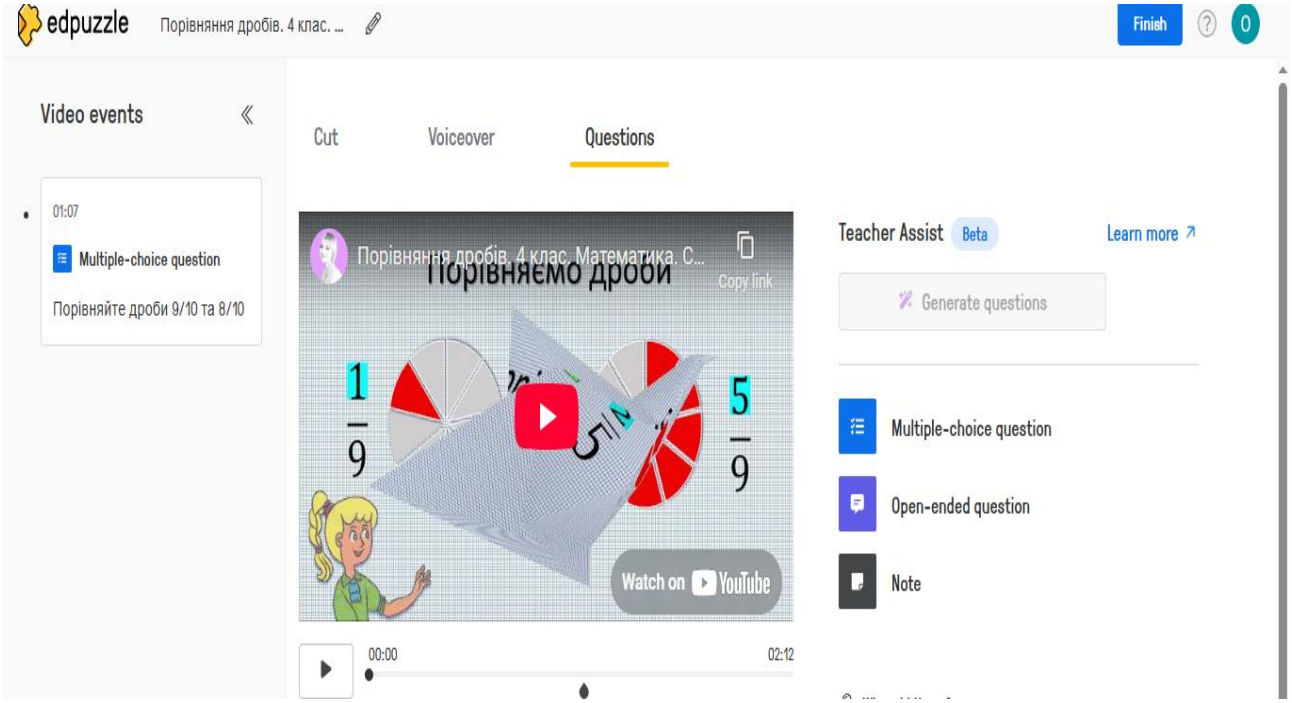


Fig. 61. Adding questions to a video

8. Enter the question text and then the answer text. Check the box next to the correct answer. You can insert links, images, equations (various symbols) into the question text. To do this, click on the corresponding icons on the toolbar. After entering all the answers, click the **Save** button.
9. Next, select **Open-ended question** and enter the question text and **Save**.
10. You can also insert notes into the video by clicking **the Note** button located under the select **Open-ended question** icon.
11. This service provides the ability to cut some fragments from the video. To do this, select the **Cut** command. Then, using the mouse cursor on the blue ribbon, select what you want to cut and click the **Add Cut** button (Fig. 62):

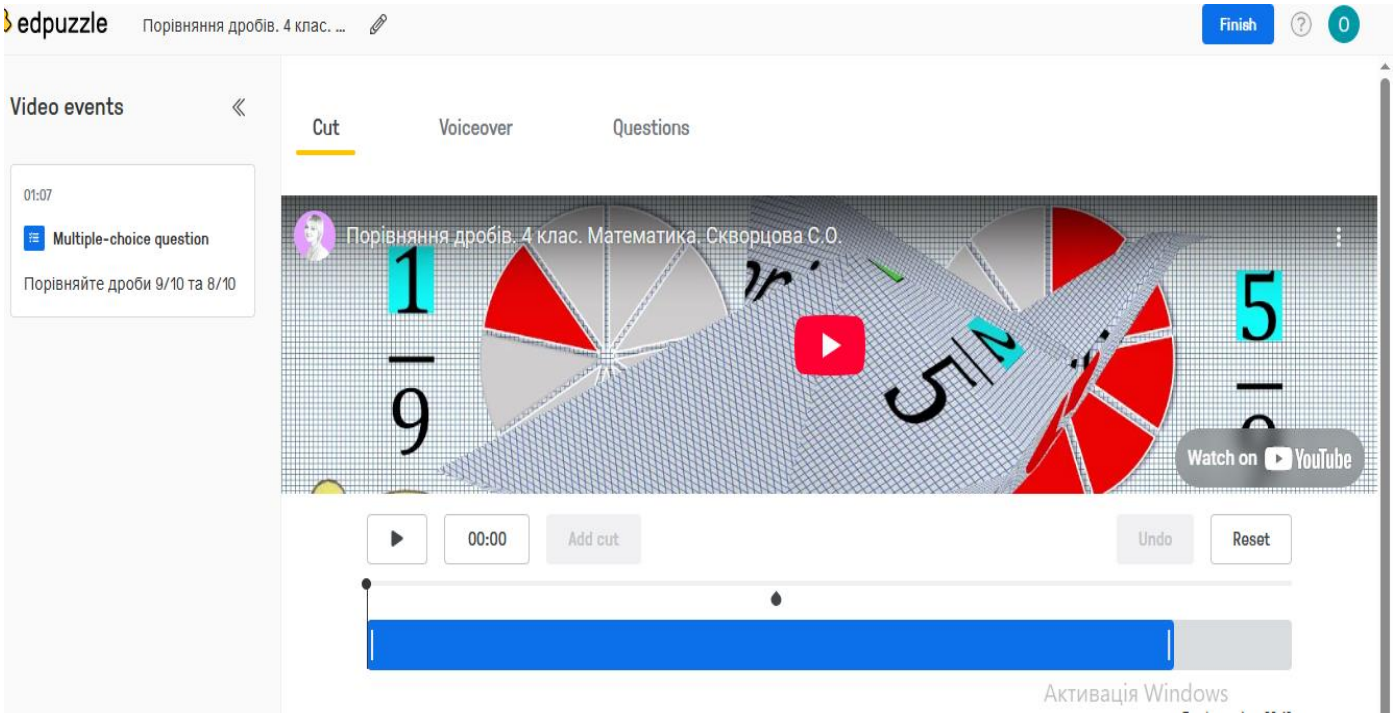


Fig. 62. Cutting video fragments

After finishing work, click **Finish.**

12. Click the **Share Preview** command in the top row of the Edpuzzle window (Fig. 63) and paste the link into a text document named LastName_ Edpuzzle:

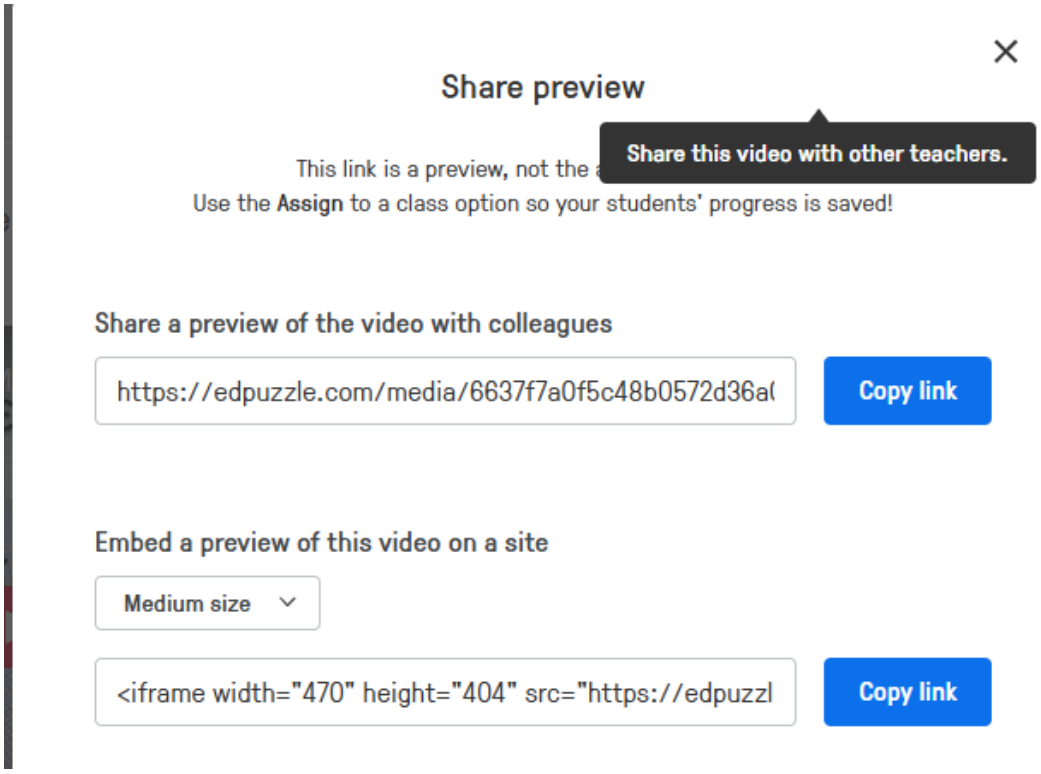


Fig. 65. Copying a link to an edited video

13. In order to record voiceover for a video, you need to upload your own video (click on the **+Add new** (Fig. 58)) and click on the **Voiceover**.
14. Record your own educational video (3-5 min. long), download it to *Edpuzzle* (click on the **+Add content** (Fig. 58)). Add 3-5 questions to it (open, multiple choice) add a note to this video. Newly created videos will be stored in the **My Content** folder, which is located on the home page of this service (Fig. 58).
15. In a text document named LastName_ Edpuzzle, paste 3 video links.

Control questions

1. What is the online service *Edpuzzle* for?
2. What commands are available in the program window where you can watch videos?
3. What is displayed in the *Video event* field?
4. How to add questions to a video?
5. What types of questions can be inserted into a video?
6. How to add a note?
7. What command allows cutting a video?
8. How to share a created interactive video?
9. How to download my own video to Edpuzzle?
10. Is it possible to create classes in Edpuzzle?

Laboratory work № 9

Basics of work with SMART Notebook

Purpose: learn how to create the educational presentations and the other learning materials using SMART Notebook software.

Theoretical information

SMART Notebook is designed to create the engaging, interactive educational presentations and tasks. It is the foundation of the **SMART Board** software suite and is designed for users to create the compositions from the text and graphic fragments, store the created materials, and play them back during the demonstration. **SMART Notebook** is a series of pages (slides) to which you can add the notes. You can use it to record a lesson or presentation, take notes during discussions, and use other software tools.

The SMART Notebook software interface consists of these components:

- Menu;
- Toolbar;
- Tabs (Page Sorter, Gallery, and so on);
- Page area.

The main program menu contains the following items: **File, Edit, View, Insert, Format, Math, Tools, Add-ons, Account, Help.**

The **File** tab of the main menu, in addition to the standard *create*, *open*, *save* and *print* commands, allows you to *import*, *export* a document as a gallery item, *export* a document as a web page, image files, in PowerPoint format, PDF, etc.

Using the **Insert** menu, you can add a new page, picture, gallery items, link, sound, table, measurement tools, Internet browser, and SMART Document Camera viewer to your document. Some of these objects can be added directly to your document from the toolbar.

The **Tools** main menu item allows you (the corresponding icons are located on the toolbar of the program window) to write or draw with tools such as a marker, calligraphy

pen, colored pencil, art pen, fountain pen, brush, add text, draw lines, shapes, regular and irregular polygons, erase with an eraser, use a fill, etc.

Using the **SMART Board** allows you to draw with a stylus or your finger on it during the lesson itself, and it is also possible to enter the text from a virtual keyboard [1], [10].

Instruction:

1. Open the program by double-clicking the **SMART Notebook** shortcut on your desktop or by clicking **Start → Programs → SMART Technologies → SMART Notebook.**
2. Look at the main page window of the document (Fig. 66):

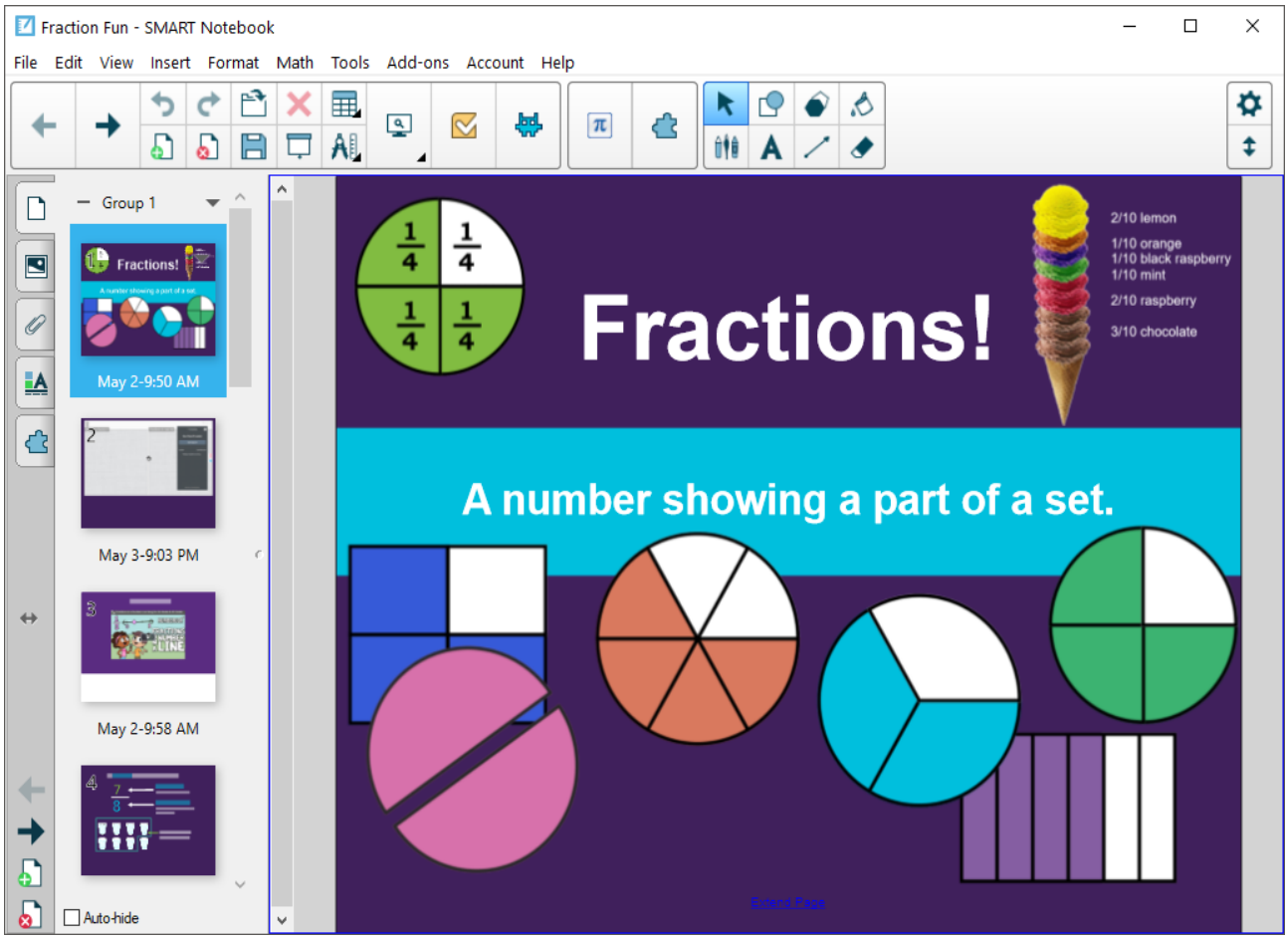
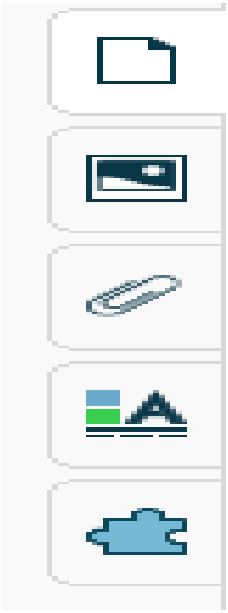


Fig. 66. SMART Notebook main window

3. Check out the buttons on the left side of the **SMART Notebook** window, browse the collections gallery and select fills (each slide can have different fills) for the document (Fig. 67):



– by clicking on it, we can see all the slides (pages) of the document on the left side of the program window;

– opens access to the main topics of the collection, which contains a large number of graphic elements from school subjects, etc.;

– provides the ability to insert files, links, and file shortcuts into a document;

– adding a fill to slides (solid, gradient, pattern, image fill);

– class designer.

Fig. 67. Icons of commands on the left side of the SMART Notebook window

4. Explore the SMART Notebook toolbar by hovering your mouse over each icon (Fig. 68):

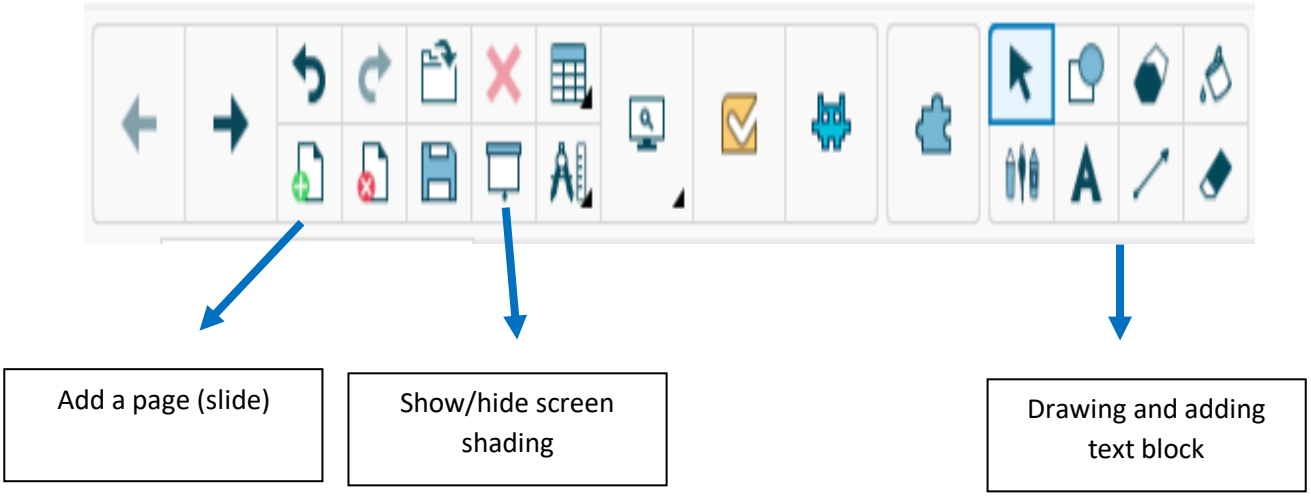


Fig. 68. Toolbar

The **Show/Hide Screen Shade** command is useful when presenting new material, dosing the presentation of information; when students are taking tests in class, when the left or bottom part of the screen with answers can be hidden, etc. (Fig. 69):

Fig. 69. Screen shade

5. Each element on the page is an object. By clicking on it, an icon appears in the upper right corner, which allows you to open the context menu (Fig. 72). With its help, you can clone, cut, copy, paste, delete, perform infinite cloning, add sound, links, block, group objects, display and set their order on the page. The blue circle in the lower right corner allows you to resize objects, and the circle at the top allows you to rotate objects.
6. Create a 10-slide lesson presentation on the subject topics for elementary school students. Do not overload the slides with the text information and follow the methodological recommendations for creating the presentations.
7. On two slides, create 2 interactive exercises with three questions (for example, exercises like “Find a pair”, “Establish a sequence”, etc.). The answers to the questions should be the graphic objects. Place the questions on the right and the answers on the left.
8. Shade the right side of the screen where the answers are placed. The arrows will connect the questions with the correct answers during the presentation.
9. Insert the link to the video into the document.
10. Save the created presentation as Last Name_ SMART Notebook. Also save this presentation in pdf format. To do this, click **File → Export As → In PDF format** and name the file Last Name_ PDF.

Control questions

1. What are the main menu items of the SMART Notebook program?
2. What features does this program provide?
3. What can you add to a document using the **Insert** menu item?

4. What actions can you perform using the **Tools** menu item?

5. Describe the buttons on the SMART Notebook program toolbar.

6. What buttons are located on the left side of the window of this program? Indicate their purpose.

7. How to add a slide to a presentation?

8. How to add the ready-made educational materials of this program to a document?

9. What is the Screen Shade button for?

10. Describe the commands of the context menu of objects in the SMART Notebook program.

Laboratory work № 10

Work with the online graphic editor Canva

Purpose: learn how to create and edit graphics, animations, and videos using the online service Canva.

Theoretical information

Canva is a free online graphic editor that serves as a multifunctional tool for creating graphic materials, including educational ones [1], [6]:

- educational presentations;
- educational posters;
- worksheets;
- educational videos;
- Google Classroom ads;
- flashcards;
- Instagram posts;
- posters;
- storyboards, educational infographics, etc.

Instruction:

1. Go to https://www.canva.com/
2. You will be able to use the service as a **Student, Teacher, Personal Use**, etc. Select **Teacher** first. Check out the home page of this service (Fig. 70):

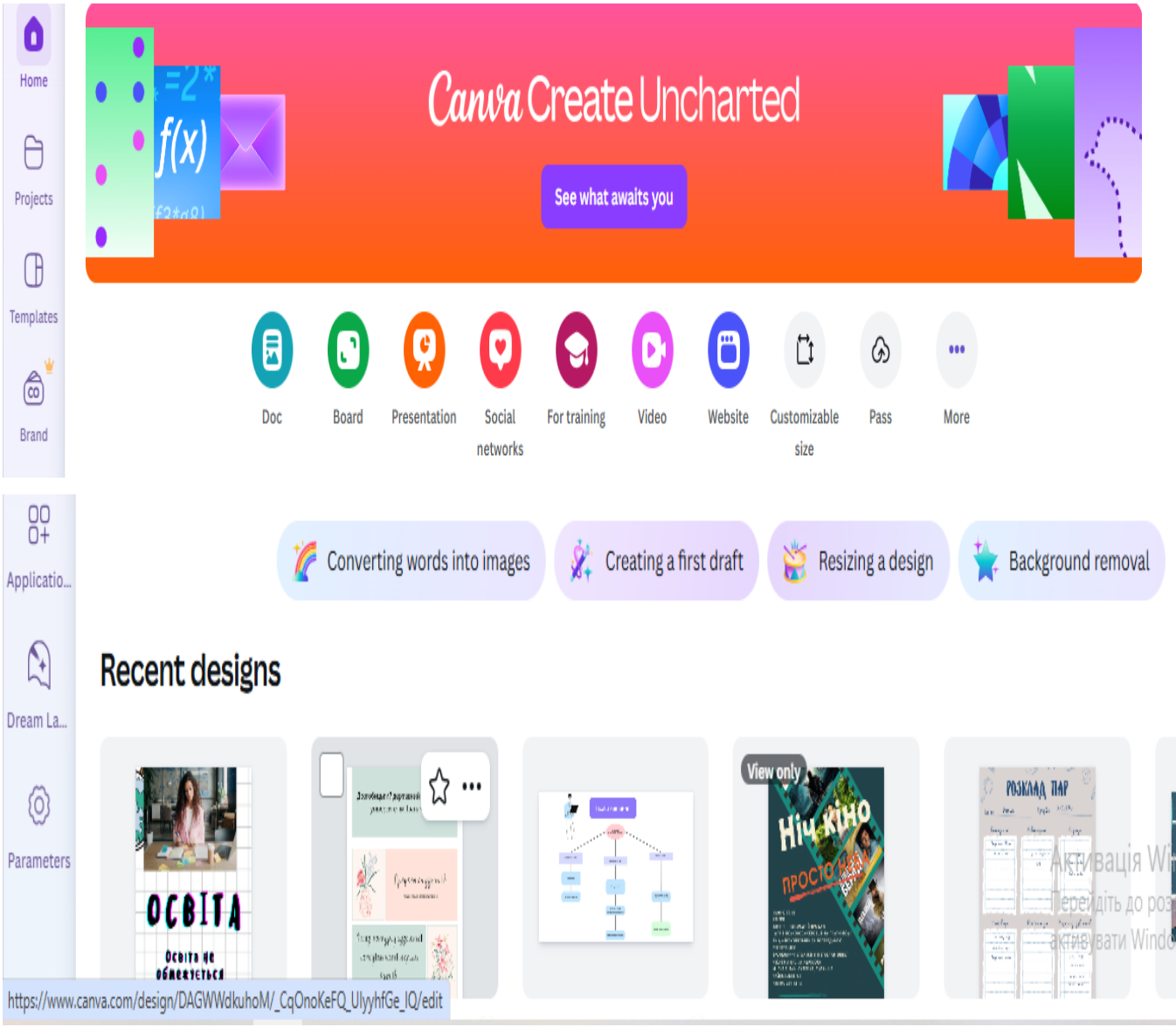


Fig. 70. Home page of *Canva*

3. View the contents of the **Templates** tab located on the left side of the page (Fig. 71):

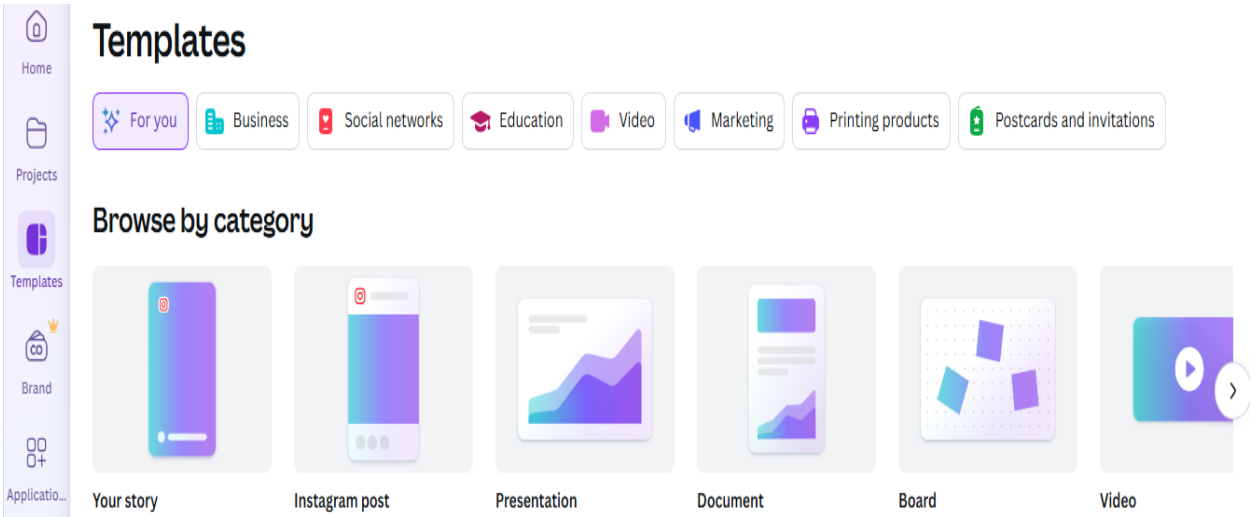


Fig. 71. **Templates** tab

4. You need to create 3 graphic materials in this editor at your own discretion (2 of them must be related to education) according to the algorithm below.

5. Select a template option to work with the document or click **More** (Fig. 70) and select the type: document, board, presentation, etc. (Fig. 72):

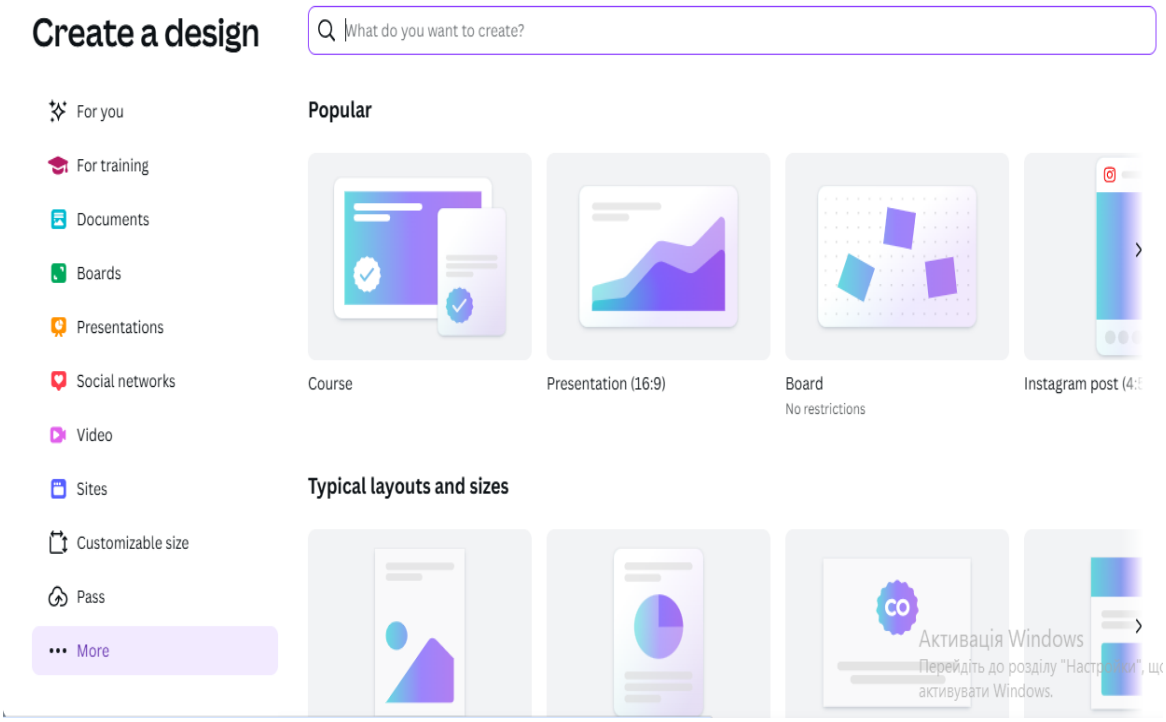


Fig. 72. Selecting the design

6. By selecting, for example, **Document**, the following window appears, in which the following tabs are located on the left: **Templates, Elements, Brand, Transferred, Projects** etc. (Fig. 73):

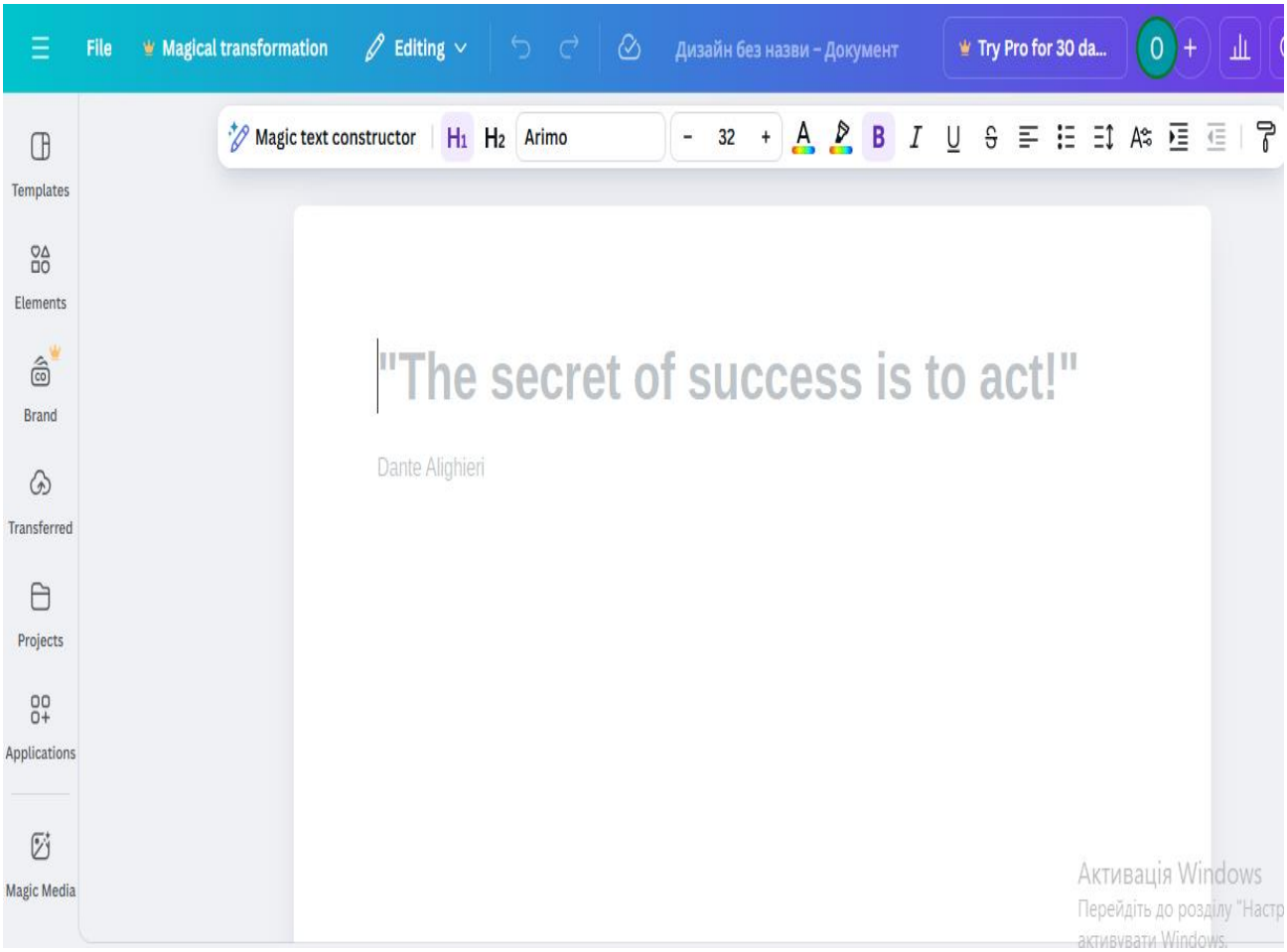


Fig. 73. Home page of a newly created document

7. Change the background or template, to do this, enter a query in the template search bar (Fig. 74):

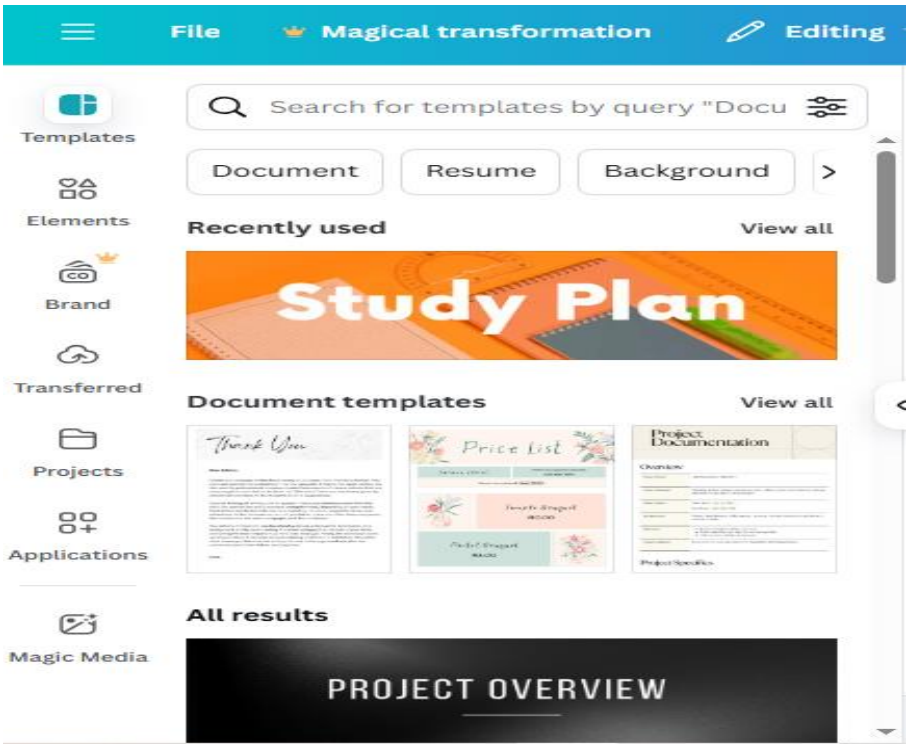


Fig. 74. Selecting a document template

To add another page to the document, click the **+ button**. There are also **Copy Page** and **Lock Page** icons nearby (Fig. 75):

Fig. 75. Adding the page

8. To add a text field, click the **Text** button located on the left side of the window and then click on **T Add a text field** button (Fig. 76):

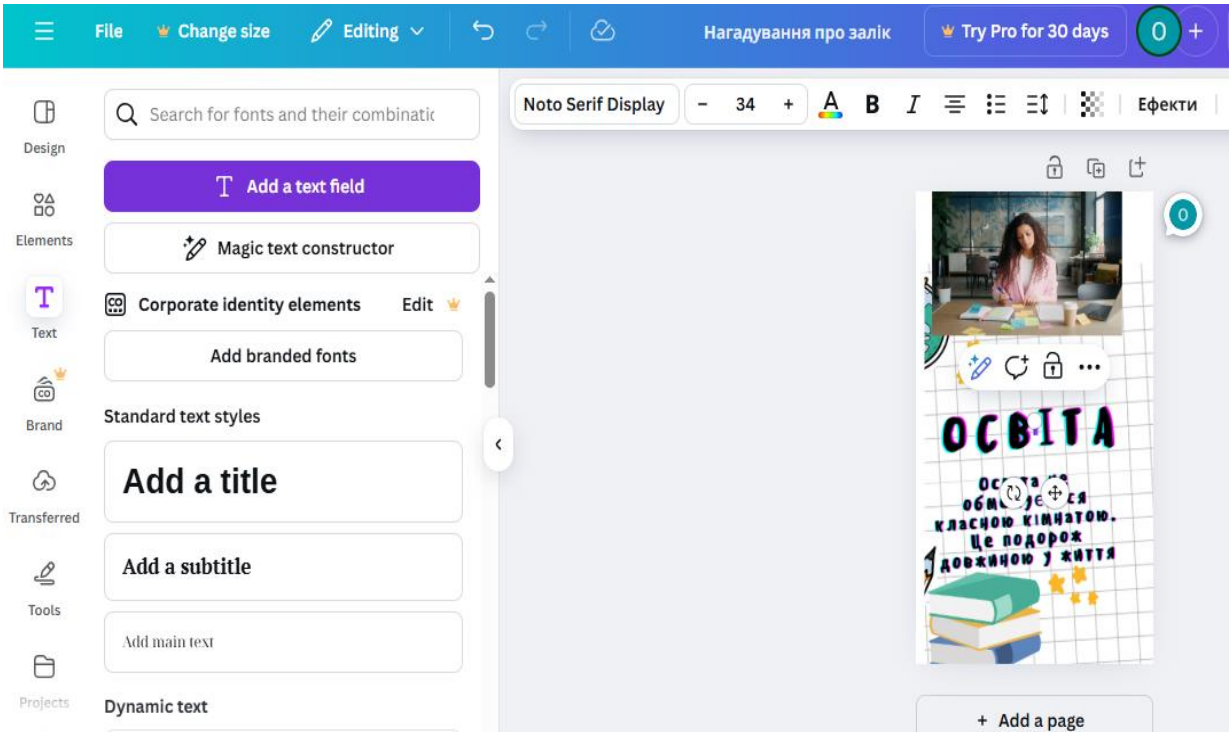


Fig. 76. Adding the text field

If you click on the text field, you can work with fonts: select the **font** type, its **size, color, highlight** the text in bold or italics, **align** the text, create **lists, intervals, effects**. The **Intervals** button allows you to adjust tracking (expand the distance between letters) and change the distance between lines (Fig. 77):

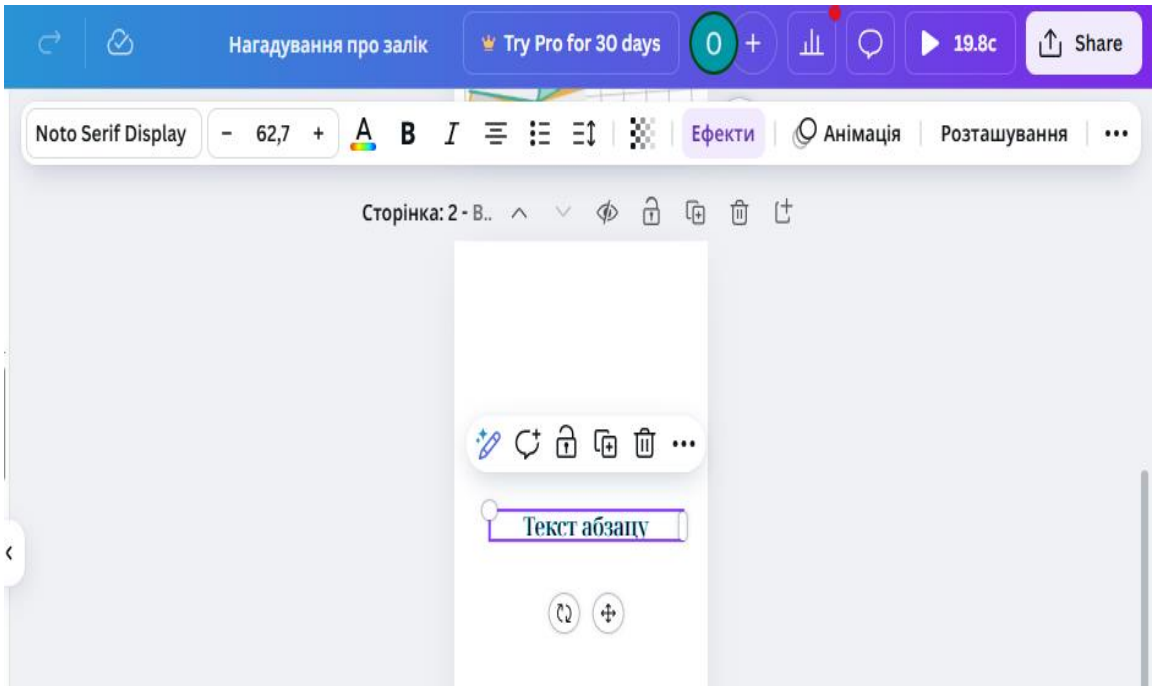


Fig. 77. Work with font

Text fields, images can be deleted, copied, etc. By clicking on them, a context menu appears, where you can select the desired action. To perform additional actions, click on the icon with three horizontal dots (Fig. 78):

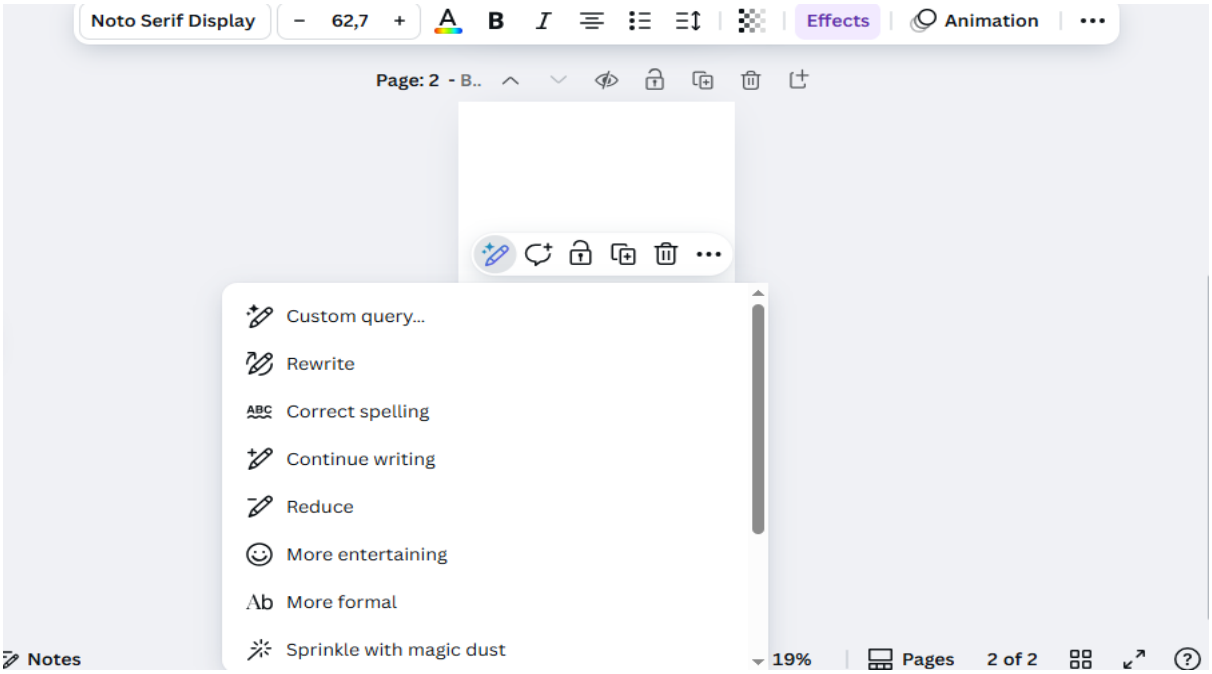


Fig. 78. Context menu of the text field

9. Add an additional element to the document. To do this, click on the **Element** tab located in the left part of the window, select the desired element and drag it into the document with the mouse. Among the elements there are animated images and videos. Some of the elements, like templates, are free. Those elements that are paid are marked with a *crown* (Fig. 79):

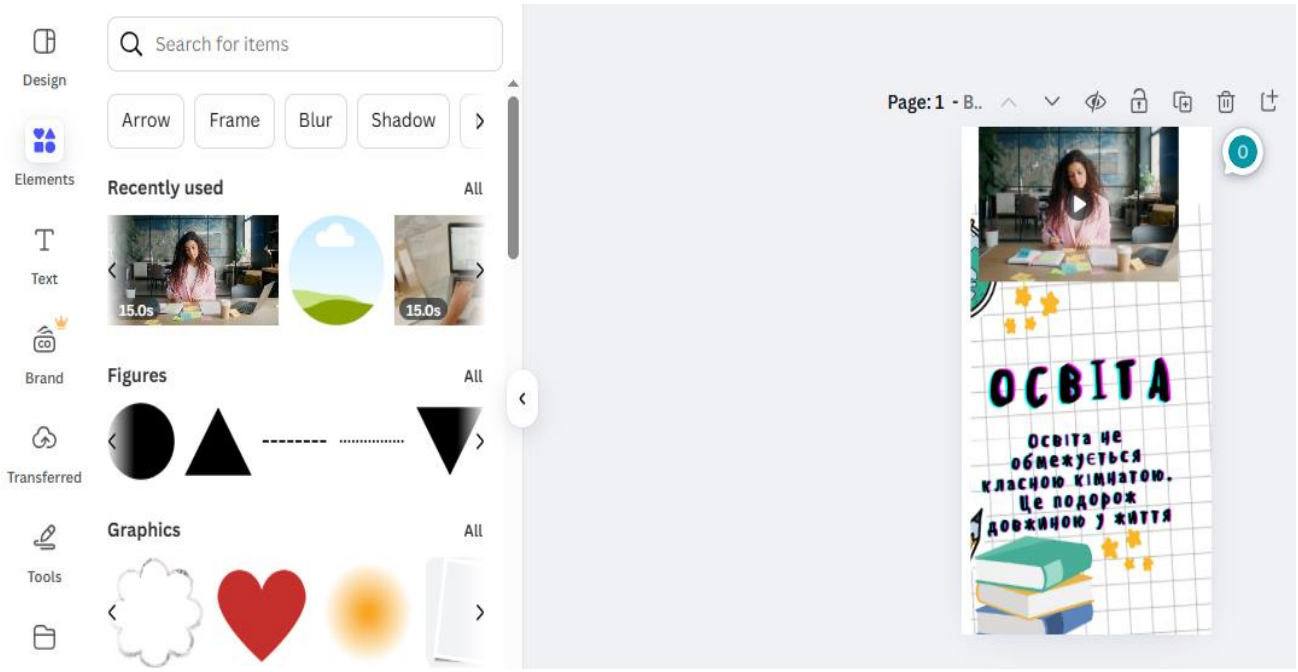


Fig. 79. Adding new elements to the page

10. To load a video into a document, select **Elements → Video** and drag the video into the document. Clicking on the video in the document displays a toolbar for working with the video: **Edit Video, Play, Crop, Flip**, select the **shape** and **color** of the frame, set the **animation**, position the video in the document, set the transparency, etc. (Fig. 80):

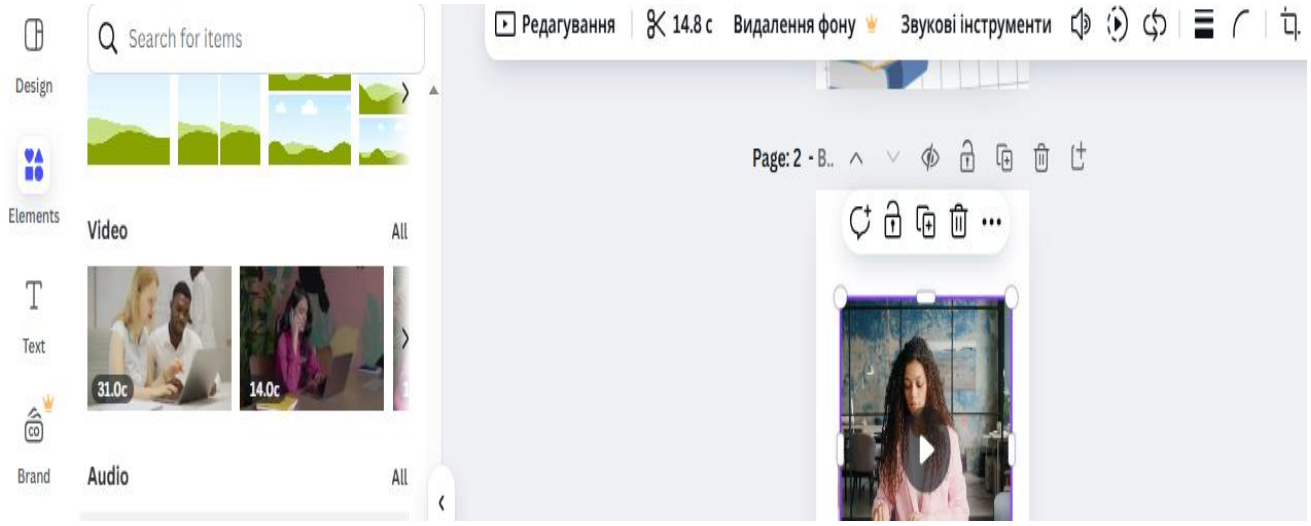


Fig. 80. Adding the video

11. To download the images, videos or audio from your computer to the service, click **Transferred → Transfer files** and specify the path where the image is located, etc. You can also upload materials to the service from **Google Drive, Dropbox, social networks**, etc. by clicking the tab **Transferred**, then the **icon with three dots** and selecting the desired option (Fig. 81). There is also an option to record yourself by selecting the **Transmitted → Record yourself** (Fig. 81).

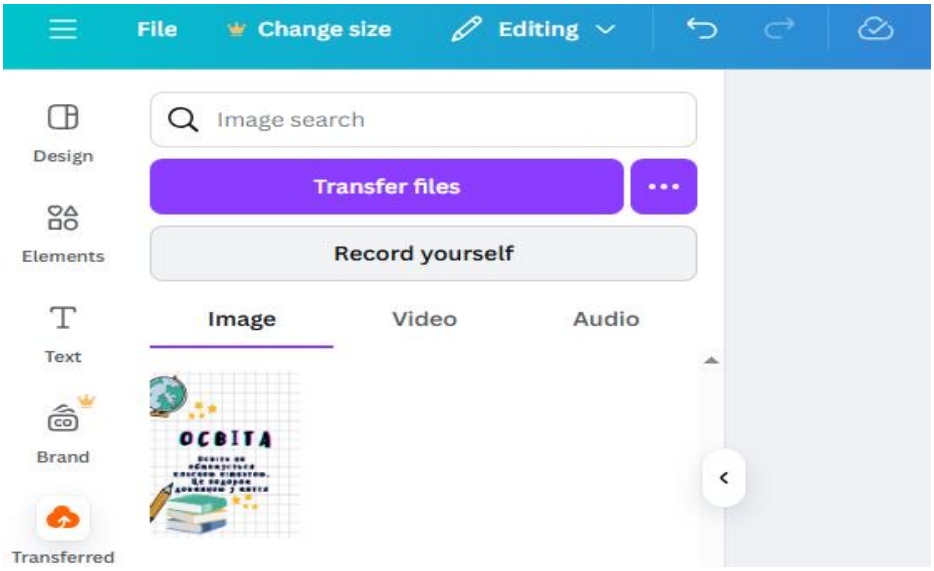


Fig. 81. Transferring the files. Recording yourself

12. Name the created document by double-clicking on the cloud icon  , which by is named the **Untitled Design**.

13. Download the created image. To do this, click **Share** 

, then **Download**, select PNG or JPG format if it is an image. If the document contained two pages, an archive will be downloaded, after which you will need to extract the files from the archive.

14. If the graphic material contains a video, you need to select the following file type – **MP4 Video** and click **Download.**

15. Share the design you created, click the button **Copy the link.**

16. In a text document named *LastName_Canva*, save 3 links to the created graphic materials, provide the access for viewing.

Control questions

1. What educational graphic design templates does the online editor *Canva* contain?

2. Describe the command buttons on the left side of the newly created design window.

3. How to change the background or template of a document?

4. How to add the text to a document?

5. What options for work with font does *Canva* provide?

6. Describe the **Intervals** and **Effects** commands of formatting the text?

7. How to add the new objects to a document?

8. What elements we can add to a document?

9. How to download the files from computer to the design?

10. In what formats can we save the created graphic materials?

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Olha Kutnyak

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