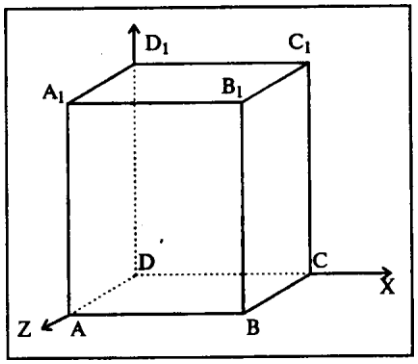
Two ways to use OLEtechnologies: Open Insert (ВкладкаВставка), then on the Text group(ГруппаэлементовТекст)

1. Click on **Object(Объект)**
2. Click on **Text from file (Текстизфайла)**

The first method can be used for embedding (linking) a document fragment or an entire document, the second one is used only for an entire document.

Exercise 1.Createscheme (see on the picture), group all graphical objects.



1. draw the rectangle ABB_1A_1;
2. make a line, for example, A_1D_1;
3. copy$A_1D_1$and insertthree timesBC, B_1C_1andAD;
4. make linesCC_1, DD_1, DCandD_1C_1;
5. select lines and click on **Format tab (ФорматВкладка)⇒Shape Styles group (ГруппаэлементовСтилифигур)⇒Shape outline(Контурфигуры)**, choosing**Dashes (Штрихи)⇒Type of dashes (Типштриха)** – **dotted-dashes (штрихпунктирный);**
6. finish drawing reference axes, choosing the instrument**Line with arrow (Линиясострелкой)**. For selecting AutoShape style, click the right button of the mouse over the object and select**Format AutoShape (Форматавтофигуры)** in the right click menu.
7. For placing the letter in the place required click on**Insert tab⇒Text group⇒Text box (Надпись)**.
8. Clicking the button**Line color (Цветлинии)** in **Format tab (Вкладкаформат)⇒Shape Styles group (ГруппаэлементовСтилифигур)⇒Shape outline(Контурфигуры)**(the frame should be selected), select in the given pallet **No line (НетЛинии),**similarly the following **Fill color (Цветзаливки)** — **No fill (Нетзаливки)**, your frame becomes transparent. Now the text can be placed in it (we need only one letter – top labelling).
9. Select your frame, copy it and paste 10 times. Sub index is established with the**Home tab (Вкладкаглавная)⇒Font group (ГруппаэлементовШрифт) ⇒ Subscript Subscriptor press CTRL+= (Нижнийиндекс)**.
10. Modify the drawing into the single graphics object. For this purpose activating on **Home tab** (Вкладкаглавная)⇒**Editing group(Редактирование) ⇒Select (Выбор) ⇒Selectobjects(Выборобъектов)** button stretch the punctuated frame around the whole drawing (select the drawing) and click **Format tab (Вкладкаформат) ⇒Arrange group (Группаэлементовупорядочить)** ⇒select**Group (Группировать).**

Advancement questions:

1. What tool can be used for drawing the graphic objects in Word text processor?
2. What approaches is the work with graphics based on in Word text processor?
3. What isOLE –technologies?
4. What is the difference between linked objects and embedded objects?
5. What does Group objects mean?

Practical class № 5
Subject: «Spreadsheet processor MS Excel. Data entry and editing. Addressing cells. Calculating values of a function. Master function.»

Purpose: Repeat the basic concepts of Excel spreadsheet, create the ability to enter and edit data, use various types of addressing when solving problems, generate skills to calculate the values of functions to plot functions.

In a spreadsheet application, at a very basic level, values often need to be added, Class programs for the creation and processing tabular data in electronic form, called tabular processors or spreadsheets. Feature spreadsheet is the possibility of applying the formulas to describe the connection between the values of the various cells.

Excel document is called a workbook, the book is a collection of worksheets, each sheet has a table structure, and may contain one or more tables. The maximum number of worksheets - 255, they are designated as the Page 1 (Sheet 1). Excel document is saved as a file with the extension * .xls. User representation spreadsheet Excel XP (worksheet) consists of 65,536 lines (rows) and 256 columns or columns (columns), that appear on the computer screen. Rows are numbered from 1 to 65536 and the columns or the column marked with the Latin letters A, B, ..., Z, AA, AB, ... IV. At the intersection of the row and column is the basic structural element of the table - cell (cell). By the contents of the cell can be accessed by its address (link), for example, A5.

In the worksheet cells may be the following types of data: text, Constants and Formulas. In one cell, you can enter up to 32,767 characters of text or numerical.

By default, numeric data align to the right, and text to the left. If the category name does not include the width, the right-hand box (if it is not empty) overlaps the previous one.

Group adjacent cells forming a rectangular table area is called range.

Addressing cells. In Excel distinguish 3 types of cell addressing: **absolute, relative, and mixed**. When you copy a formula from one cell to another cell automatically change the address included in the formulas. This is called **relative addressing** of cells. **Relative references** used by default in Excel. But sometimes it is necessary not to change the address of a cell with the formula is copied. This address is called an absolute and absolute link is set by specifying a dollar sign before the row and column number, such as **A2** or by pressing the **<F4>** key.

A mixed reference is a combination of absolute and relative references, when the row and column used **different ways** of addressing, for example, $A1, B$2. the absolute part of the link is not changed when copying the formula.

All formulas in Excel must begin with the character **"=",** finishes entering the formula by pressing the Enter

Examples of formulas: = 2*5^3+4 = A1 + A2 = A1 + Cos (5,282)

Editing formulas: To begin editing the contents of a cell, you must first select the cell. Next, turn on edit mode by pressing F2 or by double-clicking the mouse. To edit the formula, you can press the button = in the formula bar. In the edit mode is activated formula bar, which can be seen the formula text and not the result of its computation.

To change the formula you need to click to the line item where you want to make changes.

Formatting Data. First of all, you need to select the cells in which it is necessary to change the format of the data. Then you can either open the right-click context menu and call it the command Format Cells, or cause a command Format Cells from the **Format menu**. In any case, the screen will display the **Format Cells** dialog box. Using it, you can install the data representation format in the cells: number formats alignment, borders and type of cells, and to determine the level of data protection.

Since many complex and simple calculations are very common, the Excel program offers more than 200 pre-programmed functions. The functions in Microsoft Excel are called computational operation on a particular algorithm and formula. **INSERT Function** is ready to enter into the calculation formulas. Button **INSERT Function** on the toolbar looks like ***fx***

To quickly find the required functions are divided into categories: 10 recently used, complete alphabetical listing, ***Financial***, ***Date and time***, ***Math end Trig, Statistical, Database, Text, Logical***, and check the properties. Built-in **INSERT Function** helps to apply the function. It allows you to build and calculate the most functions.

Function in Microsoft Excel are formulas that have one or more arguments. The arguments specify numerical values or cell addresses.

For example:

= SUM (A5: A9) - the amount of cells A5, A6, A7, A8, A9;

= AVERAGE (G4: G6) - average value of cell G4, G5, G6.

Functions can be nested in one another, for example: = ROUND (AVERAGE (H4: H8); 2).

Description of the basic functions.

Category Math.

ABS (number) - the module number.

COS (number) - the cosine of a predetermined number.

EXP (number) - returns the number of e raised to the specified power.

LN (number) - returns the natural logarithm of a number.

SIN (number) - returns the sine of the given number.

TAN (number) - returns the tangent of the given number.

ROOT (number) - returns the positive square root.

PI () - Returns the number of □ up to 15 digits.

POWER (number, power) - returns the result of the exponentiation;

SUM (number1; number2; ...) - returns the sum of all the numbers included in the list of arguments;

Statistical functions.

MAX (item1, item2, ...) - is looking for a maximum of arguments;

MIN (arg1; argument2; ...) - is looking for a minimum of the arguments;

AVERAGE (item1, item2, ...) - calculates the average of its arguments;

COUNTIF (range, condition) - counts the number of arguments in the range corresponding to the condition

When entering basic formulae, the **mathematical operators** defining the operation to be carried out are as follows:

Operation:	***Sign:***	***Example:***
Addition	+	=A1+B1+C1+D1
Subtraction	-	=A1-A2
Multiplication	*	=C4*C5
Division	/	=C4/D4
Combination	(____)	= A1*(B1+C1)

Charts - a graphical representation of data. They are used for analysis and comparison of data, presenting them in a visual form.

Chart Wizard allows you to build a chart of 14 standard types of planar and volumetric representation, as well as 24 non-standard type. To auto-build the chart just press the F11 key.

Editing charts is running as using the context menu or by using the commands of the control chart menu.

Logical functions are used to perform calculations, depending on certain conditions. The conditions can be used comparison operators =,>, <, <> (not equal),> = (greater than or equal to), <= (less than or equal to).

Function IF (logical_test; value_if_true; value_if_false) result is value1 if value2 and boolean true otherwise.

logical_test - is any value or expression in the calculation yields a value of TRUE or FALSE.

Value_if_true - is the value that is returned if logical_test is TRUE. If logical_test is TRUE and value_if_true omitted, it returns TRUE.

Value_if_false - is the value that is returned if logical_test FALSE. If logical_test FALSE and value_if_false omitted, it returns FALSE.

Exercise 1. It is necessary to calculate the amount of tax, bonus and salaries sum of the whole, after deduction of all taxes and charges premium.

1. Open an **MS EXCEL** program. Save the book under the name Laboratory work in its own folder.
2. Rename the current worksheet (Sheet1) to **Exercise 1.**
3. Enter the source data name1.
4. Make a table for the model.
5. To merge cells, select the cell and press the button  or the **Cell Format** menu

	A	B	C	D	E	F	G	H	I
1					***salary report***				
2									
3	**№**	**Full name**	**salary**	**taxes**			**premium 11%**	**remaining amount**	
4				**union fee 5%**	**income tax 12%**	**pension contributions 10%**			
5	1	Abay Nargiza	120000						
6	2	Amanova Aydana	289000						
7	3	Asan Aydar	180000						
8	4	Osman Adil	107000						
9	5	Nurtas Talgat	250000						
10	6	Alimbekov Bagdat	505000						
11	7	Baytursyinova Zhanna	140000						
12	8	Ashim Aygerim	103000						
13		**in total**							
14									
15									

6. To change the orientation of the text, you must
   - Select the cell that contains the text **context menu → Format Cells**, **Alignment** tab, go to the *field orientation*
   - Click on the red diamond  by holding down the left mouse button,  drag to 90 °.
7. In order to calculate the amount of professional fee is 5% of the salary, it is necessary:
   - Select cell **D5,** and enter the formula = C5*5%
   - Similarly, for all taxes and premiums.
8. Calculate the amount received on the hands after calculating all taxes and accrued bonuses in **H5** cells.
9. To sum up the entire amount of the **salary of all employees** and the amount of wages received by them in his arms. For this
   - Select a block of cells H5: H12.
   - Click on *the AutoSum* button  on the Standard toolbar.

Exercise 2: Using the capabilities of Excel, to find the sum of sales revenue in rubles and dollars.

	A	B	C	D	E	F	G
1	LLP "Dream Store"						
2							
3	exchange rate =	332,75		10.10.2016			
4							
5	№	product name	price for unit of dollar	sold items	sales proceeding, dollar	sales proceeding, tenge	
6	1	Smart TV's	599,99	10			
7	2	Laptops	1099,99	6			
8	3	Webcams	70	5			
9	4	MP3 Players	49	7			
10	5	Monitors	179,99	4			
11	6	PlayStation 4	449,98	3			
12	total amount of proceeds						
13							
14							

1. Click on *Sheet2*. Rename it to *Exercize2*.
2. Create a table, fill it in the original data of the problem
3. Calculate the proceeds from the sale in dollars and tenge.
4. E6 cell, enter the following formula: = C6 * D6
5. In cell F6 enter the following formula: = E6*B3. B3 is the absolute addressing, click on the F4, you should get B3.

Exercise 3. Set the rating on any subject as a percentage. If it is not lower than 45%, the student attested on the subject, not otherwise attested.
1. Rename Sheet1 to Exercise 3.
2. Fill in the table on the model.

	A	B	C	D
1				
2	Full name	rating assessment, %	attestation	
3	Akhmetov A	40%		
4	Spatayeva K	70%		
5	Temirkhanova G	65%		
6	Zhandos A	30%		
7	Sultanbay E	50%		
8	Altynbek S	90%		
9				
10				

3. To determine whether a student is certified. Select cell C3. Run the following command. Formulas The functions of the wizard to select the category of **Logic,** name of the function **IF**.
4. In the drop down box, the **IF** function. In the **logical expression** set conditions, check the cell B3, whether it is greater than 50%, if so, the student is certified, if there is not certified. For this:
In the logical expression of the condition record: **B3> = 50%**
• In the Value_if_true «certified»
• In the Value_if_false «not certified»
• Click on **OK**.
5. Copy the formula to the rest.

Control questions:

1. What is a spreadsheet?
2. What forms autofill you know?
3. What types of addressing you know? How do they differ from each other?
4. How can merge cells?