



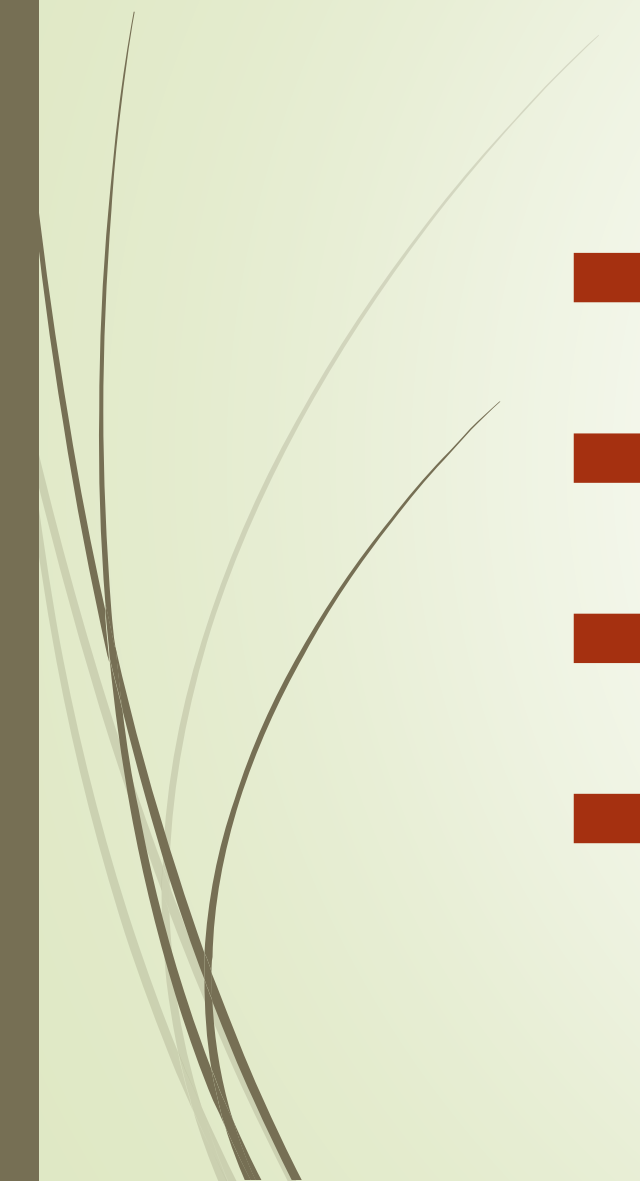
**X**

# **MS EXCEL**

**doc. Ing. Marcela Hallová, PhD.**



# What level of Excel knowledge do I have?

- Beginner
  - Pre-intermediate
  - Advanced
  - Expert
- 



# 1. If I want to save the file under a different name

- a) I click on the floppy disk icon
- b) I will use the save as command from the main menu on the File tab
- c) I'll use the Copy icon
- d) I do not know



## 2. Each cell in the sheet is given by:

- a) serial number, for example 1.
- b) column letter and row number, for example A3
- c) by combining the column number and the row number, for example 12/5
- d) I do not know



**3. When entering a formula into a cell, I must use a sign at the beginning**

a) &

b) =

c) fx

d) I do not know



**4. What expression do I use to calculate the sum of the numbers in cells from A6 to B12**

a) =SUM(A6:B12)

b) =SUM(A6..B12)

c) =SUM(A6+B12)

d) I do not know



## 5. We will set the percentage format of the number by

- a) percentage icon
- b) I will write „perc“ before the number
- c) by dividing by the number 100
- d) I do not know



## 6. What is true for the chart

- a) I cannot add more data to the chart
- b) the chart can be placed on a separate sheet
- c) I can't change the selected graph type anymore
- d) I do not know



7. The picture shows the situation just before copying. What will be the value in cell A3 if we use copy by dragging across the lower right corner of the cell (in the red square)


- a) 20
- b) 30
- c) 10
- d) I do not know

	A	B
1	10	
2	20	
3		
4		

## 8. Determine what problem cells A2 and A3 in the figure have in common.

- a) insufficient column width
- b) incorrect entry of the value
- c) incorrect cell format
- d) I do not know

	A	B	C
1			
2	####		
3	Ivana Nováková		
4			
5			

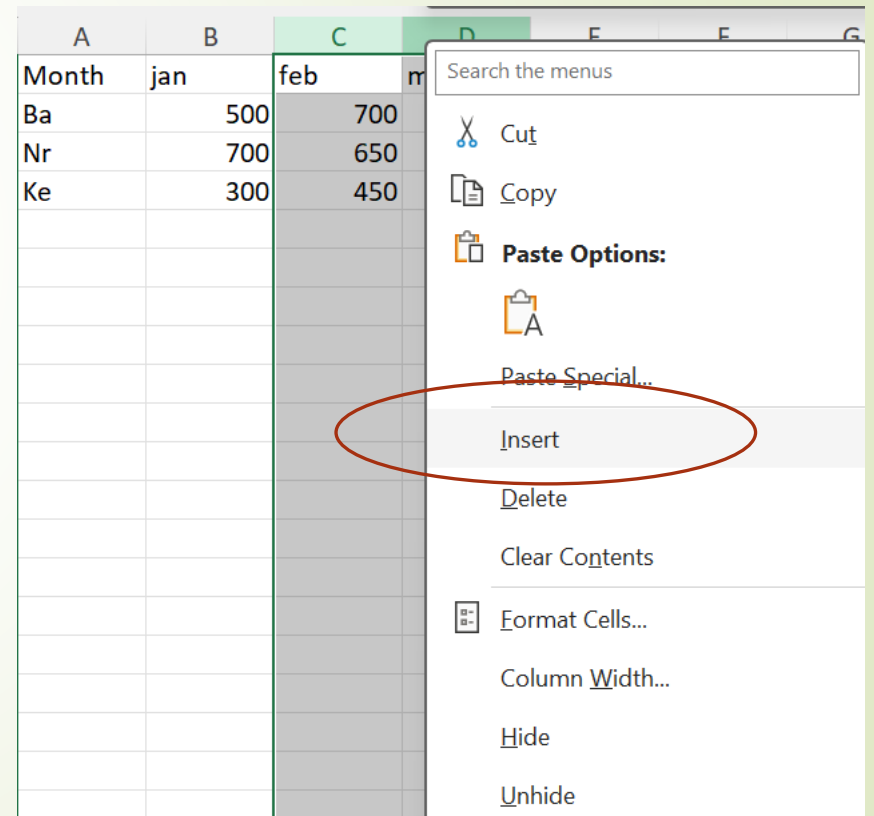



9. How will the value 30 be displayed in the cell if we set the custom cell format: `"##0,00" km/hour`

- a) 30km/hour
- b) 30,00 km/hour
- c) 0 030,00 km/hour
- d) I do not know

10. The picture shows the selection of two adjacent columns C and D. If the "Insert" option is selected, there will be inserted:

- a) Two blank columns after column D
- b) Two blank columns before column C
- c) Two blank columns between columns C and D
- d) I do not know





**11. If we always want to refer to cell A3 when copying the formula, we use the notation:**

a)  $=\$A\$3$

b)  $=A3$

c)  $=@A3$

d) I do not know



## 12. The **AVERAGE(A3:A12;C2:C4)** function calculates

- a) average of two non-contiguous areas
- b) averages for each area separately
- c) will not work properly
- d) I do not know



## 13. Function IF(A3>= B3;A3;B3)

- a) subtracts the lower number from the higher number
- b) always chooses the lower of the two numbers
- c) always chooses the higher of the two numbers
- d) I do not know



## 14. We use the automatic filter for

- a) selection of data from the database
- b) selection (display) of data from the database
- c) correction of data in the database
- d) I do not know



# 15. Na obrázku sú zobrazené kritéria pre nástroj rozšírený filter (bunky G2 až H4). Vyberte správnu odpoveď o výsledkoch rozšíreného filtra.

- a) all orders from the legal department, greater than €4,000, and at the same time from the personal department, less than €6,000, will be filtered
- b) all orders of only the personal department less than €6000 will be filtered
- c) such filter settings will not work
- d) I do not know

B	C	D	E	F	G	H
<b>Date</b>	<b>Department</b>	<b>Order</b>	<b>Amount</b>		<b>Department</b>	<b>Amount</b>
1.9.2024	accounting	A0101	1 131 €		legal	>4000
1.9.2024	legal	A0110	878 €		personal	<6000
1.9.2024	commercial	A0102	6 583 €			
1.9.2024	commercial	A0101	4 097 €			
1.9.2024	personal	A0110	4 334 €			
1.9.2024	personal	A0102	6 457 €			
1.9.2024	IT	A0101	2 636 €			
1.9.2024	IT	A0110	276 €			
1.9.2024	legal	A0102	5 511 €			
1.9.2024	legal	A0101	2 642 €			
1.9.2024	commercial	A0110	6 031 €			
2.9.2024	accounting	A0102	6 301 €			
3.9.2024	commercial	A0101	1 712 €			
4.9.2024	personal	A0110	9 787 €			
5.9.2024	personal	A0102	9 787 €			
6.9.2024	IT	A0101	8 797 €			
7.9.2024	IT	A0110	8 108 €			
8.9.2024	legal	A0102	6 850 €			

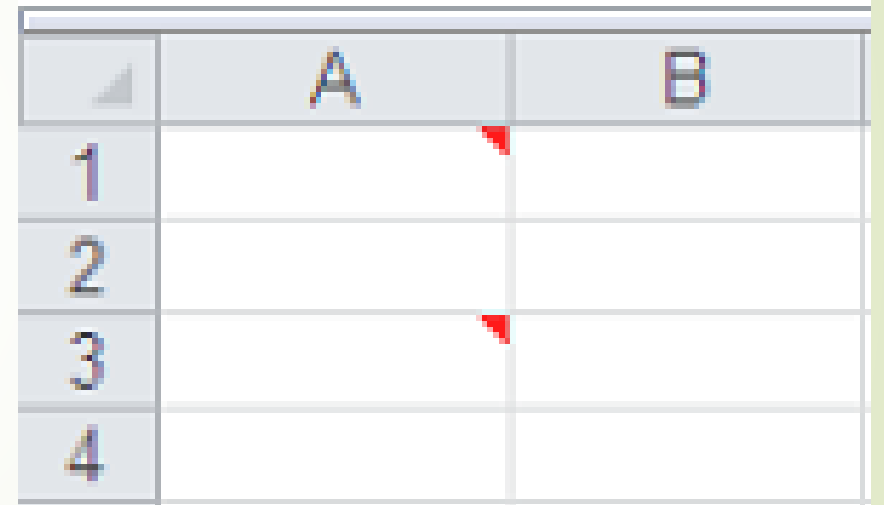
16. In the picture, the anchoring of partitions is set using View - Freeze Panes. Which cell/cells should be selected to anchor the first row and first column?

- a) the first row and column A should be highlighted
- b) the second row and column B must be highlighted
- c) just click in cell B2
- d) I do not know

	A	B	C	D	E
1	Date	Department	Order	Amount	
2	1.9.2024	accounting	A0101	1 131 €	
3	1.9.2024	legal	A0110	878 €	
4	1.9.2024	commercial	A0102	6 583 €	
5	1.9.2024	commercial	A0101	4 097 €	
6	1.9.2024	personal	A0110	4 334 €	
7	1.9.2024	personal	A0102	6 457 €	
8	1.9.2024	IT	A0101	2 636 €	
9	1.9.2024	IT	A0110	276 €	
10	1.9.2024	legal	A0102	5 511 €	
11	1.9.2024	legal	A0101	2 642 €	
12	1.9.2024	commercial	A0110	6 031 €	
13	2.9.2024	accounting	A0102	6 301 €	
14	3.9.2024	commercial	A0101	1 712 €	
15	4.9.2024	personal	A0110	9 787 €	
16	5.9.2024	personal	A0102	9 787 €	
17	6.9.2024	IT	A0101	8 797 €	
18	7.9.2024	IT	A0110	8 108 €	
19	8.9.2024	legal	A0102	6 850 €	
20					

## 17. The red marks in the upper right corner of the cell represent

- a) revision in the cell
- b) note in the cell
- c) wrong value in the cell
- d) I do not know



The image shows a small Excel spreadsheet with two columns labeled 'A' and 'B' and four rows labeled '1' through '4'. The cells in column 'A' at rows 1 and 3 contain a small red triangle in the upper right corner, which is a standard Excel error indicator for a formula error. The other cells are empty.

	A	B
1		
2		
3		
4		

18. The picture shows copying of the table with its subsequent special insertion - rotation (changing rows into columns, columns into rows). We can reach this action via the icon:

- a) Transpose
- b) paste
- c) paste the link
- d) I do not know

	A	B	C	D
1	Date	Departme	Order	Amount
2	1.9.2024	accountin	A0101	1 131 €
3	1.9.2024	legal	A0110	878 €
4				
5				
6	Date	1.9.2024	1.9.2024	
7	Departme	accountin	legal	
8	Order	A0101	A0110	
9	Amount	1 131 €	878 €	



19. We insert the dollar signs shown in the image at address H1 in the given formula using the key:

a) F5

b) F2

c) F4

d) I do not know



=A1\*\$H\$1

20. The picture shows the condition of the custom automatic filter. What values will be filtered after its confirmation:

- a) none
- b) all values in the range 1000 to 3000 inclusive
- c) all values less than 1000 and values greater than 3000 inclusive
- d) I do not know

	A	B	C	D	E	F
1	Order	Amount				
2	Ord1	700				
3	Ord2	1500				
4	Ord3	2700				
5	Ord4	2350				
6	Ord5	1870				
7	Ord6	890				
8	Ord7	8422				
9	Ord8	9811				
10	Ord9	1500				
11						
12						
13						

Custom Autofilter

Show rows where:

Amount

is less than 1000

And  Or

is greater than or equal... 3000

Use ? to represent any single character  
Use \* to represent any series of characters

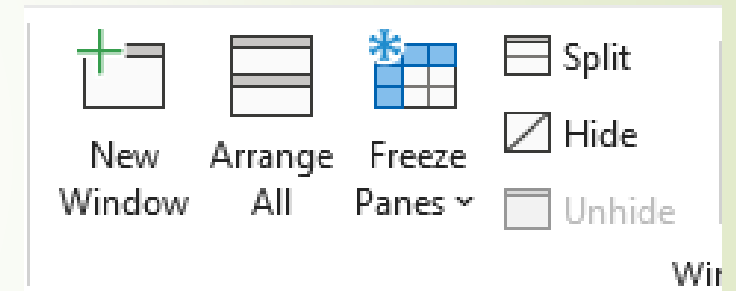
# 21. The picture shows the condition of the advanced filter, which will allow filtering

- a) all persons from the city of TN who have at the same time the number of points obtained more than 80 inclusive
- b) all persons from the city of TN, or all who have a score of more than 80 points inclusive
- c) all persons from the city of TN, or all those who have obtained 80 or less points
- d) I do not know


	A	B	C	D	E	F	G
1	name	surname	points	address		points	address
2	Peter	New	80	TN		>=80	
3	Joseph	Peter	70	BB			TN
4	Martin	Ivanhoe	67	KE			
5	Jane	Old	45	TN			
6	Charles	Michael	88	BA			

## 22. The Arrange All icon on the View tab is for:

- a) arrange the data in the table alphabetically in ascending or descending order
- b) alphabetical arrangement of sheets
- c) arrangement of windows of open files on the monitor
- d) I do not know








**23. If I have the numbers -3, 2, 0, -6, -5, 3, 10 in the range G3:G9 and I want to find the number of non-negative numbers, I use the function :**

- a) COUNT(G3:G9)
- b) COUNTIF(G3:G9;<>0)
- c) COUNTIF(G3:G9;>0)
- d) I do not know



**24. Formula: =IF(AND(A1=8; B1=10); "yes"; "no") writes:**

- a) "no" if the value in cell A1 is 8 and the value in cell B1 is 10
- b) "yes", if the value in cell A1 is 8 and the value in cell B1 is 10
- c) "no" if the value in cell A1 is 8 or the value in cell B1 is 10
- d) I do not know



**25. If we need to round the number in the cell to whole hundreds (for example, 570 to 600), we use the function:**

- a) ROUND
- b) CEILING
- c) TRIM
- d) I do not know



# RESULTS



1)B

2)B

3)B

4)A

5)A

6)B

7)A

8)A

9)B

10)B

11)A

12)A

13)C

14)B

15)A

16)C

17)B

18)A

19)C

20)C

21)B

22)C

23)C

24)B

25)A



# EVALUATION

➤ 0 – 9 → beginner

➤ 10 – 17 → pre-intermediate

➤ 18 – 25 → advanced



# Excel beginner

- ▶ Starting Excel
- ▶ The difference between older and newer versions of Excel
- ▶ Save the workbook in several formats (.xls, .xlsx, .pdf...)
- ▶ Control keyboard shortcuts for faster and more efficient work
- ▶ Copying and moving cells / tables
- ▶ Text formatting
- ▶ Bordering the cells
- ▶ Use basic cell formatting
- ▶ Use automatic lists (number, date and text)
- ▶ Work with columns / rows / sheets
- ▶ Working with comments
- ▶ Basic calculations in cells, use of formulas
- ▶ Basic functions: sum, average, minimum, maximum, count
- ▶ Easy filtering with an automatic filter
- ▶ Simple graph creation
- ▶ Print the table

# Excel pre-intermediate

- All knowledge of Excel beginner level
- Advanced cell formatting - custom format
- Advanced options – Paste
- Create your own list
- Conditional formatting
- Using all the options of the automatic filter
- Sorting records in tables
- Combining filters and conditional formatting
- Use find and replace tools
- Inserting formulas into cells - relative and absolute references
- Options for anchoring cells in formulas
- Insert functions in different ways
- Working with functions: COUNTA, COUNTBLANK, LARGE, SMALL, SUBTOTAL, ROUND, ROUNDUP, ROUNDDOWN, IF, AND, OR, SUMIF, AVERAGEIF, COUNTIF, VLOOKUP, HLOOKUP
- Creating a simple pivot table and pivot chart
- Creating a chart and adding areas to the chart
- Print tables, set repetition of rows and columns, set pages and margins
- Header and footer settings


# Excel advanced

- All the knowledge contained in Excel intermediate and beginner levels
- Nested functions
- Advanced functions: DSUM, DMIN, DMAX..., IFERROR, CHOOSE, MATCH, INDEX, INDIRECT, TODAY, DAY, MONTH, YEAR, DATE, HOUR, MINUTE, SECOND, TIME, WEEKDAY, LEFT, RIGHT, MID, LEN, REPLACE, SUBSTITUTE, FIND, TRIM, LOWER, UPPER, PROPER, CLEAN, CONCATENATE, PMT, NPER
- Work with named cells and links
- Working with advanced filter and wildcards
- Search for duplicates in tables and be able to remove them
- Verify data and set restrictions
- Use the calculation field in pivot tables
- Secure document / workbook
- Use tools for finding solutions and managing scenarios
- Create simple and nested subtotals
- Creating forms
- Create simple and moderately advanced macros



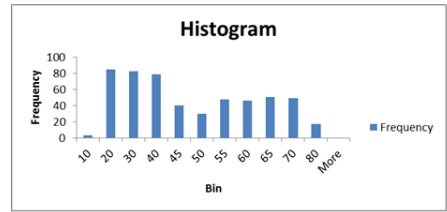
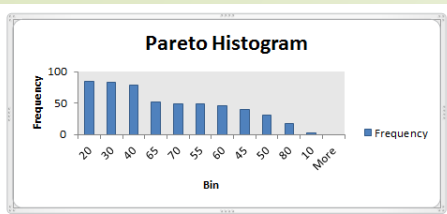
# Where Excel can be used everywhere?

- **Accounting** – we can use Excel's calculation functions in many financial statements (for example, in cash flow statements, income statements or profit and loss statements).
- **Budgets** – regardless of whether the needs are personal or business related. We can create any type of budget in Excel (for example, a marketing budget plan, an event budget or a pension budget).
- **Invoicing and Sales** – Excel is also useful for managing invoicing and sales data, and it also allows you to easily create the required forms (sales invoices, shipping lists or orders).
- **Creating reports** – in Excel, we can create different types of reports into which data analyzes are projected, or which create summary information. For example, reports that measure overall project performance, show variances between planned and actual results, or reports that you can use to make assumptions about data trends.

- 
- **Planning** – Excel is an excellent tool for creating professional plans or useful planners. For example, to create a weekly timetable, marketing research plan, tax plan for a particular year. Also planners who organize weekly meals, parties or holidays.
  - **Tracking** – we can use Excel to track data in a time sheet or list, such as a time sheet to track work or an inventory list that tracks equipment.
  - **Use of calendars** – since Excel offers a grid workspace, it is an excellent tool for creating any type of calendar, for example an academic calendar to track activities during the school year or a financial calendar to track company events or milestones.
  - The Excel program also allows us to create and edit tables containing not only texts, but also numbers, various formulas and other data. If a value is changed in one place, the values in all places where there are formulas referencing that value are automatically changed. Along with its functions, Excel is also used for processing databases.

# EXCEL - news

- **Forecasts** - if we have historical time data, we can use it to create a forecast. When you create a forecast, Excel creates a new worksheet that contains a table of historical and forecast values along with a graph that represents that data. Forecasting can help us predict items such as future sales volume, stock levels, or estimate trends in customer demand..
- **Date grouping (pivot tables)** - in recent versions of Excel pivot tables, dates were always recorded individually. Dates are now automatically categorized as years, quarters, and months.



➤ **New charts- Histogram and Pareto charts** - histograms show frequencies, such as how many of one product was sold versus another. They are not based on categories, but on values that are assigned to different stacks. Pareto charts go a step further by ordering these frequencies and adding a cumulative percentage line to show the trend across the data.



➤ **New charts – sunburst charts** - a sunbursts chart is ideal for displaying hierarchical data. Each level of the hierarchy is represented by one circle, with the innermost circle being the highest level of the hierarchy. A sunburst chart without hierarchical data (one level of categories) looks similar to a pie chart. However, a sunburst chart with multiple levels of categories shows how the outer circles relate to the inner circles. A sunburst plot is most effective for showing the division of a single circle into individual parts.



➤ **New charts – waterfall charts** - displays the subtotal while adding or subtracting values. With the help of this graph, we can understand the effect of a series of positive and negative numbers on the initial value (for example, the net profit).



- **3D maps** - a three-dimensional (3D) data visualization tool that provides an innovative view of information. 3D maps allow you to gain insight that traditional two-dimensional (2D) charts and graphs do not provide. With the 3D map feature, we can display geographic and time data on a 3D globe or your own map, view it over time, and create visual tours that you can then share with other people.
- **PowerPivot** - an Excel add-in, it can be used to perform powerful data analysis and create sophisticated data models. Power Pivot makes it possible to process large amounts of data from various sources, perform quick analysis of information, and easily share insights.
- **Get and transform** - helps import data from various data sources. There are standard CSV (Comma Separated Values) file import options, but now we can also select options like Facebook, Salesforce, and other programs and packages. Once the data is imported, Excel will provide an opportunity to edit the data into a usable format.

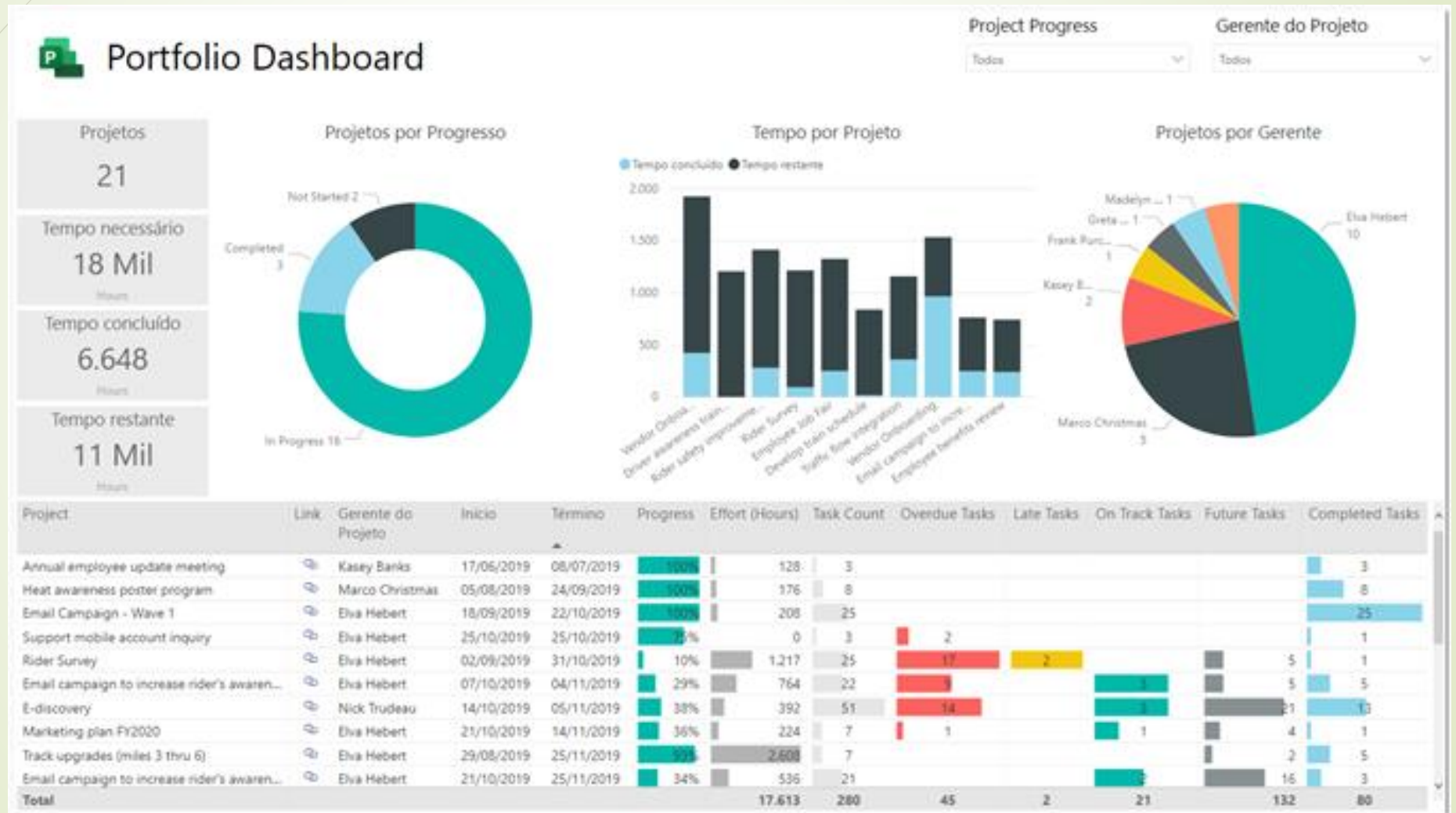


# Excel Dashboards

- This is usually a single page of data that helps track important information, whether for managers or business leaders.
- The data that is evaluated in the dashboards is included in the category of key performance indicators – KPI.
- Dashboards consist of tables, charts, various indicators and numbers.

# Power BI

- A business analytics tool that allows you to visualize data from different perspectives.



# Macros

- A macro is a program that performs specified actions for us. This saves time and we don't have to repeat the same actions or settings repeatedly.
- They are the repetitive routine activities that you have to do.
- Macro recording records all steps in Visual Basic for Applications (VBA) code. These steps can include entering text or numbers, clicking cells or commands on ribbons or menus, formatting cells, rows or columns, or even importing data from an external source such as Microsoft Access.
- VBA (Visual Basic Application) is a subset of the powerful Visual Basic programming language and is part of most Office applications.



# Some interesting facts about Excel

- When was Excel created?
- Who are its "parents"?
- How was the legendary Mr. Spreadsheet born?
- How many versions are there (to this day)?
- Hidden surprises.
- EXCELlent artists.
- What is forbidden?

## Excel facts - continued

- More than 500 keyboard shortcuts can be used in Excel.
- The number of sheets in one file is limited only by the size of available memory.
- The Excel program code consists of more than 30,000 rows.
- It contains more than 460 built-in functions.
- The last date that can be entered in Excel is 31.12.9999

# AI in Excel

➤ <https://excelformulabot.com/>

➤ <https://excelformulator.com/>

➤ Find out for me the exact number of years, months and days between the date and the current date?

➤ `=DATEDIF(A1;TODAY();"Y")&" Years;  
"&DATEDIF(A1;TODAY();"YM")&" Months;  
"&DATEDIF(A1;TODAY();"MD")&" Days"`



**Doug Klunder**



**Jabe Blumenthal**



**Charles Simonyi**



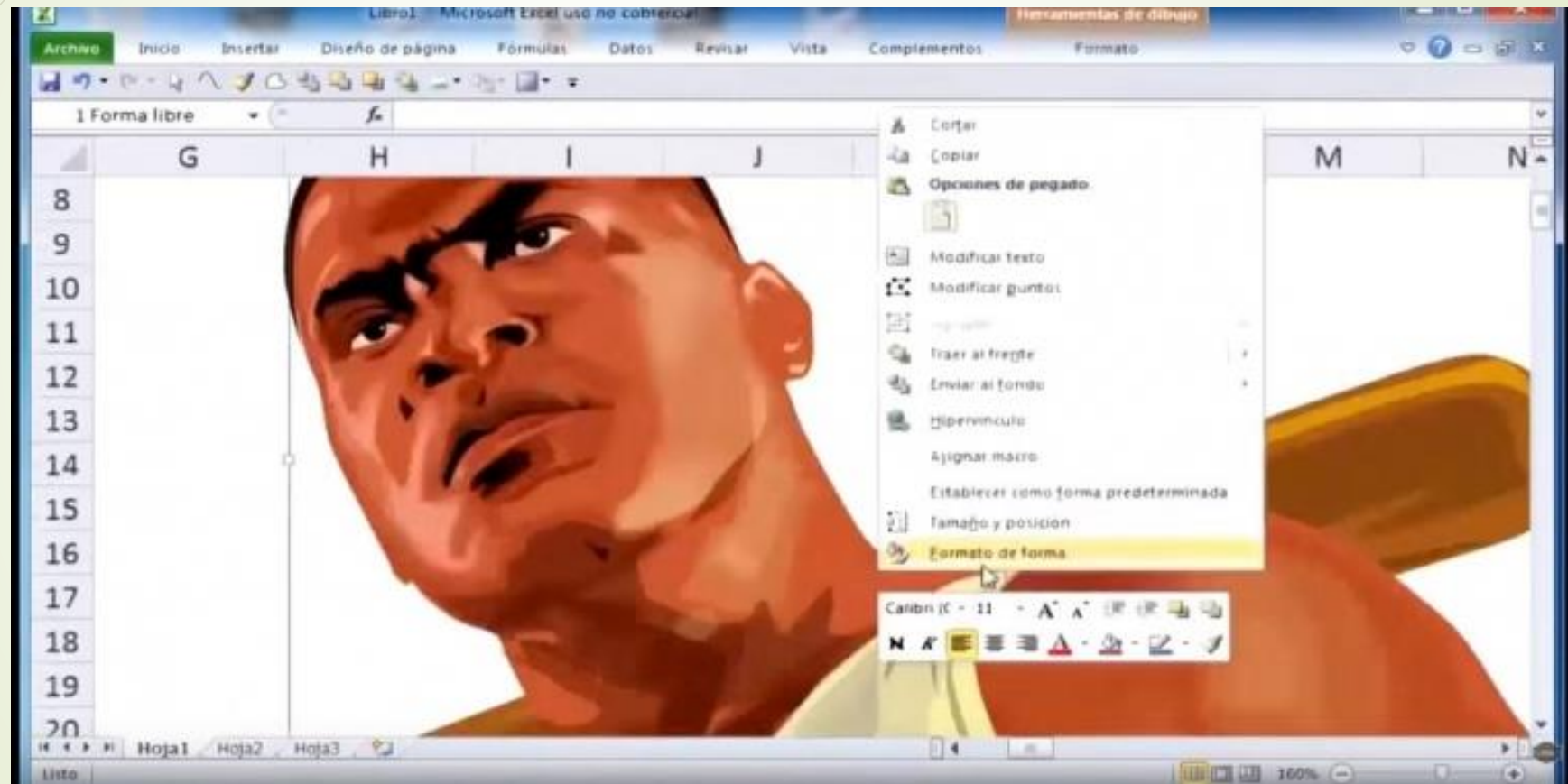
**Bill Gates**



# Tatsuo Horiuchi



# Felipe Velásquez





**Thank you for your  
attention!**

