MS Excel

Unit(3)

Learning Objectives

- **You will learn about:**
  - Add and Remove Conditional Formatting
  - Freeze options from Window Group

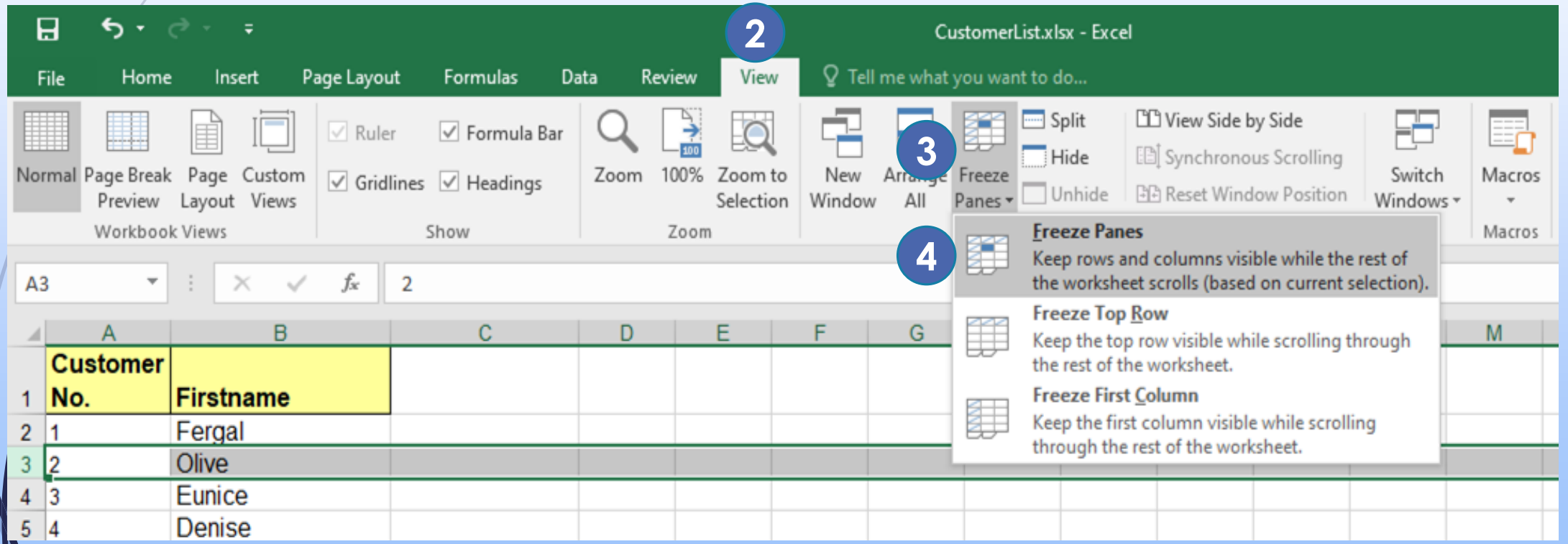
Window Group

- **Freezing options** in an Excel sheet allow you to **lock specific rows or columns** so that they remain visible while you scroll through the rest of the worksheet.
- **This feature is especially useful** when working with **large datasets** — for example, keeping the column headers or row titles in view helps you understand the data as you move down or across the sheet.
- **Example:** If you freeze the top row, the headings (like Name, Age, Salary) will stay visible even when you scroll down the page.
- Types of Freeze
  - **Freeze Panes:** Locks selected rows and columns.
  - **Freeze Top Row:** Keeps only the top row visible.
  - **Freeze First Column:** Keeps only the first column visible.

Window Group

❖ Freeze Row 1 and 2

1 Select the Row 3



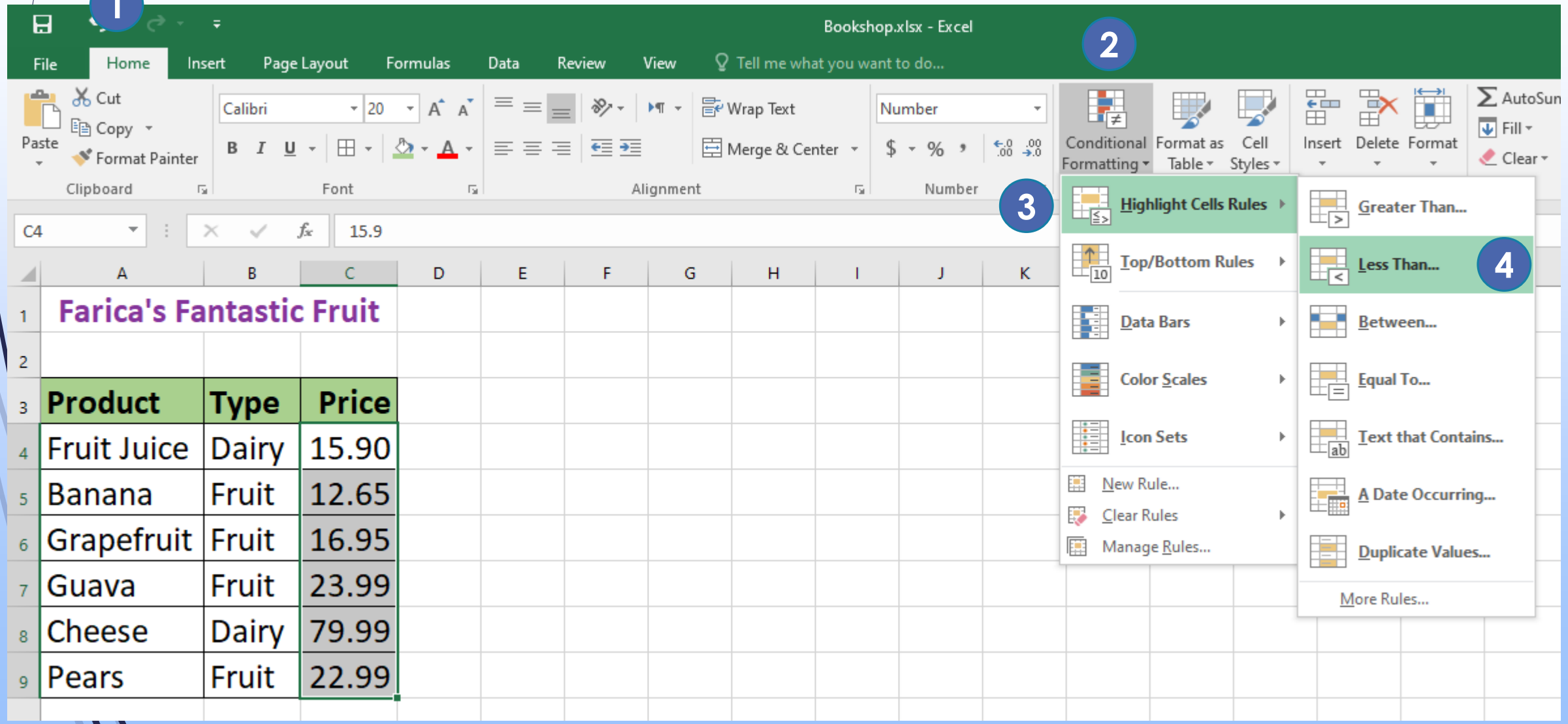
❖ Note: Freeze Top Row and Freeze First column Included

Conditional Formatting

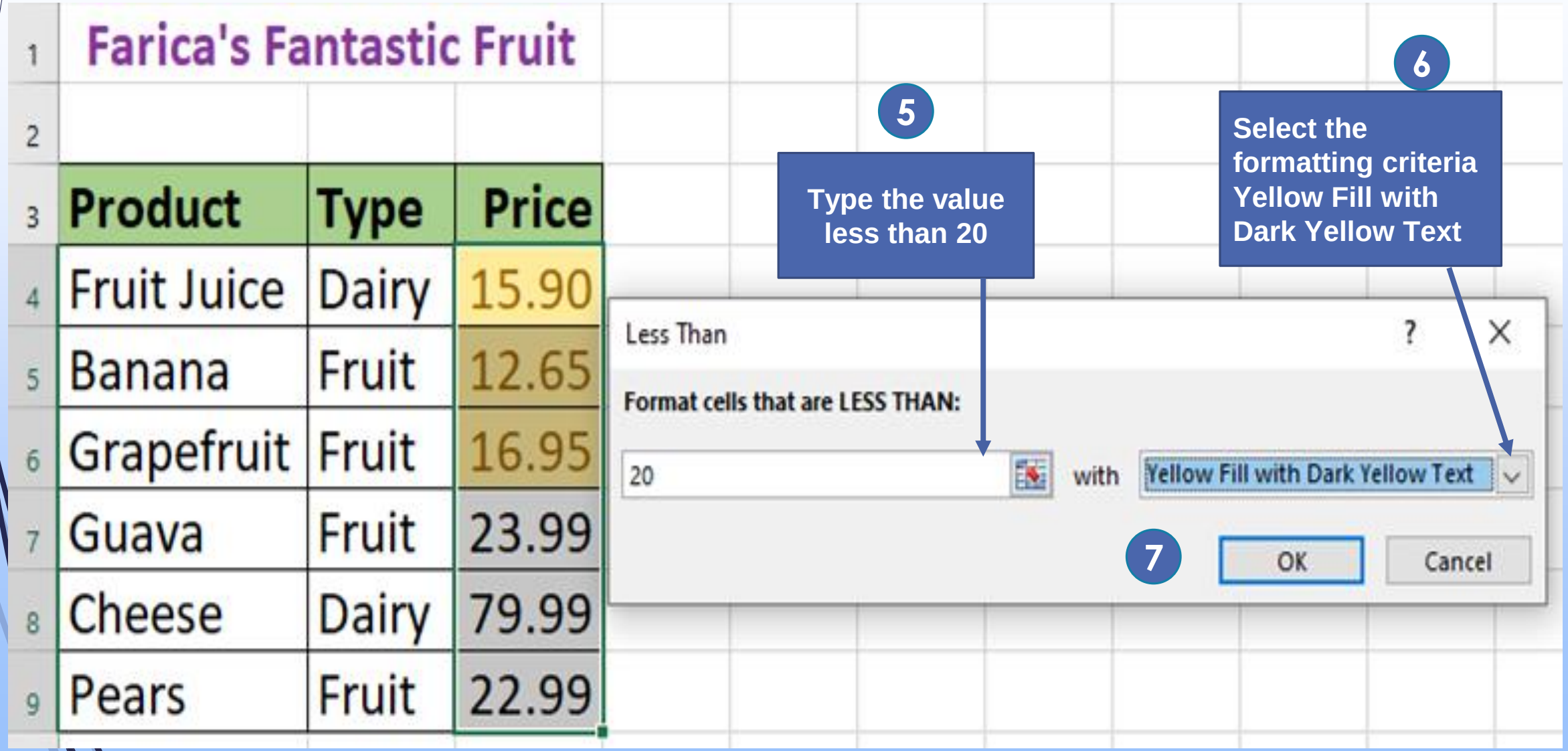
- **Conditional Formatting is** a feature in Microsoft Excel that allows you to automatically change the appearance of cells — such as their color, font, or border — based on specific conditions or rules.
- **For example:**
  - You can make cells turn red if the value is below 50.
  - Or turn green if the value is greater than 80.
- **Path:**

  Go to the Home tab → Conditional Formatting → Choose Rule (like Highlight Cell Rules, Data Bars, Color Scales, or Icon Sets).
- **This makes your Excel sheet more visual, interactive, and easier to understand.**

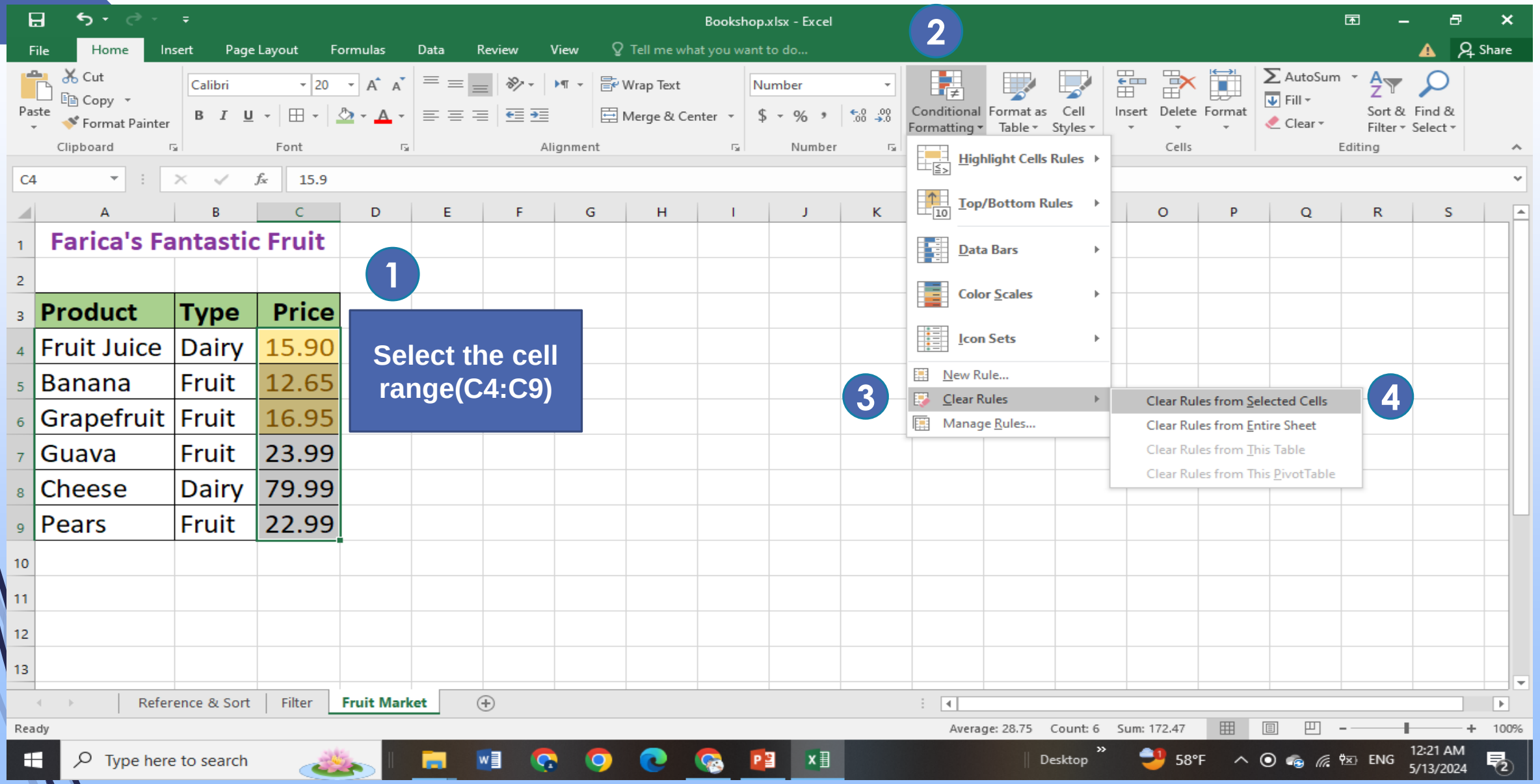
Applying Conditional Formatting



Applying Conditional Formatting



Clearing Conditional Formatting



Applying Freezing & Conditional Formatting

1. Use **Conditional Formatting.xlsx** to **color** the cells containing **Price** **Less than 20** with **Yellow Fill with Dark Yellow Text .**
   a) Select the cell range**(C4:C9).**
   b) Go to **HOME** tab then from **STYLES** group go to **CONDITIONAL FORMATTING** dropdown list.
   c) Select a rule from the dropdown list(select **highlight Cells Rules Less than 20).**

2. Use **Conditional Formatting.xlsx to** Freeze Row 3

FORMULAS

fx =A1+B1

	A	B	C	D	E
1	12,10	14,1	=A1+B1		
2	56,31	81,2	=A2+B2		
3	101	96,51	=A3+B3		
4	71,2	41,12	=A4+B4		
5	112	10,2	=A5+B5		

Question (Entry Ticket)

- "What do you think a formula in Excel means?"
- "Why do you think formulas are important when working with numbers in Excel?"
- "Have you ever used symbols like +, –, *, or / in Excel? What do they do?"

Learning Objectives

- **The students will learn about :**
  - The Definition of Formula in Excel.
  - Comparison between Formulas in Excel and Equations in Math.
  - Addition, Subtraction, Multiplication, Division and Average Formulas.
  - Using Cell Reference in Formulas.

Formula in Excel & Equation in Math

- Excel Formulas are a practical extension of Mathematical Equations — the same logic, just applied in a digital tool.
- A formula in Excel is an equation used to perform calculations on data in your worksheet in a digital way. All formulas in Excel start with an equal sign (=).

https://www.youtube.com/watch?v=AloJOoF5u0w

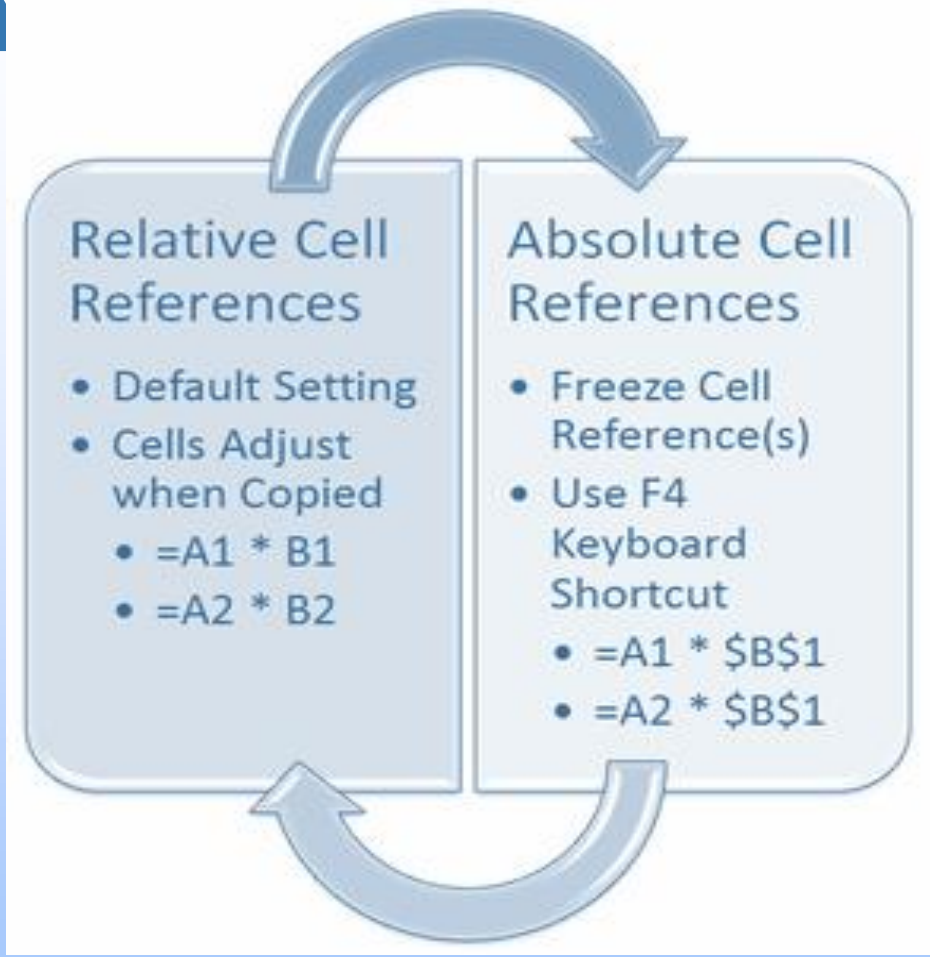
Arithmetic Operators

What symbols do you use in math Equations ?

Operator	Meaning	Formula using Cell Reference	Formula using Values	Description
+	Addition	=A1+B1	=5+7	Adds values in A1 and B1
-	Subtraction	=A1-B1	=5-7	Subtracts B1 from A1
*	Multiplication	=A1*B1	=5*7	Multiplies A1 by B1
/	Division	=A1/B1	=5/7	Divides A1 by B1

Relative Cell Referen

- In Excel, a **cell reference** refers to the **address** or **location** of a cell in a worksheet.



Cell Reference

Why Use Cell References Instead of Typing Numbers?

- Using **cell references** (like A1, B1, etc.) makes your formulas **dynamic** and **automatic**.
- ***Advantages:***
- **Easier updates** — if the data changes, Excel automatically recalculates.
- **Saves time** — you don't need to rewrite formulas.
- **Consistent results** — fewer mistakes.

Apply Skills

Formula

Questions	Value 1	Value 2	Answer
In cell D5 find the Total for B5 and C5	155	265	=B5+C6
In cell D6 Subtract B6 from C6	490	500	=C6-B6
In cell D7 Multiply B7 by C7	125	235	=B7*C7
In cell D8 Divide B8 by C8	150	25	=B8/C8
In cell D9 calculate the Average for the cells B9 and C9	200	600	=(B9+C9)/2

Formulas Apply Skills (out of 5)

- **Open** the Spreadsheet "**Formulas Apply Skills.xlsx**"From the hared folder then apply the skills below

1. Enter a formula in cell **B14** that **subtracts** cell **B12** from cell **B3**. **Copy** the formula in cell **B14** to the cell range **C14 : E14**.
2. Enter a formula in cell **B15** that will calculate the **average** of the cell range **B7 : B11**. **Copy** the formula in cell **B15** to the cell range **C15 : E15**.
3. Enter a formula in cell **H9** using the **+** operator that **adds** cell **B9** and cell **B10**.

Learning Objectives

- **You will learn about:**
  1. **Sum ,Average, Maximum ,Minimum ,Round Functions.**
  2. **Count , CountA Functions.**
  3. **IF ,SUMIF Functions.**

Functions

Function	Definition	Purpose / Use	Example Formula
SUM	Adds all the numbers in a selected range of cells.	Used to find the total of values in a column or row.	=SUM(A1:A5)
AVERAGE	Calculates the mean (average) of numbers in a range of cells.	Used to find the central value of a data set.	=AVERAGE(A1:A5)
MIN	Returns the smallest (minimum) value in a range of cells.	Used to find the lowest value in a set of numbers.	=MIN(A1:A5)
MAX	Returns the largest (maximum) value in a range of cells.	Used to find the highest value in a set of numbers.	=MAX(A1:A5)

Functions

Function	Definition	Purpose / Use	Example Formula
COUNT	Counts the number of cells that contain numbers in a range of cells.	Used to count how many numeric values exist in a list.	=COUNT(A1:A5)
COUNTA	Counts the number of non-empty cells (text, numbers, etc.) in a range of cells.	Used to count all filled cells, regardless of data type.	=COUNTA(A1:A5)
ROUND	Rounds a number to a specified number of decimal places.	To make data neater or adjust decimal precision.	=Round(A4,0) =Round(A5,1) =Round(B3,2)

Evaluation

https://wordwall.net/resource/101630213

Functions

Function	Definition	Purpose / Use	Example Formula
IF	Checks a condition and returns one value if true, another if false.	To compare and make decisions (e.g., Pass/Fail).	=IF(C2>=80,"Pass","Fail") for Sara
SUMIF	Adds numbers that meet a specific condition.	To sum only scores meeting a criterion.	Enter a function in cell **D11** to help a small store wants to know **how much money was earned from "Vegetables" only.**

IF Function

IF Function Arguments

Condition	Value if TRUE	Value if FALSE
(What Excel checks—logic)	(What Excel returns if the condition is TRUE)	(What Excel returns if the the condition is False)

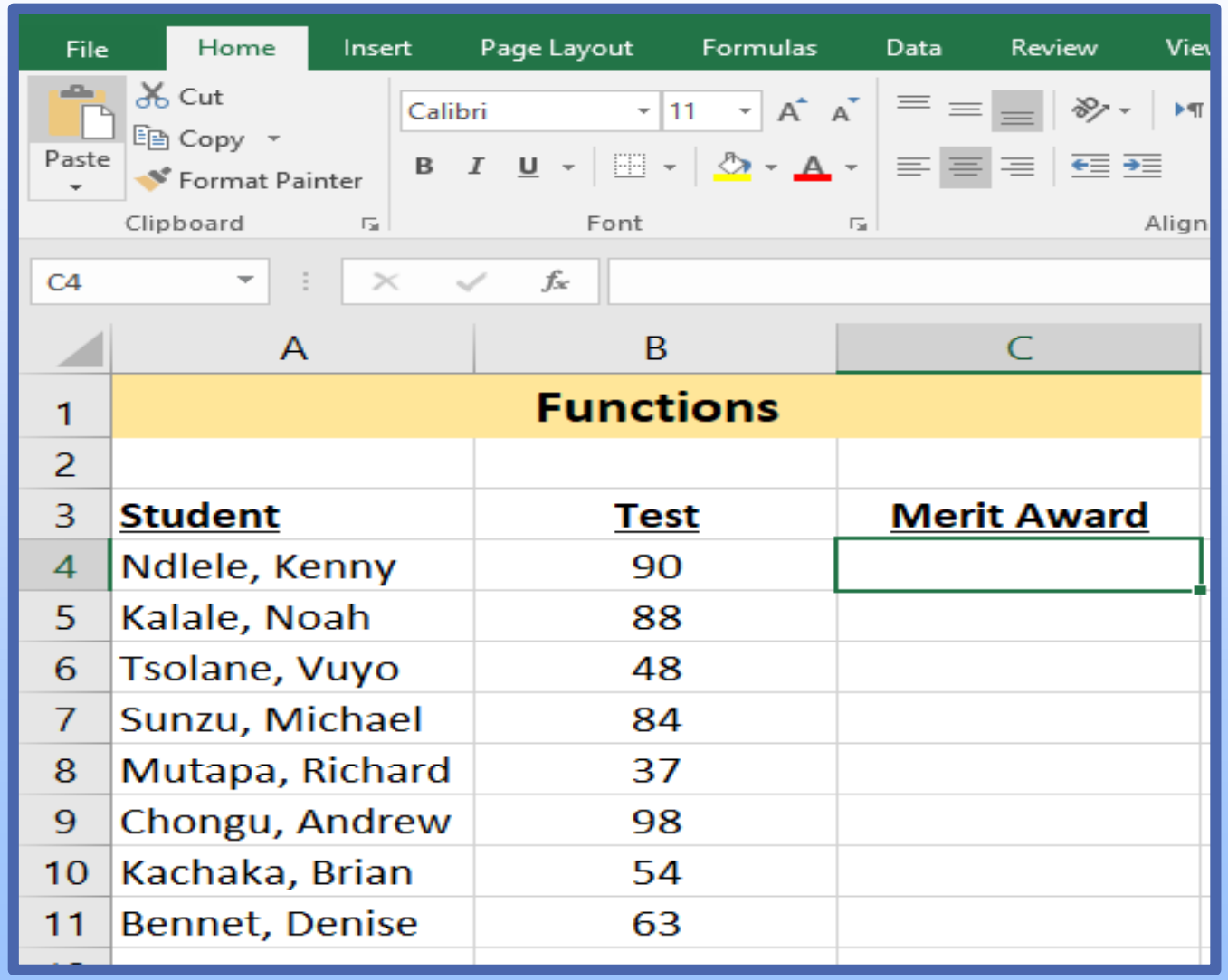
Example:

=IF(B4>=50,"pass","fail")

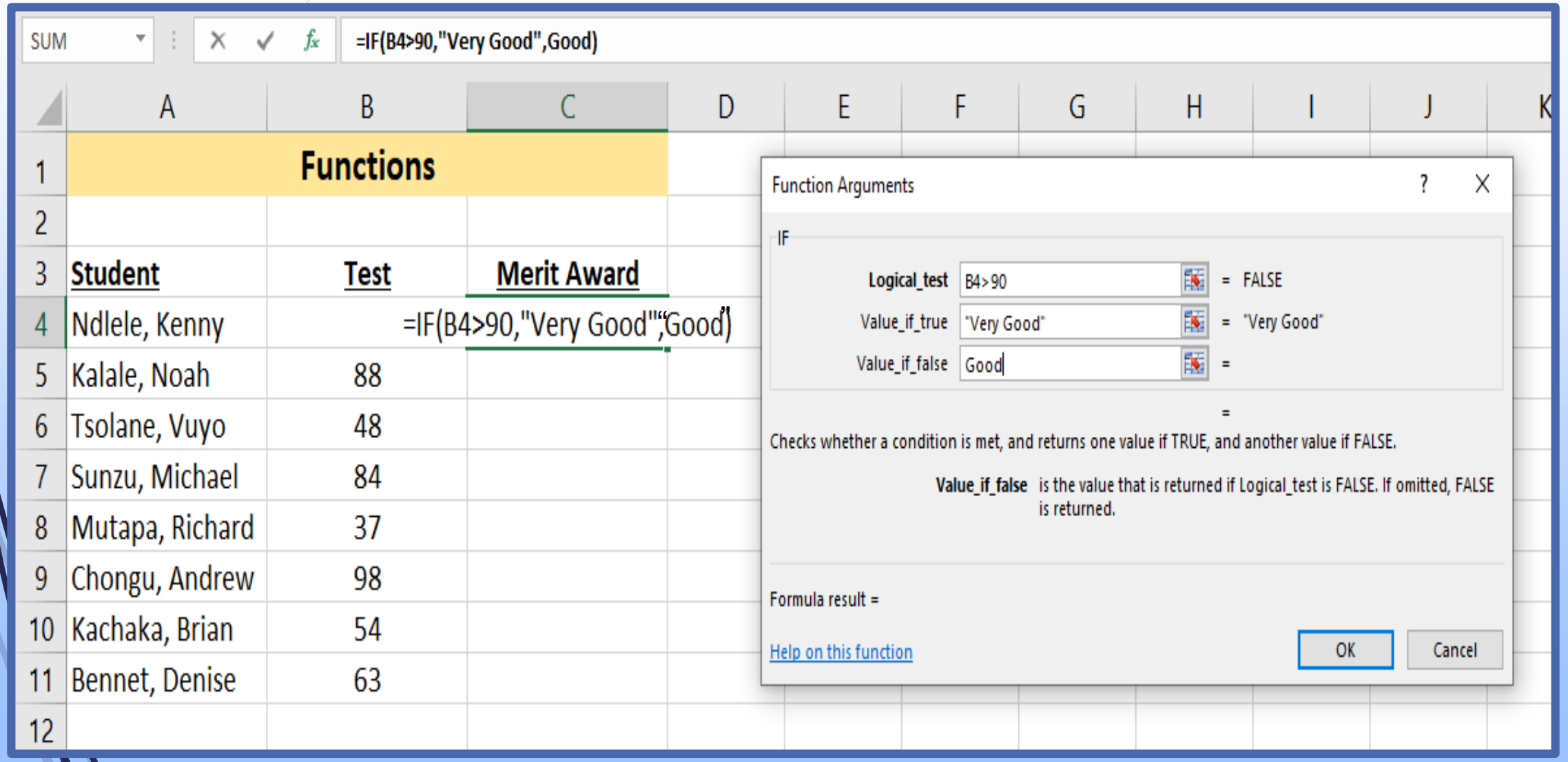
- Condition
- Value if TRUE
- Value if FALSE

IF Function

Use **IF** function in cell **C3** that displays the text "**Very Good**" if the Test for Ndlele,**Kenny** in cell **B4** is **greater than 90** and otherwise displays the text "**Good**". **Copy the function** in cell **C4** to the cell range (**C5:C11**).



IF Function


SUM
=IF(B4>90,"Very Good",Good)
Functions
Student
Test
Merit Award
Ndlele, Kenny
=IF(B4>90,"Very Good",Good)
Kalale, Noah 88
Tsolane, Vuyo 48
Sunzu, Michael 84
Mutapa, Richard 37
Chongu, Andrew 98
Kachaka, Brian 54
Bennet, Denise 63
Function Arguments
IF
Logical_test B4>90 = FALSE
Value_if_true "Very Good" = "Very Good"
Value_if_false Good =
Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.
Value_if_false is the value that is returned if Logical_test is FALSE. If omitted, FALSE is returned.
Formula result =
Help on this function
OK
Cancel

IF Function

G9

	A	B	C	D
1	**Functions**			
2				
3	**Student**	**Test**	**Merit Award**	**Merit Award**
4	Ndlele, Kenny	90	Good	=IF(B4>90,"Very Good","Good")
5	Kalale, Noah	88	Good	=IF(B5>90,"Very Good","Good")
6	Tsolane, Vuyo	48	Good	=IF(B6>90,"Very Good","Good")
7	Sunzu, Michael	84	Good	=IF(B7>90,"Very Good","Good")
8	Mutapa, Richard	37	Good	=IF(B8>90,"Very Good","Good")
9	Chongu, Andrew	98	Very Good	=IF(B9>90,"Very Good","Good")
10	Kachaka, Brian	54	Good	=IF(B10>90,"Very Good","Good")
11	Bennet, Denise	63	Good	=IF(B11>90,"Very Good","Good")

SUMIF Function

The **SUMIF** function in Excel **sums values in a range that meet a single, specified condition.** You provide it with the range to evaluate, the criteria, and the range to sum, which can be a different range than the one being evaluated. For example, to find the total sales for the "East" region, you would sum the "Sales" column, where the "Region" column equals "East".

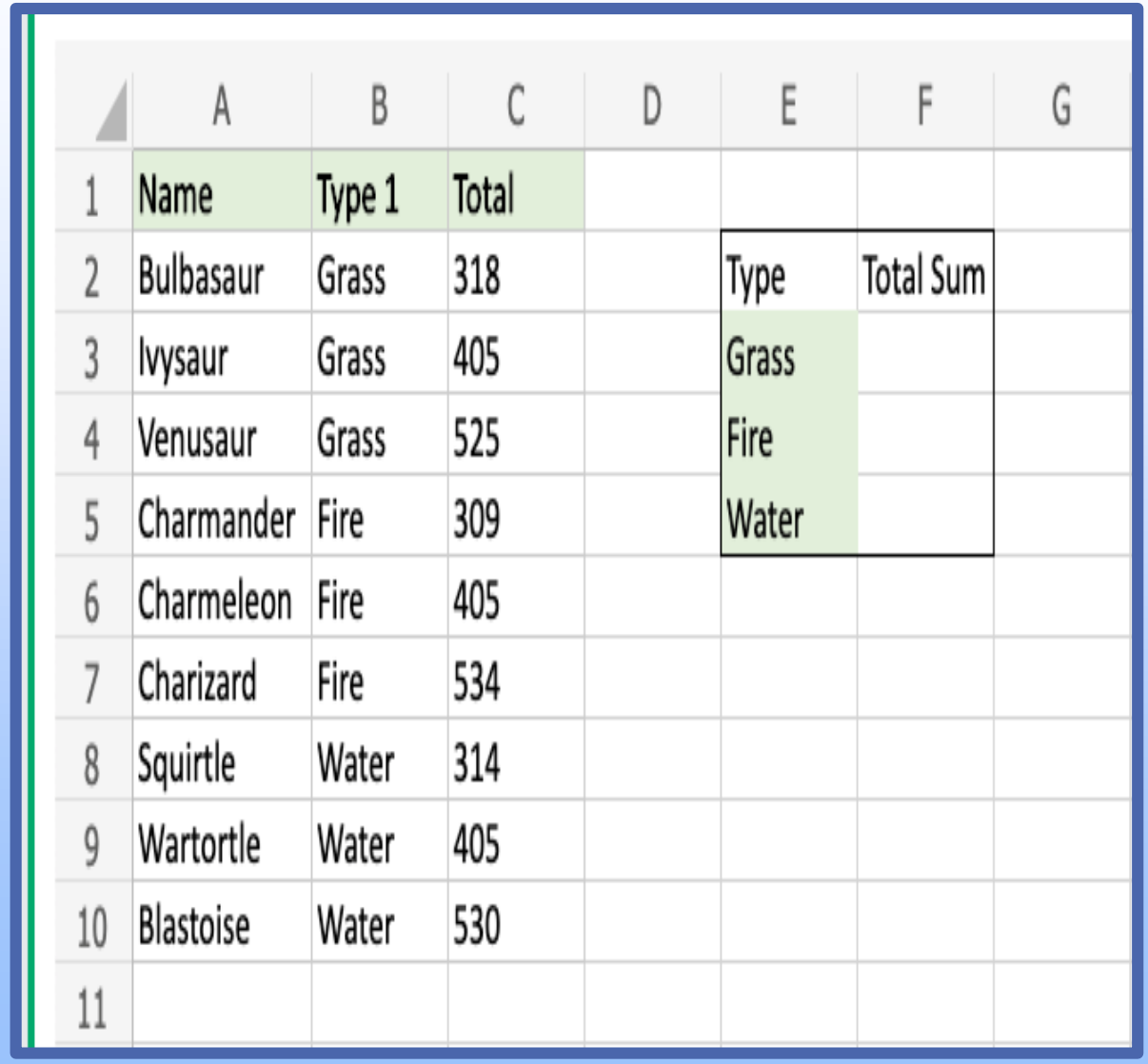
SUMIF Function

The basic **syntax** is **=SUMIF(range, criteria, Sum_range)**

- **range:** The range of cells you want to evaluate based on the criteria.
- **criteria:** The condition that determines which cells to sum. This can be a number, text, or an expression like ">5" or "John".
- **sum_range:** The optional range of cells to sum. If omitted, the range is summed.

SUMIF Function

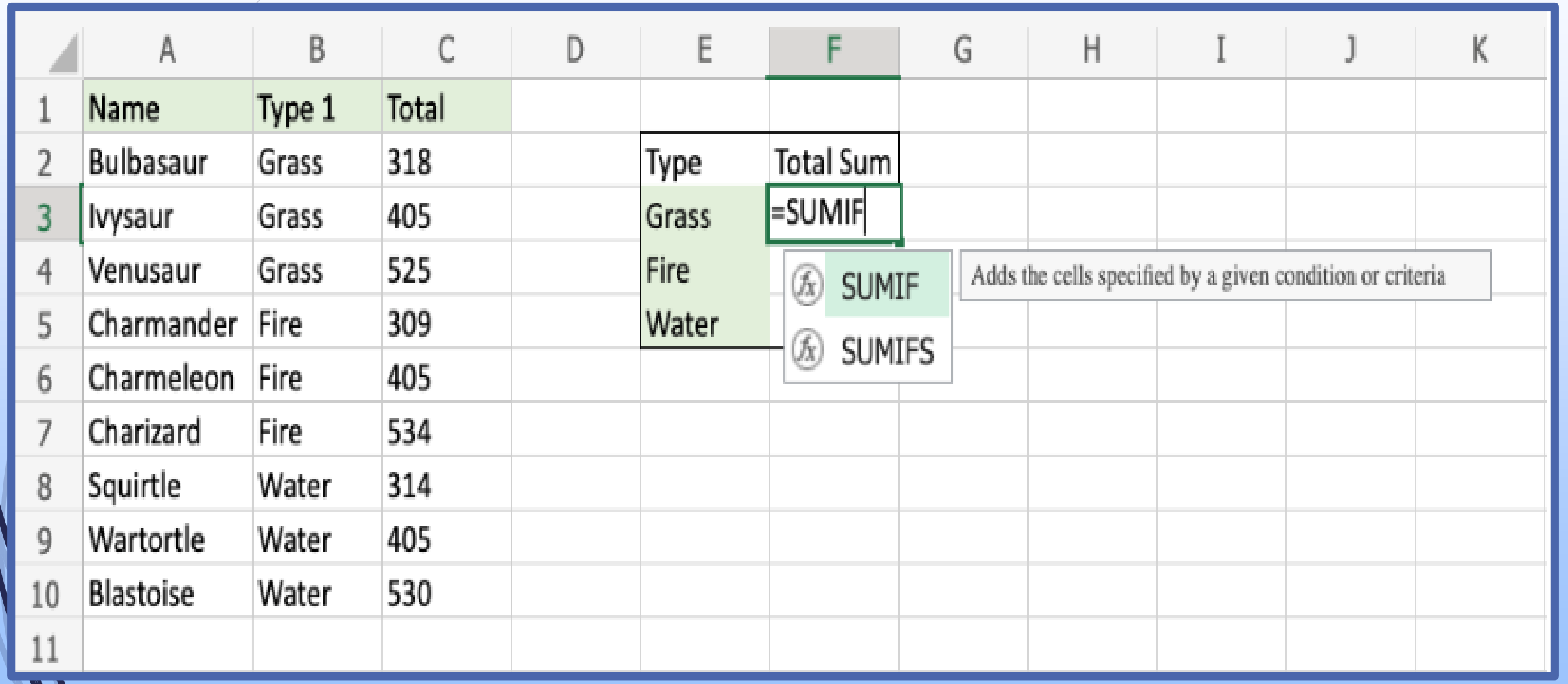
Open **SUMIF Function.xlsx spreadsheet**, then in cell **F3** Find the **sum** of **Total** stats for **Grass type.**



	A	B	C	D	E	F	G
1	Name	Type 1	Total				
2	Bulbasaur	Grass	318		Type	Total Sum	
3	Ivysaur	Grass	405		Grass		
4	Venusaur	Grass	525		Fire		
5	Charmander	Fire	309		Water		
6	Charmeleon	Fire	405				
7	Charizard	Fire	534				
8	Squirtle	Water	314				
9	Wartortle	Water	405				
10	Blastoise	Water	530				
11							

SUMIF Function

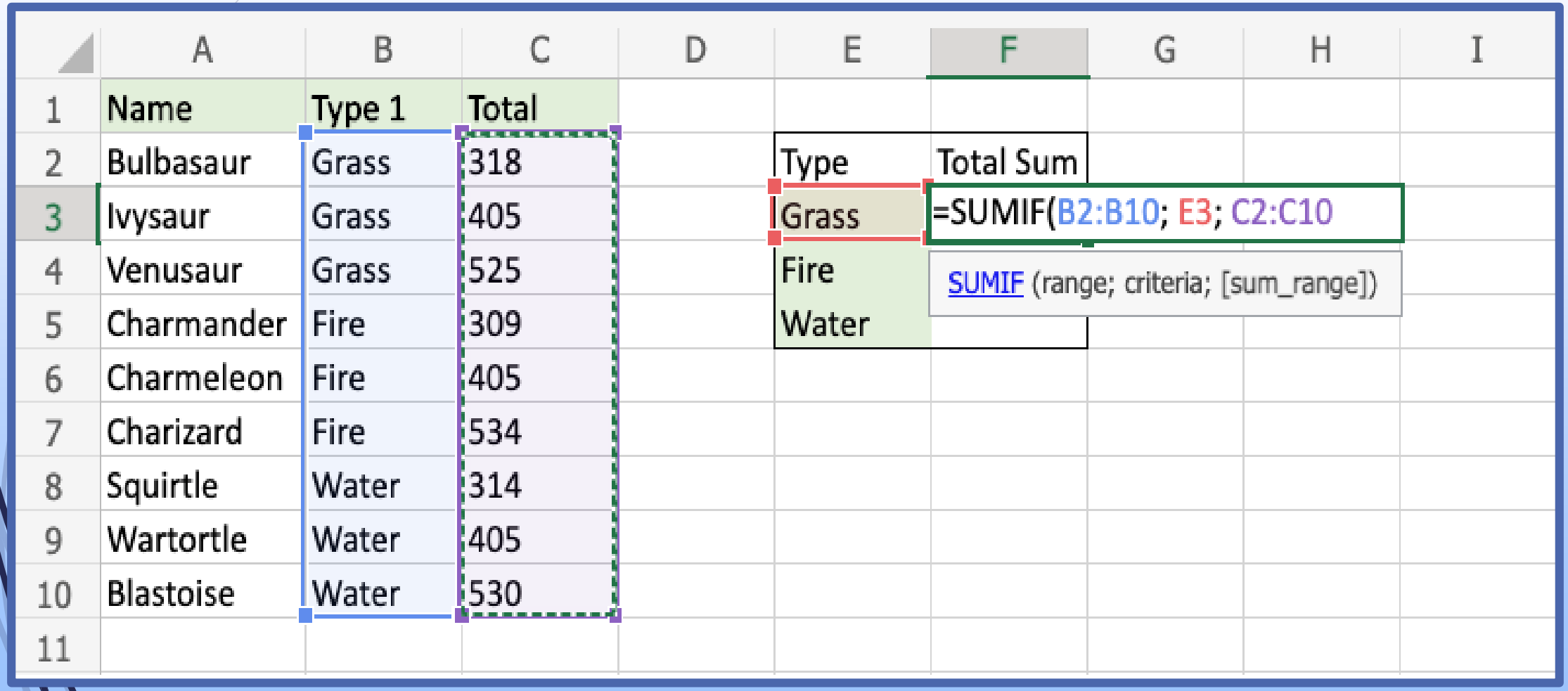
1



	A	B	C	D	E	F	G	H	I	J	K
1	Name	Type 1	Total								
2	Bulbasaur	Grass	318		Type	Total Sum					
3	Ivysaur	Grass	405		Grass	=SUMIF					
4	Venusaur	Grass	525		Fire						
5	Charmander	Fire	309		Water						
6	Charmeleon	Fire	405								
7	Charizard	Fire	534								
8	Squirtle	Water	314								
9	Wartortle	Water	405								
10	Blastoise	Water	530								
11											

SUMIF Function

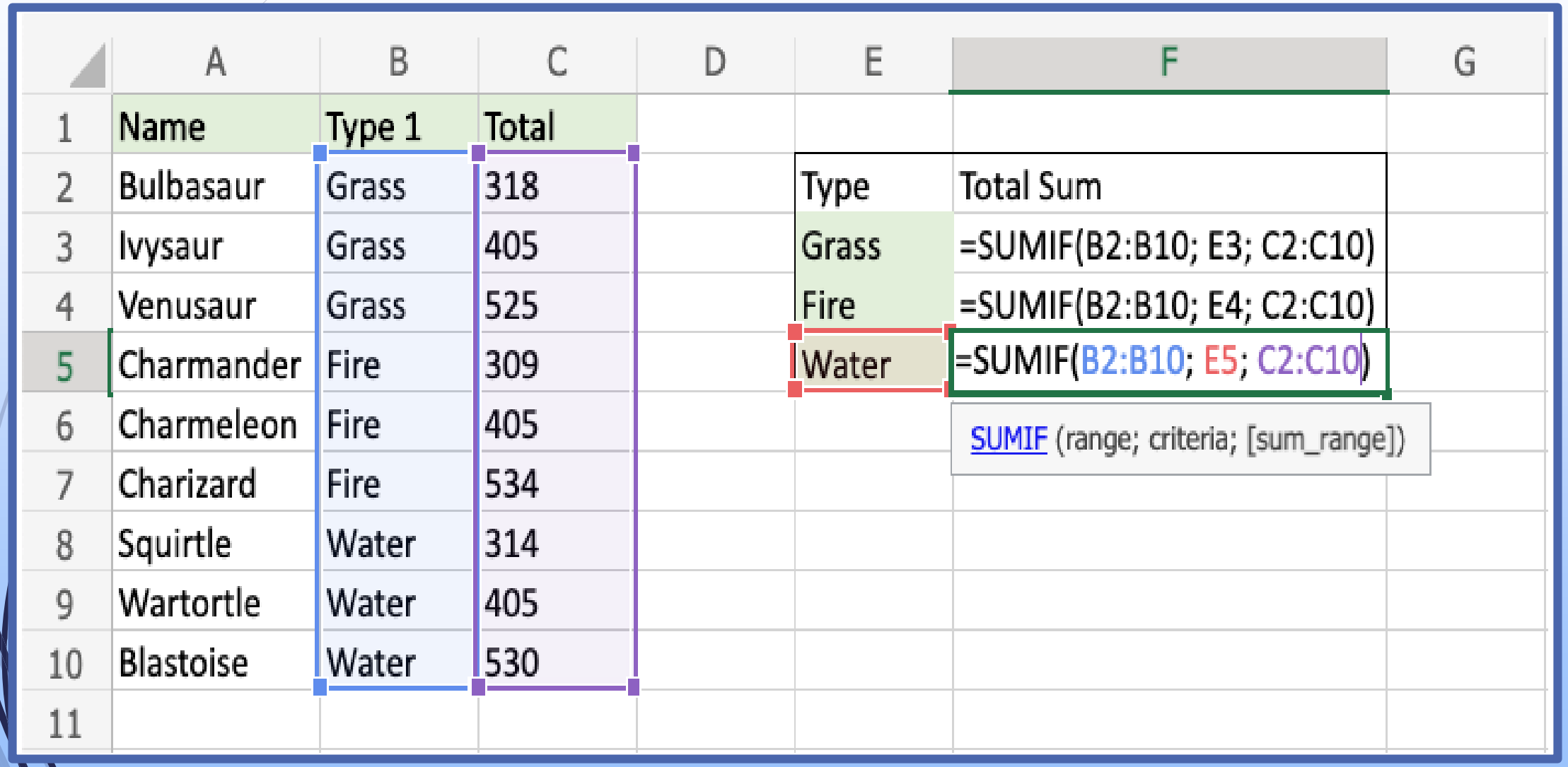
2



	A	B	C	D	E	F	G	H	I
1	Name	Type 1	Total						
2	Bulbasaur	Grass	318		Type	Total Sum			
3	Ivysaur	Grass	405		Grass	=SUMIF(B2:B10; E3; C2:C10			
4	Venusaur	Grass	525		Fire				
5	Charmander	Fire	309		Water				
6	Charmeleon	Fire	405						
7	Charizard	Fire	534						
8	Squirtle	Water	314						
9	Wartortle	Water	405						
10	Blastoise	Water	530						
11									

SUMIF Function

3



	A	B	C	D	E	F	G
1	Name	Type 1	Total				
2	Bulbasaur	Grass	318		Type	Total Sum	
3	Ivysaur	Grass	405		Grass	=SUMIF(B2:B10; E3; C2:C10)	
4	Venusaur	Grass	525		Fire	=SUMIF(B2:B10; E4; C2:C10)	
5	Charmander	Fire	309		Water	=SUMIF(B2:B10; E5; C2:C10)	
6	Charmeleon	Fire	405				
7	Charizard	Fire	534				
8	Squirtle	Water	314				
9	Wartortle	Water	405				
10	Blastoise	Water	530				
11							

SUMIF (range; criteria; [sum_range])

Functions Apply Skills (out of 5)

- **Open** the Spreadsheet "**Functions Apply Skills.xlsx** "From the hared folder then apply the skills below

- **On Costing worksheet**

1. Enter a function in **cell B15** to calculate the maximum of the **cell range B7 : B11**. Copy the function in **cell B15** to the **cell range C15 : E15**.
2. Enter a function in **cell B16** that displays the text **Yes** if the number in **cell E12** is **greater than 50000** and otherwise displays the text no

Functions Apply Skills

- **Open** the Spreadsheet "**Functions Apply Skills.xlsx**"From the hared folder then apply the skills below

New Members Worksheet

3. Enter a function in cell **B42** to **count** the **new member** names in the cell range **B4 : B40**. Save and close the newmembers.xlsx spreadsheet.

Store Worksheet

4. Enter a function in cell **D10** to help a small store wants to know **how much money was earned from "Fruits" only.**
5. Enter a function in cell **D11** to find How much money was earned **from Quantity greater than 100.**

https://wordwall.net/resource/102199550

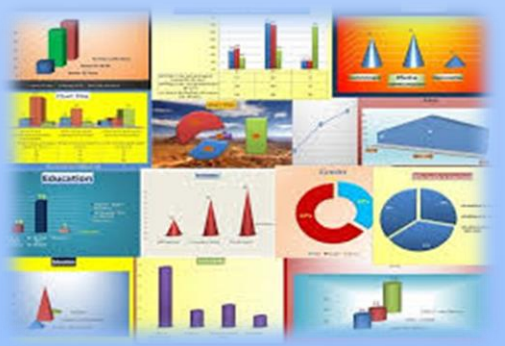
CHARTS

https://www.youtube.com/watch?v=7W5-sojhUW4

Learning Objectives

You will learn about:

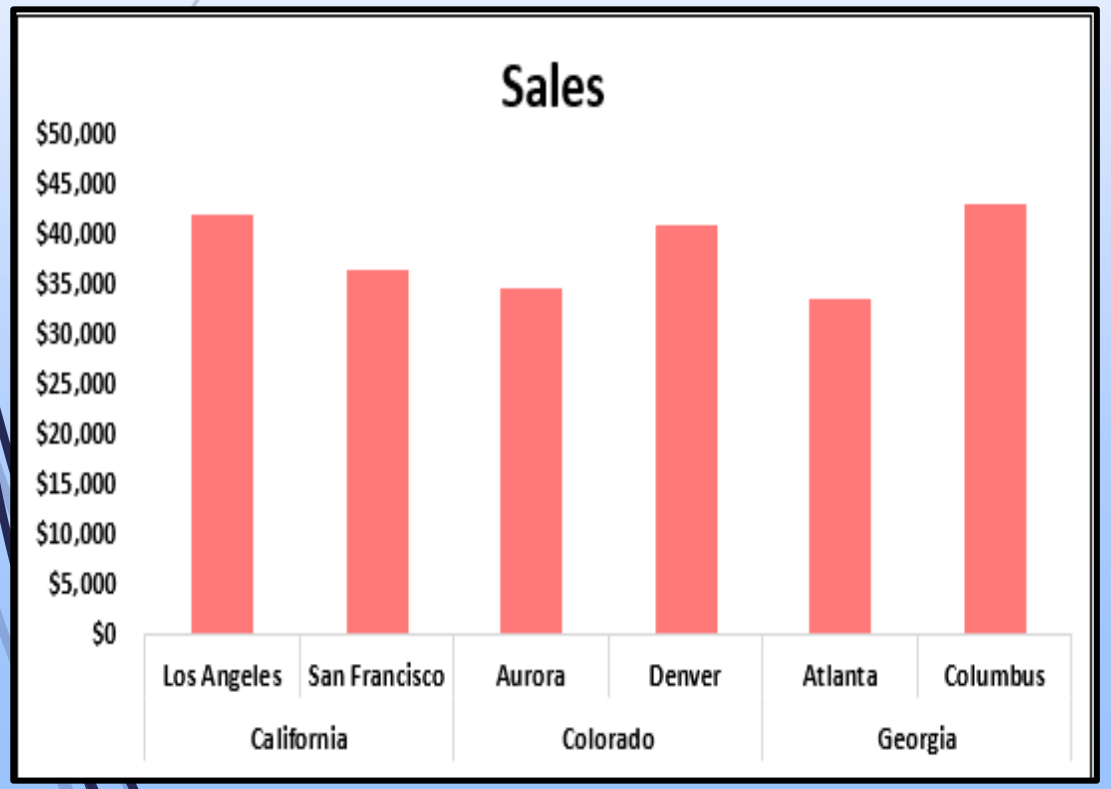
1. Explain why charts are more useful than raw tables.
2. Create a chart by using different type of charts like (Column, Bar, Line, Pie,...).
3. Change Chart Type from one type to another.
4. List the elements of charts(chart Title , Vertical Axis Title , Data Label , Horizontal Axis Title ,Plot Area, Chart Area ,Legend)
5. Add and edit chart elements: (Chart Title – Data Labels – Legend – Axis Titles)



Entry Ticket

- Explain why charts are more useful than raw tables?

Chart



Table

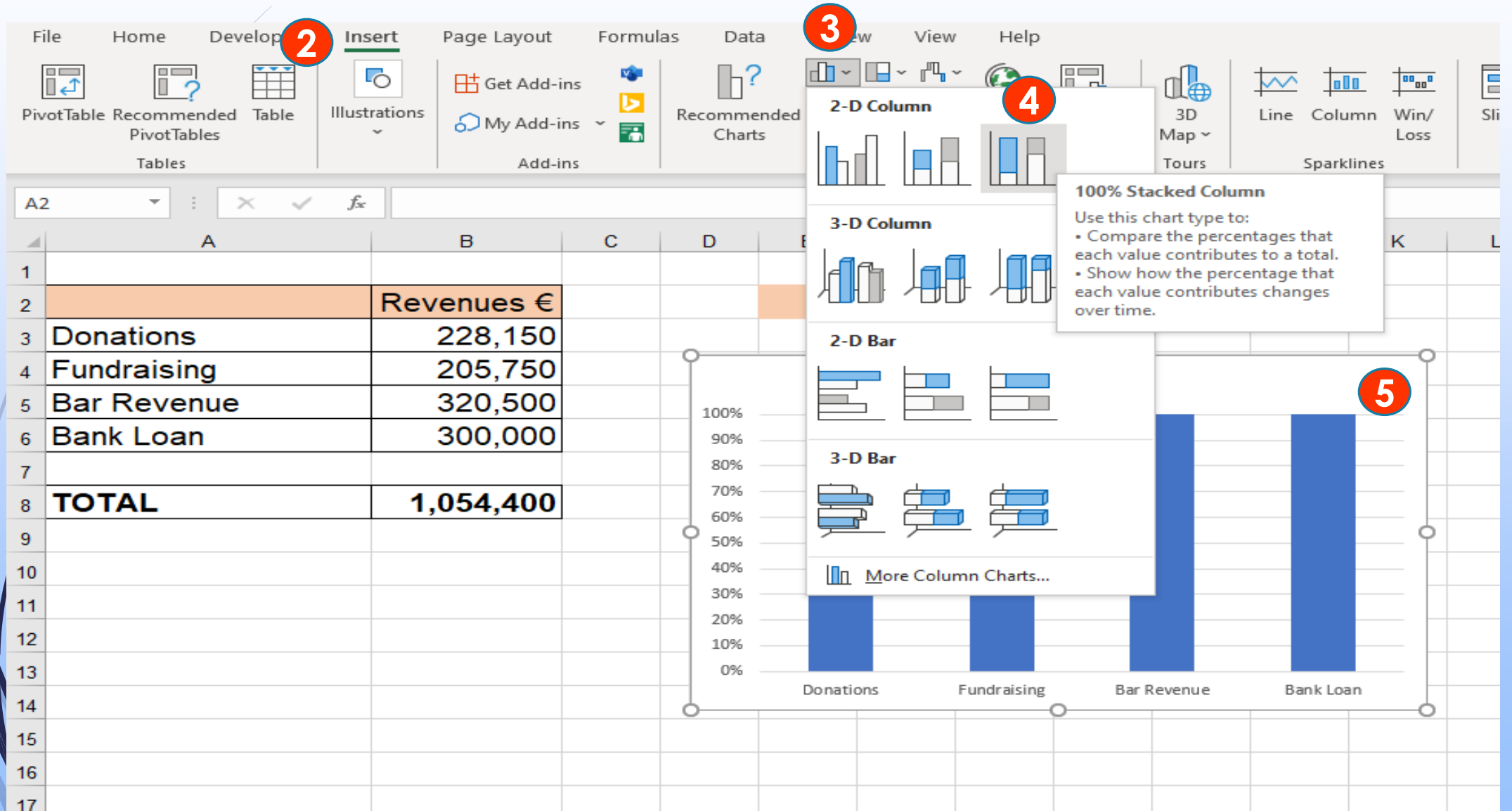
	A	B	C
1	State	City	Sales
2	California	Los Angeles	$41,795
3		San Francisco	$36,457
4	Colorado	Aurora	$34,543
5		Denver	$40,919
6	Georgia	Atlanta	$33,633
7		Columbus	$42,981

Compare between chart and Table

Category	Chart	Table
Easy to understand		
Help compare data quickly		
Highlight the most important information		

Creating Charts

1 Select (A2:B6).



	Revenues €
Donations	228,150
Fundraising	205,750
Bar Revenue	320,500
Bank Loan	300,000
TOTAL	**1,054,400**

Chart Apply Skills (out of 2)

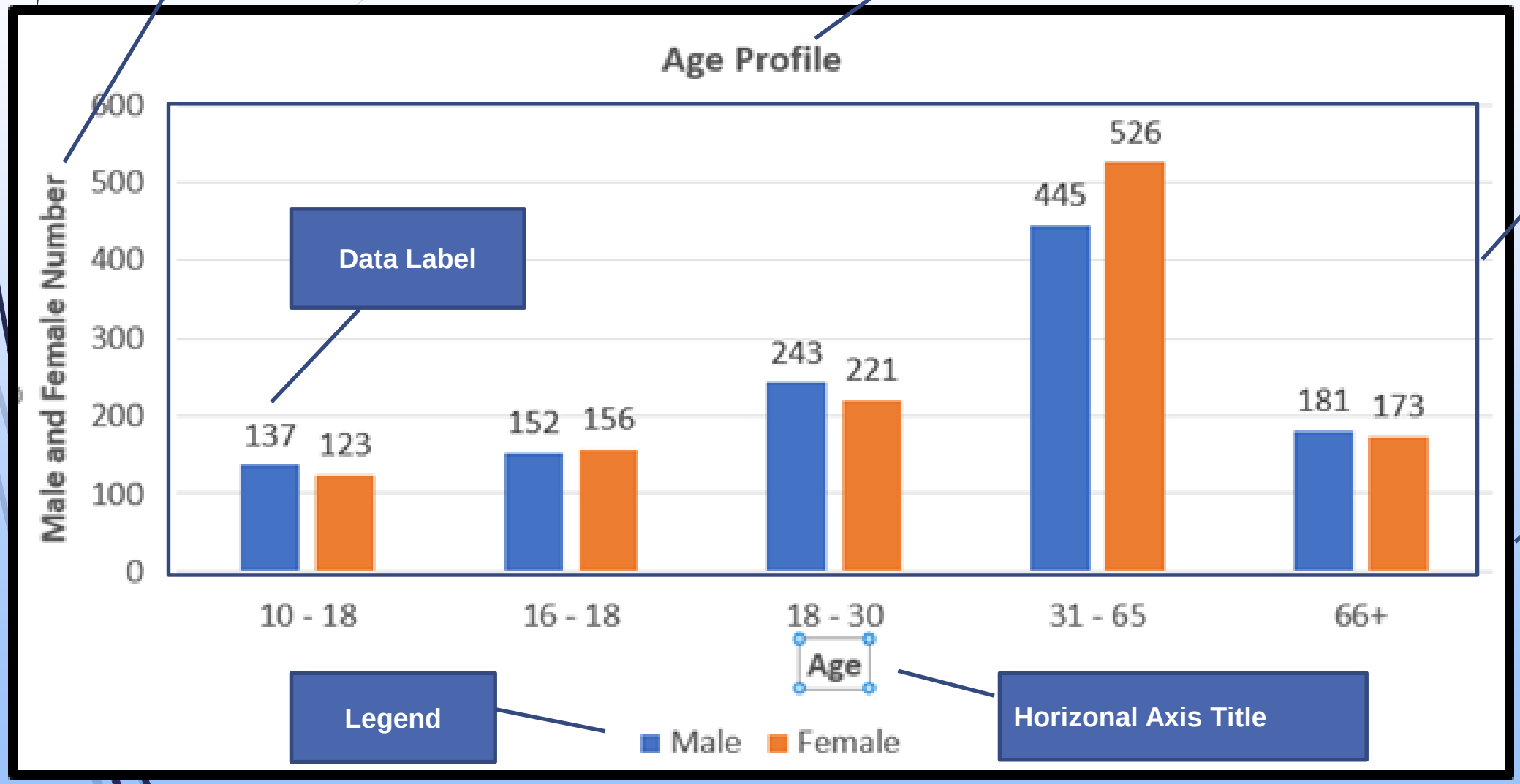
- **Open** the Spreadsheet "**Chart.xlsx**" From your own folder then apply the skills below:
- **On Bank Loan worksheet**

1. Create a **2-D Clustered Column** chart, from the **cell range A2 : B6**.
2. **Move** the column chart to cell **E2**.

On Extra Chart worksheet

1. Create a **3_D Line Chart**, from the cell range A3 : C8.
2. **Move** the column chart to G3.

Chart Elements

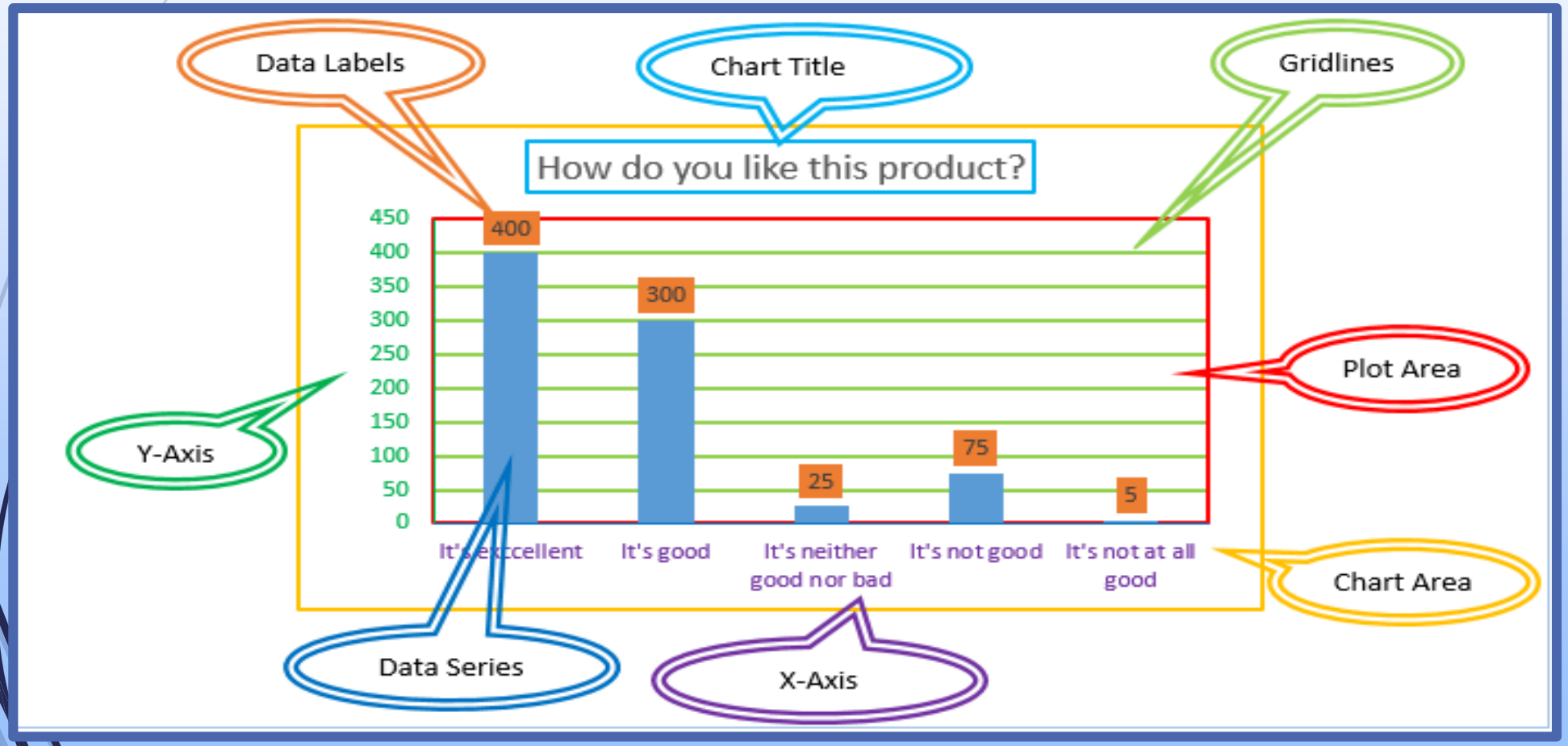


Charts Elements

Chart Element	Definition	Use
Chart Title	Main heading of the chart	Tells the viewer what the chart is about
Vertical Axis Title	Label for Y-axis	Shows units/measure of values
Horizontal Axis Title	Label for X-axis	Explains categories or time
Data Labels	Numbers on the chart	Shows exact values clearly
Legend	Explains colors/symbols	Helps identify data series
Plot Area	Space where data is drawn	Displays bars/lines/slices
Chart Area	Entire chart container	Overall formatting and layout

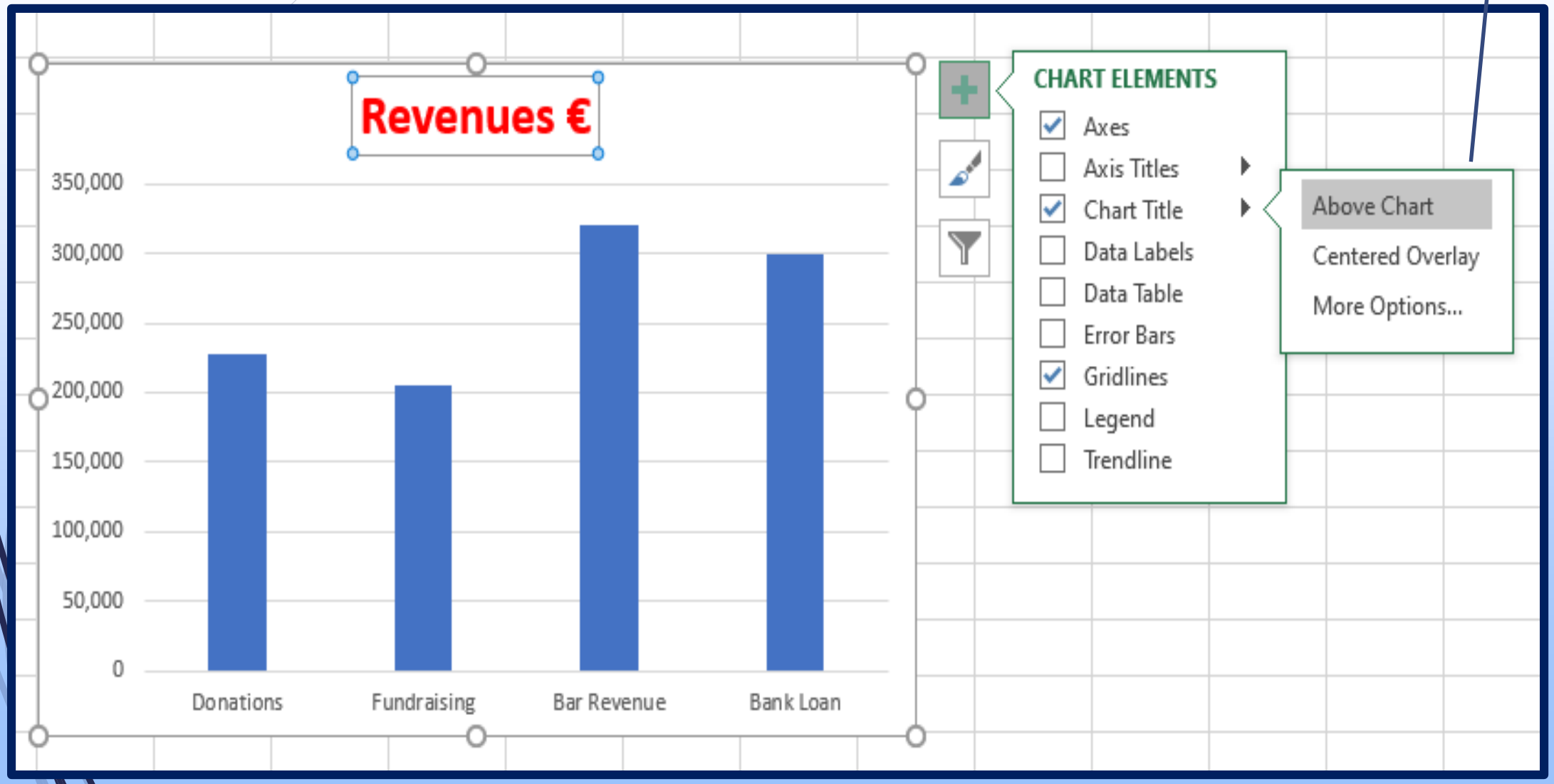
Lets Play

https://wordwall.net/resource/102396869

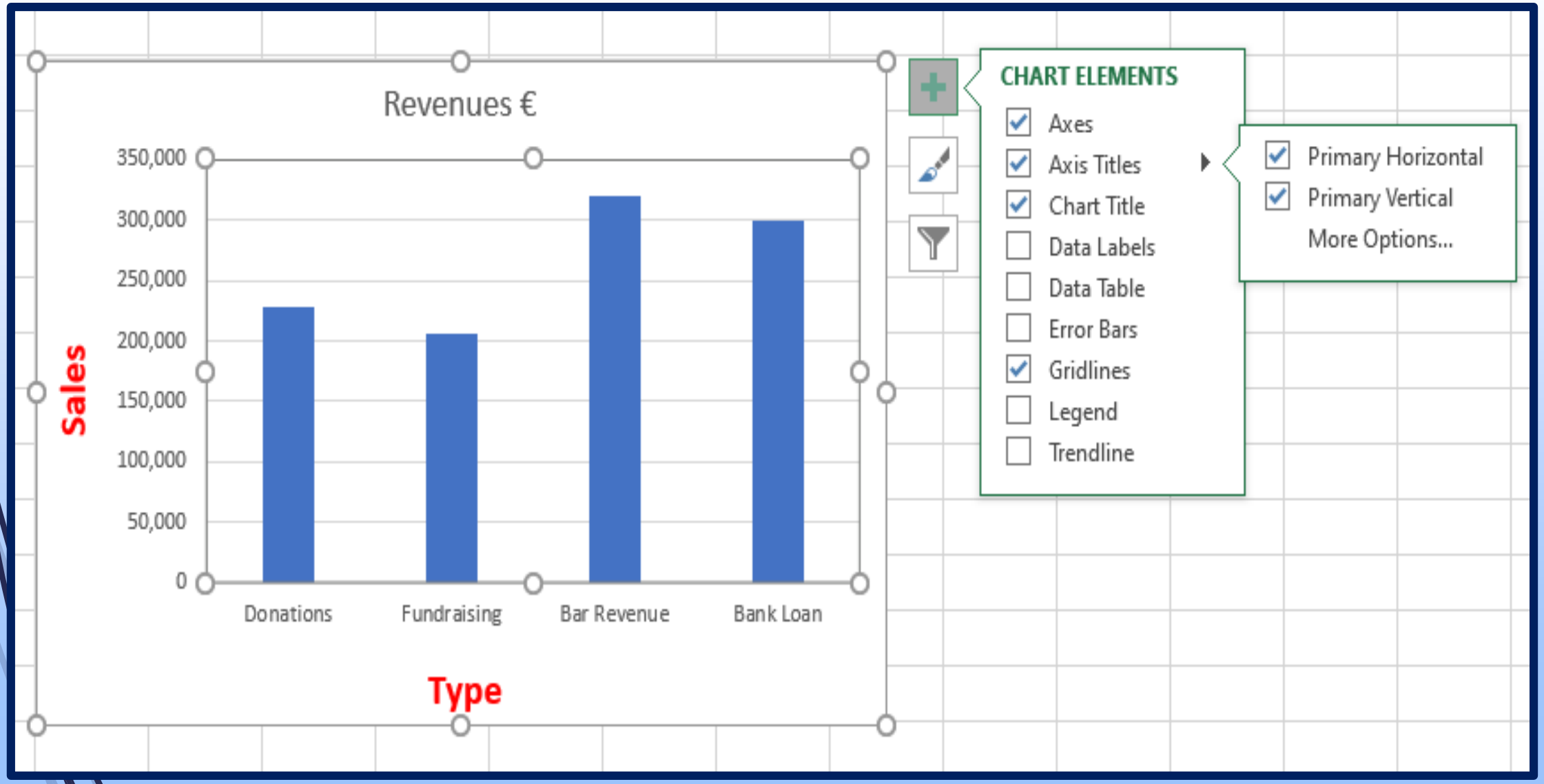


Title Charts

Position of the Title Chart

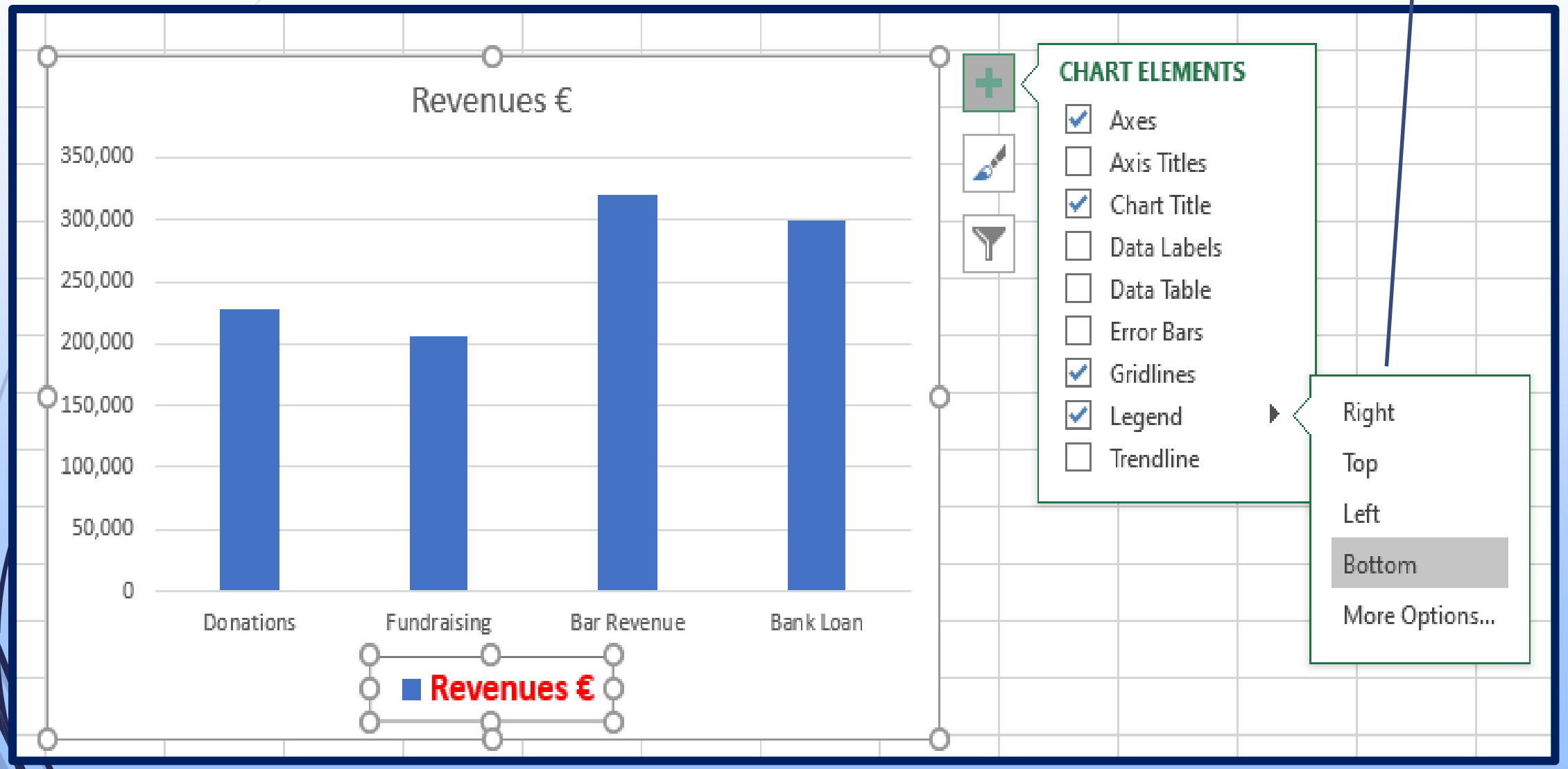


Axis title


Revenues €
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Sales
Donations
Fundraising
Bar Revenue
Bank Loan
Type
CHART ELEMENTS
Axes
Axis Titles
Chart Title
Data Labels
Data Table
Error Bars
Gridlines
Legend
Trendline
Primary Horizontal
Primary Vertical
More Options...

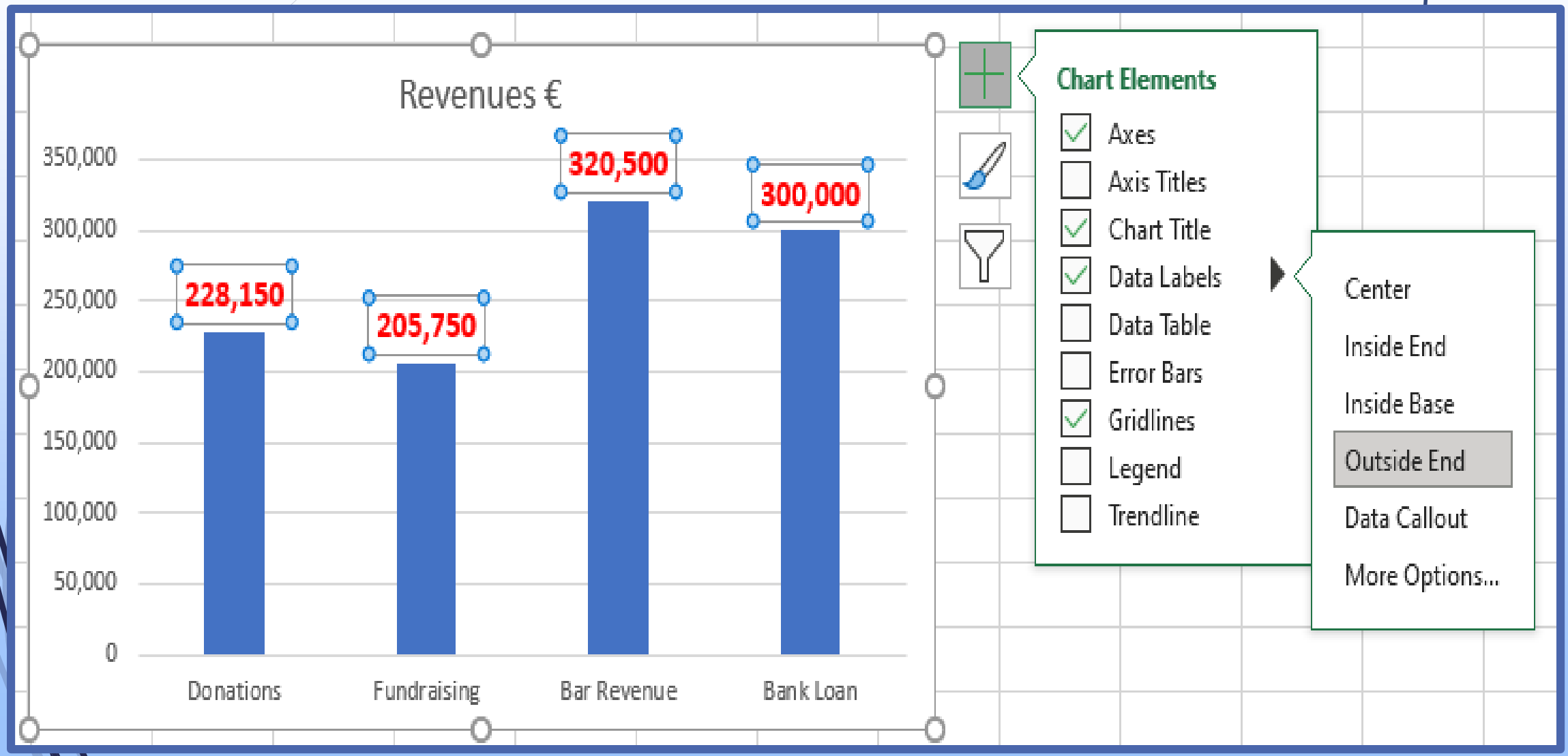
Legend

Position of the Legend



Data Label

Position of the Data Label



Add chart elements

1. Select the chart

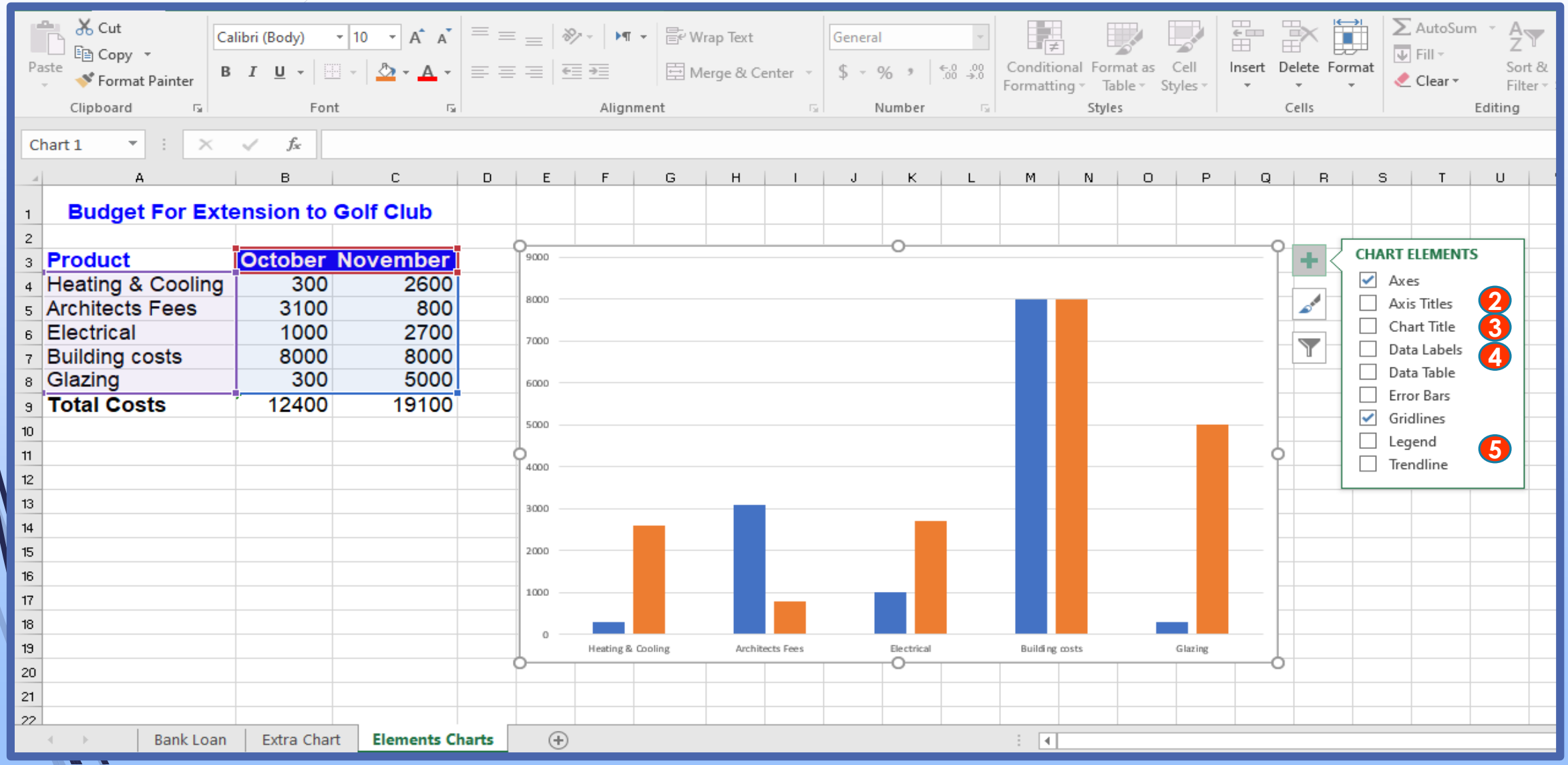


Chart Apply Skills

- **Open** the Spreadsheet "**Chart.xlsx**" From your own folder then :
- **On "Elements Charts" worksheet**

1. Add the **title :Budget Of Gulf Club"** to the chart.
2. Add the **X-axis title :"Product"** to the chart.
3. Add the **Y-axis title :"Sales"** to the chart.
4. Add **Inside End Data Label.**
5. Add **Bottom Legend.**

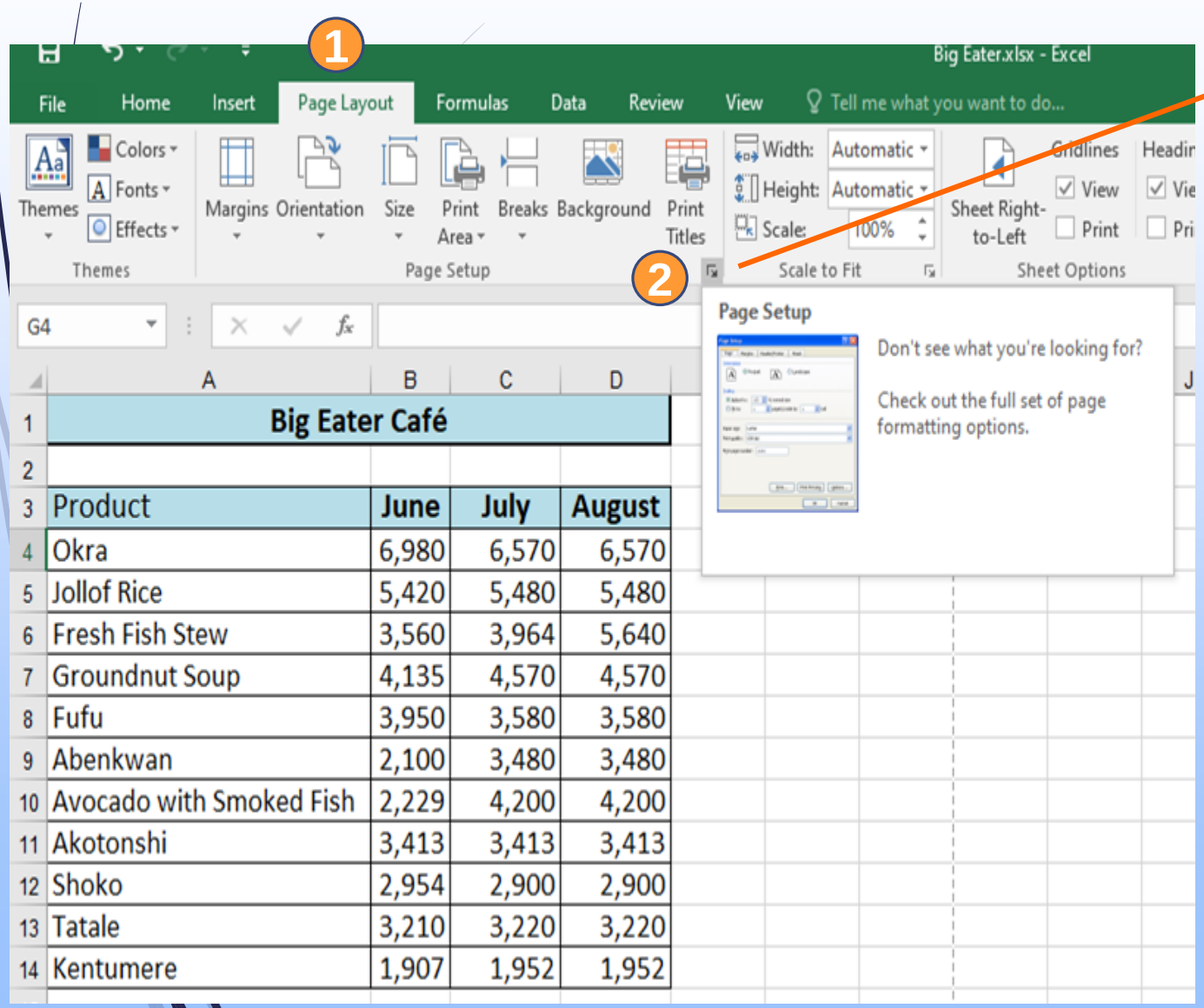
Header & Footer

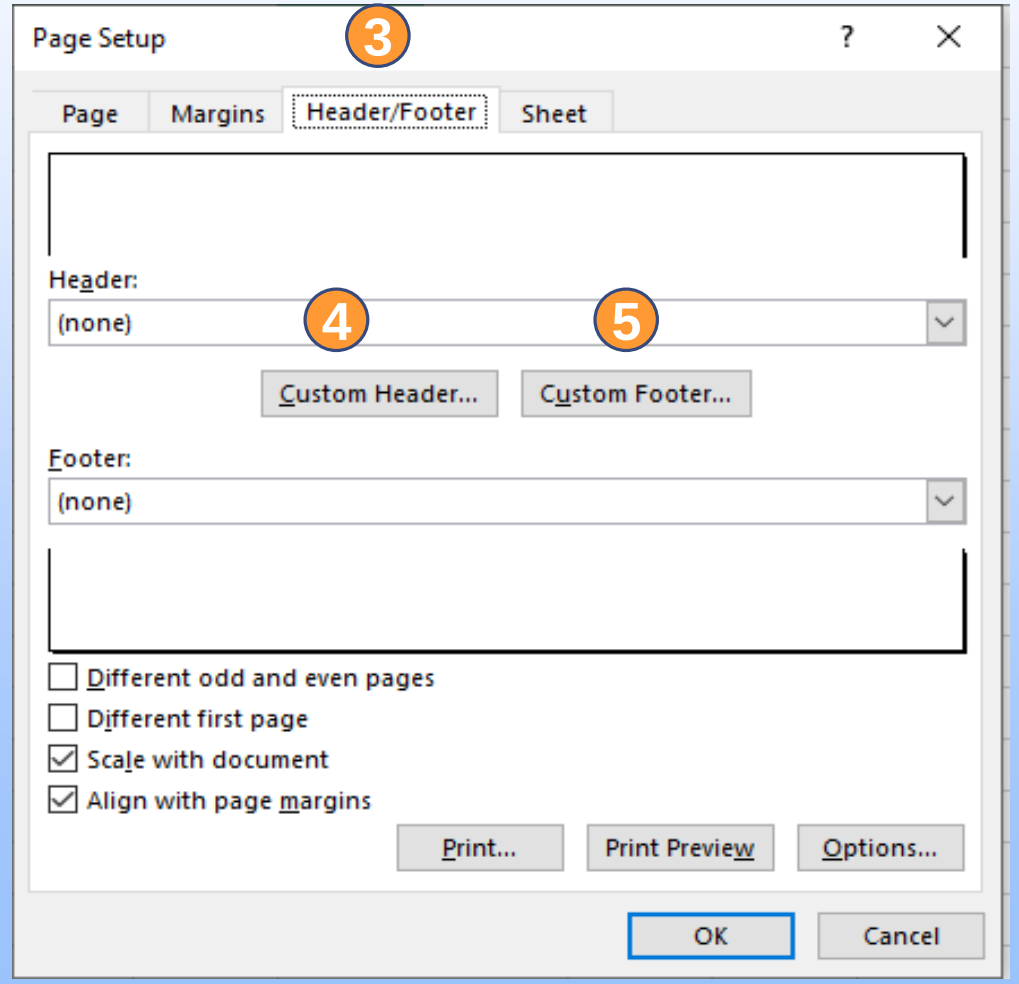
Header and footer in a worksheet

- You can add headers or footers at the top or bottom of a printed worksheet in Excel.
- For example, you might create a footer that has page numbers, the date, and the name of your file.
- You can create your own, or use many built-in headers and footers.

Header and Footer

Click on the launcher to open the" Page Setup "dialog box



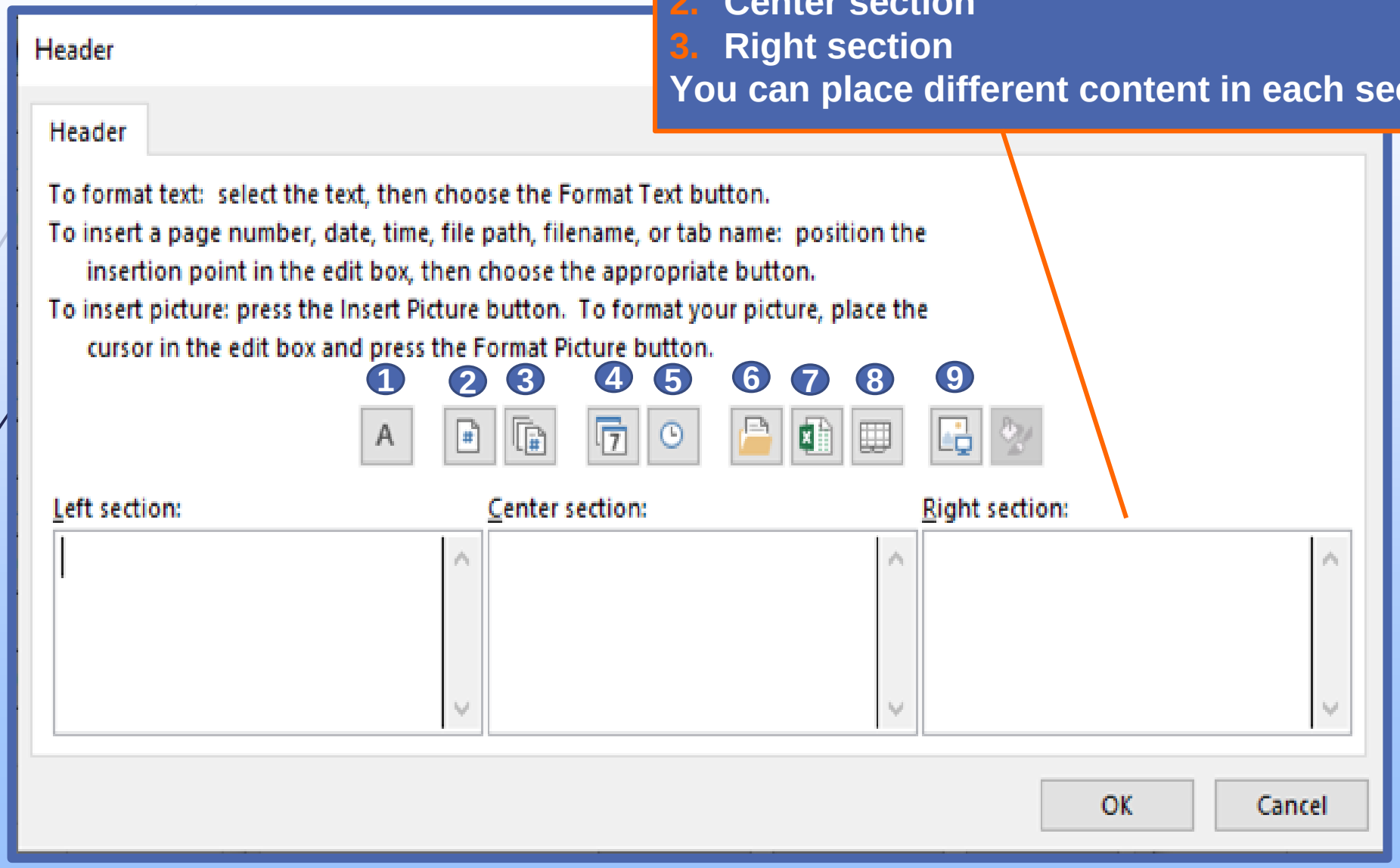


Custom Header

A header in Excel is divided into three sections:

1. Left section
2. Center section
3. Right section

You can place different content in each section.



Parts of Header Dialog box

1. Format Text
2. Insert Page Number
3. Insert Number of Pages
4. Insert Date
5. Insert Time
6. Insert File Path
7. Insert File Name
8. Insert Sheet Name
9. Insert Picture

Note:
The Parts of the custom Footer are the same of the parts of custom header

Header and Footer Apply Skills

- **Open** the Spreadsheet "**SUMIF.xlsx**" From your own folder then apply the skills below:
- **On SUMIF Worksheet**

1. Add your **First and Last Name** into the **right** section of the **Header**.
2. Insert **File Name** into the **Left** section of the **Header.**
3. Insert **Page Number** into the **Left** section of the **Footer**.
4. Insert **Date and Time** into the **Right** section of the **Footer**.