

GE-161L

Introduction to Information and Communication Technologies

Laboratory 06

Introduction to Microsoft ® Excel Spreadsheet – I

Version: 1.0.0

Release Date: 14-02-2022

Department of Information Technology

University of the Punjab

Lahore, Pakistan

Contents:

- Learning Objectives
- Required Resources
- General Instructions
- Background and Overview
 - Microsoft ® Excel
- Activities
 - Pre-Lab Activity
 - Open Microsoft ® Excel
 - Understanding Workbooks
 - Navigating in a file
 - Merge cells
 - Enter data
 - Format cells
 - Resize column
 - Using Ribbon
 - Double Click Method
 - Task 01: Creating Initial Worksheet
 - In-Lab Activity
 - Currency Style Formatting
 - Formula
 - Use Function
 - AutoSum
 - Adding Columns
 - Formula View
 - Adding Rows
 - Sorting Data
 - Custom Sort
 - Precedence of Operations
 - Conditional Formatting
 - Line Break within a cell
 - Wrap Text
 - Freeze Panes
 - Task 01: Population Analysis
 - Task 02: Formatting Data
 - Post-Lab Activity
 - Task 01: GPA Calculation
- Submissions
- Evaluations Metric
- References and Additional Material
- Lab Time and Activity Simulation Log

Learning Objectives:

- Basics of Microsoft ® Excel
- Formatting Excel worksheets
- Basic Formulas in Microsoft ® Excel
- Sorting Data

Resources Required:

- Computer / Laptop
- Microsoft ® Excel

General Instructions:

- This is an individual lab, you are strictly **NOT** allowed to discuss your solution with your colleagues, even not allowed to ask how is he/she is doing, may result in negative marking. You can **ONLY** discuss with your TAs or with me.
- Your TAs will be available in the lab for your help. Alternatively, you can send me your queries via email.

Teachers:		
Course Instructor	Prof. Dr. Syed Waqar ul Qounain	swjaffry@pucit.edu.pk
Teacher Assistants	Usman Ali	bitf19m007@pucit.edu.pk
	Saad Rahman	bsef19m021@pucit.edu.pk
	Mahreen Asama	bsef19m030@pucit.edu.pk

Background and Overview:

What is Microsoft ® Excel?

Microsoft ® Excel is a commercial spreadsheet application that is produced and distributed by Microsoft for Microsoft ® Windows and Mac OS operating systems. It features the ability to perform basic calculations, use graphing tools, create pivot tables and create macros, among other useful features.

Microsoft ® Excel uses a collection of cells arranged into rows and columns to organize and manipulate data. They can also display data as charts, histograms, and line graphs.

Activities:

Pre-Lab Activities:

Open Microsoft ® Excel:

- Type “excel” in the search bar

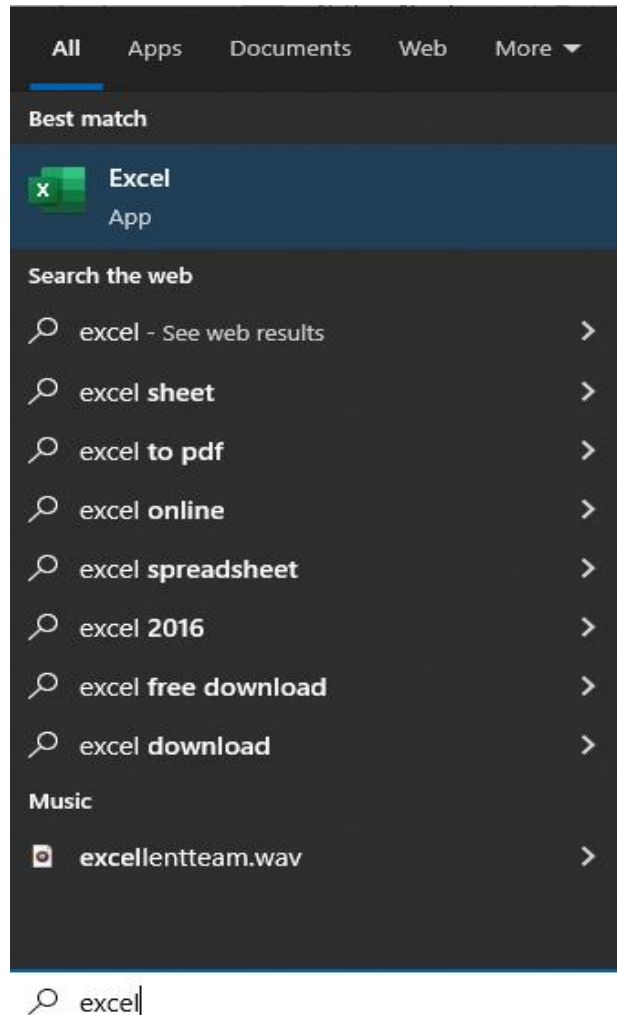


Fig. 1 (Searching Microsoft ® Excel)

- Select “**Excel**” application
- Select a blank workbook

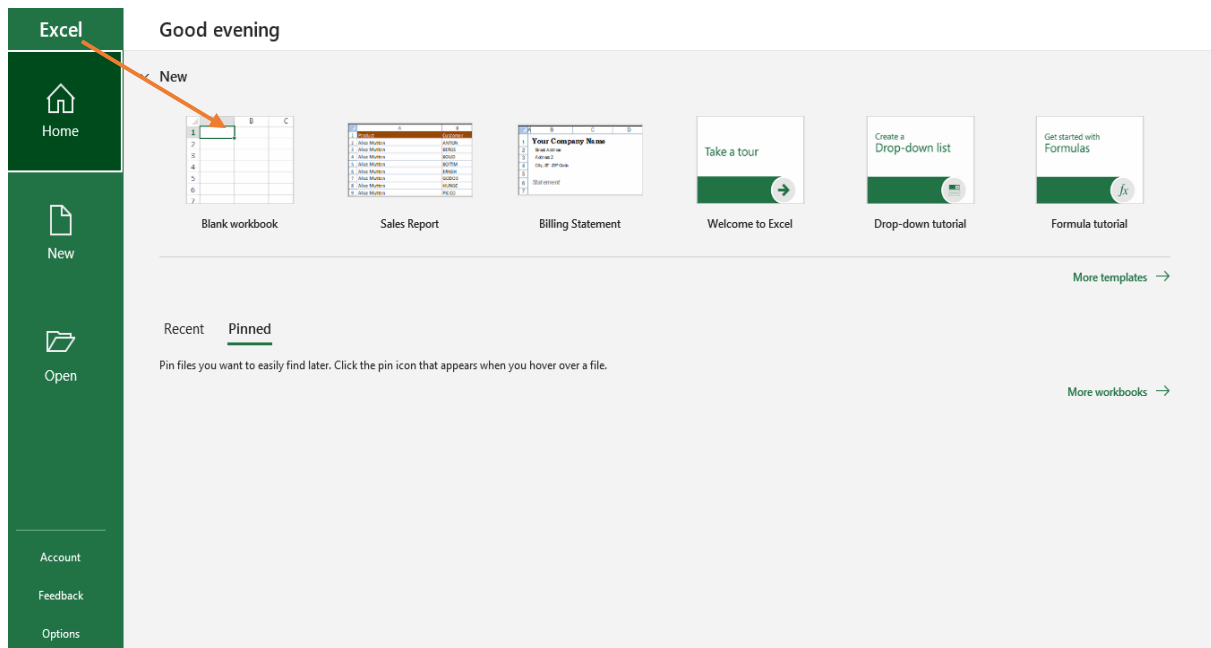


Fig. 2 (Open Blank Worksheet)

Understanding Workbooks:

A worksheet (or page) in a workbook contains **16,384 columns** that are labeled using letters of the alphabet. The first column in a worksheet is labeled column **A**, while the last is labeled **XFD**.

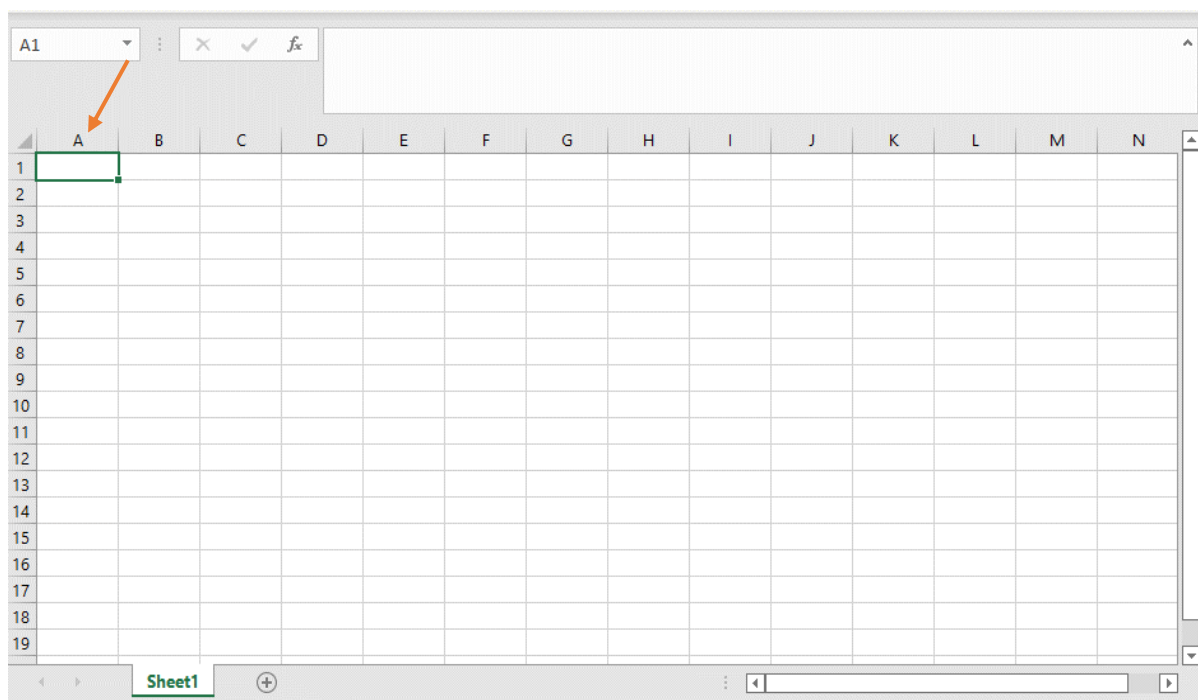


Fig. 3 (Blank Worksheet)

A worksheet (or page) in a workbook contains **1,048,576 rows** that are labeled using numbers from **1** to **1,048,576**.

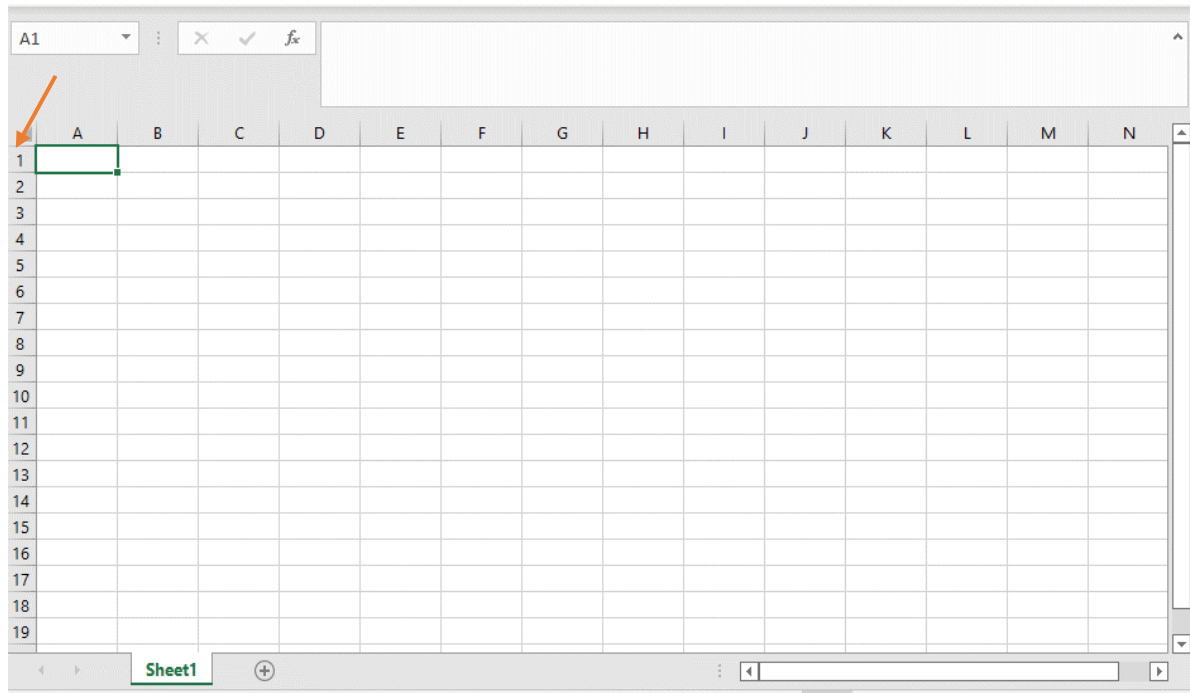


Fig. 4 (Blank Worksheet)

Where a column and row intersect, we get what is known as a cell. You enter your data into these cells. Each cell in a worksheet can hold up to **32,767 characters**. Cells are referred to by their column and row labels. For example, in the figure below the cell, we are pointing to is **B10**, this reference is known as the **cell address** and is most important as it is frequently used in commands and formulas.

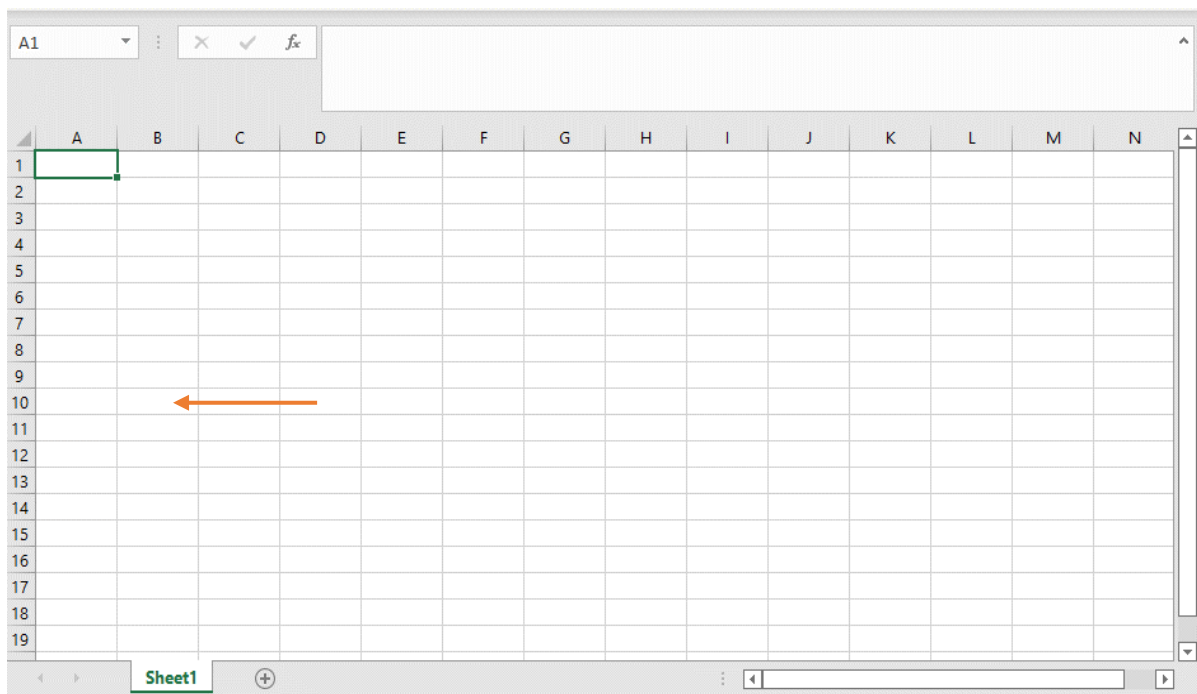


Fig. 5 (Blank Worksheet)

Insert Worksheet button will insert another worksheet into the current workbook.

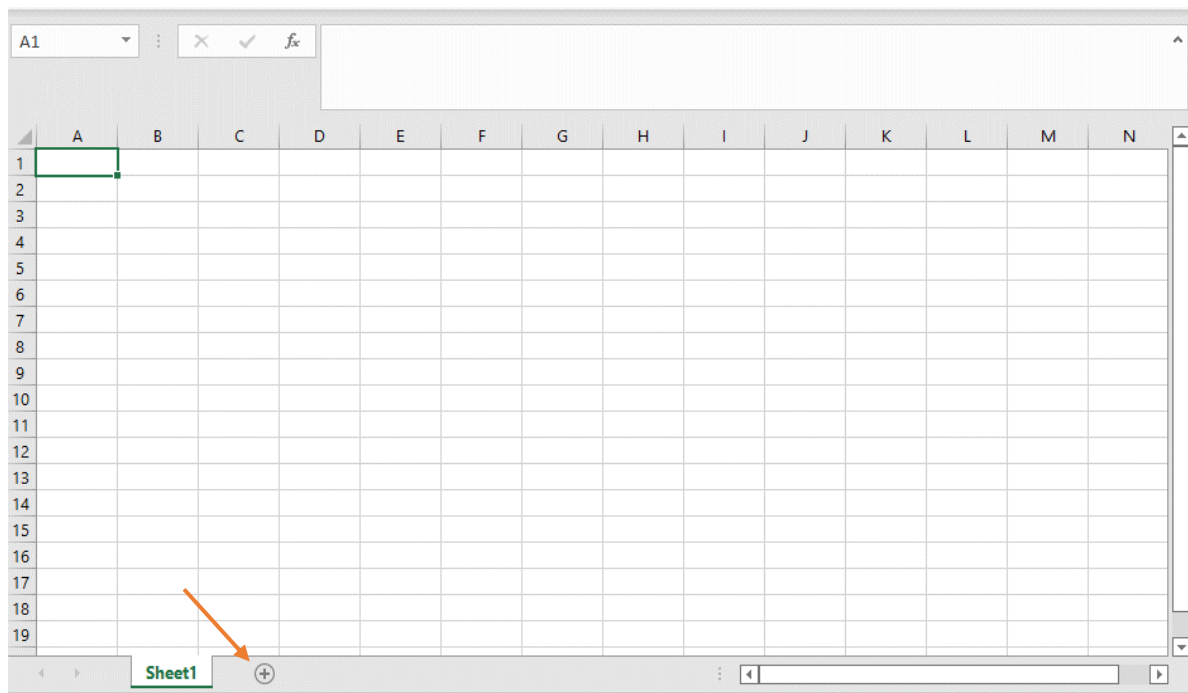


Fig. 6 (Blank Worksheet)

Navigating in a File:

Keys	Movement
Arrow Keys	Move one cell to the right, left, up, or down
Tab	Move one cell to the right
Ctrl + Home	To the beginning of the file
Shift + Tab	Move one cell to the left
Ctrl + End	To end of typed information
Home	Beginning of a line
End	End of a line
F5	To a specific page
Page Down	Down one screen
Page Up	Up to one screen

Merge and Center Cells:

- Click cell **A1** and take note of the appearance of the **buttons** on the **Formula Bar**. Two of them dimmed, indicating they are unavailable



Fig. 7 (Formula bar)

- Note also the **cell address** in the **Name Box**



Fig. 8 (Name box)

- Note the **dark green border** around cell **A1**. This means the cell is selected and ready to accept data



Fig. 9 (Cell)

- Type **Monthly Budget**
- Note how all three buttons on the Formula Bar are now available

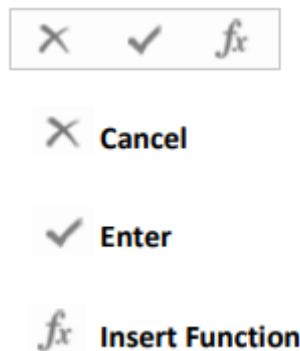


Fig. 10 (Formula bar)

Cancel	Returns the cell content to its previous state
Enter	Commits the changes that were made to the cell. There are many ways to commit changes to a cell, but this button is guaranteed to work all the time, no matter what situation you are in.
Insert Function	Inserts a function into the cell

- Select cells **A1** to **C1** by clicking inside the first cell, making sure your mouse pointer is a **white box cross (selection tool)** and holding the left mouse button down, and dragging across to the last cell of the selection area

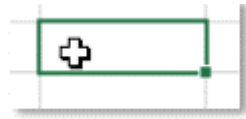


Fig. 11 (Selection tool)

- On the **Home** tab, in the **Alignment** group, click the **Merge & Center** button

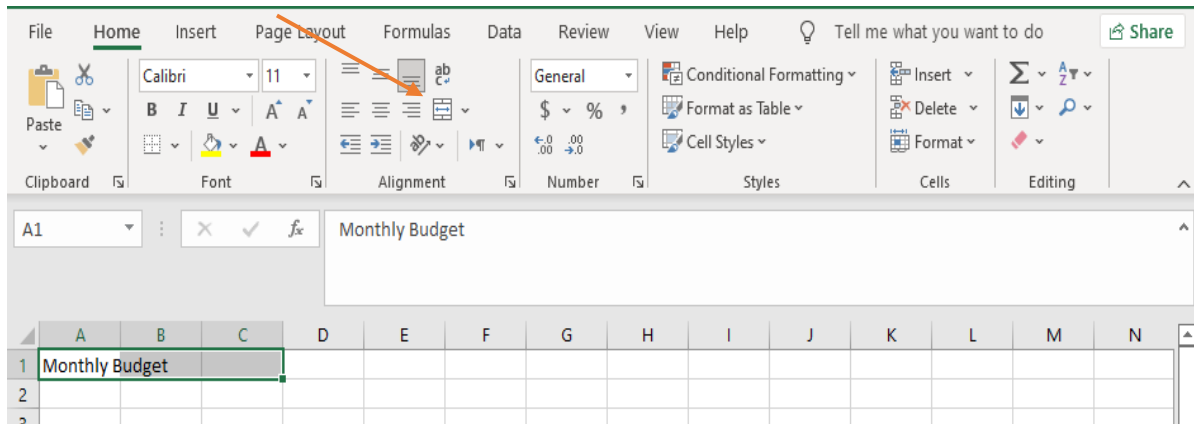


Fig. 12 (Merge Cells)

Enter Data:

- Click in cell **A2**. Type **Item**, and tap the Tab key to move to cell **B2**
- In cell **B2**, type **Amount** and tap the Tab key to move to cell **C2**
- In cell **C2**, type **Comments**
- Move to a different cell to commit the content in C2 or commit with the checkmark

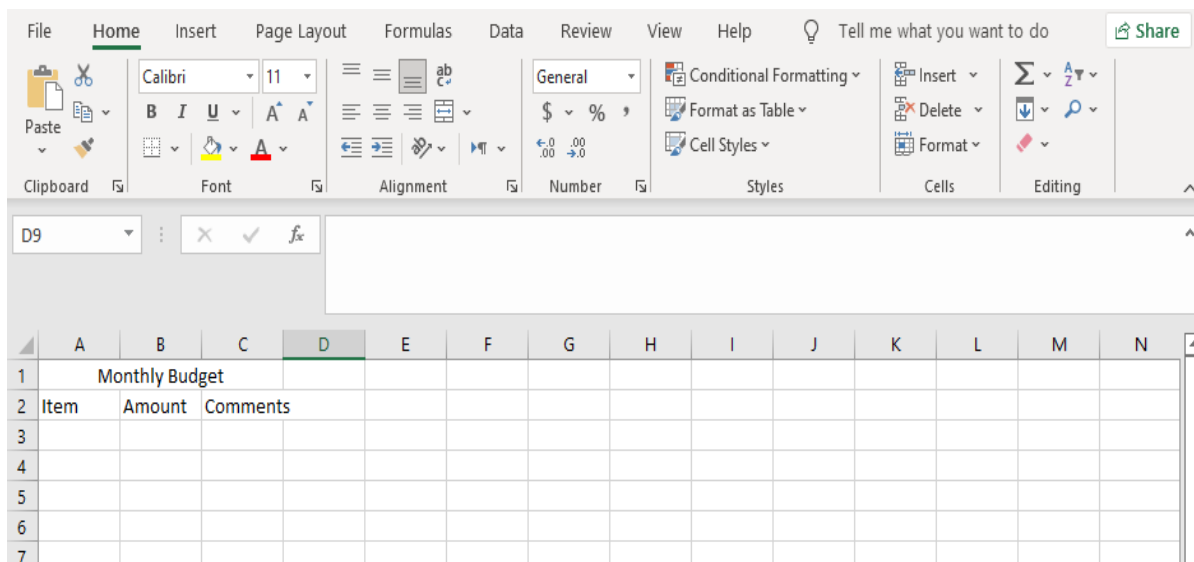


Fig. 13 (Merge Cells)

Format Cells:

- Select the **A2** through **C2** cell range by clicking cell A2, making sure the cursor is the **selection tool** (**white box cross**), and dragging across to cell C2. The selected cells should be highlighted, although the first cell will not be so
- On the **Home** tab in the **Font** group, click the **Bold** button or Press **CTRL+B**

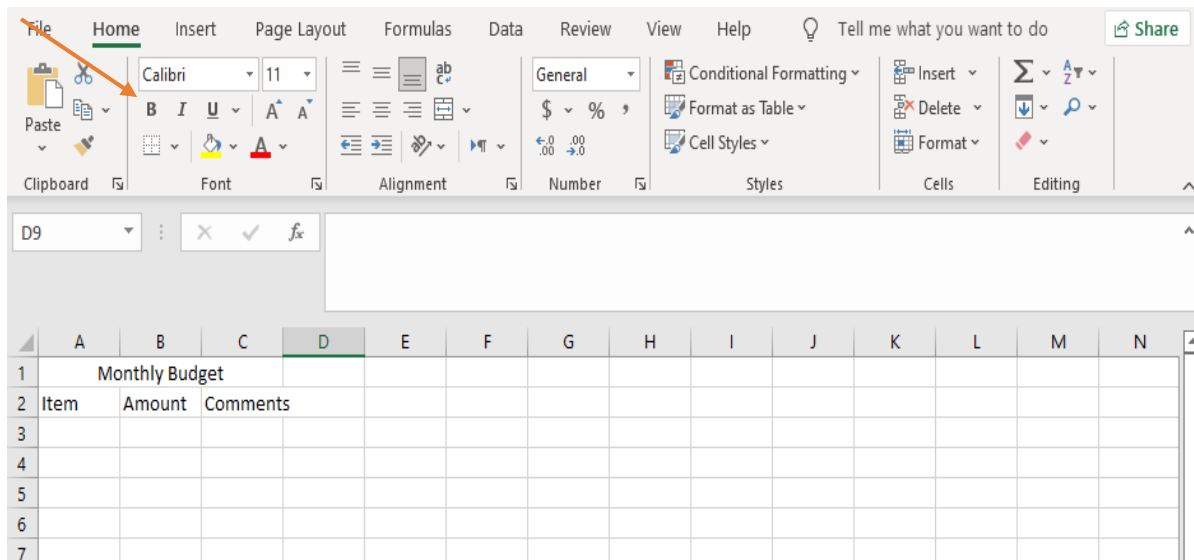


Fig. 14 (Bold text)

- Change the **font size** to **12**
- Find the **Fill Color** button in the **Font group** and click the list arrow. Select a color from the color choices

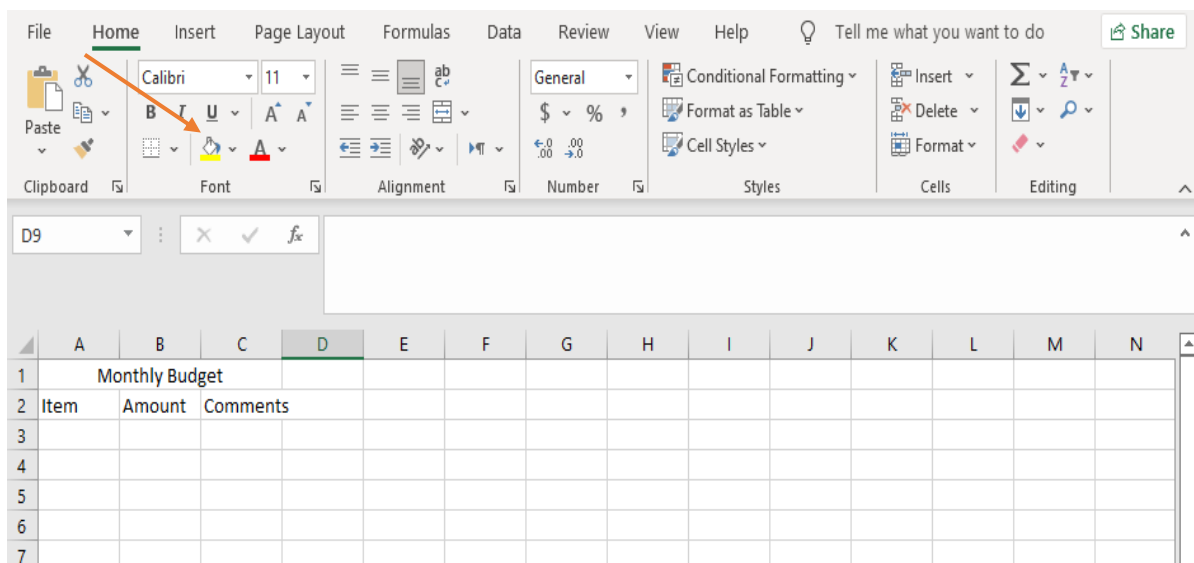


Fig. 15 (Fill Color button)

- Click in a clear cell to view the changes to this range of cells

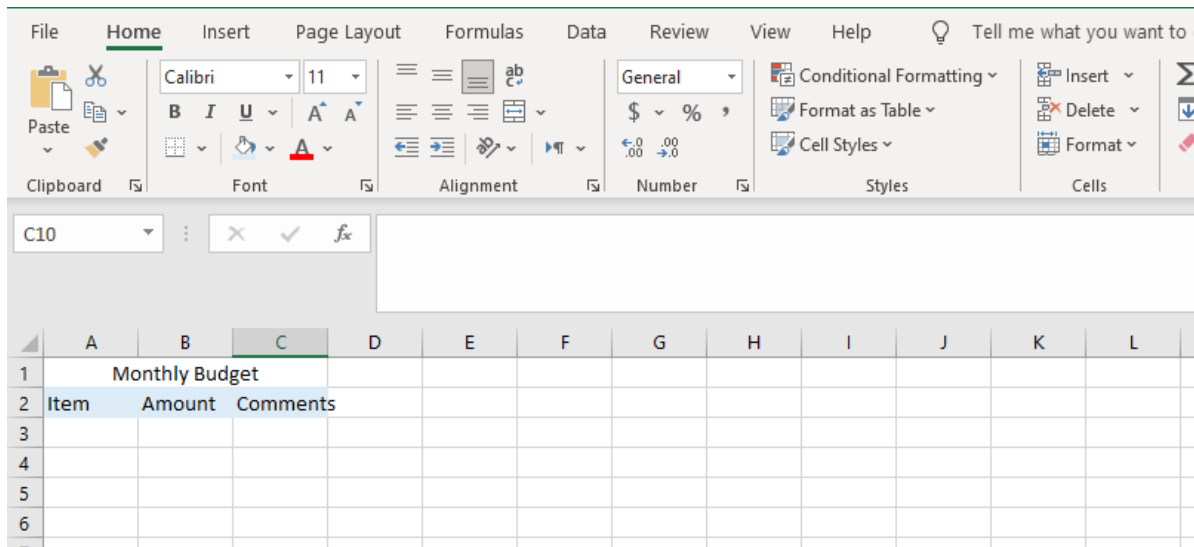


Fig. 16 (Fill Color)

Resize Column:

Note how the word Comments doesn't **fit** in the cell. To fix that, we need to widen the column

Using Ribbon

- Click on the **C** at the top of the column to select the column. This is called the **column label**

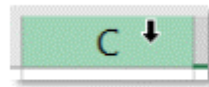


Fig. 17 (Column Tag)

- On the **Home** tab in the **Cells** group, click the **Format** button. Under **Cell Size**, choose **AutoFit Column Width**

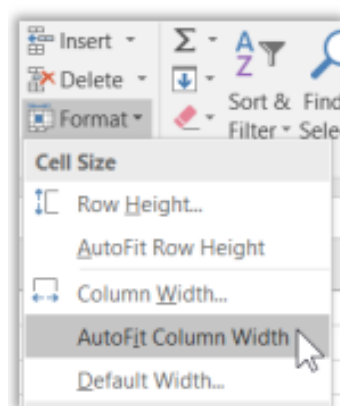


Fig. 18 (Format Button)

- Click in a clear cell to deselect the column

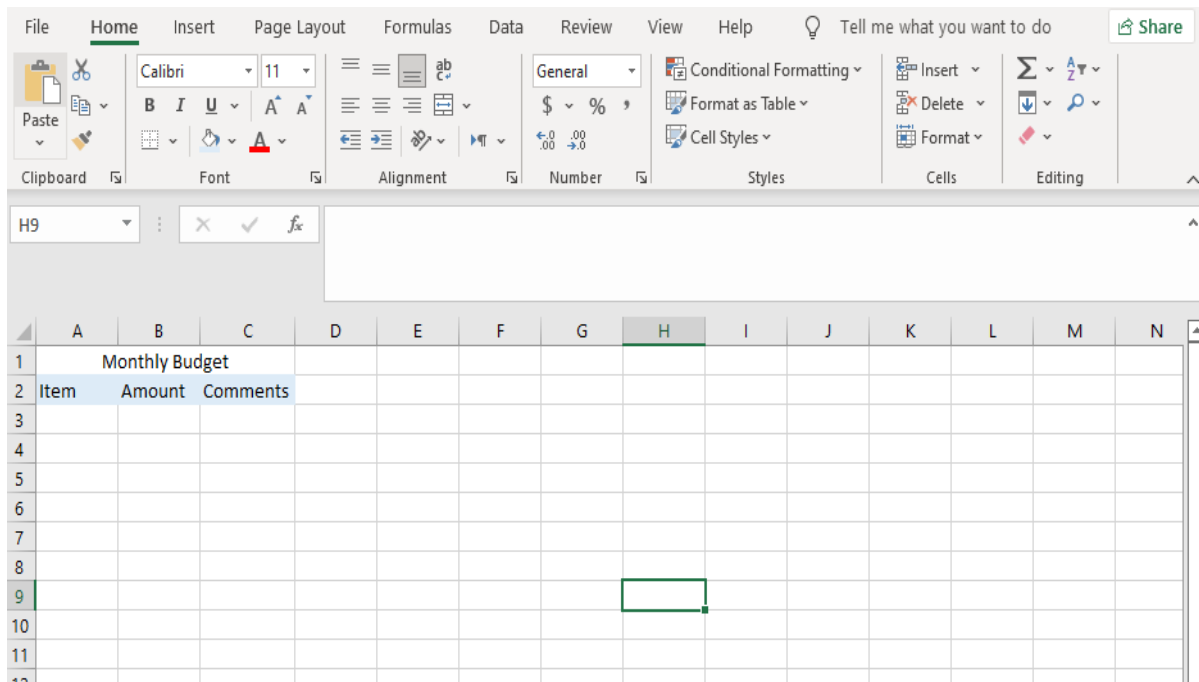


Fig. 19 (Adjust Column width)

Double Click Method

- Point the cursor to the dividing line between the column **C label** and the column **D label**
- The pointer turns into an arrow pointing left and right



Fig. 20 (Adjust Column Width)

- Keeping the cursor in that location, **double-click** to resize the column

Task 01: Creating Initial worksheet**[Estimated 20 minutes / 20 marks]**

	A	B	C
1	Monthly Budget		
2	Item	Amount	Comments
3	Rent	800	June 1st this goes to \$825
4	Utilities	40	Look into new windows
5	Transportation	50	
6	Food	150	
7	Medical	25	
8	Clothing	75	
9	Leisure	100	
10	Miscellaneous	100	
11	TOTAL		
12			
13	INCOME	2500	
14	EXPENCES		
15	VACATION CLUB		
16	SAVINGS		

Fig. 21 (Pre-Lab Task)

- Open a blank worksheet
- Write the text as shown in the above figure
- Apply the required formatting
- Save the document as done in the previous Microsoft ® Word Lab named **“Your Roll No”**
- Email the document named with your roll no like **“BSEF19M021”** to the respective TA.
- The subject of your email should be **“Your RollNo_Pre-Lab06”**.

In-Lab activities:**Apply Currency Style Formatting:**

- Select column **B** by clicking on the letter B at the top of the column
- On the **Home** tab in the **Number** group, click the Accounting **Number Format** button

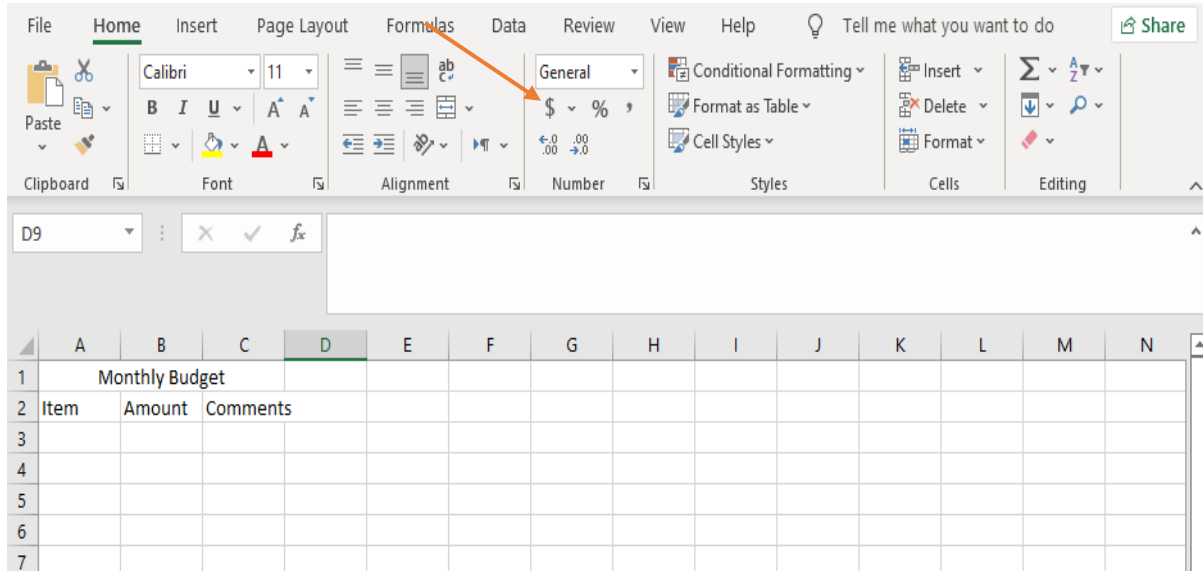


Fig. 21 (Currency Formatting)

- Numbers now have dollar signs and two decimal places

Amount
\$ 800.00
\$ 40.00
\$ 50.00
\$ 150.00
\$ 25.00
\$ 75.00
\$ 100.00
\$ 100.00

Fig. 22 (Currency Formatting)

Simple Formula:

- Always start your formula with an equal = sign. Click into **B11** and type an “=” sign
- Now, click into cell **B3**. The cell name (B3) appears in **B11** as if it was typed in and also a color border is now around cell B3

Amount
\$ 800.00
\$ 40.00
\$ 50.00
\$ 150.00
\$ 25.00
\$ 75.00
\$ 100.00
\$ 100.00
=B3

Fig. 23 (Applying formula)

- Next, type a “+” **sign** and then click in cell **B4**. Continue to type the + **signs** and click into the cells, which will add the value that is in that cell, until you click into the last cell, B10. Do not type the + sign after clicking in B10

B10	X	✓	<i>fx</i>	=B3+B4+B5+B6+B7+B8+B9+B10
	A	B	C	D
1	Monthly Budget			
2	Item	Amount	Comments	
3	Rent	\$ 800.00	May 1st this goes to \$825	
4	Utilities	\$ 40.00	Look into new windows	
5	Transportation	\$ 50.00		
6	Food	\$ 150.00		
7	Medical	\$ 25.00		
8	Clothing	\$ 75.00		
9	Leisure	\$ 100.00		
10	Miscellaneous	\$ 100.00		
11	TOTAL	=B3+B4+B5+B6+B7+B8+B9+B10		
12				

Fig. 24 (Applying formula)

- Click the **checkmark** on the formula bar to see the result

Monthly Budge
Amount
\$ 800.00
\$ 40.00
\$ 50.00
\$ 150.00
\$ 25.00
\$ 75.00
\$ 100.00
\$ 100.00
\$ 1,340.00

Fig. 25 (Applying Formula)

Use a Function:

- Type an “=” **sign** into cell **B11**
- Type **SUM**. As you type, note that a dropdown list appears with suggestions for which function you might like to use
 - Clicking once will display a description of the function
 - Double-clicking will add the function to the formula in the cell

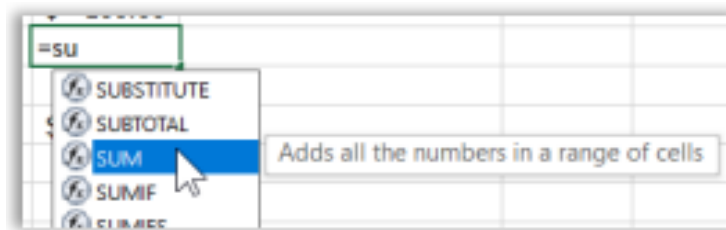


Fig. 26 (Using function)

- Double-click the **SUM** entry
 - ScreenTip shows the function's **syntax**. This tells you what kind of values the function expects to receive
- We are going to pass a range of cells into the function
 - Click into the first cell in the range, which is **B3**
 - Type a **colon**
 - Click into the last cell in the range, which is **B10**
 - Commit the formula by clicking the **checkmark** in the formula bar

AutoSum:

- Click in **B11**
- On the **Home** tab in the **Editing** group, click the **AutoSum** button

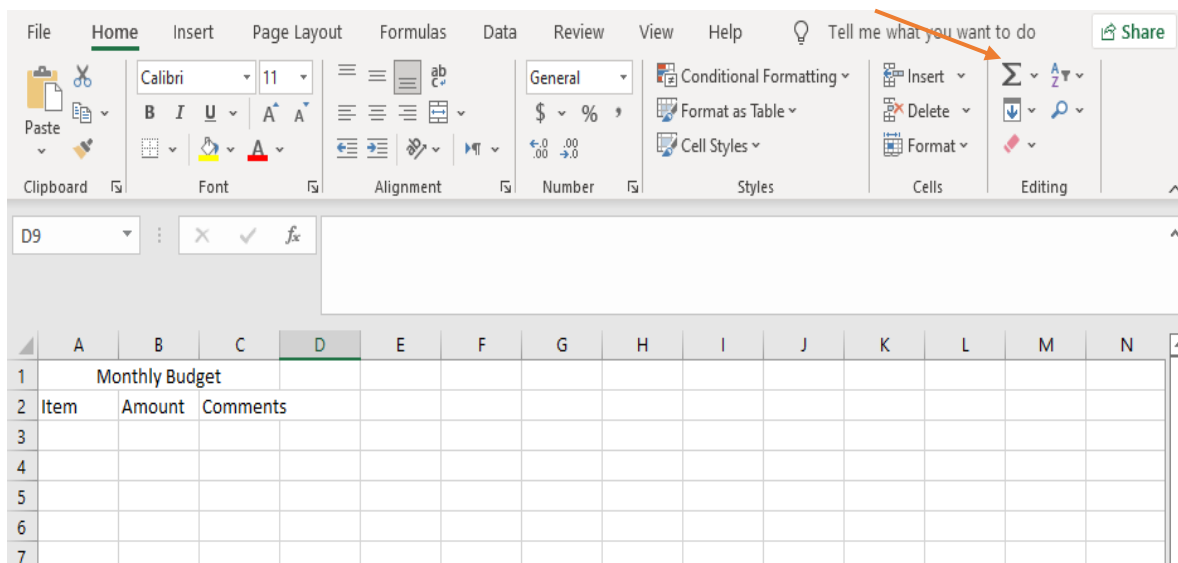


Fig. 27 (AutoSum function)

- A formula appears in **B11**
- If the formula is correct, then click the checkmark

Adding Columns:

- Add a column between column B and column C
 - Select the column to the right of where you want the new column to insert by pointing to the column label (A, B, C, e.g.) and clicking on it. In this case, **click on C**
 - On the **Home tab** in the **Cells group**, click on the **Insert button**

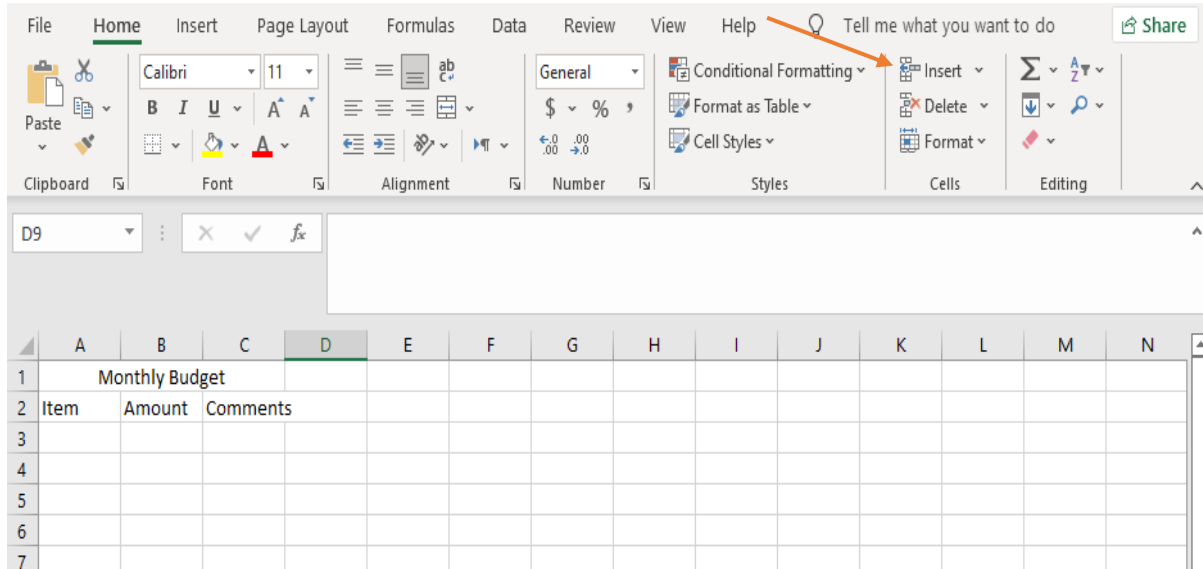


Fig. 28 (Adding columns)

New Column will be inserted.

B	C	D
Monthly Budget		
Amount		Comments
\$ 800.00		
\$ 40.00		
\$ 50.00		
\$ 150.00		
\$ 25.00		
\$ 75.00		
\$ 100.00		
\$ 100.00		
\$ 1,340.00		

Fig. 29 (Adding columns)

Formulas View:

Hold down the Ctrl key, and tap the “~” (tilde) key. The tilde key is directly below the Esc key

	A	B	C	D	E
1	Monthly Budget				
2	Item	Budget	Actual	Difference	Comments
3	Rent	800	800	=B3-C3	May 1st this goes to \$825
4	Utilities	40	50	=B4-C4	Look into new windows
5	Transportation	50	60	=B5-C5	
6	Food	150	195	=B6-C6	
7	Medical	25	25	=B7-C7	
8	Clothing	75	50	=B8-C8	
9	Leisure	200	130	=B9-C9	
10	Miscellaneous	100	20	=B10-C10	
11	TOTAL	=SUM(B3:B10)	=SUM(C3:C10)	=SUM(D3:D10)	
12					
13	INCOME	2500			
14	EXPENCES	=B11			
15	VACATION CLUB				
16	SAVINGS				

Fig. 30 (Formula View)

Adding Rows:

- Add a column between row B and row C
 - Select the column above which you want the new row to insert by pointing to the row label
 - On the **Home** tab in the **Cells** group, click on the **Insert** button

2	Amount
3	\$ 800.00
4	\$ 40.00
5	\$ 50.00
6	\$ 150.00
7	\$ 25.00
8	
9	75.00
10	\$ 100.00
11	\$ 100.00

Fig. 31 (Adding rows)

Sorting Data:

- Select cells A3 through A9

1	Monthly Budget	
2	Item	Amount
3	Rent	\$ 800.00
4	Utilities	\$ 40.00
5	Transportation	\$ 50.00
6	Food	\$ 150.00
7	Medical	\$ 25.00
8	Clothing	\$ 75.00
9	Leisure	\$ 100.00
10	Miscellaneous	\$ 100.00
11	TOTAL	\$ 1,340.00
12		

Fig. 32 (Sorting data)

- On the **Home** tab look in the **Editing** group and click **Sort & Filter**. Choose the **A to Z** sort option

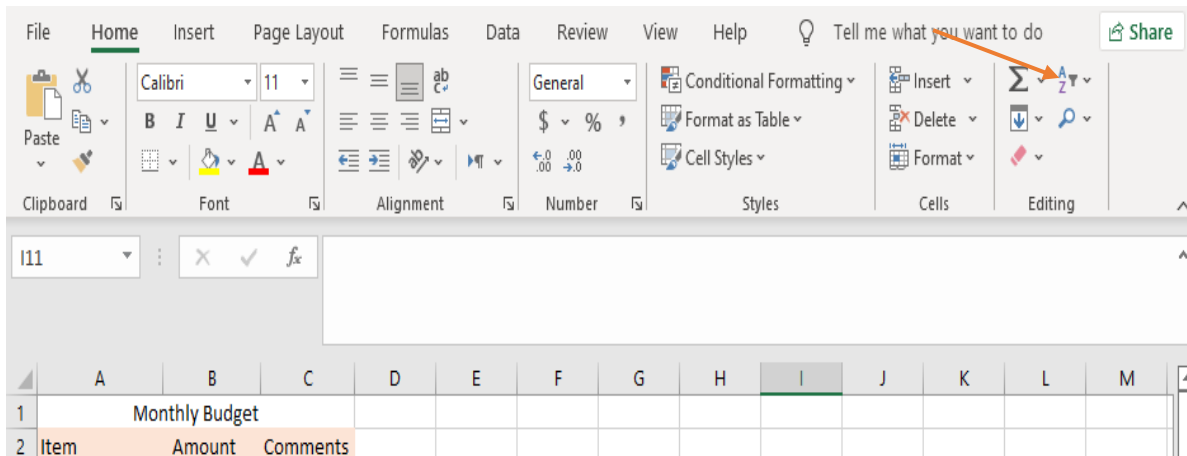


Fig. 33 (Sort Button)

- A Sort Warning dialogue box appears

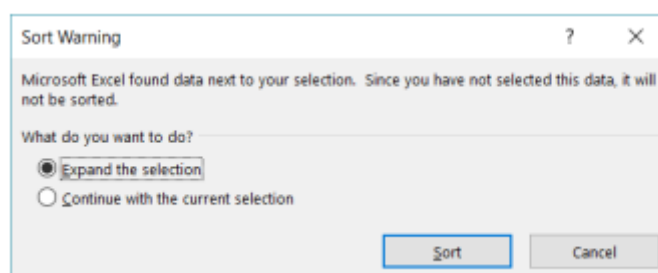


Fig. 34 (Sort Warning Dialog)

- Choose **Continue with the current selection** and click the **Sort** button. This results in only the item names being sorted leaving the rest of the data in place. So Undo it

	A	B
1	Monthly Budget	
2	Item	Amount
3	Clothing	\$ 800.00
4	Food	\$ 40.00
5	Leisure	\$ 50.00
6	Medical	\$ 150.00
7	Rent	\$ 25.00
8	Transportation	\$ 75.00
9	Utilities	\$ 100.00
10	Miscellaneous	\$ 100.00
11	TOTAL	\$ 1,340.00
12		

Fig. 35 (Sorting data)

- Now choose to **Expand the selection**. The Excel correctly identified that column B (Amount) should be included (the amounts are correctly aligned with the items). However, it also extended the sort vertically, including row 10 (Miscellaneous) and row 11 (Total) in the sort. This is not what we wanted

	A	B
1	Monthly Budget	
2	Item	Amount
3	Clothing	\$ 75.00
4	Food	\$ 150.00
5	Leisure	\$ 100.00
6	Medical	\$ 25.00
7	Miscellaneous	\$ 100.00
8	Rent	\$ 800.00
9	TOTAL	\$ 1,250.00
10	Transportation	\$ 50.00
11	Utilities	\$ 40.00
12		
13		

Fig. 36 (Sorting data)

So, it's better to select specific cells you want to include in the sort.

- Select cells **A3** through **B9**

	A	B
1	Monthly Budget	
2	Item	Amount
3	Rent	\$ 800.00
4	Utilities	\$ 40.00
5	Transportation	\$ 50.00
6	Food	\$ 150.00
7	Medical	\$ 25.00
8	Clothing	\$ 75.00
9	Leisure	\$ 100.00
10	Miscellaneous	\$ 100.00
11	TOTAL	\$ 1,340.00
12		

Fig. 37 (Sorting data)

- Click **Sort and Filter** and then **Sort A to Z** (no dialog box appears because we are being more specific about what we want to sort)

	A	B
1	Monthly Budget	
2	Item	Amount
3	Clothing	\$ 75.00
4	Food	\$ 150.00
5	Leisure	\$ 100.00
6	Medical	\$ 25.00
7	Rent	\$ 800.00
8	Transportation	\$ 50.00
9	Utilities	\$ 40.00
10	Miscellaneous	\$ 100.00
11	TOTAL	\$ 1,340.00
12		

Fig. 38 (Sorting data)

Custom Sort:

- Select cells **A3 to B9**
- On the **Home** tab go to the **Editing** group and click **Sort & Filter**. Choose **Custom Sort**

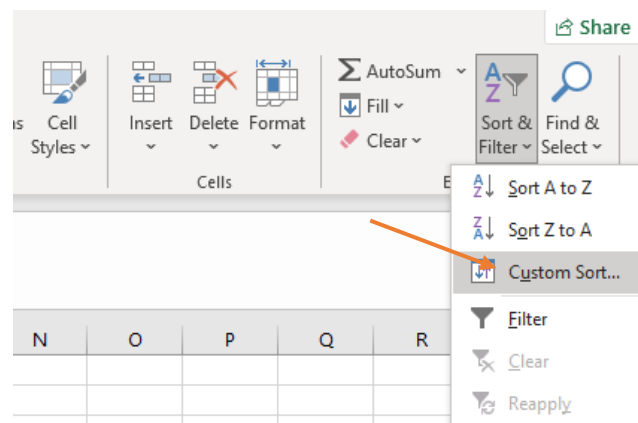


Fig. 39 (Custom sort)

- In the Sort dialogue box, in the Column **Sort by** field, use the list arrow to select our column labeled **Amount**. The **Sort On** field should be **Cell Values** and the **Order** field should be **Smallest to Largest**. Click **OK**

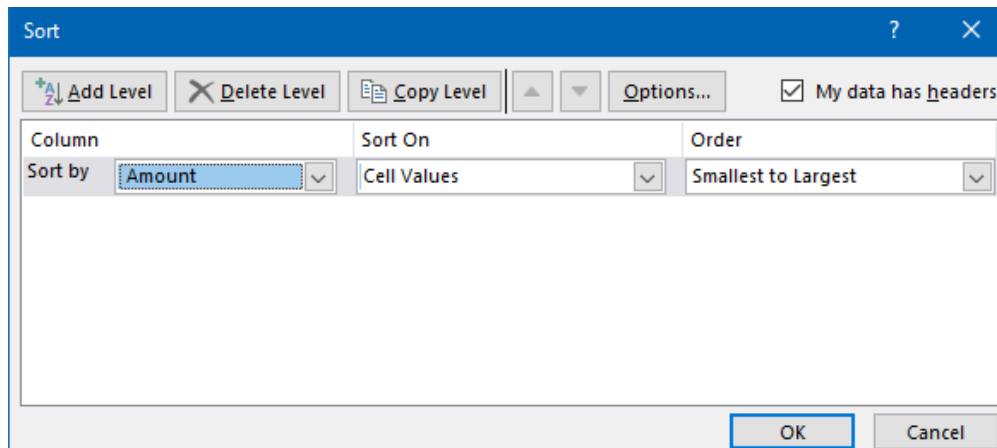


Fig. 40 (Custom sort dialog)

Data will be sorted by amount.

1	Monthly Budget	
2	Item	Amount
3	Medical	\$ 25.00
4	Utilities	\$ 40.00
5	Transportation	\$ 50.00
6	Clothing	\$ 75.00
7	Leisure	\$ 100.00
8	Food	\$ 150.00
9	Rent	\$ 800.00
10	Miscellaneous	\$ 100.00
11	TOTAL	\$ 1,340.00
12		
13		

Fig. 41 (Custom sort)

Precedence of Operations:

Excel is not evaluated left to right. Certain operators are evaluated before others, which changes the formula's result.

Precedence (High to Low)	Description
()	Parenthesis
^	Exponents
/, *	Division, Multiplication
+, -	Addition, Subtraction

Conditional Formatting:

- Select the Column B
- On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. Then, click on **Highlight Cell Rules** and then **Less Than**

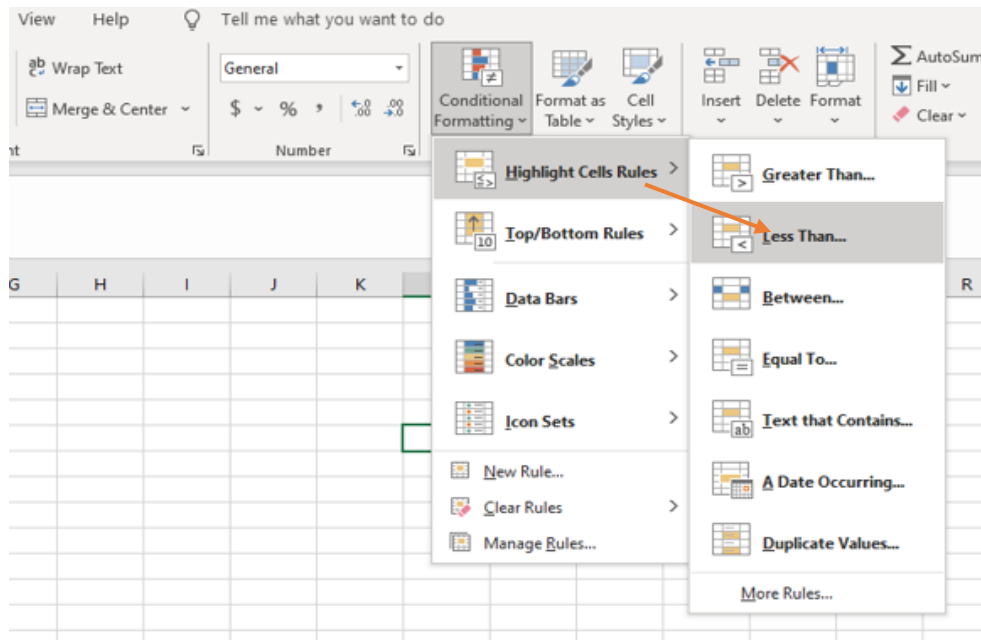


Fig. 42 (Conditional formatting)

- In the Less Than dialogue box enter **50** in the text box on the left
- Select “**Light Red Fill with Dark Red Text**” in the dropdown list on the right

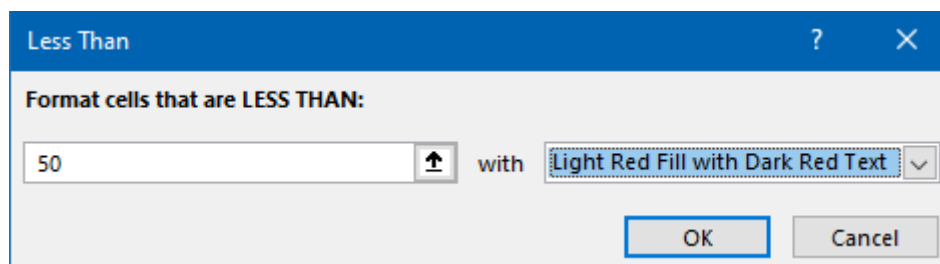


Fig. 43 (Less Than condition dialog)

- Click **OK** in the Less Than dialogue box

	A	B
1	Monthly Budget	
2	Item	Amount
3	Medical	\$ 25.00
4	Utilities	\$ 40.00
5	Transportation	\$ 50.00
6	Clothing	\$ 75.00
7	Leisure	\$ 100.00
8	Food	\$ 150.00
9	Rent	\$ 800.00
10	Miscellaneous	\$ 100.00
11	TOTAL	\$ 1,340.00
12		

Fig. 44 (Conditional formatting)

Similarly, follow the above steps for greater than and fill values **greater than 50** with “green with dark green text” and for a value **equal to 50** with “yellow with the dark yellow text”.

The result will be the following.

	A	B
1	Monthly Budget	
2	Item	Amount
3	Medical	\$ 25.00
4	Utilities	\$ 40.00
5	Transportation	\$ 50.00
6	Clothing	\$ 75.00
7	Leisure	\$ 100.00
8	Food	\$ 150.00
9	Rent	\$ 800.00
10	Miscellaneous	\$ 100.00
11	TOTAL	\$ 1,340.00
12		

Fig. 45 (Conditional formatting)

Line Break within a cell:

- Type the word “**Total Average**” into cell **H20**

	Total Average	

Fig. 46 (Line break)

- Instead of making column **H** wider to fit the heading, we can make the word “**Average**” go on a separate line by inserting a line break
- With cell **H20** selected click in the formula bar just after the letter **I**, so that the cursor is at the end of the word **Total**
- Press **Alt + Enter** on the keyboard

	Total Average	

Fig. 47 (Line break)

Wrap Text:

- Undo the last step
- Select cell **H20** selected click **Wrap Text** in the **Alignment group** on the **Home tab**
- The text will fit inside the cell

	Total	
	Average	

Fig. 48 (Wrap text)

Freeze Panes:

- Scroll to the down so that the Row 1 is visible
- Click the **View** tab on the ribbon and in the **Window** group, click on **Freeze Panes**

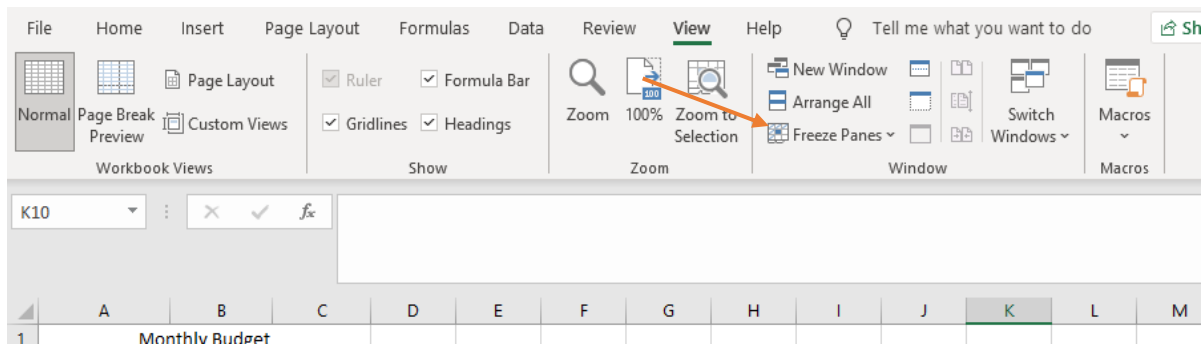


Fig. 49 (Freeze Panes)

- Select **Freeze Top Row**

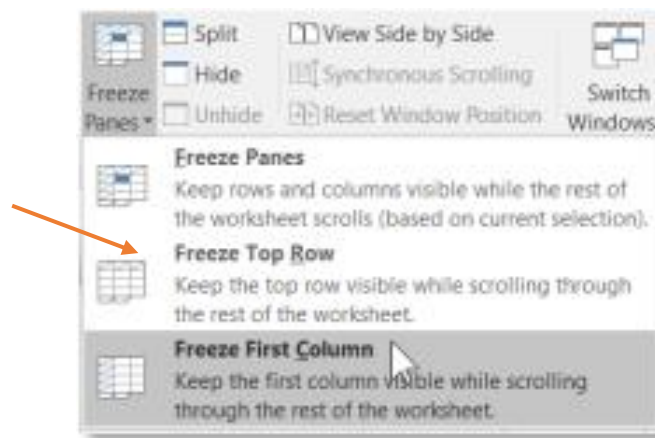


Fig. 50 (Freeze Row)

- Scroll downwards and note Row 1 remains visible

	A	B
1	Monthly Budget	
6	Clothing	\$ 75.00
7	Leisure	\$ 100.00
8	Food	\$ 150.00
9	Rent	\$ 800.00
10	Miscellaneous	\$ 100.00
11	TOTAL	\$ 1,340.00
12		
13		
14		

Fig. 51 (Freeze Row)

- To freeze multiple columns or rows, select the cell that is one column to the right of the column(s) you want to freeze, and one row below the row(s) you want to freeze
- Select **B2**
- Click the **View** tab on the ribbon and in the **Window** group, click on **Freeze Panes**
- Select **Freeze Panes**

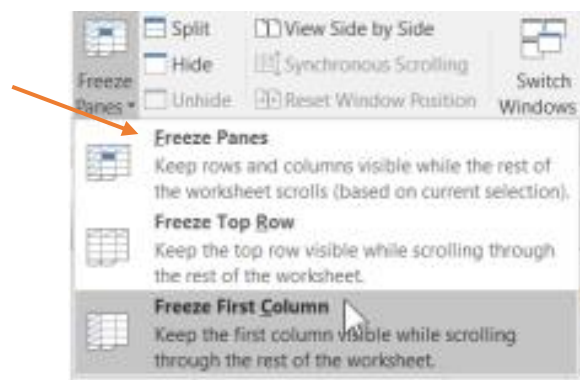


Fig. 52 (Freeze Pane)

- Row 1 and Column A** will be freeze

	A	C
1	Monthly Budget	
2	Item	Comments
3	Medical	
4	Utilities	
5	Transportation	
6	Clothing	
7	Leisure	
8	Food	
9	Rent	
10	Miscellaneous	
11	TOTAL	

Fig. 53 (Freeze Pane)

Task 01: Population Analysis**[30 minutes / 30 marks]**

	Population Analysis					
	Lahore	Karachi	Islamabad	Peshawar	Average	Total
Population	200,000.00	150,000.00	350,000.00	100,000.00	200,000.00	800,000.00
Percentage of Total Population	25%	19%	44%	13%		100%
Revenue generated by city	€ 3,000,000.00	€ 2,000,000.00	€ 1,500,000.00	€ 2,000,000.00	€ 2,125,000.00	€ 8,500,000.00
Revenue generated per person	€ 15.00	€ 13.33	€ 4.29	€ 20.00	€ 13.15	

Fig. 54 (In-Lab task)

- Create above shown worksheet
- Use proper formatting (In-case you simply write text; marks will be not given)
- You can assume population and revenue values yourself
- Name excel file with “**Your Roll No**”
- Email the file to the TA, the subject should be “**Lab 06_Task 01_Your Roll No**”

Task 02: Formatting Data**[20 minutes / 40 marks]**

- Copy the data in Task 01 a new worksheet
- Instead of extending **First Column**, wrap the text
- Add two rows between **Row 4** and **Row 5**
- Highlight **Population values equal to Average** with **Red color & dark red text**
- Highlight **Revenue generated by city values less than Average** with **Yellow color & dark yellow text**
- Highlight **Revenue generated per person values greater than Average** with **Green color & dark green text**
- Freeze first two columns using **Freeze Panes**

Post-Lab activities:

Task 01: GPA Calculation

[Estimated time 60 minutes / 50 marks]

- Create a worksheet with Columns (Subject (At least 5 Subjects), Marks, Total Marks, Percentage, GPA, Credit Hours)
- Calculate Total GPA ($\text{SUM}(\text{GPA} + \text{C.H}) / \text{Total C.H}$), Average Marks
- Use Wrap text instead of expanding columns
- Highlight all Column names with **red** color
- Sort the data by highest to lowest GPA
- Freeze Subject Column
- Apply Conditional formatting of your choice on the Percentage column

Submissions:

- For Pre-Lab Activity:
 - Perform Pre-Lab as mentioned above. Save the respective document in folder “RollNo_Pre-Lab-06”.
 - Then zip the whole folder (RollNo_Pre-Lab-06.zip), and email it to your respective TA.
- For In-Lab:
 - Perform mentioned tasks of In-Lab activity.
 - Make a folder on Desktop by the name “RollNo_In-Lab-06”.
 - Then save each document in folder “RollNo_In-Lab-06”.
- For Post-Lab Activity:
 - Perform Post-Lab as mentioned above.
 - Save the respective document in folder “RollNo_Post-Lab-06”.
 - Then zip the whole folder (RollNo_Post-Lab-06.zip), and email it to your respective TA.

Evaluations Metric:

- All the Lab tasks will be evaluated offline by TA's.
- Division of Pre-Lab tasks: [20 marks]
 - Task 01 (Creating Worksheet) [20 marks]
- Division of In-Lab tasks: [70 marks]
 - Task 01 (Population Analysis) [30 marks]
 - Task 02 (Formatting) [40 marks]
- Division of Post-Lab tasks: [40 marks]
 - Task 01 (GPA Calculation) [50 marks]

References and Additional Material:

- Joyce J. Nielsen, Microsoft Official Academic Course, Microsoft Excel 2016, Wiley Publisher, 2016. ISBN: 978-111-927300-4
https://drive.google.com/drive/u/1/folders/1V9nh8WIKOIQvi_ig98_YCaP7Vvei-tQz
- Learn Microsoft ® Excel:
<https://support.microsoft.com/en-us/excel>

Lab Time Activity Simulation Log:

- Slot – 01 – 00:00 – 00:15: Settlement and attendance
- Slot – 02 – 00:15 – 00:30: Demonstration on screen (Microsoft ® Excel)
- Slot – 03 – 00:30 – 00:45: Demonstration on screen (Microsoft ® Excel)
- Slot – 04 – 00:45 – 01:00: Demonstration on screen (Microsoft ® Excel)
- Slot – 05 – 01:00 – 01:15: Demonstration on screen (Microsoft ® Excel)
- Slot – 06 – 01:15 – 01:30: Demonstration on screen (Microsoft ® Excel)
- Slot – 07 – 01:30 – 01:45: Discussion on In-Lab Tasks
- Slot – 08 – 01:45 – 02:00: In-Lab Tasks
- Slot – 09 – 02:00 – 02:15: In-Lab Tasks
- Slot – 10 – 02:15 – 02:30: In-Lab Tasks
- Slot – 11 – 02:30 – 02:45: In-Lab Tasks
- Slot – 12 – 02:45 – 03:00: Discussion on Post-Lab Task