1. **What is the difference between 'Paste' and 'Paste Special' in Excel? Briefly explain with examples.**
   Paste copies the entire cell including formulas and formatting.

Example:

- Cell A1 contains the formula `=B1+C1` and is formatted in bold.
- If you **Copy A1 → Paste**, the new cell will:
    - Still have `=B1+C1`
    - Keep the same formatting (bold, color, borders)

   Paste Special allows us to paste only specific elements like values, formulas, or formats based on requirement.

Example:

- Cell A1 contains the formula `=B1+C1` and is formatted in bold.
- If you **Copy A1 → Paste**, the new cell will:
    - Still have `=B1+C1`
    - Keep the same formatting (bold, color, borders)

2. **Describe the functions and usefulness of 'Freeze Panes' and 'Split Panes' in Excel.**

Freeze Panes

Function:
Freeze Panes keeps specific rows or columns fixed while you scroll through the worksheet.

Usefulness:

- Helps you always see headers or key columns
- Best for large datasets

Common uses:

- Freeze top row (column headers)
- Freeze first column (ID, Name)
- Freeze both rows & columns

Split Panes

Function:
Split Panes divides the worksheet into **multiple independent scrollable sections**.

Usefulness:

- Compare different parts of the same worksheet
- View distant rows/columns at the same time

3. **Explain the difference between inserting a new row and inserting a new column in Excel. Can you insert multiple rows or columns at once?**

Insert New Row

What it does:

- Adds a horizontal row
- New row is inserted above the selected row

Insert New Column

What it does:

- Adds a vertical column
- New column is inserted to the left of the selected column

Yes, we can insert multiple rows/columns at once.

Insert Multiple Rows

How:

- Select multiple rows (e.g., Rows 3–5)
- Right-click → Insert

Insert Multiple Columns

How:

- Select multiple columns (e.g., Columns B–D)
- Right-click → Insert

4. **What are logical functions in Excel? Provide examples of at least two logical functions and their applications.**

Logical functions in Excel evaluate conditions and return results based on TRUE or FALSE values. Common logical functions include IF, AND, OR, and NOT, which are used for decision-making and data validation.

1.IF() Function

Syntax:

IF(logical_test, value_if_true, value_if_false)

Example:

Marks in A1

=IF(A1 >= 50, "Pass", "Fail")

2. AND() Function

Syntax:

AND(condition1, condition2, ...)

Example:

Attendance in A1, Marks in B1

=IF(AND(A1 >= 75, B1 >= 50), "Eligible", "Not Eligible")

5. **Discuss the purpose of 'XLOOKUP' and how it differs from the traditional 'VLOOKUP' function.**

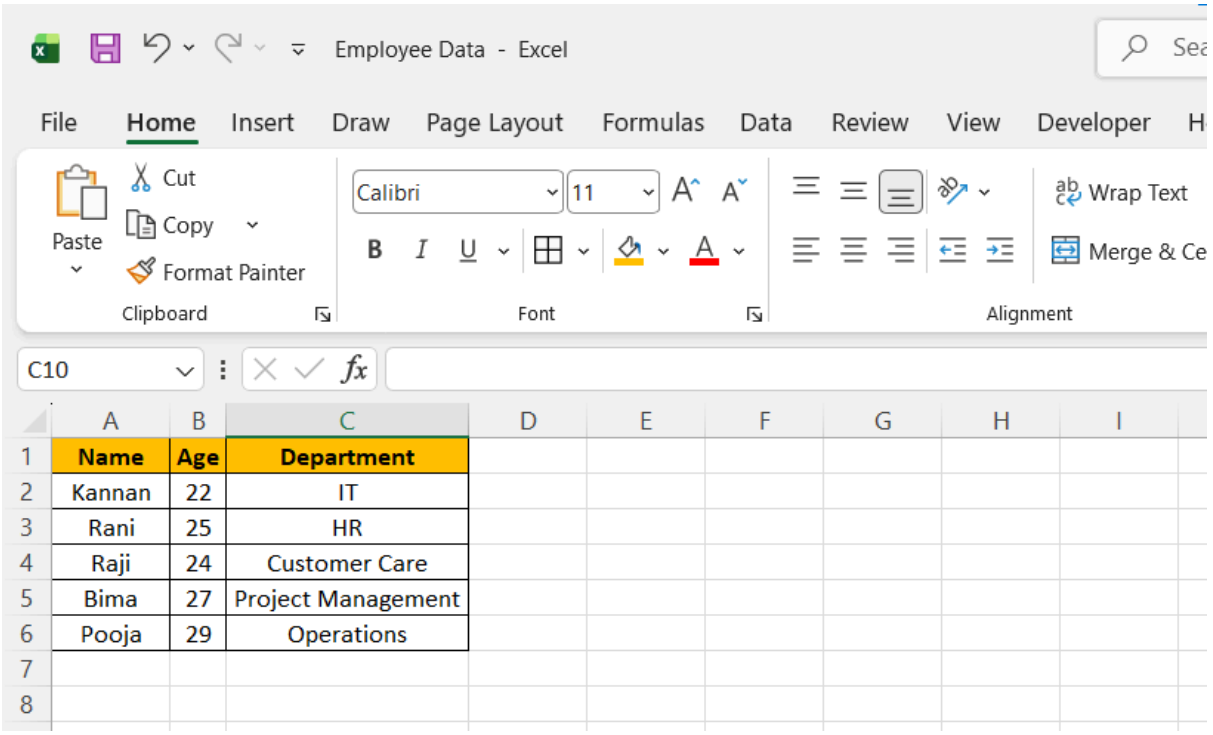
XLOOKUP is a modern Excel function used to search for a value in a range and return a corresponding result from another range.
It is designed to replace older lookup functions like VLOOKUP and HLOOKUP with more flexibility and fewer limitations.

Syntax:
XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found])

Feature	XLOOKUP	VLOOKUP
Lookup direction	Left & Right	Right only

Column reference	Direct range	Column index number
Column insert safe	Yes	No
Exact match default	Yes	No (needs FALSE)
Error handling	Built-in	Needs IFERROR
Vertical/ Horizontal	Both	Vertical only

6. Create a worksheet titled 'Employee Data' with columns: Name, Age, Department. Add 5 rows of data.



7. Demonstrate how to insert and delete multiple rows and columns in Excel. (Provide screenshots before and after the changes.)

Insert Multiple Rows

1. Select multiple row numbers (e.g., Row 3 & 4)

2. Right-click → Insert
   ➡ Excel inserts the same number of new rows above the selection.

Insert Multiple Columns

1. Select multiple column letters

2. Right-click → Insert
   ➡ New columns are added to the left of the selected columns.

Delete Multiple Rows

1. Select multiple rows

2. Right-click → Delete
   ➡ Selected rows are removed, data shifts up.

Delete Multiple Columns

1. Select multiple columns

2. Right-click → Delete
   ➡ Selected columns are removed, data shifts left.

Before Changes:

	A	B	C
	Name	**Age**	**Department**
2	Kannan	22	IT
3	Rani	25	HR
4	Raji	24	Customer Care
5	Bima	27	Project Management
6	Pooja	29	Operations
7			
8			

After Inserting Rows And columns:

	A	B	C	D	E
	Name			**e**	**Department**
	Kannan			22	IT
	Rani			25	HR
	Raji			24	Customer Care
	Bima			27	Project Management
	Pooja			29	Operations

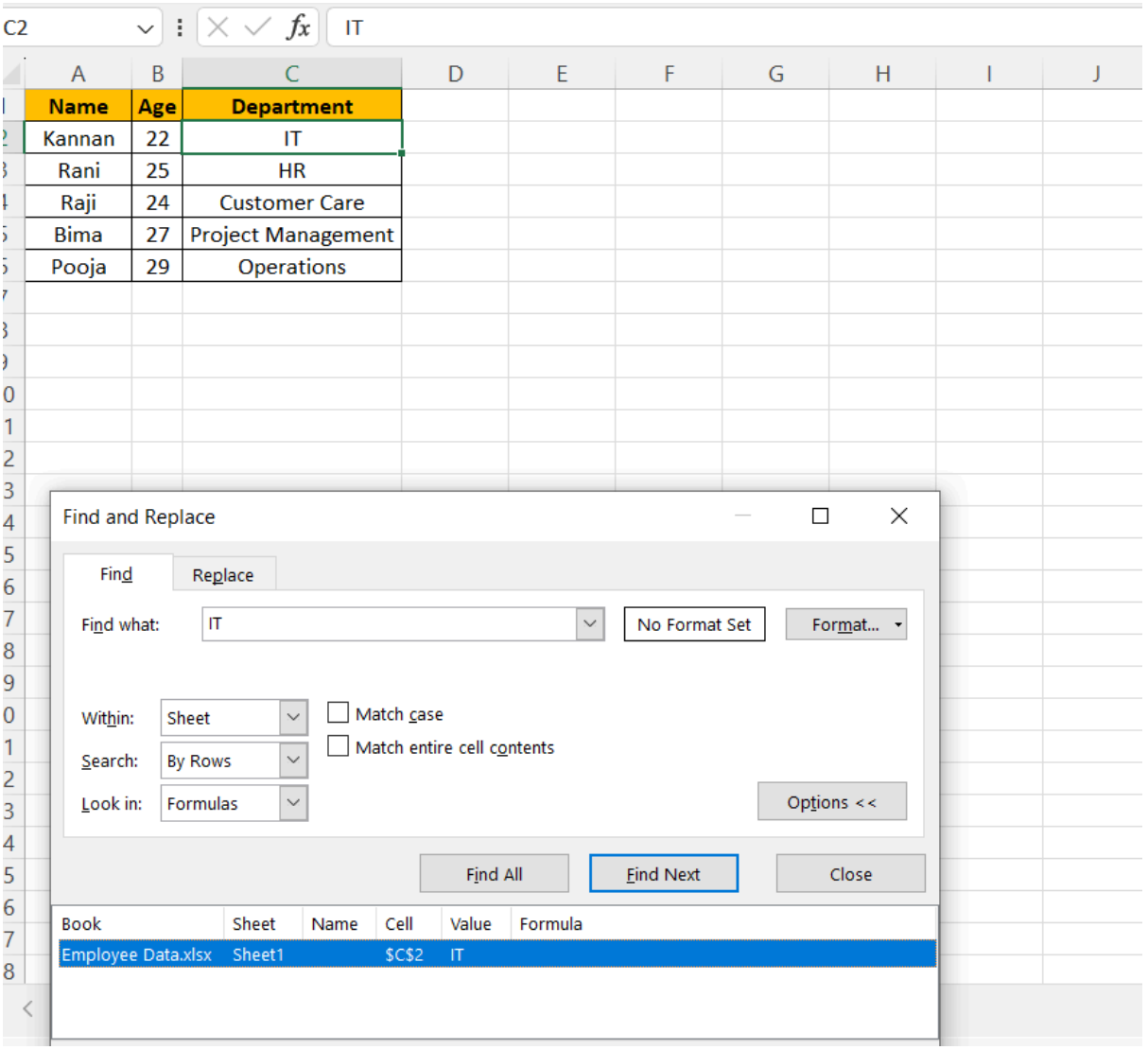
After Deleting the inserted columns:

	A	B	C	D
	Name	**Age**	**Department**	
2	Kannan	22	IT	
3	Rani	25	HR	
4	Raji	24	Customer Care	
5	Bima	27	Project Management	
6	Pooja	29	Operations	
7				
8				

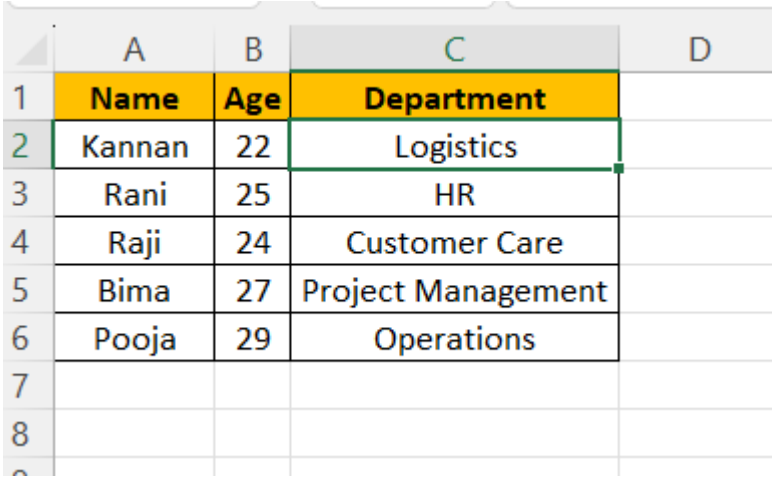
8. Use Excel's 'Find and Replace' feature to update department names in a sample table. (Include a screenshot showing the replaced data.)

Before Replacement :

	A	B	C	D
1	**Name**	**Age**	**Department**	
2	Kannan	22	IT	
3	Rani	25	HR	
4	Raji	24	Customer Care	
5	Bima	27	Project Management	
6	Pooja	29	Operations	
7				
8				
9				



After Replacement:



9. Create a small numerical dataset and apply the following functions: ● AVERAGE ● MAX ● MIN (Include a screenshot showing the formulas and their results.)

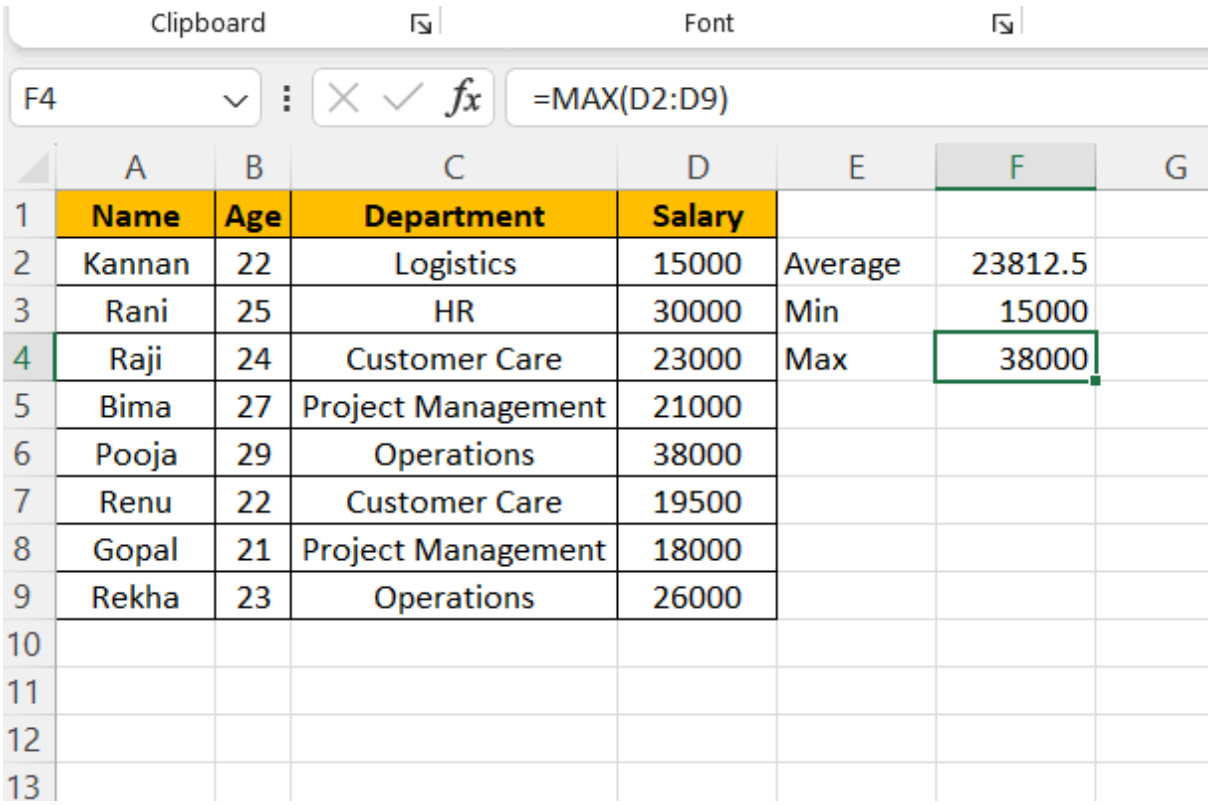
F2 =AVERAGE(D2:D9)

	A	B	C	D	E	F
1	**Name**	**Age**	**Department**	**Salary**		
2	Kannan	22	Logistics	15000	Average	23812.5
3	Rani	25	HR	30000	Min	
4	Raji	24	Customer Care	23000	Max	
5	Bima	27	Project Management	21000		
6	Pooja	29	Operations	38000		
7	Renu	22	Customer Care	19500		
8	Gopal	21	Project Management	18000		
9	Rekha	23	Operations	26000		
10						

Clipboard Font

F3 =MIN(D2:D9)

	A	B	C	D	E	F
1	**Name**	**Age**	**Department**	**Salary**		
2	Kannan	22	Logistics	15000	Average	23812.5
3	Rani	25	HR	30000	Min	15000
4	Raji	24	Customer Care	23000	Max	
5	Bima	27	Project Management	21000		
6	Pooja	29	Operations	38000		
7	Renu	22	Customer Care	19500		
8	Gopal	21	Project Management	18000		
9	Rekha	23	Operations	26000		
10						
11						
12						
13						
14						



10.You're working with a dataset that contains missing values. As a Data Scientist, explain how you'd detect and handle missing data using Excel. Mention tools like: ● Go To Special ● ISBLANK ● COUNTBLANK (Include a screenshot showing how blanks are identified or processed.)

Using Go to Special:

1. Select the data range
2. Press Ctrl + G (Go To)
3. Click Special
4. Select Blanks → OK

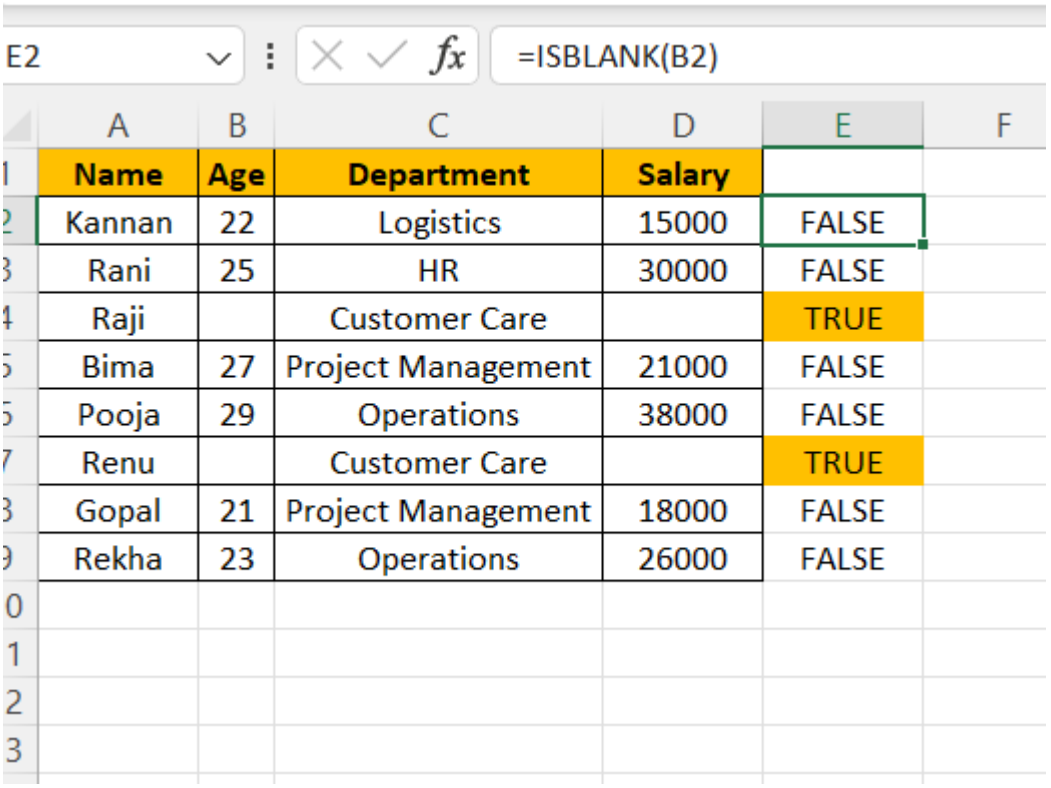
	A	B	C	D
1	**Name**	**Age**	**Department**	**Salary**
2	Kannan	22	Logistics	15000
3	Rani	25	HR	30000
4	Raji		Customer Care	
5	Bima	27	Project Management	21000
6	Pooja	29	Operations	38000
7	Renu		Customer Care	
8	Gopal	21	Project Management	18000
9	Rekha	23	Operations	26000
10				
11				

Using Is Blank:

Check cell-by-cell if a value is missing.

Syntax:

=ISBLANK(A2)



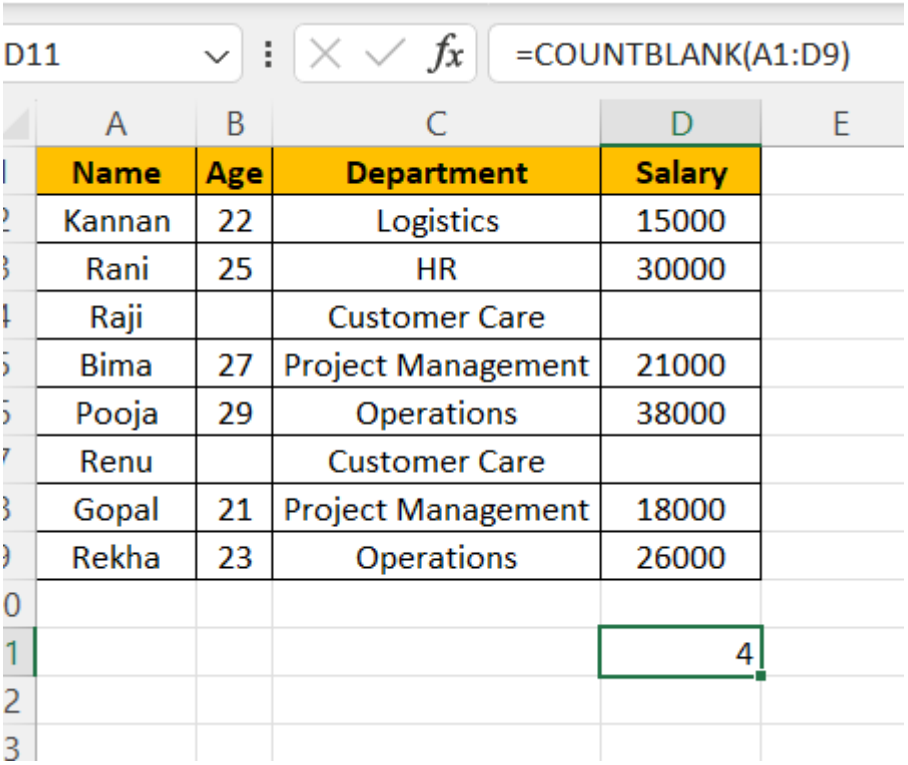
	A	B	C	D	E	F
1	**Name**	**Age**	**Department**	**Salary**		
2	Kannan	22	Logistics	15000	FALSE	
3	Rani	25	HR	30000	FALSE	
4	Raji		Customer Care		TRUE	
5	Bima	27	Project Management	21000	FALSE	
6	Pooja	29	Operations	38000	FALSE	
7	Renu		Customer Care		TRUE	
8	Gopal	21	Project Management	18000	FALSE	
9	Rekha	23	Operations	26000	FALSE	
10						
11						
12						
13						

Using Countblank:

Count how many blanks exist in a range.

Syntax:

=COUNTBLANK(B2:B10)



	A	B	C	D	E
1	**Name**	**Age**	**Department**	**Salary**	
2	Kannan	22	Logistics	15000	
3	Rani	25	HR	30000	
4	Raji		Customer Care		
5	Bima	27	Project Management	21000	
6	Pooja	29	Operations	38000	
7	Renu		Customer Care		
8	Gopal	21	Project Management	18000	
9	Rekha	23	Operations	26000	
10					
11				4	
12					
13					