Week 3 by: Manisha Pal

Week 3.1

The week 3 is about discussion on the marketing dataset. The following formulas and charts are used in discussion:

Calculating Percentages:

To calculate percentages based on given data:

- **Percentage of a part relative to a whole:**

  = (Part / Whole) * 100

2. Summing Values:

To sum values across a range:

A1:A10 is the range for which you want to perform

- **Sum of a range:**

  = SUM(A1:A10)

3. Average, Median, and Mode:

To find the average, median, and mode:

- **Average:**

  = AVERAGE(A1:A10)

- **Median:**

  = MEDIAN(A1:A10)

- **Mode:**

  = MODE(A1:A10)

4. Counting Specific Conditions:

To count the number of cells that meet specific criteria:

- **Count if condition is met:**

  = COUNTIF(A1:A10, "Condition")

Eg: you need to check if a certain number of people can afford to buy a new two-wheeler based on their income and savings.

Income Threshold for Affordability: 50,000

Person's Income: 60,000

Formula: = IF(60000 >= 50000, "Affordable", "Not Affordable")

Result: Affordable

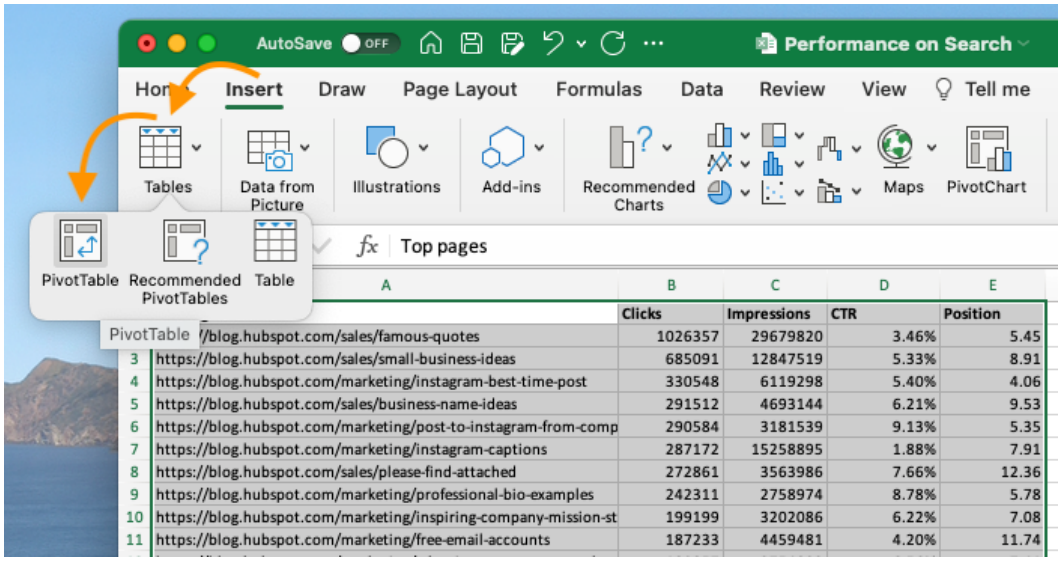
Count if multiple conditions are met: = COUNTIFS(A1:A10, "Condition1", B1:B10, "Condition2")

A1:A10 and B1:B10 are the ranges for respective conditions

6. Creating Pivot Tables:

To summarize and analyze large datasets:

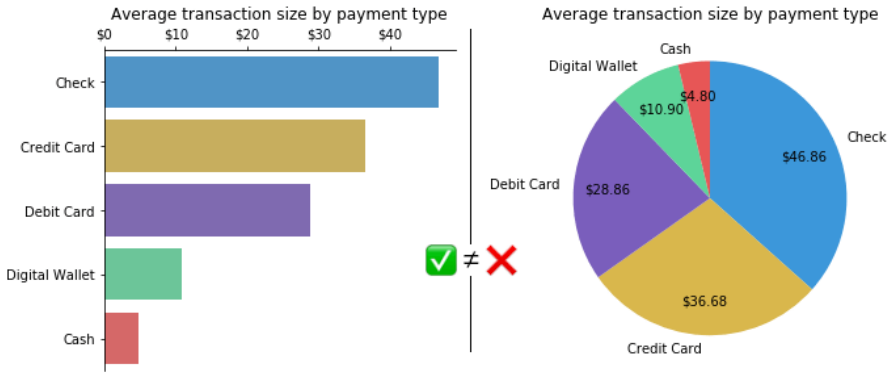
- Go to **Insert** > **PivotTable** to create a pivot table and drag fields to summarize the data.



7. Visualization:

To create charts for visual representation:

- **Bar Chart, Pie Chart, etc.:**
    - Select data range.
    - Go to **Insert** > **Chart** and choose the desired chart type.
    - In short, a pie chart can only be used if the sum of the individual parts add up to a meaningful whole, and is built for visualizing how each part contributes to that whole. Meanwhile, a bar chart can be used for a broader range of data types, not just for breaking down a whole into components.



VLOOKUP or XLOOKUP to match data across tables:

= VLOOKUP(LookupValue, TableArray, ColIndexNum, [RangeLookup])

VLOOKUP and XLOOKUP

Both **VLOOKUP** and **XLOOKUP** are Excel functions used to search for data in a table and retrieve related information.

VLOOKUP

VLOOKUP (Vertical Lookup) searches for a value in the first column of a table and returns a value in the same row from a specified column.

Syntax: = VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])

- **lookup_value**: The value you want to search for.
- **table_array**: The range of cells that contains the data. The first column in this range should contain the lookup_value.
- **col_index_num**: The column number in the table_array from which to retrieve the value. The first column is 1, the second is 2, and so on.
- **[range_lookup]**: Optional. TRUE for an approximate match (default) or FALSE for an exact match.

Example:

Imagine you have a table where column A lists product IDs and column B lists product names. You want to find the product name for a specific product ID.

A	**B**
Product ID	Product Name
101	Widget
102	Gadget
103	Doodad

To find the product name for Product ID 102

= VLOOKUP(102, A2:B4, 2, FALSE)

This formula looks for 102 in the first column of the range A2:B4 and returns the corresponding value from the second column (Gadget).

XLOOKUP

XLOOKUP is a newer and more versatile function introduced to overcome some limitations of VLOOKUP. It searches for a value in a column or row and returns a value from the same position in another column or row.

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

- **lookup_value**: The value you want to search for.
- **lookup_array**: The array or range to search for the lookup_value.
- **return_array**: The array or range from which to return the value.
- **[if_not_found]**: Optional. Value to return if the lookup_value is not found. Defaults to #N/A.
- **[match_mode]**: Optional. Specifies exact or approximate match. 0 for exact match (default), -1 for exact or next smaller, 1 for exact or next larger.
- **[search_mode]**: Optional. Specifies search direction. 1 for search from first to last (default), -1 for search from last to first.

Example:

Using the same table as above, to find the product name for Product ID 102:

= XLOOKUP(102, A2:A4, B2:B4, "Not Found")

This formula searches for 102 in the range A2:A4 and returns the corresponding value from B2:B4 (Gadget). If 102 is not found, it returns "Not Found".

Key Differences:

- **VLOOKUP** only searches vertically and requires the lookup value to be in the first column of the table.
- **XLOOKUP** can search both vertically and horizontally and does not require the lookup value to be in the first column. It also allows for more flexible matching and error handling.

Week 3.2 and Week 3.3

1. Data Filtering

Data filtering in Excel allows you to view only the rows that meet certain criteria. This is useful for focusing on specific subsets of data.

Example: Suppose you have a dataset with columns for Name, Age, and City. You want to filter the data to show only people who live in "New York."

Steps:

1. Select the Dataset: Click on any cell within your dataset.
2. Apply Filter:
    - Go to the Data tab on the Ribbon.
    - Click on Filter. This adds drop-down arrows to each column header.
3. Filter the Data:
    - Click the drop-down arrow in the City column header.
    - Uncheck all cities except "New York."
    - Click OK. Now, only rows where the city is "New York" will be displayed.

2. Replacing Values

Sometimes, datasets include placeholder values (e.g., -99) that need to be replaced with blank cells or more meaningful values.

Example: You have a column of numerical data where -99 represents missing data. You want to replace -99 with blank cells.

Steps:

1. Open Find and Replace:
    - Press Ctrl + H to open the Find and Replace dialog.
2. Replace Values:

- In the Find what box, enter -99.
- Leave the Replace with box empty to replace -99 with a blank cell.
- Click Replace All.