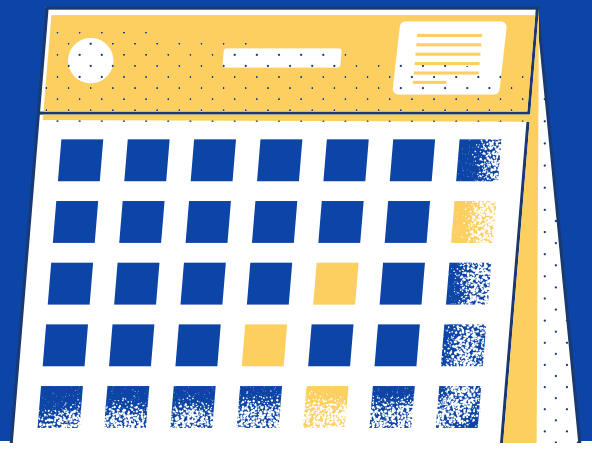
Data Fundamentals

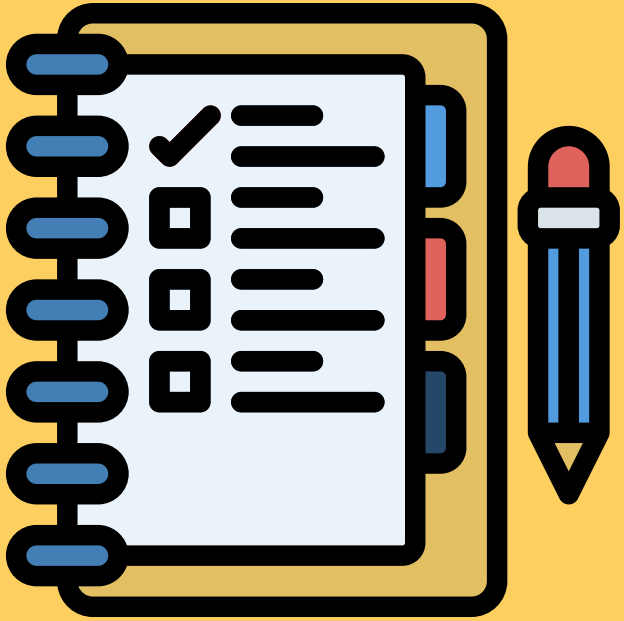
Spreadsheets
Part 1 - Part 2

GOALS



Review descriptive Statistics - Part 1,2

- Navigate worksheets and handle various file formats (CSV, XLS, XLSX).
- Differentiate between commas and decimals in spreadsheet formatting.
- Proficiently manipulate data through math operations and remove duplicates.
- Develop essential skills in sorting data, applying filters, and using popular formulas for efficient spreadsheet usage.
- Use the Analysis ToolPak for data analysis.

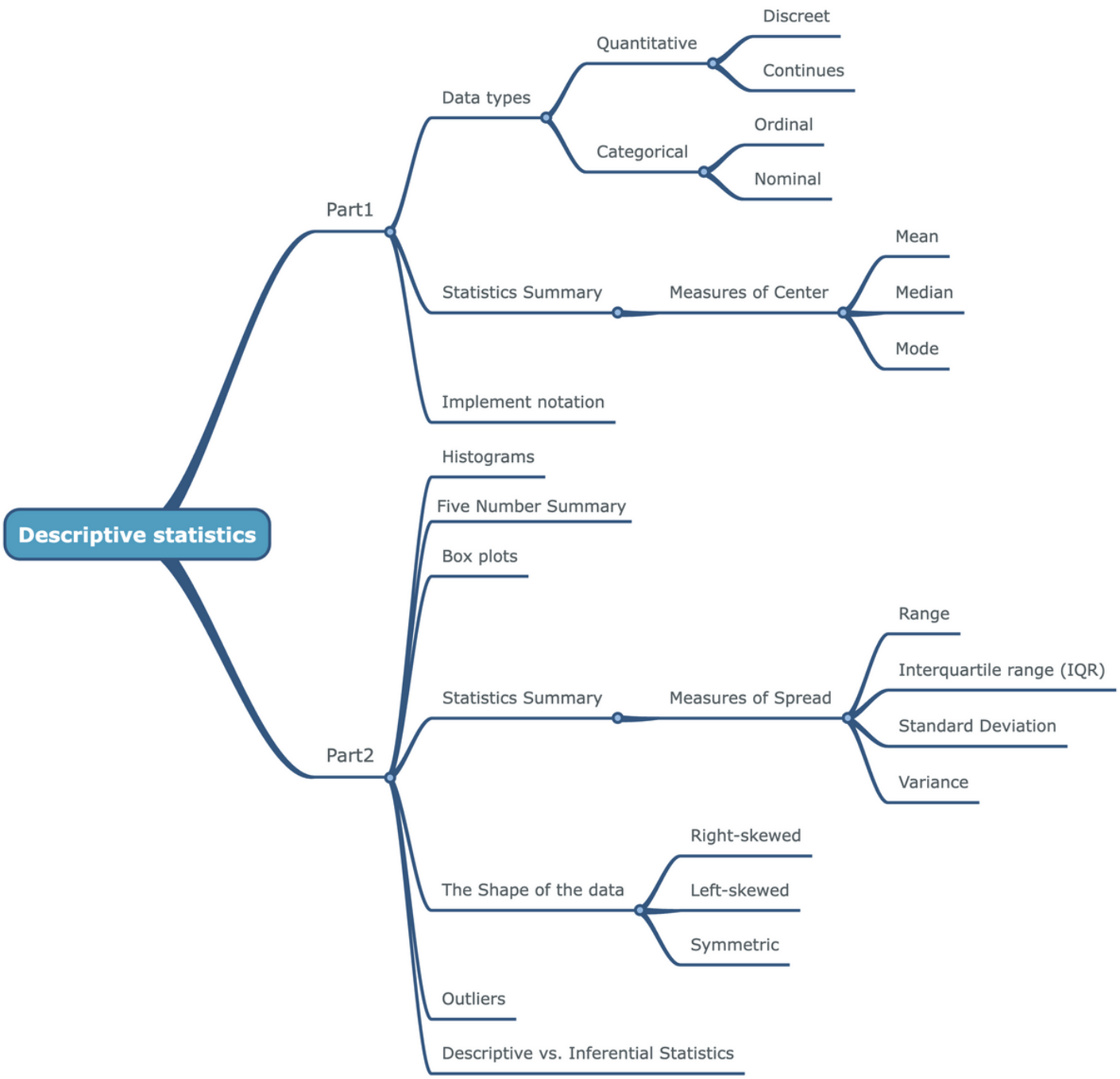


AGENDA

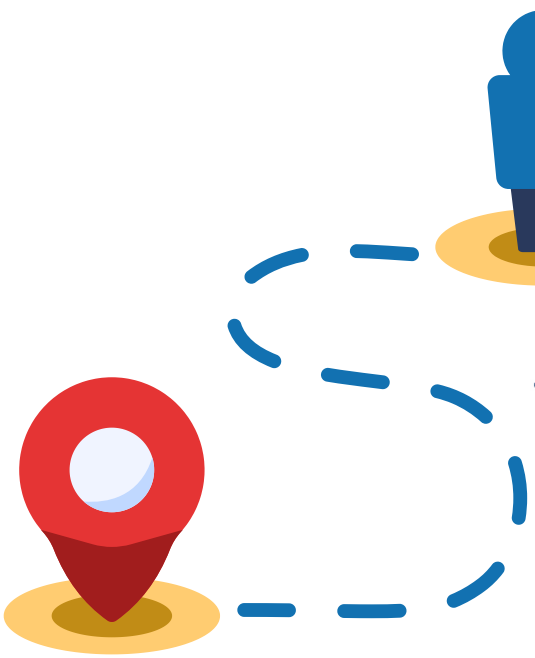
- Welcome
- Review & Roadmap
- Navigation and File Formats
- Spreadsheet Formatting
- Data Manipulation Techniques
- Sorting, Filtering, and Formulas
- Analysis ToolPak
- Q&A

Behind every data point, there's a story waiting to be told.

REVIEW


Descriptive statistics
Part1
Data types
Quantitative
Discreet
Continues
Categorical
Ordinal
Nominal
Statistics Summary
Measures of Center
Mean
Median
Mode
Implement notation
Part2
Histograms
Five Number Summary
Box plots
Statistics Summary
Measures of Spread
Range
Interquartile range (IQR)
Standard Deviation
Variance
The Shape of the data
Right-skewed
Left-skewed
Symmetric
Outliers
Descriptive vs. Inferential Statistics

ROADMAP



- Spreadsheets
  - Getting Started
    - Navigation: Worksheet
    - CSV,XLS,XLSX
    - Commas vs. Decimals
    - Range Addressing
    - Relative vs Absolute Addressing
    - Analysis ToolPak.
  - Popular Formulas
  - Manipulate Data
    - Math Operations
      - Addition (+)
      - Subtraction (-)
      - Division (/)
      - Multiplication (*)
    - Remove duplicates.
    - Split text to columns
    - Sorting
    - Filtering

SPREADSHEET BASICS

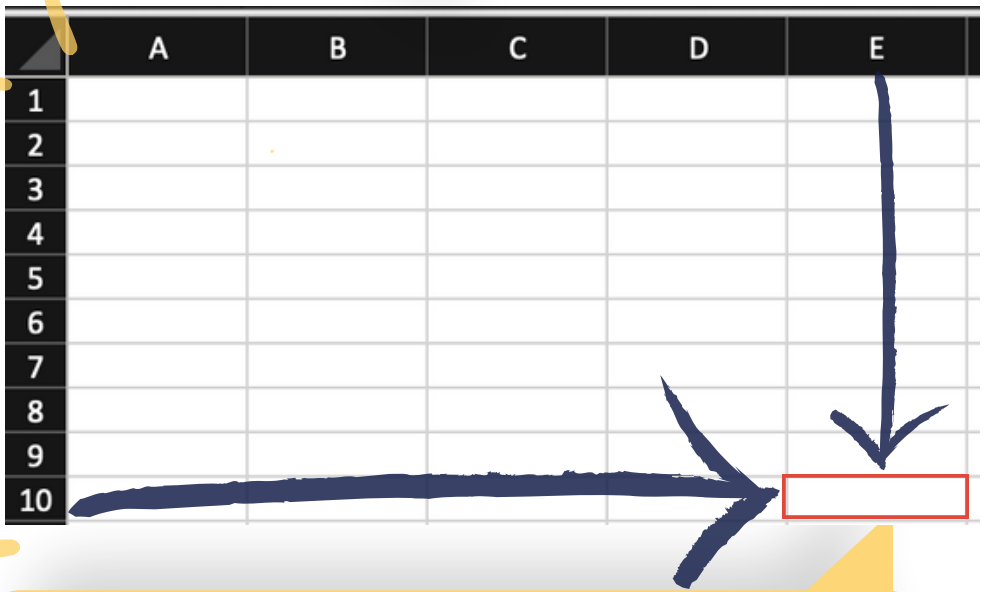
Spreadsheet Structure

Columns

Labeled with letters from A to Z, and then continuing with AA, AB, etc.

Rows

Numbered numerically.



Cells

Addressed based on their column and row. For example, the cell in Column E and row 10 is E10

CSV, XLS, XLSX

CSV (Comma-Separated Values):

- Simple format for storing tabular data.
- Each line represents a row, with values separated by commas.
- Ideal for data exchange between systems.
- .csv extension.

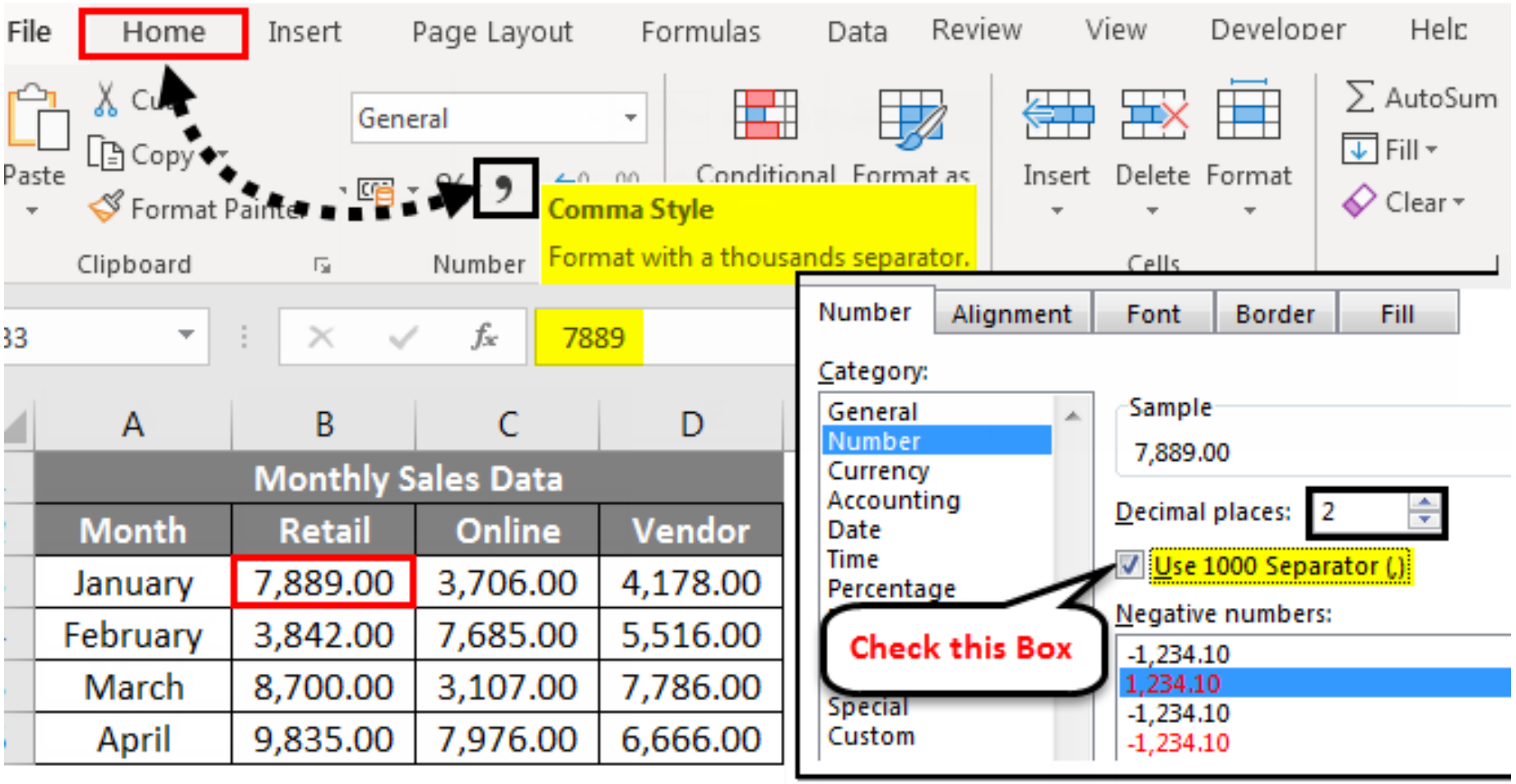
XLSX (Excel Open XML Spreadsheet)

- Modern file format for Excel.
- Based on XML, efficient and flexible.
- Supports advanced features and better performance.
- .xlsx extension.

XLS (Excel Spreadsheet)

- XLS (Excel Spreadsheet):
- Legacy format used by Microsoft Excel.
- Supports advanced features like formulas and macros.
- Compatible with older software versions.
- .xls extension.

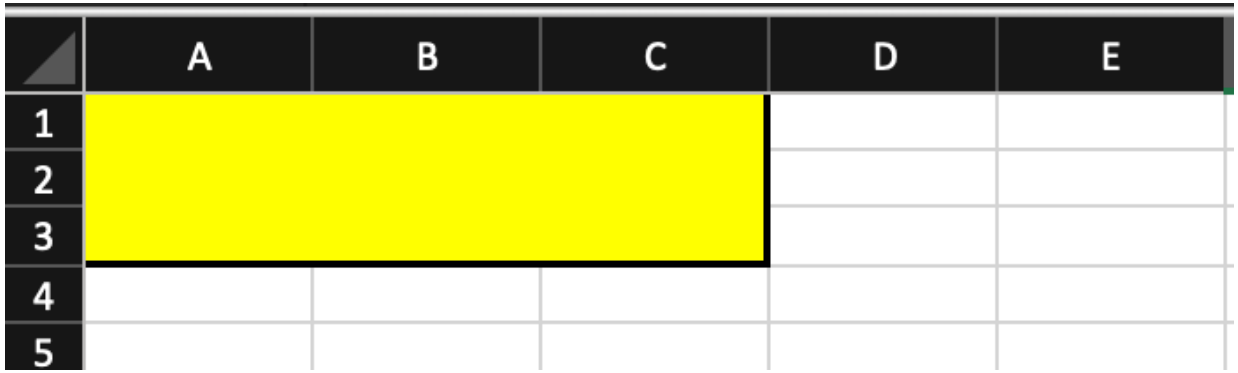
Commas vs. Decimals



Range Addressing

Contiguous Range

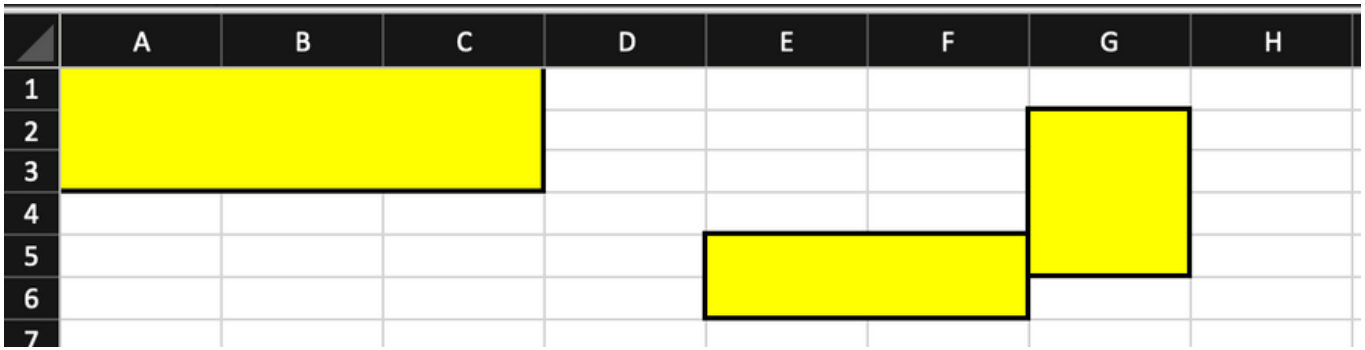
- A contiguous range consists of cells that are adjacent to each other.
- It forms a rectangular block of cells.
- **Example**: A1:C3 represents a contiguous range.



Range Addressing

Non-Contiguous Range

- A non-contiguous range consists of cells that are not adjacent to each other.
- It includes multiple separate selections of cells.
- **Example**: **A1:C3, E5:F6, G2:G5** represents a non-contiguous range.



Relative vs Absolute Addressing

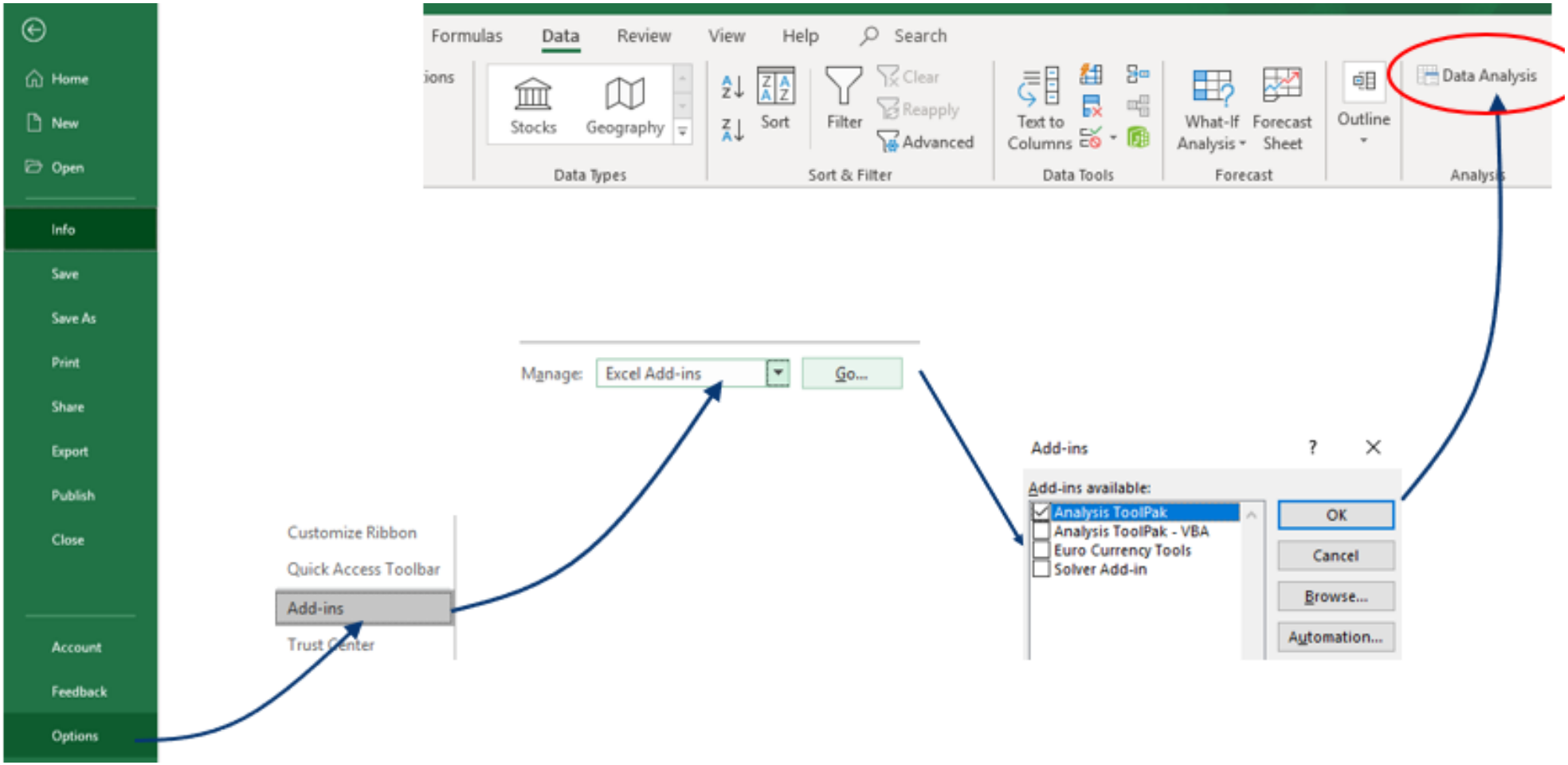
Relative Addressing

- Cell **A1** contains the value 10.
- In cell **B1**, the formula "=**A1**+5" is entered.
- When the formula is copied to cell **B2**, it automatically adjusts to "=**A2**+5" because it is using relative addressing.
- This allows the formula to reference cells relative to its own position.

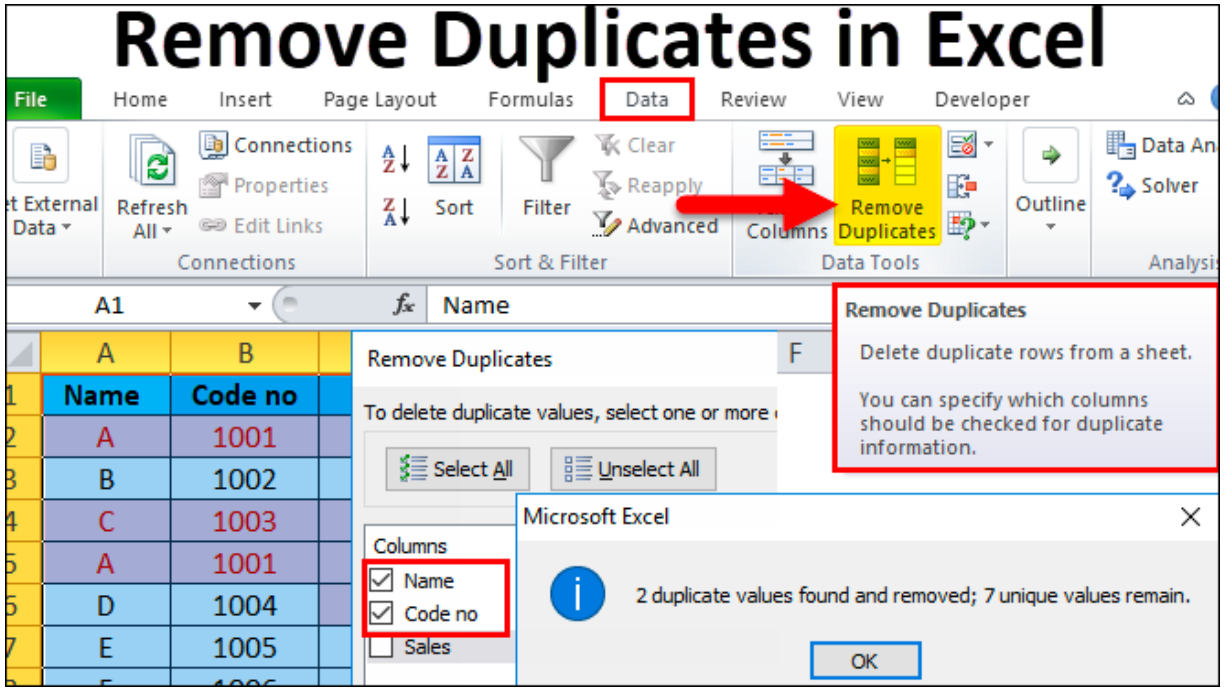
Absolute Addressing

- Cell **A1** contains the value 10.
- In cell B1, the formula "=**A1**+5" is entered.
- When the formula is copied to cell **B2**, it remains "=**A1**+5" without adjusting.
- The dollar signs ($) in the cell reference make it an absolute reference, keeping it fixed regardless of copying.

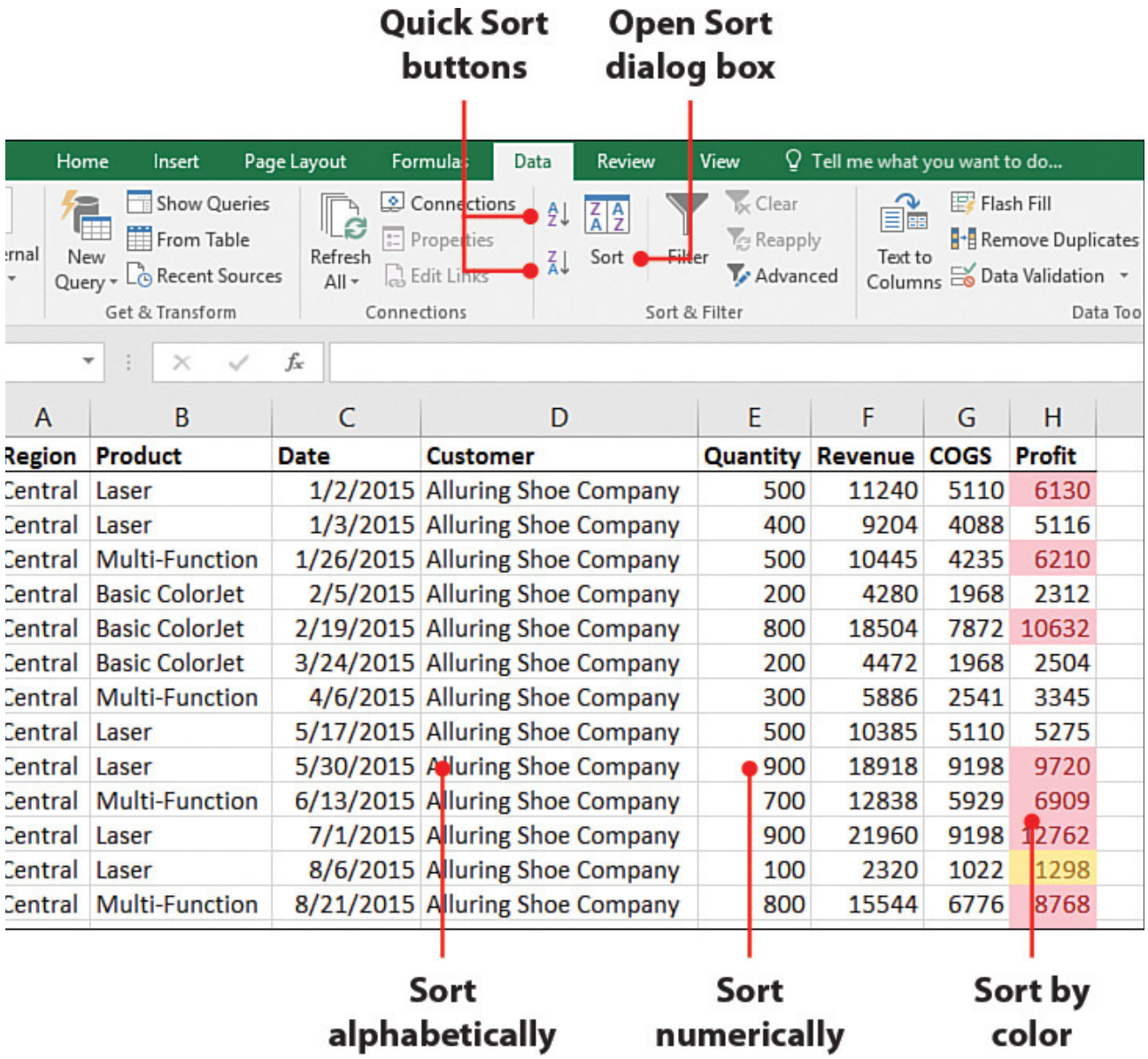
Analysis ToolPak.



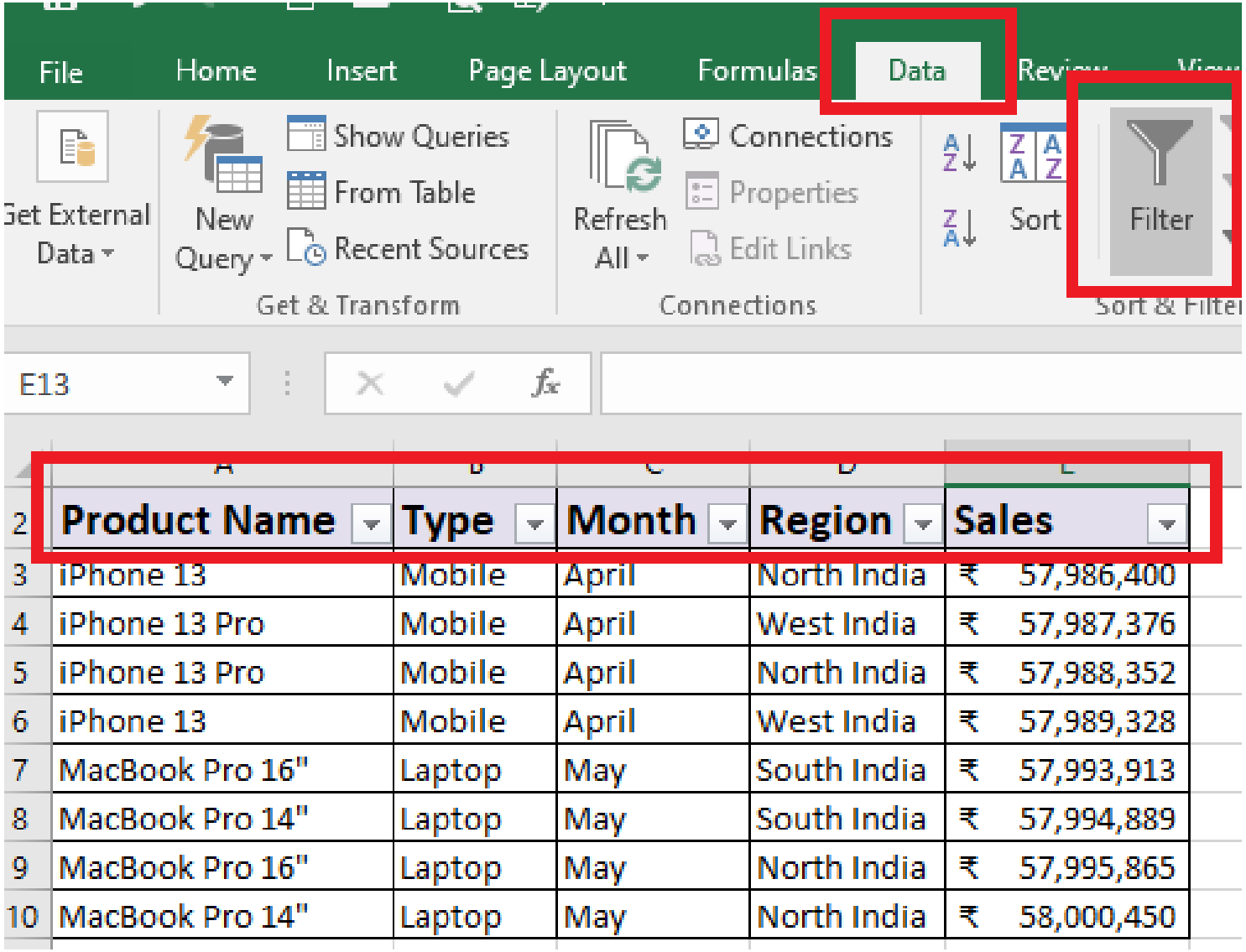
Remove duplicates.



Sorting


Quick Sort buttons
Open Sort dialog box
Home
Insert
Page Layout
Formulas
Data
Review
View
Tell me what you want to do...
Show Queries
From Table
Recent Sources
New Query
Get & Transform
Connections
Properties
Edit Links
Refresh All
Connections
Sort
Filter
Clear
Reapply
Advanced
Sort & Filter
Text to Columns
Flash Fill
Remove Duplicates
Data Validation
Data Too
Region
Product
Date
Customer
Quantity
Revenue
COGS
Profit
Central Laser 1/2/2015 Alluring Shoe Company 500 11240 5110 6130
Central Laser 1/3/2015 Alluring Shoe Company 400 9204 4088 5116
Central Multi-Function 1/26/2015 Alluring Shoe Company 500 10445 4235 6210
Central Basic ColorJet 2/5/2015 Alluring Shoe Company 200 4280 1968 2312
Central Basic ColorJet 2/19/2015 Alluring Shoe Company 800 18504 7872 10632
Central Basic ColorJet 3/24/2015 Alluring Shoe Company 200 4472 1968 2504
Central Multi-Function 4/6/2015 Alluring Shoe Company 300 5886 2541 3345
Central Laser 5/17/2015 Alluring Shoe Company 500 10385 5110 5275
Central Laser 5/30/2015 Alluring Shoe Company 900 18918 9198 9720
Central Multi-Function 6/13/2015 Alluring Shoe Company 700 12838 5929 6909
Central Laser 7/1/2015 Alluring Shoe Company 900 21960 9198 12762
Central Laser 8/6/2015 Alluring Shoe Company 100 2320 1022 1298
Central Multi-Function 8/21/2015 Alluring Shoe Company 800 15544 6776 8768
Sort alphabetically
Sort numerically
Sort by color

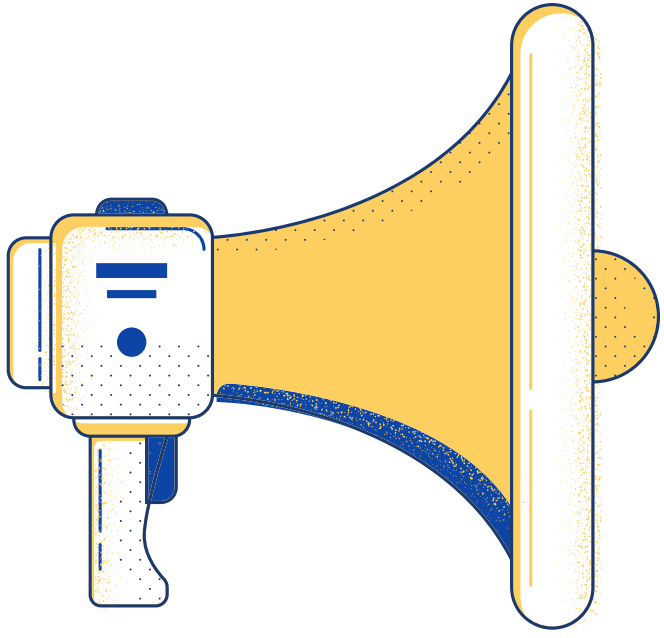
Filtering



	Product Name	Type	Month	Region	Sales
3	iPhone 13	Mobile	April	North India	₹ 57,986,400
4	iPhone 13 Pro	Mobile	April	West India	₹ 57,987,376
5	iPhone 13 Pro	Mobile	April	North India	₹ 57,988,352
6	iPhone 13	Mobile	April	West India	₹ 57,989,328
7	MacBook Pro 16"	Laptop	May	South India	₹ 57,993,913
8	MacBook Pro 14"	Laptop	May	South India	₹ 57,994,889
9	MacBook Pro 16"	Laptop	May	North India	₹ 57,995,865
10	MacBook Pro 14"	Laptop	May	North India	₹ 58,000,450

POPULAR FORMULAS

- SUM: Calculates the sum of a range of numbers.
- COUNT: Counts the number of cells in a range that contain numbers.
- AVERAGE: Calculates the average of a range of numbers.
- MEDIAN: Finds the middle value in a range of numbers.
- MODE: Identifies the most frequently occurring value in a range.
- MAX: Returns the highest value in a range.
- MIN: Returns the lowest value in a range.
- STDEV: Calculates the standard deviation of a range of numbers.
- LEN: Returns the length of a text string.
- UPPER: Converts text to uppercase.
- LOWER: Converts text to lowercase.
- LEFT: Extracts a specified number of characters from the beginning of a text string.
- RIGHT: Extracts a specified number of characters from the end of a text string.
- MID: Extracts a specified number of characters from a text string, starting at a given position.
- CONCATENATE: Joins multiple text strings into one.
- SUBSTITUTE: Replaces text within a string with new text.
- FIND: Finds the position of a specified character or text string within another string.
- PROPER: Capitalizes the first letter of each word in a text string.
- TRUE: Returns the logical value for "true."



Q&A Session: Let's explore and understand together

RESOURCES

- Excel_Cheat_Sheet
- Excel Formulas (simplilearn)
- Excel Formulas (exceljet)
- Excel Formulas (microsoft)

Your presence today has added value to our shared learning journey. Thank you for joining us!