

Data Analytics Project

11. Data Transformation with Excel



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EXCEL in Data Transformation

Excel provides efficient means for managing data through **sorting** - *arranging data in a logical sequence*, and **filtering** - *enabling focused analysis* by displaying specific subsets of data.

IMPORTANCE:

1. Sorting: *Organizes data* for identifying trends.
2. Filtering: Focuses on *specific subsets* for deeper insights.

EXAMPLES:

1. Sorting: Sort **sales data** by date.
2. Filtering: Filter **customer data** by age group.



DATA CONVERSION in Excel

Data conversion in Excel is the process of transforming data types to ensure compatibility and consistency across various systems and analysis tools.

IMPORTANCE: Efficient data conversion ensures seamless integration and accurate analysis.

EXAMPLES:

1. Convert **text-formatted dates** into **standard date** format.
2. Split a **column** containing comma-separated full names into separate columns for first and last names.



CONDITIONAL FORMATTING in Excel

Conditional Formatting in Excel allows users to apply formatting rules based on specific conditions, enhancing data visualization and analysis.

IMPORTANCE:

1. Helps highlight important trends and outliers.
2. Improves readability and clarity of data presentations.

EXAMPLES:

1. To highlight cells with values greater than a certain threshold in a sales report.



COMBINING DATASETS in Excel

Combining datasets in Excel involves merging multiple sets of data to create a unified dataset for comprehensive analysis.

IMPORTANCE:

1. Enables integration of data from different sources.
2. Facilitates holistic analysis by incorporating diverse perspectives.

EXAMPLES:

1. Merge sales data from different regions into a single dataset to analyze overall performance across territories. (Lookups, Index, data sources).



DATA CALCULATIONS in Excel

Excel involves using formulas and functions to manipulate numerical data for analysis and reporting; this is known as Data calculations.

IMPORTANCE:

1. Streamlines complex calculations.
2. Enhances accuracy and efficiency in data analysis.

KEY FEATURES:

1. **Formulas:** Custom calculations based on mathematical expressions.
2. **Functions:** Predefined formulas for specific calculations.



Widely Used Excel FUNCTIONS

A. *Statistical Functions:*

1. **SUM**: Calculates the sum of the cells.
2. **AVERAGE**: Computes the average of a range.
3. **COUNT**: Counts the numerical cells.

B. *Logical Functions:*

1. **IF**: Evaluate the conditions.
2. **AND**: Checks if ALL are TRUE.
3. **OR**: Checks if ANY is TRUE.

C. *Lookup and Reference Functions:*

1. **VLOOKUP**: Searches and retrieves the values.
2. **INDEX**: Returns cell value.
3. **MATCH**: Finds position.



COMMON ERRORS in Excel

Some of the most common errors occurring in Excel are shown in the below image along with the reason behind the error.

| Error Indicator | What caused the error |
|-----------------|--|
| #NULL | The cell range indicated in the formula is entered incorrectly. |
| #DIV/0! | A formula entered in a cell causes a divide by 0 error. Example =L1/L2 where L2 is an empty cell or has a value of zero. |
| #N/A | The formula refers to an empty cell, so no data is available to compute. |
| #REF | The formula refers to a cell that is not accessible, such as a named sheet that doesn't exist. |
| #NUM | The formula entered in the cell is invalid. |
| #NAME | A non-existent range name is used in a formula. |
| #VALUE | A function is used incorrectly, or the arguments are invalid. |



PIVOT TABLES in Excel

(1)

Pivot Tables are powerful data analysis tools in Excel that allow users to summarize, analyze, and visualize large datasets quickly and easily.

IMPORTANCE:

1. Streamlines data analysis by organizing and summarizing data.
2. Enables users to extract meaningful insights and trends from complex datasets.
3. Facilitates dynamic data exploration and interactive reporting.

PIVOT TABLES in Excel

(2)

KEY FEATURES:

1. **Drag-and-drop interface** for easy customization of data views.
2. Ability to **group and filter data dynamically** to focus on specific aspects.
3. **Aggregation functions** such as sum, average, count, etc., for data summarization.
4. Pivot table **layouts can be easily modified** and updated as needed.

EXAMPLES:

Analyzing Sales Data by *product category and region* to identify **top-selling products** and **high-performing regions**.



PIVOT CHARTS in Excel (1)

Pivot Charts complement pivot tables by providing graphical representations of **summarized data**, enhancing visual analysis and interpretation.

IMPORTANCE:

1. Visualizes data trends and patterns for better understanding and decision-making.
2. Offers dynamic interaction and exploration of data through customizable chart elements.
3. Facilitates presentation and communication of insights to stakeholders effectively.



PIVOT CHARTS in Excel (2)

KEY FEATURES:

1. A **wide range of chart types** is available, including *bar, line, pie, and scatter plots*.
2. Interactive features such as **drill-down, filtering, and sorting** for detailed analysis.
3. Seamless *integration with pivot tables*, allowing **simultaneous updates of charts and tables**.

EXAMPLES:

Creating a pivot chart to **Visualize Sales Trends over time**, with the *ability to drill down by product category or region* for deeper insights.



THANK YOU!!! FOR YOUR SUPPORT! For Now...

Keep Learning, Keep Sharing & Keep Following
Aagam Deolasi.

