**Execution Report: Cleaning Dataset in Excel and Visualization in Power BI**

**Objective**

The objective of this report is to detail the step-by-step process for cleaning the UserDetails dataset using Excel and visualizing insights derived from the dataset in Power BI. The goal is to analyze user behavior, cooking preferences, and order trends effectively.

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**Step 1: Cleaning the Dataset in Excel**

**Tools Required**

- Microsoft Excel (preferably Office 365 for latest features)

**Steps for Data Cleaning**

1. **Open the Dataset**:
    - Import the UserDetails.csv file into Excel.
    - Ensure the file opens with all columns visible (adjust column width if necessary).
2. **Remove Duplicate Records**:
    - Highlight the dataset.
    - Navigate to the **Data** tab.
    - Select **Remove Duplicates** and choose relevant columns (e.g., UserID or Email).
3. **Handle Missing Values**:
    - Identify cells with missing values.
    - Replace empty cells with appropriate placeholders:
        - Use "Not Provided" for categorical columns like City.
        - Fill numerical columns like Age with the average or median value.
4. **Standardize Formatting**:
    - Format text columns (e.g., Name) to Title Case using Excel functions.
    - Ensure dates are in DD/MM/YYYY format.
    - Standardize phone numbers to a uniform format using TEXT functions.
5. **Validate Data**:
    - Use conditional formatting to highlight anomalies (e.g., ages below 10 or above 100).

- Cross-check unique identifiers such as UserID for consistency.

6. **Export Cleaned Dataset**:
    - Save the cleaned file as UserDetails_Cleaned.xlsx in the data/ folder.

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**Step 2: Visualizing Insights in Power BI**

**Tools Required**

- Microsoft Power BI Desktop

**Steps for Visualization**

1. **Load Data**:
    - Import the cleaned UserDetails_Cleaned.xlsx file into Power BI.
    - Verify that all columns are correctly mapped.
2. **Data Transformation**:
    - Use the **Power Query Editor** to:
        - Rename columns for clarity (e.g., User_ID to User ID).
        - Create calculated columns, such as Age Group (e.g., "18-25", "26-35").
    - Add a new column to categorize users based on their city size (e.g., Metro, Tier 2, Rural).
3. **Create Visualizations**:
    - **Demographics Analysis**:
        - Pie chart for Age Group distribution.
        - Bar chart for City-wise user counts.
    - **Behavioral Insights**:
        - Line chart showing registration trends over time.
        - Clustered bar chart for preferred cooking preferences by demographic.
4. **Build the Dashboard**:
    - Arrange visualizations logically:
        - Top section for overall demographics.
        - Middle section for cooking and order behavior.

        - Bottom section for trends and insights.
    - Use slicers for dynamic filtering by Age Group, City, or Registration Date.

5. **Export Dashboard**:
    - Save the Power BI file as UserDetails_Visualization.pbix.
    - Export visuals as PNG images to include in reports or presentations.

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**Conclusion**

By following these steps, the cleaned dataset can provide actionable insights through visually appealing and interactive dashboards. This approach ensures accuracy in data representation and aids decision-making based on clear, structured analyses.

**Contact**

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