

# Data Analysis and Visualization Project on Power BI

**Objective:** Analyze and visualize a given dataset to derive meaningful insights and present a compelling story using Power BI.

## Instructions:

### 1. Dataset Selection

Use the datasets related to the following themes:

- Energy Consumption

Link: <https://www.kaggle.com/datasets/pralabhpoudel/world-energy-consumption>

- Sales and Marketing Analytics

Link: <https://www.kaggle.com/datasets/beekiran/sales-data-analysis>

- Financial Data

Link: <https://go.microsoft.com/fwlink/?LinkID=521962>

- Healthcare Analytics

Link: <https://www.kaggle.com/datasets/abisheksudarshan/health-care-analytics>

*(Ensure the dataset has sufficient columns for analysis, e.g., dates, categories, numerical values, etc.)*

### 2. Data Cleaning and Transformation

- Load the dataset into Power BI.
- Perform necessary cleaning: handle missing values, remove duplicates, and format columns (e.g., date and currency).
- Create new calculated columns or measures where necessary (e.g., percentage change, growth rates).

### 3. Data Analysis

- Identify key performance indicators (KPIs) based on the dataset.
- Perform trend analysis, comparisons, or segmentation (e.g., year-over-year analysis, product category performance).

### 4. Visualization

- Create at least 4 interactive visuals to communicate the insights.

- Include at least one of each of the following:
  - Bar/Column Chart
  - Line Chart
  - Pie/Donut Chart
  - Map (if geographical data is available)
- Use slicers/filters to make visuals interactive.
- Design a clean and professional Power BI dashboard layout.

#### 5. **Insights and Reporting**

- Highlight the insights gained from the analysis.
- Provide recommendations or conclusions based on the visualizations.

#### 6. **Deliverables**

- A Power BI file (.pbix) with a fully interactive dashboard.
- A 2 to 3 pages' summary/report explaining the insights, KPIs, and recommendations.

#### Resources:

- <https://learn.microsoft.com/en-us/power-bi/fundamentals/desktop-get-the-desktop#download-power-bi-desktop-directly>
- <https://learn.microsoft.com/en-us/power-bi/fundamentals/service-get-started>
- <https://medium.com/edureka/power-bi-tutorial-ed9619113223>
- <https://www.simplilearn.com/tutorials/power-bi-tutorial>
- [https://www.youtube.com/watch?v=I0vQ\\_VLZTWg](https://www.youtube.com/watch?v=I0vQ_VLZTWg)