Mid-Term Project: Exploratory Data Analysis with Power BI

Course: Introduction to Power BI
Institution: Miami Dade College

Objective

To provide students with an opportunity to apply their knowledge of Power BI in a real-world context by performing Exploratory Data Analysis (EDA) on a dataset of their choice, identifying insights, and creating visualizations to communicate these insights.

Instructions

1. **Dataset Selection**: Choose a dataset that you're interested in. This could be from any domain: finance, sports, entertainment, health, environment, etc. Your dataset should have at least 500 rows and 5 columns to ensure there's enough data to explore and analyze.
2. **Data Import and Cleaning**:
    - Import your chosen dataset into either Excel or Power BI.
    - Perform any necessary data cleaning operations to ensure the quality of your data. This might include handling missing values, removing duplicates, or converting data types.
3. **Exploratory Data Analysis (EDA)**:
    - Explore the dataset to understand its structure, variables, and the relationships between them.
    - Use descriptive statistics to summarize the main characteristics of the dataset.

    - Identify any patterns, anomalies, or outliers in the data.
4. **Insight Generation**:
    - Based on your EDA, identify and document at least three insights from the dataset.
    - For each insight, explain the significance or potential impact it might have in the real-world context of the dataset's domain.
5. **Visualization with Power BI**:
    - Create at least three visualizations in Power BI, one for each of your insights. These could be bar charts, scatter plots, line graphs, maps, or any other visualization type that best represents your insight.
    - Ensure your visualizations are clear, labeled, and provide a concise representation of your insights.
6. **Report Compilation**:
    - Compile a report in Power BI that presents your EDA, insights, and visualizations.
    - Make sure to include a brief introduction about your chosen dataset and the domain it represents.
7. **Submission**:
    - Export your Power BI report as a PDF.
    - Submit the PDF report along with any supplementary files (e.g., Excel files) you used during your analysis.

Grading Criteria

- **Dataset Selection and Quality (10%)**: Dataset is relevant, interesting, and of sufficient size.
- **Data Cleaning (15%)**: Demonstrates understanding of data quality and implements appropriate cleaning techniques.
- **Exploratory Data Analysis (20%)**: Provides a thorough exploration of the dataset using appropriate techniques.
- **Insight Generation (20%)**: Insights are relevant, interesting, and well-explained.
- **Visualization Quality (25%)**: Visualizations are clear, relevant, and effectively convey the insights.
- **Report Presentation (10%)**: Report is well-organized, includes all necessary sections, and is free of errors.