Assignments (Py04)

Python Assignment: Unique and Informative Data Visualization

Overview

In this assignment, you are tasked with creating a unique and highly informative plot using data from the given CSV file, which can be accessed via the link provided on opendata.swiss.

Instructions

1. **Data Acquisition**:

   - Visit the provided link and download the CSV file containing SARS-CoV-2 (COVID-19) related data.
   - COVID-19 Data

2. **Data Exploration**:

   - Load the CSV file into a Pandas DataFrame. You may use the pandas library to accomplish this. pd.read_csv(https://idd.bag.admin.ch/api/v1/export/current/COVID19_oblig/csv)
   - Explore the dataset to understand its structure, content, and the relationships between different variables.

3. **Plot Creation**:

   - Based on your exploration, identify a unique and insightful aspect of the data that can be visualized. This might involve:
     - Analyzing trends over time.
     - Comparing different categories or regions.
     - Highlighting correlations or anomalies.
     - Performing statistical or predictive analysis.
   - Use Python libraries such as Matplotlib, Seaborn, Plotly, or others to create a visualization that is:
     - **Unique**: Aim to create a plot that few others would think to create. The more unique the perspective or combination of data points, the higher your grade.
     - **Informative**: Ensure that your visualization conveys valuable insights. The clarity, depth, and relevance of the information presented will be a major factor in grading.

4. **Documentation**:

   - Write a brief explanation (in Markdown or as a comment) detailing the rationale behind your choice of visualization, the insights it provides, and any challenges you encountered.

5. **Submission**:

   - Submit your Python script or Jupyter notebook containing:
     - The code to load, explore, and visualize the data.

- The final plot.
        - Your written explanation.
    - Additionally, submit a powerpoint presentation with one slide containing the plot, a brief explanation of the plot and your name.

Evaluation Criteria

- **Uniqueness (50%)**:

    - **Hard**: If you are the only one to present the chosen visualization or analysis.
    - **Medium**: If only two of you present a similar type of visualization.
    - **Easy**: If more than three students present similar visualizations.

- **Informative Value (50%)**:

    - How well the visualization captures and communicates important insights from the data.
    - The effectiveness of the visualization in answering a significant question or revealing hidden patterns.

Tips for Success

- Think creatively about the data. Consider different angles and questions that the data might answer.
- Consider combining multiple visualizations or layers within a single plot to tell a more comprehensive story.
- Pay attention to the aesthetics and clarity of your plot. Ensure that it is not only unique but also easy to interpret.
- Double-check your data handling and ensure that any conclusions drawn are supported by the data.

This assignment is designed to challenge your ability to extract meaningful insights from data and present them in a way that stands out. Good luck!