

Assignment - 3

1. Seaborn Assignment:

- a. Explain the features of Seaborn that differentiate it from other visualization libraries.
- b. Demonstrate how to create plots with Seaborn using sample datasets. Include at least three different types of plots.
- c. Provide real-world examples where Seaborn can be effectively used for data visualization. Discuss the advantages of using Seaborn in these scenarios.

2. Altair Assignment:

- a. Describe the declarative API of Altair and compare it with other visualization libraries like Matplotlib.
- b. Create an Altair chart and plot for a given dataset. Explain the steps involved in creating the plot, including data encoding and mark types.
- c. Discuss the importance of global configuration in Altair. Provide examples of how global configuration can be utilized to enhance visualization consistency across different plots.

3. Altair Encoding and Properties:

- a. Explain the concept of encoding arguments in Altair and how they affect the visualization output.
- b. Describe Altair datatypes and their significance in constructing meaningful visualizations.
- c. Demonstrate how to create titles, tooltips, and other properties in Altair charts. Provide examples to illustrate their usage.

4. Altair Interactive Visualization:

- a. Discuss the methods used to make Altair plots interactive. Provide examples of interactive elements such as zooming, panning, and tooltips.
- b. Compare the interactive capabilities of Altair with other popular visualization libraries.
- c. Propose a scenario where interactive visualization with Altair can add significant value to data analysis tasks. Describe the benefits of employing Altair for interactive data exploration in this context.

5. Comprehensive Visualization Assignment:

- a. Compare and contrast Seaborn and Altair in terms of their features, ease of use, and suitability for different types of datasets.
- b. Create a series of visualizations using both Seaborn and Altair for the same dataset. Analyze the differences in the generated plots and discuss the strengths and weaknesses of each library.
- c. Based on your analysis, provide recommendations on when to use Seaborn and when to use Altair for data visualization tasks, considering factors such as dataset size, complexity, and desired visualization interactivity.