CSCE 5320 Scientific Data Visualization
ICE-11

Multiple Linked Views

Use Python for this lab. You can import any python library for this lab. Please use your own data for this lab, you can use the data set from your previous labs. The data should contain multiple quantitative values or timeline.

1. **Small Multiples (30 points)**

   1.1) Please create a 3X3 grid of subplot (not data needed), describe the advantage of applying small multiples in data visualization. submit the screenshot of the graph and code (commented properly)

   1.2) Create a line chart which contains multiple lines. Analysis the data based on your line chart. Submit a screenshot of the graph which contains the selection object and a screenshot of your code (commented properly).

   1.3) Use small multiples to separate the above chart into multiple subplots. Submit a screenshot of the multiple plots and a screenshot of your code (commented properly). Describe differences/similarities between these subplots. Analysis the data based on the plots.

2. **Linked Highlighting with Brushing (30 points)**

   2.1) Create two different types of charts (scatter plot, bar chart, line chart, etc.) based on your dataset. Submit a screenshot of the graph and a screenshot of your code (commented properly).

   2.2) Linking these two charts, selecting one element in one chart, and seeing linked highlights the other chart (Brushing and linking). Submit screenshots of the graph and a screenshot of your code (commented properly).

   2.3) What are the pros and cons of Brushing and Linking? Give sufficient explanation with examples.

3. Linked Navigation (40 points)

Find or create a location csv which contains latitude and longitude value.

3.1) Show part of the dataset and show these locations on the map. Submit a screenshot of the dataset and the map, and a screenshot of your code (commented properly).

3.2) Add Tooltip to your map, submit a screenshot of the map and the code (commented properly).

3.3) Add a new column 'Color' to your csv. Build a function to separate all locations into different colors. Show the new dataset (include the color column) and reload the map with color. Submit a screenshot of the dataset and the map, and a screenshot of your code (commented properly).

Rubric ICE 11

Q1: Small Multiples (30 points)

Criteria	Ratings		Pts
1.1) Screenshots of the graph is provided, and the data description / explanation is matching the data. Answer the question.	**10 pts**	**0 pts**	5 for the screenshot 5 pts for explanation
	Full Marks	**No Marks**	
1.2) Screenshots of the graph is provided, and the data description / explanation is matching the data.	**10 pts**	**0 pts**	5 for the screenshot 5 pts for explanation
	Full Marks	**No Marks**	
1.3) Screenshots of Code and the graph are provided, and the code should be properly commented with an explanation.	**10 pts**	**0 pts**	5 for the screenshot 5 pts for explanation
	Full Marks	**No Marks**	

Q2: Linked Highlighting with Brushing (30 points)

Criteria	Ratings		Pts
2.1) Screenshots of Code and the graph are provided, and the code should be properly commented with an explanation.	**10 pts**	**0 pts**	5 pts for chart 5 pts for code screenshots and code explanation
	Full Marks	**No Marks**	
2.2) Screenshots of Code and the graph are provided, and the code should be properly commented with an explanation.	**15 pts**	**0 pts**	10 pts for chart 5 pts for code screenshots and code explanation
	Full Marks	**No Marks**	
2.3) Answer the question	**5 pts**	**0 pts**	5 pts
	Full Marks	**No Marks**	

Q3: Linked Navigation Map (40 points)

Criteria	Ratings		Pts
3.1) Screenshots of dataset, the code and the map are provided, and the code should be properly commented with an explanation.	**10 pts**	**0 pts**	5 pts for the map and data 5 pts for code screenshots and code explanation
	Full Marks	**No Marks**	
3.2) Screenshots of Code and the map with tooltips are provided, and the code should be properly commented.	**10 pts**	**0 pts**	5 pts for the map with tooltips 5 pts for code screenshots and comments
	Full Marks	**No Marks**	
3.3) Screenshot of new dataset (contains color column) and the code should be provided with comments. A new map separated by different colors and the code should be provided.	**20 pts**	**0 pts**	10 pts for the new dataset and code which create new color column 10pts for the new map and the code
	Full Marks	**No Marks**	

Plagiarism Rules:

• No scores to the questions which are completely plagiarized i.e., same screenshots captured, or almost same wordings for an explanation.

• If the similarity score for the explanation part (mainly analysis) is >= 50% and is plagiarized with other students or any source, deduct 30-50% off from the obtained score.

• If it is between 30-50%, deduct 20-30% from the obtained score.

• For all others, it should be according to the

ICE Submission Guidelines

1. ICE Submission is individual.
2. ICE code (if there is any) has to be properly commented.
3. The documentation should include the screenshots of your code/results.
4. Provide the explanation of the exercise as per your understanding.
5. The similarity score for your document should be less than 15%.
6. Submit the documentation (.pdf/.doc) with visual images of the data with explanation.
7. Submission after the deadline is considered as late submission.