Final Project Proposal

(due March 10th 7:00p.m)

This document outlines the guidelines for the project proposal. You can start working on the project once your proposal is accepted and graded by your TA on gradescope. The entire final project is worth 25% of your final grade and the proposal takes account for **5%**. There is no late-submission on the proposal.

Submission Guideline

Download this google doc, fill the table and submit it in **PDF** format on Gradescope.

If you need some inspirations please feel free to take a look at:
Showcase of Information is Beautiful Awards

Project Proposal

	Description
Project Topic	Explore and Visualize Data Science Job Opportunities in the US
Dataset Description	Provide 1) the list of attributes and 2) a single item in the dataset as an example. A list of attributes (columns) in this dataset include (but not limited to) Job Title, Salary Estimate, Rating, Company Name, Company Location, Headquarters, Industry, Revenue, Age, etc. This dataset consists of 42 distinct attributes in total. One example item can be as follows: ● Job Titles: Health data scientist ● Salary Estimate: $63K–$112K ● Rating: 3.4 ● Company Name: University of Maryland Medical System ● Location: Linthicum, MD ... (I'll leave out the enumerating the remaining 37 features about this item since that would just be too long of a list, I will most likely throw out a few features that I would not use to generate insights for my visualization)

Dataset Link	https://www.kaggle.com/datasets/nikhilbhathi/data-scientist-salary-us-glassdoor?resource=download
Why you chose this particular dataset. What kind of story you aim to deliver (e.g "Sales analysis of company xyz")	Hint) You can refer to the storytelling lecture slides. As a data science student and soon-to-be graduate from the department, I am naturally inclined to find out how the job market is marching on in favor (or perhaps not) of new graduates that possess data science skill sets. I would like to in particular explore and deliver to my audience how are the data science job opportunities distributed across different states according my dataset from 2021, what the salary range spread is like, where are most jobs and companies clustered, skills related to certain job positions, and such so that hopefully those that are wondering what the future is like can gain some quick and informative facts through consuming my visualizations.
1 plot with 0 Key and 2 values	i) Question you are asking from this graph. Are data scientists of different salary ranges satisfied with their jobs and companies? ii) Columns you are going to use Salary Estimate, Rating iii) Type of graph Scatterplot
1 plot with 1 key and 1 value	i) Question you are asking from this graph. How much on average are data scientists getting paid across different industries? ii) Columns you are going to use Industry, Average Salary iii) Type of graph Vertical Barchart
1 plot with 2 keys and 1 value	i) Question you are asking from this graph.

	What is the salary range like for data scientists or data scientists equivalent positions in different industries? ii) Columns you are going to use Job Title Simplified, Salary Estimate, Industry iii) Type of graph Streamgraph or stacked barchart
1 geometric visualization	i) Question you are asking from this graph. How many open positions are there across states and cities? ii) Columns you are going to use Company Location, Job Title iii) Type of graph US geo-map with some form of magnitude indicator for the number of jobs to each state.
1 visualization from - box plot, node-link diagram, adjacency matrix	i) Question you are asking from this graph. What is the pay-gap like between different data science positions? ii) Columns you are going to use Average Salary, Job Title Simplified iii) Type of graph Grouped Boxplot
1 interactivity using Buttons	Describe in which visualization you plan to add the button-related interactivity For the pie chart, viewers can click the dropdown to select another industry and the chart would re-render the distribution.

1 interactivity using Tooltips (Display data on hover).	Describe in which visualization you plan to add a tooltip. For the streamgraph, some areas can be really small so I can add a tooltip so that the small areas are highlighted and its information can be displayed more salient.
1 interactivity using Animation.	Describe 1) what type of animation you plan to add and 2) in which visualization you plan to add. I have zoom-in and zoom-out for my entire page. When the mouse hovers on one card, the card enlarges, and when it leaves, it shrinks.
1 interactivity not learned in class	Describe 1) what type of animation you plan to add and 2) in which visualization you plan to add. I plan to make a pie chart to display the type of jobs typical to a certain industry in addition and I plan to make it animated so that the chart rotates and unfolds in a spiral once I change from one industry to another.
Any creative form of plot you want to try for the five you selected above? (e.g. pictogram)	Hint) You can refer to the storytelling lecture slides. Note) This is going to be for extra credit. Pie charts seem to be a good starting point. It can have cool spiral animation and still encode very visually appealing information, but I may consider making the visualization displayed as pictograms if I can come up with meaningful icons for different job positions.