Lab3 Data visualization

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1 Objectives

In contemporary society, schools, degrees and economic income are inextricably linked. We hope to provide valuable insights into the relationship between degrees and financial income, and will help families make better-informed decisions that will impact students' futures. By analyzing the data in the dataset provided by Payscale, we can understand and visualize the relationship among salary, degree, school, and geographic location, finally summarize the law from it.

2 Requirement of this task

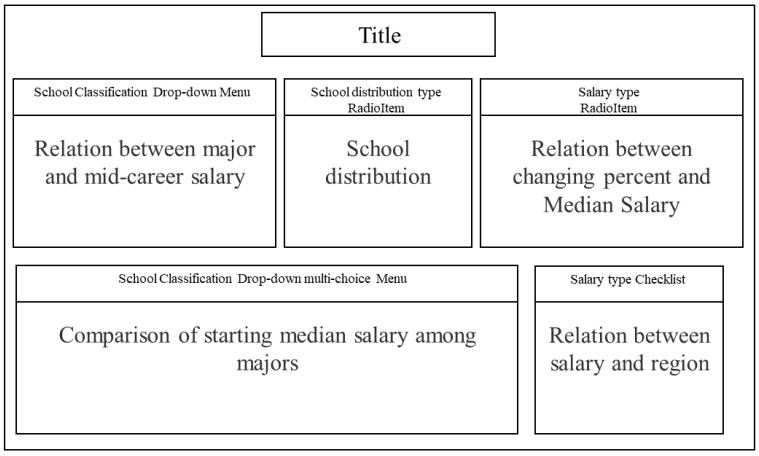
- Comply with principles of the 3 task categories used in the data visualization task which is mentioned in the class.
- Process irregular data or empty data.
- Make data interactive design, and users can filter the displayed data.
- Has a friendly visual interface

3 Dataset introduction

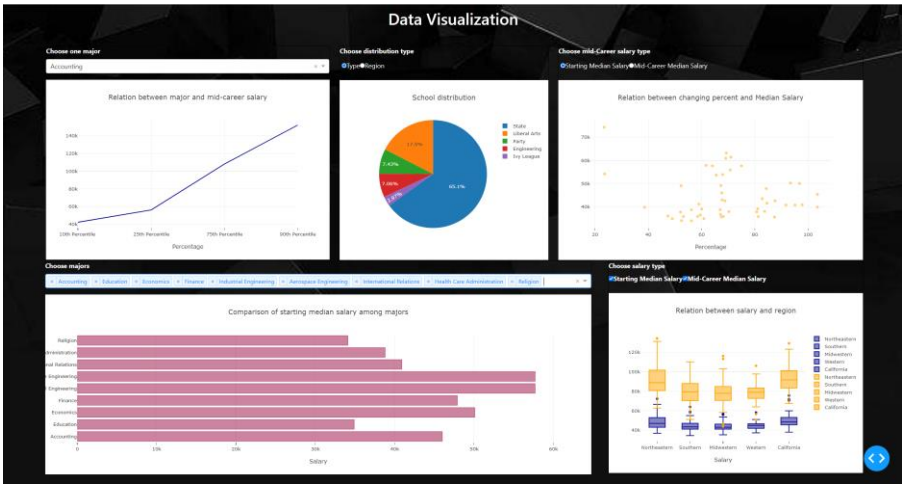
- degrees-that-pay-back: Represents the relationship between 50 undergraduate majors and the starting median salary and mid-career median salary.
- salaries-by-college-type: Represents the relationship between school types (such as Party and Engineering, Liberal Arts, etc.) and salary for 269 schools
- salaries-by-region: Represents the relationship between 320 schools, geographic location and salary.

4 Page structure

A total of 5 visual charts are set up in this project. Each chart has a different type, and is matched with a data interactive component, including drop-down, radio item, and checklist. Users can filter the data by changing the value in the interactive component, and the data will be updated in real time. The overall layout of the page is mainly horizontal.



5 Page design

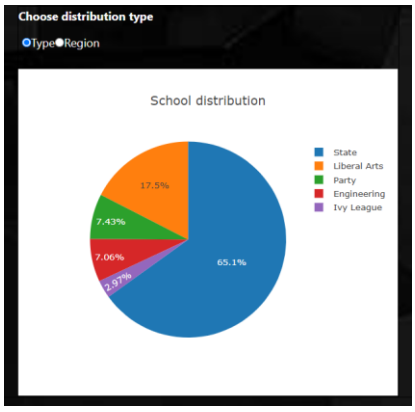


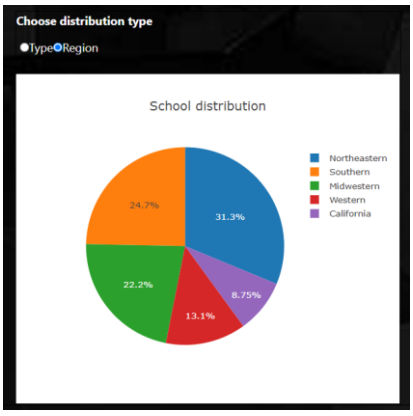
6 Introduction of each chart

a) Relation between major and mid-career salary: line chart

This graph shows the mid-career salary for the 4 percentiles. From this, users can see the salary changes of each major, so as to understand the salary distribution of the major. The closer the trend is to a straight line, the more stable salary changes are. The graph shows that the top 25 percent of Accounting majors have relatively low wages, while the bottom 75 percent has a large upward trend.

b) School distribution: pie chart



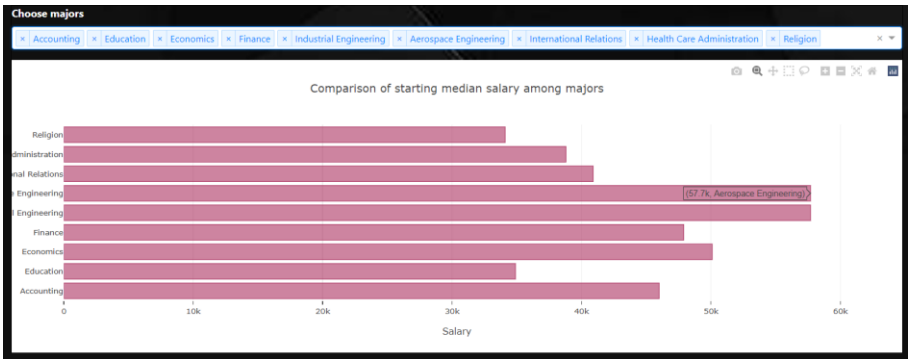


Users can view the distribution of schools in the table by selecting the "Type" or "Region" of the school. From the table, we can clearly see that schools of the type "State" account for the largest proportion, accounting for 65.1%; most of the schools are located in Northeastern, Southern and Midwestern regions.

c) Relation between changing percent and median salary: scatter chart

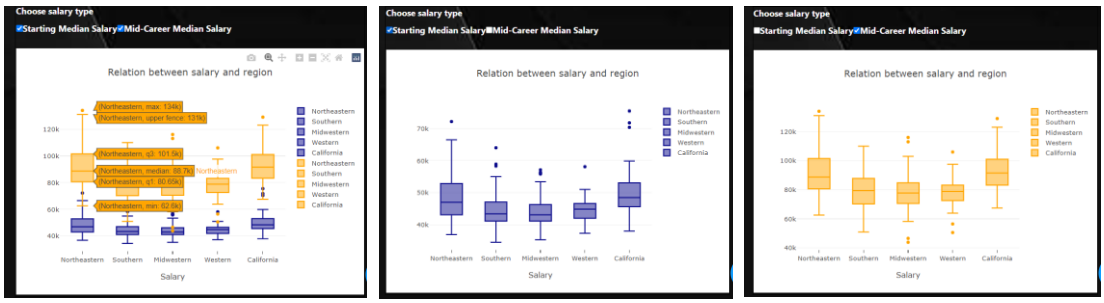
The user selects the salary type (starting or mid-career) and observes the relationship between the percentage of salary change and salary. From the chart, we can see that for a surgeon's assistant, his starting salary is already high, and there is not much upward trend in salary. For "math" and "philosophy" (with percentage of more than 100%), there can be a larger increase.

d) Comparison of starting median salary among majors: bar chart



By choosing multiple different majors, users can compare their starting median salary. The table compares the starting salaries of nine majors, with Aerospace engineering and Industrial engineering having the highest starting salaries.

e) Relation between salary and region: box chart



Box chart can not be affected by outliers, can accurately and stably depict the discrete distribution of data. Users can visually view the salary distribution in different regions. The table shows that starting salaries and mid-career salaries are relatively high in the two regions, Northeastern and California.