**Web Data Design**

Project Report

Lam Le – CSC 160 Fall 2019

Cause: My cause in general is inequalities. But in this project, I choose to focus on inequality between men and women at workplace.

Why it is important to me: I will soon go to work and the fact that female still face a lot of unfairness and discrimination bothers me.

Project URL: <https://shirone0110.github.io/FinalProject/>

Repository URL: <https://github.com/Shirone0110/FinalProject>

Source of datasets: All my datasets are from Bureau of Labor Statistic <https://www.bls.gov/>. My datasets include earning ratio from 1990-2018, earning ratio by age group, wage growth rate comparing to 22-year-old, earning ratio by industry, and pay gap by occupation.

What surprising thing I have shown in my visualization:

* Although earning ratio between men and women overall has been increasing through time, women still only earn about 80% of what men earn in average.
* Women earn less then men in most industries and occupations, no matter if that industry/ occupation has more men or women workers.
* As people aged, wage gap between men and women increase. Men’s wage also peak later in their career at higher salary compare to women’s.

Why is my design well suited my findings:

* I use a scatter plot to describe the earning ratio through time because it’s the most suitable graph to show the change in a time period. I use a non-zero baseline because most of the data are in 60-90 range, so zoom in that area will help see the change more clearly.
* I use a pyramid graph to show percent earning and percent number of workers at the same time as they have different scale but are in the same industry. At the same time I also use a bar graph to show percent earning for occupations in that industry. That way user can see no matter if an industry have more men or women workers, women still earn less then men in most industries. Using length or height chart is suitable to show the magnitude of an element.
* Because I think there are connection between ratio earning by age group and wage growth through age, I decided to put them in a same graph. Because the ages are in groups so I use a bar graph with the width represent the age groups and showing the ratio at the same time. The user should see that at first the wage growth between men and women are almost the same, women’s wage growth is even more than men’s. But after 35 years old, something happened (I think it’s because women have to stop working to take care of their children) so the percent wage growth of men now increase drastically comparing to that of women. Because the growth gap increase, the earning ratio between women and men decrease.

Pieces that make my work complex:

* I set up all of the graphs at the beginning, then hide the ones that the user is not looking at and alternately showing and hiding the graphs and legends.
* Combining the industries with their occupations
* The animation of the bars and dots growing up or out from the axis.
* Clicking on the dots in the first graph, because circles in SVG don’t have on click function

Influences to my visualization: Except for the pyramid graph Dr. B recommended, the rest of my visualization is my idea.

Evaluation:

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| --- | --- |
| Shows truth (only one of these) | |
| 5% | Displays information with at least 5 dimensions about a topic |
| 15% | Effectively displays information that is easy to navigate and understand |
| 25% | Makes an effective (and truthful) argument to dispel a myth |

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| --- | --- |
| Beauty and Engagement (all that apply) | |
| 5% | Effective layout and decoration using css |
| 10% | Pleasing interactions, intuitive actions occur due to hovers or clicks |
| 5% | Engaging animation |
| 5% | Animation is central to understanding the data |

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| --- | --- |
| Embracing the Medium (only one of these) | |
| 5% | Static information that can be displayed using a standard spreadsheet. |
| 15% | Leverages interactivity to access all dimensions of data (but may not all at once) |
| 25% | Effectively combines at least 5 dimensions of data in a visualization |

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| --- | --- |
| Level of Difficulty | (only one of these) |
| 5% | Histogram, pie chart, stacked bar chart  (assumes use of libraries) |
| 15% | Tree, Choropleth, Chord, Tree packing (assumes use of libraries) |
| 20% | Unique visualization or unique addition to an existing visualization |

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| Documentation - (all that apply) as a paper turned in both electronically on the site and in paper form last day of class. | |
| 10% | Describes what a user should see, how they interact with it, and how they will interpret it.  Your document should reference relevant ideas from Cairo. (You may reference chapters not assigned to the class) |
| 5% | Lists Sources of data and rates the authenticity of the sources |
| 5% | Fills out this rubric and evaluates their contributions |
| -5% | If not turned in, on paper, on due date. |

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| Extra - Be it data collection, complex algorithms, unified field theory, or just soap.  Be sure to talk about it. | |
| ??% | If you do not report on this, then it didn't happen.  If you are not sure if it would count as something extra, then go on a report it anyway. |

Extra:

* Animation of the bars and dots
* Hiding and showing graphs alternatively
* Clicking on circles

Maybe I’ll give 5% for the extras.