



Project Final Presentation

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Outline

- Data Choice
- Questions
- Variables Used
- Final views
- Implementation
- Insights learned from the data



Data Choice

- Dataset: Labour Force Survey
 - records monthly information on employment and unemployment in Canada
 - The sample size is approximately 100,000 individuals
 - More than 60 variables are collected.
 - Being collected monthly, the data is very recent.



Questions

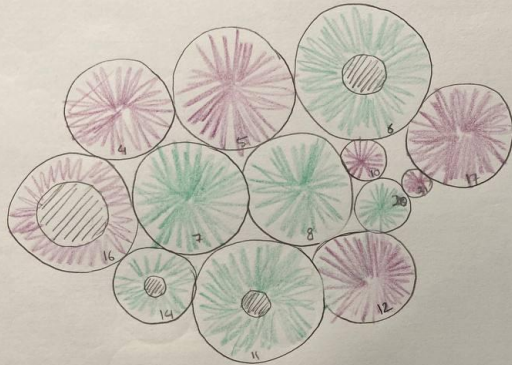
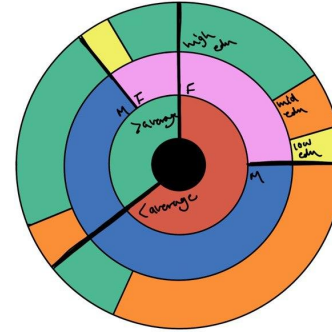
- Does higher education lead to a higher salary?
- How does one's gender affect the salary?
- In what job category are we observing more extra hours of work?
- How is gender equality in each category of job?
- Is there a difference between different provinces in Canada in terms of unemployment rate?



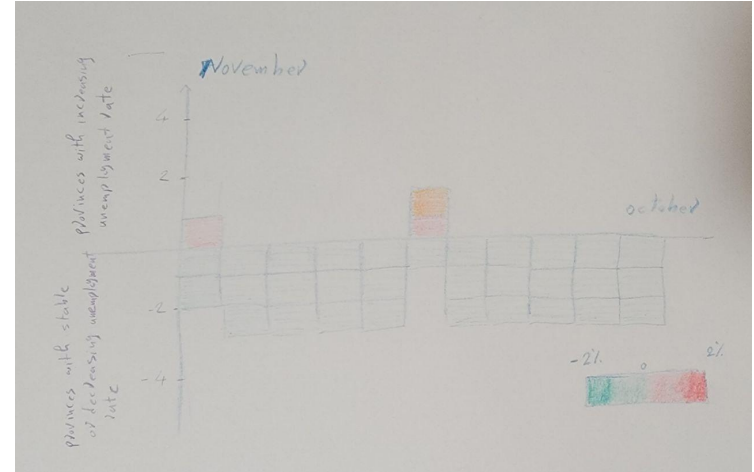
Variables Used

- Province
- Sex
- Salary
- Educational attainment, ranging from 0 (middle school) to 6 (above bachelor's)
- Immigration status
- Occupation, one of 40 NOC occupation categories
- Hours worked
- Extra hours worked
- Employment status

Final Views Selected

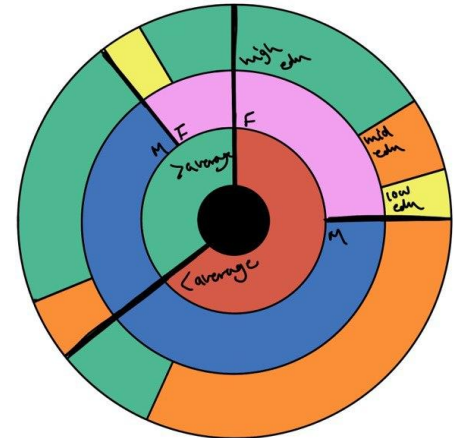


Female
 Male
 Circle Size → Actual hrs
 Inner Circle → Extra hrs
 Size



First View

- Capturing the relationship between wage category, sex, and education level
- **Interactive Feature:** When the user hovers the mouse over a segment, the sequence is highlighted and the average wage for the selected subgroup is shown.



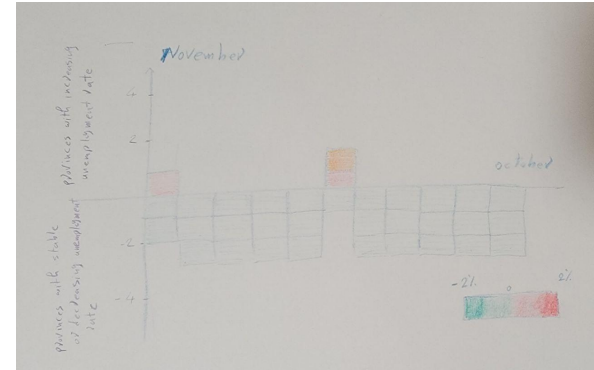
Second View

- By using a diameter proportional to the total hours worked and the extra hours worked, the user can process the visual very quickly
- Used colour to show dominance of gender in each job category
 - This will allow for easy grouping of the job category based on the dominant gender.
- **Interactive Feature:** By hovering to each circle the viewer can see the exact distribution of women and men in the category of work as a pie chart.



Third View

- Conjunction of the temporal representation, vertical positioning, and the color encoding, makes the necessary data available to users all at the same time
 - Reduces the demand on short term memory, and minimizes the cognitive load.
- **Interactive Feature:** Once the user clicks on one square (choosing one province), all squares corresponding to the selected province are highlighted to reveal any province specific pattern.





Colour Selection

- Selected a colour palette so that the people with colour blindness would have a lower chance of difficulty with using the visuals
- Used a bright qualitative colour scheme proposed by Paul Tol

Color Palette





Implementation

- Video: <https://youtu.be/9RGPPZV2tN4>



Insights Learned

- Some higher rank positions like “senior management” and “middle management” are male-dominated.
- Among highly educated people, males have a higher chance of having a high salary.
- Alberta consistently has one of the lowest unemployment rates throughout the year, and on the other hand, Newfoundland has the highest unemployment rate.



Thank you!