Group 8 3155 Project Ideas

Group Members: Eli Mills, Eric Phann, Evan Hemming, Will Chen

1. List the source of and **describe** at least 4 potential data sets **(8 points)**
2. Identify who your customer/s would be **(8points)**.
3. Describe the problem that each proposed project solves and justify its need (10 **points**)
4. State the product vision and how your web based project would be useful to society **(8 points)**
5. Identify the major features of each of the proposed projects. **(12 points)**

Project Idea 1 - Eli Mills

Dataset: Education rates across countries - wide variety of available metrics for comparing/contrasting educated populations in different countries, such as percentage of children graduating school, amount of government funding towards education, and literacy rates.

Customer(s): Potential customers for a visualization of education rates could include non-profit educational organizations looking for where to focus their efforts the most; governments/public officials who want to know how best to reshape education policies.

Problem: Education is one of the most significant drivers of the success of a country, an educated population leads to a healthier economy. However, the extreme disparities between quality of education in different countries (or even in different parts of the same country in some cases i.e. USA) is often overlooked when measuring economic success. Visualizing this data could help bring a less talked about angle for tracking prosperity to light.

Product Vision: A web app with line graphs, bubble charts, and bar charts comparing education metrics from different countries including literacy rates, graduation rates, government spending, gender/economic status differences. Each visualization will have an accompanying written analysis of the impact of the data. The product will be useful to society by increasing awareness of education disparities across the globe, and by re-examining how we measure a nation's growth.

Features:

- Scrolling view of different metric visualizations
- More detailed page with written analysis of data when a particular visualization is clicked
- Option to choose a specific time frame for each metric, to see how education rates change in different time periods
- Option to choose specific countries for each metric, or every country all at once

Project Idea 2 - Eric Phann

Dataset: [Data on forcibly displaced populations and stateless persons](#) - Data collected by the Office of the United Nations High Commissioner for Refugees (UNHCR), also known as the UN Refugee Agency. This set includes data from all countries across the world regarding forcibly displaced populations (which includes refugees), asylum application numbers, and corresponding demographics (country of origin, asylum, etc).

Customer(s): Potential customers include grass-roots organizations or groups that want to focus on assisting these forcibly displaced populations in their country of origin as well as the overall well being of such population across the globe.

Problem: Across the world, people have been forcibly displaced from their country of origin due to various reasons, including, but not limited to, human rights issues. These people often put themselves in great danger seeking a better life for themselves and their loved ones (see "refugee crisis"). There is a lack of understanding of the scope and importance of refugee and forcibly displaced populations advocacy and support worldwide, including the United States. Visualization of this data could prove useful to raising awareness and becoming a catalyst for any such movements and advocacy.

Product Vision: The web app would utilize bar graph and line graphs in order to represent the population and demographics of refugees within a selected country. Users will be able to compare gender, age, and country of origin among other metrics to understand the scope and nuances of refugee movement and populations around the world. Additional focus will be given to countries with a severe refugee crisis.

Features:

- Comparison between demographics in the refugee population
- Comparison of refugee populations between countries
- Option to limit scope by time (year)
- Explanation and analysis of data as it pertains to current events and advocacy efforts

Project Idea 3 - Evan Hemming

Dataset: [Unemployment in the US](#) - data about employment and unemployment in the US across all states, counties, and major cities throughout time. Additionally categorized by age, race, sex, etc.

Customer(s): The customers for a visualization of unemployment data in the US could potentially be the US government for policy making decisions, journals reporting on employment in the US, or just those interested in learning more about unemployment rates in the US across time.

Problem: The posed problem is the lack of dynamic historical representations of unemployment data throughout the U.S. A project to solve this is needed as a historical resource to see different times in US history when unemployment changed rapidly and see which regions and people were affected the most. A visualization of modern unemployment data can also be used to educate lawmakers, journalists, and the general public on employment throughout the US as of now.

Product Vision: A web app that displays a heat map of unemployment data in the US over time. Every state/county across the country will have data that shows the unemployment rate at the selected time, represented relatively by the heat map. The user can select which time the map is showing using a scroller that goes from 1950-2020. This would be useful to society as both a historical resource to see how employment changed throughout time and regions in the US and to show modern changes in employment and which regions are most currently affected.

Major Features:

- Heat Map of the US: shows unemployment rates in states/counties across the country, represented by the heat, where extreme colors are high unemployment and fainter colors are low unemployment (probably red-yellow)
- Time Slider: a slider that lets you select any period in time from 1950-2020 to see unemployment data for

Project Idea 4 - Will Chen

Dataset: [Data on Food Access](#) - data about the availability of food choices depending on location. This data is influenced by proximity to food retailers, affordability of retailers, food prices, etc.

Customer(s): Ideally to be used by the government to assist in creating healthier food options in areas lacking such options. If not government funded then individual food retailers and restaurants could use this information to locate areas where they could improve the quality of food.

Problem: Hunger and poverty are major issues that nations across the globe face. Impoverished people usually have much lower access to healthier food options due to their price, thus this data can be used to tackle health issues as well as poverty issues. The visualization of this data can assist in pinpointing areas of dire need that should be focused on as well as analyzing what causes those areas to be particularly poor on food access.

Product Vision: The web application would use a heat map to show the areas with poor access to healthy food options. The option to change the year associated with the displayed data can be used to show how areas have either grown or declined. This data can then be used to understand the effects of food retailers on the areas that they move into or leave from.

Major Features:

- Heat Map identifying areas based on their access to food
- Ability to change the year of the map to view data across different sets of time
    - Time lapse functionality to easily pinpoint areas of growth or decline
- Specific points on the map locating supermarkets and grocery stores to see the impact of their proximity on nearby food access