Milestone 2 : World happiness

Tools and Technologies

In creating our visualization, the standard web technologies of HTML, CSS, and JavaScript will all be used. The JavaScript will be written following the 2015 ES6 standard, with Babel used as a transpiler if necessary. The popular JavaScript library d3.js will be incorporated into the project to help with more complex visualizations.

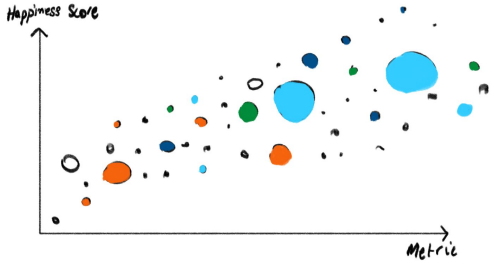
The first several lectures of the course will be relied upon heavily throughout the project for language support. Additionally, the two map related lectures ('Maps', and 'Practical Maps') will be used for direction and inspiration in the *Summary World Map* visualization. Finally, the 'Text Viz' lecture would eventually be used in implementing the *Weighted Text Visualization within Region-Based Bubble Chart*, which is among the more creative and challenging ideas.

Minimal Viable Product

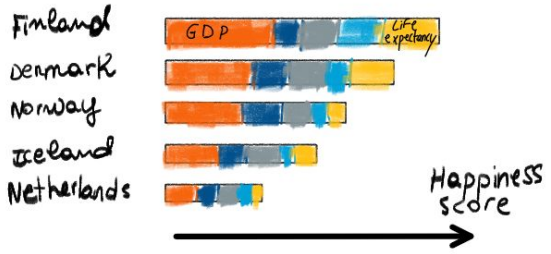
Component 1: Summary World Map
The world map visualization is the first visual the user will see, and will summarize the dataset by colouring countries according to their happiness level, as well as other sub-metrics. Users will be able to interact with this visual by changing the year of the data.

Component 2: Scatter Plot (Happiness vs. Sub-Metrics)
A series of scatter plots will allow users to examine the correlation between a country's happiness, and several sub-metrics, such as GDP, perceived freedom, and level of corruption. This visual will help users better understand the most important factors of a happy country. (See sketch 1)

Component 3: Bar Graph (Score and Sub-Metrics of Each Country)
A large bar graph will give users a look into the breakdown of each country's happiness score. The value of each sub-metric will be displayed as a portion of the bar, with the total bar representing the country's overall happiness score (the sum of all sub-metrics). (See sketch 2)

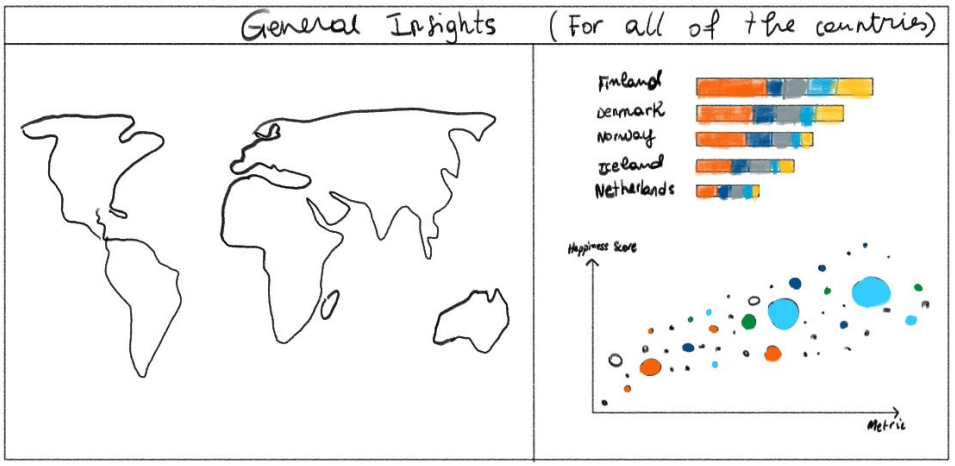


Sketch 1: Scatter plot of Score vs other metrics

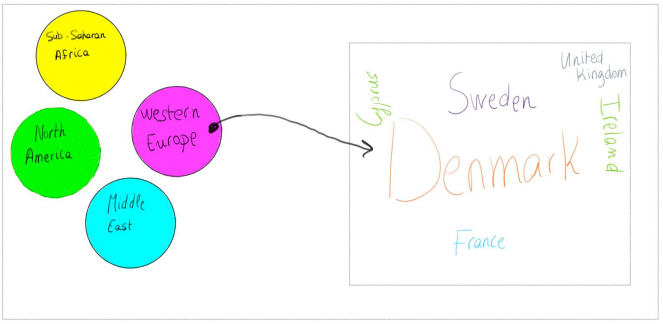


Sketch 2: Stacked horizontal bar graph

The basic layout of our website will look close to this :



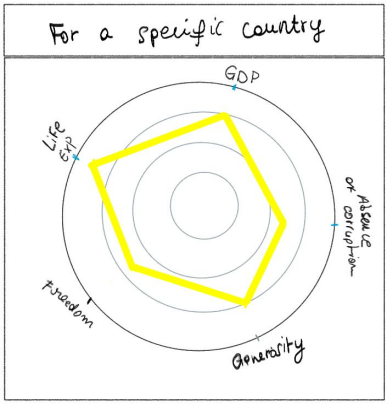
Creative/Challenging Ideas



Component 1: Weighted Text Visualization within Region-Based Bubble Chart

Each world region (the data is grouped into several) would be displayed as a bubble within a bubble chart, with the size being weighted based on the aggregate happiness score for countries within said region. Upon clicking on a bubble, the names of each country within the region will appear in a text visualization, with the font size of each country being proportionally weighted based on its happiness score compared against its regional counterparts.

Component 2: Country Radar Charts



Radar charts would be incorporated into the summary visualization, where clicking on a country on the summary map would bring up its radar chart, which would simultaneously display the value of all a country's sub-metrics. Clicking on additional countries on the map would then bring up their respective radar charts, enabling seamless comparisons across countries.

Component 3: Unique Abstract Visual

A novel way of displaying country happiness data would be created, different from all standard data display tools. This display method would incorporate both happiness metrics as well as relevant sub-metrics to provide users with a comprehensive overview of the data in just one visual.