Milestone 2

COM-480: Data Visualization

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1. Implementation Goals

In this section, we will describe the core visualizations of our project that will comprise of our minimal viable product. Additional visualizations that could enhance the product but will not be part of our core product are described in Section 4

1.1. **Geographical Trends.** This will be the core visualization of our project. We plan to have a world map and a selection where different genres, artists and songs can be selected and for the selected attribute the popularity across different countries is displayed in a color code. An example visualization for this is given in Section 2.

1.2. **Country Statistics.** On the world map that is described above we plan to make the countries clickable to open a page for the country with different statistics. There we will display the most popular artists, songs and genres for the country. Additionally we will visualize the countries music taste in form of song characteristics. Therefore we will display the characteristics Happiness, Energy, Danceability, Speechiness, Acoustics, Instrumentalness, Valence, and Tempo in a bar diagram which shows the difference to the global average.

1.3. **Artist Comparison.** This will be another core component of our project. Here we will have a visualization where different artists can be selected to be compared. We plan to use spider visualizations here, an example can again be found in 2. There will be multiple visualizations for comparison, one for overall statistics with the attributes Popularity, Number of Songs, Number of Albums, Number of Top50 songs, and the ratio of explicit songs. A second visualization will display the quantifiable musical characteristics of the artist's songs: Happiness, Energy, Danceability, Speechiness, Acoustics, Instrumentalness, Valence, and Tempo.

2. Planned Visualizations

As described in Implementation Goals we already have a plan for our core visualizations. Below we provide an example visualization sketch for each of our core visualizations.
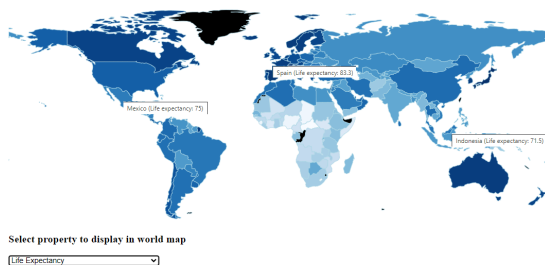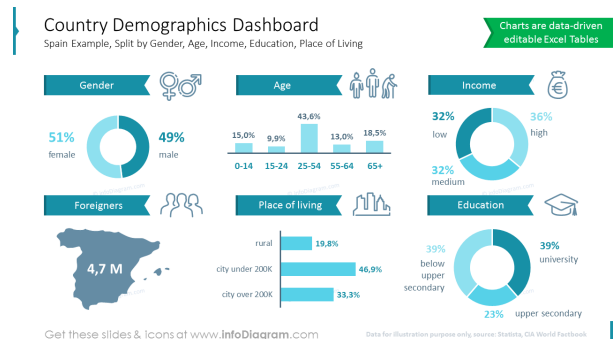

Figure 1. Geographical Insights Sketch 1.1
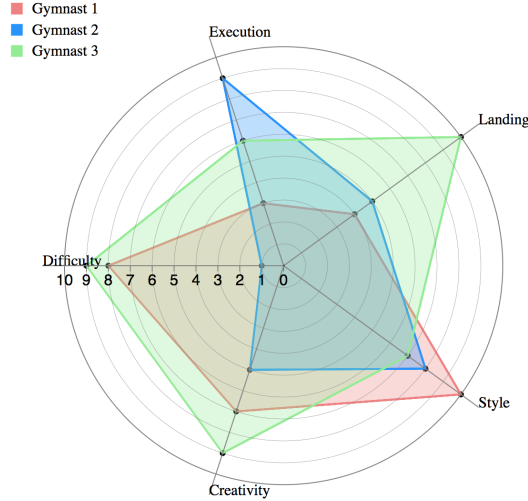

Figure 2. Country Statistics Sketch 1.2

FIGURE 3. Artist Comparison Sketch 1.3

3. REQUIRED TOOLS AND LECTURES

For all our visualizations we will use JavaScript and D3.js. As described before for our core visualizations we will use an interactive world map, pie and bar charts and spider/radar charts. Therefore we will especially need the content of the following lectures:

- D3.js
- Interactions
- Perception colors
- Maps
- Graphs

4. ADDITIONAL IDEAS

4.1. **Property Search.** We will provide a widget that will allow to search songs in the dataset based on title, artist and the musical attributes listed in **1.2**. This visualization will enable users to quickly get an overview which songs are contained in the dataset.

4.2. **Artist and Song Recommendations.** Here we will provide an interface where users can input their music preferences like genre, song characteristics and songs and artists the user likes. Based on the input we will then recommend further artists and songs and display in which categories these artists or song are close to the users music preferences.

4.3. **Analysis Board.** This visualization will display music trends over the 3 years that our dataset contains. We will display a time series analysis to show how the popularity of genres and certain music characteristics has changed over time. These statistics can also be filtered by country or continent.