DataVis Project Proposal

Sanket Mishra, Godday Ogbo, Iqbal Sandhu, Yamini Sasidhar

For this Data Visualization project, we plan to create an interactive dashboard for visualizing and understanding aviation crash data recorded from 1962 to present day. This dataset is provided by the National Transportation Safety Board (NTSB), and is able to be filtered on 31 unique IDs. This allows us to view subsets of the data based on passenger injury, commercial vs. military flights, weather conditions, airport code, airline company, number and type of engines, make and model, and more. This dataset is ideal for the scope of this project, and also provides latitude and longitude coordinates for crash sites.

Our project falls into the track of creating a dashboard page which is able to update after applying different filters on the same database. The NTSB Aviation Accident Database provides an XML file containing all existing aviation accident records. We plan to use SQL to cast this XML file into a SQLITE database for use in our Python Flask server. We will only be looking at crashes where a final report has been issued and published, and all investigations are concluded. We will be able to webscrape departure points from these HTML reports for any airport codes necessary for our visualizations.

User-driven interaction will be limited to the use of dropdown filters and sliding scales to view different windows and subsets of the rendered data. Ideally, our final visualization will involve at least these three charts: a map of flight paths, crashes by accident type, and frequency of aviation crashes over the years.

We will be documenting our attempts at parsing the dataset, our coding approach, data munging, and final visualizations in this GitHub repo. One JS library we plan on using which we did not cover in this course is the C3.js library, which allows us to update the charts even after they've been rendered on the page.
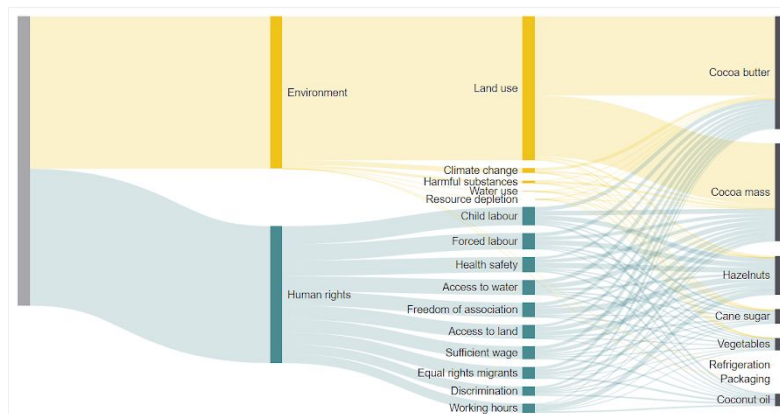
Here is a sample of the metadata:

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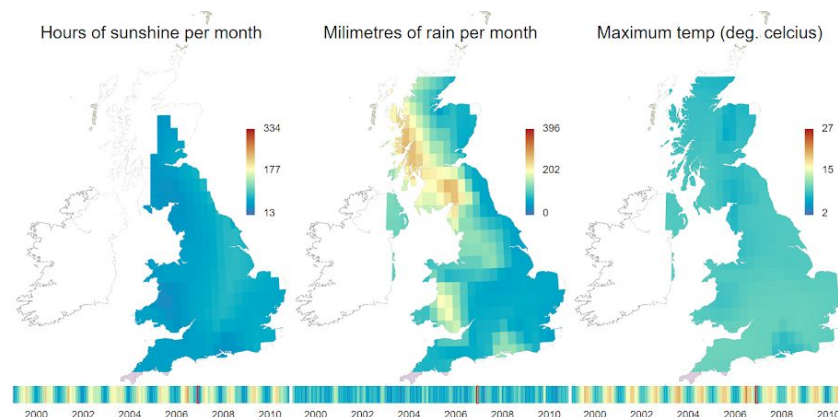
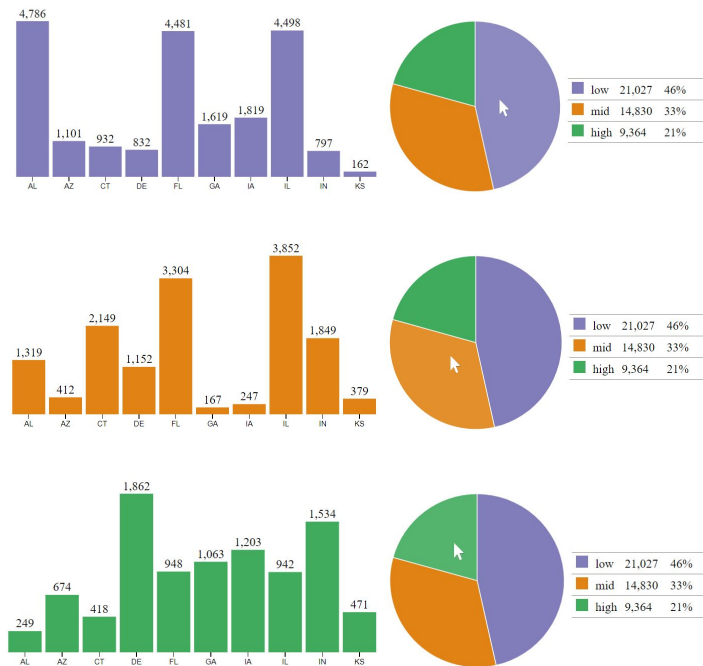Some visualizations we plan to use as a reference:

Source: http://www.tnoda.com/blog/2014-04-02

Source: https://bl.ocks.org/wvengen/cab9b01816490edb7083

Source: http://kyrandale.com/viz/uk-weather-stations.html

Source: http://bl.ocks.org/NPashaP/96447623ef4d342ee09b

Sketch of dashboard: