Motivation and Purpose

The safety of passengers within any method of transportation is always of primary importance. Understanding the factors that influence passenger safety may lead to the implementation of more effective transportation policies in the future that will prioritize the safety and well-being of passengers. We propose building a data visualization app that allows transportation policy administrators to visually interact with a dataset of passenger survival counts for a given method of transportation. Specifically, our app will allow users to explore survival counts of passengers amidst a number of other contributing factors for an ocean liner dataset.

Description of the Data

We will be visualizing a dataset of exactly 1309 passengers from the Titanic ship. Each passenger has 14 related factors. For our research project, we are particularly interested in demographic information (`name`, `age`, `gender`), location of the passenger (`pclass`, `cabin`), and whether or not the passenger survived (`survived`). Gender is divided into either male or female. Each passenger was also assigned a class, `pclass` which was split into 3 categories: 1st class, 2nd class, and 3rd class. And the cabin column represents the location of the passenger in terms of deck and room number. For example, a passenger in cabin A22 would be in Deck A and room number 22. And finally the survived variable is binary, indicating that the passenger either survived or did not survive.

Using this data, we will create a new variable `death\_rates\_class` by grouping passengers into their respective classes for a given deck, then calculating the death rates by class for the given deck.

For example, a passenger of class (`pclass`) 1 in cabin (`cabin`) A22 would be grouped into the category Deck A 1st Class, which we will compute a death rate for, based on all the passengers that survived and did not survive in that category.

Research questions and usage scenarios

We will address two exploratory research questions. First, does the cabin location of a passenger affect his or her survival on an ocean liner? And second, what are other variables that influence the survival of a passenger on an ocean liner?

Trevor is a transportation policy maker for ocean liners and wants to prioritize the safety of ship passengers in future implementations of transportation policies. In order to do this, he must first understand factors that affect passenger safety. When Trevor looks at our “Titanic Survival Counts App”, he will be able to view a visual summary of whether or not each passenger survived and their respective cabin and deck locations. He can select the deck he wishes to explore and can hover over each data point to view demographic information of each individual passenger including their name, age, and gender. In doing so, Trevor may notice that certain class sections of certain decks may appear to have a higher death count or death rate. He then hypothesizes in a future study that certain locations of the ocean liner may be deemed relatively unsafe for passengers in comparison to other locations of the ocean liner.