Using our dashboard we attempted to answer the following research question: does cabin location of a passenger affect his or her survival on an ocean liner? To answer his question, the first visualization of our dashboard allows users to navigate different decks of the ship and see where passengers died or survived. A cruise line designer could focus in on "death clusters" to find out if there were sub-standard safety features implemented in those areas of the ship. Our second visualization, the "survival rate by deck level" plot gives a general overview showing whether or not certain deck levels were lacking in safety features compared to others. Similarly, the "survival rate by class" plot helps show a general overview of differences in safety features between cabins of varying classes. Overall, dashboard does well in addressing our research question.

Based on TA and peer feedback, the use of the dropdown as the single interactive feature in combination with the two static horizontal bar charts for survival rates by class and deck respectively is effective at showing how passenger fates vary by these two attributes which is difficult to visualize in two dimensions on a single plot since all three classes of passenger cabins (1-3) are found on all seven decks (A-G).

In its current form, the dashboard does not consider passenger fates by other attributes such as gender, age, marital status, or port of origin which are interesting but separate research questions requiring additional visualizations. To enhance the visualization of the current research question, we could also consider using colour to encode the three classes in the deck levels legend where the area of each colour is proportional to the share of its corresponding cabins class on each deck level. A more ambitious improvement would be to create a 3D interactive visualization of the ship which would allow the user to rotate the ship about the x, y and z axes to visualize passenger fate by specific cabin class, deck and nautical location (i.e. bow-stern, port-starboard) at a single glance with tooltips providing additional passenger attributes.

Furthermore, our dashboard had several important limitations which need to be considered, especially when trying to draw conclusion about our research question. First of all, our visualization assumes that all passengers were in their cabins at the time of the disaster. Additionally, the lack of historical records with information about each passenger's cabin location means that we have only plotted a sample of the population of all passengers, and need to be careful about drawing conclusions that generalize to the entire population of passengers. Finally, we need to be cautious in implying causation when the results are correlational. For example, class may affect the survival rate, not due to cabin safety of that particular class, but due to the a confounding association between passenger class and societal status (maybe first class passengers were more likely to get on a safety boat and survive).

We received peer feedback in milestone 3 suggesting several changes including making positional changes of interactivities, color and sizing changes for visualizations, and description additions to clarify conceptual terminologies.

We decided to implement 5 of those changes. First, we repositioned the drop down bar for deck level to be on the right side of the titanic visualization because that was where peers said it was most natural for them to look for the drop down interactivity. Second, we changed the size of the note about adjusting browser. We initially added a note to tell users to adjust their browser to enhance visualization experience, but after peer feedback some peers noted that the note was not clear enough. Third, we changed the color of bars in the horizontal bar chart to be blue, and also changed the “passenger survived” bubble to the color bar. Because the amount of blue ink used in the bar chart was analogous to the amount of survival in passengers, we adhered to the principal of proportional ink by keeping the color of “passenger survival” consistent through the titanic visualization and the bar chart visualization. Fourth, we changed the default deck level from B to C because deck C had more data points to visualize. And fifth, we added a note that states you can hover over data points for passenger information for additional clarity on how to fully utilize our titanic visualization, and we changed the size of the tooltip to be larger to enhance user readability of titanic visualization.

We did not decide to implement 4 changes suggested to us through peer feedback. First, it was suggested that we add a note or label to show that the square shape in the titanic visualization represented an empty cabin. We did not go through with this change because the word “cabin” was used in our title and we thought it was already self-explanatory that a box in our titanic would be represent a cabin. Second, it was suggested that for each deck level, we should show which cabins belong to which class. Although this was a reasonable suggestion to make, it would be impossible for us to do because we only have data on where first class cabins are located and no information on any of the other classes. Third, a peer suggested that we make wording changes to our general description, that we should change the word “location” to “deck level”, to better describe our titanic visualization that is based more on deck level. However, we decided to keep the word “location” to better describe all 3 of our plots holistically, since “location” encompasses both “deck level” and “class”, and we are visualizing associations between class/deck level and passenger survival. And fourth, a peer suggested we decrease the size of the titanic photo at the top of the page. We did not go through with this change because other peers and Firas complimented on our choice of photo, mentioning that the photo really “sets the tone of our project”.

We will reflect more on milestone 3 feedback from peers below. In terms of usability, it was easy for our peers to use the app because there was only one drop down bar which did not complicate the interactive element of the app. We did not expect them to look to the right of the titanic visualization first for the drop down bar, but because of that we repositioned our drop down bar on the right side of the titanic visualization. Two themes emerged looking at the full set of peer feedback: descriptive clarifications and visualization schematic adjustments. Peers asked us to either clarify descriptions or add descriptions to better under visualizations. Peers also often asked us to change the size, positioning, or color of visualizations. The most valuable feedback received was the suggestion to change the color of our “passenger survived” bars and bubbles to blue. Although conceptually simplistic, the implications are rather large, since those bars and bubbles are representing one half of the core variable of interested: survival of passengers. The least valuable part of the feedback process was the first part of the process, where we were asked to be silent and unable to immediately communicate any suggestions that came up from our peers. From our experience being “fly-on-the-wall”, we how well our visualization could truly communicate standing on its own without our verbal support. And we learned that an effective visualization is able to clearly communicate ideas without anyone verbally explaining it. The feedback process most definitely did lead to an improved app given that we implemented all the changes we deemed were necessary.