Team Q-056-IeBored Project Report

1. Please list out changes in directions of your project if the final project is different from your original proposal (based on your stage 1 proposal submission).
    a. One thing that changed from our original proposal was the user interface of the application. We were unable to achieve the level of airport and plane mapping that we wanted, so we had to create one graph that represented all efficient and inefficient flights in our data. We were unable to add the table of the planes that are inefficient and should be discontinued by airlines because they are using too much fuel per passenger.
2. Discuss what you think your application achieved or failed to achieve regarding its usefulness.
    a. Our application is able to track flights from all domestic flights across the US. Furthermore, the application also makes a map depicting all the flight paths of all flights in the US. This is still a huge success according to our proposal because the framework we establish for the website allows a level of replication that can be used to find other data points (like inefficient planes) in the data without having to add a totally new framework from scratch. Our application is easily updatable, which is a huge accomplishment from the database design and software design standpoint.
3. Discuss if you changed the schema or source of the data for your application
    a. The schema or source of the data remained unchanged.
4. Discuss what you change to your ER diagram and/or your table implementations. What are some differences between the original design and the final design? Why? What do you think is a more suitable design?
    a. There were no changes to our ER diagram and the table implementation. There were no differences between our proposal's diagram and how the database was finally implemented.
5. Discuss what functionalities you added or removed. Why?
    a. A functionality that we added was the map creation when a flight path is produced. We added this because it is very useful to have a way for the user to see where the flight they are searching for leaves from and goes to. Additionally, this helps them plan out their next trip efficiently and easily. We also changed the original map plotting idea to this graph idea because it was much easier for the sake of the class. For future developments, we would convert the random graph to a proper map plotting instead.

6. Explain how you think your advanced database programs complement your application.
    a. Our advanced database programs complement the application in many ways that help with the usability and usefulness of it. For example, we implemented a stored procedure because stored procedures allow us to reuse the same code for bigger databases.
7. Each team member should describe one technical challenge that the team encountered. This should be sufficiently detailed such that another future team could use this as helpful advice if they were to start a similar project or where to maintain your project.
    a. One technical challenge that we faced was fixing the bugs that were found in the program. Another technical challenge linking the project to GCP as our code crashed the connection at times. And finally, another challenge was initially planning out the map implementation but it worked out in the end.
8. Are there other things that changed comparing the final application with the original proposal?
    a. There were no other things that were changed when comparing the final application with the original proposal.
9. Describe future work that you think, other than the interface, that the application can improve on
    a. We would further improve our application by allowing our project to work with bigger datasets and maybe expand our flight tracker to the world or international flights and not just domestic flights.
10. Describe the final division of labor and how well you managed teamwork.
    a. Pranav and Sahith worked with the backend database code and Prithvi worked with the link between the frontend and backend and helped with the backend code too. We managed the teamwork well and we communicated appropriately on what to do and when to do it. We managed issues that people faced by often switching roles for a couple days to help resolve any errors that someone couldn't figure out themselves.