

Week 0 (11/11/2020 - 11/18/2020):

During this preliminary week our group worked on figuring out which direction our project would take. We wrote out our project goals after a great amount of discussion and helped draft and revise our group contracts. Our final decision was to use the open flight data set and load it into a directed graph (more information on this is provided in GOALS.pdf). After creating the basic structure for our group's procedures, workload, and overall project outline, we ensured that each group member individually committed and signed onto the team contract.

Week 1 (11/19/2020 - 11/25/2020):

This week we have moved further towards our goal by creating a basic structure for our graphs in graph.cpp and graph.h. Another task that was completed was the creation of the Makefile. This Makefile utilized code from previous assignments and allowed our files to compile successfully. So far, our graph files are present as a means to test if our makefile works. We also created the airport.cpp and airport.h files to keep track of the airports based on their identification number, and we added files for directed edges which will serve the purpose of implementing a directed graph. We held a team meeting over Zoom between all four members during the middle of the week to ascertain which aspects of the final project we had accomplished as well as detailing future goals.

Week 2 (11/26/2020 - 12/2/2020):

We deleted the files airport.cpp and airport.h and replaced them with Airport.cpp and Airport.h respectively due to a dependency error caused by the previous files. We also deleted directed_edge.cpp and directed_edge.h because their use was deemed unnecessary for our goals. Additionally, we tested and fully developed our graph implementation this week. As a result our graph can parse data as well as create vertices and edges for the corresponding data. Our team fixed an issue from previous weeks, so now every time a vertex or edge is made our graph will programmatically add an edge wherever needed. During our Zoom meeting this week we were able to resolve the issue of multiple people working on the codebase and committing at the same time by utilizing our avenues of communication at an increased rate. This ensured that each team member would be informed when the other was working on certain elements of the project, and they would subsequently wait until a working git commit had been pushed before they themselves modified the codebase.

Week 3 (12/3/2020 - 12/9/2020):

In week 3 we began with our mid-project check-in meetings with our TA Xiao Tan. Everything went smoothly with our meeting and Xiao Tan was an invaluable resource who

helped guide us through the remainder of the project. This week also encompassed the bulk of our algorithmic progress. We were able to develop and implement code for the Breadth First Search algorithm, Landmark Path algorithm, and Dijkstra's algorithm. As a result we completed the primary goals of incorporating a traversal algorithm, an algorithm that was covered in class, and an uncovered/complex algorithm into our group's project. Additionally, we created multiple tests and corresponding assertions to ensure the effectiveness of all three of the algorithms mentioned above. These developments took the majority of our time, effort, and responsibility this week. However, we were able to utilize online resources with pseudocode to help us visualize the minutiae of each implementation. Any aspects of the code we were not able to write ourselves, we overcame by employing digital resources and subsequently citing them. On top of that, we began the process of refactoring, documenting, and cleaning our code to improve general readability. We went through these processes in the Airport class and Graph class. In our group's weekly Zoom meeting, we learned of an unfortunate predicament, in that our group member Bobby Wang may have COVID-19. He is experiencing multiple symptoms and we believe he is currently awaiting test results for the virus. We hope he gets better soon and accept that he may not be able to fully contribute to the final stage of the project. Furthermore, at the meeting we discussed the final touches of the project that we have to complete, namely the Readme.md, RESULTS.pdf, and the recording of our final presentation.