**Individual Project 2 Reflection**

Nadia Konadu Afriyie

31322024

Intermediate Computer Programming, Ashesi University

Dr. Robert Sowah

Cohort B

November 29, 2022

**Individual Project 2 Reflection**

I solved this project using the breadth-first search. I first created two classes, each representing the three data files we were given: airports, and routes. I then read the files in a class I called FileRandW. I created a method to read all three data sets and used the fstream object to read them. I then split the file at commas. Then, I created an unordered map with the keys of the airport, and routes methods being city, country (a concatenated string of the city and the country), airline ID and source airport ID respectively.

After this, I created my node class, which creates instances of the needed variables. Then, I created a class to find the route and implemented the breadth first search algorithm here. The breadth first search algorithm loops through a frontier to check whether it’s empty and if it is not, pops the first node off the frontier and adds it to the explored set. It then checks if the child nodes of the explored node are in the frontier or the explored set. If it is in neither, it adds it to the frontier. If it is in the frontier, it does nothing.

From this project, I learnt the proper implementation of data structures like unordered maps, vectors and lists and learnt how to use their methods. I also learnt how to how to create an object and its instance. I learnt how to read from files and write to one. I learnt the importance of creating header files before creating c++ files to declare the variables, methods and constructors. The c++ files are used for definitions and implementations.

Some references I used were javatpoint, github, stackoverflow, w3schools, geeksforgeeks, and codegrepper.