REFLECTIVE REPORT ON INTERMEDIATE COMPUTER PROGRAMMING PROJECT

To solve the problem, I began by creating java classes for all three CSV files. i.e., I created a class for airport, airline, and route. I then created classes to store the collection of each of the airport, airline, and route objects. I used the hash map data structure to store the list of all three objects. To get the individual airport, airline, or route, I read the CSV files and created instance fields to create the objects of all three classes before adding the objects to the hash maps. I used the hash map data structure to store the objects because of its time efficiency with the lookup of items in it. This is because each item has a key which uniquely identifies it from the other items in the hash map.

In order to represent a problem which is to find a route or a series of routes between two places, I created a class called RouteProblem which takes in the details of the two places as arguments. It has findNextAirports method which generates successive airports given an initial airport. The successive airports are the airports that can be reached from the current airport. It also has a method that finds an initial airport using the starting location details. In that class, I have a method which tests to see if the route has led to the final airport.

I also have a SearchRoute class which represents the logic (algorithm) I used to solve the problem. The class has a search class which uses the breadth-first search algorithm to find a solution route. I also created a class that has methods for creating files, writing to files and reading from files. I also have the Main class where the entire project is executed. Only the Main class has a main method which can be run to give an output.

The process of doing the project was challenging which helped me to learn new things in Java. There I say, I have learned more from the project than I started learning java. The multiple times I had to write certain codes like handling errors became part of my java programming skills.