Reflective Paper for ICP

CS313: Intermediate Computer Programming

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Bernd Osafo Opoku-Boadu

Dr. David Ebo Agyepon-Yamoah

Cohort A

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After carefully reading through the instructions, I observed that there were three things involved: the airline, route and airport. This made me think of creating classes for each of them with methods that would communicate with each other to give the desired output which is a file containing flight paths.

Initially, I was going to create an output method in the solution class that calls other methods to calculate the total number of flights and get the flight paths. However, after looking at it through the high-level approach, I realised that it is not a good way to structure code.

In the end, I ended up using a HashMap for most of the methods used. I chose it due to how the time complexity to retrieving information from it is O(1). I used it to store the routes that each airplane takes and the airport codes and their corresponding locations. To make use of all the data in the HashMaps, I implemented an algorithm that searched for the flight paths that the airplane takes given the start country and city, and the city and country you want to land in using data from a file.

This project has made me learn many lessons. The one that stands out the most is that knowledge of **DATA STRUCTURES** is essential. There is no running from it so I have to embrace it and practice a lot. Another lesson I learnt is that properly establishing a high-level approach is critical to solving problems as it allows you to see what exactly it is that you’re looking to do and then you can go ahead with the implementation. Finally, I learned about regular expressions which can be used in search patterns hence I used it in the airport csv file to help with finding the airline code, city and country.