ASHESI

C++ Individual Project Reflection

CS 313: Intermediate Computer Programming

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Before we started, we had to structure how we were going to solve the question. From this we observed that our project was going to use the concept of OOP. This meant we had to write down the classes we will be creating and the variables.To our advantage the variables of each the classes were in the csv files as columns.The next step was how to extract the information from the csv files. With this we decided to read the files. Then came the next step which involved creating objects of the classes.Finally, we had to decide on the search algorithm to use in solving the problem. We decided to use the uniform cost search algorithm to find the route from one point to the other. After deciding on the steps to take, we divided the project into two parts. One part was about reading the csv files and creating the classes and objects whereas the other part was about the search algorithm and writing to the txt file.I worked on the first part of the project.

I created classes of the airline, airport and route files.With the help of CLion, the .cpp and .h files were auto generated making it easier to work with.Next, a file reader class was created to read the individual csv files. When the files are read, the rows were stored in vectors. I also created a class that creates an airport object, airline object, and route object of the airports, airline, and route classes. The contents were stored in an unordered map to make the data that would be needed easily accessible. The source airportcode is stored as the key and the destination, pathcost, stops are stored as the value.This was done to make it easier during the search implementation.

In implementing this solution, a few challenges were faced due to the different syntax in C++. Personally, I was not familiar with the various libraries and data structures in the C++ language along with their functionalities. This led us to do a lot of research into how these libraries and structures work in order to become conversant with their functionalities.In addition I was able to apply concepts such as inheritance, abstraction and encapsulation.

Overall, this challenge was a great learning experience and allowed us to further research and learn more about the C++ concepts outside of class.

Reference

Raj, A. (2022, February 17). *How to read CSV file in C++?* Java2Blog. https://java2blog.com/read-csv-file-in-cpp/