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ICP C++ Project 2

Reflection

The assignment, upon reading through it for the first time, seemed impossible to figure out. But after reading through and pondering over the individual sections multiple times, I realized this was a search problem that required the implementation of a search algorithm of choice. For this problem, I decided to implement breadth-first search as it incorporated a bit of optimality.

First, I created classes for all the files present: Airports, Routes, and Airlines with the appropriate accessor and mutator methods. Additionally, I created a class for the Node that would be used in carrying out the breadth-first search, as well as a Main class for all the executions.

Then, I created hashmaps for both the airport and route classes, with one having a string concatenation of the city and country name as the key, and an array list of the airport codes as the value. The next one had the airport codes as key and the string concatenation of the city and country names as value. The last hashmap had the source airport code as key and a list of possible routes from that source airport as value. Finally, I implemented the search algorithm.

This project duly tested my knowledge on creating classes, reading and writing to files, handling exceptions, and implementing the breadth first search algorithm in C++ (I had previous knowledge of how to do so in Python). A key lesson I have learned from this project, is to always start projects on time. I was almost unable to complete the project because I failed to begin on time, and although I was seeking help from colleagues who seemed to have a better grasp on the assignment, this was no excuse.