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RESULTS

The result of our project was a simple program in which the user would be able to find airlines that would take the shortest path (distance) from one airport to another. The user would be allowed to specify whether they want to consider an intermediate stop in between the airports. The inputs would be in the form of the airport's IATA code.

```
Do you wish to make a stop somewhere? (Y/N) N
Enter IATA code of starting airport: JFK
Enter IATA code of destination airport: ORD
```

Figure I. Interface in terminal for entering airport IATAs

When the program would run, after being supplied with an input and whether the user would want to have a stopping point in-between the destination and starting point, the output in the terminal shows any airlines that follow the shortest path between two airports, as well as the exact distance between the two airports. If the user inputs an intermediate stopping point, then that is displayed as well, with the distance and airline required being displayed for the journey to and from the midway point.

```
TRIP
Start from JFK (John F Kennedy International Airport)

Fly to ORD (Chicago O'Hare International Airport) flying 738.095043 miles using one of the following:
 - American Airlines
 - JetBlue Airways
 - Delta Air Lines
 - Qatar Airways
 - US Airways

Land at ORD (Chicago O'Hare International Airport)
```

Figure II. Output in the terminal, displaying result for input from Figure I

Should an invalid IATA be provided as an input, the result would not prompt the user to a valid IATA.

Figure III. Output when given invalid IATA

When supplied with a repeat IATA, that is to say that the two or more of the destination, midpoint, or start IATAs are the same, then there is an output error that expresses that the start and destination are the same.

Figure IV. Error message for repeat IATA

We also incorporated multiple test cases regarding the functions in our program, to ensure that everything functioned as intended. These programs ended up catching bugs, making them extremely useful to us.

Overall, there was an efficient implementation of the goals we set out to do. While limited to the airports provided in the data file from openflights, it does cover a large number of airports across the world, and quickly determines the shortest flight path from one airport to another.