**Air Route Planner**

Software Requirements Specification

**That “One” Team**

**SE 300 Section 1**

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**Introduction**

The purpose of this document is to specify the requirements for the development of an Air Route Planner.

**Team Project Information**

Course: Spring 2013 SE300 Section 1

Team: That “One” Team

Members/Roles:

* **Team Leader:** Brian Powell
* **Development Manager:** Brittany Rompa
* **Planning Manager:** Craig Wilkerson
* **Quality Manager:** Yutong Zhu
* **Req/Support Manager:** Muraad Khan

# Requirements Specification

User Interface Requirements

1. The user interface for the program shall be of a graphical nature.
   1. The interface shall have fields allowing the user to enter:
      1. Origin
      2. Destination
      3. Sorting Criteria
         1. Cost
         2. Time
         3. Airline
   2. The interface shall have a table where results are displayed
   3. The interface shall have a menu bar that will have buttons to:
      1. Add airports
      2. Add routes
         1. Airlines based on existing routes
      3. Delete
         1. Airports
         2. Routes
      4. Display most current route information (i.e. all routes in network)
      5. Display airports that can be reached from a given airport
      6. Display air route information for a given route
      7. Close airport
         1. Re-open closed airport
      8. Save any modifications made

Data Input Specifications

1. Data will be read in from a text file
   1. Data will be separated by

Data Modification Requirements

1. System will allow user to enter new routes
   1. New routes will require the following information
      1. Airline
      2. Departure airport
         1. Error if the airport is not already in the network
      3. Departure time
         1. Error if the departs before midnight
      4. Arrival airport
         1. Error if the airport is not already in the network
      5. Arrival time
         1. Error if the flight time is less than thirty minutes
         2. Error if the flight arrives before it departs
         3. Error if the flight arrives after midnight
      6. Price
         1. Error if the price is less than zero
2. System will allow user to add new airports
   1. Airports must have a three letter call code
   2. Airports must be initialized with no added routes
3. System will allow user to delete routes
4. System will allow user to delete airports
   1. Any routes associated with deleted airport must be deleted as well
5. System will allow user to close airport
   1. Airport must remain closed until user re-opens airport
   2. Error must be generated if user attempts to close a closed airport
6. System shall only save any modifications if the user clicks the save button
   1. If the save button is pressed, all modifications will be written to the input file
      1. Additions will be appended to the end of the file
      2. Deletions will remove the data from the file
   2. Any modifications will automatically appear in other related fields

System Output Requirements

1. System will display results based on filter selected
   1. Cheapest route filter will return the following information:
      1. Total price of flight
      2. Total travel time (including layover)
      3. Names of paths used
   2. Shortest total travel time filter will return the following information:
      1. Total price of flight
      2. Total travel time (including layover)
      3. Names of paths used
   3. Using a specific airline for the greatest percentage of time will return the following information:
      1. Total price of flight
      2. Total travel time (including layover)
      3. Names of paths used
   4. There will be a filter that will allow the user to display all three filters at once
2. System shall allow the user to see all airports currently in the network
   1. Information will be tabularized for easy viewing
3. System shall allow the user to see all airlines that service a given airport
   1. Information will be tabularized for easy viewing
4. System shall allow the user to see the air route information for all routes
   1. Information will be tabularized for easy viewing
   2. Information will consist of:
      1. Carrier
      2. Departure airport
      3. Departure time
      4. Arrival airport
      5. Arrival time
      6. Price of flight

Non-Function Requirements

1. The program shall use twenty-four hour time format
2. The program shall use appropriate exception handling so that the system responds with a clear, descriptive message when an error or exceptional condition occurs.
3. The implementation programming language must be a “standard” version of a widely used language.
4. The system must be easily portable to a variety of computer environments
5. The system must be easy to maintain