**Android Air Route Planner**

**Software Requirements Specification**

**Version 1.1**

**October 24, 2012**

**Team Awesome X**

**SE 300 Section 1**

Team Awesome X 1

**Table of Contents**

Introduction ..................................................................................................................................... 2

Team Project Information ............................................................................................................... 2

Requirements Specification ............................................................................................................ 3

General Requirements ................................................................................................................. 3

Route Search Requirements ........................................................................................................ 3

Data Modification Requirements ................................................................................................ 4

Data Output Requirements .......................................................................................................... 4

Non-Functional Requirement ...................................................................................................... 5

Data Format Description ............................................................................................................. 6

External Interface Requirements – GUI Interface ....................................................................... 7

**Introduction**

The purpose of this document is to specify the requirements for the development of the SE 300

Android Air Route Planner Program. It needs to inform the user of airport routes in a 24 hour

period. The system will receive airport information through a text file which contains airport

name, arrival and departure times, airline name, and cost. The system will calculate a travel route

based on the following criteria: cheapest, shortest, most frequent airline used for that day. The

route will be displayed graphically for the Android operating system.

**Team Project Information**

 Course: Fall 2012 SE300 Section 1

 Team: Awesome X

 Members/Roles

- Team Leader: David Franklin

- Quality Manager: Max Chang

- Planning Manager: Andrew Spilling

- Design Manager: Maxwell Seifert

- Design Manager: Finn Carlsvi

- Construction Engineer: all team members

**Requirements Specification**

*User Interface Requirements*

1. The user interface will be GUI.
   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. Most frequently using one airline filter 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