Team 000000000111

Airport Map

Analysis Class Report

Revision History

Authors	Description of Change	Sections	Rev	Date
Matthew Noack	Added Project Description	2	1	3/1/18
Yushuo Lu	Class Diagram	2	2	3/1/18

Table of Contents

1   Team Description

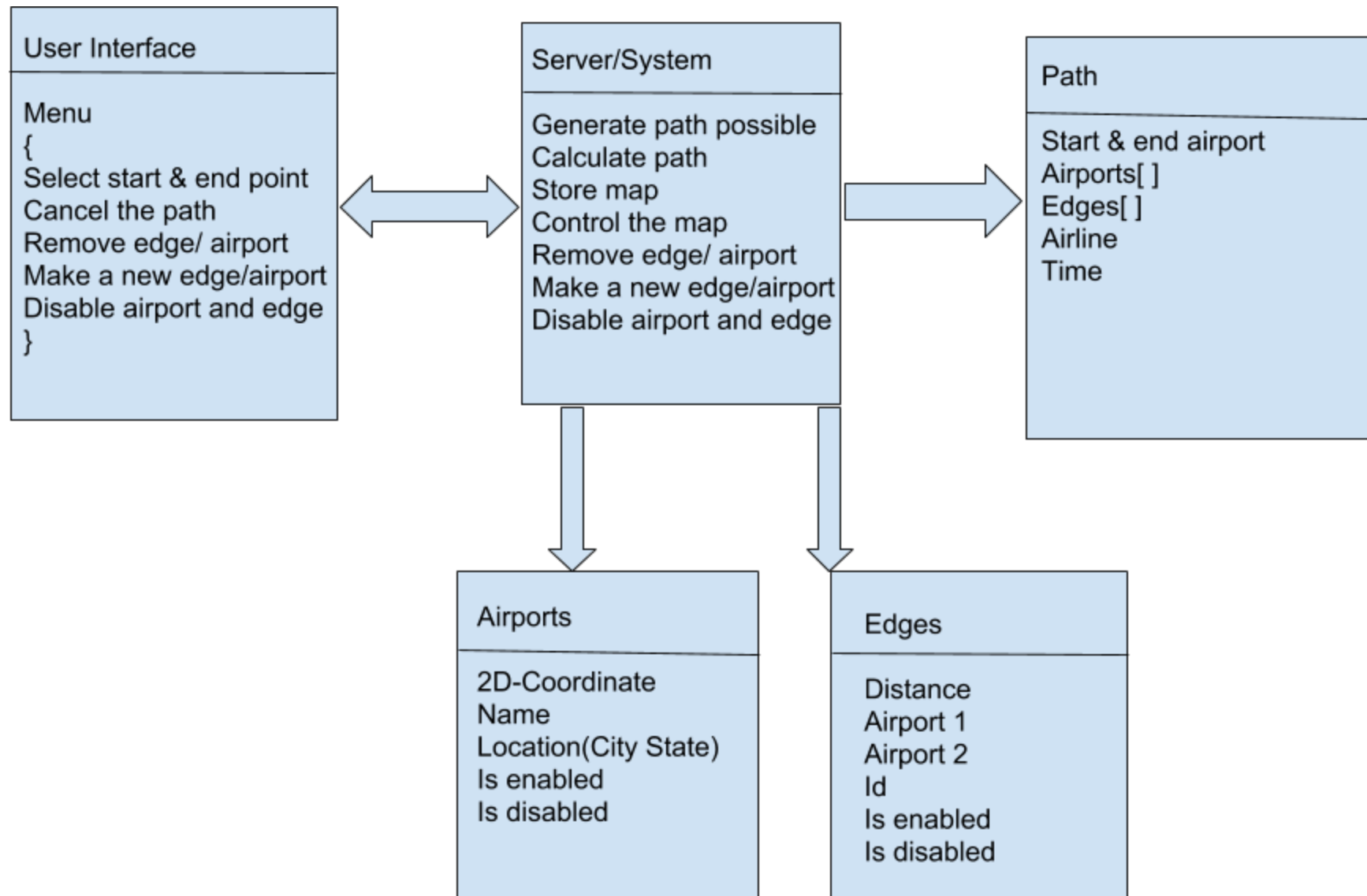| Team Member Name	Email Address
Matthew Noack	matthewnoack@csu.fullerton.edu
Yushuo Lu	yushuolu@csu.fullerton.edu
Christine Trujillo	christinetru@csu.fullerton.edu
Lola Holiday	lolaholliday@csu.fullerton.edu

2   Project Description

Statement of Purpose: The purpose of this project is to determine the optimal flight path based on distance between two airports.

Detailed Description: Each rectangle is a vertex, an indivisible object that are connected by edges, and each vertex represents a airport. Each line between two airports are called an edge, and the set of edges that connect a starting point and ending point is called a path. The program will generate a map based on the number of vertices and edges created by the FAA(It will look like the following drawing).
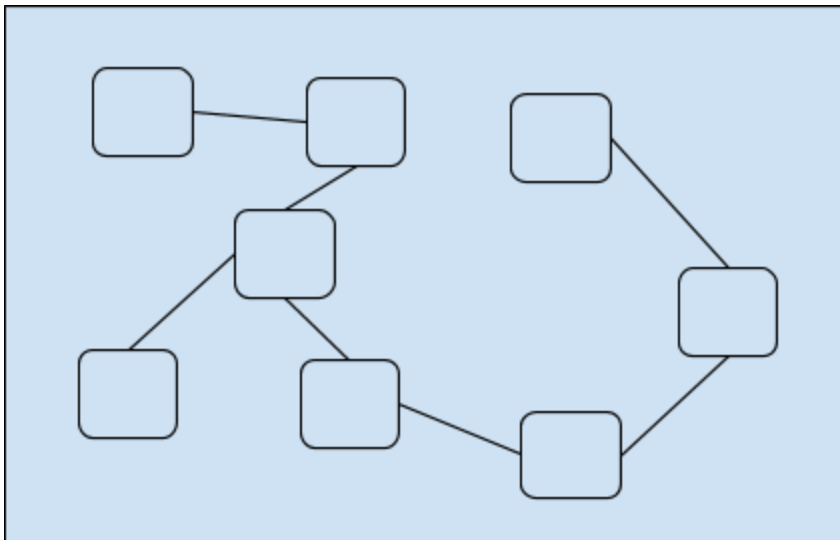
The airline enters a starting point and ending point for the path. First, the system will determine if the path is possible. If the path is possible, the system will generate the shortest path for the airline based on distance. If not, the system will generate an error message. If the airline selects a generated path. the FAA will then record said path selected by the airline. The FAA can remove airports and paths at anytime.

2.1   Analysis Class Diagram

User Interface

Menu
{
Select start & end point
Cancel the path
Remove edge/ airport
Make a new edge/airport
Disable airport and edge
}

Server/System

Generate path possible
Calculate path
Store map
Control the map
Remove edge/ airport
Make a new edge/airport
Disable airport and edge

Path

Start & end airport
Airports[ ]
Edges[ ]
Airline
Time

Airports

2D-Coordinate
Name
Location(City State)
Is enabled
Is disabled

Edges

Distance
Airport 1
Airport 2
Id
Is enabled
Is disabled

2.2   Analysis Class List

Sequence Number	Analysis Class
1	User interface
2	Server/System
3	Airports
4	Edges
5	Path
6	

2.2.1   <User Interface>

Description: This class will do all the function that user can use and interact will system.

Methods:

- Select path(start airport,end airport);
- cancel path();
- make a new airport(x,y coordinate,name,location);
- make a new edge(airport 1,airport 2,id,distance);
- remove edge(edge.id);
- remove airport(airport.name);
- disable edge(edge.id);
- disable airport(airport.name);
- enable airport(airport.name);
- enable edge(edge.id);

Attributes:

- Menu

2.2.2 Server/ System

Description: This class will do all of the calculations

Methods:

- Generate path(start airport,end airport);
- Calculate path(start airport,end airport);
- make a new airport(x,y coordinate,name,location);
- make a new edge(airport 1,airport 2,id,distance);
- remove edge(edge.id);
- remove airport(airport.name);
- disable edge(edge.id);
- disable airport(airport.name);
- enable airport(airport.name);
- enable edge(edge.id);

Attributes:

- Airport;
- Edge;
- Path;

2.2.3 <Airports>

Description: Determined the name location and 2d coordinate for airports.

Methods:

-

Attributes:

- 2D coordinate;
- name;
- location
- isEnable;

2.2.4 <Edge>

Description: Determined the id, connecting airport,distance, is enable for edges.

Methods:

-

Attributes:

- id
- airport 1
- airport 2
- distance
- isEnable

2.2.5 <Path>

Description: Determined the all information for each requested path.

Methods:

-

Attributes:

- Airport[];
- edge[];
- Airline;
- time;