**Capital**

-represents the vertex in this project

-has attributes : name, long, lat, x, y

**Edge**

-the connection between 2 capitals (vertices)

-attributes : source & destination (Vertex) , cost , time

**Vertex**

-we think of vertices in this project as Capitals

-vertex class has a singleLinkedList of vertices that stores all capitals in it

-has a boolean variable (visited) to see if we visited this capital

**SingleLinkedList**

-used in the vertex class to store the capitals

**SNode**

-the node of the single linked list

-has attributes :

-Edge edge (because the linked list stores capitals and each one has an edge with another one)

-SNode next

**Graph**

-the main data structure of the project

-represented as a HashTable of Vertices

-contains the DIJKSTRA'S shortest path method

**HashTable**

-contains an array of vertices

-hash table was used because it provides constant time O(1) in all methods

**HNode**

-the node of the minHeap

-the node that contains the MINIMUM weight in the dijkstra's method , so that we get the Shortest Path , Lowest Price, Minimum Time

-attributes : vertex , weight , path single linked list

**MinHeap**

-the MinHeap was used to get the smallest weight of the path's edges (distance, price, time)

-if we want to get the biggest weight we use a max heap instead

-dijkstra's algorithm only works using min heap

**fillGraph(File file)**

-the method that fills the graph data structure with info from the file i load

-after parsing the data , we first convert the longitude and latitude in the file to (x,y) that fit the map pic im using (draws pins exactly where they should be) using 2 formulas for long and lat . then we make a capital object , then make a vertex and that takes this capital , and then add this vertex in the graph . after that, make 2 vertices (source and destination) and make an edge object that takes them and takes the time and cost parsed from the file , and then add this edge to the source only (because this graph is dirceted , the path from A to B could differ from B to A) .