

```

1  // digraph.hpp -- adjacency matrix based directed graph
2  // c. 2017 T. O'Neil, C. Reilly; Node class c. 2008 P. Rathore
3
4  #ifndef DIGRAPH_HPP
5  #define DIGRAPH_HPP
6
7  #include <string>
8  #include <vector>
9  #include <iostream>
10
11 using std::string;
12 using std::cout;
13 using std::endl;
14
15 enum Status { NOT_VISITED, VISITED };
16
17 class Node {
18     private:
19         string name;
20         enum Status status;
21
22     public:
23         Node(string id) { name = id; status = NOT_VISITED; }
24         enum Status getStatus() { return status; }
25         void setStatus(enum Status st) { status = st; }
26         string getName() { return name; }
27 };
28
29 class Digraph {
30
31     protected:
32         unsigned int numberOfVertices = 0;
33         unsigned int numberOfEdges = 0;
34         std::vector<Node*> vertex;
35         std::vector< std::vector< int > > distMatrix;
36
37     public:
38
39         void addVertex(string s) {
40             Node* n = new Node(s);
41             vertex.push_back(n);
42             numberOfVertices++;
43             distMatrix.resize(numberOfVertices);
44             for (int i = 0; i < numberOfVertices; i++) distMatrix[i].resize(numberOfVertices);
45         }
46
47         unsigned int noVertices();
48         unsigned int noEdges();
49         void resetEdges();
50         void addEdge(int source, int dest, int wt);
51         void delEdge(int source, int dest);
52         int isEdge(int source, int dest);
53         int dijkstra(int source, int dest);
54 };
55
56 #endif

```