Homework #8 Part2 Report

For compile in Virtual machine terminal:

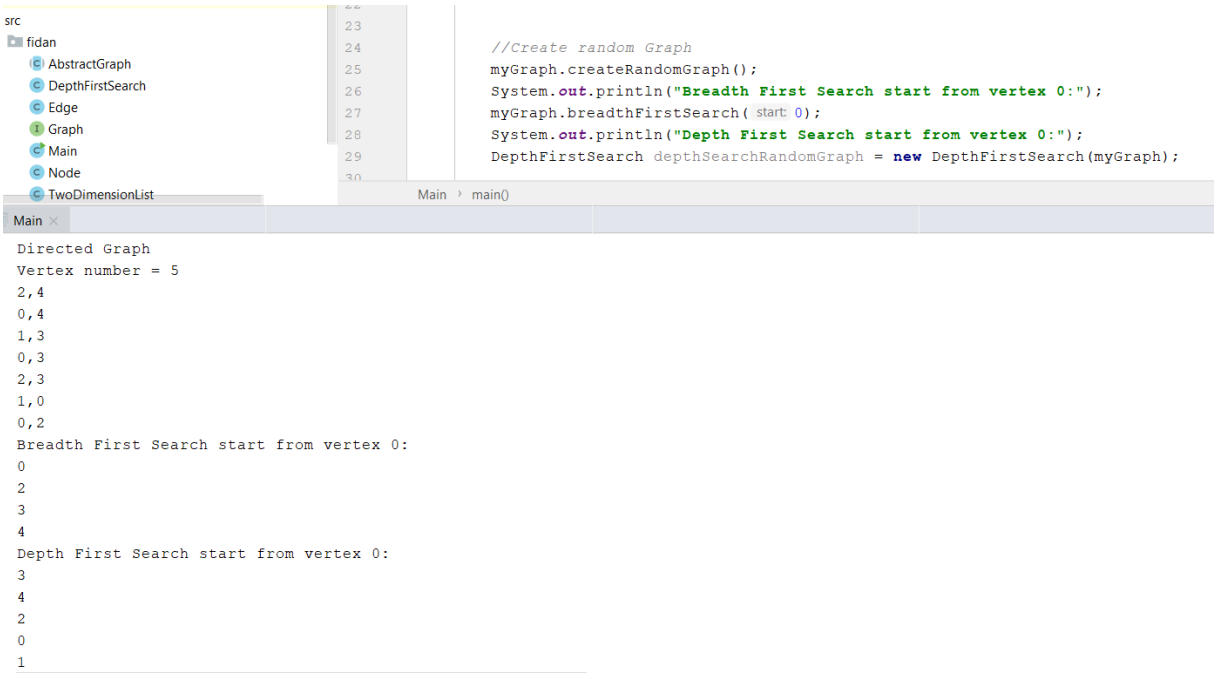
İn src file type: javac -cp . fidan/*java

Then for running type: java -cp . fidan/Main

I write implementation mentioned in the pdf in TwoDimensionList class and my node class contains Edge,rprev,rnext,cprev,cnext. Either you can create a random graph or you can create a graph with using insert method.

Test screenShot Examples

Here I create mygraph then insert it edges and i build same graph in pdf. Then calling breathFirst algorithm with starting from vertex 1 and calling depth first algorithm with starting from vertex 0.



Here I use createRandomGraph and its create a random graph. Then I print graph proporties and edges. Then I call Breath First Search from starting vertex 0 and I call Depth first search from starting vertex 0.

Homework #8 Part3 Report

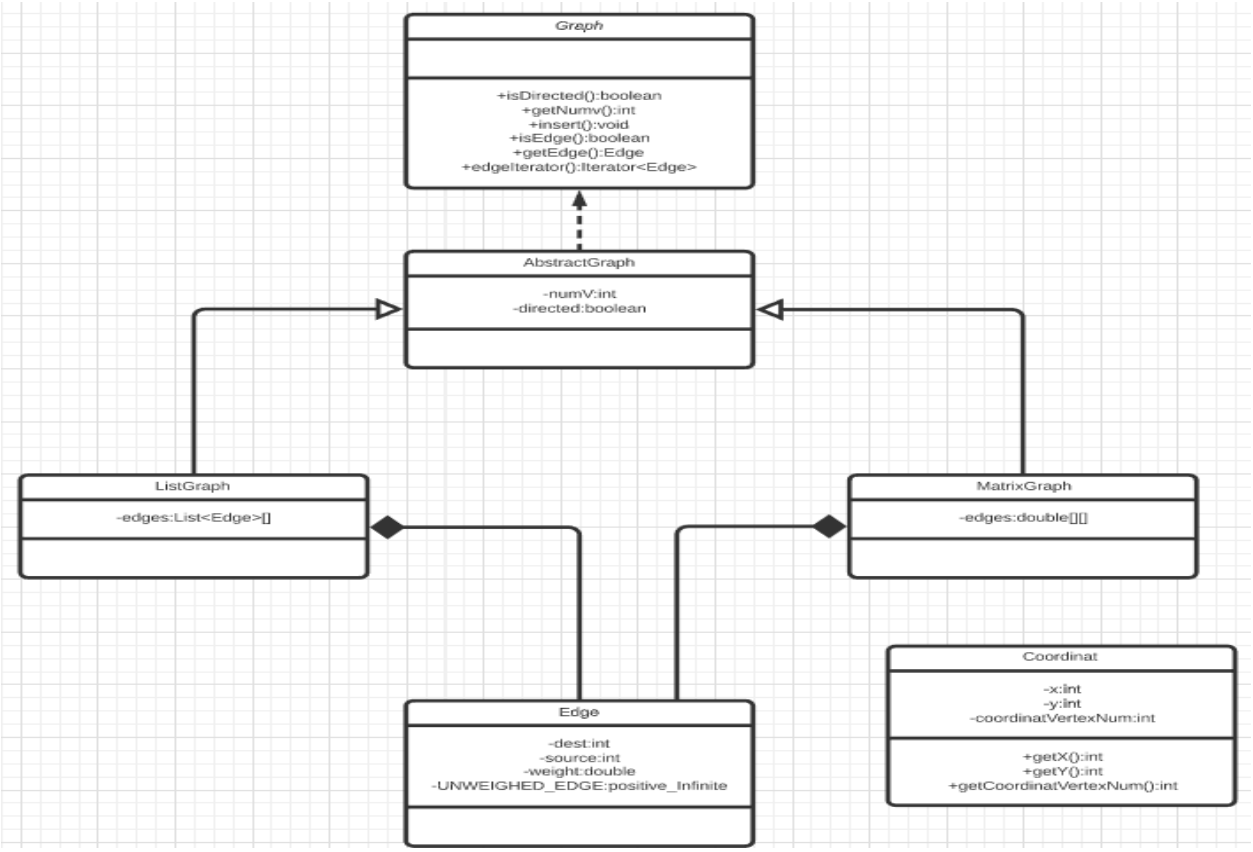
For compile in Virtual machine terminal:

İn src file type: javac -cp . fidan/*java

Then for running type: java -cp . fidan/Main

There are 5 class and 1 interface in my design. Graph interface , AbstractGraph , ListGraph, MatrixGraph and Edge classes from the book. Also I write a Coordinat class to determine graph vertex points and edge point in the maze. I read graph.txt file maze and first calculate edge and vertex number. Then using this vertex number and edge number I determine my graph is a dense or sparse graph. If graph is a dense graph , I created my graph using matrix implementation, but if graph is a sparse graph I implement my graph as a ListGraph in main. Then insert all edges with its source and destination points into my graph with help of my coordinat class.After my graph is completed I use dijkstra algorithm in the book, so with this algorithm I calculate all shortest paths from the vertex 0(maze start point) to that vertex.

UML DIAGRAM



Test ScreenShots

```
Vertex size = 26
Edge size = 58
Node, Predecessor, and Distance:
0:  0   0.0
1:  0   1.0
2:  1   16.0
3:  2   23.0
4:  10  14.0
5:  6   30.0
6:  7   27.0
7:  3   26.0
8:  1   5.0
9:  8   7.0
10: 9   12.0
11: 10  15.0
12: 11  20.0
13: 12  23.0
14: 11  20.0
15: 14  28.0
16: 9   13.0
17: 16  15.0
18: 10  18.0
19: 14  22.0
20: 19  31.0
21: 6   36.0
22: 21  38.0
23: 17  18.0
24: 23  33.0
25: 22  40.0

From Upper-left(begin) to lower-right(finish) distant = 40.0
```

This is my program screen shot for maze given in pdf.First it sprint Vertex number and Edge number, Then print all verteses shortest distances. After that finally I print maze shortest path from start point to finish point. So maze in the pdf shortest path from the upper-left to lower-right distance is 40 square.

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