

The given code was compiled in IntelliJ IDEA.

I have created a graph with 10 nodes and 22 edges.

Then I printed the tree with these nodes. The format of printing is:-  
(**Bold** and *italic* lines are the code and others are explanation.)

**The edges are:-**

**Edge from vertex *i* to vertex *j* with weight *w***

So there is an edge between vertex *i* and *j* with a weight *w*.

**The vertices are {list of vertices}**

-----**After applying Dijkstra's**-----

**Distance from vertex *i* to vertex *j* is *d***

So here the minimum distance from a vertex *i* (which is the starting point) to a vertex *j* is *d*.

**There is an edge between vertex *i* and vertex *j* in the tree.**

This is the statement in which I mention the edges (between vertex *i* and *j*) in the tree after applying the algorithm.

**The vertices in the tree when we start from {start point} are  
{list of vertices}**

In this statement I mentioned the list of vertices in the tree like :-

**Vertex *i***

And the vertices (*j*) which are not in the tree are mentioned as: -

**Vertex *j* is not in the tree (Do not have a path from start point to *j*)**

**NOTE:-** I have used two libraries, namely

```
import java.util.Comparator;  
import java.util.PriorityQueue;
```

The second was mentioned in the HW question.

I used the first library for making the comparator for the priority queue and nothing else. Otherwise I would have to implement the heap again.

**To run the code from command line:-**

```
javac main.java
```

```
java main
```