

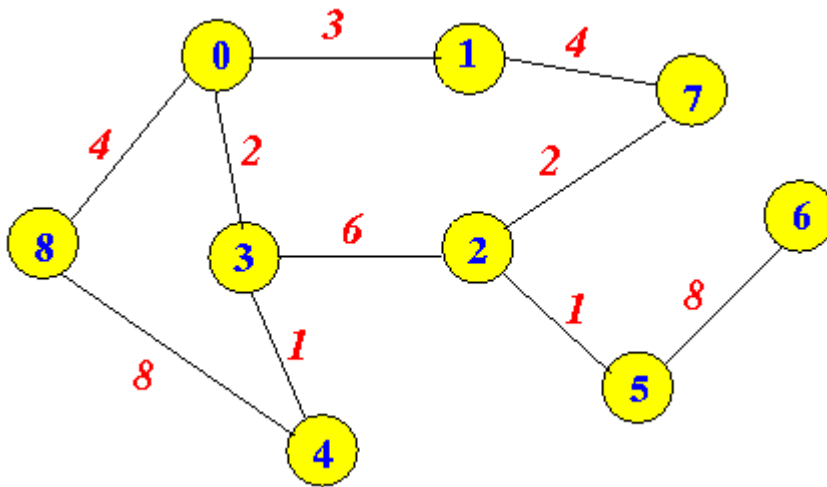
Assignment #5

Due: Tuesday 5th of January, 2021 before 11:55 pm

Note:

1. Late submissions receive zero credit.
2. If you write only the correct answer without steps you get very low credit.
3. Submit in the code and also the output.

In this assignment you will be implementing the dijkstra algorithm that we have learned in quite some detail during the class. The input of the algorithm will be a matrix of size Nodes * Nodes. The entries in the matrix will be the weights of the edges that are present in the graph. The first row and the first column of the matrix will correspond to the first nodes and the second row and column of the matrix will correspond to the second node and so on. Some entries of the matrix corresponding to the above graph are shown below in the matrix



```

[0   3   0   2   0   0   0   0   4
 3   0   0   0   0   0   0   4   0
 0   0   0   6   0   1   0   2   0
.....
]
  
```

Your Job: write a program that will accept a graph in the form of a matrix. Then it will apply the dijkstra algorithm on the matrix values and will compute the shorted path. Your program should be based on loop where in each iteration it will pick one of the nodes according to the criteria used by the dijkstra algorithm. When a node is processed it should generate and update values inside a table. This means that during each iteration of the loop, the table will be updated based on some new values.

Complete the matrix values corresponding to the graph shown above and provide the following deliverables

1. Complete source code of your program (Please note that builtin functions are not allowed and you will receive zero marks if you used them)
2. The table corresponding to the dijkstra algorithm that are being updated during each iteration. You are supposed to provide the screen shots of as many tables as there are iterations of the loop inside your program.
3. The final computed path and the length of the path