



ECE 316 - Operating Systems and Networking Laboratory

Practical Assignment 11 (Due: 08/04/2020)

Deliverables: Your **report and code** should be sent via email to lab teaching assistants (aanast01@ucy.ac.cy or ahadji29@ucy.ac.cy) prior the assignment examination and must include the usual cover page. In your report, include only the pseudocode, not the actual code, with any comments and description you may need to add, as well as a typical scenario that you use to test your programs. **Email subject line should only consist of "ECE316_2020_11"**. Naming format for the zip file: `lastName.zip` (or `lastName_lastName.zip` if a group). **Caution:** Remove the executables (.exe) from the files before you send them!

[100%] Write a program that reads a file with a **graph $G=(V,E)$** with **n nodes** and the **cost** associated with **every edge**. The form of the file is the following:

n % the number of nodes

m % the number of edges

n1 n2 c1 % n1 n2 identifies the edge between nodes n1 and n2 while c1 is the cost of the edge

An example is shown below:

```
5
12
0 1 75
0 2 120
1 0 75
1 2 75
1 3 120
1 4 30
2 0 120
2 1 75
3 1 120
3 4 60
4 3 60
4 1 30
```

Your program should **ask the user** to enter the **start node and the destination node** (both integers) and it should output the **shortest path** (should show the sequence of nodes and minimum cost) from the start node to the destination node. This **should be repeated** until the user enters as start and destination the same node number.

Note: You are required to produce **two implementations**. One should consider the **Bellman-Ford (distance vector)** approach [60%] and the other **Dijkstra's approach** [40%].