Assignment [Final-Term]

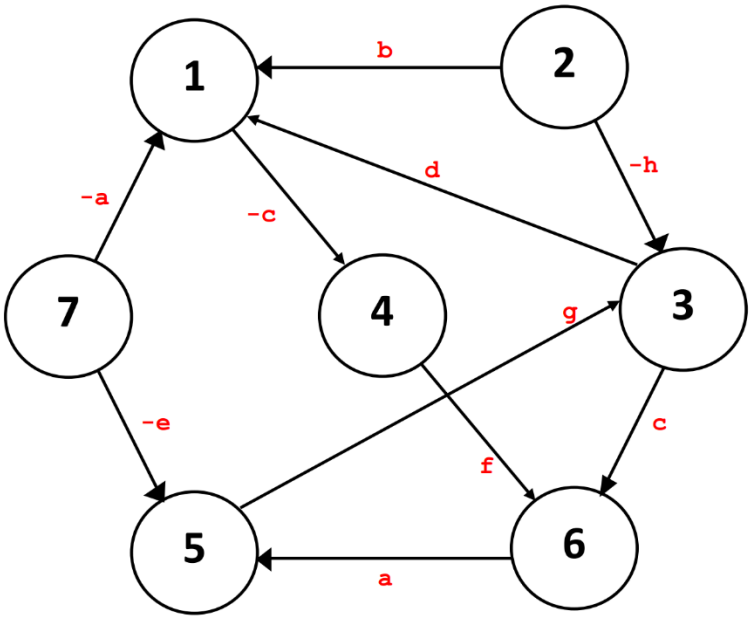
CSC 2211 - Algorithms

Spring 2020-21

Deadline: 24th April 2021 [before 11 PM]

Question 1:

For the following graph, apply Floyd-Warshall's algorithm to find out All-pair shortest path. Show step-by-step relaxations for all the nodes as shown in the lecture. Finally, draw the shortest-path graph.



As you can see from the above figure, the edges of the graphs are not given as numerical values directly. Because, these numerical values will come from your AIUB Student ID. Read the following instructions carefully.

1. Look at your AIUB Student ID. For this problem, assume your ID format is **ab-cdefg-h**.
2. Now, for all the alphabets used as weights of the edges in the graph, put the corresponding numerical values from your ID (following the format: **ab-cdefg-h**).
3. For example, if your ID is *11-18421-1*, then a = 1, b = 1, c = 1, d = 8, e = 4, f = 2, g = 1, h = 1.
4. If one of the alphabet's value turns out to be 0 (ZERO), then you have to substitute it with **a+b+h**.

5. For example, for an ID *20-12304-1*, b = 0 and f = 0. Therefore, change **b = a+b+h** and **f = a+b+h**. So, it becomes b = 3 and f = 3 (because, a = 2, b = 0, h = 1).

Submission instructions:

You will solve the problem by hand on pen/pencil and paper with clear and concise hand-writing. If it is not understandable from your solution what steps/ method and values you used to get to your solution, full marks is not guaranteed.

Take photos of the pages with solutions. Use all those photos chronologically to make a single pdf file. Name that file with your AIUB student ID. For example, if your student id is *11-18421-1*, the name of the file should be ***11-18421-1.pdf***.

Upload that file in the **Assignments** tab in MS TEAMS. You will see an assignment is already created for you there for this course in Final Term. All you have to do is to navigate to that and upload the pdf file to turn in your work. That is it.

Finally, if you have any queries, do not hesitate to contact me.

GOOD LUCK