CS345A: Algorithms -II
Users Online : 12

✏️ Quiz 2

Submitted on 3/10/2021 08:55

Instructions

- Exam opens at: 3/10/2021 08:00
- You are given an extra 10 minutes after due time to submit your exam.
- However, please note that any submissions made after the due time are marked as late submissions.
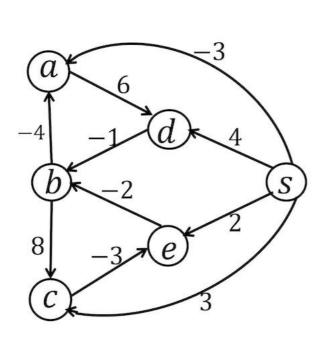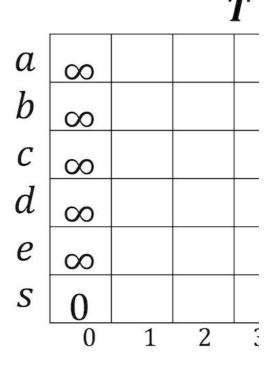
Quiz 2

Question:

Attempt exactly one of the following questions.

1. **Easy question** (*marks=2.5*)

See the directed graph given below. Table T stores the label of each vertex at the end of each of the 5 iterations of the Bellman and Ford algorithm fo
need to fill up each entry of the table correctly.

2. **Difficult question** (*marks=7.5*)

Let G=(V,E) be an undirected connected graph on n=|V| vertices where degree of each vertex is bounded by d. Each edge has a unit length.
and Radha initially positioned at distinct vertices u,v,x, and y respectively. Ram has to travel from u to v in order to meet Sita, and Krishna has
Radha. In each time step, Ram (likewise Krishna) can travel to any vertex which is neighboring to the vertex where he is currently present. Ho
Ram and Krishna is allowed to move. We are interested in finding a possible schedule according to which Ram and Krishna should travel so t
However, the schedule has to respect the following constraint -- Throughout their journey, the distance between Ram and Krishna must never
parameter. As answer to this question, you just need to design an $O(n^2 d)$ time algorithm to determine if there exists a schedule for Ram and K
respectively while respecting the constraint stated above. You may assume that u and x have distance greater than r units, and v and y also h
absolutely no need to provide intuition, time complexity analysis, or proof of correctness. <u>Just describe the algorithm formally and completely.</u>

Note: No marks for an algorithm which is incorrect, incomplete, or ambiguous. So please attempt this problem keeping in mind this important

Solution:

CS345_Quiz_2_Grading_Scheme.pdf

Marks: 7.5

Feedback: <!--td {border: 1px solid #ccc;}br {mso-data-placement:same-cell;}--> Solution 1 used. Details present