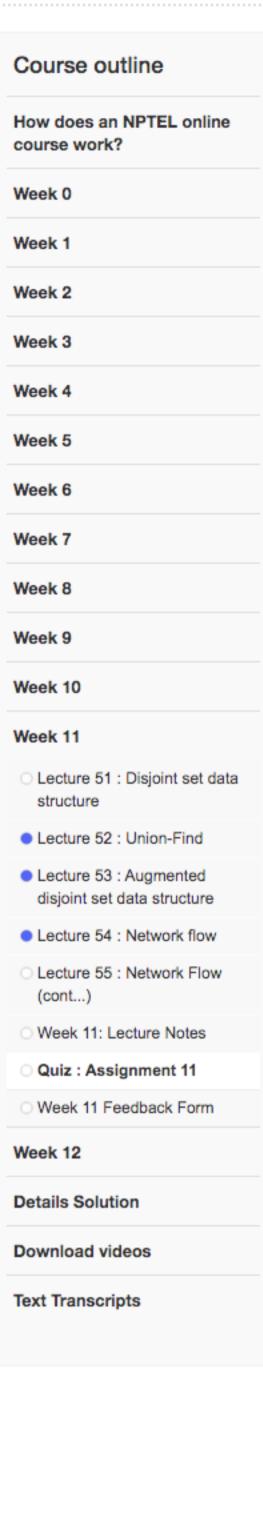
NPTEL » Introduction to algorithms and analysis

Unit 13 - Week 11



Assignment 11 The due date for submitting this assignment has passed. Due on 2020-04-15, 23:59 IST. As per our records you have not submitted this assignment. 1 point In disjoint set data structure, representative element supports which of the following operation? (a) Find-Set (b) Union (c) Make-Set (d) All of these ○ a. ○ b. O c. O d. No, the answer is incorrect. Accepted Answers: d. let $S = \{S_1, S_2, ..., S_n\}$ be the collection of disjoint sets, then after how 1 point many maximum UNION operation will the set S contain exactly one set? (a) n-1(b) n-3(c) n-2(d) None of these ○ a. b. Ос. \bigcirc d. No, the answer is incorrect. Score: 0 Accepted Answers: 1 point If for each set $S_i = \{x_1, x_2, ... x_n\}$ as balanced tree, then what is time complexcity in worst case for FIND-SET(x) operation, for some x? (a) Θ(n) (b) $\Theta(\log n)$ (c) $\Theta(n^2)$ (d) Θ(1) ○ a. ○ b. Ос. \bigcirc d. No, the answer is incorrect. Score: 0 Accepted Answers: b. "The MakeSet operation makes a new set by creating a new element 1 point with a unique id, a rank of 0, and a parent pointer to itself. The parent pointer to itself indicates that the element is the representative member of its own set." The above statement is (a) True (b) False ○ a. ○ b. No, the answer is incorrect. Score: 0 Accepted Answers: 1 point If we concatinate samller lists into the end of larger list and n is the overall numbers of elements, then cost of all UNIONs is (a) $\mathcal{O}(n \log n)$ (b) $\mathcal{O}(\log \log n)$ (c) O(1) (d) None of these ○ a. ○ b. Ос. ○ **d**. No, the answer is incorrect. Score: 0 Accepted Answers: Given a flow network G = (V, E), let f_1 and f_2 be functions from $V \times V$ 1 point to \mathbb{R} . The flow sum $f_1 + f_2$ is the function from $V \times V$ to \mathbb{R} by $(f_1 + f_2)(u, v) = f_1(u, v) + f_2(u, v) \ \forall u, v \in V$ If f_1 and f_2 are flows in G, then which of the flow properties must the flow sum $f_1 + f_2$ satisfy? (a) Skew symmetry, flow conservation (b) Flow cinservation, capacity constraints (c) Capacity constraints, skew symmetry (d) Flow cinservation, capacity constraints, skew symmetry ○ a. ○ b. Ос. \bigcirc d. No, the answer is incorrect. Accepted Answers: For any integer $j \geq 1$ the value of $A_1(j)$ is _____, where A is 1 point Ackermann's function (a) 2j-1(b) 2j+1(c) 2j (d) j+1○ b. Ос. \bigcirc d. No, the answer is incorrect. Score: 0 Accepted Answers: 1 point What does Maximum flow problem involve? (a) finding a flow between source and sink that is maximum (b) finding a flow between source and sink that is minimum (c) finding the shortest path between source and sink (d) computing a minimum spanning tree ○ a. ○ c. \bigcirc d. No, the answer is incorrect. Score: 0 Accepted Answers: A vertex is called *source* if the vertex _____ 1 point (a) has no incoming edges (b) has no leaving edges (c) is a central vertex (d) has the least weight ○ b. ○ c.

 \bigcirc d. No, the answer is incorrect. Accepted Answers: 10) What is the maximum number of minimum cuts that a graph with nvertices can have? (a) n+1(b) n(n-1)○ a. ○ b. ○ c. ○ d. No, the answer is incorrect. Score: 0 Accepted Answers:

1 point