Quiz 5 - Backtracking and Greedy Algorithms

Due Feb 8 at 11:59pm

Points 10

Questions 6

Available until Feb 9 at 11:59pm

Time Limit None

Allowed Attempts 2

Instructions

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This quiz will test your understanding of the material covered so far this week (MLOs).

This is an online quiz. There will be no time limit to the quiz. You can attempt the quiz twice and the best of the scores will be retained. This is open notes and open internet quiz but refrain from discussing with anybody during the exam.

Note that this test cannot be taken past the due date for any credit.

This quiz is worth 10 points.

You can view the correct answers here after the due date.

Attempt History

	Attempt	Time	Score	
KEPT	Attempt 2	7 minutes	7 out of 10	
▶ EST	Attempt 2	7 minutes	7 out of 10	
	Attempt 1	9 minutes	7 out of 10	

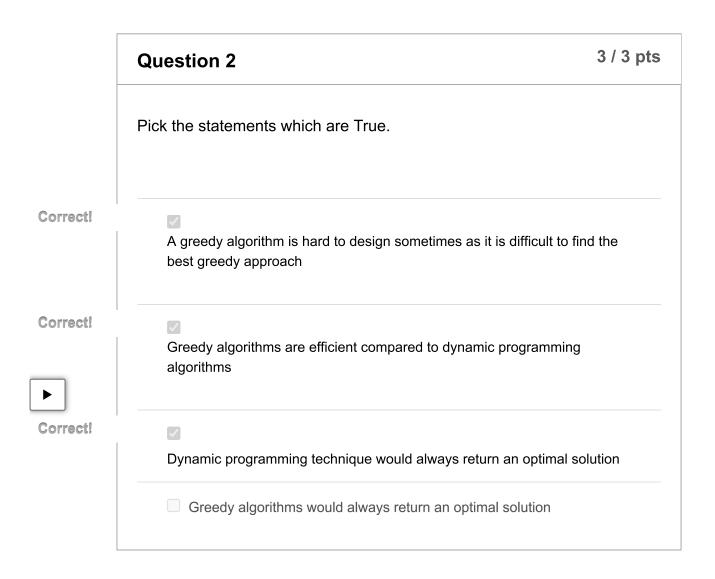
Score for this attempt: 7 out of 10

Submitted Feb 5 at 6:55pm This attempt took 7 minutes.

Question 1 1 / 1 pts

What makes the solution for the 'Activity Selection Problem' that we implemented in the exploration, a greedy approach?

,	3
	It is similar to Dynamic Programming algorithm
Correct!	
	We make a best available choice in each iteration and we never look back
	It has optimal substructure
	It satisfies greedy property



Question 3 1 / 1 pts

All possible greedy algorithms, at each step, choose what they know is going to lead to an optimal/near optimal solution.

Correct!

Question 4

1 / 1 pts

Can 0/1 knapsack problem be solved using the Greedy algorithm technique to obtain an optimum solution to fill the knapsack?

0/1 knapsack problem (This is the problem that we saw in the previous modules) When have n items and their values given. We are provided with a knapsack of capacity X. We have only one copy of each item. We need to maximize the value of our knapsack with items that we pick.

True

Correct!

False

Greedy solution might not give us an optimal solution.



Question 5

1 / 3 pts

Fill in the below pseudocode for activity selection problem using the greedy approach. The function returns the count of the maximum number of activities that can be selected.

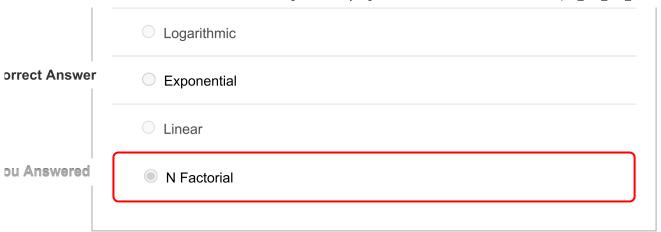
activitySelection(activities):

sortBasedonEndTime(activities) # uses quick sort to sort the activities

for activity in activities:

2/3/22, 0.30 PIVI	Quiz 5 - Backtracking and Greedy Algorithms. ANALYSIS OF ALGORIThmis (C5_325_400_w20.	۷.				
	if currendEndTime <= activity.startTime:					
	result.append(activity)					
	[Select]					
	return result					
	Time complexity for the pseudocode will be					
	[Select]					
	Answer 1:					
orrect Answer	result = result + 1					
ou Answered	result.append(activity)					
	Answer 2:					
Correct!	currentEndTime = activity.endTime					
	Answer 3:					
ou Answered	O(n log n)					
Answer	O(n^2)					
	Quick sort has worst case of O(n^2) time complexity					

Question 6 O / 1 pts The asymptotic runtime of the solution for the combination sum problem that was discussed in the exploration is _____.



Quiz Score: 7 out of 10

