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Quiz - Dynamic Programming and Backtracking

This is a preview of the draft version of the quiz

Instructions

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.

Quiz Type	Graded Quiz
Points	10
Assignment Group	Quizzes
Shuffle Answers	Yes
Time Limit	No Time Limit
Multiple Attempts	Yes
Score to Keep	Highest
Attempts	2
View Responses	Always
Show Correct Answers	After Apr 24 at 12am
One Question at a Time	No

Due	For	Available from	Until
Apr 23	Everyone	-	Apr 24 at 11:59pm

Preview

Score for this attempt: **0** out of 10
Submitted Apr 28 at 8:26pm
This attempt took less than 1 minute.

Unanswered

Question 1

0 / 1 pts

Given two integer arrays to represent weights and profits of 'N' items, find a subset of these items that will give us maximum profit such that their cumulative weight is not more than a given number 'C'. Best technique to solve this problem is?

orrect Answer

- Dynamic Programming
- Divide and Conquer
- Brute Force
- Backtracking

Unanswered

Question 2

0 / 2 pts

To find the optimal solution for 0-1 knapsack, what would be dimensions of the extra array that we would need? The knapsack has a capacity of W, and there are total of n items. Assume we are using the approach that was discussed in the exploration.

- Array[W]
- Array[W][n]

orrect Answer

- Array[W+1][n+1]
- Array[n+1]

Unanswered

Question 3

0 / 1 pts

We are given an array of numbers and we are asked to find the optimal solution to maximize the sum of numbers (i.e continuous subsequence that has maximum sum). We would always end up with the same combination of numbers as answer.

- True
- False

orrect Answer

Unanswered

Question 4

0 / 1 pts

What does a backtracking algorithm do if it reaches a complete solution?

- None of the options
- It backtracks to the root
- It either stops or continues searching for other solutions
- It backtracks and traverses the same route

orrect Answer

Unanswered

Question 5

0 / 1 pts

Backtracking is used to solve which of the problems:

- Any numerical problems

- Problems that have sub-problems similar to divide and conquer

orrect Answer

- To find all possible solutions
- Optimal solution problems

Unanswered

Question 6

0 / 2 pts

What is the correct recurrence formula for the unbound knapsack problem that was discussed in the exploration?

Consider the weight of the items w[1..n], value of the items v[1..n]

- $F(x,v) = \max\{ F[x-w_i] + v_i \}$
- $F(x) = \max\{ F[x-v_i] + w_i \}$

t Answer

- $F(x) = \max\{ F[x-w_i] + v_i \}$
- $F(x,i) = \max\{ v_i + F[x-w_i , i-1] , F[x , i -1] \}$

Unanswered

Question 7

0 / 2 pts

In the o-1 knapsack recurrence formula $f(x,i) = \max\{ v_i + f[x-w_i , i-1] , f[x , i -1] \}$

The first part $v_i + f[x-w_i , i-1]$ represents : [Select]

The second part f[x , i -1] represents: [Select]

Answer 1:

ou Answered (You left this blank)

orrect Answer adding the ith item to the knapsack

Answer 2:

ou Answered (You left this blank)

orrect Answer not adding the ith item to the knapsack

Quiz Score: **0** out of 10