

Quiz 3 - Dynamic Programming

Due Jan 25 at 11:59pm**Points** 10**Questions** 7**Available** until Jan 26 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.

[Take the Quiz Again](#)

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	7 minutes	10 out of 10

⚠️ Answers will be shown after your last attempt

Score for this attempt: **10** out of 10

Submitted Jan 23 at 8:51pm

This attempt took 7 minutes.

Question 1**2 / 2 pts**

What are the major required aspects in a problem in order to apply Dynamic Programming Technique?

- ☐ Base case to stop recurrence
- ☐ Whether a problem can be divided or not
- ☒ Optimal Substructure and Overlapping subproblems
- ☐ Be able to solve using top down and bottom up approach

Question 2

1 / 1 pts

In which of the following approaches we start with the base case and proceed to solve the bigger subproblems?

- ☒ Bottom-up Approach
- ☐ Top-Down Approach
- ☐ Both
- ☐ None of the options

Question 3

1 / 1 pts

In dynamic programming, the technique of storing the previously calculated values is called

- ☐ Cache

- ☒ Memoization
- ☐ Top-down approach
- ☐ Bottom-up approach

Question 4**1 / 1 pts**

The difference between Divide and Conquer Approach and Dynamic Programming is

- ☐ The way we divide the sub-problems
- ☐ The base case
- ☐ Use of recurrence formula
- ☒ Whether the sub-problems overlap or not

**Question 5****2 / 2 pts**

A binary search algorithm searches for a target value within a sorted array. Binary search compares the target value to the middle element of the array; if they are unequal, the half in which the target cannot lie is eliminated and the search continues on the remaining half until the target value is found or until a search can no longer be performed. This problem can be solved using which of the techniques?

- ☒ Divide and Conquer

Correct, since there are repeatable subproblems, but not Dynamic Programming because there are no overlapping sub-problems.

- ☐ None of the options
- ☐ Dynamic Programming
- ☐ Any of the two techniques

Question 6

2 / 2 pts

In the Longest Common Subsequence problem assume we are comparing two strings of lengths m and n . In the bottom-up approach the solution we build a 2-Dimensional array called $\text{Cache}[m][n]$. The final solution was obtained by accessing which element of the cache?

- ☐ The first element in the $\text{cache}[m][n]$
- ☒ The element in the bottom right corner of the $\text{cache}[m][n]$
- ☐ Any element in the $\text{Cache}[m][n]$
- ☐ The last but one element in the $\text{cache}[m][n]$

Question 7

1 / 1 pts

In we start with the base case and build the solution starting from base case. In we start solving the the bigger problem proceed towards the base case.

Answer 1:

bottom-up approach

Answer 2:

top-down approach

Quiz Score: **10** out of 10

