Week 13- Day 2 : Coding Challenge

(Maximum marks -15)

Q-1) Climbing Stairs - solve without DP

https://leetcode.com/problems/climbing-stairs/

(5 marks)

(Easy)

You are climbing a staircase. It takes n steps to reach the top.

Each time you can either climb 1 or 2 steps. In how many distinct ways can you climb to the top?

Example 1:

Input: n = 2

Output: 2

Explanation: There are two ways to climb to the top.

1. 1 step + 1 step

2. 2 steps

Q-2)Solve above question with DP (5 marks)

Q-3) Longest Common Subsequence - Solve using DP

(5 marks)

https://leetcode.com/problems/longest-common-subsequence/

(Medium)
Given two strings `text1` and `text2`, return *the length of their longest common subsequence.* If there is no common subsequence, return `0`.

A subsequence of a string is a new string generated from the original string with some characters (can be none) deleted without changing the relative order of the remaining characters.

- For example, `"ace"` is a subsequence of `"abcde"`.

A common subsequence of two strings is a subsequence that is common to both strings.

Example 1:

> Input: text1 = "abcde", text2 = "ace"
> Output: 3
> Explanation: The longest common subsequence is "ace" and its length is 3.

Marks distribution:
Question 1,2 and 3 carry 5 marks each.