

1143. Longest Common Subsequence

Given two strings `text1` and `text2`, return the length of their longest common subsequence.

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. (eg, "ace" is a subsequence of "abcde" while "aec" is not). A common subsequence of two strings is a subsequence that is common to both strings.

If there is no common subsequence, return 0.

Example 1:

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

```
class Solution {
    public int longestCommonSubsequence(String text1, String text2)
    {

        // dynamic programming
        int n = text1.length();
        int m = text2.length();
        int dp[][] = new int[n+1][m+1];

        for (int i = 1; i <= n; i++) {
            for (int j = 1; j <= m; j++) {
                dp[i][j] = Math.max(dp[i-1][j], dp[i][j-1]);

                if (text1.charAt(i-1) == text2.charAt(j-1)) {
                    dp[i][j] = dp[i-1][j-1] + 1;
                }
            }
        }

        return dp[n][m];
    }
}
```