Pallindromic Subsequences

Lab Exam 2 - Batch 1

Computer Programming
Date: 23 October, 2019

Problem Code: **B1P3 [20 Marks]**

Problem Statement: Given a string s, find the longest pallindromic subsequence within it.
Definition of Pallindrome: A string s is said to be a pallindrome if $\forall i, s_i = s_{n-i-1}$ where n is the length of the string, indices are zero-based. In other words, the string is the same as its reverse.
Definition of Subsequence: A subsequence is a not contiguous subset of a string in order of the sequence it appears in the original string. For example, subsequences of the string "abcd" could be: "acd", "abd", "ac", "bd" etc.

Input
First line of input is T, denoting the number of test cases. Each of the next T lines contains a single string s
Output
You should have T lines of output. Each line should have a single integer corresponding to the length of the longest pallindromic sbsequence.

Constraints
$1 \leq T \leq 10$
$1 \leq |S| \leq 10^3$

Subtasks
Subtask 1(4 marks):$|S|$ <= 20
Subtask 2(16 marks):Original Constraints

Time Limit: 1 sec
Memory Limit: 256 MB

Sample Test Case

Input	Output
3 abcaba sakjajk abc	5 5 1