Beautiful Toys

Lab Exam 1 - Replay

Computer Programming
Date: 3 October, 2019

Problem Code: **BTA [10 Marks]**

Problem Statement: K has a collection of toys denoted by P. K is obsessed with toys, but all toys are not equal to him. He is more favourable to one toy, denoted by C, than the rest of the toys. He came up with a formula to find the beauty index of his arrangements of toys with respect to C. A consecutive segment of P is beautiful if there are exactly N occurrences of C in it. The beauty index of his toys collection P is the minimal length beautiful segments. Since he is obsessed with his toys the entire time, he asks for your help to compute the beauty index of his toys arrangement P.

Input
First line of input is T, denoting number of test cases. Next T lines have three space separated inputs. The input is string P, second input is character C and the third input is integer N. P is an alphanumeric string, i.e. P has uppercase letters, lowercase letters and digits.

Note: To get input of above format, don't use scanf("%s%c%d",str1, &c, &n); This will not properly input n. Use scanf("%s%s%d",str1, str2, &n); and then use c = str2[0]; to get proper input.

Output
For each test case, output one integer, the minimal length of beautiful segment of P

Constraints
$1 \leq T \leq 100$
$1 \leq |P| \leq 10^5$
$C \in P$ i.e. $\exists i$ such that $0 \leq i < |P|$ and $P[i] = C$
$1 \leq N \leq |C \in P|$ i.e. N is atmost number of occurences of C in P

Time Limit: 1 sec
Memory Limit: 256 MB

Sample Test Case

Input	Output
5 AAa A 2 bbb b 1 LoL L 2 XyXyXyyyyXyXyXyX X 2 XyXyXyyyyXyXyXyXX X 2	2 1 3 3 2