**Assignment –II/CAP-680/DOC-14/G-1 and G-2**

**Q1)** Smith is planning to setup a secure password for his customer account. For a password to be secure the following conditions should be satisfied:

Password must contain at least one lower case letter [a-z];

Password must contain at least one upper case letter [A-Z] strictly inside, i.e. not as the first or the last character;

Password must contain at least one digit [0-9] strictly inside;

Password must contain at least one special character from the set {‘@’, '#', '%', '&', '?' } strictly inside;

Password must be at least 10 characters in length, but it can be longer.

Smith has generated several strings and now wants you to check whether the passwords are secure based on the above criteria. Please help Smith in doing so.

Input

First line will contain T, number of test cases. Then the test cases follow.

Each test case contains of a single line of input, string S.

Output

For each test case, output in a single line "YES" if the password is secure and "NO" if it is not.

Constraints

1≤∣S∣≤20

All the characters in S are one of the following: lower case letters [a-z], upper case letters [A-Z], digits [0-9], special characters from the set { '@', '#', '%', '&', '?' }

**Q2)**Given an expression string **x**. Examine whether the pairs and the orders of {,},(,),[,] are correct in exp.  
For example, the function should return 'true' for exp = [()]{}{[()()]()} and 'false' for exp = [(]).

**Note:**The drive code prints "balanced" if function return true, otherwise it prints "not balanced".

Input:

()

Output:

true

Explanation:

(). Same bracket can form balanced pairs, and here only 1 type of bracket is present and in balanced way.

**Q3)** A text mining system accepts a sentence as an input. It tries to extract those words which read the same backwards or forwards. This system is interested to extract only such largest and smallest possible words. Develop a java program which can help this text mining system for the extraction of such words from an input sentence.

Example: Input – “Madam, I want to learn malayalam this noon.”

Output – Words are: “noon” and “malayalam”

**Q4)** School of computer application (SCA) department in LPU wants to find out those faculties whose names are same. Develop a java program which stores faculties’ names in an array of strings and return those names which are found to be the same. This program should use StringBuffer class for storage.

Assignment 4: Given all the students, Mr. XYZ wants to find that student name which is second most frequent in this section. Develop a java program which can help Mr. XYZ to locate such student name with its frequency.

Example : Input – [“Ram”, “Aryan”, “Sumit”, “Ram”, “Sumit”, “Akshay”, “Moni”, “Sumit”]

Output – “Ram” is second most frequent name with count 2.

**Q5)** A company XYZ is storing its employee’s salary in an array of size N. This company is interested to find out those pairs of employees whose sum of salary is equal to a given number K. Given this array, develop a java program which can help the company to extract such pairs.

Example: Input – N = 5, K = 6000, Salary [] = {1000, 5000, 1000, 7000, 6000}

Output – Pairs are: {1000, 5000}, {5000, 1000}