

Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

REC_2028_OOPS using Java_Week 4_CY

Attempt : 1
Total Mark : 40
Marks Obtained : 40

Section 1 : Coding

1. Problem Statement

Meera is practicing her English vocabulary. She wants to focus on words that have more vowels in them, as they help improve her pronunciation. She decides to extract only those words from a sentence that contain at least two vowels.

Your task is to help Meera by writing a program that finds such words from the given sentence.

Input Format

The input contains a string representing the sentence.

Output Format

The output prints all the words that contain at least two vowels, separated by a space.

If no such word exists, print "No words with two vowels".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: This is an example sentence

Output: example sentence

Answer

```
import java.util.Scanner;

class VowelWords {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String sentence = sc.nextLine();
        String[] words = sentence.split(" ");
        String vowels = "aeiouAEIOU";
        String result = "";
        for (int i = 0; i < words.length; i++) {
            int count = 0;
            for (int j = 0; j < words[i].length(); j++) {
                if (vowels.indexOf(words[i].charAt(j)) != -1) {
                    count++;
                }
            }
            if (count >= 2) {
                if (result.length() > 0) result += " ";
                result += words[i];
            }
        }
        if (result.length() == 0) System.out.println("No words with two vowels");
        else System.out.println(result);
    }
}
```

Status : Correct

Marks : 10/10

2. Problem Statement

Neha is analyzing text messages to identify words that have repeated characters. A word is considered "repetitive" if any character appears more than once in that word.

Your task is to write a program that extracts all words that contain repeated characters from a given sentence.

If no such word exists, print "No repetitive words found".

Input Format

The input contains a single line containing a sentence with multiple words.

Output Format

The output prints all words that contain repeated characters separated by a space.

If no word contains repeated characters, print "No repetitive words found".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: letter balloon apple tree

Output: letter balloon apple tree

Answer

```
import java.util.Scanner;
class RepetitiveWords {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String sentence = sc.nextLine();
        String[] words = sentence.split(" ");
        String result = "";
        for (String word : words) {
            if (hasRepeatedChar(word)) {
                result += word + " ";
            }
        }
    }
}
```

```

    }
    }
    if (result.equals("")) {
        System.out.println("No repetitive words found");
    } else {
        System.out.println(result.trim());
    }
}

private static boolean hasRepeatedChar(String word) {
    int[] freq = new int[256];
    for (int i = 0; i < word.length(); i++) {
        char c = word.charAt(i);
        freq[c]++;
        if (freq[c] > 1) return true;
    }
    return false;
}
}

```

Status : Correct

Marks : 10/10

3. Problem Statement

A bookstore wants to analyze the titles of books to determine their longest word in each title. This helps in designing banners and covers.

Your task is to write a program that, given a sentence (book title), finds and prints the longest word. If multiple words have the same maximum length, print the first one.

Input Format

The input contains a single line containing a sentence representing the book title.

Output Format

The output prints a string representing the longest word in the sentence (book title).

Refer to the sample output for formatting specifications.

Sample Test Case

Input: The Chronicles of Narnia

Output: Chronicles

Answer

```
import java.util.Scanner;
class LongestWord {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String sentence = sc.nextLine();
        String[] words = sentence.split(" ");
        String longest = "";
        for (String word : words) {
            if (word.length() > longest.length()) {
                longest = word;
            }
        }
        System.out.println(longest);
    }
}
```

Status : Correct

Marks : 10/10

4. Problem Statement

In a university library, librarians need to track the usage of special characters in students' notes.

To help them, you are asked to write a program that counts the number of specific symbols in each passage of text.

The symbols of interest are:

Exclamation marks (!)Colons (:)Semicolons (;)

Input Format

The first line of input contains an integer T, representing the number of test

cases (passages).

Each of the next T lines contains a single passage of text.

Output Format

For each test case, print three integers separated by spaces, representing the number of exclamation marks, colons, and semicolons in the passage.

The first line of output corresponds to the first passage, the second line to the second passage, and so on.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1

Hello! How are you

Output: 1 0 0

Answer

```
import java.util.Scanner;
```

```
class Main {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        int T = Integer.parseInt(sc.nextLine());  
        for (int i = 0; i < T; i++) {  
            String line = sc.nextLine();  
            int exclam = 0, colon = 0, semicolon = 0;  
            for (char ch : line.toCharArray()) {  
                if (ch == '!') exclam++;  
                else if (ch == ':') colon++;  
                else if (ch == ';') semicolon++;  
            }  
            System.out.println(exclam + " " + colon + " " + semicolon);  
        }  
        sc.close();  
    }  
}
```

Status : Correct

Marks : 10/10