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

```
// You are using Java
import java.util.*;

public class Main {
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);
      String[] words = sc.nextLine().split(" ");
      String result = "";

      for (String word : words) {
         int count = 0;
         for (char c : word.toLowerCase().toCharArray()) {
            if ("aeiou".indexOf(c) != -1) {
               count++;
            }
         }
         if (count >= 2) {
            result += word + " ";
         }
      }

      if (result.equals("")) {
         System.out.println("No words with two vowels");
      } else {
         System.out.println(result.trim());
      }
   }
}
```

Status : Correct ***Marks : 10/10***

2. Problem Statement

Anjali is preparing a report on text complexity. She wants to identify all words in a sentence that contain at least one digit so she can analyze numeric mentions.

Your task is to write a program that extracts and prints all words containing at least one digit from a given sentence.

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

Input Format

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

Output Format

The output prints all words containing at least one digit separated by a space.

If no word contains a digit, print "No words with digits found".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: The model X100 and Y200 are available
Output: X100 Y200

Answer

```
// You are using Java
import java.util.*;
class main
{
   public static void main(String arg[])
   {
      Scanner sc = new Scanner(System.in);
      String s = sc.nextLine();
```

```
        String [] w = s.split(" ");
        List<String>wWithDigit = new ArrayList<>();
        for(String wd : w)
        {
            if(wd.matches(".*\\d.*"))
            {
                wWithDigit.add(wd);
            }
        }
        if(wWithDigit.isEmpty())
        {
            System.out.println("No words with digits found");
        }
        else
        {
            System.out.println(String.join(" ", wWithDigit));
        }
    }
}
```

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 contais 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

```
// You are using Java
import java.util.*;

public class Main {
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);
      String[] words = sc.nextLine().split(" ");
      String res = words[0];

      for (String word : words)
      {
         if(word.length()>res.length())
         {
            res = word;
         }
      }
      System.out.println(res);
   }
}
```

Status : Correct ***Marks : 10/10***

4. 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

```
// You are using Java
import java.util.*;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String[] words = sc.nextLine().split(" ");
        String result = "";

        for (String word : words) {
            if (RepeatedChar(word)) {
                result += word + " ";
            }
        }

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

    private static boolean RepeatedChar(String word) {
        for (int i = 0; i < word.length(); i++) {
            char ch = word.charAt(i);
            for (int j = i + 1; j < word.length(); j++) {
                if (ch == word.charAt(j)) {
                    return true;
                }
            }
        }
        return false;
    }
}
```

Status : Correct ***Marks : 10/10***