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

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 WordsWithDigits {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String sentence = sc.nextLine();
        String[] words = sentence.split(" ");
        List<String> result = new ArrayList<>();

        for (String word : words) {
            if (word.matches(".*\\d.*")) {
                result.add(word);
            }
        }

        if (result.isEmpty()) {
            System.out.println("No words with digits found");
        } else {
            System.out.println(String.join(" ", result));
        }

        sc.close();
    }
}
```

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

2. Problem Statement

Riya is preparing for a vocabulary test. Her teacher told her to focus on long words in her practice sentences, specifically words that have at least 5 letters.

Riya wants to write a program that will help her identify such words quickly.

Your task is to help Riya by printing all the words in a given sentence that have a length greater than or equal to 5.

If no such word exists, display "No long words found".

Input Format

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

Output Format

The output prints all words having length ≥ 5, separated by a space.

If no such word is found, print "No long words found".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: The quick brown fox jumps over the lazy dog
Output: quick brown jumps

Answer

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

class LongWords {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String sentence = sc.nextLine();
        String[] words = sentence.split(" ");
        List<String> result = new ArrayList<>();
```

```
        for (String word : words) {
            if (word.length() >= 5) {
                result.add(word);
            }
        }

        if (result.isEmpty()) {
            System.out.println("No long words found");
        } else {
            for (String word : result) {
                System.out.print(word + " ");
            }
        }

        sc.close();
    }
}
```

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

3. 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.*;

 class WordsWithTwoVowels {
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);
      String sentence = sc.nextLine();
      String[] words = sentence.split(" ");
      List<String> result = new ArrayList<>();

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

      if (result.isEmpty()) {
         System.out.println("No words with two vowels");
      } else {
         for (String word : result) {
            System.out.print(word + " ");
         }
      }

      sc.close();
   }
}
```

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

```
import java.util.*;

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

```
        List<String> result = new ArrayList<>();

        for (String word : words) {
            if (hasRepeatedChar(word)) {
                result.add(word);
            }
        }

        if (result.isEmpty()) {
            System.out.println("No repetitive words found");
        } else {
            for (String word : result) {
                System.out.print(word + " ");
            }
        }

        sc.close();
    }

    private static boolean hasRepeatedChar(String word) {
        Set<Character> seen = new HashSet<>();
        for (char ch : word.toCharArray()) {
            if (seen.contains(ch)) {
                return true;
            }
            seen.add(ch);
        }
        return false;
    }
}
```

Status : Correct *Marks : 10/10*