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

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

```java
import java.util.*;

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

        boolean found = false;
        StringBuilder result = new StringBuilder();

        for (String word : words) {
            if (word.length() >= 5) {
                result.append(word).append(" ");
                found = true;
            }
        }

        if (found) {
            System.out.println(result.toString().trim());
        } else {
            System.out.println("No long words found");
        }
    }
}
```

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

```java
import java.util.*;

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

```java
        boolean found = false;
        StringBuilder result = new StringBuilder();

        for (String word : words) {
            if (word.matches(".*\\d.*")) {  // checks if word contains at least one digit
                result.append(word).append(" ");
                found = true;
            }
        }

        if (found) {
            System.out.println(result.toString().trim());
        } else {
            System.out.println("No words with digits found");
        }
      }
    }
}
```

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

```java
import java.util.*;

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

        String longestWord = words[0];

        for (String word : words) {
            if (word.length() > longestWord.length()) {
                longestWord = word;
            }
        }

        System.out.println(longestWord);
    }
}
```

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

```java
import java.util.*;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int T = Integer.parseInt(sc.nextLine().trim());  // number of test cases

        for (int i = 0; i < T; i++) {
            String passage = sc.nextLine();
            int exclamations = 0, colons = 0, semicolons = 0;

            for (char ch : passage.toCharArray()) {
                if (ch == '!') exclamations++;
                else if (ch == ':') colons++;
                else if (ch == ';') semicolons++;
            }

            System.out.println(exclamations + " " + colons + " " + semicolons);
        }
    }
```

```
        }
    }
```

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