Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 4_Q5

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

In a secure banking system, customers are required to create PIN codes for accessing their accounts. The bank wants to validate these PIN codes before accepting them.

A PIN code is considered valid if:

It consists of exactly 4 digits.All characters must be numeric (0–9).It cannot contain all identical digits (e.g., 1111 is invalid).

Your task is to determine whether each PIN code in the list is valid or not.

Input Format

The first line of input contains an integer T, representing the number of PIN codes to check.

The next T lines each contain a string S, representing a PIN code.

Output Format

For each PIN code S, the output print "YES" if it is valid.

Otherwise, the output print "NO".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1
1234
Output: YES

Answer

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

 class PinCodeValidator {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Read the number of PIN codes to check
        int T = Integer.parseInt(scanner.nextLine());

        // Process each PIN code
        for (int i = 0; i < T; i++) {
            String pinCode = scanner.nextLine();
            validatePinCode(pinCode);
        }

        scanner.close();
    }

    private static void validatePinCode(String pinCode) {
        // Check if the PIN code is valid
        if (isValidPinCode(pinCode)) {
```

```
            System.out.println("YES");
        } else {
            System.out.println("NO");
        }
    }

    private static boolean isValidPinCode(String pinCode) {
        // Check if the length is exactly 4
        if (pinCode.length() != 4) {
            return false;
        }
        // Check if all characters are digits
        for (char ch : pinCode.toCharArray()) {
            if (!Character.isDigit(ch)) {
                return false;
            }
        }
        // Check if all digits are identical
        if (pinCode.charAt(0) == pinCode.charAt(1) &&
            pinCode.charAt(1) == pinCode.charAt(2) &&
            pinCode.charAt(2) == pinCode.charAt(3)) {
            return false;
        }
        return true;
    }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 4_Q4

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Arjun is learning how to filter words from a sentence based on grammar rules. He wants to identify the valid words in a sentence.

A word is considered valid if it satisfies all these conditions:

The word contains only alphabets (a–z, A–Z).The word length is at least 2 characters.The word should not contain digits or special characters.

Your task is to read a sentence and print all the valid words in it.

Input Format

The input contains a single line containing a sentence S.

Output Format

The output prints all the valid words separated by spaces.

If no valid word exists, print "No valid words."

Refer to the sample output for formatting specifications.

Sample Test Case

Input: Hello world1 123 ab" @#$ Hi
Output: Hello Hi

Answer

```
// You are using Java
import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;

class WordFilter {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Read the input sentence
        String sentence = scanner.nextLine();

        // Find and print valid words
        List<String> validWords = findValidWords(sentence);

        if (validWords.isEmpty()) {
            System.out.println("No valid words.");
        } else {
            System.out.println(String.join(" ", validWords));
        }

        scanner.close();
    }

    private static List<String> findValidWords(String sentence) {
        List<String> validWords = new ArrayList<>();
```

```
        // Split the sentence into words
        String[] words = sentence.split(" ");

        // Check each word for validity
        for (String word : words) {
            if (isValidWord(word)) {
                validWords.add(word);
            }
        }

        return validWords;
    }

    private static boolean isValidWord(String word) {
        // Check if the length is at least 2
        if (word.length() < 2) {
            return false;
        }
        // Check if the word contains only alphabets
        for (char ch : word.toCharArray()) {
            if (!Character.isLetter(ch)) {
                return false;
            }
        }
        return true;
    }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 4_Q3

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Bechan Chacha is seeking help to filter out valid mobile numbers from a list provided by his crush. He can only pick his crush's number if the list contains valid mobile numbers.

A mobile number is considered valid if:

It has exactly 10 digits.It consists only of numeric values (0–9).It does not begin with zero.

Your task is to determine whether each mobile number in the list is valid or not.

Input Format

The first line contains an integer T, representing the number of mobile numbers

to check.

The next T lines each contain a string S, representing a mobile number.

Output Format

For each mobile number S, the output print "YES" if it is valid.

Otherwise, print "NO".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1
9876543210
Output: YES

Answer

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

 class MobileNumberValidator {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Read the number of mobile numbers to check
        int T = Integer.parseInt(scanner.nextLine());

        // Process each mobile number
        for (int i = 0; i < T; i++) {
            String mobileNumber = scanner.nextLine();
            validateMobileNumber(mobileNumber);
        }

        scanner.close();
    }

    private static void validateMobileNumber(String mobileNumber) {
        // Check if the mobile number is valid
```

```
        if (isValidMobileNumber(mobileNumber)) {
            System.out.println("YES");
        } else {
            System.out.println("NO");
        }
    }

    private static boolean isValidMobileNumber(String mobileNumber) {
        // Check if the length is exactly 10
        if (mobileNumber.length() != 10) {
            return false;
        }
        // Check if the first character is not '0'
        if (mobileNumber.charAt(0) == '0') {
            return false;
        }
        // Check if all characters are digits
        for (char ch : mobileNumber.toCharArray()) {
            if (!Character.isDigit(ch)) {
                return false;
            }
        }
        return true;
    }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 4_Q2

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Anu is developing a tool for a conference registration system. Participants submit keywords related to their fields of interest. The organizer wants to sort these keywords alphabetically to generate tags for session grouping.

Write a program that accepts at least five keywords as input arguments and outputs them in sorted alphabetical order.

Input Format

The first line of input contains an integer n, representing the number of keywords.

The second line of input contains n space-separated keywords (string).

Output Format

The output prints n space separated strings representing the sorted keyword in alphabetical order.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5
Blockchain Cloud AI Data Cybersecurity
Output: AI Blockchain Cloud Cybersecurity Data

Answer

```
// You are using Java
import java.util.Arrays;
import java.util.Scanner;

 class KeywordSorter {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Read the number of keywords
        int n = Integer.parseInt(scanner.nextLine());

        // Read the keywords
        String keywordsLine = scanner.nextLine();
        String[] keywords = keywordsLine.split(" ");

        // Sort the keywords alphabetically
        Arrays.sort(keywords);

        // Print the sorted keywords
        System.out.println(String.join(" ", keywords));

        scanner.close();
    }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 4_Q1

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

In a publishing company, editors often need to quickly analyze passages of text to check for punctuation usage. To assist them, you are asked to write a program that counts the number of specific punctuation marks in each passage.

The punctuation marks of interest are:

Commas (,)Periods (.)Question marks (?)

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 commas, periods, and question marks 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, world. How are you?
Output: 1 1 1

Answer

```
import java.util.Scanner;

 class PunctuationCounter {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Read the number of test cases
        int T = Integer.parseInt(scanner.nextLine());

        // Process each passage
        for (int i = 0; i < T; i++) {
            String passage = scanner.nextLine();
            countPunctuation(passage);
        }

        scanner.close();
    }

    private static void countPunctuation(String passage) {
        int commas = 0;
        int periods = 0;
        int questionMarks = 0;
```

```
        // Count punctuation marks
        for (char ch : passage.toCharArray()) {
            if (ch == ',') {
                commas++;
            } else if (ch == '.') {
                periods++;
            } else if (ch == '?') {
                questionMarks++;
            }
        }

        // Print the results
        System.out.println(commas + " " + periods + " " + questionMarks);
    }
}
```

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

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2024_28_III_OOPS Using Java Lab

REC_2028_OOPS using Java_Week 4_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 5

Section 1 : MCQ

1. Predict the output for the following code.

```
class Main {
   public static void main(String[] fruits) {
      String fruit1 = new String("apple");
      String fruit2 = new String("orange");
      String fruit3 = new String("pear");
      fruit3 = fruit1;
      fruit2 = fruit3;
      fruit1 = fruit2;
      System.out.println(fruit1);
      System.out.println(fruit2);
      System.out.println(fruit3);
   }
}
```

Answer

appleorangepear

Status : Wrong ***Marks : 0/1***

2. What will be the output for the following code?

```
class Main {
   public static void main(String[] args) {
   String languages[] = { "C", "C++", "Java", "Python", "Ruby"};
      for (String sample: languages) {
         System.out.println(sample);
      }
   }
}
```

Answer

CC++JavaPythonRuby

Status : Correct ***Marks : 1/1***

3. What will be the output of the following program?

```
class Main {
  public static void main(String[] args) {
    String greet = "Welcome\n";
    System.out.print("String: " + greet);
    int length = greet.length();
    System.out.print("Length: " + length);
  }
}
```

Answer

String: welcomeLength: 8

Status : Wrong ***Marks : 0/1***

4. What will be the output of the following program?

```
class Main {
   public static void main(String[] args) {
      String s = new String("5");
      System.out.println(1 + 1111 + s + 1 + 1010);
   }
}
```

Answer

1112591010

Status : Wrong ***Marks : 0/1***

5. What will be the output of the following program?

```
public class Main {
   public static void main(String[] args) {
     String str = "1234.34";
     int a = Integer.parseInt(str);
     System.out.println(a);
   }
}
```

Answer

1234

Status : Wrong ***Marks : 0/1***

6. What will be the output of the following program?

```
class Main {
   public static void main(String[] args) {
      String s1 = "EDUCATION";
      String s2 = new String("EDUCATION");
      String s3 = "EDUCATION";
      if (s1 == s2) {
         System.out.println("s1 and s2 equal");
      }
      else {
```

```
        System.out.println("s1 and s2 not equal");
    }
    if (s1 == s3) {
        System.out.println("s1 and s3 equal");
    }
    else {
        System.out.println("s1 and s3 not equal");
    }
  }
}
```

Answer

s1 and s2 not equals1 and s3 equal

Status : Correct ***Marks : 1/1***

7. Predict the output for the following code:

```
class Main {
  public static void main(String args[]) {
    StringBuffer sb = new StringBuffer("I Java!");
    sb.insert(5, "like ");
    System.out.println(sb);
  }
}
```

Answer

I Java like a!

Status : Wrong ***Marks : 0/1***

8. Predict the output for the following code:

```
public class Main {
  public static void main(String[] args) {
    float a = 10.0f;
    String temp = Float.toString(a);
    System.out.println(temp);
  }
```

```
}
```

Answer

Error: no suitable method found for toString(float)

Status : Wrong ***Marks : 0/1***

9. What will be the output of the following code?

```
class Main {
   public static void main(String args[])
   {
      StringBuffer sb = new StringBuffer("Hello");
      System.out.println("buffer before = " + sb);
      System.out.println("charAt(1) before = " + sb.charAt(1));
      sb.setCharAt(1, 'i');
      sb.setLength(2);
      System.out.println("buffer after = " + sb);
      System.out.println("charAt(1) after = " + sb.charAt(1));
   }
}
```

Answer

buffer before = HellocharAt(1) before = ebuffer after = HicharAt(1) after = i

Status : Correct ***Marks : 1/1***

10. What will be the output of the following code?

```
class Main {
   public static void main(String args[]) {
      String s1 = "Hello i love java";
      String s2 = new String(s1);
      System.out.println((s1 == s2) + " " + s1.equals(s2));
   }
}
```

Answer

false false

Status : Wrong ***Marks : 0/1***

11. What is the output of the following code?

```
class Main
{
   public static void main(String args[])
   {
      StringBuffer c = new StringBuffer("Hello");
      c.delete(0,2);
      System.out.println(c);
   }
}
```

Answer

llo

Status : Correct ***Marks : 1/1***

12. What will be the output of the following program?

```
class Main {
   public static void main(String args[])  {
      String name="Work Hard";
      name.concat("Success");
      System.out.println(name);
   }
}
```

Answer

Work Hard

Status : Correct ***Marks : 1/1***

13. Predict the output for the following code.

```
public class Main {
   public static void main(String[] args) {
```

```
    String a = "java";
    char temp = a.charAt(1);
    System.out.println(temp);
  }
}
```

Answer

j

Status : Wrong ***Marks : 0/1***

14. What will be the output of the following code?

```
class Main {
   public static void main(String args[]) {
      char c[] = {'j', 'a', 'v', 'a'};
      String s1 = new String(c);
      String s2 = new String(s1);
      System.out.println(s1);
      System.out.println(s2);
   }
}
```

Answer

java java

Status : Wrong ***Marks : 0/1***

15. What will be the output of the following program?

```
class Main {
   public static void main(String args[]) {
      StringBuffer sb = new StringBuffer("Hello");
      System.out.println("buffer = " + sb);
      System.out.println("length = " + sb.length());
      System.out.println("capacity = " + sb.capacity());
   }
}
```

Answer

buffer = Hellolength = 4capacity = 21

Status : Wrong ***Marks : 0/1***