Rajalakshmi Engineering College

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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 : 15

Section 1 : MCQ

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

```java
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*

2. Predict the output for the following code:

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

Answer

10.0

Status : Correct   *Marks : 1/1*

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

```java
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 true

Status : Correct   *Marks : 1/1*

4. What is the output of the following code?

```java
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*

5.   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

1112511010

Status : Correct   *Marks : 1/1*

6.   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 Javlike a!

Status : Correct   *Marks : 1/1*

7.   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 : Correct   **Marks : 1/1**

8.   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

appleappleapple

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

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

class Main {

```java
    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?

```java
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

javajava

Status : Correct   *Marks : 1/1*

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

```java
class Main {
    public static void main(String args[]) {
        StringBuffer sb = new StringBuffer("Hello");
```

```java
        System.out.println("buffer = " + sb);
        System.out.println("length = " + sb.length());
        System.out.println("capacity = " + sb.capacity());
    }
}
```

Answer

buffer = Hellolength = 5capacity = 21

Status : Correct   *Marks : 1/1*

12.   Predict the output for the following code.

```java
public class Main {
    public static void main(String[] args) {
        String a = "java";
        char temp = a.charAt(1);
        System.out.println(temp);
    }
}
```

Answer

a

Status : Correct   *Marks : 1/1*

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

```java
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");
        }
```

```java
        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*

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

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

Answer

NumberFormatException

Status : Correct   *Marks : 1/1*

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

```java
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

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Scan to verify results

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

```java
import java.util.Scanner;

public class Main {

    private static int[] countPunctuation(String passage) {
        int commaCount = 0;
        int periodCount = 0;
        int questionMarkCount = 0;

        for (char c : passage.toCharArray()) {
            switch (c) {
                case ',':
                    commaCount++;
                    break;
                case '.':
                    periodCount++;
                    break;
                case '?':
                    questionMarkCount++;
                    break;
                default:
                    break;
            }
```

```java
        }

        return new int[]{commaCount, periodCount, questionMarkCount};
    }

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

        try {
            if (!scanner.hasNextInt()) {
                return;
            }
            int T = scanner.nextInt();

            scanner.nextLine();

            for (int i = 0; i < T; i++) {
                String passage = scanner.nextLine();

                int[] counts = countPunctuation(passage);

                System.out.println(counts[0] + " " + counts[1] + " " + counts[2]);
            }
        } catch (Exception e) {
        } finally {
            if (scanner != null) {
                scanner.close();
            }
        }
    }
}
```

Status : Correct   *Marks : 10/10*

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Scan to verify results

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

```java
import java.util.Scanner;

public class Main {

    private static String isValidPin(String s) {
        if (s.length() != 4) {
            return "NO";
        }

        for (int i = 0; i < s.length(); i++) {
            char c = s.charAt(i);
            if (c < '0' || c > '9') {
                return "NO";
            }
        }

        char firstDigit = s.charAt(0);
        boolean allSame = true;

        for (int i = 1; i < s.length(); i++) {
            if (s.charAt(i) != firstDigit) {
                allSame = false;
                break;
```

```java
            }
        }

        if (allSame) {
            return "NO";
        }

        return "YES";
    }

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

        try {
            if (!scanner.hasNextInt()) {
                return;
            }
            int T = scanner.nextInt();

            scanner.nextLine();

            for (int i = 0; i < T; i++) {
                String pinCode = scanner.nextLine();
                System.out.println(isValidPin(pinCode));
            }
        } catch (Exception e) {
        } finally {
            if (scanner != null) {
                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_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

```java
import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;

public class Main {

    private static boolean isValidWord(String word) {
        if (word.length() < 2) {
            return false;
        }

        return word.matches("[a-zA-Z]+");
    }

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

        try {
            if (!scanner.hasNextLine()) {
                return;
            }
            String sentence = scanner.nextLine();

            String[] words = sentence.split(" ");

            List<String> validWords = new ArrayList<>();

            for (String word : words) {
```

```java
                if (word.isEmpty()) {
                    continue;
                }

                if (isValidWord(word)) {
                    validWords.add(word);
                }
            }

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

        } catch (Exception e) {
        } finally {
            if (scanner != null) {
                scanner.close();
            }
        }
    }
}
```

Status : Correct   *Marks : 10/10*

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Scan to verify results

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

```java
import java.util.Scanner;

public class Main {

    private static String isValidMobileNumber(String s) {
        if (s.length() != 10) {
            return "NO";
        }

        if (s.charAt(0) == '0') {
            return "NO";
        }

        for (int i = 0; i < s.length(); i++) {
            char c = s.charAt(i);
            if (c < '0' || c > '9') {
                return "NO";
            }
        }

        return "YES";
    }
```

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

    try {
        if (!scanner.hasNextInt()) {
            return;
        }
        int T = scanner.nextInt();

        scanner.nextLine();

        for (int i = 0; i < T; i++) {
            String mobileNumber = scanner.nextLine();
            System.out.println(isValidMobileNumber(mobileNumber));
        }
    } catch (Exception e) {
    } finally {
        if (scanner != null) {
            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_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

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

public class Main {

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

        try {
            if (!scanner.hasNextInt()) {
                return;
            }

            int n = scanner.nextInt();

            scanner.nextLine();


            if (!scanner.hasNextLine()) {
                return;
            }
            String line = scanner.nextLine();

            String[] keywords = line.split(" ");
```

```java
            if (keywords.length < n) {

            }


            Arrays.sort(keywords);


            for (int i = 0; i < keywords.length; i++) {
                System.out.print(keywords[i]);

                if (i < keywords.length - 1) {
                    System.out.print(" ");
                }
            }
            System.out.println();

        } catch (Exception e) {
        } finally {
            if (scanner != null) {
                scanner.close();
            }
        }
    }
}
```

Status : Correct   *Marks : 10/10*