Rajalakshmi Engineering College

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Batch: 2028
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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 12_Q1

Attempt : 2
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Sabrina is working on a project that involves analyzing a set of numbers. In her exploration, she encounters scenarios where extracting even numbers and finding their sum is essential.

Create a program that calculates the sum of even numbers from a given array of integers using a lambda expression.

Input Format

The first line of input consists of an integer N, representing the size of the array.

The second line consists of N space-separated integers, representing the elements of the array.

Output Format

The output prints the sum of the even integers from the array.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 3
29 37 45

Output: 0

Answer

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

class EvenSumUsingPredicate{
   public static void main(String[] args){
      Scanner sc=new Scanner(System.in);
      int n=sc.nextInt();
      int [] arr=new int[n];
      for(int i=0;i<n;i++){
         arr[i]=sc.nextInt();

      }
      Predicate<Integer>isEven=num->num%2==0;
      int sum=0;
      for(int num:arr){
         if(isEven.test(num)){
            sum+=num;
         }
      }
      System.out.println(sum);
      sc.close();
   }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 12_Q3

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

In the mystical realm of programming, there exists a magical incantation to reveal hidden words.

Elara, the skilled enchantress, wishes to summon a word using her spell and then reverse its characters to uncover its enchanted reflection.

Write a program that uses the predefined functional interface Supplier<String> and a lambda expression to:

Supply (generate) a string, and

Display its reversed form.

Input Format

No input is required from the user.

The string must be supplied internally using a Supplier<String>.

Output Format

Print the reversed version of the supplied string.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: Wizard!!
Output: !!draziW

Answer

```
import java.util.Scanner;
import java.util.function.Supplier;

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

      String a=sc.next();

      // Supplier to provide the string internally
      Supplier<String> supplyString = () -> a;  // You can change this for testing

      String original = supplyString.get();

      // Reverse the string
      String reversed = new StringBuilder(original).reverse().toString();

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

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 12_Q4

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Abi is working on a text analysis project where she needs to categorize words based on their length.

Words that have three or fewer characters are considered “Short”, while

words with more than three characters are classified as “Long.”

Write a Java program that takes a sentence as input, analyzes each word, and prints a list showing whether each word is “Short” or “Long.”

Use the predefined functional interface Function<String, String> along with a lambda expression for categorization.

Input Format

A single line containing a sentence (words separated by spaces).

Output Format

- A single line with each word categorized as "Short" or "Long", separated by spaces.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: I love my cat
Output: Short Long Short Short

Answer

```
import java.util.*;
import java.util.function.Function;

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

        String sentence = sc.nextLine().trim();
        String[] words = sentence.split("\\s+");

        // Function to categorize a word as Short or Long
        Function<String, String> categorize =
            word -> word.length() <= 3 ? "Short" : "Long";

        for (String w : words) {
            System.out.print(categorize.apply(w) + " ");
        }
    }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 12_Q2

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Alex is learning about Java's functional interfaces and lambda expressions.

He wants to write a simple program that prints the square of each number in an array using a predefined functional interface.

Help Alex complete this task using the Consumer functional interface.

Input Format

- The first line contains an integer N, the number of elements in the array.
- The second line contains N space-separated integers.

Output Format

- Print the squares of all elements in the array, separated by a space.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 4
1 2 3 4
Output: 1 4 9 16

Answer

```
import java.util.*;
import java.util.function.Consumer;

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

        int N = sc.nextInt();
        int[] arr = new int[N];

        for (int i = 0; i < N; i++) {
            if (sc.hasNextInt()) {
                arr[i] = sc.nextInt();
            }
        }

        Consumer<Integer> printSquare = x -> System.out.print((x * x) + " ");

        for (int num : arr) {
            printSquare.accept(num);
        }
    }
}
```

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