

Rajalakshmi Engineering College

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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.Scanner;
import java.util.function.Consumer;
import java.util.Arrays;

class SquarePrinter {

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

        if (!scanner.hasNextInt()) {
            scanner.close();
            return;
        }
        int N = scanner.nextInt();

        int[] numbers = new int[N];
        for (int i = 0; i < N; i++) {
            if (scanner.hasNextInt()) {
                numbers[i] = scanner.nextInt();
            } else {
                break;
            }
        }

        scanner.close();

        // Consumer functional interface definition
        Consumer<Integer> printSquare = n -> {
            long square = (long)n * n;
            System.out.print(square + " ");
        };
    }
}
```

```
// Process the array using streams
Arrays.stream(numbers)
    .boxed()
    .forEach(printSquare);

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

Status : Correct

Marks : 10/10