

Rajalakshmi Engineering College

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Branch: REC

Department: AI & ML - Section 3

Batch: 2028

Degree: B.E - AI & ML

Scan to verify results



2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 3_Q1

Attempt : 1

Total Mark : 10

Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Rosh is intrigued by numerical patterns. Today, she stumbled upon a puzzle while working with arrays. She wants to compute the sum of the third-largest and second-smallest elements from a list of integers. She seeks your help to implement a program that solves this for her efficiently.

Input Format

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

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

Output Format

The output displays a single integer representing the sum of the third-largest and second-smallest elements in the array.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10
10 20 30 40 50 60 70 80 90 100
Output: 100

Answer

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

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

        // Read the size of the array
        int N = scanner.nextInt();
        int[] array = new int[N];

        // Read the array elements
        for (int i = 0; i < N; i++) {
            array[i] = scanner.nextInt();
        }

        // Sort the array
        Arrays.sort(array);

        // Find the second smallest and third largest elements
        int secondSmallest = array[1]; // 0th index is smallest, 1st index is second
        smallest
        int thirdLargest = array[N - 3]; // N-1 is largest, N-2 is second largest, N-3 is
        third largest

        // Calculate the sum
        int sum = secondSmallest + thirdLargest;

        // Print the result
```

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

        scanner.close();
    }
}
```

Status : Correct

Marks : 10/10

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 3_Q2

Attempt : 1

Total Mark : 10

Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Monica is interested in finding a treasure but the key to opening is to get the sum of the main diagonal elements and secondary diagonal elements.

Write a program to help Monica find the diagonal sum of a square 2D array.

Note: The main diagonal of the array consists of the elements traversing from the top-left corner to the bottom-right corner. The secondary diagonal includes elements from the top-right corner to the bottom-left corner.

Input Format

The first line of input consists of an integer N, representing the number of rows and columns.

The following N lines consist of N space-separated integers, representing the 2D array elements.

Output Format

The first line of output prints "Sum of the main diagonal: " followed by an integer, representing the sum of the main diagonal.

The second line prints "Sum of the secondary diagonal: " followed by an integer, representing the sum of the secondary diagonal.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 3

1 2 3

4 5 6

7 8 9

Output: Sum of the main diagonal: 15

Sum of the secondary diagonal: 15

Answer

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

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

        // Input the size of the matrix
        int N = scanner.nextInt();
        int[][] matrix = new int[N][N];

        // Input the matrix elements
        for (int i = 0; i < N; i++) {
            for (int j = 0; j < N; j++) {
                matrix[i][j] = scanner.nextInt();
            }
        }
    }
}
```

```
// Calculate sums of the diagonals
int mainDiagonalSum = 0;
int secondaryDiagonalSum = 0;

for (int i = 0; i < N; i++) {
    mainDiagonalSum += matrix[i][i]; // main diagonal
    secondaryDiagonalSum += matrix[i][N - i - 1]; // secondary diagonal
}

// Output the results
System.out.println("Sum of the main diagonal: " + mainDiagonalSum);
System.out.println("Sum of the secondary diagonal: " +
secondaryDiagonalSum);

    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 3_Q3

Attempt : 1

Total Mark : 10

Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

You are developing a warehouse management system for a shipping company. The system uses an integer array to represent the weights of packages in a specific order. To verify that the weight capacity is not exceeded, the program needs to calculate the sum of the weights of the first and last packages in the list.

Task:

Write a code to calculate the sum of the weights of the first and last packages in the list. The program should take an integer array as input and return the total weight of the first and last packages.

Input Format

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

The second line of the input is N space-separated integer values.

Output Format

The output is displayed in the following format:

"Sum of the first and last elements: <>Sum<>"

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5

10 20 30 40 50

Output: Sum of the first and last elements: 60

Answer

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

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

        // Read the size of the array
        int N = scanner.nextInt();
        // Create an array to store the package weights
        int[] weights = new int[N];

        // Read the weights from the input
        for (int i = 0; i < N; i++) {
            weights[i] = scanner.nextInt();
        }

        // Calculate the sum of the first and last elements
        int sum = weights[0] + weights[N - 1];

        // Output the result
        System.out.println("Sum of the first and last elements: " + sum);
    }
}
```

}

Status : Correct

Marks : 10/10