

Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

REC_2028_OOPS using Java_Week 3_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 12

Section 1 : MCQ

- What will be the output of the following code?

```
class Q {  
    public static void main(String[] args) {  
        int[][] arr = {  
            {5, 6, 7},  
            {8, 9, 10}  
        };  
        System.out.println(arr[0][2]);  
    }  
}
```

Answer

7

Status : Correct

Marks : 1/1

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

```
class Sample {  
    public static void main(String[] args) {  
        int[] a = {1, 2, 3};  
        int product = 1;  
        for (int i = 0; i < a.length; i++) {  
            product *= a[i];  
        }  
        System.out.println(product);  
    }  
}
```

Answer

6

Status : Correct

Marks : 1/1

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

```
class Q {  
    public static void main(String[] args) {  
        int[] a = {1, 2, 1, 3, 1, 4};  
        int count = 0;  
        for (int i = 0; i < a.length; i++) {  
            if (a[i] == 1) count++;  
        }  
        System.out.println(count);  
    }  
}
```

Answer

1

Status : Wrong

Marks : 0/1

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

```
class Q {
```

```
public static void main(String[] args) {  
    int[][] a = {  
        {1, 2},  
        {3, 4}  
    };  
    int sum = 0;  
    for (int i = 0; i < a.length; i++)  
        for (int j = 0; j < a[0].length; j++)  
            sum += a[i][j];  
    System.out.println(sum);  
}
```

Answer

10

Status : Correct

Marks : 1/1

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

```
class Q {  
    public static void main(String[] args) {  
        int[] a = {1, 2, 3, 4};  
        for (int i = 0; i < a.length; i++) {  
            if (a[i] % 2 == 0)  
                a[i] = 0;  
        }  
        System.out.println(a[1] + " " + a[3]);  
    }  
}
```

Answer

2 4

Status : Wrong

Marks : 0/1

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

```
class Sample {
```

```
public static void main(String[] args) {  
    int[][] data = {  
        {1, 2},  
        {3, 4}  
    };  
    int sum = 0;  
  
    for (int[] row : data) {  
        for (int val : row) {  
            sum += val;  
        }  
    }  
    System.out.println("Sum = " + sum);  
}
```

Answer

Sum = 10

Status : Correct

Marks : 1/1

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

```
class Q {  
    public static void main(String[] args) {  
        int[][] a = {  
            {1, 2},  
            {3, 4}  
        };  
        for (int i = 0; i < a.length; i++) {  
            for (int j = 0; j < a[0].length; j++) {  
                System.out.print(a[i][j] + " ");  
            }  
        }  
    }  
}
```

Answer

1 2 3 4

Status : Correct

Marks : 1/1

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

```
class Q {  
    public static void main(String[] args) {  
        int[] nums = {4, 2, 9, 5};  
        int max = nums[0];  
        for (int i = 1; i < nums.length; i++) {  
            if (nums[i] > max)  
                max = nums[i];  
        }  
        System.out.println(max);  
    }  
}
```

Answer

9

Status : Correct

Marks : 1/1

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

```
class Sample {  
    public static void main(String[] args) {  
        int[][] matrix = {  
            {1, 2, 3},  
            {4, 5, 6}  
        };  
        System.out.println(matrix[1][2]);  
    }  
}
```

Answer

6

Status : Correct

Marks : 1/1

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

```
class Q {  
    public static void main(String[] args) {  
        int[] a = {1, 2, 3, 4};  
        for (int i = 0; i < a.length / 2; i++) {  
            int temp = a[i];  
            a[i] = a[a.length - 1 - i];  
            a[a.length - 1 - i] = temp;  
        }  
        System.out.println(a[0]);  
    }  
}
```

Answer

4

Status : Correct

Marks : 1/1

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

```
class ReverseArray {  
    public static void main(String[] args) {  
        int[] a = {1, 2, 3, 4};  
        for (int i = 0; i < a.length / 2; i++) {  
            int temp = a[i];  
            a[i] = a[a.length - 1 - i];  
            a[a.length - 1 - i] = temp;  
        }  
        for (int i : a)  
            System.out.print(i + " ");  
    }  
}
```

Answer

4 3 2 1

Status : Correct

Marks : 1/1

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

```
public class Test {  
    public static void main(String[] args) {  
        int[] x = {4, 8, 12};  
        int result = x[0] * x[2];  
        System.out.println(result);  
    }  
}
```

Answer

48

Status : Correct

Marks : 1/1

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

```
class M {  
    public static void main(String[] args) {  
        int[][] arr = {  
            {1, 2},  
            {3, 4},  
            {5, 6}  
        };  
  
        for (int i = 0; i < arr.length; i++) {  
            System.out.print(arr[i][0] + " ");  
        }  
    }  
}
```

Answer

1 2 4

Status : Wrong

Marks : 0/1

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

```
public class Main {
```

```
public static void main(String[] args) {  
    int[] arr = {1, 2, 3, 4, 5};  
    int n = arr.length;  
    int temp = arr[0];  
  
    for (int i = 0; i < n - 1; i++) {  
        arr[i] = arr[i + 1];  
    }  
    arr[n - 1] = temp;  
  
    for (int num : arr) {  
        System.out.print(num + " ");  
    }  
}
```

Answer

2 3 4 5 1

Status : Correct

Marks : 1/1

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

```
class Q {  
    public static void main(String[] args) {  
        int[] nums = {3, 6, 7, 2, 8};  
        int sum = 0;  
        for (int i = 0; i < nums.length; i++) {  
            if (nums[i] % 2 == 0)  
                sum += nums[i];  
        }  
        System.out.println(sum);  
    }  
}
```

Answer

16

Status : Correct

Marks : 1/1

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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

```
import java.util.*;  
  
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++) arr[i] = sc.nextInt();  
        Arrays.sort(arr);  
        int secondSmallest = arr[1];  
        int thirdLargest = arr[N - 3];  
        System.out.println(secondSmallest + thirdLargest);  
    }  
}
```

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

```
import java.util.*;  
  
public class Main {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        int N = sc.nextInt();  
        int[][] arr = new int[N][N];  
        for (int i = 0; i < N; i++) {  
            for (int j = 0; j < N; j++) {  
                arr[i][j] = sc.nextInt();  
            }  
        }  
        int mainSum = 0, secondarySum = 0;  
        for (int i = 0; i < N; i++) {  
            mainSum += arr[i][i];  
            secondarySum += arr[i][N - 1 - i];  
        }  
        System.out.println("Sum of the main diagonal: " + mainSum);  
    }  
}
```

```
        System.out.println("Sum of the secondary diagonal: " + secondarySum);
```

```
}
```

Status : Correct

Marks : 10/10

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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

```
import java.util.*;  
  
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++) arr[i] = sc.nextInt();  
        int sum = arr[0] + arr[N - 1];  
        System.out.println("Sum of the first and last elements: " + sum);  
    }  
}
```

Status : Correct

Marks : 10/10

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_Q4

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Amit wants to evaluate the depreciation of his car over time to understand its current value and categorize it based on that value.

Write a program that helps him determine the current value of his car after a certain number of years of depreciation and classify it into one of three categories:

High: If the current value is greater than 10,000.
Medium: If the current value is between 5,000 and 10,000, both inclusive.
Low: If the current value is less than 5,000.

The depreciation rate of the car is 15% per year. The program should calculate the current value of the car after applying this depreciation over the given number of years and print the current value along with the category.

Input Format

The first line of input consists of an integer, representing the initial cost of the car.

The second line consists of an integer, representing the number of years the car has been depreciating.

Output Format

The first line of output prints a double value, representing the current value of the car, rounded off to two decimal places "Current Value: <value>".

The second line prints its category "Category: <categories>".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 20000

5

Output: Current Value: 8874.11

Category: Medium

Answer

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

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

        int initialCost = scanner.nextInt();
        int years = scanner.nextInt();

        double currentValue = initialCost;
        for (int i = 0; i < years; i++) {
            currentValue *= 0.85;
        }

        currentValue = Math.round(currentValue * 100.0) / 100.0;
    }
}
```

```
System.out.println("Current Value: " + String.format("%.2f", currentValue));  
if (currentValue > 10000) {  
    System.out.println("Category: High");  
} else if (currentValue >= 5000) {  
    System.out.println("Category: Medium");  
} else {  
    System.out.println("Category: Low");  
}  
}  
}
```

Status : Correct

Marks : 10/10

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 3_Q5

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Sharon is creating a program that finds the first repeated element in an integer array. The program should efficiently identify the first element that appears more than once in the given array. If no such element is found, it should appropriately display a message.

Help Sharon to complete the program.

Input Format

The first line of input consists of an integer n, representing the number of elements in the array.

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

Output Format

If a repeated element is found, print the first element that appears more than once.

If no repeated element is found, print "No repeated element found in the array".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 8
12 21 13 14 21 36 47 21

Output: 21

Answer

```
import java.util.*;  
  
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++) arr[i] = sc.nextInt();  
  
        Set<Integer> seen = new HashSet<>();  
        int repeated = -1;  
        for (int i = 0; i < n; i++) {  
            if (seen.contains(arr[i])) {  
                repeated = arr[i];  
                break;  
            }  
            seen.add(arr[i]);  
        }  
  
        if (repeated == -1) {  
            System.out.println("No repeated element found in the array");  
        } else {  
            System.out.println(repeated);  
        }  
    }  
}
```

}

Status : Correct

Marks : 10/10