JAVA WEEK-02

Counter.java 3

Counter.java > ...

```java
class Counter {
    static int count = 0;

    Counter() {
        count++;
    }

    Run main | Debug main
    public static void main(String[] args) {
        Counter c1 = new Counter();
        Counter c2 = new Counter();
        Counter c3 = new Counter();

        System.out.println("Number of objects created = " + count);
    }
}
```

PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> javac Counter.java
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> java Counter
Number of objects created = 3
PS C:\Users\Nagendra\Desktop\SHIRISHA B R>
```

Counter.java 3 | ArraySum.java

ArraySum.java > ...

```java
import java.util.Scanner;

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

        int n, sum = 0;
        System.out.print("Enter number of elements: ");
        n = sc.nextInt();

        int[] arr = new int[n];

        System.out.println("Enter array elements:");
        for (int i = 0; i < n; i++) {
            arr[i] = sc.nextInt();
            sum += arr[i];
        }

        System.out.println("Sum of array elements = " + sum);
    }
}

```

PROBLEMS 4 | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

```
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> javac ArraySum.java
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> java ArraySum
Enter number of elements: 4
Enter array elements:
20 30 40 10
Sum of array elements = 100
PS C:\Users\Nagendra\Desktop\SHIRISHA B R>
```

ArrayAverage.java

```java
import java.util.Scanner;

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

        int n;
        double sum = 0;

        System.out.print("Enter number of elements: ");
        n = sc.nextInt();

        int[] arr = new int[n];

        System.out.println("Enter elements:");
        for (int i = 0; i < n; i++) {
            arr[i] = sc.nextInt();
            sum += arr[i];
        }

        double average = sum / n;
        System.out.println("Average of array elements = " + average);
    }
}

```

PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> javac ArrayAverage.java
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> java ArrayAverage
Enter number of elements: 4
Enter elements:
50 30 20 10
Average of array elements = 27.5
PS C:\Users\Nagendra\Desktop\SHIRISHA B R>
```

ArrayAverage.java | MathUtility.java | Student.java

MathUtility.java > ...

```java
import java.util.Scanner;

class MathUtility {

    static int add(int a, int b) {
        return a + b;
    }

    Run main | Debug main
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter first number: ");
        int a = sc.nextInt();

        System.out.print("Enter second number: ");
        int b = sc.nextInt();

        int result = MathUtility.add(a, b);
        System.out.println("Sum = " + result);
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> javac MathUtility.java
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> java MathUtility
Enter first number: 20
Enter second number: 10
Sum = 30
PS C:\Users\Nagendra\Desktop\SHIRISHA B R>
```

Student.java > Student > accept(Scanner sc, int n)

```java
/* Develop a Java program to create a class Student with
members usn, name, an array credits and an array marks.
Include methods to accept and display details and a
method to calculate SGPA of a student.
*/
import java.util.Scanner;

class Student
 {
    String usn, name;
    int[] credits, marks;

    void accept(Scanner sc, int n) {
        System.out.print("Enter USN: ");
        usn = sc.next();
        sc.nextLine(); // clear buffer
        System.out.print("Enter Name: ");
        name = sc.nextLine();

        credits = new int[n];
        marks = new int[n];

        System.out.println("Enter credits and marks:");
        for (int i = 0; i < n; i++) {
            System.out.print("Credits of subject " + (i + 1) + ": ");
            credits[i] = sc.nextInt();
            System.out.print("Marks of subject " + (i + 1) + ": ");
            marks[i] = sc.nextInt();
        }
    }

    double calculateSGPA() {
```

```
32      double calculateSGPA() {
33          double sum = 0;
34          int total = 0;
35
36          for (int i = 0; i < credits.length; i++) {
37              int gp;
38              if (marks[i] >= 90) gp = 10;
39              else if (marks[i] >= 80) gp = 9;
40              else if (marks[i] >= 70) gp = 8;
41              else if (marks[i] >= 60) gp = 7;
42              else if (marks[i] >= 50) gp = 6;
43              else if (marks[i] >= 40) gp = 5;
44              else gp = 0;
45
46              sum += gp * credits[i];
47              total += credits[i];
48          }
49          return sum / total;
50      }
51
52      void display() {
53          System.out.println("\nUSN: " + usn);
54          System.out.println("Name: " + name);
55      }
56  }
```

```java
class StudentDemo{
    Run main | Debug main
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter number of subjects: ");
        int n = sc.nextInt();

        Student s = new Student();
        s.accept(sc, n);
        s.display();

        System.out.printf("SGPA: %.2f\n", s.calculateSGPA());
    }
}

```

```
PROBLEMS 1  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Nagendra\Desktop\SHIRISHA B R> javac Student1.java
PS C:\Users\Nagendra\Desktop\SHIRISHA B R> java Student1Demo
Enter number of subjects: 4
Enter USN: 1bmcs22045
Enter Name: shirishabr
Enter credits and marks:
Credits of subject 1: 3
Marks of subject 1: 90
Credits of subject 2: 2
Marks of subject 2: 96
Credits of subject 3: 2
Marks of subject 3: 89
Credits of subject 4: 1
Marks of subject 4: 88

USN: 1bmcs22045
Name: shirishabr
SGPA: 9.63
PS C:\Users\Nagendra\Desktop\SHIRISHA B R>
```