IT5512- WEB TECHNOLOGY LAB-SESSION-1

DATE: 06/09/2021 FN

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BASIC JAVA PROGRAMS

1) AIM:

To write a Basic Java code for the following Programs:

1 a) Write a java program to display Fibonacci series

1 b) Write a java program to check whether a number is Armstrong or not

1 c) Write a java program to check whether a number is palindrome or not.

1 d) Write a program to find a factorial of a number

1 e) Write a program to find sum of all integers greater than 100 and less than 200 that are divisible by 4.

1 f) Write a program to print even numbers between 1 to 20

1 g) Write a program to check whether a number is positive or negative

1 h) Write a program to display the student details.

PROCEDURE:

- ✓ Download the Java Development Kit (JDK version 8) from oracle
- ✓ Download and install IntelliJ IDEA IDE from JetBrains
- ✓ Once JDK is installed add the path variable in the system variable environment setting
- ✓ Create a project in IntelliJ and configure the SDK version, enter the project and package name and click on finish. IntelliJ will load and set up the required components
- ✓ Create a new file from File → new Class → Enter the name
- ✓ Code up the algorithm and run it using the Run button.
- ✓ The source code is compiled using JAVAC compiler which comes along JDK and the output is displayed on the terminal.
- ✓ Copy the source code and take screen shots of the output for each program and paste it in the document.

1) a.

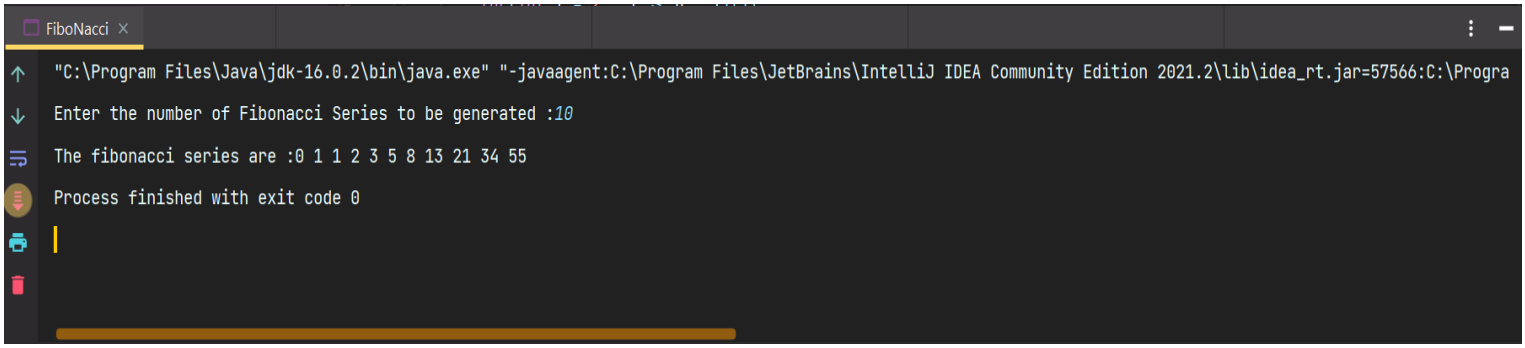
AIM:

To Write a java program to display Fibonacci series

PROGRAM CODE:

```
package Java.Lab.lab1;

import java.util.Scanner;

public class FiboNacci {
    private static Scanner input = new Scanner(System.in);
    public static void main(String[] args) {
        int n;
        System.out.print("Enter the number of Fibonacci Series to be generated :");
        n = input.nextInt();
        int []fibo = new int[n+1];
        fibo[0] = 0;
        fibo[1] = 1;
        for(int i = 2 ; i <= n ; i++){
           fibo[i] = fibo[i-1] + fibo[i-2];
        }
        System.out.print("The fibonacci series are :");
        for(int i = 0 ; i < fibo.length ; i++){
            System.out.print(fibo[i] + " ");
        }
    }
}
```

OUTPUT:



RESULT:

Thus, the program has been executed successfully.

1) b.

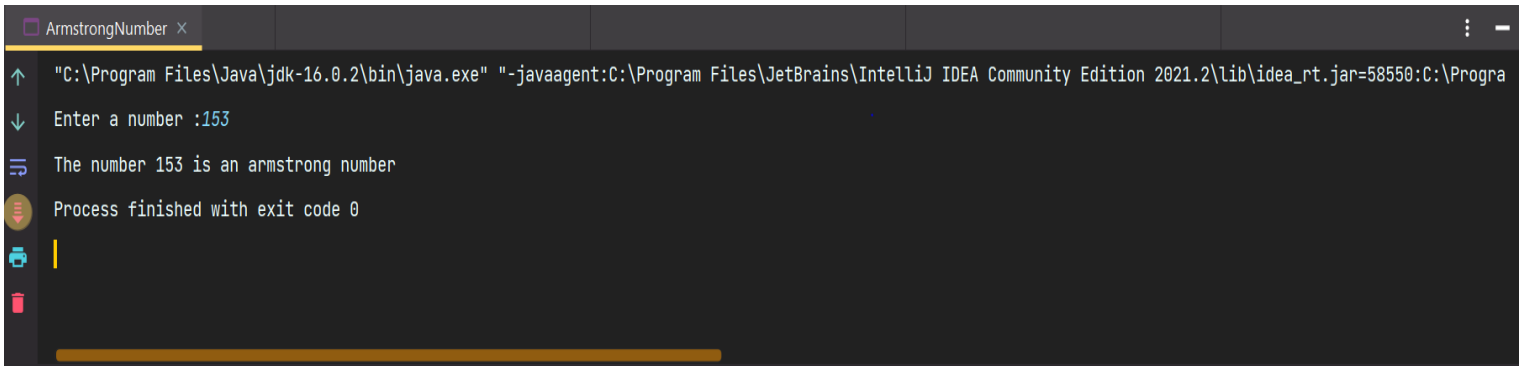
AIM:

To Write a java program to check whether a number is Armstrong or not

PROGRAM CODE

```
package Java.Lab.lab1;

import java.util.Scanner;

public class ArmstrongNumber {
    private static Scanner input = new Scanner(System.in);
    public static int numberOfDigits(int num){
        int ans = 0;
        while(num != 0){
           ans ++;
           num /= 10;
        }
        return ans;
    }
    public static void main(String[] args) {
        int n;
        System.out.print("Enter a number :");
        n = input.nextInt();
        int numberOfDigits = numberOfDigits(n);
        int ans = 0;
        int m = n;
        while(m != 0){
           ans += (int)Math.pow(m % 10,numberOfDigits);
           m /= 10;
        }
        if(ans == n)System.out.print("The number " + n + " is an armstrong number ");
        else System.out.print("The number "  + n + " is not an armstrong number ");
      }
    }
```

OUTPUT:



RESULT:

Thus, the program has been executed successfully.

1) c.

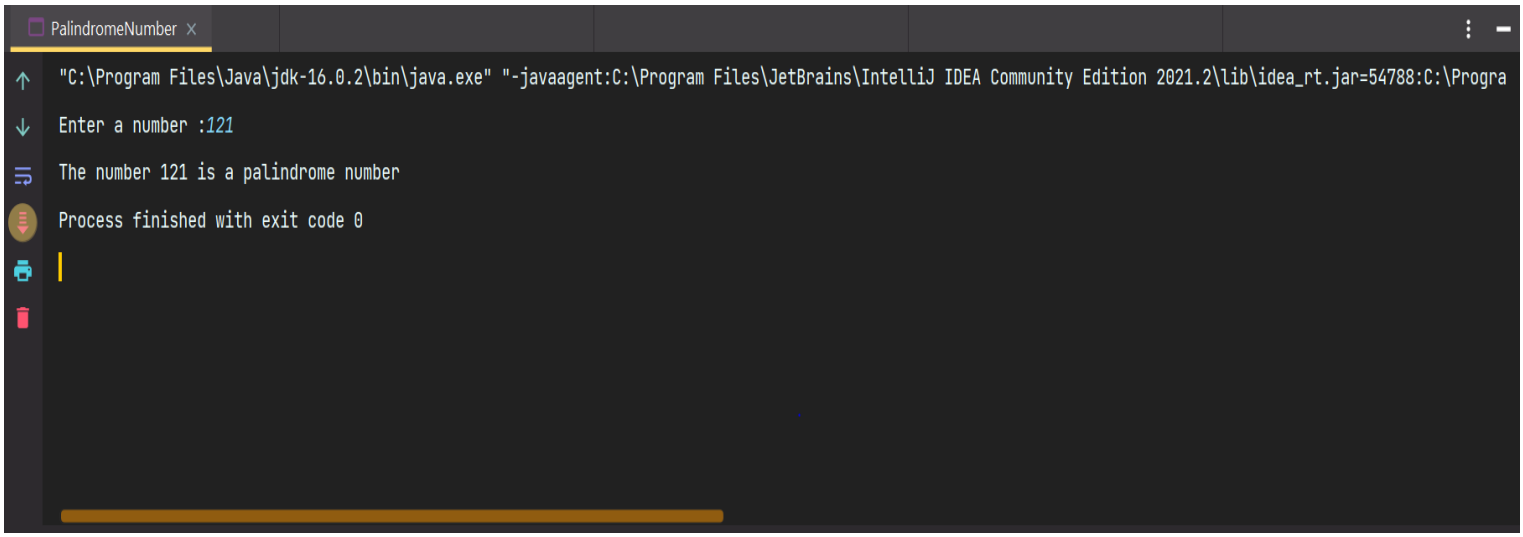
AIM:

To Write a java program to check whether a number is palindrome or not

PROGRAM CODE:

```
package Java.Lab.lab1;

import java.util.Scanner;

public class PalindromeNumber {
    private static Scanner input = new Scanner(System.in);
    public static void main(String[] args) {
        int n;
        System.out.print("Enter a number :");
        n = input.nextInt();
        int m = n;
        int ans = 0;
        while(n != 0){
           ans = ans * 10 + n % 10;
           n /= 10;
        }
        if(ans == m)System.out.print("The number " + m + " is a palindrome number  ");
        else System.out.print("The number " + m + " is not a palindrome number ");

    }
}
```

OUTPUT:



RESULT:

Thus, the program has been executed successfully.

1) d.

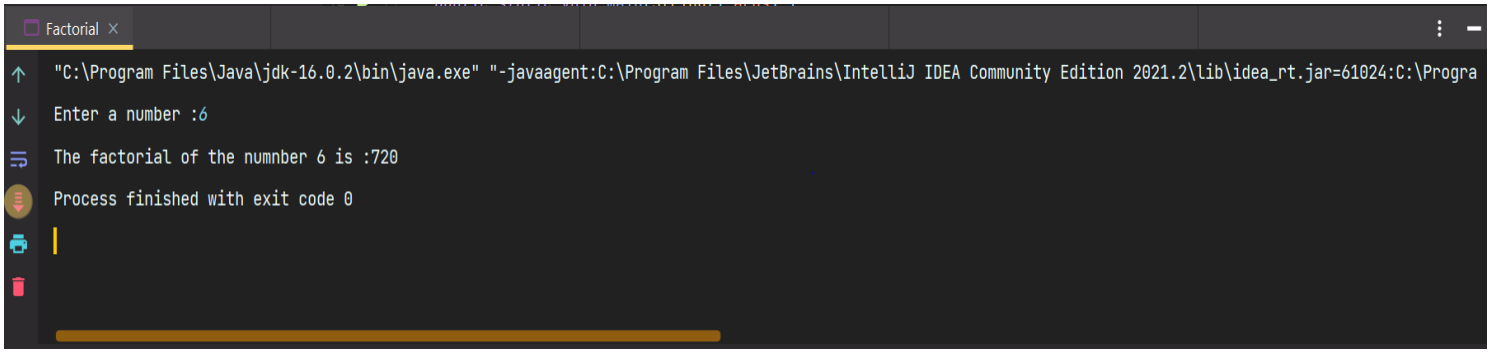
AIM:

To Write a java program to find a factorial of a number.

PROGRAM CODE:

```
package Java.Lab.lab1;

import java.util.Scanner;

public class Factorial {
    private static Scanner input = new Scanner(System.in);
    public static long  getFactorial(int num){
        long ans = 1;
        for(int i =2 ; i <= num ; i++){
           ans *= i;
        }
        return ans;
    }
    public static void main(String[] args) {
        int n;
        System.out.print("Enter a number :");
        n = input.nextInt();
        System.out.print("The factorial of the numnber " + n +" is :" + getFactorial(n));
    }
  }
```

OUTPUT:



RESULT:

Thus, the program has been executed successfully.

1) e.

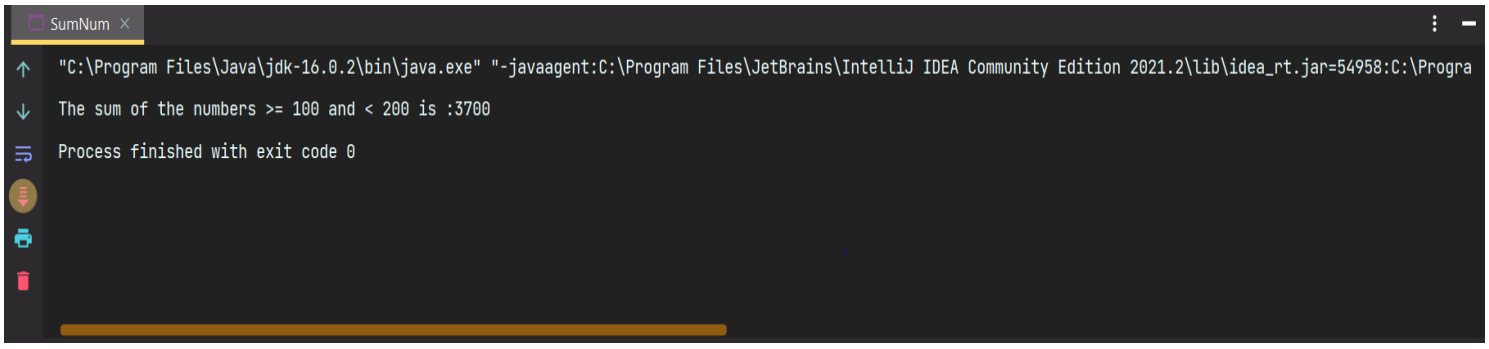
AIM:

To write a program to find sum of all integers greater than 100 and less than 200 that are divisible by 4

PROGRAM CODE:

```
package Java.Lab.lab1;

public class SumNum {
    public static void main(String[] args) {
        int sum = 0;
        for(int i = 100 ; i < 200 ; i++){
            if(i % 4 == 0)sum += i;
        }
        System.out.print("The sum of the numbers >= 100 and < 200 is :" + sum);
    }
}
```

OUTPUT:



RESULT:

Thus, the program has been executed successfully.

1) f.

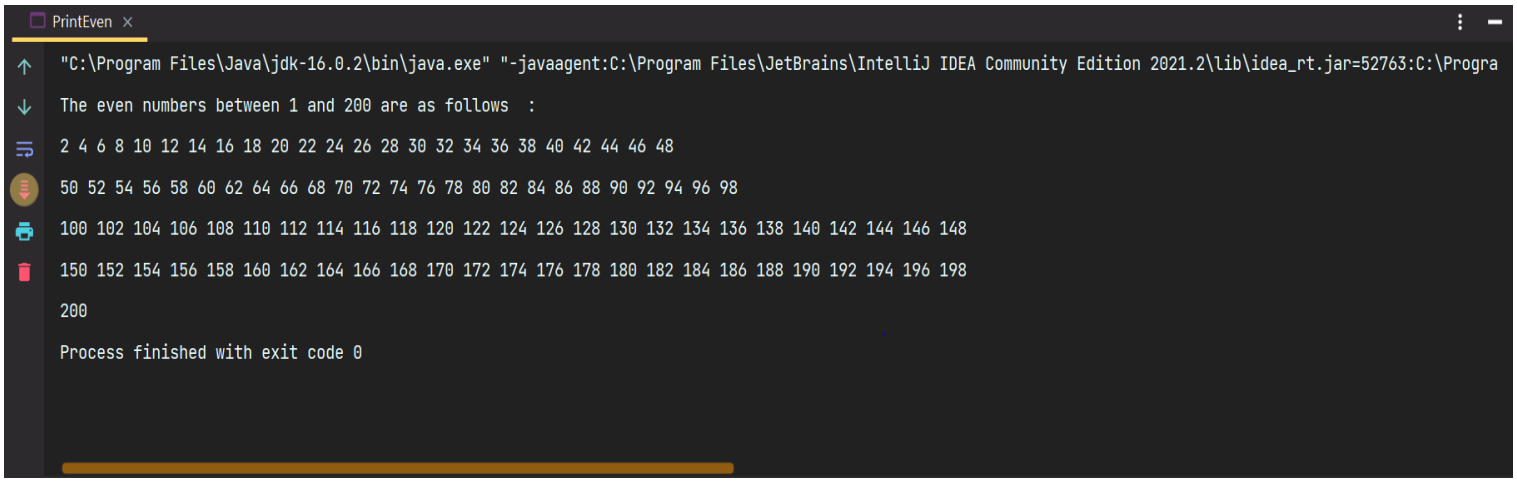
AIM:

To Write a program to print even numbers between 1 to 200

PROGRAM CODE:

```
package Java.Lab.lab1;

public class PrintEven {
    public static void main(String[] args) {
        System.out.println("The even numbers between 1 and 200 are as follows  :");
        for(int i = 1 ; i <= 200 ; i++){
           if(i % 50 == 0)System.out.println();
           if(i % 2 == 0)System.out.print(i + " ");

        }
    }
}
```

OUTPUT:



RESULT:

Thus, the program has been executed successfully.

1) g.

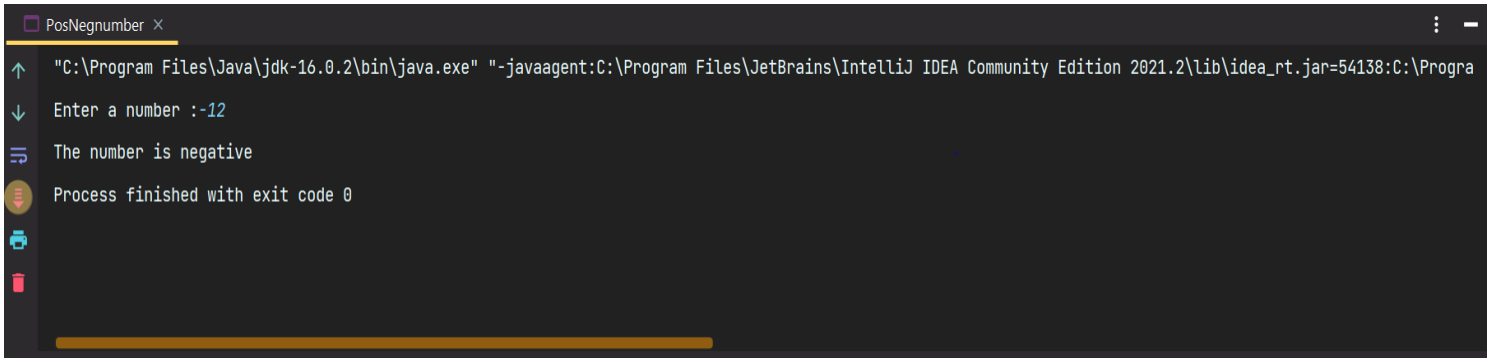
AIM:

To Write a program to check whether a number is positive or negative

PROGRAM CODE:

```
package Java.Lab.lab1;

import java.util.Scanner;

public class PosNegnumber {
    private static Scanner input = new Scanner(System.in);
    public static void main(String[] args) {
        int n;
        n = input.nextInt();
        if(n >=0 )System.out.print("The number is positive");
        else System.out.print("The number is negative");
    }
}
```

OUTPUT:



RESULT:

Thus, the program has been executed successfully.

1)h.

AIM:

To Write a program to display the student details.

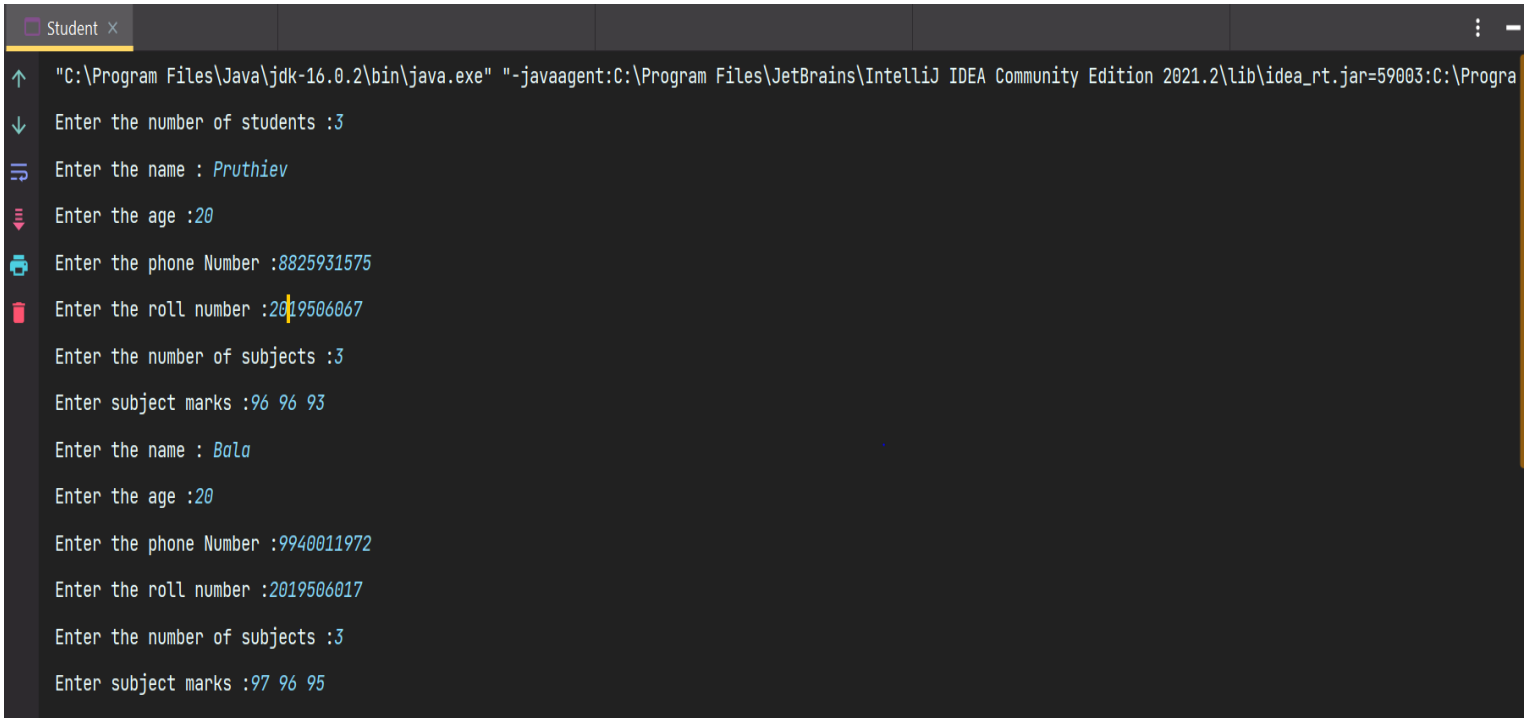
PROGRAM CODE:

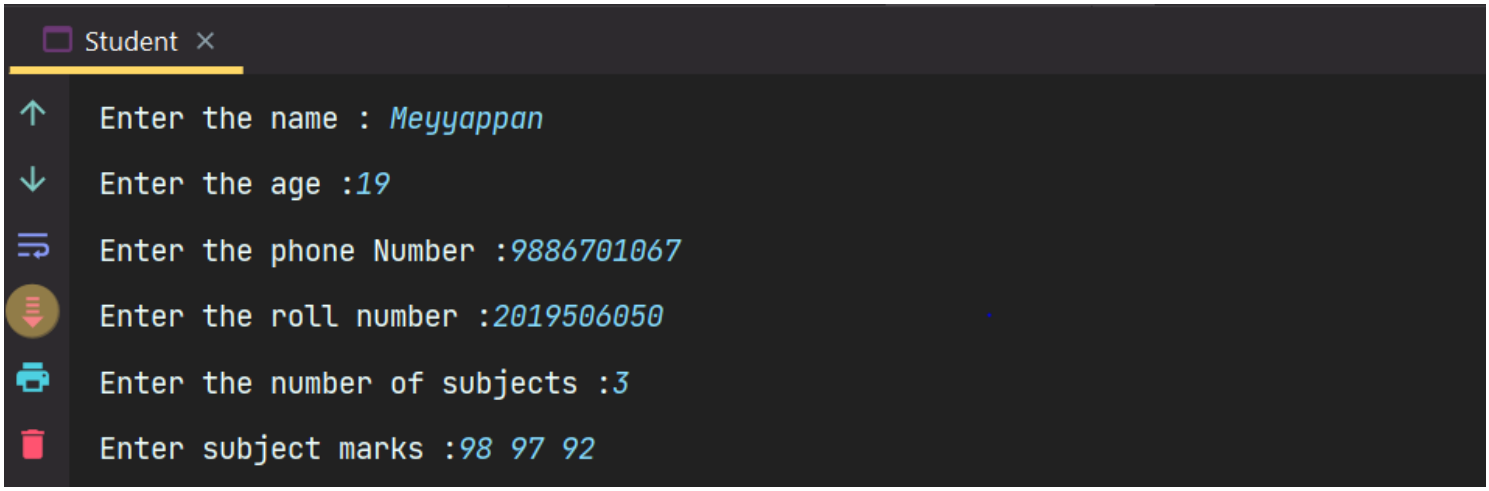
```
package Java.Lab.lab1;

import java.util.Scanner;

class StudentDetails{
    private final static Scanner input = new Scanner(System.in);
    private int age;
    private String name,phoneNumber,rollNumber;
    private int []marks;
    private int numberOfSubjects;
    private double cgpa;
    StudentDetails(int age, String name, String phoneNumber, String rollNumber,int
  numberOfSubjects ) {
        this.age = age;
        this.name = name;
        this.phoneNumber = phoneNumber;
        this.rollNumber = rollNumber;
        this.numberOfSubjects = numberOfSubjects;
        marks = new int[numberOfSubjects];
        System.out.print("Enter subject marks :");
        for(int i = 0 ; i < numberOfSubjects ; i++){
            marks[i] = input.nextInt();
        }
        input.nextLine();
    }
    public int getAge() {
        return age;
    }
    public String getName() {
        return name;
```

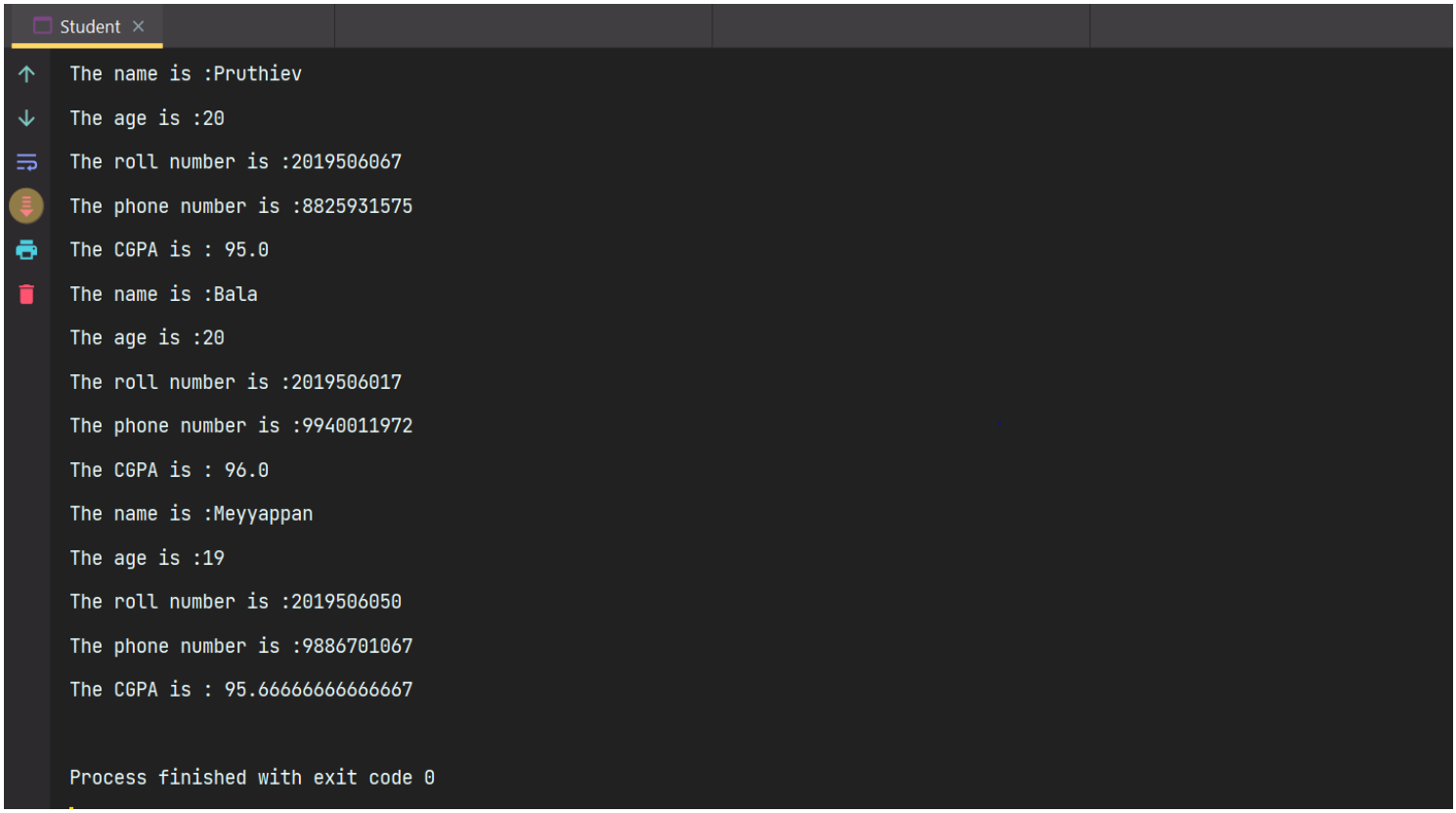
```
    }
    public String getPhoneNumber() {
       return phoneNumber;
    }
    public String getRollNumber() {
       return rollNumber;
    }
    public double getCgpa() {
       return cgpa;
    }
    void  calculateCGPA(){
       double total = 0d;
       for(int i = 0 ; i < marks.length ; i++)total += marks[i];
       cgpa =  total / (double)numberOfSubjects;
    }
}
public class Student {
   private final static Scanner input = new Scanner(System.in);
   public static void main(String[] args) {
        int n;
        int age;
        String name,phoneNumber,rollNumber;
        int numberOfSubjects;
        System.out.print("Enter the number of students :");
        n = input.nextInt();;
        StudentDetails [] students = new StudentDetails[n];
        for(int i = 0 ; i < n ; i++){
           input.nextLine();
           System.out.print("Enter the name : ");
           name = input.nextLine();
           System.out.print("Enter the age :");
           age = input.nextInt();
           input.nextLine();
           System.out.print("Enter the phone Number :");
           phoneNumber = input.nextLine();
           System.out.print("Enter the roll number :");
           rollNumber = input.nextLine();
```

```
            System.out.print("Enter the number of subjects :");
            numberOfSubjects = input.nextInt();
            students[i]=new
        StudentDetails(age,name,phoneNumber,rollNumber,numberOfSubjects);
            students[i].calculateCGPA();
        }
        for(int i = 0 ; i < n ; i++){
            System.out.println("The name is :" + students[i].getName());
            System.out.println("The age is :" + students[i].getAge());
            System.out.println("The roll number is :" + students[i].getRollNumber());
            System.out.println("The phone number is :" + students[i].getPhoneNumber());
            System.out.printf("The CGPA is : %.2f" + students[i].getCgpa());
        }
    }
}
```

OUTPUT:







RESULT:

Thus, the program has been executed successfully.