Shri Guru Gobind Singhji Institute of Engineering & Technology
Nanded – 431606, India.
(An Autonomous Institute of Govt. of Maharashtra)

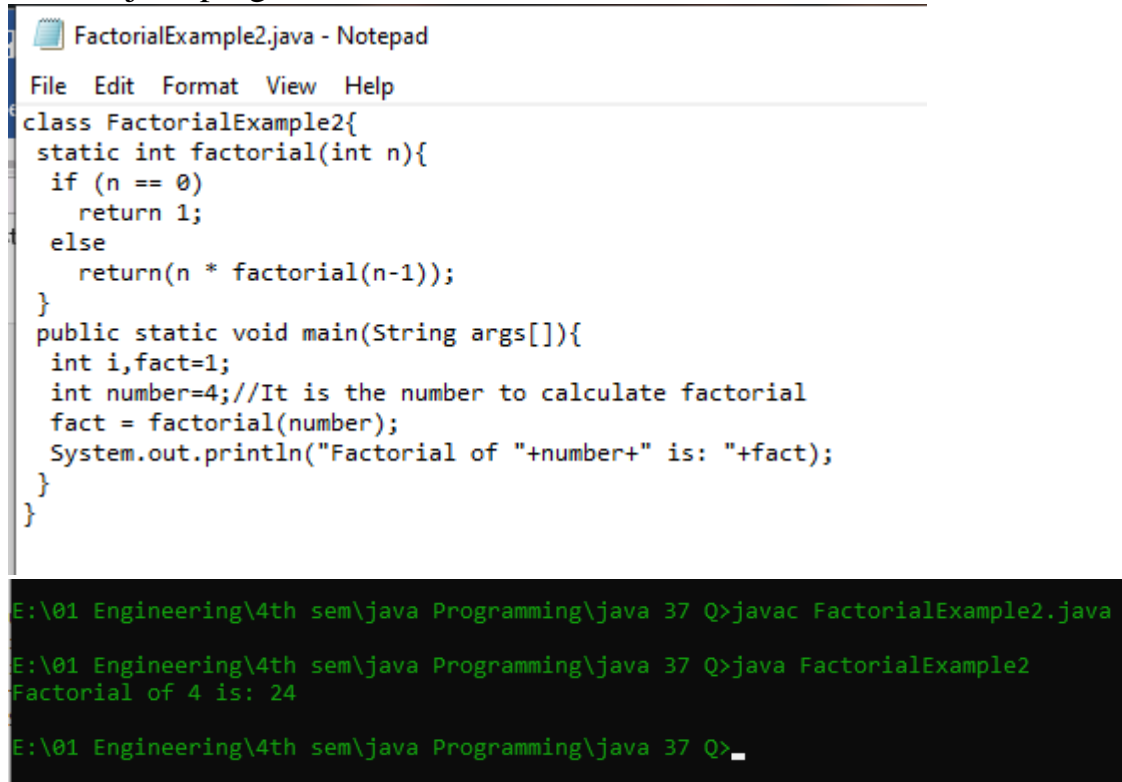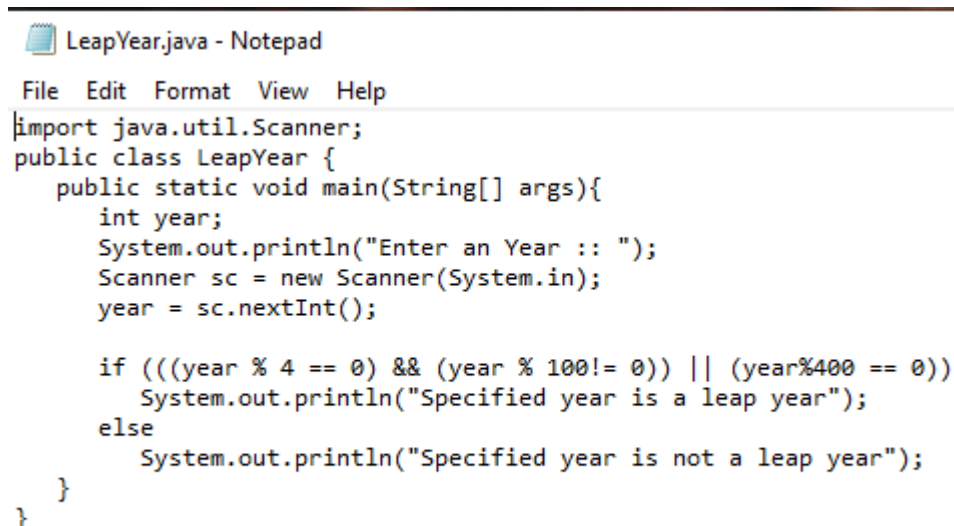# Java Programs

1) Write a java program to find factorial of N.

```
FactorialExample2.java - Notepad
File  Edit  Format  View  Help
class FactorialExample2{
 static int factorial(int n){
  if (n == 0)
    return 1;
  else
    return(n * factorial(n-1));
 }
 public static void main(String args[]){
  int i,fact=1;
  int number=4;//It is the number to calculate factorial
  fact = factorial(number);
  System.out.println("Factorial of "+number+" is: "+fact);
 }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac FactorialExample2.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java FactorialExample2
Factorial of 4 is: 24

E:\01 Engineering\4th sem\java Programming\java 37 Q>_
```

2) Write a java program to check whether a year is leap or not.

```
LeapYear.java - Notepad
File  Edit  Format  View  Help
import java.util.Scanner;
public class LeapYear {
    public static void main(String[] args){
        int year;
        System.out.println("Enter an Year :: ");
        Scanner sc = new Scanner(System.in);
        year = sc.nextInt();

        if (((year % 4 == 0) && (year % 100!= 0)) || (year%400 == 0))
            System.out.println("Specified year is a leap year");
        else
            System.out.println("Specified year is not a leap year");
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac LeapYear.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java LeapYear
Enter an Year ::
2022
Specified year is not a leap year

E:\01 Engineering\4th sem\java Programming\java 37 Q>java LeapYear
Enter an Year ::
2012
Specified year is a leap year
```
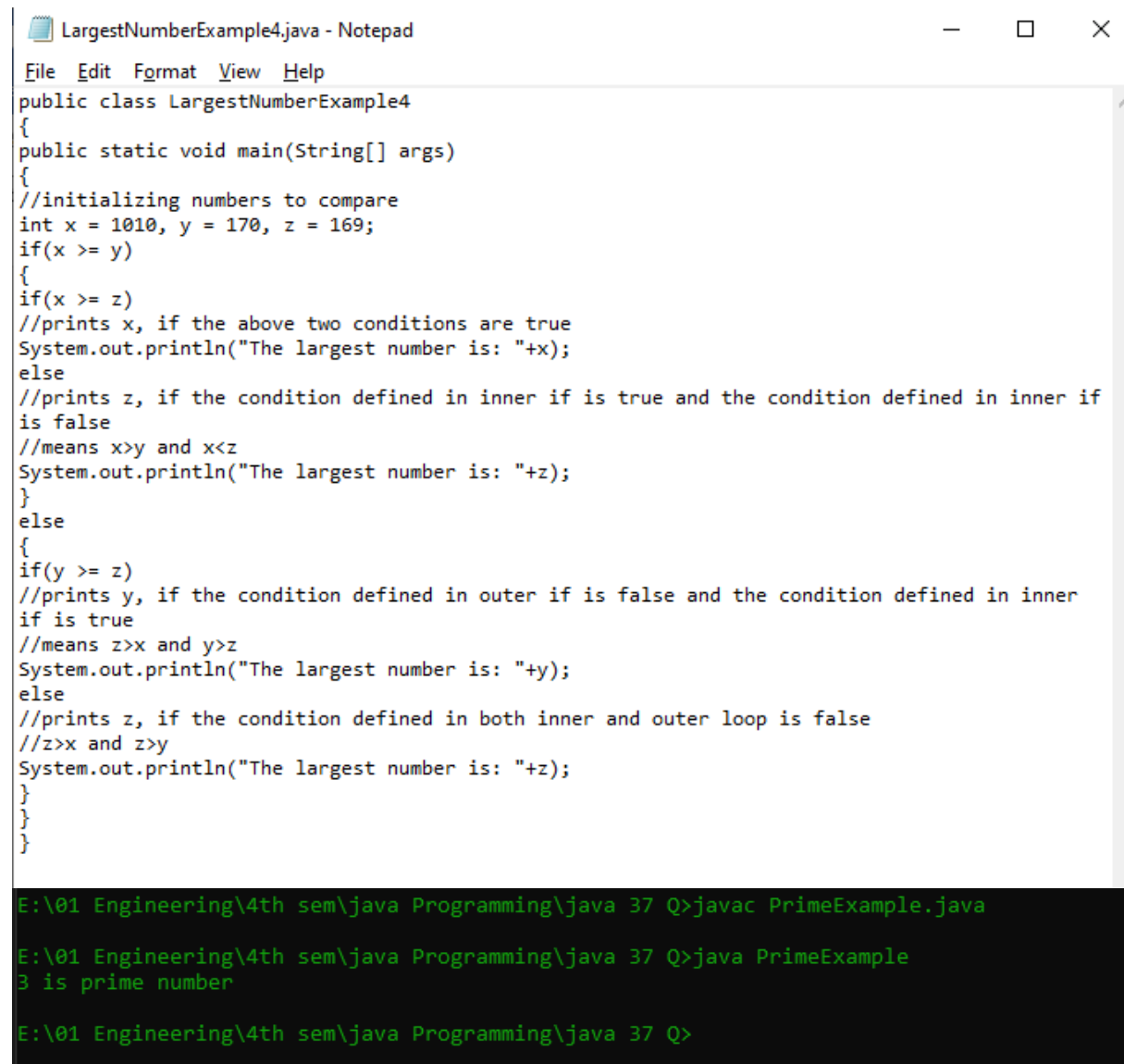
3) Write a java program to find greatest of three number.

LargestNumberExample4.java - Notepad

File Edit Format View Help

```java
public class LargestNumberExample4
{
public static void main(String[] args)
{
//initializing numbers to compare
int x = 1010, y = 170, z = 169;
if(x >= y)
{
if(x >= z)
//prints x, if the above two conditions are true
System.out.println("The largest number is: "+x);
else
//prints z, if the condition defined in inner if is true and the condition defined in inner if
is false
//means x>y and x<z
System.out.println("The largest number is: "+z);
}
else
{
if(y >= z)
//prints y, if the condition defined in outer if is false and the condition defined in inner
if is true
//means z>x and y>z
System.out.println("The largest number is: "+y);
else
//prints z, if the condition defined in both inner and outer loop is false
//z>x and z>y
System.out.println("The largest number is: "+z);
}
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac LargestNumberExample4.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java LargestNumberExample4
The largest number is: 1010

E:\01 Engineering\4th sem\java Programming\java 37 Q>
```
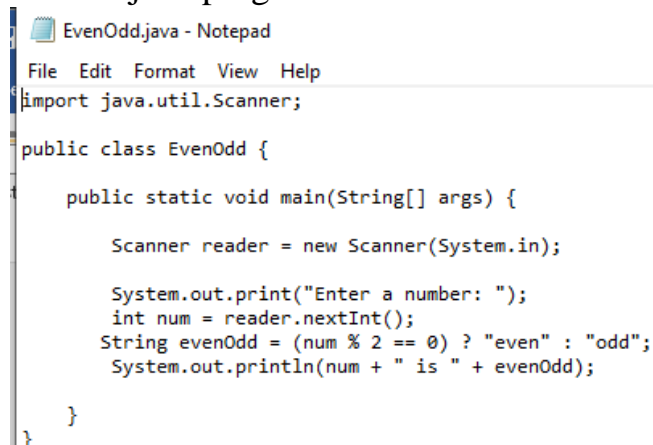
4) Write a java program to check whether number is prime or not.

```
LargestNumberExample4.java - Notepad                          —    □    ✕

File  Edit  Format  View  Help
public class LargestNumberExample4
{
public static void main(String[] args)
{
//initializing numbers to compare
int x = 1010, y = 170, z = 169;
if(x >= y)
{
if(x >= z)
//prints x, if the above two conditions are true
System.out.println("The largest number is: "+x);
else
//prints z, if the condition defined in inner if is true and the condition defined in inner if
is false
//means x>y and x<z
System.out.println("The largest number is: "+z);
}
else
{
if(y >= z)
//prints y, if the condition defined in outer if is false and the condition defined in inner
if is true
//means z>x and y>z
System.out.println("The largest number is: "+y);
else
//prints z, if the condition defined in both inner and outer loop is false
//z>x and z>y
System.out.println("The largest number is: "+z);
}
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac PrimeExample.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java PrimeExample
3 is prime number

E:\01 Engineering\4th sem\java Programming\java 37 Q>
```

5) Write a java program to check whether the number even or odd.

```
EvenOdd.java - Notepad

File  Edit  Format  View  Help
import java.util.Scanner;

public class EvenOdd {

    public static void main(String[] args) {

        Scanner reader = new Scanner(System.in);

        System.out.print("Enter a number: ");
        int num = reader.nextInt();
      String evenOdd = (num % 2 == 0) ? "even" : "odd";
        System.out.println(num + " is " + evenOdd);

    }
}
```

3

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac EvenOdd.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java EvenOdd
Enter a number: 5
5 is odd

E:\01 Engineering\4th sem\java Programming\java 37 Q>java EvenOdd
Enter a number: 6
6 is even

E:\01 Engineering\4th sem\java Programming\java 37 Q>_
```

6) Write a java program to find sum of N natural numbers.

SumOfNaturalNumber1.java - Notepad

File   Edit   Format   View   Help

```java
public class SumOfNaturalNumber1
{
public static void main(String[] args)
{
int i, num = 10, sum = 0;
//executes until the condition returns true
for(i = 1; i <= num; ++i)
{
//adding the value of i into sum variable
sum = sum + i;
}
//prints the sum
System.out.println("Sum of First 10 Natural Numbers is = " + sum);
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac SumOfNaturalNumber1.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java SumOfNaturalNumber1
Sum of First 10 Natural Numbers is = 55

E:\01 Engineering\4th sem\java Programming\java 37 Q>_
```

7) Write a java program to find sum of first N even numbers.

4

Nevn.java - Notepad

File   Edit   Format   View   Help

```java
import java.util.Scanner;

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

                System.out.print("Enter the value of n: ");
                int n = in.nextInt();

                int sum=0, num = 1;

                for(int count=1; count<=n; ){
                    //if num is even then increment 'count'
                    if(num%2 == 0){
                        sum += num;
                        count++;
                    }
                    num++;
                }

                System.out.println("Sum: "+sum);
        }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Nevn.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Nevn
Enter the value of n: 5
Sum: 30
```

8) Write a java program to find sum of first N odd numbers.

Nodd.java - Notepad

File   Edit   Format   View   Help

```java
import java.util.Scanner;
public class Nodd{
    public static void main(String[] args) {
        Scanner sc= new Scanner(System.in);
        System.out.print("Number of terms is : ");
        int num = sc.nextInt();
        int sum = 0;

        for (int i=1;i<=num;i++){
            System.out.println(2*i-1);
            sum = sum + (2*i-1);
        }
        System.out.println("The Sum of first 5 odd number is "+sum);
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>java Nodd
Number of terms is : 6
1
3
5
7
9
11
The Sum of first 5 odd number is 36
```

9) Write a java program to generate Multiplication table of N.

```
Nmul.java - Notepad
File  Edit  Format  View  Help
import java.util.Scanner;
public class Nmul
{
    public static void main(String[] args)
    {
        Scanner s = new Scanner(System.in);
        System.out.print("Enter number:");
        int n=s.nextInt();
        for(int i=1; i <= 10; i++)
        {
            System.out.println(n+" * "+i+" = "+n*i);
        }
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Nmul.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Nmul
Enter number:4
4 * 1 = 4
4 * 2 = 8
4 * 3 = 12
4 * 4 = 16
4 * 5 = 20
4 * 6 = 24
4 * 7 = 28
4 * 8 = 32
4 * 9 = 36
4 * 10 = 40
```

10)Write a java program to find factorial of a Number using method.

```
FactorialExample.java - Notepad
File  Edit  Format  View  Help
class FactorialExample{
 public static void main(String args[]){
  int i,fact=1;
  int number=5;//It is the number to calculate factorial
  for(i=1;i<=number;i++){
      fact=fact*i;
  }
  System.out.println("Factorial of "+number+" is: "+fact);
 }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac FactorialExample.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java FactorialExample
Factorial of 5 is: 120
```

11) Write a java program to find area and perimeter of circle using static method.

```
Exercise11.java - Notepad
File  Edit  Format  View  Help
public class Exercise11 {

   private static final double radius = 7.5;

    public static void main(String[] args) {

        double perimeter = 2 * Math.PI * radius;
        double area = Math.PI * radius * radius;

        System.out.println("Perimeter is = " + perimeter);
        System.out.println("Area is = " + area);
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Exercise11.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Exercise11
Perimeter is = 47.12388980384689
Area is = 176.71458676442586
```

12)Write a java program to find area and perimeter of rectangle using method.

Area_Perimeter.java - Notepad

File   Edit   Format   View   Help

```java
import java.util.Scanner;
public class Area_Perimeter
{
void peramtr(int l,int  b){
int perimeter,area;
        perimeter = 2 * (l + b);
        System.out.println("Perimeter of rectangle:"+perimeter);
        area = l * b;
        System.out.println("Area of rectangle:"+area);
}
    public static void main(String[] args)
    {
        int l, b, perimeter, area;
        Scanner s = new Scanner(System.in);
        System.out.print("Enter length of rectangle:");
        l = s.nextInt();
        System.out.print("Enter breadth of rectangle:");
        b = s.nextInt();
        Area_Perimeter a=new Area_Perimeter();
        a.peramtr(l,b);
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Area_Perimeter.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Area_Perimeter
Enter length of rectangle:20
Enter breadth of rectangle:10
Perimeter of rectangle:60
Area of rectangle:200
```

13) write a java program to find sum of digit of a number.

8

SumOfDigitsExample1.java - Notepad

File Edit Format View Help

```
import java.util.Scanner;
public class SumOfDigitsExample1
{
public static void main(String args[])
{
int number, digit, sum = 0;
Scanner sc = new Scanner(System.in);
System.out.print("Enter the number: ");
number = sc.nextInt();
while(number > 0)
{
//finds the last digit of the given number
digit = number % 10;
//adds last digit to the variable sum
sum = sum + digit;
//removes the last digit from the number
number = number / 10;
}
//prints the result
System.out.println("Sum of Digits: "+sum);
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>java SumOfDigitsExample1
Enter the number: 7
Sum of Digits: 7

E:\01 Engineering\4th sem\java Programming\java 37 Q>java SumOfDigitsExample1
Enter the number: -100
Sum of Digits: 0
```

14) write a java program to swap to numbers.

Swap_With.java - Notepad

File Edit Format View Help

```
import java.util.*;
class Swap_With {
    public static void main(String[] args) {
        int x, y, t;// x and y are to swap
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the value of X and Y");
        x = sc.nextInt();
        y = sc.nextInt();
        System.out.println("before swapping numbers: "+x +"  "+ y);
        /*swapping */
        t = x;
        x = y;
        y = t;
        System.out.println("After swapping: "+x +"   " + y);
        System.out.println( );
    }
}
```

9

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Swap_With.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Swap_With
Enter the value of X and Y
4
8
before swapping numbers: 4  8
After swapping: 8    4
```

15) write a java program to check whether is an Alphabet vowel or Consonant.

VowelConsonant.java - Notepad   —   □   ✕

File Edit Format View Help

```java
public class VowelConsonant {
    public static void main(String[] args) {
        char ch = 'i';
        if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' )
            System.out.println(ch + " is vowel");
        else
            System.out.println(ch + " is consonant");
    }
}
```
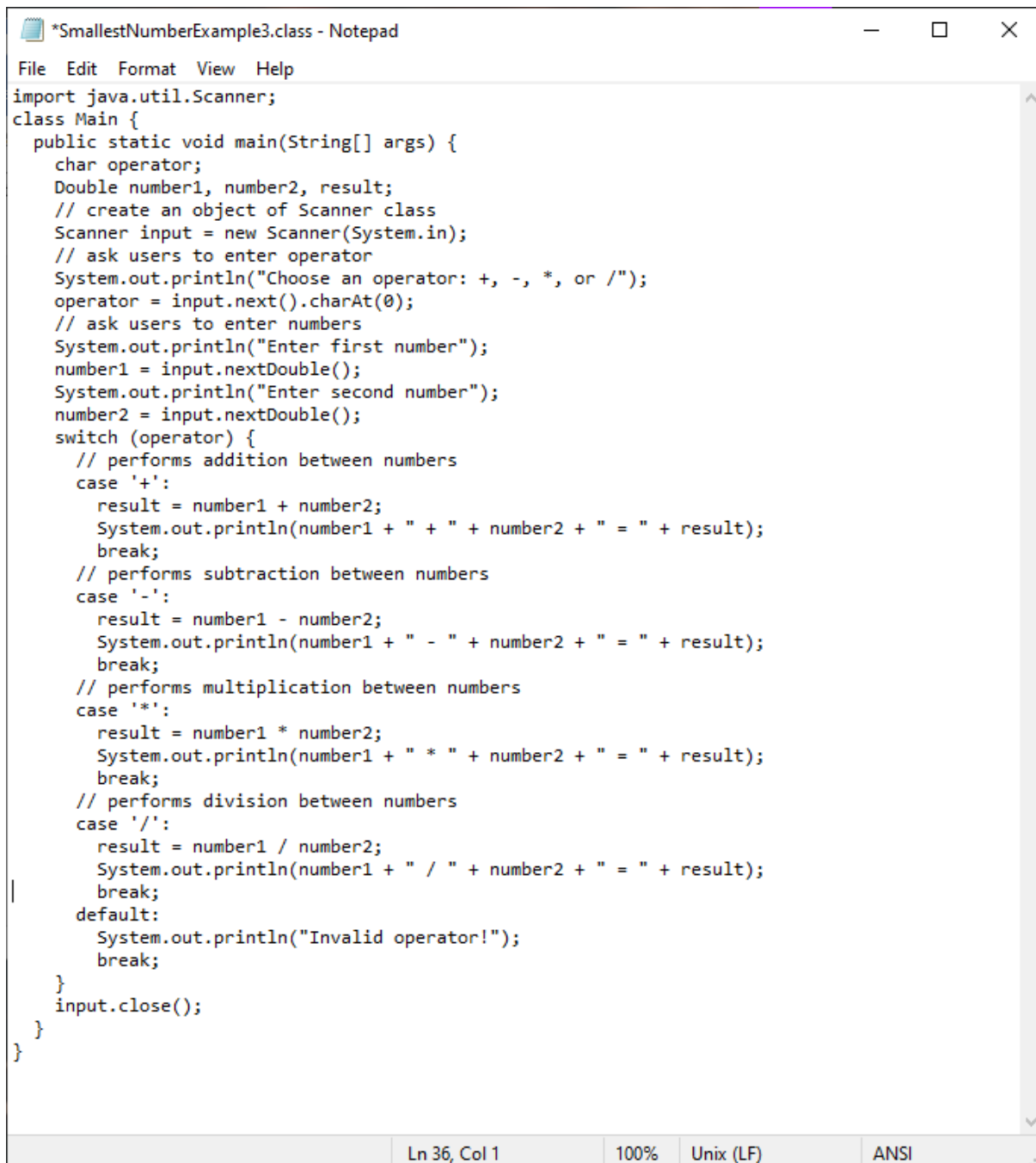
```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac VowelConsonant.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java VowelConsonant
i is vowel
```

16) write a java program to find smallest among the three numbers.

SmallestNumberExample3.java - Notepad

File Edit Format View Help

```java
public class SmallestNumberExample3
{
public static void main(String[] args)
{
//initializing numbers to compare
int a=101, b=8, c=19;
//comparing numbers, a with b and a with c
//if both conditions are true, prints a
if(a<=b && a<=c)
System.out.println(a+" is the smallest number");
//comparing b with a and b with c
//if both conditions are true, prints b
else if (b<=a && b<=c)
System.out.println(b+" is the smallest number");
else
//prints c if the above conditions are false
System.out.println(c+" is the smallest number");
}
}
```

10

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac SmallestNumberExample3.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java SmallestNumberExample3
8 is the smallest number
```

17) write a java program to make a simple calculator using switch case.

*SmallestNumberExample3.class - Notepad — □ ×

File   Edit   Format   View   Help

```java
import java.util.Scanner;
class Main {
  public static void main(String[] args) {
    char operator;
    Double number1, number2, result;
    // create an object of Scanner class
    Scanner input = new Scanner(System.in);
    // ask users to enter operator
    System.out.println("Choose an operator: +, -, *, or /");
    operator = input.next().charAt(0);
    // ask users to enter numbers
    System.out.println("Enter first number");
    number1 = input.nextDouble();
    System.out.println("Enter second number");
    number2 = input.nextDouble();
    switch (operator) {
      // performs addition between numbers
      case '+':
        result = number1 + number2;
        System.out.println(number1 + " + " + number2 + " = " + result);
        break;
      // performs subtraction between numbers
      case '-':
        result = number1 - number2;
        System.out.println(number1 + " - " + number2 + " = " + result);
        break;
      // performs multiplication between numbers
      case '*':
        result = number1 * number2;
        System.out.println(number1 + " * " + number2 + " = " + result);
        break;
      // performs division between numbers
      case '/':
        result = number1 / number2;
        System.out.println(number1 + " / " + number2 + " = " + result);
        break;
      default:
        System.out.println("Invalid operator!");
        break;
    }
    input.close();
  }
}
```

Ln 36, Col 1   100%   Unix (LF)   ANSI

11

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac calc.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java calc
Choose an operator: +, -, *, or /
+
Enter first number
5
Enter second number
10
5.0 + 10.0 = 15.0

E:\01 Engineering\4th sem\java Programming\java 37 Q>_
```

18) write a java program to find simple interest.

simpleIntrest.java - Notepad

File Edit Format View Help

```
class SimpleIntrest {
public static void main (String args[])
{ float p, r, t, si; // principal amount, rate, time and simple interest respectively.
p = 13000; r = 12; t = 2;
si = (p*r*t)/100;
System.out.println("Simple Interest is: " +si);
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac simpleIntrest.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java SimpleIntrest
Simple Interest is: 3120.0
```

19) write a java program to reverse a given number.

ReverseNumberExample1.java - Notepad

File Edit Format View Help

```
public class ReverseNumberExample1
{
public static void main(String[] args)
{
int number = 987654, reverse = 0;
while(number != 0)
{
int remainder = number % 10;
reverse = reverse * 10 + remainder;
number = number/10;
}
System.out.println("The reverse of the given number is: " + reverse);
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac ReverseNumberExample1.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java ReverseNumberExample1
The reverse of the given number is: 456789
```

20) write a java program to print the Fibonacci series using recursion.

12

FibonacciExample1.java - Notepad

File Edit Format View Help

```
class FibonacciExample1{
public static void main(String args[])
{
 int n1=0,n2=1,n3,i,count=10;
 System.out.print(n1+" "+n2);//printing 0 and 1
 for(i=2;i<count;++i)//loop starts from 2 because 0 and 1 are already printed
 {
  n3=n1+n2;
  System.out.print(" "+n3);
  n1=n2;
  n2=n3;
 }
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac FibonacciExample1.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java FibonacciExample1
0 1 1 2 3 5 8 13 21 34
E:\01 Engineering\4th sem\java Programming\java 37 Q>_
```

21) write a java program to demonstrate the concept of constructor.

Constr.java - Notepad

File Edit Format View Help

```
class Constr{
  private String name;
  // constructor
  Constr() {
    System.out.println("Constructor Called:");
    name = "Constructor By Ashish";
  }
  public static void main(String[] args) {
    // constructor is invoked while
    // creating an object of the Main class
    Constr obj = new Constr();
    System.out.println("The name is " + obj.name);
  }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Constr.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Constr
Constructor Called:
The name is Constructor By Ashish
```

22) write a java program using three functions having same name but different   number of parameters which returns sum of 1, 2, 3 numbers respectively.

MethodOverloading.java - Notepad
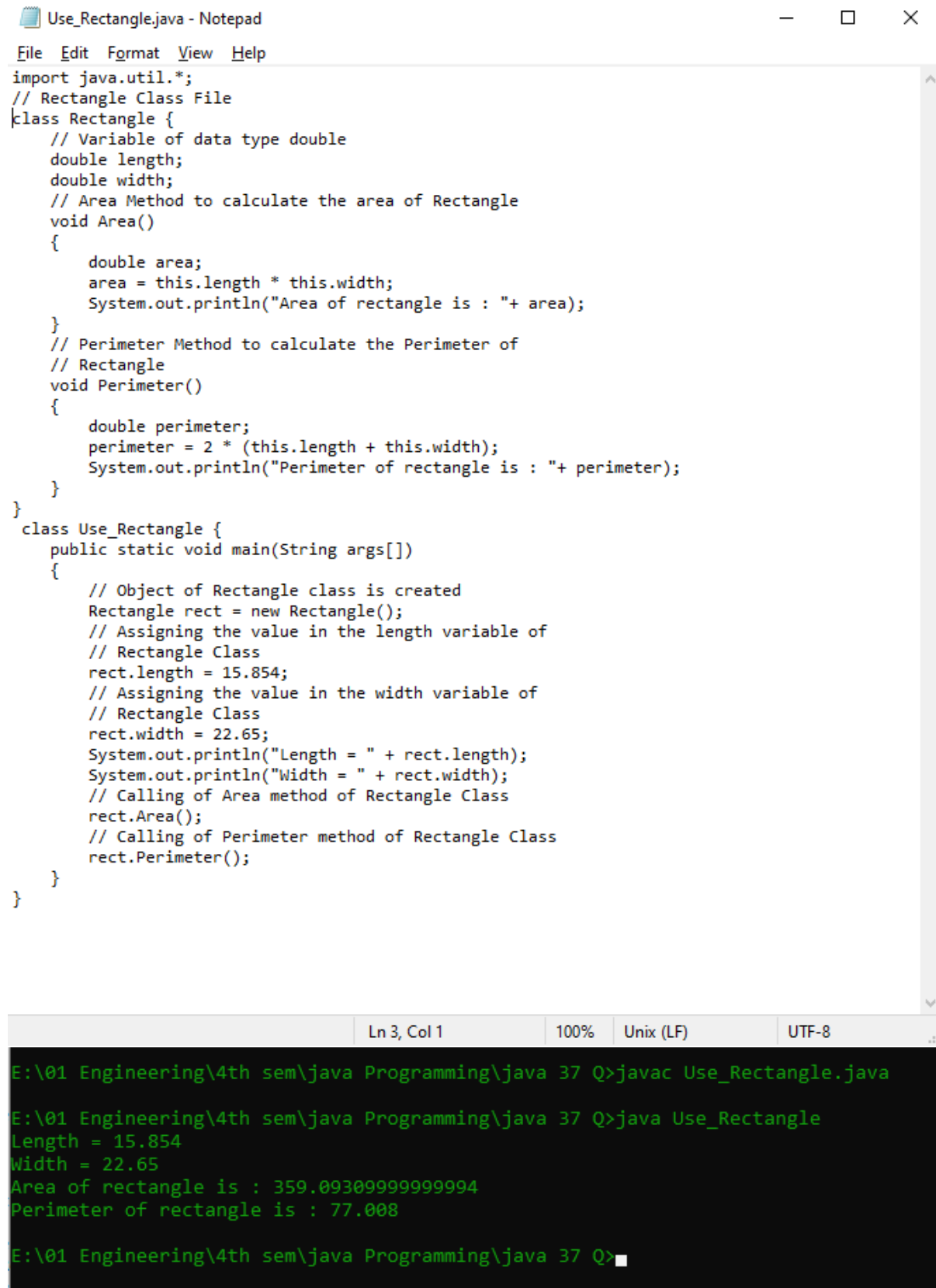
File   Edit   Format   View   Help

```java
class MethodOverloading {
    private static void display(int a){
        System.out.println("Arguments: " + a);
    }
    private static void display(int a, int b){
        System.out.println("Arguments: " + a + " and " + b);
    }
    public static void main(String[] args) {
        display(1);
        display(1, 4);
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac MethodOverloading.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java MethodOverloading
Arguments: 1
Arguments: 1 and 4

E:\01 Engineering\4th sem\java Programming\java 37 Q>_
```

23) write a java program to find area and perimeter of square by taking side of square using the constructor.

Use_Rectangle.java - Notepad

File   Edit   Format   View   Help

```java
import java.util.*;
// Rectangle Class File
class Rectangle {
    // Variable of data type double
    double length;
    double width;
    // Area Method to calculate the area of Rectangle
    void Area()
    {
        double area;
        area = this.length * this.width;
        System.out.println("Area of rectangle is : "+ area);
    }
    // Perimeter Method to calculate the Perimeter of
    // Rectangle
    void Perimeter()
    {
        double perimeter;
        perimeter = 2 * (this.length + this.width);
        System.out.println("Perimeter of rectangle is : "+ perimeter);
    }
}
 class Use_Rectangle {
    public static void main(String args[])
    {
        // Object of Rectangle class is created
        Rectangle rect = new Rectangle();
        // Assigning the value in the length variable of
        // Rectangle Class
        rect.length = 15.854;
        // Assigning the value in the width variable of
        // Rectangle Class
        rect.width = 22.65;
        System.out.println("Length = " + rect.length);
        System.out.println("Width = " + rect.width);
        // Calling of Area method of Rectangle Class
        rect.Area();
        // Calling of Perimeter method of Rectangle Class
        rect.Perimeter();
    }
}
```

Ln 3, Col 1   100%   Unix (LF)   UTF-8

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Use_Rectangle.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Use_Rectangle
Length = 15.854
Width = 22.65
Area of rectangle is : 359.09309999999994
Perimeter of rectangle is : 77.008

E:\01 Engineering\4th sem\java Programming\java 37 Q>
```

15

24) write a java program to generate reverse multiplication table. (these one)

RevMultiplicationTable.java - Notepad

File Edit Format View Help

```java
public class RevMultiplicationTable {
    public static void main(String[] args) {
        int num = 5;
        for(int i = 10; i >= 1; i--)
        {
            System.out.printf("%d * %d = %d \n", num, i, num * i);
        }
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac RevMultiplicationTable.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java RevMultiplicationTable
5 * 10 = 50
5 * 9 = 45
5 * 8 = 40
5 * 7 = 35
5 * 6 = 30
5 * 5 = 25
5 * 4 = 20
5 * 3 = 15
5 * 2 = 10
5 * 1 = 5
```

16

25) write a program which take input of marks of five subject from user and print that marks using method.

result.java - Notepad — □

File Edit Format View Help

```java
public class result{
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter the marks of five subjects::\n");
        // To store the values of five subjects
        float sub_1 = in.nextFloat();
        float sub_2 = in.nextFloat();
        float sub_3 = in.nextFloat();
        float sub_4 = in.nextFloat();
        float sub_5 = in.nextFloat();
        float total;
        float average;
        float percentage;
        char grade;
        // Calculate total, average and percentage
        total = sub_1 + sub_2 + sub_3 + sub_4 + sub_5;
        average = (float)(total / 5.0);
        percentage = (float)((total / 500.0) * 100);
        // It will calculate the Grade
        if (average >= 90)
            grade = 'A';
        else if (average >= 80 && average < 90)
            grade = 'B';
        else if (average >= 70 && average < 80)
            grade = 'C';
        else if (average >= 60 && average < 70)
            grade = 'D';
        else
            grade = 'E';
        // It will produce the final output
        System.out.println("\nThe Total marks   = " + total + "/500.0");
        System.out.println("The Average marks = " + average);
        System.out.println("The Percentage    = " + percentage + "%");
        System.out.println("The Grade         = '" + grade + "'");
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac result.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java result
Enter the marks of five subjects::

20
40
50
30
70

The Total marks   = 210.0/500.0
The Average marks = 42.0
The Percentage    = 42.0%
The Grade         = 'E'
```

17

26) write a java program to count number of digits in a number.

Count.java - Notepad

File Edit Format View Help

```java
public class Count {
  public static void main(String[] args) {
    int count = 0, num = 0003452;
    while (num != 0) {
      // num = num/10
      num /= 10;
      ++count;
    }
    System.out.println("Number of digits: " + count);
  }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Count.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Count
Number of digits: 4
```

27) write a java program to print the numbers from 1 to N using do while loop. (this One)

Print_1_To_N_UsingWhile.java - Notepad

File   Edit   Format   View   Help

```java
import java.util.Scanner;

public class Print_1_To_N_UsingWhile
{
        public static void main(String[] args)
        {
                //loop counter initialisation
                int i =1;
                //create object of scanner class
                Scanner Sc = new Scanner(System.in);

                // enter the value of " n "
                System.out.print("Enter the value n : ");

                // read the value.
                int n = Sc.nextInt();

                System.out.println("Numbers are : ");

                while(i<=n)
                {
                        System.out.println(i);
                        i++;
                }
        }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Print_1_To_N_UsingWhile.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Print_1_To_N_UsingWhile
Enter the value n : 5
Numbers are :
1
2
3
4
5
```

28) write a java program to print the numbers from N to 1 using while loop.

19

GFG.java - Notepad

File Edit Format View Help

```
// Java program to print all numbers between 1
// to N in reverse order
import java.util.*;
class GFG {
// Recursive function to print from N to 1
static void PrintReverseOrder(int N)
{
for (int i = N; i > 0; i--) // for reverse the loop
        System.out.print( +i + " ");
}
// Driver code
public static void main(String[] args)
{
        int N = 5;
        PrintReverseOrder(N);
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac GFG.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java GFG
5 4 3 2 1
E:\01 Engineering\4th sem\java Programming\java 37 Q>_
```

// This code is contributed by shivanisinghss2110

29) write a java program to add two Numbers without using '+' Operator.

GFG_add.java - Notepad   —   □   ✕
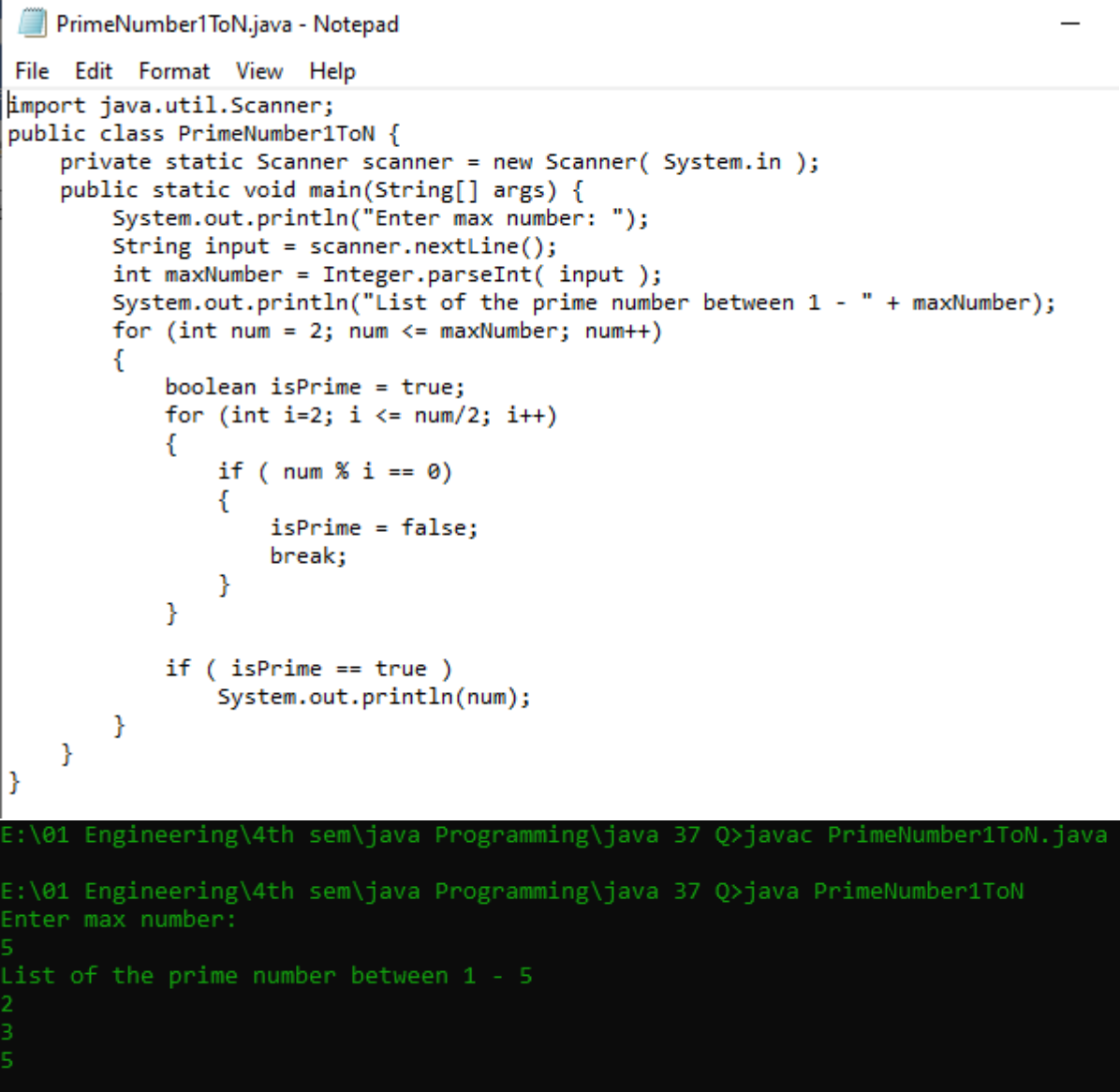
File Edit Format View Help

```
import java.util.*;
class GFG_add {
  static int add(int a, int b) {
    for (int i = 1; i <= b; i++) // for loop will start from 1 and move till the value of
second
      // number , first number(a) is incremented in for loop
    {
      a++;
    }
    return a;
  }
  public static void main(String[] args) {
    int a = add(10, 32); // first number is 10 and second number is 32 , for loop will start
    System.out.print(a); // from 1 and move till 32 and the value of a is incremented 32 times
    // which will give us the total sum of two numbers
  }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac GFG_add.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java GFG_add
42
```

30) write a java program to print Prime numbers between 1 to N.

```
PrimeNumber1ToN.java - Notepad                                    —
File  Edit  Format  View  Help
import java.util.Scanner;
public class PrimeNumber1ToN {
    private static Scanner scanner = new Scanner( System.in );
    public static void main(String[] args) {
        System.out.println("Enter max number: ");
        String input = scanner.nextLine();
        int maxNumber = Integer.parseInt( input );
        System.out.println("List of the prime number between 1 - " + maxNumber);
        for (int num = 2; num <= maxNumber; num++)
        {
            boolean isPrime = true;
            for (int i=2; i <= num/2; i++)
            {
                if ( num % i == 0)
                {
                    isPrime = false;
                    break;
                }
            }

            if ( isPrime == true )
                System.out.println(num);
        }
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac PrimeNumber1ToN.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java PrimeNumber1ToN
Enter max number:
5
List of the prime number between 1 - 5
2
3
5
```

31) write a java program to check whether an integer is Armstrong Number or not .

      (Armstrong number is type of number in which sum of cube of each digit is Equal to that number.)

ArmStrong.java - Notepad

File Edit Format View Help

```java
import java.util.Scanner;
public class ArmStrong
{
    public static void main(String[] args)
    {
        int n, count = 0, a, b, c, sum = 0;
        Scanner s = new Scanner(System.in);
        System.out.print("Enter any integer you want to check:");
        n = s.nextInt();
        a = n;
        c = n;
        while(a > 0)
        {
            a = a / 10;
            count++;
        }
        while(n > 0)
        {
            b = n % 10;
            sum = (int) (sum+Math.pow(b, count));
            n = n / 10;
        }
        if(sum == c)
        {
            System.out.println("Given number is Armstrong");
        }
        else
        {
            System.out.println("Given number is not Armstrong");
        }
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac ArmStrong.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java ArmStrong
Enter any integer you want to check:5
Given number is Armstrong

E:\01 Engineering\4th sem\java Programming\java 37 Q>java ArmStrong
Enter any integer you want to check:4
Given number is Armstrong

E:\01 Engineering\4th sem\java Programming\java 37 Q>java ArmStrong
Enter any integer you want to check:10
Given number is not Armstrong

E:\01 Engineering\4th sem\java Programming\java 37 Q>
```

32) write a java program to find factorial of a number using recursion.

Factorial.java - Notepad

File Edit Format View Help

```java
public class Factorial {
   public static void main(String[] args) {
        int num = 6;
        long factorial = multiplyNumbers(num);
        System.out.println("Factorial of " + num + " = " + factorial);
   }
   public static long multiplyNumbers(int num)
   {
        if (num >= 1)
            return num * multiplyNumbers(num - 1);
        else
            return 1;
   }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Factorial.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Factorial
Factorial of 6 = 720
```

33) write a java program to check whether a number is palindrome or not.

PalindromeExample.java - Notepad

File Edit Format View Help

```java
class PalindromeExample{
 public static void main(String args[]){
  int r,sum=0,temp;
  int n=454;//It is the number variable to be checked for palindrome
  temp=n;
  while(n>0){
   r=n%10;  //getting remainder
   sum=(sum*10)+r;
   n=n/10;
  }
  if(temp==sum)
   System.out.println("palindrome number ");
  else
   System.out.println("not palindrome");
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac PalindromeExample.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java PalindromeExample
palindrome number
```

23

Shri Guru Gobind Singhji Institute of Engineering & Technology
Nanded – 431606, India.
(An Autonomous Institute of Govt. of Maharashtra)

34) write a java program to swap two numbers without using third variable.

```
Swap_no_thrid_variable.java - Notepad

File  Edit  Format  View  Help
import java.util.*;
class Swap_no_thrid_variable
{
    public static void main(String a[])
    {
        System.out.println("Enter the value of x and y");
        Scanner sc = new Scanner(System.in);
        /*Define variables*/
        int x = sc.nextInt();
        int y = sc.nextInt();
        System.out.println("before swapping numbers: "+x +" "+ y);
        /*Swapping*/
        x = x + y;
        y = x - y;
        x = x - y;
        System.out.println("After swapping: "+x +"  " + y);
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac Swap_no_thrid_variable.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java Swap_no_thrid_variable
Enter the value of x and y
9
3
before swapping numbers: 9 3
After swapping: 3  9
```

35) write a java program to find square of a number.

```
SquareNum.java - Notepad

File  Edit  Format  View  Help
import java.util.Scanner;
class SquareNum {
    public static void main(String [] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.print("Please enter a number: ");
        int num = sc.nextInt();
        System.out.println("Your squared number is: " + square(num));
    }
    public static int square(int num)
    {
        return num * num;
    }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac SquareNum.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java SquareNum
Please enter a number: 3
Your squared number is: 9
```

24

36) write a java program to multiply two numbers without using '*' operator.

```
MultiplicationExample2.java - Notepad                          —    □

File  Edit  Format  View  Help
import java.util.Scanner;
public class MultiplicationExample2
{
public static void main(String args[])
{
int product=0;
Scanner scan=new Scanner(System.in);
System.out.print("Enter the first number: ");
int multiplicand = scan.nextInt();
System.out.print("Enter the second number: ");
int multiplicator = scan.nextInt();
for(int i=0; i<multiplicator; i++)
{
product=sum(product, multiplicand);
}
System.out.print("product of "+ multiplicand+" and "+ multiplicator +" is: "+product);
}
static int sum(int multiplicand, int multiplicator)
{
for(int i=0; i<multiplicator; i++)
multiplicand++;
return multiplicand;
}
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac MultiplicationExample2.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java MultiplicationExample2
Enter the first number: 4
Enter the second number: 7
product of 4 and 7 is: 28
```

37) write a java program to find power of a number.

```
pow.java - Notepad

File  Edit  Format  View  Help
class pow{
  public static void main(String[] args) {
    int base = 3, exponent = 4;
    long result = 1;
    while (exponent != 0) {
      result *= base;
      --exponent;
    }
    System.out.println("Answer = " + result);
  }
}
```

```
E:\01 Engineering\4th sem\java Programming\java 37 Q>javac pow.java

E:\01 Engineering\4th sem\java Programming\java 37 Q>java pow
Answer = 81
```