1.Factorial...

```
import java.util.Scanner;
import java.util.Scanner;
public class FactorialNumber {
        public static void main(String []args)
        {
            FactorialNumber fac = new FactorialNumber();
            fac.callInput();
        }
        void callInput()
        {
           Scanner scan=new Scanner(System.in);
                System.out.println("Enter the number: ");
                int Number=scan.nextInt();
                int i=1,fact=1;
                while(i<=Number)
                {
                     fact=fact*i;
                     i++;
                }
                display(fact);
         }
        void display(int fact)
        {
```

```
            System.out.println("Factorial of the number:
"+fact);
        }
}
```

2.Fibonaccinumber

```
  import java.util.Scanner;
public class FibonacciNumbers
{

   public static void main(String[] args)
   {
      int number, num1 = 0, num2 = 0, temp = 1;

       for(int i = 1; i<=89; i++)
       {
          num1 = num2;
           num2 = temp;
           temp = num1 + num2;
           System.out.print(num1+" ");
       }
   }
}
```

or

```
/*import java.util.Scanner;
public class FibonacciNumbers
{
      int number, num1 = 0, num2 = 0, temp = 1;
   public static void main(String[] args)
   {
      new FibonacciNumbers().takeInput();
   }
   void takeInput() {

      Scanner s = new Scanner(System.in);
      System.out.print("Enter the value:");
       number = s.nextInt();
      System.out.print("Fibonacci Series:");

      loop();
   }
   void loop()
   {
       for(int i = 1; i <= number; i++)
       {
          num1 = num2;
           num2 = temp;
           temp = num1 + num2;
           System.out.print(num1+" ");
       }
   }
}*/
```

3.Prime or not

```
import java.util.Scanner;
 public class FindPrimeNumber
 {
        int num,num1=1,num2=0;
      public static void main(String args[])
      {

         new FindPrimeNumber().callInput();
      }
     void callInput()
     {

       Scanner s=new Scanner(System.in);
       System.out.println("Enter A Number");
       num =s.nextInt();
       whileLoop();
     }
     void whileLoop()
     {
        while(num1<= num)
        {
           if((num%num1)==0)
              num2=num2+1;
               num1++;
         }
        ifStatement();
     }
     void ifStatement()
     {

        if(num2==2)
            System.out.println(num +" is a prime number");
            else
```

```
            System.out.println(num +" is not a prime number");
        }
    }
```

4. even or odd

```
import java.util.Scanner;

public class OddEvenNumber
{
    public static void main(String[] args)
    {

        new OddEvenNumber().callInput();
    }
    void callInput()
    {
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int number = scan.nextInt();
        IfStatement(number);
    }
    void IfStatement(int number)
    {
        if(number % 2 == 0)
            System.out.println(number + " is even");
        else
            System.out.println(number + " is odd");
    }

}
```

5.sum of 100 numbers

```
  import java.util.Scanner;

public class SumOFHundredNumbers {

      public static void main(String[] args) {
            int sum =0;
            for(int i=0;i<=100;i++)
            {
                  sum =sum+i;
            }
            System.out.println("Sum of first 100 numbers "
+sum);

         }
}
```

6.swapping

```
 import java.util.Scanner;
class SwappingNumbers
{
       int num1,num2;
   public static void main(String a[])
   {
      new SwappingNumbers().takeInput();

   }
   void takeInput()
   {
      System.out.println("Enter the value of num1 and
num2");
       Scanner sc = new Scanner(System.in);
        num1 = sc.nextInt();
        num2 = sc.nextInt();
       System.out.println("before swapping numbers:
"+num1 +" "+ num2);
       swap();
   }
   void swap()
   {
      num1 = num1 + num2;
       num2 = num1 - num2;
       num1 = num1 - num2;
       display();
   }
   void display()
   {
        System.out.println("After swapping: "+num1 +"  " +
num2);
   } }
```

7. Write a java program that simulates a traffic light. The program lets the user select one of three lights: red, yellow, or green with radio buttons.

On entering the choice, an appropriate message with "stop" or "ready" or "go" should appear in the console .Initially there is no message shown.

Code:

```
import java.util.Scanner;

public class Traffic {

	public static void main(String[] args)
	{
		String color;
		Scanner scan = new Scanner(System.in);
		System.out.println("Enter the color");
		color = scan.nextLine();
		switch(color)
		{
		case "Red" :
		case "red"  :
		case "R"  :
			System.out.println("stop!"); break;
		case "Yellow" :
		case "yellow"  :
		case "y"  :
			System.out.println("ready..."); break;
		case "Green" :
		case "green"  :
		case "g"  :
			System.out.println("go.."); break;
			default:
				System.out.println("invalid color");
```

```
        }


    }

}
```

8.

Create a class with a method which can calculate the sum of first n natural numbers which are divisible by 3 or 5

Code:

```
import java.util.Scanner;

public class SumOfNatural_Numbers_DivBy3And5 {

    public static void main(String[] args) {
        SumOfNatural_Numbers_DivBy3And5 p1 = new
SumOfNatural_Numbers_DivBy3And5();
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number");
        int n=sc.nextInt();
        System.out.println("The sum of Given natural
Number which are Divisible by 3 or 5 is "+p1.calSum(n));

    }

    private int a=0;
    public int calSum(int n)
    {
        for (int i=0; i<=n; i++)
        {
```

```
                if(i%3==0 || i%5==0) {
                    a +=i;
                }
            }
            return a;
        }

}
```

9. Write a Java program that prompts the user for an integer and then prints out all the prime numbers up to that Integer?

Code:

```
import java.util.Scanner;
public class PrintAllPrimeNumberUpToInteger {
	int num,primeNo;
	public static void main(String[] args)
		{
			new
PrintAllPrimeNumberUpToInteger().callInput();
		}
	void callInput()
	{
		Scanner s=new Scanner(System.in);
		System.out.println("Enter a number: ");
		num=s.nextInt();
		forLoopAndIf();
	}
	void forLoopAndIf()
	{
		for(int i=2;i<num;i++)
		{
			primeNo=0;
			for(int j=2;j<i;j++)
			{
				if(i%j==0)
				primeNo=1;
			}
			if(primeNo==0)
				System.out.println(i);
		}
	 }
```

10. Create a method to check if a number is an increasing number

Code:

```
import java.util.Scanner;
public class DigitIncreasingOrder {

        int num1;
    boolean flag = false;

        public static void main(String args[]) {

        new DigitIncreasingOrder().callInput();

        }

        void callInput()
        {
            Scanner scanner = new Scanner(System.in);
                System.out.println("Enter a number : ");
                num1 = scanner.nextInt();
                int number = num1 % 10;
                num1 = num1/10;
                WhileAndIf( number);
        }
        void WhileAndIf(int number)
        {
            while(num1>0){

                    if(number <= num1 % 10){
                        flag = true;
                        break;
                    }

                number = num1 % 10;
```

```
                num1 = num1/10;
                }
            ifelseCond();
        }
    void ifelseCond()
    {
       if(flag){
                System.out.println("Digits are not in
increasing order.");
            }else{
                System.out.println("Digits are in
increasing order.");
            }
    }
}
```

11. Create a class with a method to find the difference between the sum of the squares and the square of the sum of the first n natural numbers.

```
import java.util.Scanner;

public class DiffOfSumOfSqsAndSqsofSum {

  public static void main(String[] args) {
    DiffOfSumOfSqsAndSqsofSum s = new
DiffOfSumOfSqsAndSqsofSum();
    s.diff();
  }
    void diff(){
    int num,i,sum=0,sum1=0,result;
    Scanner toscan = new Scanner(System.in);
    System.out.println("Enter a number: ");
    num =toscan.nextInt();
    for(i=1;i<=num;i++) {
      sum = sum + i;
    }
    sum = sum * sum;
    for(i=1;i<=num;i++) {
      sum1 = (i*i) + sum1;
    }
    result = sum -sum1;
    System.out.println(result);
  }
}
```

12. A number is said to be an increasing number if no digit is exceeded by the digit to its left.
For Example : 134468 is an increasing number
Code:

```
import java.util.Scanner;
public class DigitIncreasingOrder {

    int num1;
  boolean flag = false;

     public static void main(String args[]) {

    new DigitIncreasingOrder().callInput();

    }

    void callInput()
    {
        Scanner scanner = new Scanner(System.in);
            System.out.println("Enter a number : ");
            num1 = scanner.nextInt();
            int number = num1 % 10;
            num1 = num1/10;
            WhileAndIf( number);
    }
    void WhileAndIf(int number)
    {
        while(num1>0){

              if(number <= num1 % 10){
                 flag = true;
                 break;
              }

             number = num1 % 10;
```

```
                num1 = num1/10;
                }
            ifelseCond();
        }
    void ifelseCond()
    {
       if(flag){
                System.out.println("Digits are not in
increasing order.");
            }else{
                System.out.println("Digits are in
increasing order.");
            }
    }
}
```

13. Create a method to check if a number is a power of two or not

Ex: 8 is a power of 2

Code:

```
import java.util.Scanner;

class GFG {


   static boolean isPowerOfTwo(int number)
   {
      if (number == 0)
         return false;

      while (number != 1)
      {
         if (number % 2 != 0)
            return false;
         number = n / 2;
      }
      return true;
   }


   public static void main(String args[])
   {
      Scanner scan = new Scanner(System.in);
      System.out.println("Enter the number :");
      int number = scan.nextInt();
      if (isPowerOfTwo(number))
         System.out.println("power of 2");
      else
         System.out.println("not power of 2");
```

```
    }
}
```