Q1. Check if the given number is Even or Odd.

ALGORITHM:

Step 1: Print "Enter Any Number "

Step 2: Read Num,

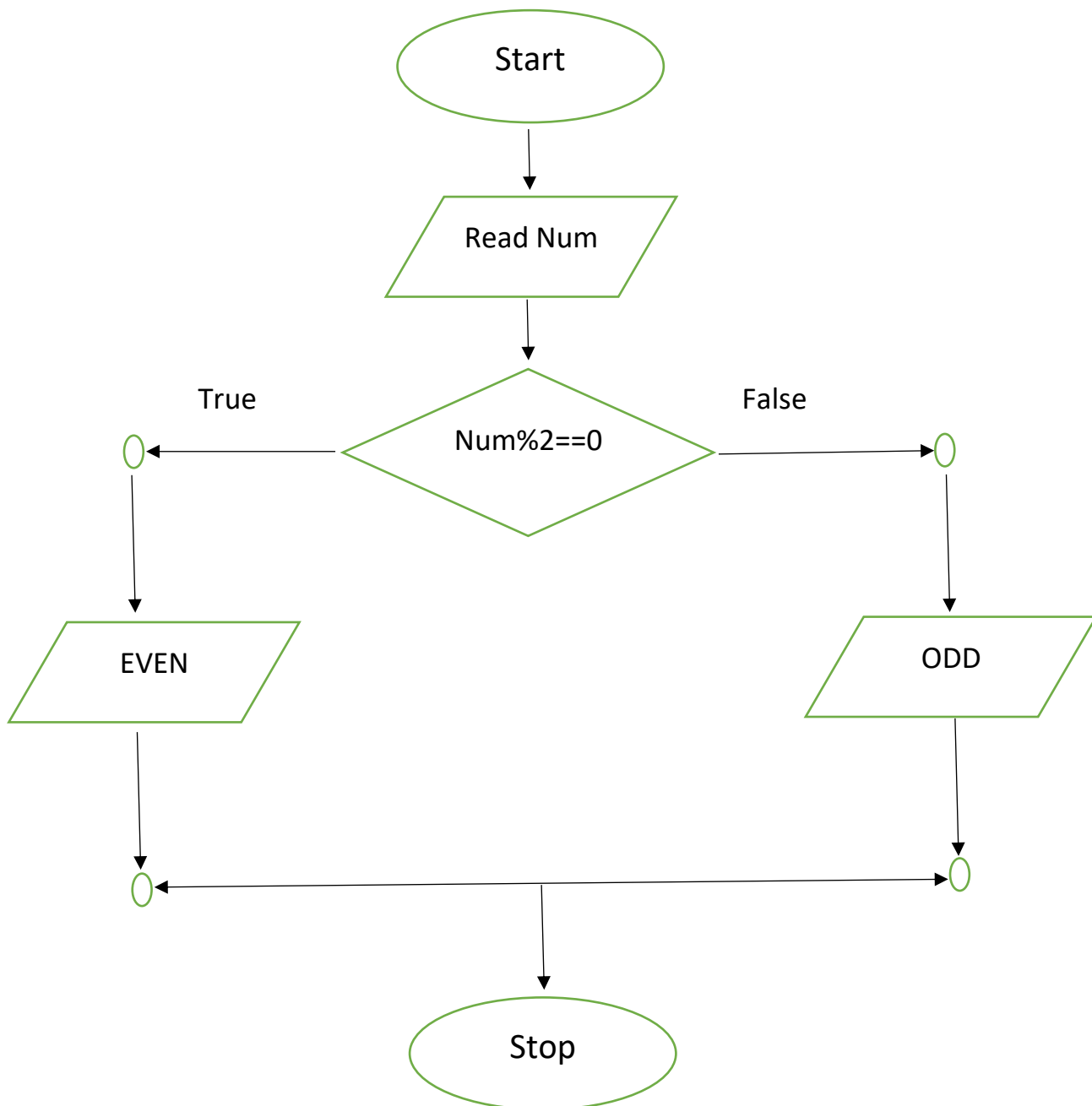*Step 3*: if (Num%2==0)
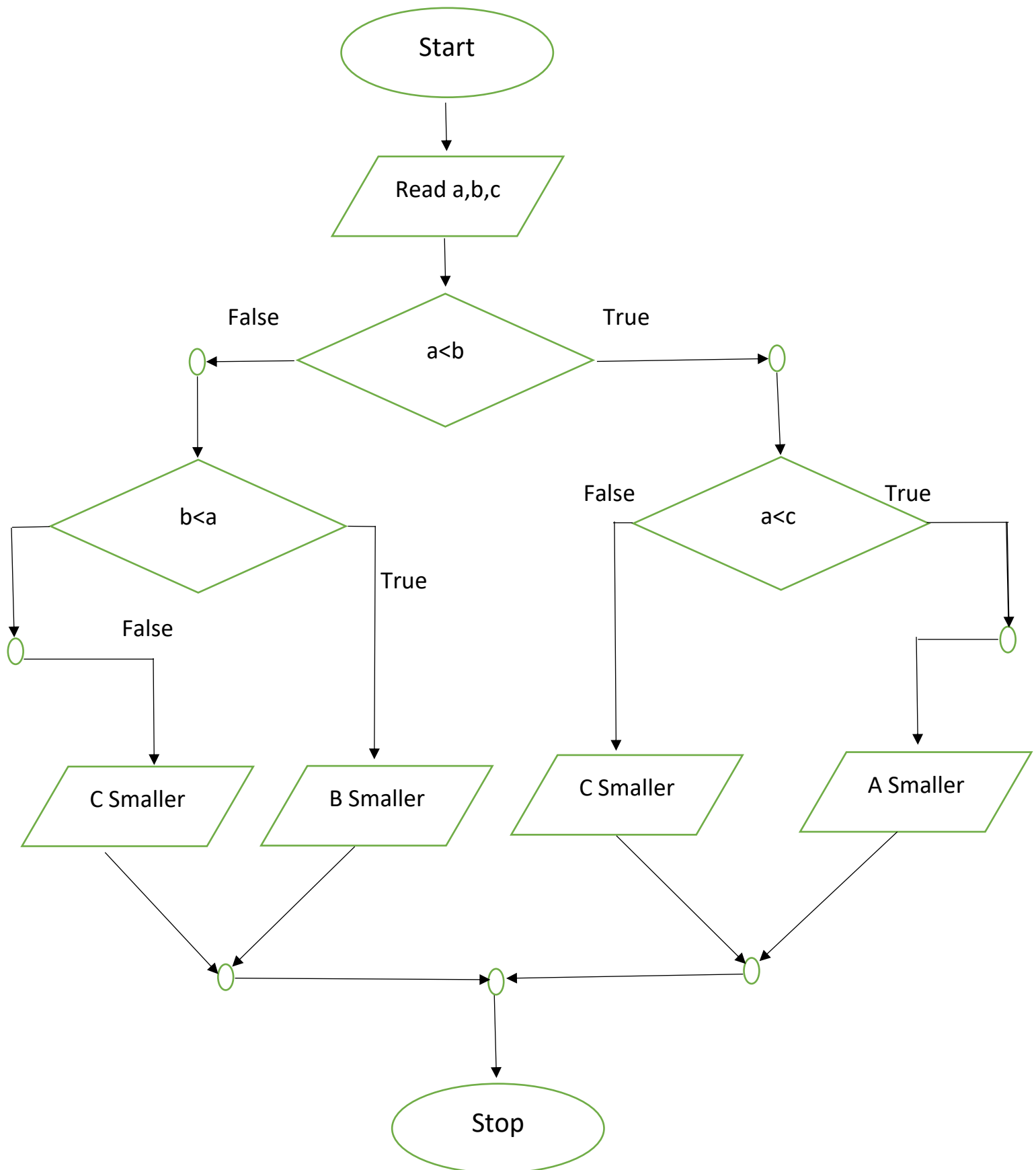
  Print("EVEN");

   Else

   Print("ODD");

Step 4: Stop.

FLOWCHART:

```
                    ┌─────────────┐
                    │    Start    │
                    └──────┬──────┘
                           │
                    ╱──────────────╲
                   │   Read Num     │
                    ╲──────────────╱
                           │
      True                 ◇                 False
     ○◄──────────────  Num%2==0  ──────────────►○
     │                                           │
     │                                           │
  ╱──────╲                                   ╱──────╲
 │  EVEN  │                                 │   ODD  │
  ╲──────╱                                   ╲──────╱
     │                                           │
     ○◄─────────────────────────────────────────►○
                           │
                    ┌─────────────┐
                    │    Stop     │
                    └─────────────┘
```

Q11. Write a java program to find smallest of three numbers (a,b,c)
FLOWCHART:

```
                              ┌──────────┐
                              │  Start   │
                              └──────────┘
                                    │
                                    ▼
                              ╱──────────╲
                             │ Read a,b,c │
                              ╲──────────╱
                                    │
                                    ▼
        False                   ◇ a<b ◇                    True
          ○◄─────────────────────                  ─────────────────►○
          │                                                           │
          ▼                                                           ▼
      ◇ b<a ◇                                                     ◇ a<c ◇
    False      True                                          False        True
      ○                                                        │            ○
      │        │                                               │            │
      ▼        ▼                                               ▼            ▼
  ╱────────╲ ╱────────╲                               ╱────────╲      ╱────────╲
 │ C Smaller││ B Smaller│                             │ C Smaller│    │ A Smaller│
  ╲────────╱ ╲────────╱                               ╲────────╱      ╲────────╱
       │         │                                         │              │
       ▼         ▼                                         ▼              ▼
         ○──────────────────○──────────────────────────────○
                            │
                            ▼
                       ┌──────────┐
                       │   Stop   │
                       └──────────┘
```

ALGORITHM:

Step 1: Print "Enter the three Numbers "

Step 2: Read a,b,c.

Step 3: if (a<b)   { check →if(a<c) Yes →PRINT a is Smaller

No →PRINT c is Smaller

}

Else   { check (b<a) Yes →PRINT b is Smaller

No→ PRINT c is Smaller }

Step 4: Stop.

•••

Q10. Write a java program to find sum of digits of a given number.

ALGORITHM:

Step 1: Print "Enter a Number "

Step 2: Read num

Step 3: To find digit 1 → { dig1=num%10

num=num/10 }

To find digit 2 → { dig2=num%10

num=num/10 }

To find digit 3 → { dig3=num%10

Dig4= num=num/10 }

Step 5:   Add all digits in sum variable

Sum= Dig1+dig2+dig3+dig4;

Print (sum);

Step 6: Stop.

FLOWCHART:

Start

Read num

Dig1=num%10

num=num/10

Dig2=num%10

num=num/10

Dig3=num%10

Dig4=num=num/10

Sum=Dig1+Dig2+Dig3+dig4

Print sum

Stop

****
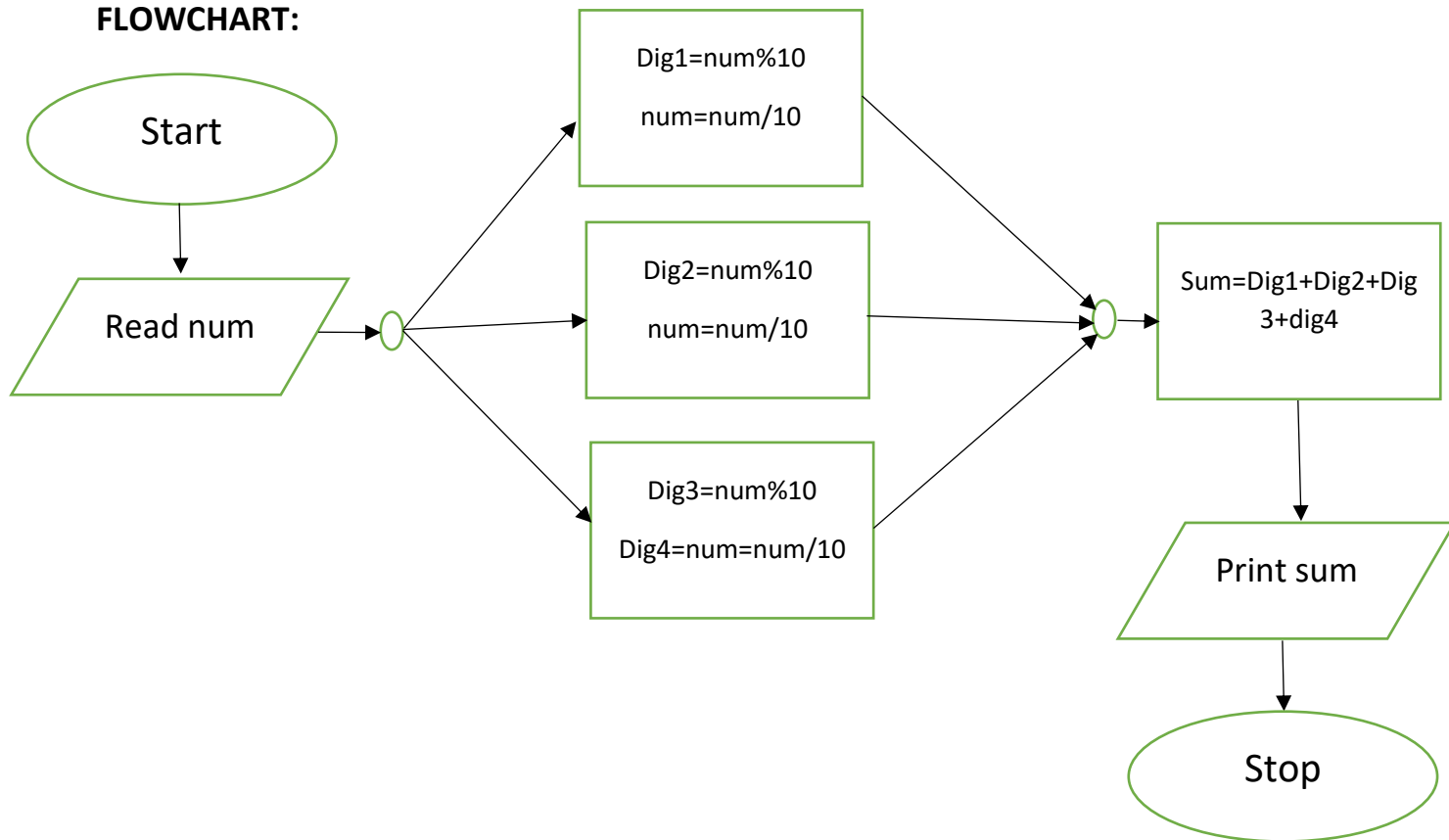
Q05. How to check whether the given number is positive or negative in java.

ALGORITHM:

Step 1: Print "Enter a Number "

Step 2: Read int x ;

Step 3: if(x==0)   Yes → print number neither positive nor negative.

                No→check if(X>0)   Yes→ print POSITIVE

                                    NO→print NEGATIVE

Step 4:   Stop.

FLOWCHART:

```
                              Start

                              Read X

         False                X==0              True        Neither
                                                            +VE nor-VE

                    False     X>0      True


         NEGATIVE                       POSITIVE

                                                                  Stop
```

****
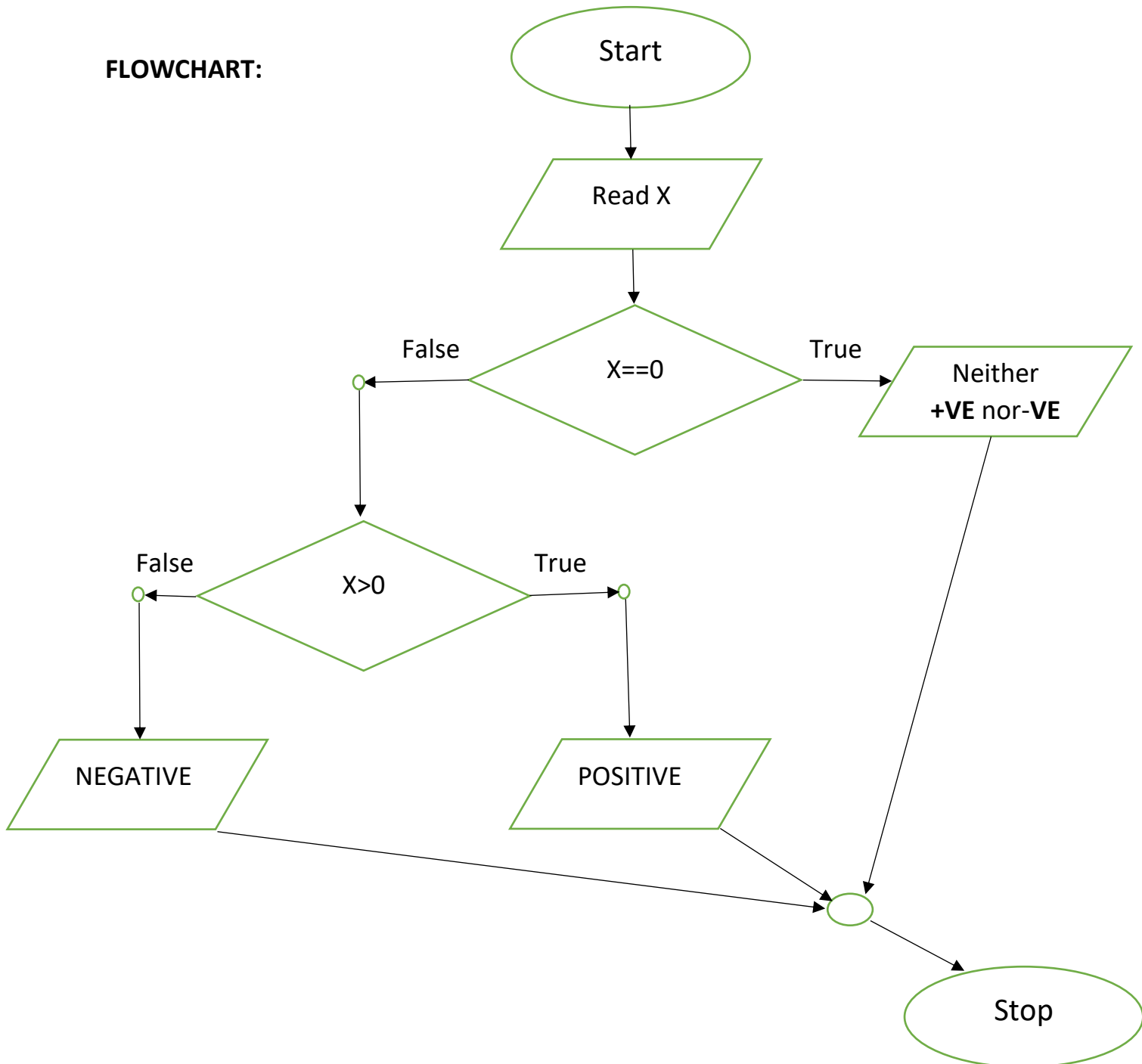
Q 06. Write a java program to find whether given number is leap year or not .

ALGORITHM:

Step 1: Print "Enter any Year "

Step 2: Read int Y ;

Step 3: if(Y % 400 ==0)   Yes → print Century Leap Year

No→check if(Y%4==0)   Yes→ print LEAP YEAR

NO→ print NON LEAP YEAR

Step 4:   Stop.

FLOWCHART:
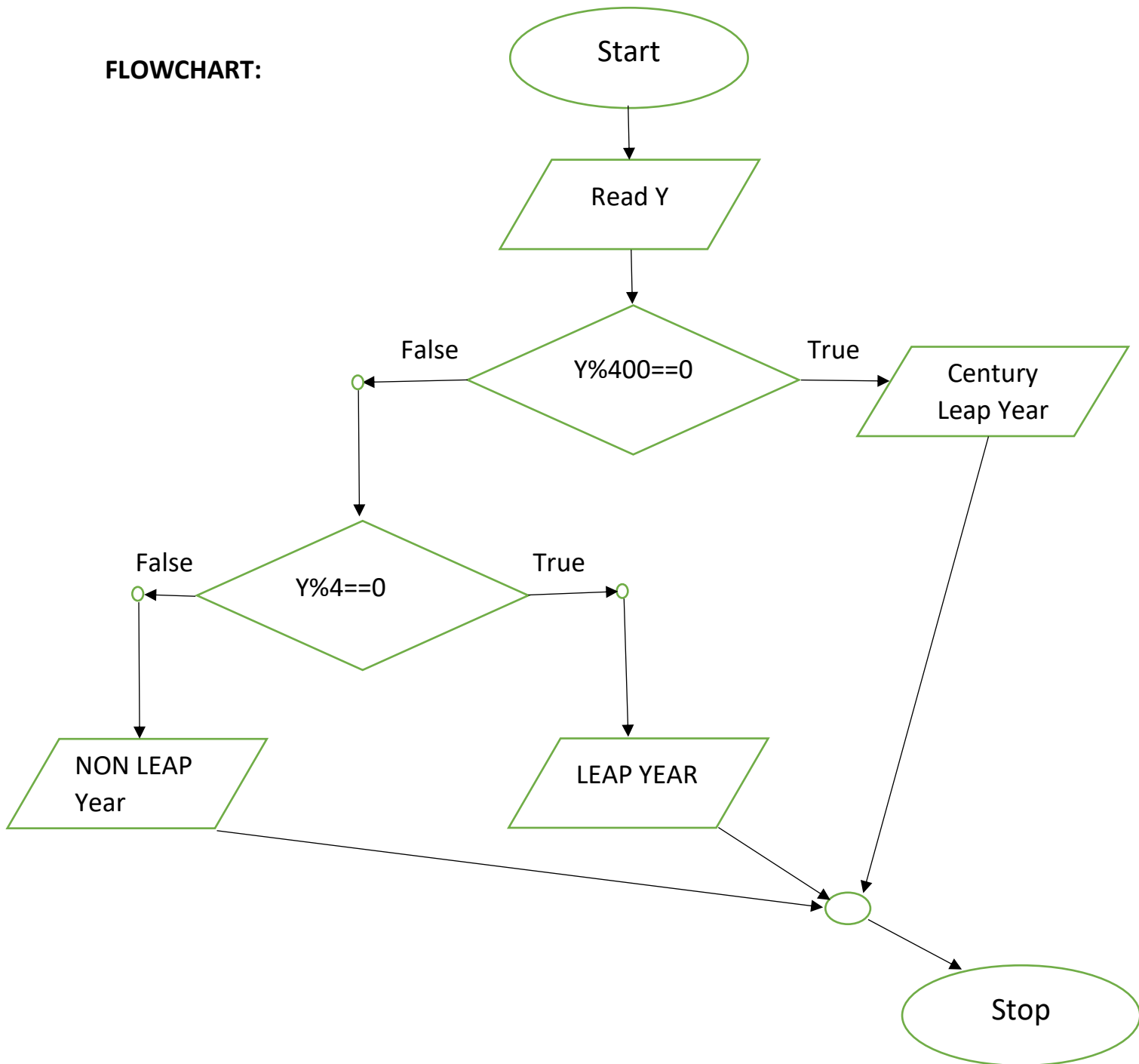
Q 08. Write a java program to print the digits of the given number.

ALGORITHM:

Step 1: Print "Enter a Number "

Step 2: Read num

Step 3: To find digit 1 → { dig1=num%10

                         num=num/10 }

         To find digit 2 → { dig2=num%10

                         num=num/10 }

         To find digit 3 → { dig3=num%10

                         Dig4= num=num/10 }

Step 5:   Print dig1,dig2,dig3,dig4

Step 6:   Stop.

FLOWCHART:

```
                                      ┌──────────────────┐
                                      │  Dig1=num%10     │
   ╭───────────╮                      │  num=num/10      │
  (   Start     )                     └──────────────────┘
   ╰───────────╯
        │
        ▼                             ┌──────────────────┐
  ╱──────────────╱                    │  Dig2=num%10     │
 ╱   Read num   ╱ ──────○──────────▶  │  num=num/10      │ ──────○
╱──────────────╱                      └──────────────────┘       │
                                                                  ▼
                                      ┌──────────────────┐   ╱──────────╱
                                      │  Dig3=num%10     │  ╱  Print    ╱
                                      │ Dig4=num=num/10  │ ╱ Dig1,2,3,4╱
                                      └──────────────────┘  ╱──────────╱
                                                                  │
                                                                  ▼
                                                             ╭─────────╮
                                                            (   Stop    )
                                                             ╰─────────╯
```
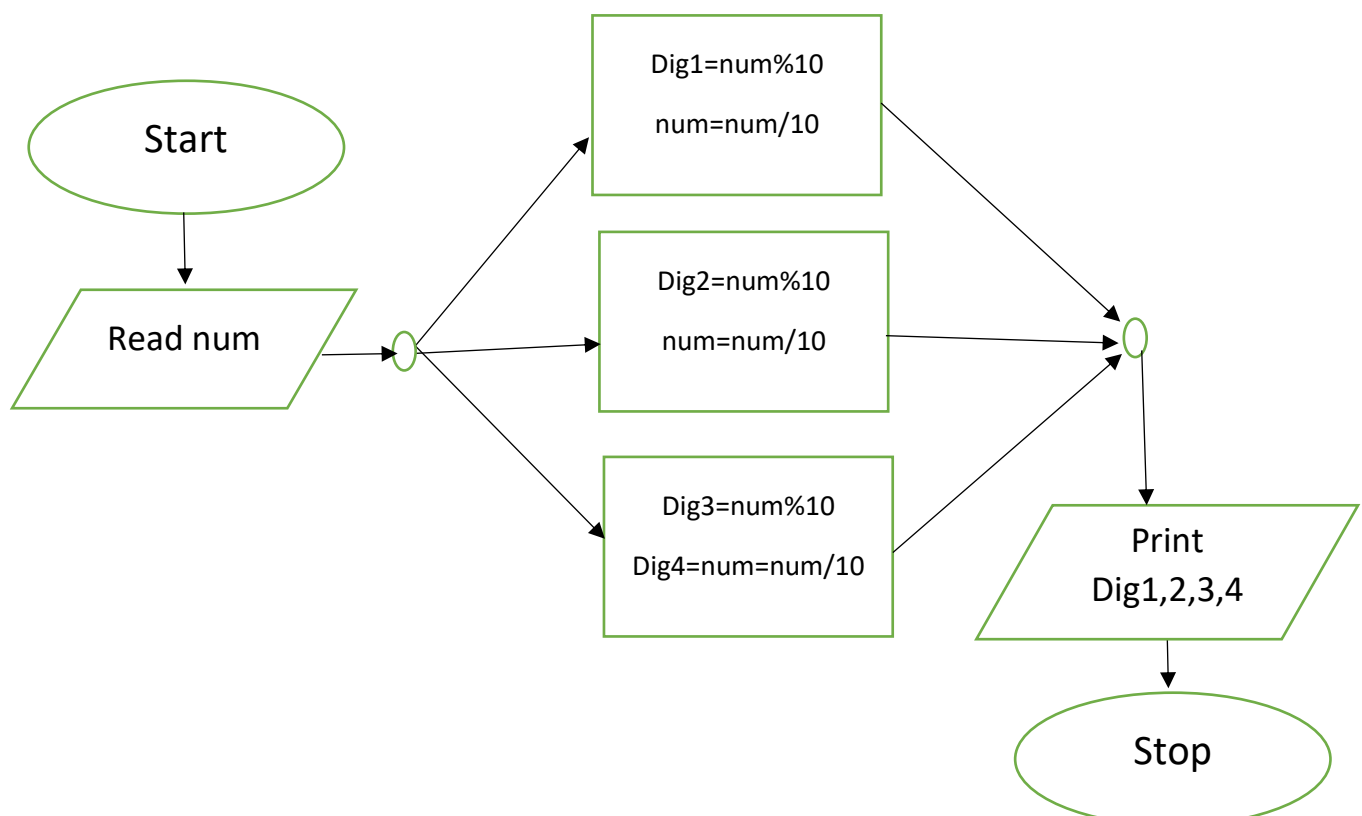
Q 09. Write a java program to print all the factors of the given number.

ALGORITHM:

Step 1: Print "Enter a Number "

Step 2: Read int n, int i;

Step 3: for(i=1;i>0;i++) Yes →check (n % i==0) →print i

No→continue to iterate for loop

Step 4: Stop.

FLOWCHART:

```
                              ( Start )
                                 |
                                 v
                          / Read n,i /
                                 |
                                 v  <--------------------( )
                                 |                        ^
                        < For(i=1;i>0;i++) >              |
                       /          \                       |
                      /            \                      |
            ( ) <----             F \---------------------|
             |                                            |
             v                                            |
         T  < n % i==0 >  F ---------------------------->( )
    ( )<---
     |
     v
  / Print i /
     |
     v
  ( Stop )
```
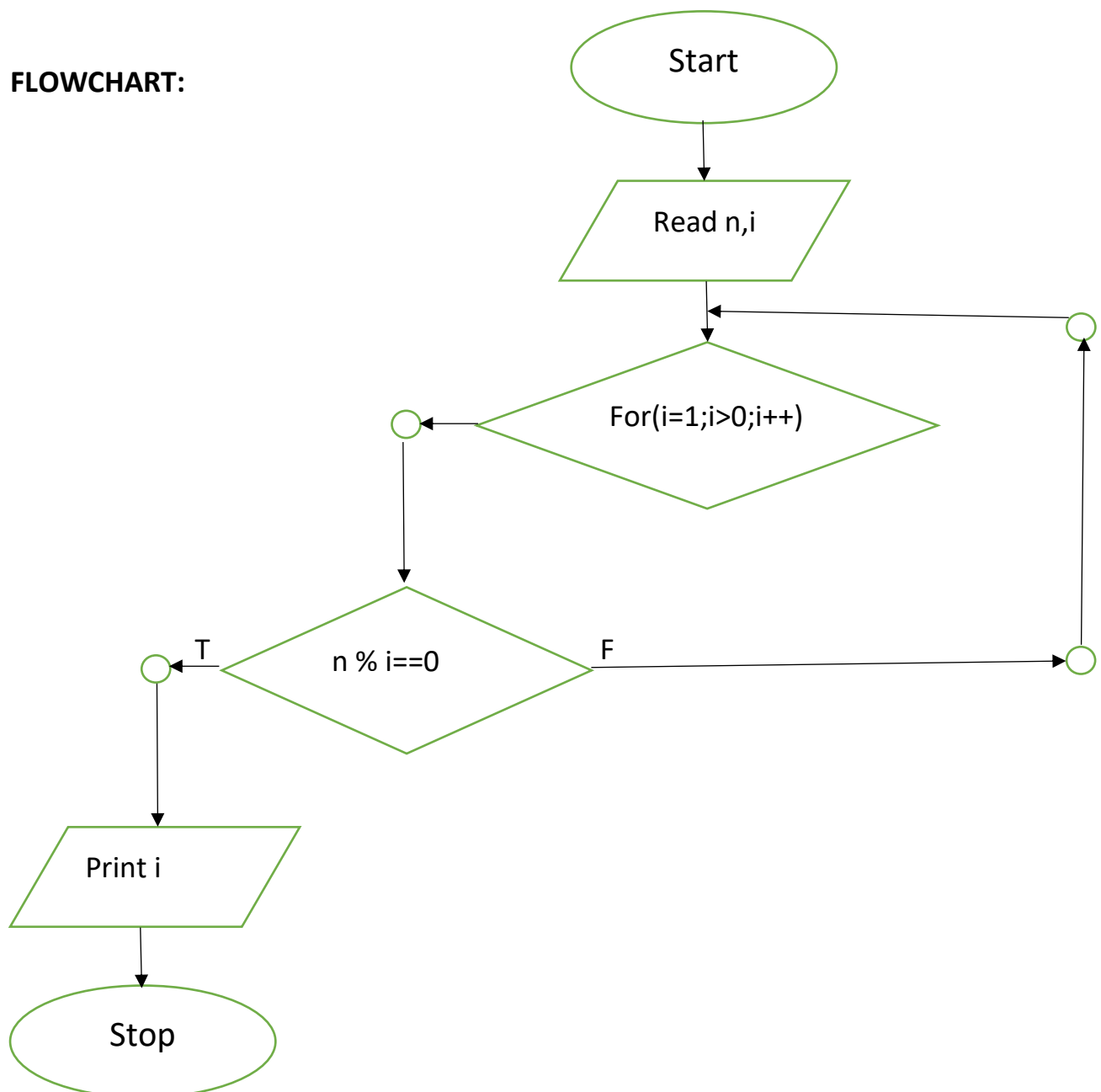
Q 19. Write a java program to print the EVEN number series 2,4,6,8,10,…..

ALGORITHM:

Step 1: Print "Enter a Number "

Step 2: Read int num, ;

Step 3: for(i=1;i<=num;i++) Yes →check (i%2==0) →print i

No→continue

Step 4: Stop.

```
                    Start

                   Read num

            i=1 ; i<= num ; i++

        T        i%2==0        F

             Print i

              Stop
```
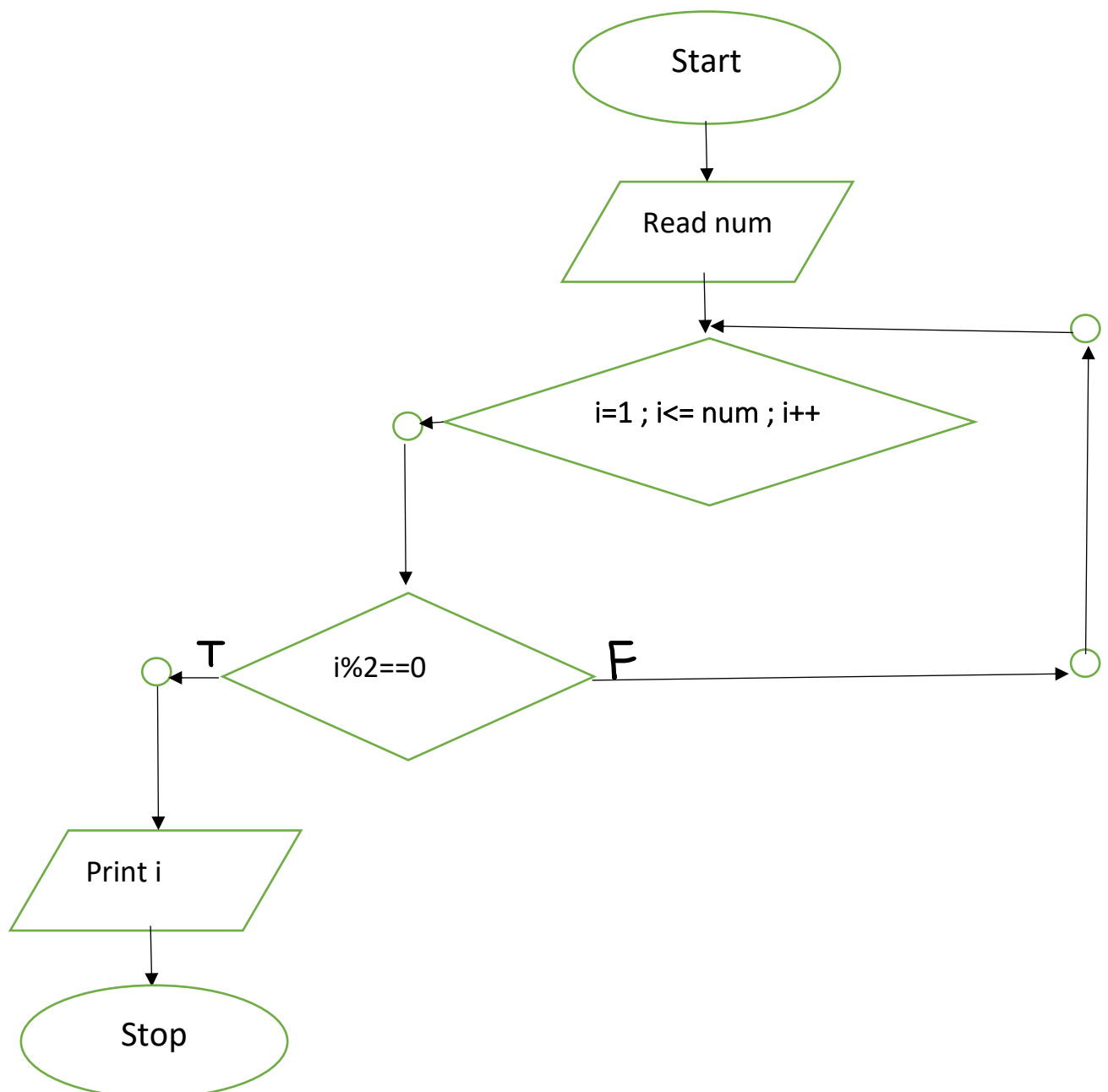
Q 20. Write a java program to print the ODD number series 1,3,5,7,9,11……

ALGORITHM:

Step 1: Print "Enter a Number "

Step 2: Read int num, ;

Step 3: for(i=1;i<=num;i++) Yes →check (i%2==0) →Continue

                                    No→Print i

Step 4: Stop.

```
                                    Start

                                    Read num

                        i=1 ; i<= num ; i++

            F
                        i%2==0                    T

            Print i

                        Stop
```
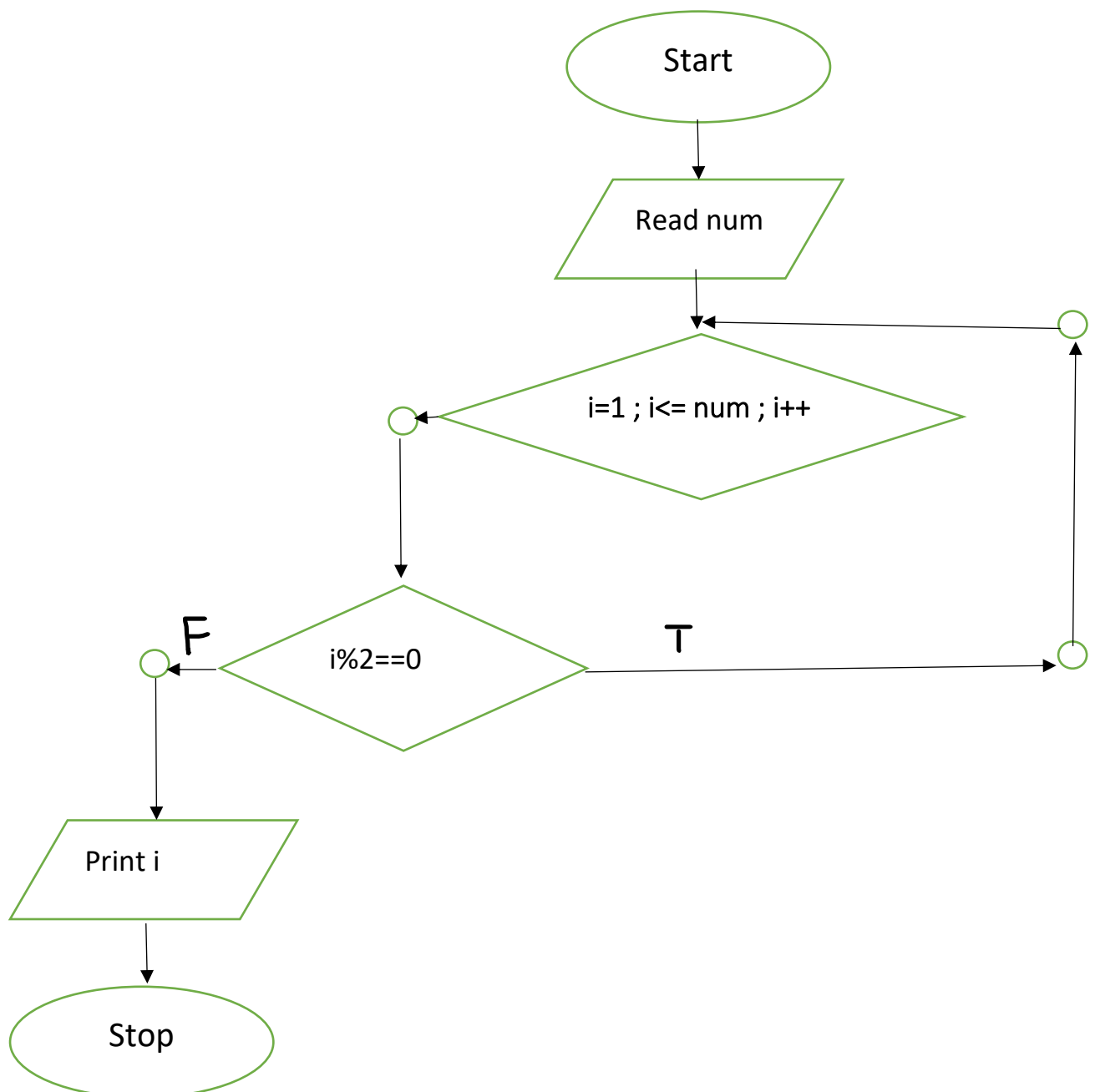
Q 17. Check whether given number is palindrome or not

ALGORITHM:

Step 1: Print "Enter a Number "

Step 2: Read int num, ;

Step 3: find the reverse of the number

Step 4: If reverse of number == number

      Yes➔ print Palindrome

       No➔ print Non Palindrome

Step 5: Stop

```
                    Start

                  Read num

          Original=n Remainder=r
                    Rev=0

                      n != 0       ──T──►

          r=num%10;  Rev=Rev*10+r
                    n/=10

              Original = Reverse    ──T──►   Palindrome

     Non
   Palindrome

                    Stop
```
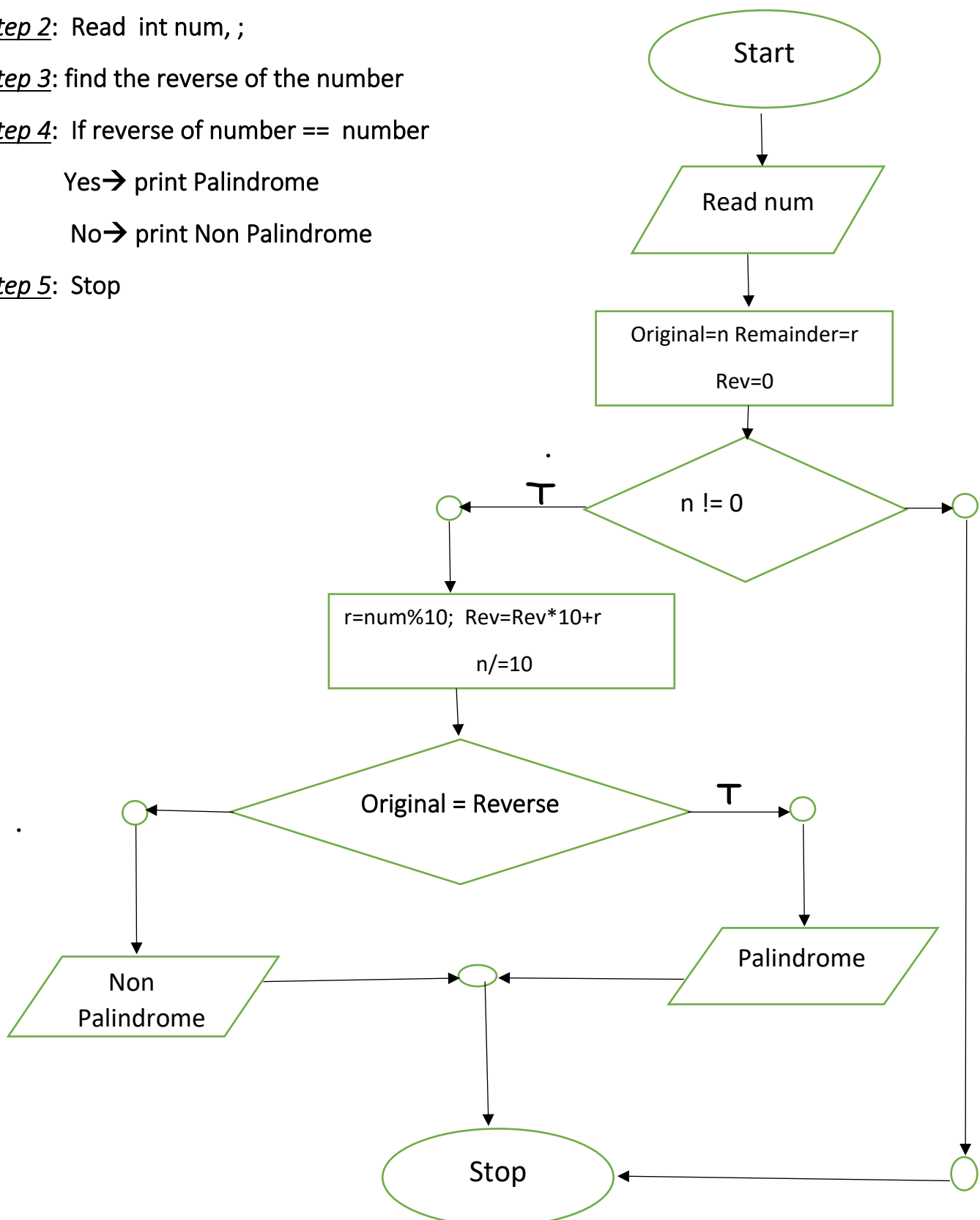
Q 15. Write a program to find LCM of given two numbers.

ALGORITHM:

Step 1: Enter two Numbers

Step 2: Store greater number in max

Step 3: Lcm of two numbers cannot be less than max

Step 4: In each iteration max is checked is it Perfectly divisible by

Input numbers.

Step 5: Stop
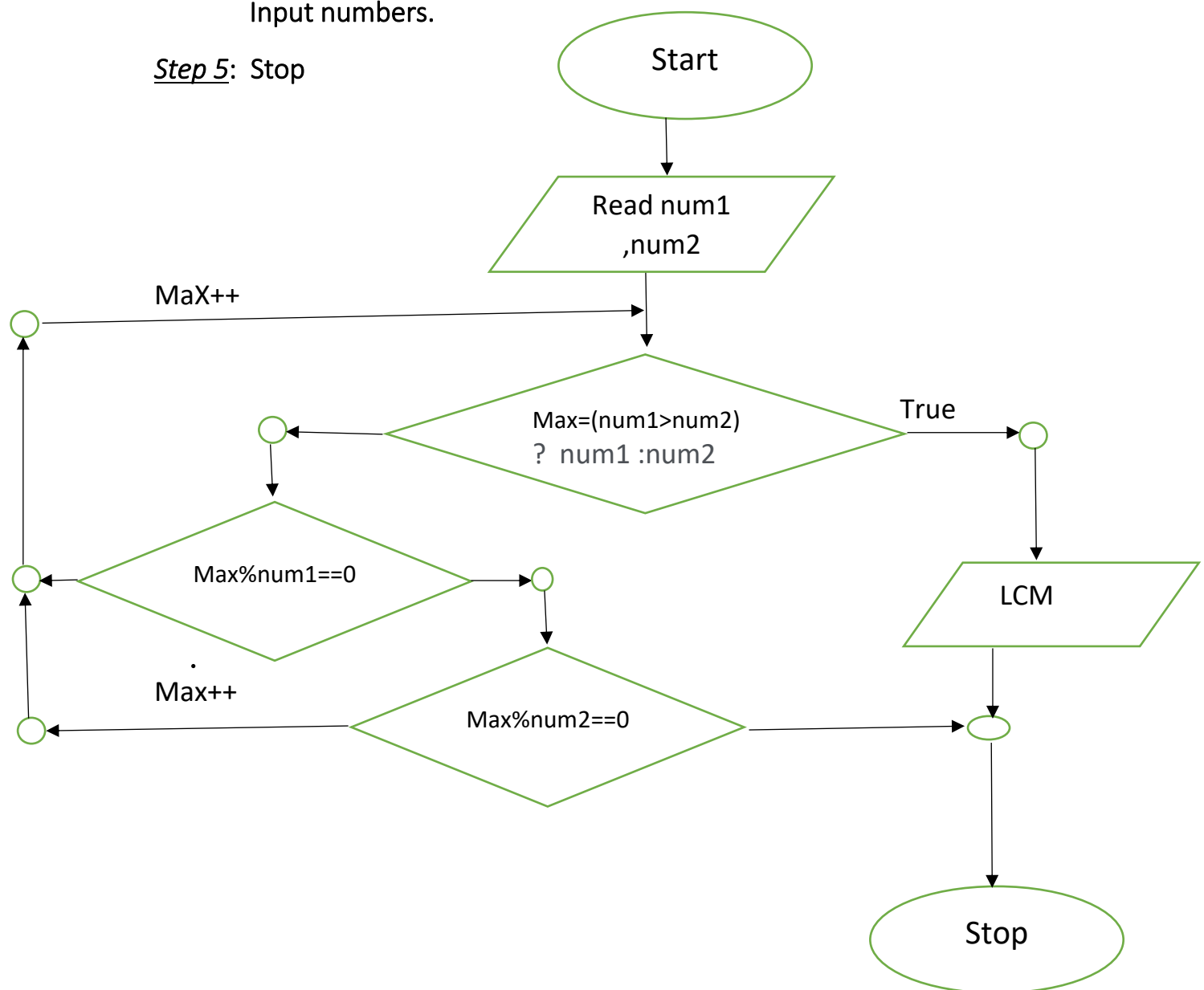
Q 13 Write a java program to reverse a number.

ALGORITHM:

Step 1: Print "Enter a Number "

Step 2: Read int num, ;

Step 3: set a loop until num becomes zero

        Get last digit from num

Step 4: Store the reverse no by

      no=no*10+digit

Step 5: Stop

Start

Read num

Rev=0; Digit r;

r=num%10; Rev=Rev*10+r

Num/=10

T   Num != 0   F

Print
Reversed

Stop
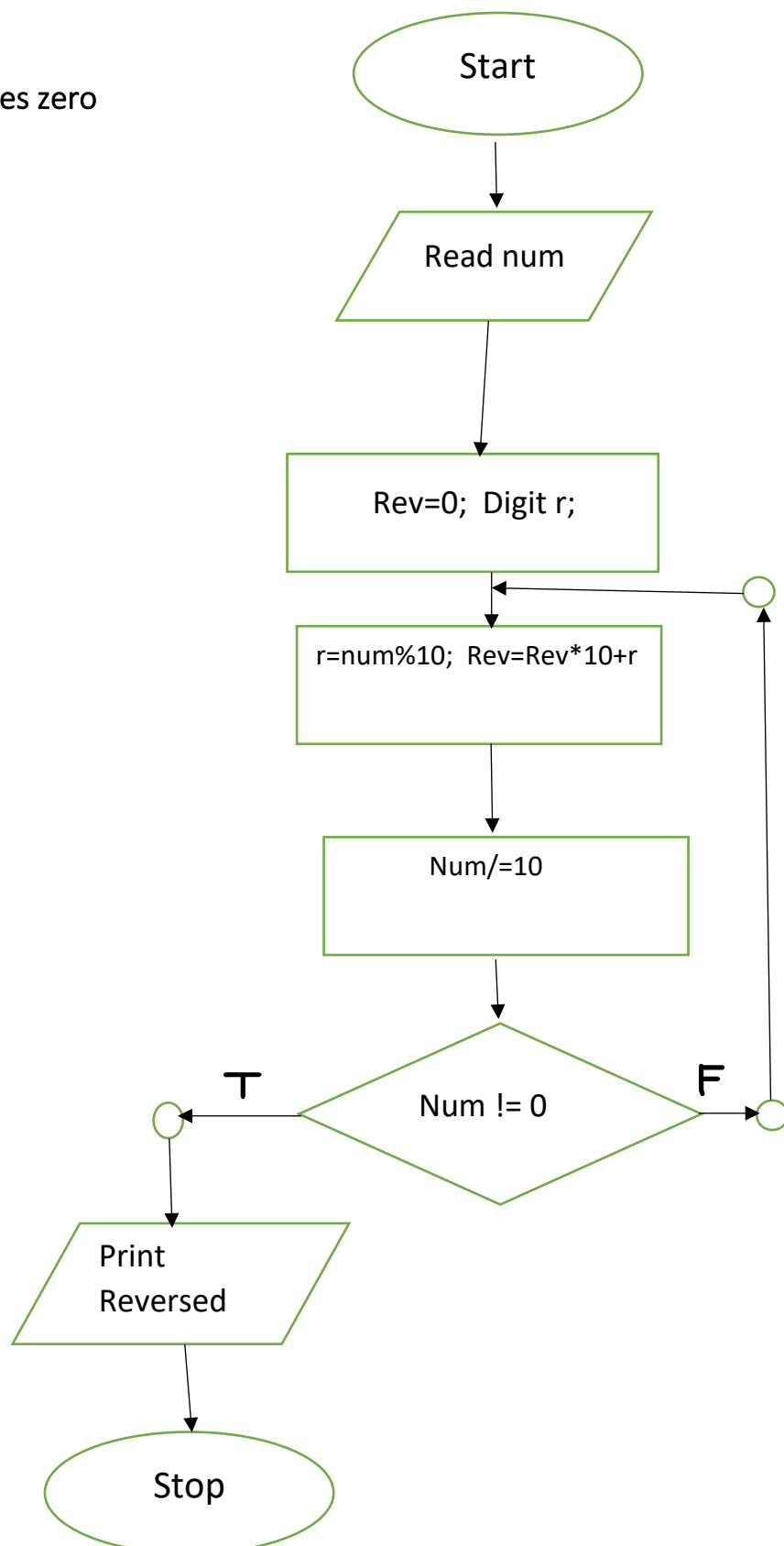
Q 12 How to add two numbers without using arithmetic operator in java.

ALGORITHM:

Step 1: input the two numbers

Step 2: calculate xor =k^j

                    Carry=k&j

Step 3: Carry<< = 1

            Xor=xor^Carry

Step 4: find carry till got bits zero

             Carry=xor&Carry

Step 5: Print xor

Start

Read k &j

Xor= k ^ j
System.out.println(1)

Carry << =1

Xor = xor ^ Carry

Carry = xor & Carry

Print Xor

Stop
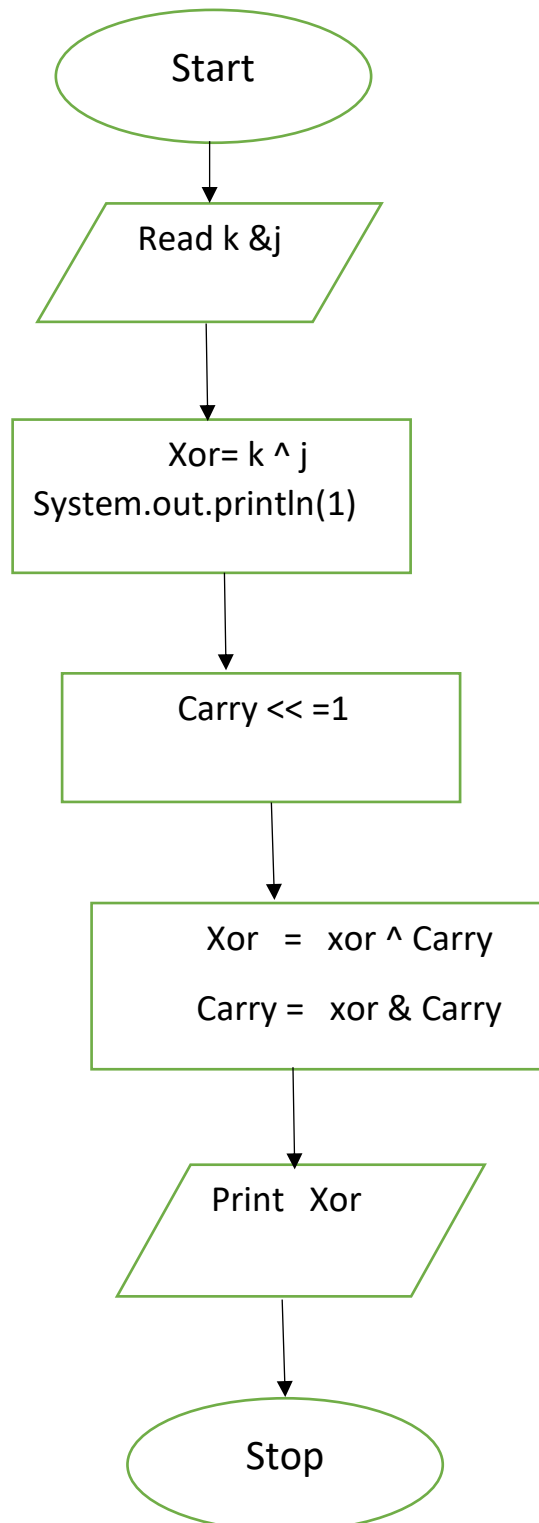
Q 14 Write a java program to find GCD of given two numbers.

ALGORITHM:

Step 1: Declare two variables I and j

Step 2: Run a loop for k &j   from 1 to max of k & j .

Step 3: Check that number devides both (k and j)

     completely or not.

     If divides completely store it in a variable.

Step 4: Devide the stored number.

Step 5: Stop

Start

Read k &j

Print Xor

i <= j

k% i ==0

j% i == 0

T

F

GCD=i

Stop
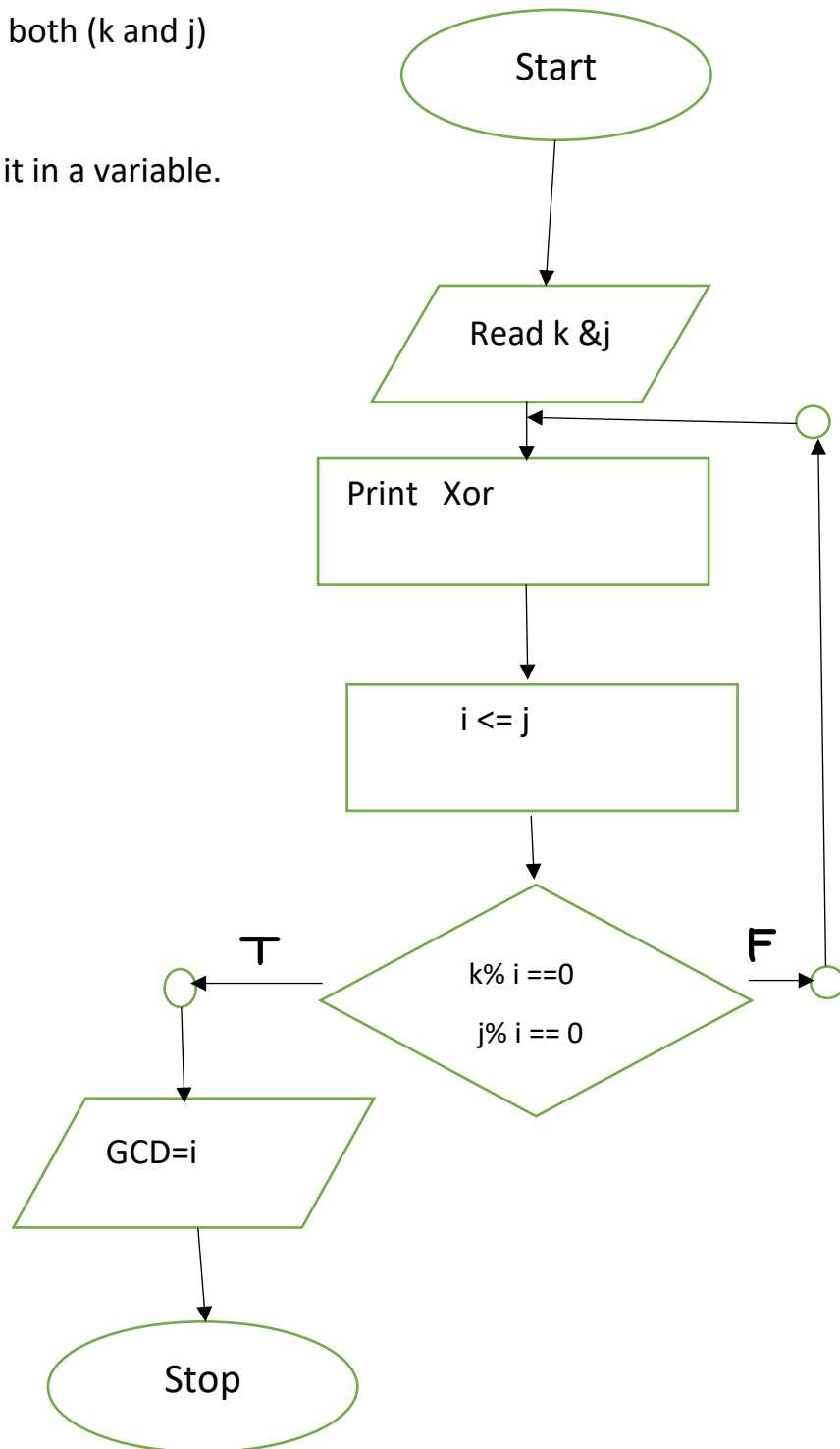
Q 7 Write a java program to print 1 to 10 without using loop.

ALGORITHM:

Step 1: write the statement with help of

System.out.println(1);

Step 2: keep changing values from 1 to 10 on every next line.

Start

System.out.println(4)

System.out.println(2)

System.out.println(3)

System.out.println(4)

System.out.println(5)

System.out.println(6)

System.out.println(7)

System.out.println(8)

System.out.println(9)

System.out.println(10)

Stop
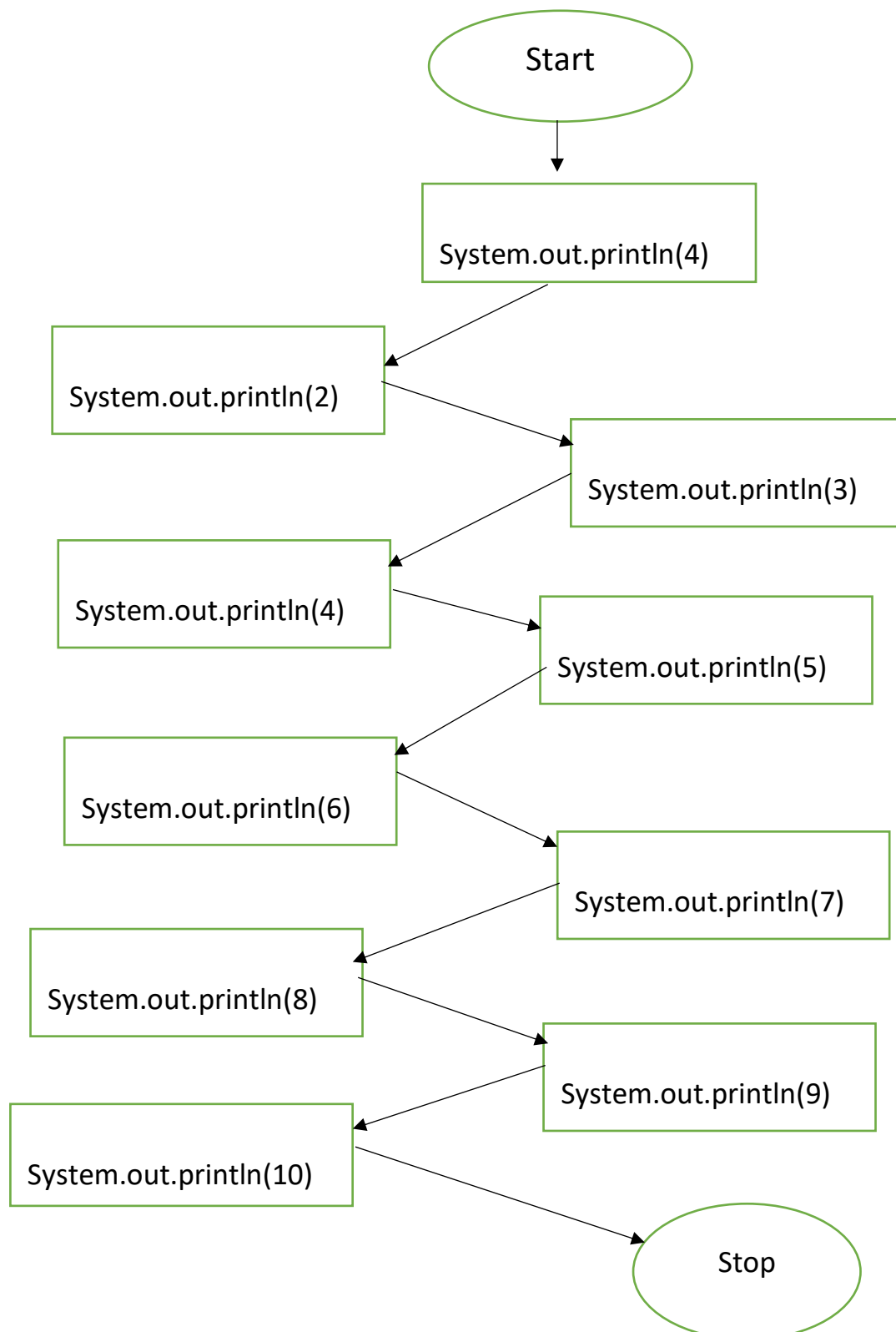
Q 02 Write a java program to find factorial of a given number.

ALGORITHM:

Step 1: Take number " X " from user as input

Step 2: initialize two variables I and fact =1

Step 3: set for loop for j

Store fact =fact *j for every j

Step 4: Print fact

```
                    Start

                  Read  int X

               Int j   , fact =1 ;

               j=1 ;j<=X;  j++

           j=1 ;j<=X;  j++
             fact=fact * j

                  Print fact                    Stop
```
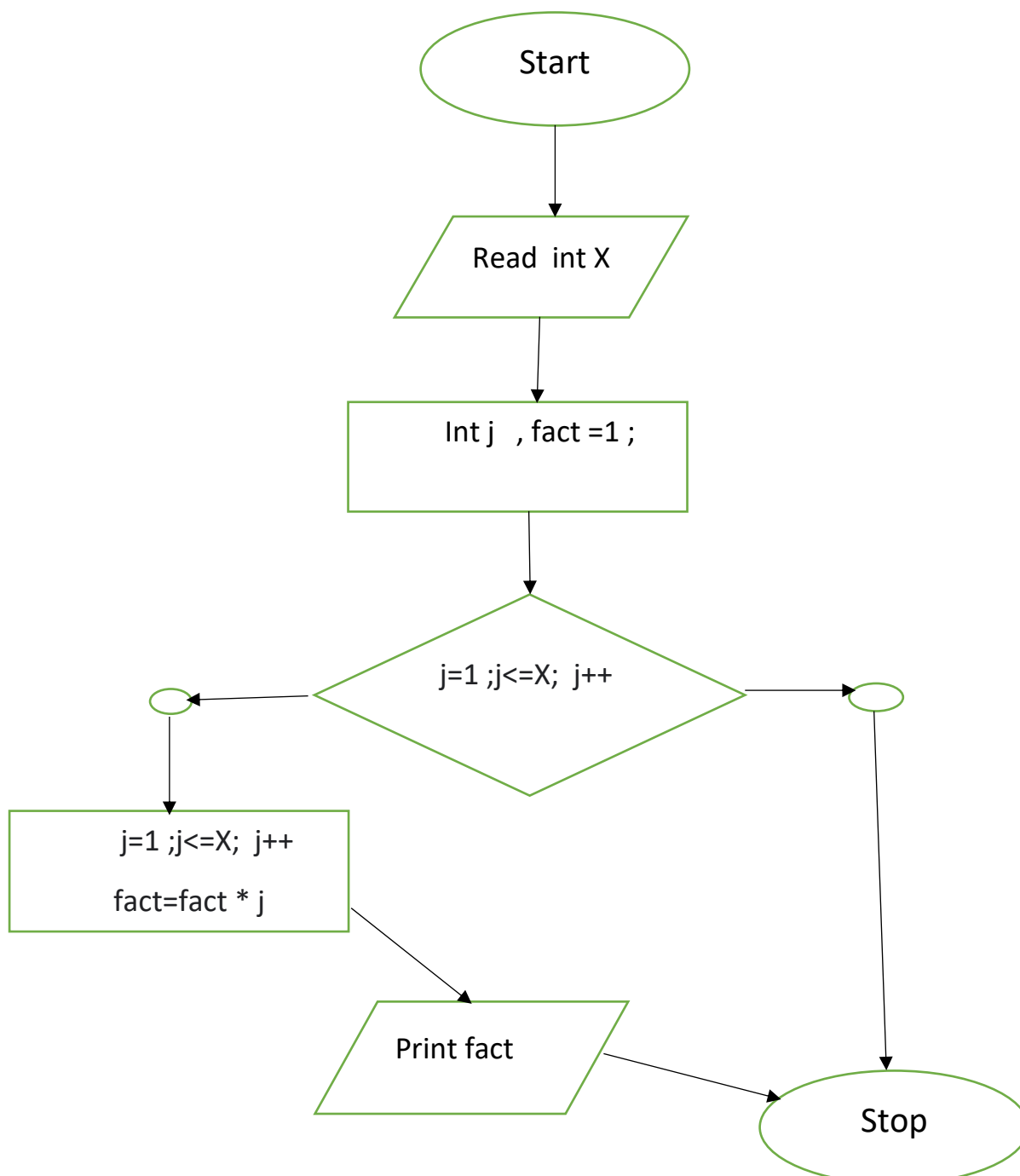
Q 04 Swap two numbers without using third variable approach

ALGORITHM:

Step 1: Read x & y

Step 2: print the values of x & y

Step 3: x=x+y

       Y=x-y

       X=x-y

Step 4: Print x y

Start

Read X Y

Read X Y

X= X+ Y

Y=X-Y

X=X-Y

Print   X Y

Stop
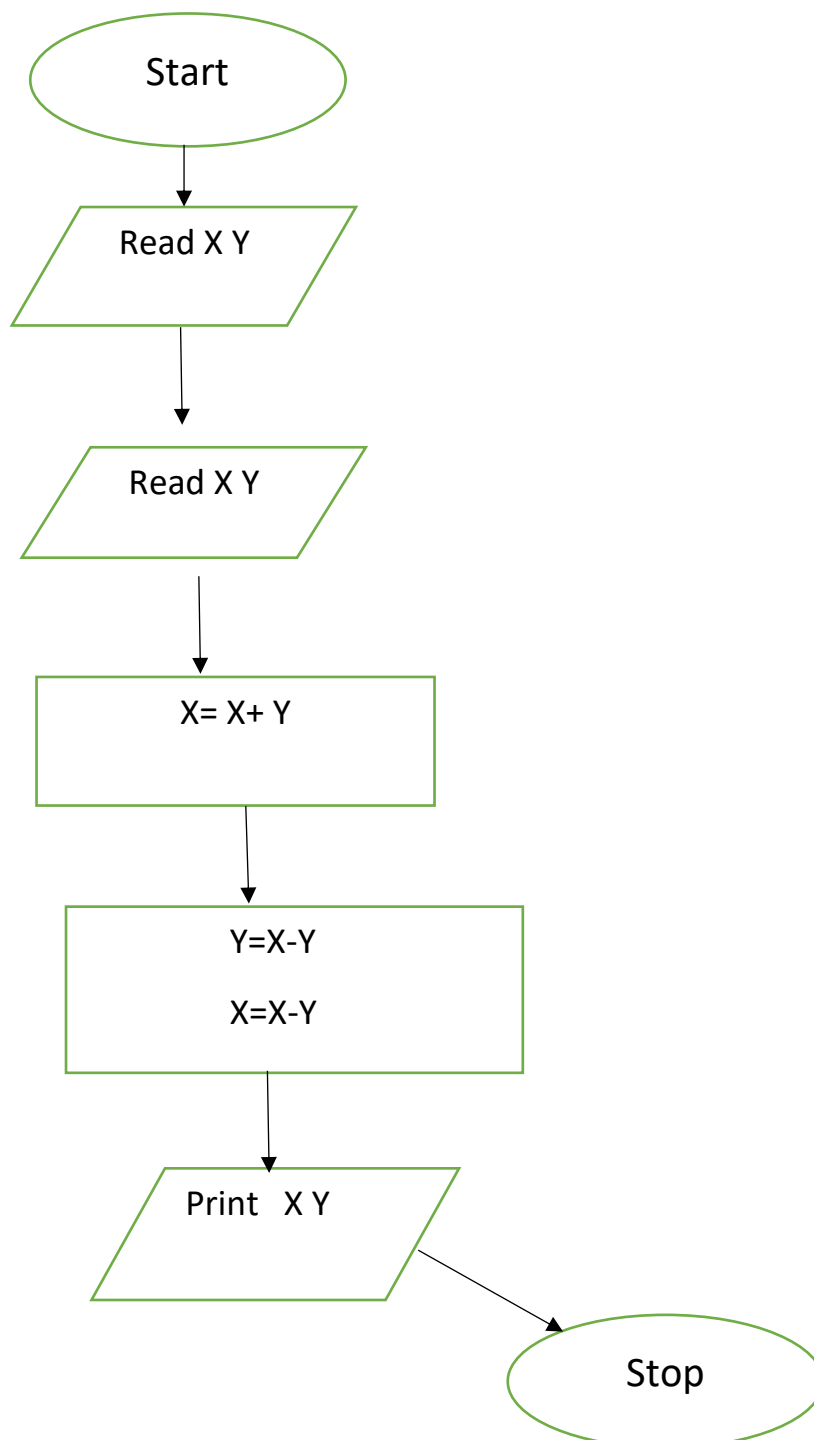
Q18   write a java program to print all the prime factors of given number

ALGORITHM:

Step 1: **check** n is divisible by 2→print 2

divide n by 2.

Step 2: n must be odd. Start loop from i = 3 to the square root of n. While i divides n, print i, and divide n by i. After i fails to divide n, increment i by 2 and continue.

Step 3:   If n is a prime number and is greater than 2, then n will not become 1 by the above two steps. So print n if it is greater than 2.

Step 4: Print
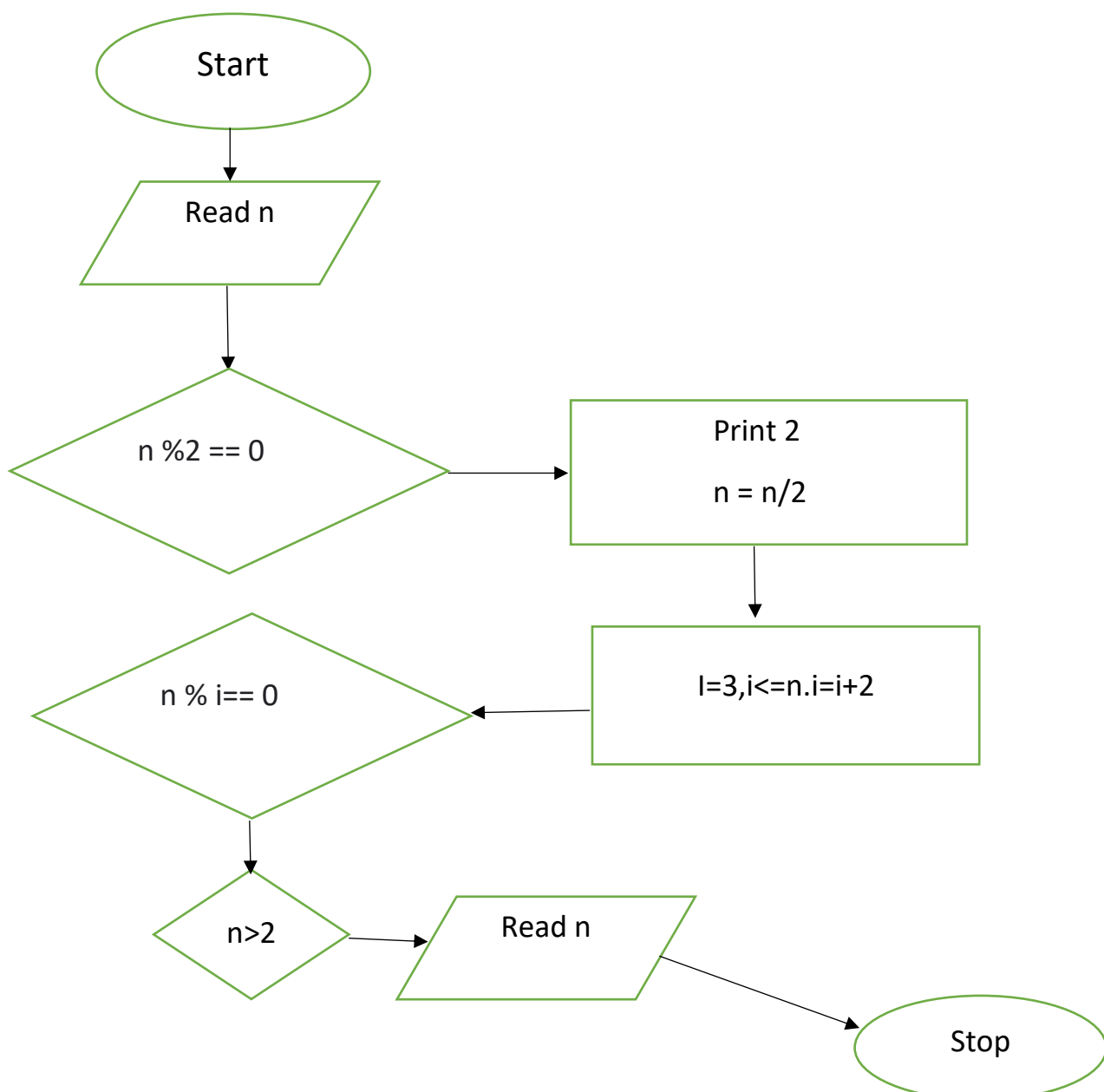
Q 03 Find the factorial of given number using recursion .
ALGORITHM:

Step 1: Accept the number

Step 2: write a function

Step 3: call the same function within function
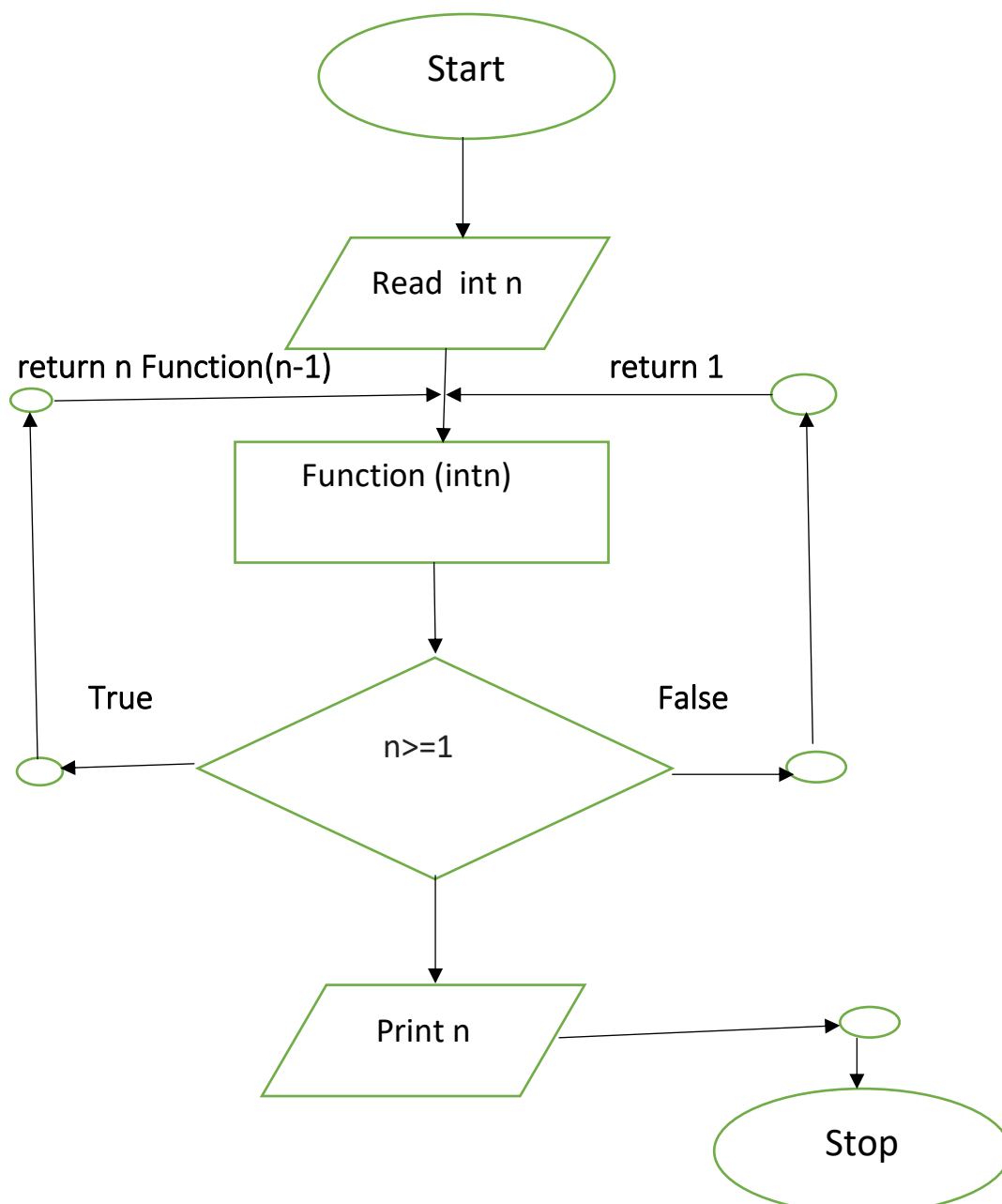
With decresing value of n

Check if

n>=1

return n*fn(n-1)

otherwise return 1

Step 4: Print n

```
                    Start

                 Read  int n

return n Function(n-1)          return 1

               Function (intn)

    True                      False

                  n>=1

            Print n

                            Stop
```

Q16 Write a java program to find LCM of given two numbers using prime factors method

ALGORITHM:

Step 1: Accept the two number

Step 2: Write two numbers as product of prime factors

Step 3: Multiply all the prime factors with highest degree

Step 4: Print LCM

Start

Read X Y

Find factors

X=prime factor of X*other Factors

Y=Prime factor of

Y* Other Factors

LCM=Multiply all prime Factors & factor with Highest Power

Start