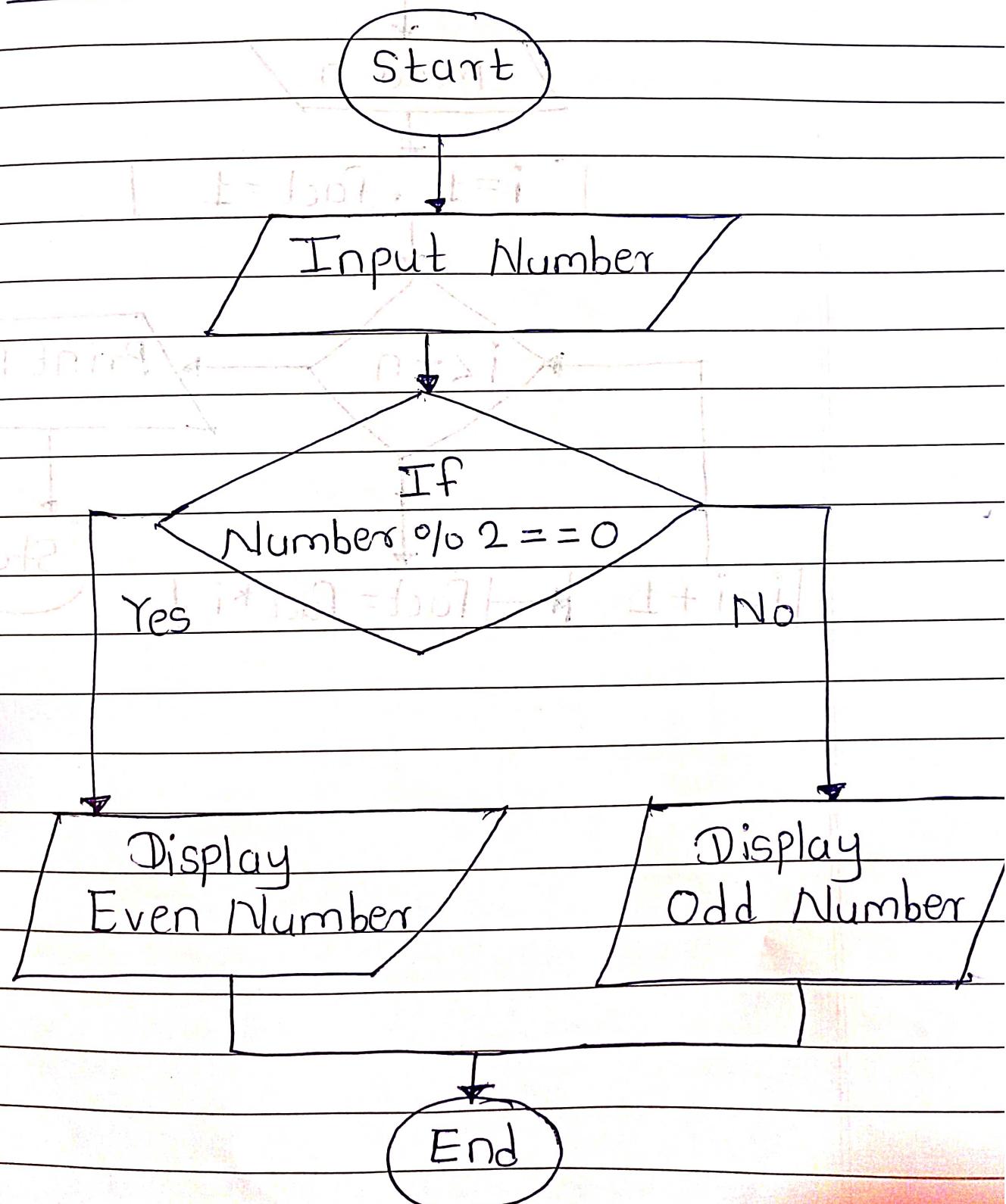


# Assignment 1

Write algorithm or Flowchart for the following programs

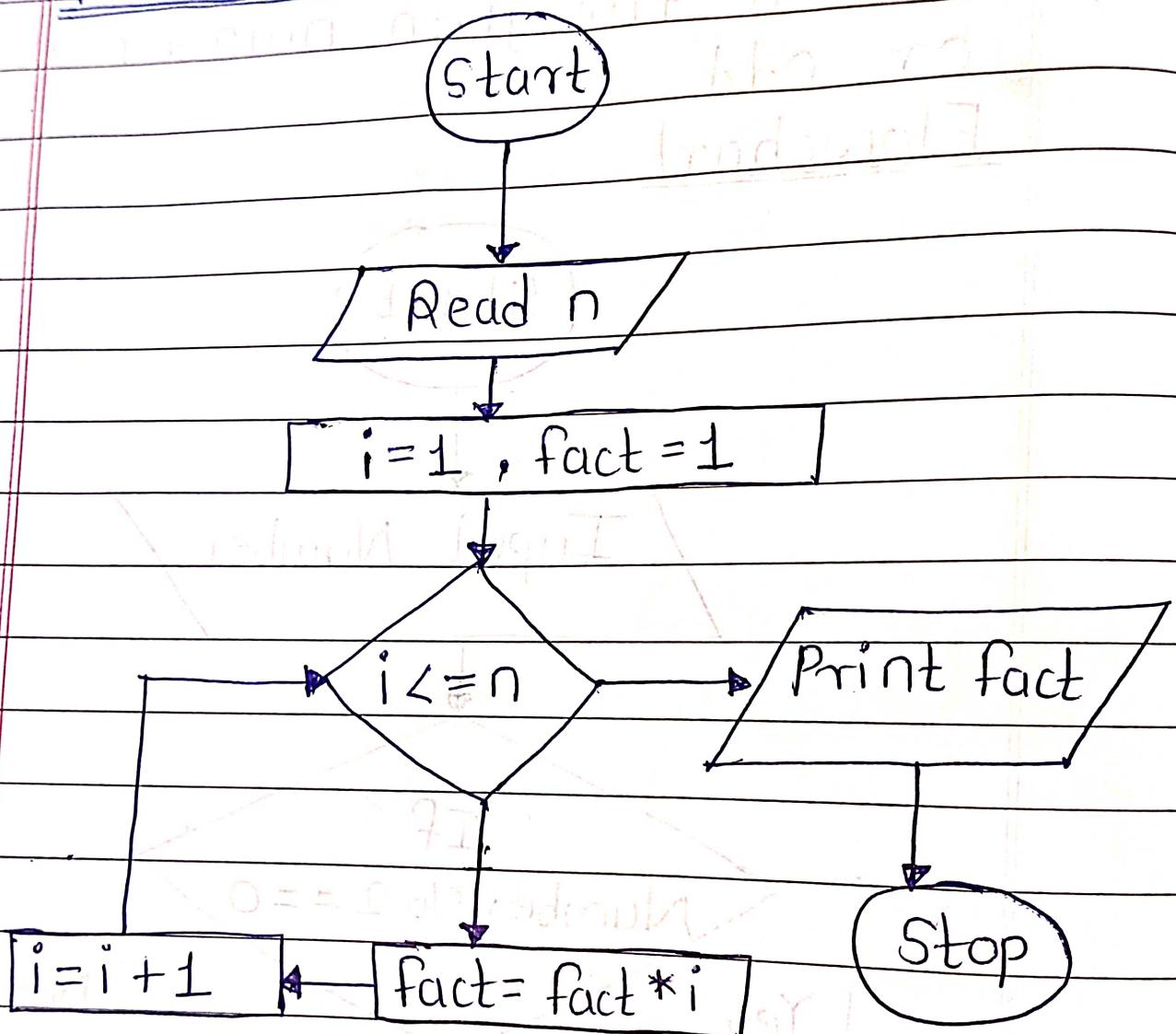
- 1) Check if the given number is even or odd

Flowchart



2) Write a Java Program to find the Factorial of a given number.

Flowchart



3) Find the Factorial of a number using Recursion  
Algorithm

Step 1 : Start

Step 2 : Read number n

Step 3 : Call factorial (n)

Step 4 : Print factorial f

Step 5 : Stop

factorial (n)

Step 1 : If  $n == 1$  then return 1

Step 2 : Else

$f = n * \text{factorial}(n-1)$

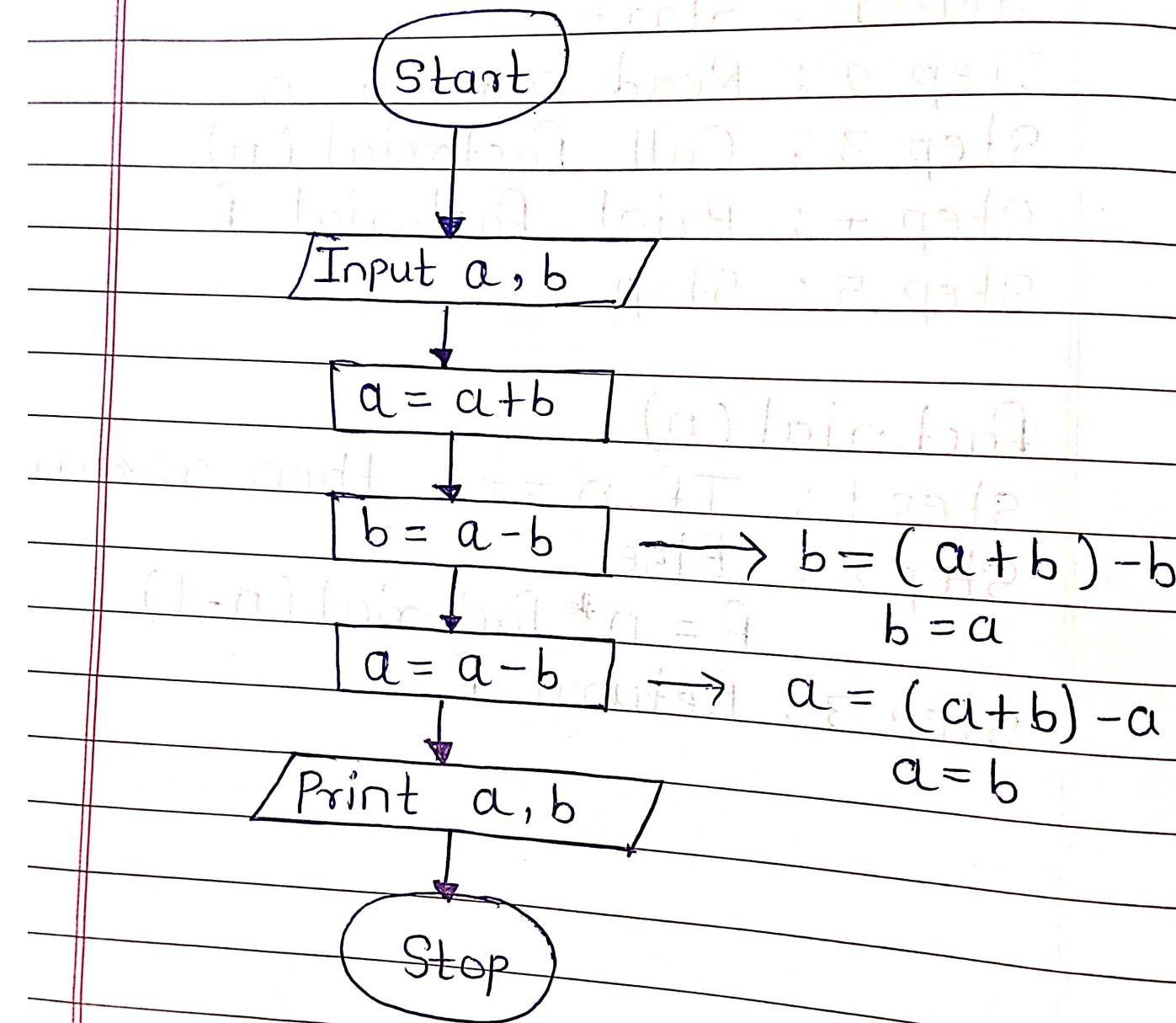
Step 3 : Return f

d = 5 (initial)

(p10)

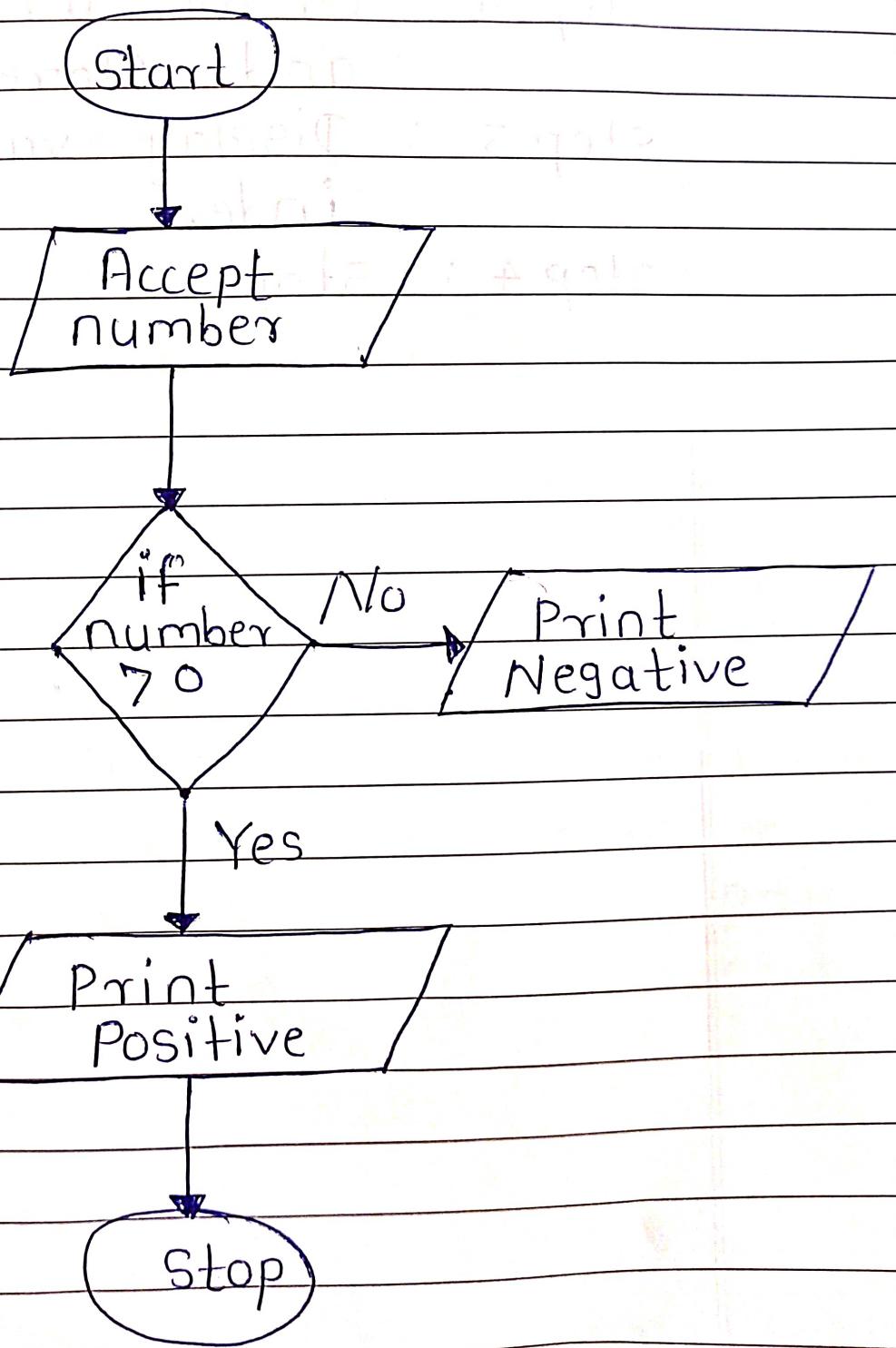
4) Swap two numbers without the third variable approach.

flowchart



5) How to check whether the given number is Positive or Negative in java?

### Flowchart



6) Write a Java Program to Print 1 To 10 without using loop.

Algorithm

Step 1: Start

Step 2: Create array of size 10 and store value 1 - 10

Step 3 : Display value of each index

Step 4 : Stop



7) Write a Java Program to find whether a given number is leap year or NOT.

Algorithm

Step 1 : Start

Step 2 : Take a year y as input.

Step 3 : Check if y is divisible by 400

Step 4 : If step 3 is true, print y as a leap year

Step 5 : If step 3 is false, check if y is divisible by 100

Step 6 : If step 5 is true, print y is not a leap year

Step 7 : If step 5 is false, Check if y is divisible by 4

Step 8 : If step 7 is true, print y is a leap year else print y is not a leap year

Step 9 : Stop

8) Write a Java Program to print the digits of a Given number

Algorithm

Step 1: Start

Step 2: Read number

Step 3: If number not equal to 0 Go to the step 4, else Go to step 8

Step 4: digit = number % 10

Step 5: number = number / 10

Step 6: print digit

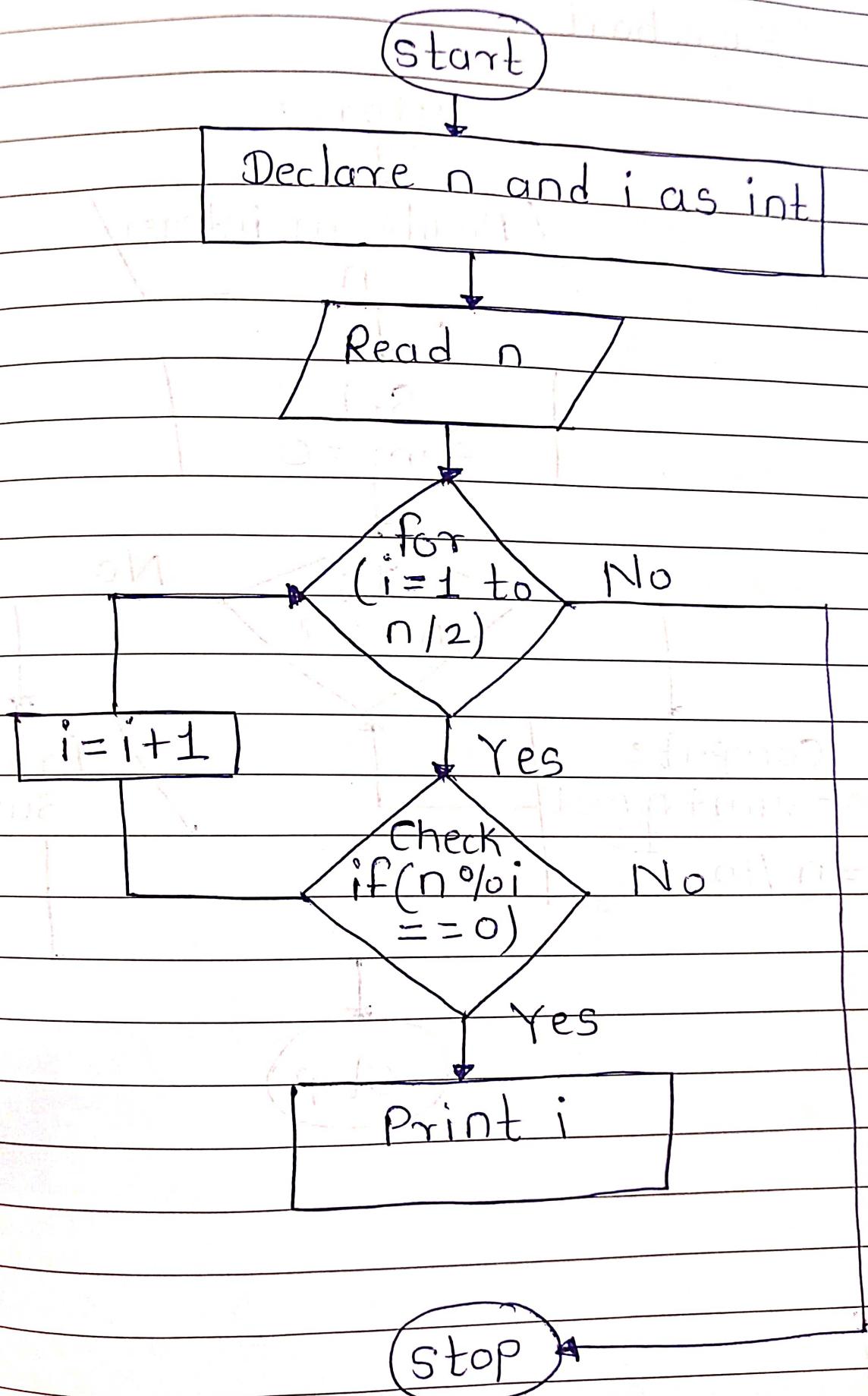
Step 7: Repeat Step 3

Step 8: Stop

g)

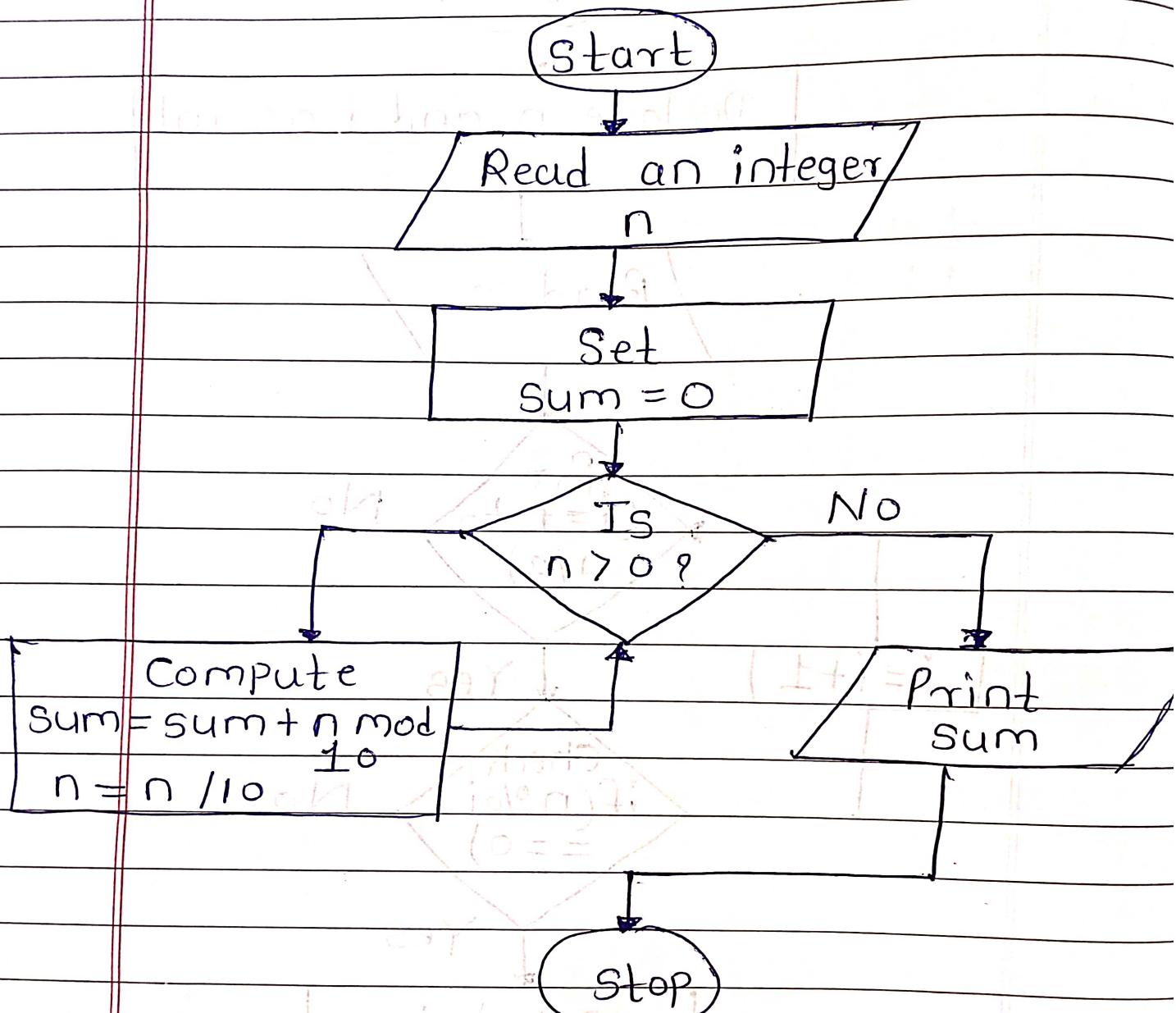
Write a program to print all the Factors of the Given number.

Flowchart



10) Write a Java program to find the sum of the digits of a given number.

Flowchart



11) Write a Java Program to find the smallest of 3 numbers (a,b,c)

Algorithm

Step 1 : Start

Step 2 : Take three numbers in a, b, c

Step 3 : Check if a is less than b

Step 4 : If above condition is true, go to step 5, else go to step 7

Step 5 : Check if c is less than a

Step 6 : If above condition is true, c is the smallest, else a is the smallest.

Go to step 9.

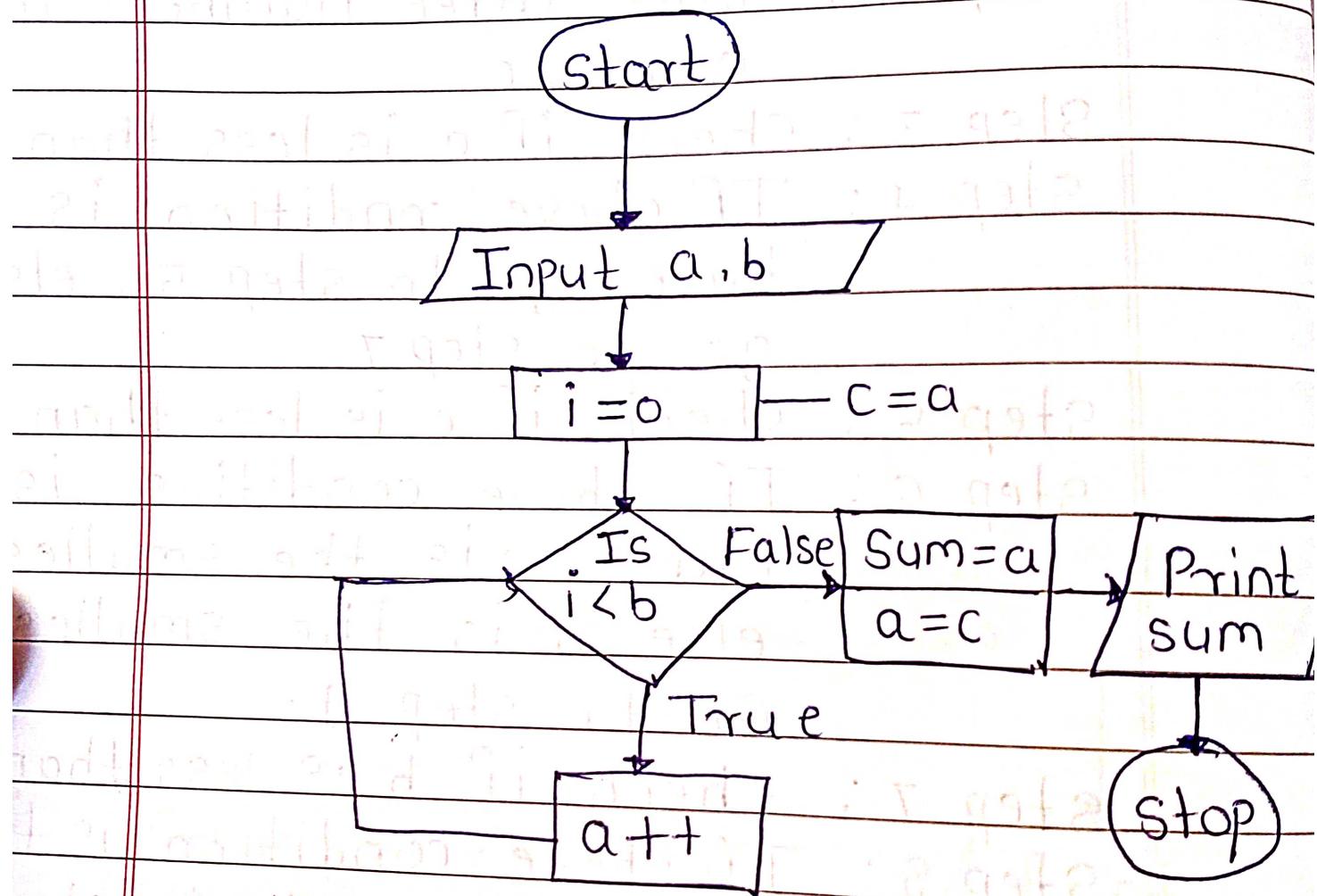
Step 7 : Check if b is less than c

Step 8 : If above condition is true b is the smallest, else c is the smallest

Step 9 : Stop

Q12) How to add two numbers without using the arithmetic operators in Java?

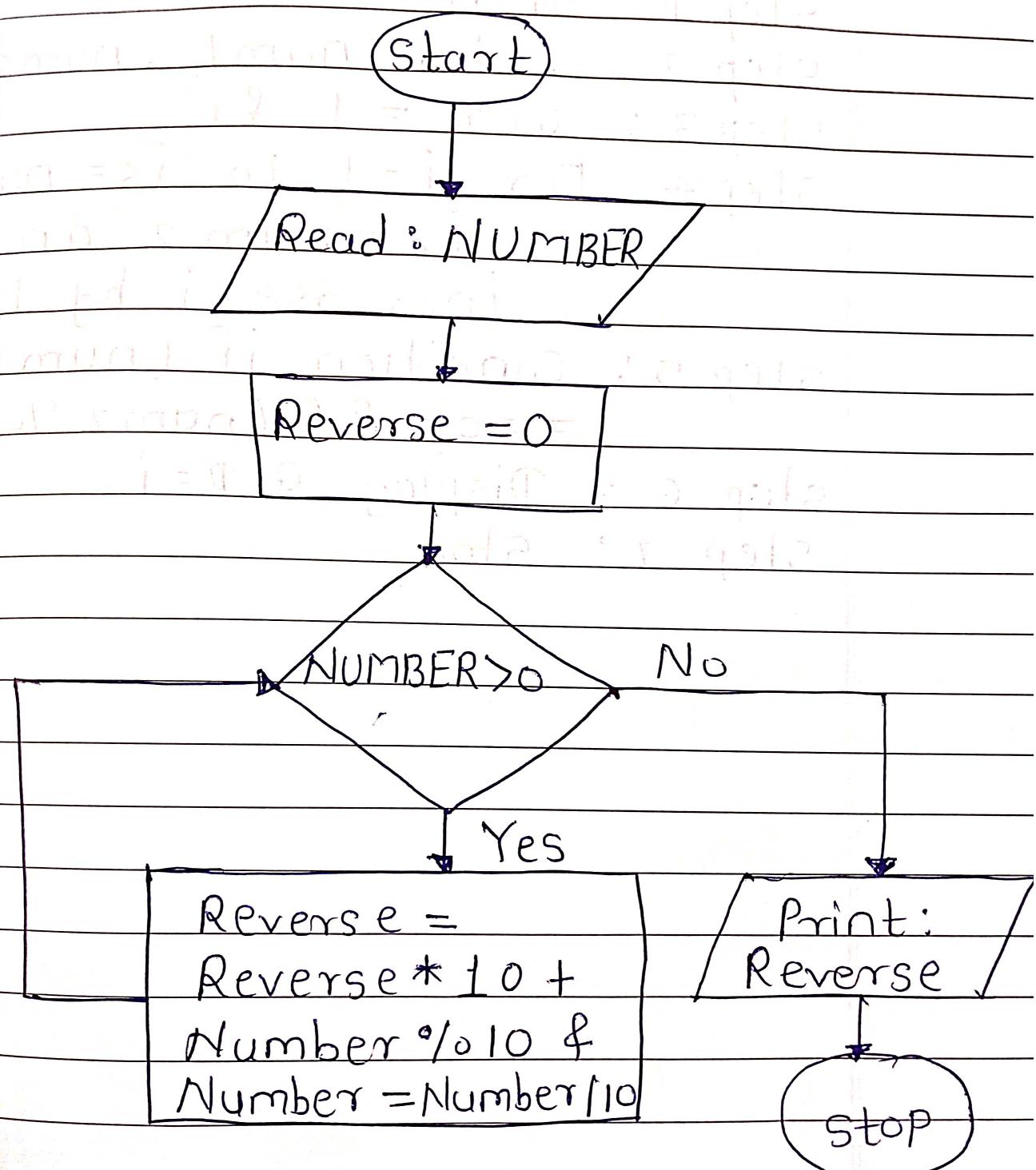
### Flowchart



Q.13)

Write a java program to Reverse a given number

Flowchart



14) Write a Java program to find the GCD of two given numbers

Algorithm

Step 1 : Start

Step 2 : Enter num<sub>1</sub>, num<sub>2</sub>

Step 3 : GCD = 1 & i

Step 4 : For i=1 to i<=num<sub>1</sub> &&

i<=num<sub>2</sub> and

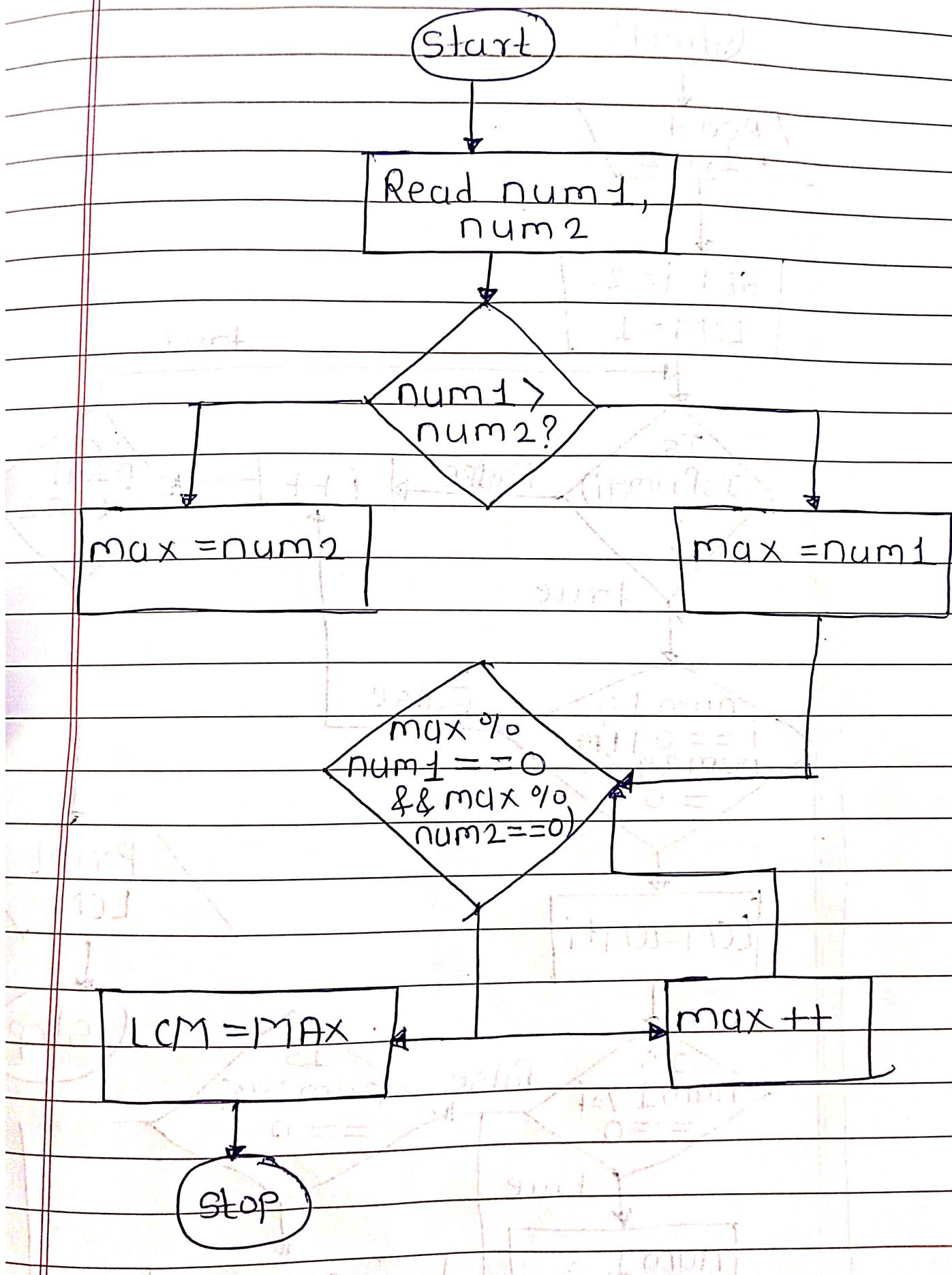
increase i by 1

Step 5 : Condition if (num<sub>1</sub> % i == 0) && (num<sub>2</sub> % i == 0)

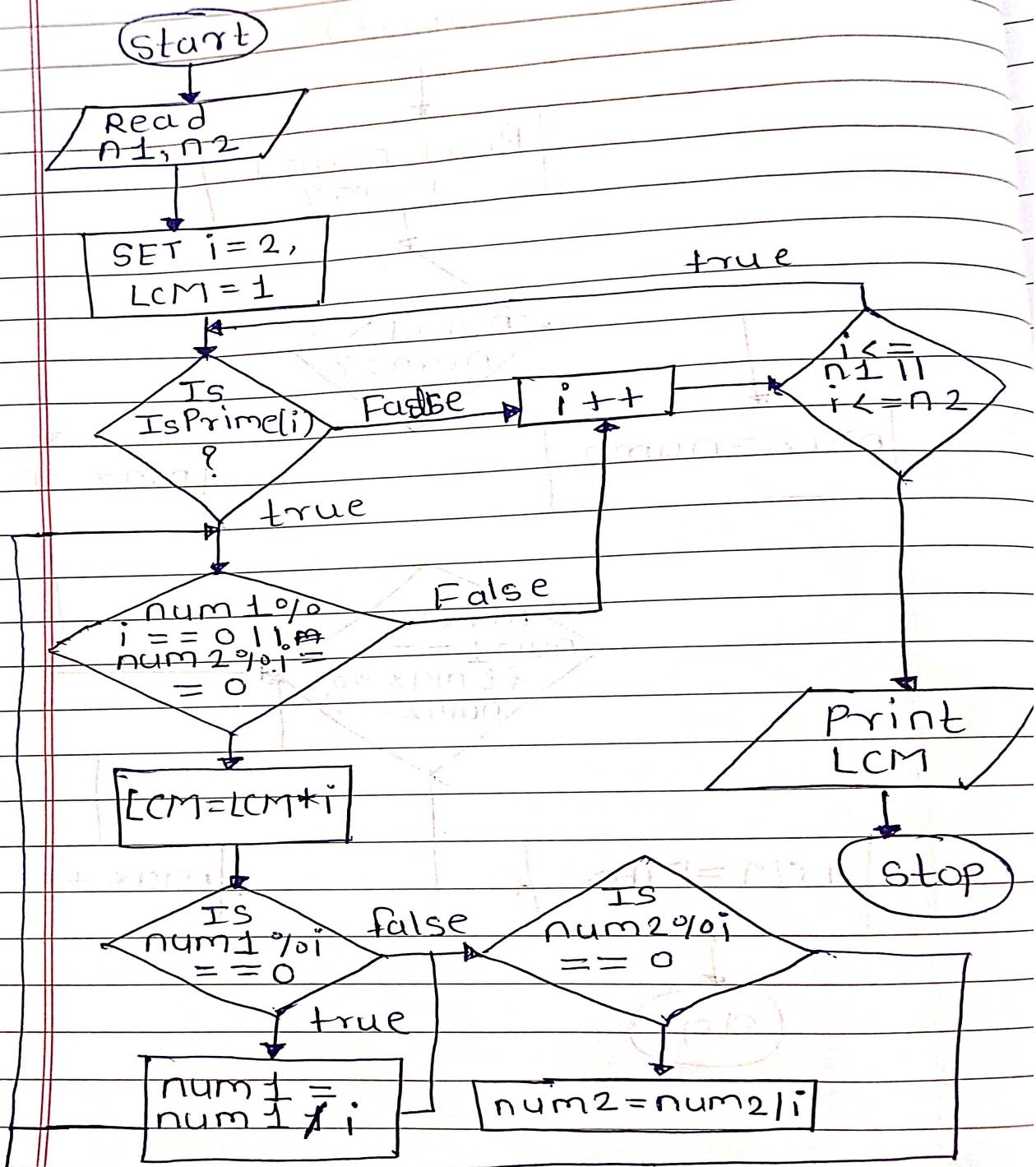
Step 6 : Display GCD=i

Step 7 : Stop

15) write a program to LCM of  
Two given numbers.  
Flowchart



16) write a program to LCM of two given numbers using the prime factors method



17) Check whether the Given number is a Palindrome or NOT.

Algorithm

Step 1: Start

Step 2: Read the input number from the user

Step 3: Declare and initialize the variable reverse and assign input to a temp variable  
 $\text{tempNum} = \text{num}$

Step 4: Start the while loop until  $|\text{num}| = 0$  becomes false

$$\text{rem} = \text{num} \% 10$$

$$\text{reverse}^* = 10 + \text{rem}$$

$$\text{num} = \text{num} / 10$$

Step 5: Check if  $\text{reverse}^* == \text{tempNum}$

Step 6: If it's true then the number is a palindrome

Step 7: If not, the number is NOT a palindrome

Step 8: Stop

18) write a Java program to print all the prime factors of the Given number.

Algorithm

Step 1 : Start

Step 2 : Enter the number

Step 3 : for  $i=2$  to  $i \leq \text{number}/2$  and  $i$  increase by 1

Step 4 : if ( $\text{num} \% i == 0$ )  
        then  $\text{isPrime} = 1$ ;

Step 5 : for  $j=2$  to  $j \leq i/2$  and  
         $j$  increase by 1

Step 6 : if ( $i \% j == 0$ ) set  $\text{isPrime} = 0$   
        and break

Step 7 : if ( $\text{isPrime} == 1$ ) then  
        display  $i$

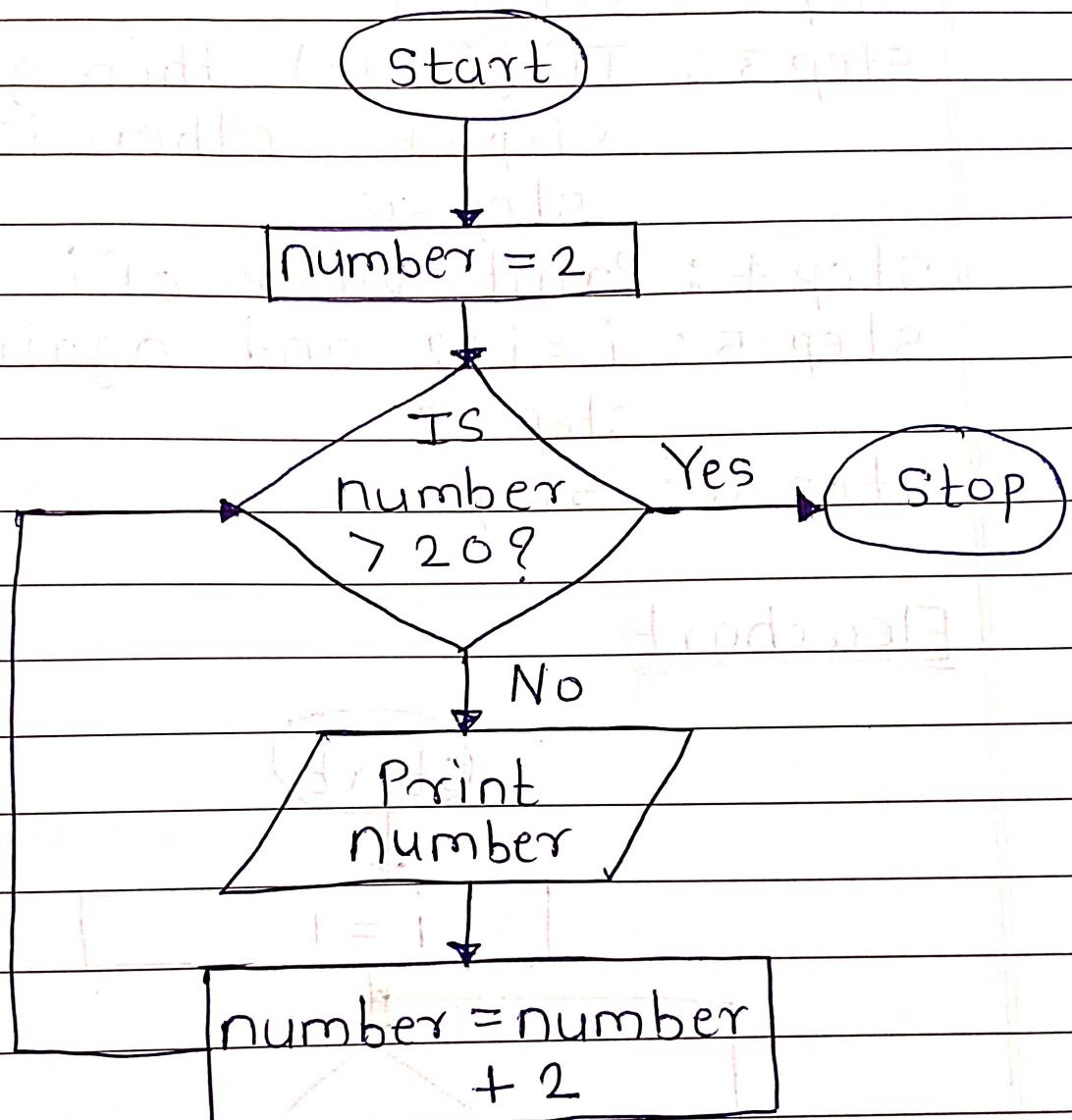
Step 8 : end if

19)

To print the following series  
EVEN number series 2, 4 6 8 10

12 14 16 -----

Flowchart



20) To print the following series 000  
number series 1 3 5 7 9 11 13...

Algorithm

Step 1 : Start

Step 2 : Let  $i = 1$

Step 3 : IF ( $i \leq 20$ ), then go to  
step - 4 , otherwise go to  
step - 6

Step 4 : Print value of  $i$

Step 5 :  $i = i + 2$  and again go to  
Step - 3

Step 6 : Stop

Flowchart

