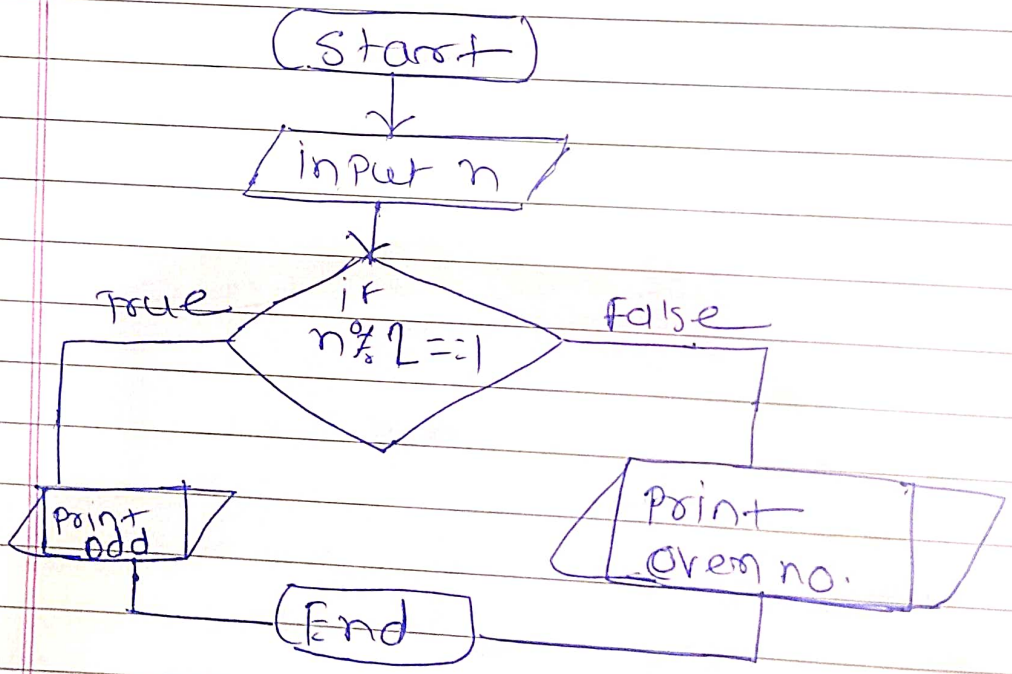
Assignment 1

1. Write Algorithm & flowchart for following programs.

1) Start
2) take input of number
3) if number ~~is~~ % 2 == 1 then odd otherwise even
4) End

flowchart



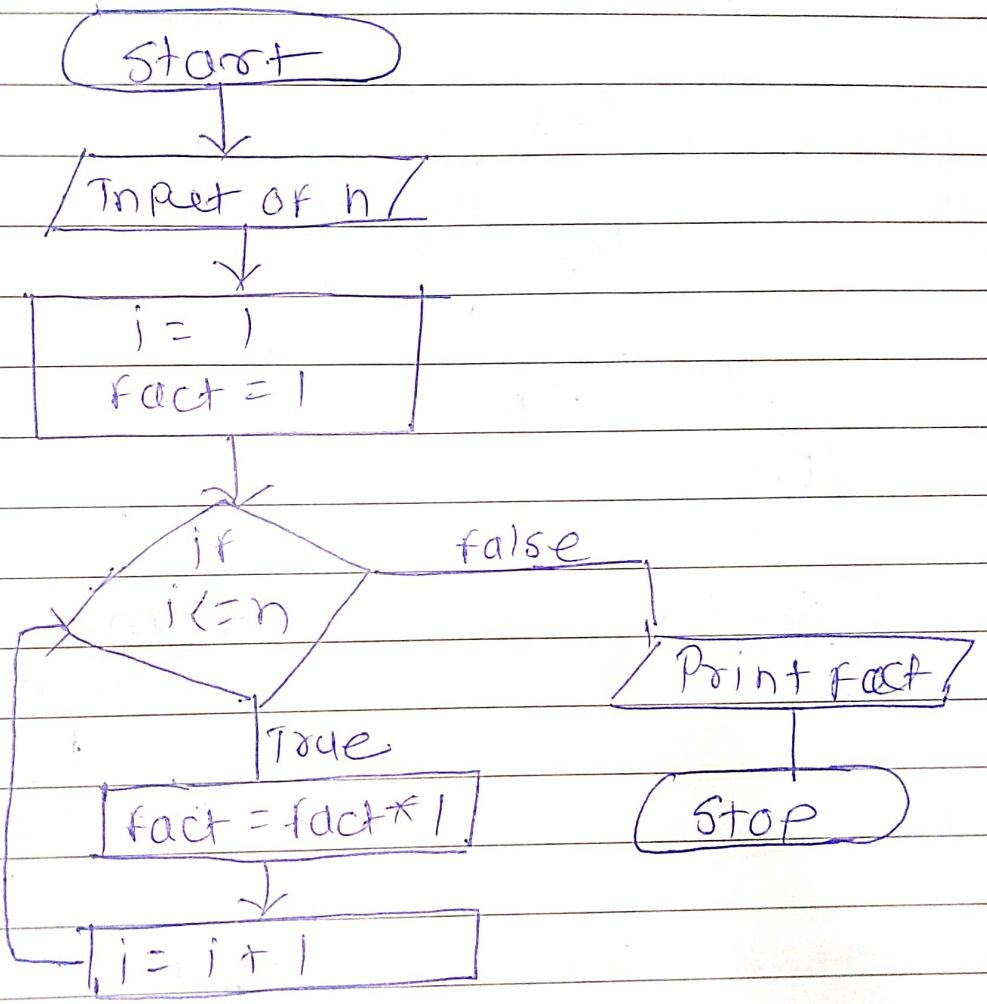
2. write a java program to find the factorial of given ~~program~~ number

algorithm

1 Start
2 Declare variable n, fact, i
3 Read number from user
4 Initialize variable fact = 1 and i=1

3 Repeat until i <= number
fact = fact * i
i = i + 1
step 6 = print fact
step 7 = stop

flowchart



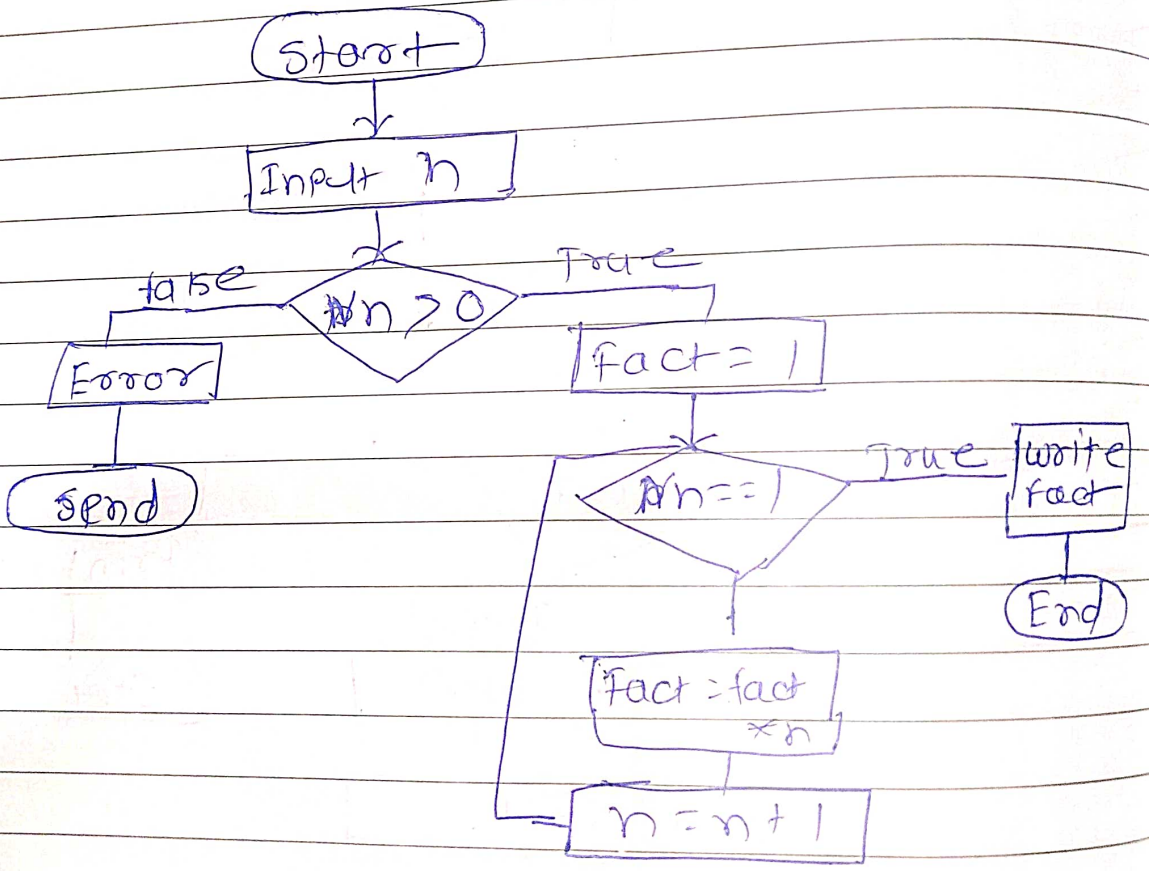
3 find the factorial of ~~program~~ number using recursion.

1) Start
2) take input of number n
3) call factorial (n)
4) Print factorial f
5) Stop

factorial(n)

1) If n==1 then return n
2) Else
   f = n * factorial(n-1)
3) Return f

flow chart



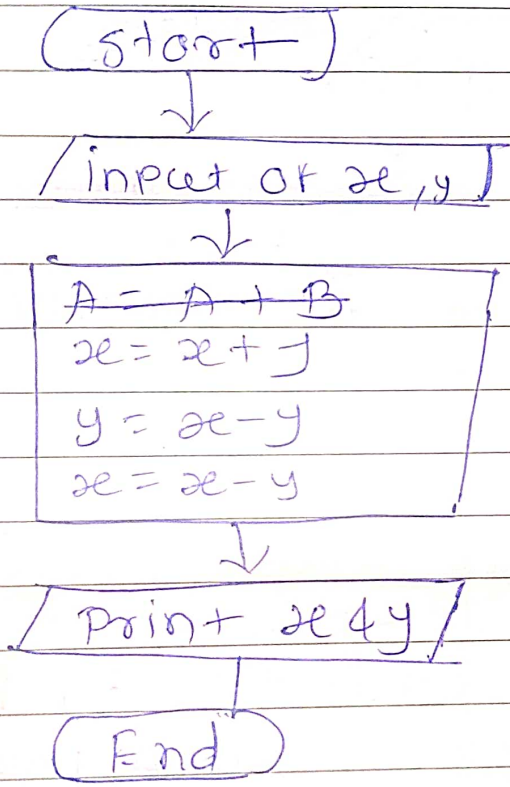
4 Swap two numbers without using third variable approach.

algorithm

1) start
2) enter x, y
3) print x, y

4) $x = x + y$
5) $y = x - y$
6) $x = x - y$
7) Print x, y
8) END

Flow chart



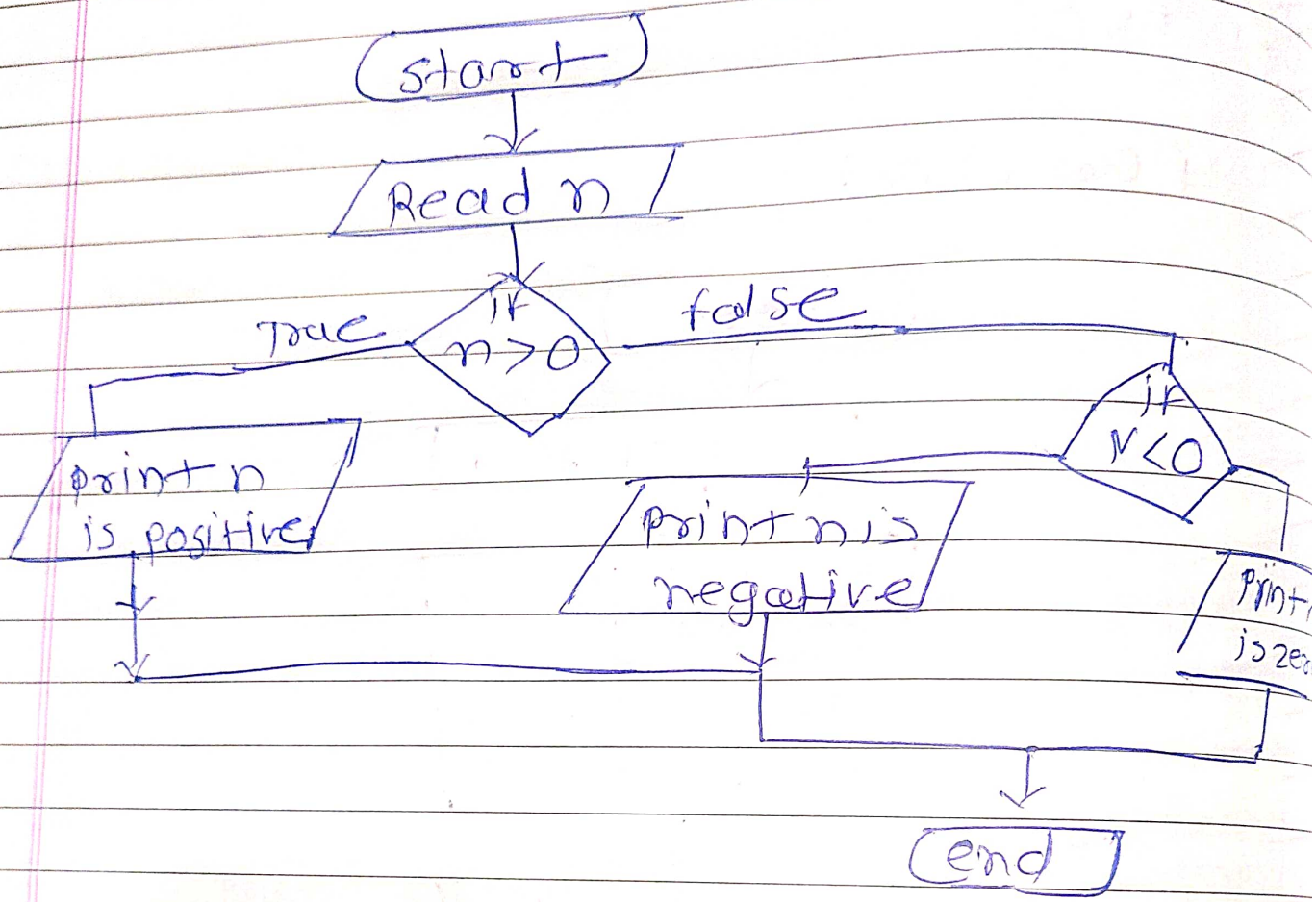
5. How to check the given numbers is positive or negative in java

algorithm

1) start
2) input number n
3) check number n is greater than equal to 0 or not
4) If $n > 0$ this positive ~~other~~ or if $n < 0$

5) find

flow chart



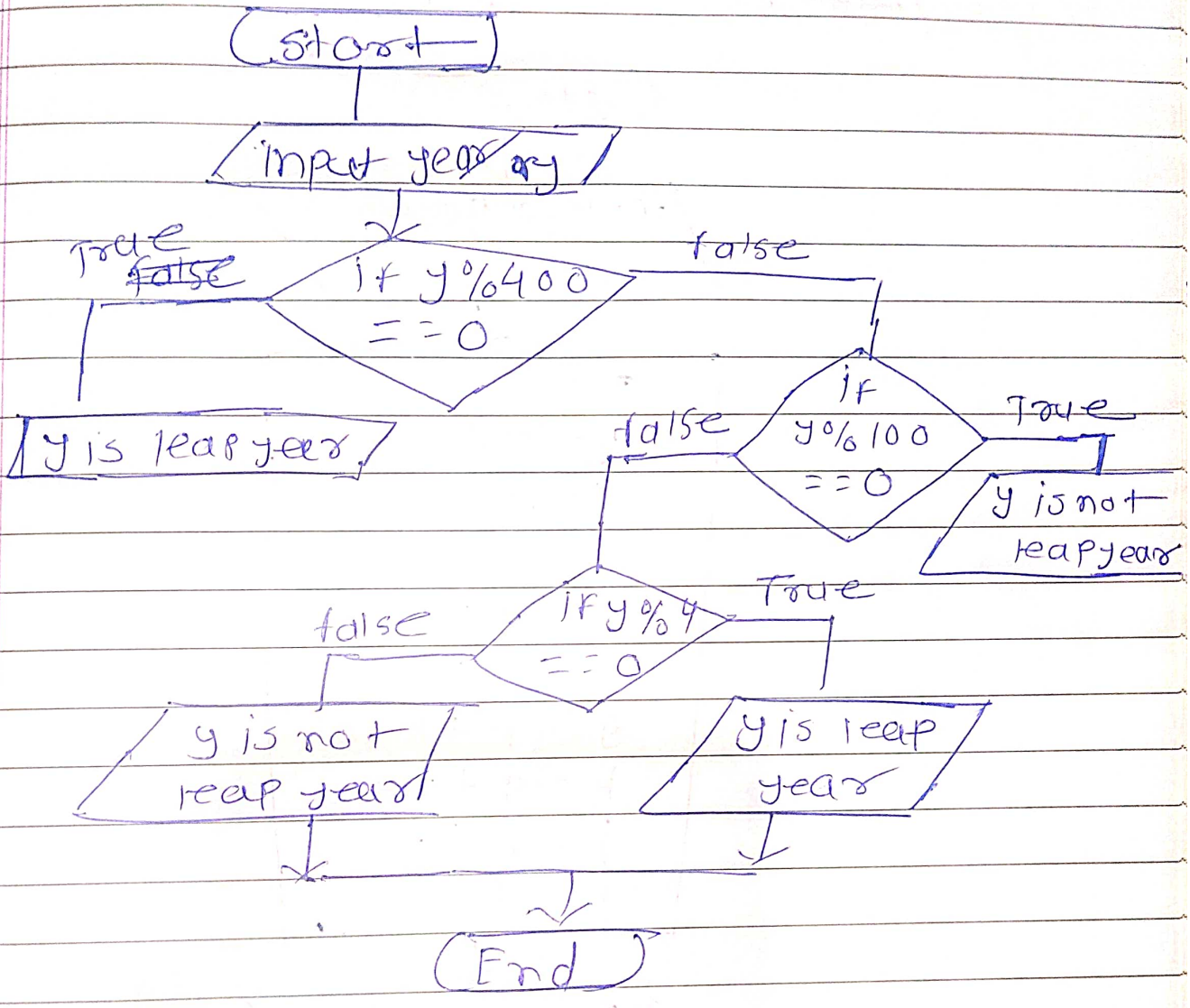
6 write a program to find whether given number is Leap year or NOT

1) Algorithm

1) start
2) input year y
3) if ~~400%~~ y % 400 is 0, print year is leap year and go
4) if y % 100 is 0, print year is not leap year
5) if ~~mod~~ y % 4 is 0 print year is leap year

6) else print y is not a leap year.
» stop.

flowchart



7 write a java program to print 0 to 10 without loop.

H Algorithm

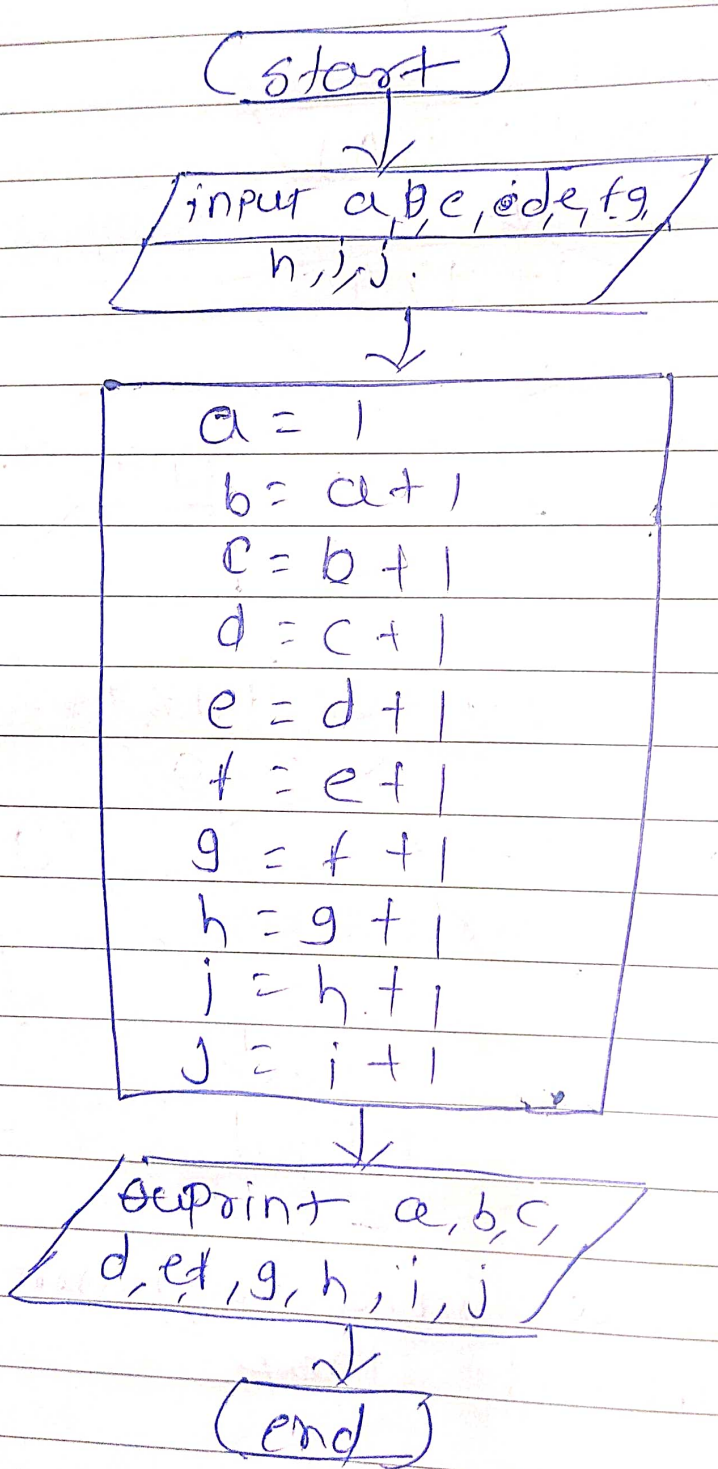
1) Start
2) Take variable a, b, c, d, e, f, g, h, i, j.
3) a = 1, b = a+1, c = b+1, d = c+1, e = d+1
f = e+1 g = f+1 h = g+1 i = h+1

j = j+1

4) print all variables

5) end

~~Algorithm~~ flowchart

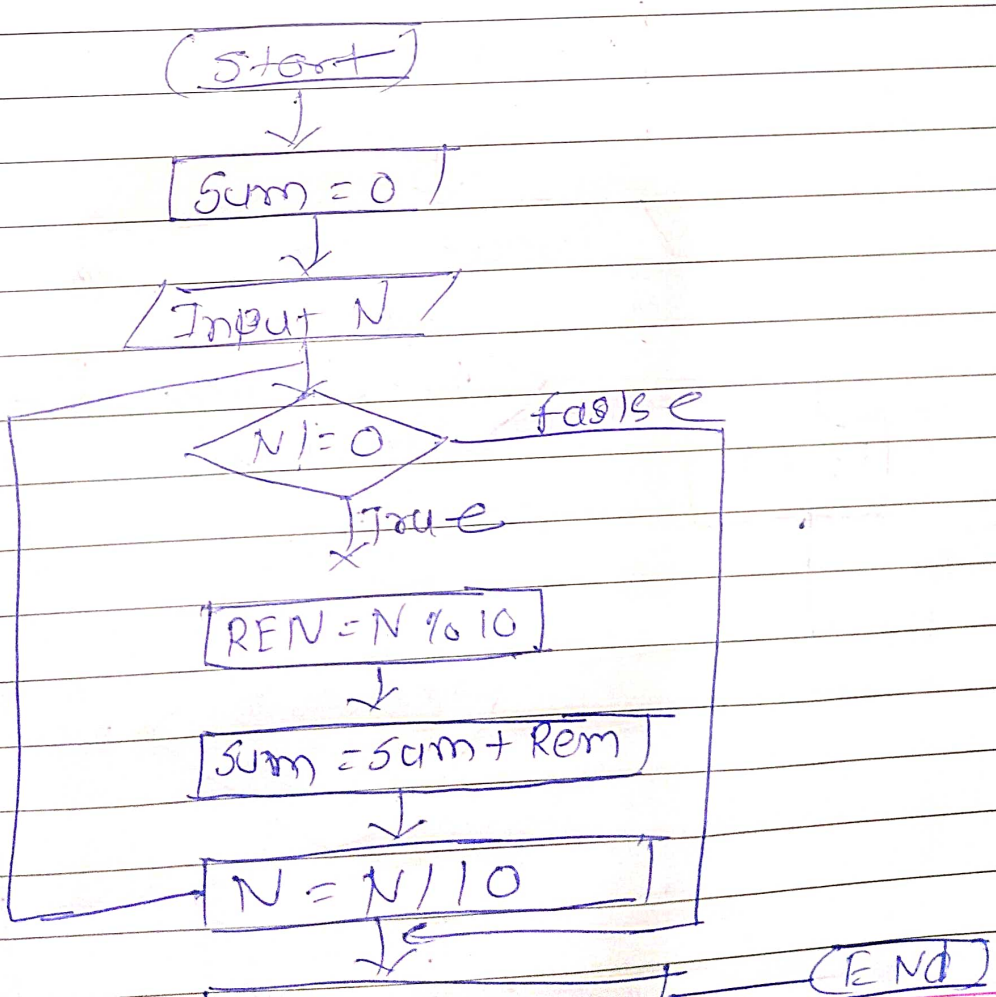


8 write a java program to ~~find sum of~~ print digit given number

Algorithm

1) Input N
2) sum = 0
3) while (N != 0)
   Rem = N % 10
   sum = sum + Rem
   N = N / 10
4) print sum

flowchart

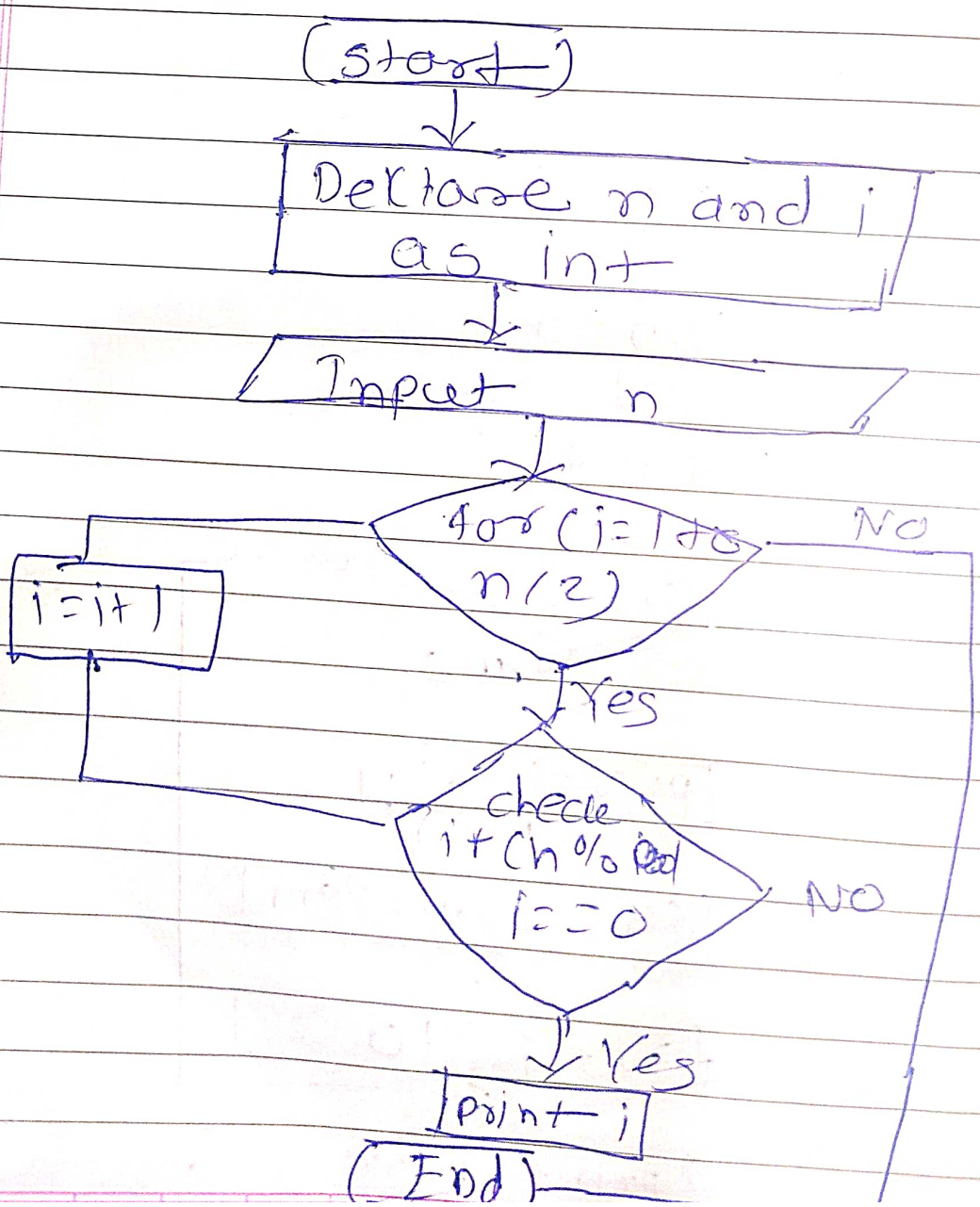


Write a program to print all the factors of given number

1 Algorithm

1) start
2) Declare n and i integers.
3) for i = 1 to n/2
4) if n%i == 0
5) Print i

flowchart

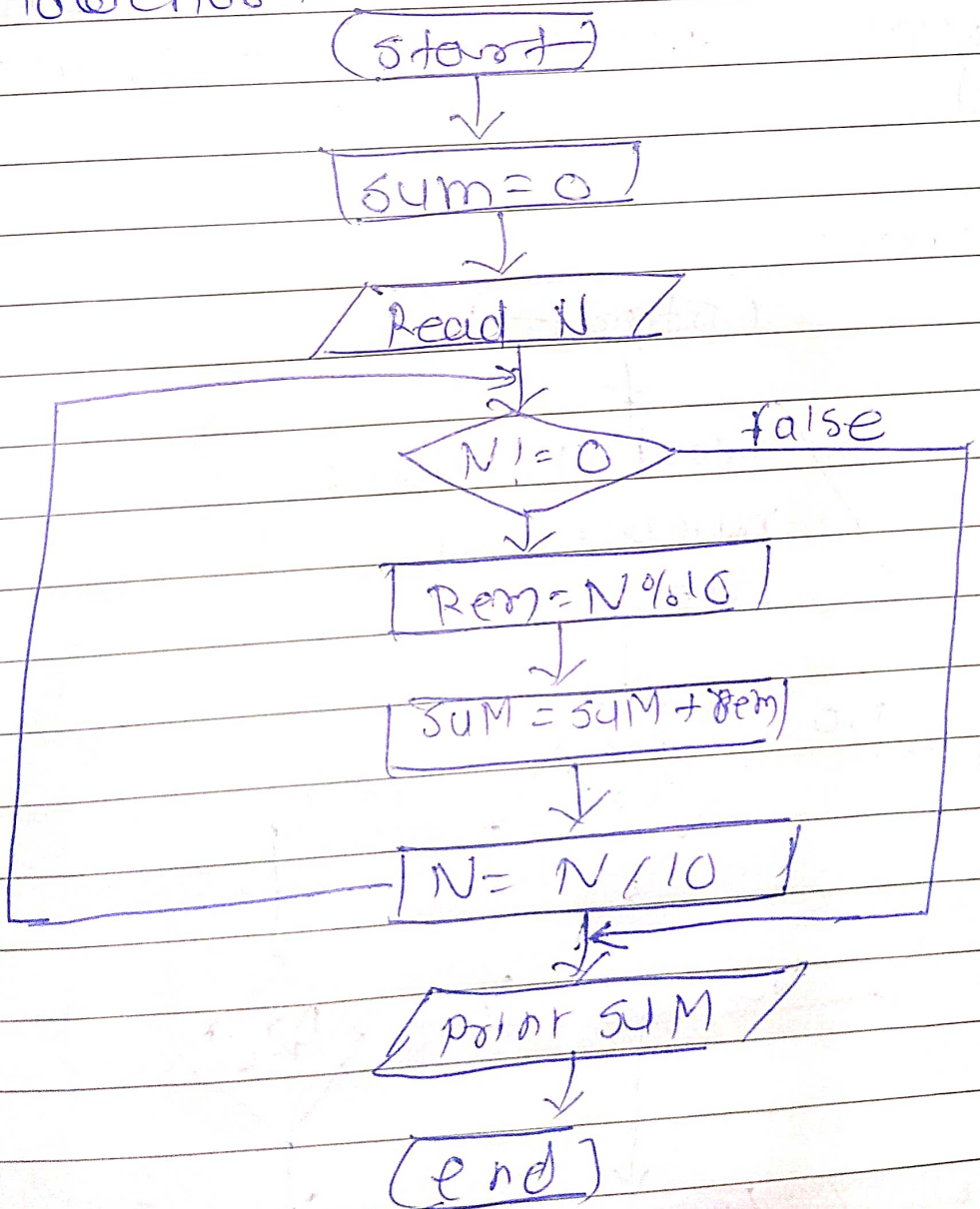


10 Write a java program to find sum of digits of given number

Algorithm

1) Get no. by user
2) Get modulus / reminder of number
3) sum the remained of number
4) Divide the number by 10
5) Repeat the step 2 while number is greater than 0.

flowchart

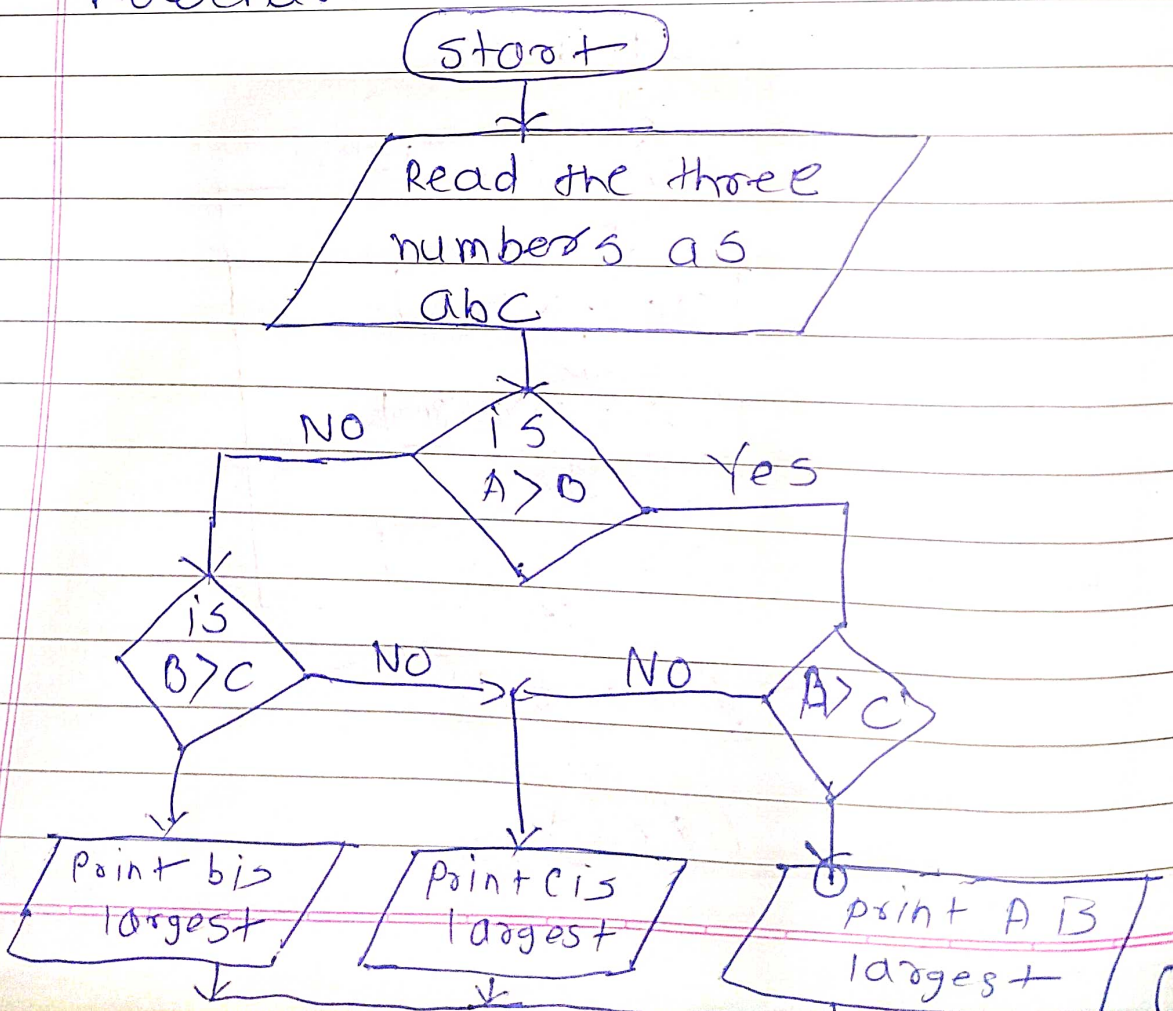


11 Write a java program to find smallest of 3 numbers.

algorithm

1) start
2) Take numbers a,b,c.
3) check if a is less than b and a is smallest and go to step 7, else goto step 5
4) check if b is less than c
5) check if b is less than c
6) if above condition is true b is the smallest, else c is the smallest
7) send

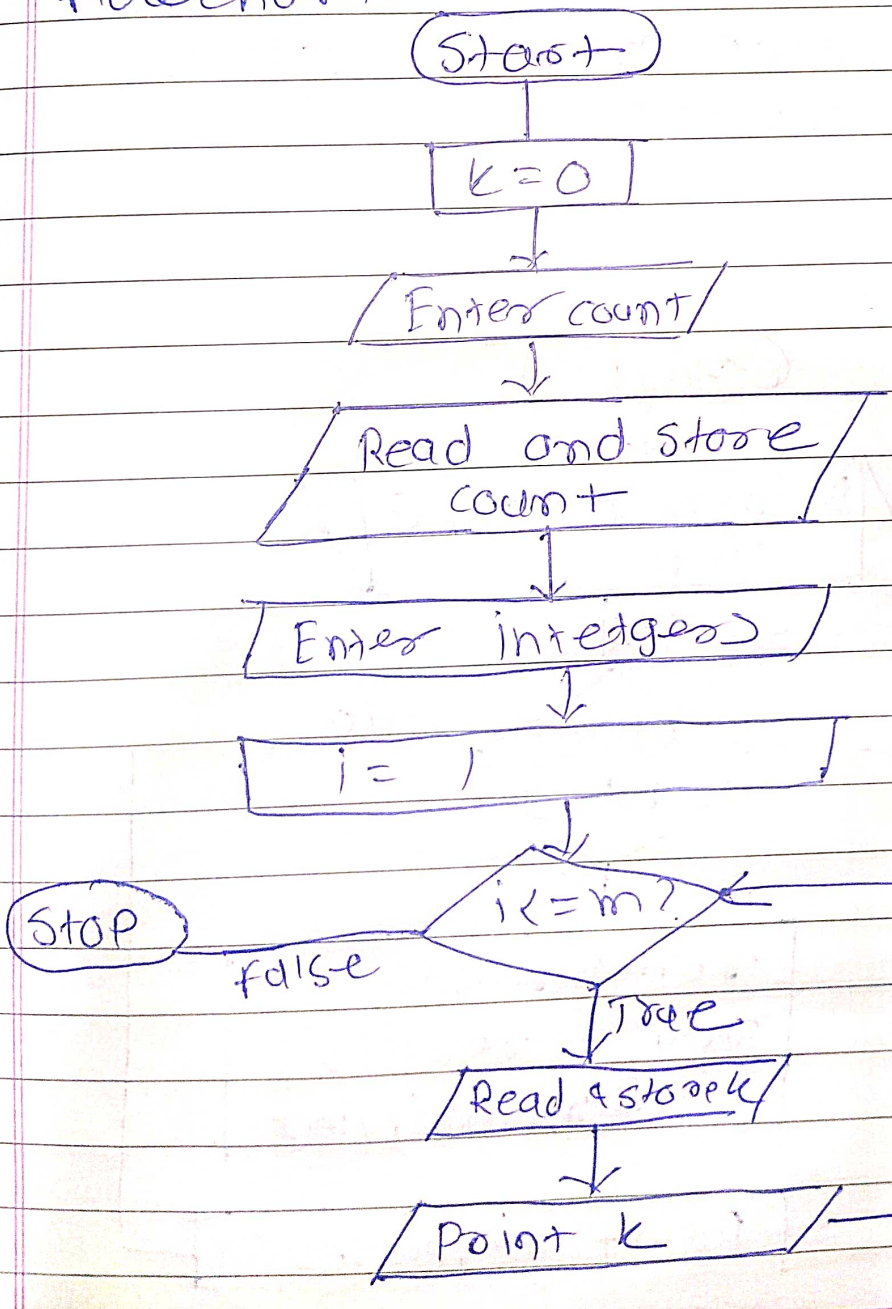
flowchart



12 How to add two Numbers without using the Arithmetic operators in Java.

1) Start
2) User input the first number
3) User input the second number
4) While loop is used to calculate the addition of two numbers.
5) Display the sum.

flowchart

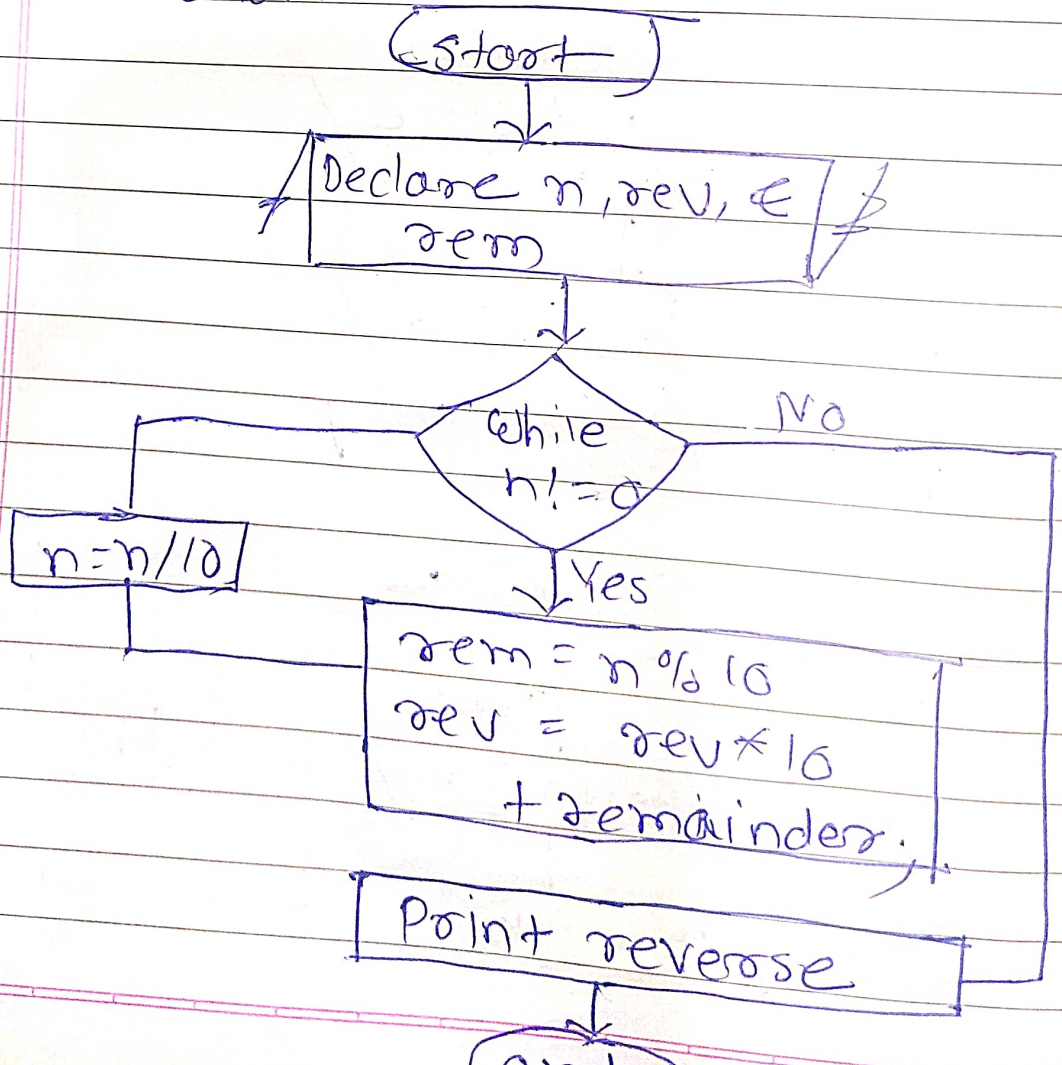


13 Write a java programm to reverse the number

Algorithm

1) Start
2) Take input of n, rev, & rem
3) use while loop n!=0
4) rem = n%10
   rev = rev*10 + rem
   n = n/10
5) repeat step 3 until false
6) print reverse
7) end

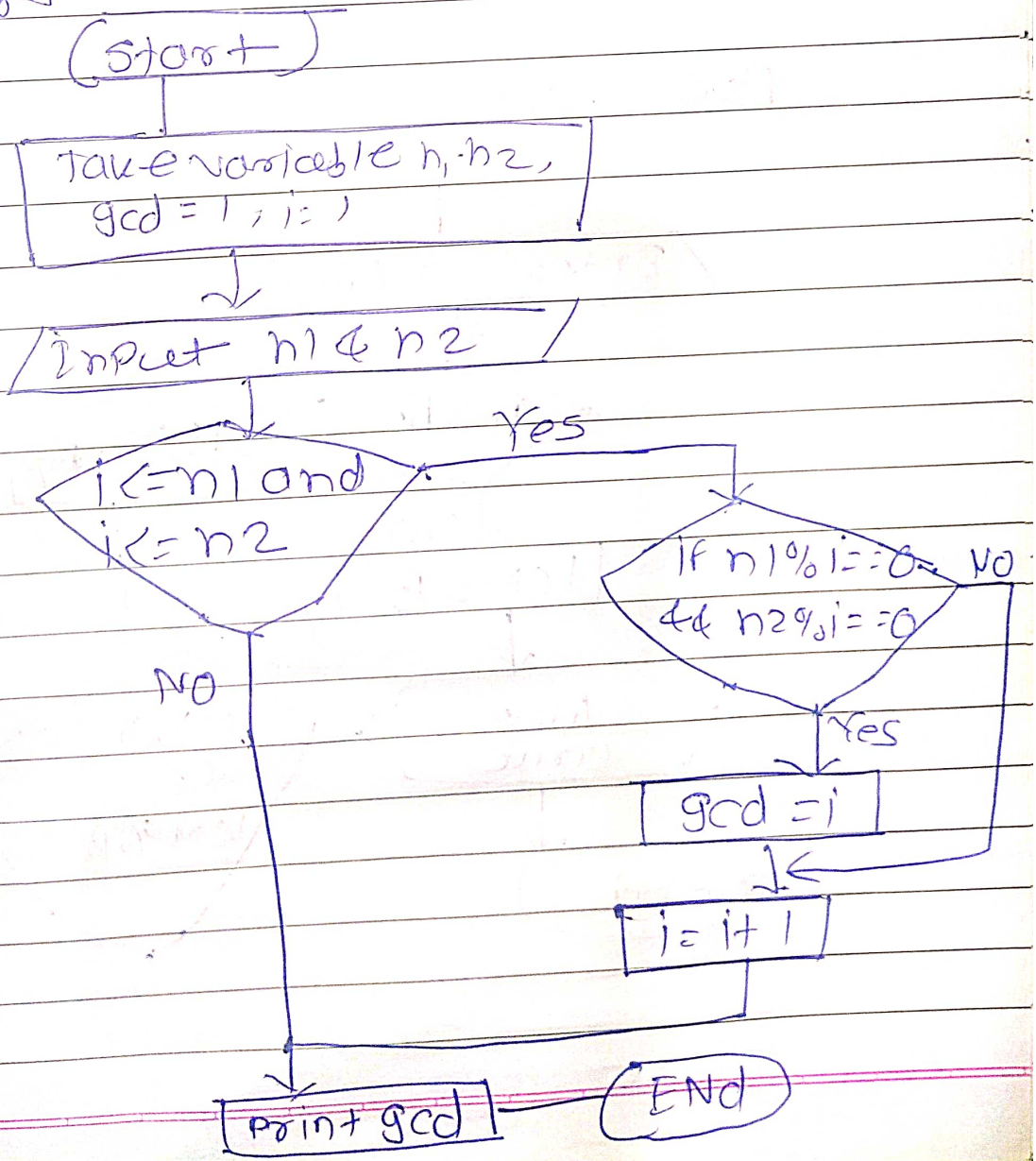
flowchart



14 Write a java program to fing GCD of 2 numbers.

1 start
2 Declare variable n1, n2, gcd = 1, i = 1
3 Input n1 and n2
4 Repeat until i <= n1 and i <= n2
    If n1 % i = 0 && n2 % i == 0;
      Gcd = i
5 print gcd
6 Stop

flow chart

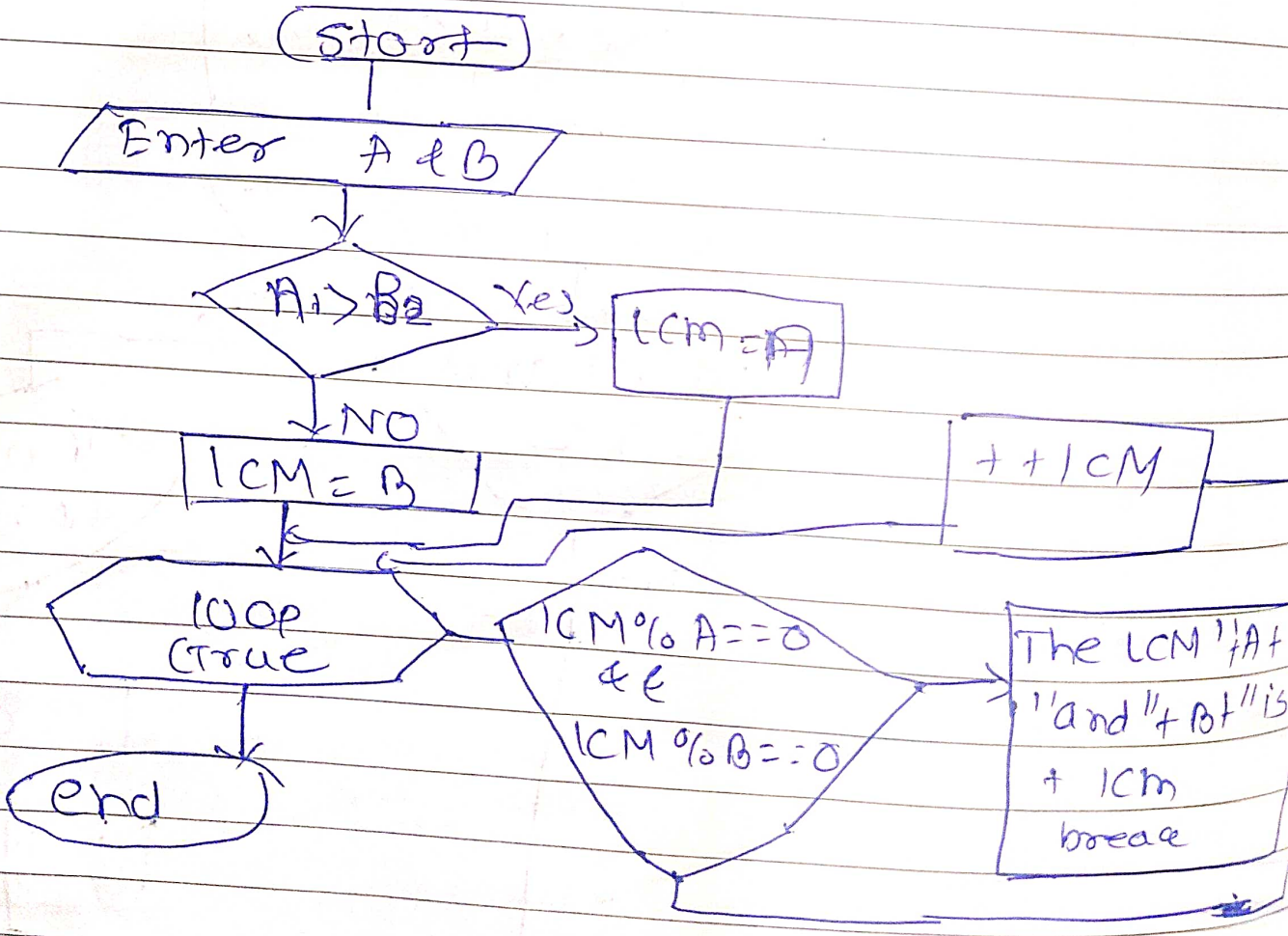


15 Write a program to find LCM of two given numbers.

Algorithm

1) initialize the positive integer variable A and B
2 store the common multiple of A and B into the max variable. ~~step~~
3 validate whether the max is divisible by both A and B
4 if max is divisible display max as the LCM of two numbers.

flow chart

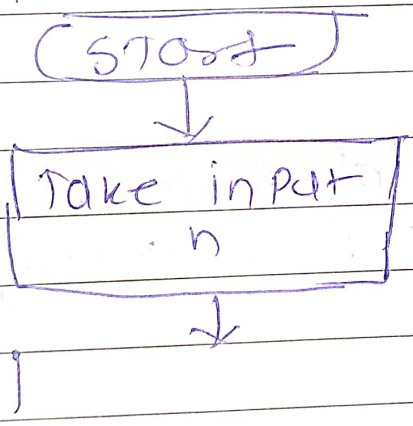


16 Write Program for LCM of Two given number using prime factors method

Algorithm

1. Find the prime factorization of each number
2. write each number as a product of primes, matching primes vertically when possible
3. Bring down the primes in each column
4. multiply the factors to get the LCM.

flowchart

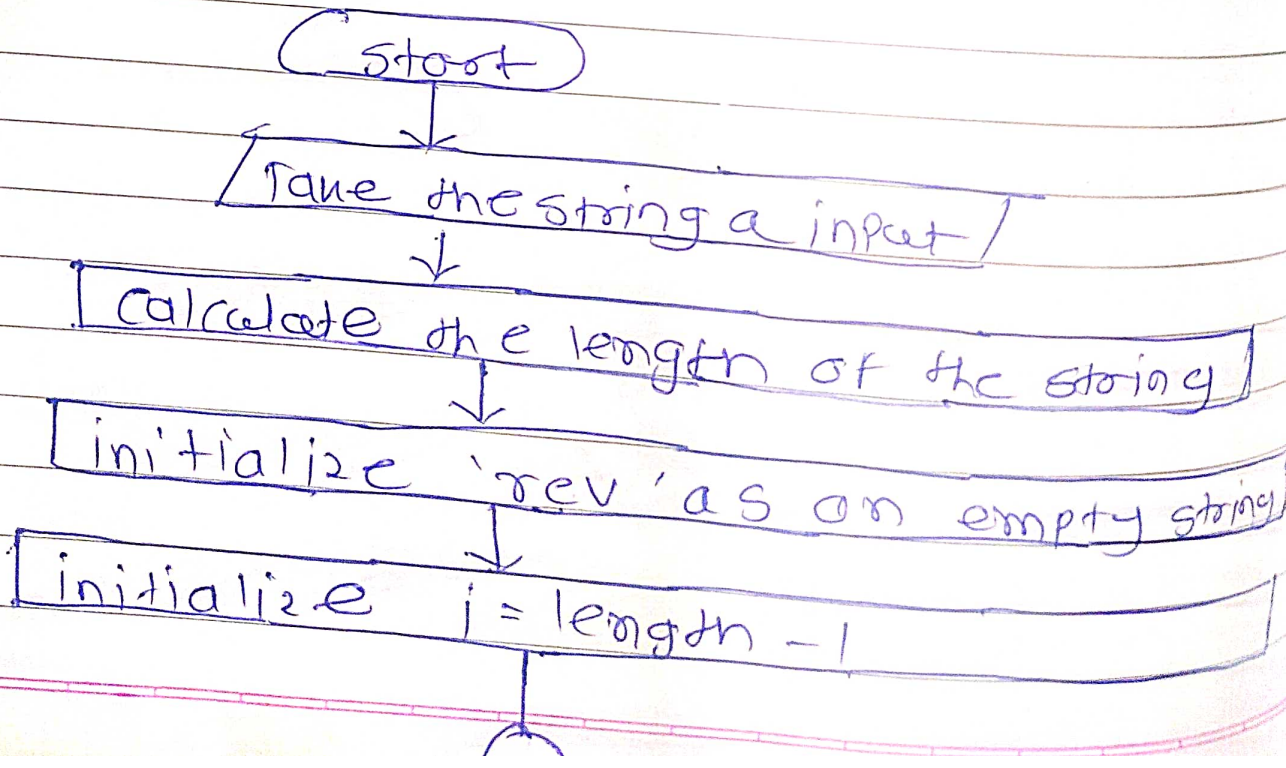


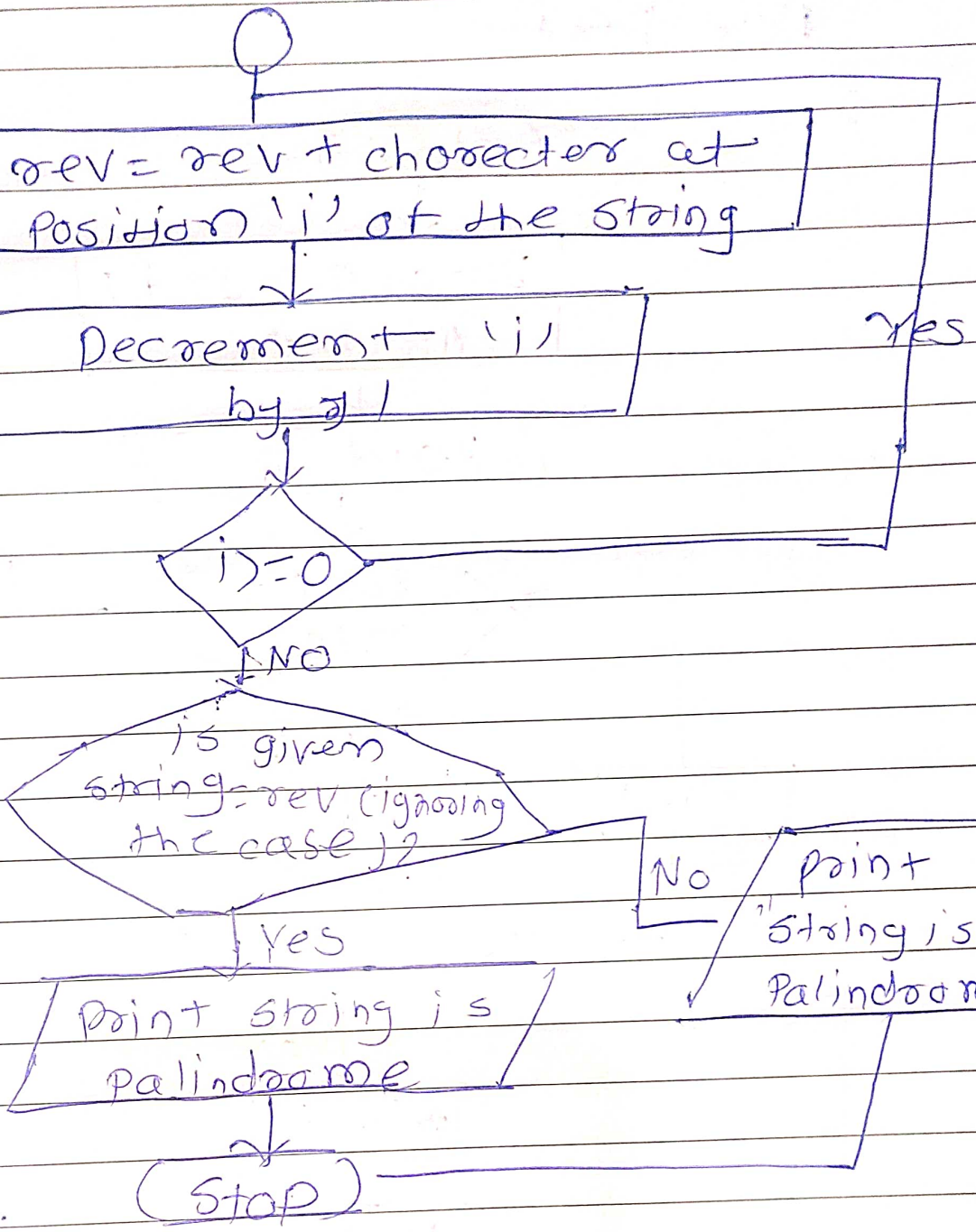
17. check whether the given number is a palindrom or NOT

Algorithm

1 Start
2 Read the string from user
3 calulate the length of string
4 initidlize rev = "" (empty string)
5) initialize i = length - 1
6 Repeat until i > 0;
rev = rev + character at position of the string
i = i - 1
7 if string = rev
print " given string is palindrom
8 else print " given string is not palindro
9 Stope

flowchart



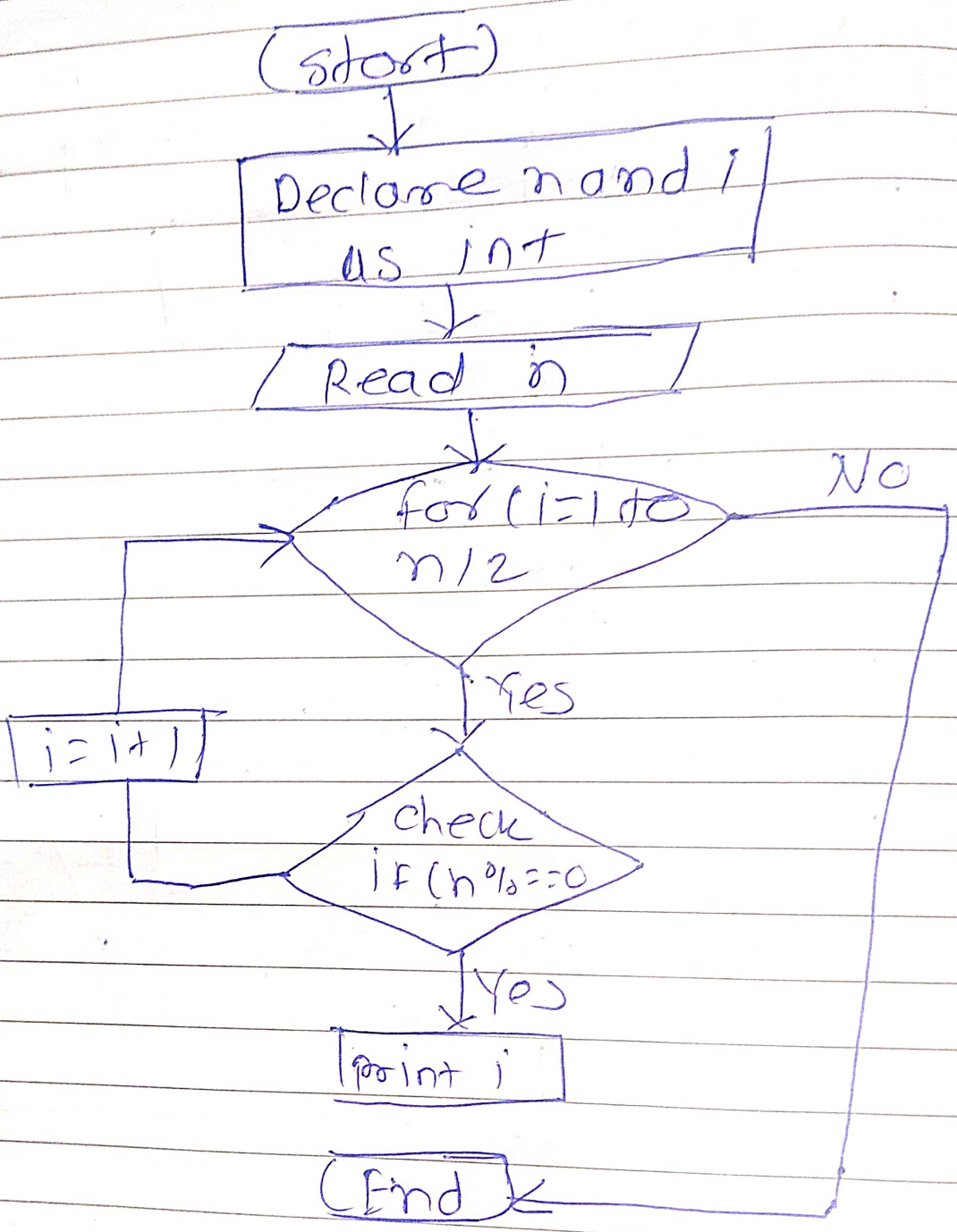


18 write a java program to print all the prime factors of the given Number

algorithm

1) Dellare avariable n and i as itger;
2) Read the number n;
3) for i=1 to n/2 and increment i by 1
4 check in n % i == 0
5 print i

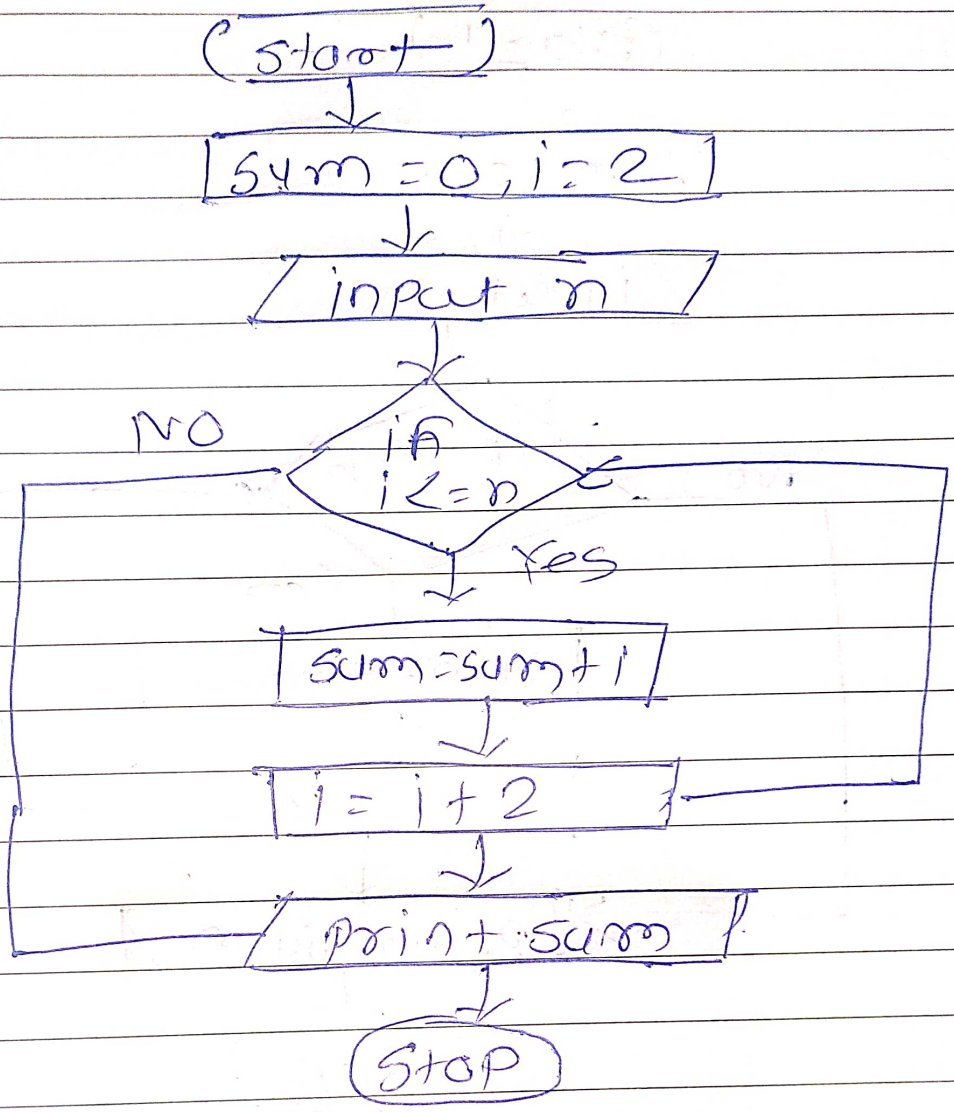
flow chart



19 To print Even number series

1) sum = 0, i = 2
2) Take input n
3) if i <= n
   True sum = sum + i;
         i = i + 2
4 Print sum

flow chart



20 To print odd number series

1) sum = 0 , i = 1
2) take input n
3) if i <= n
   if true sum = sum + i
   i = i + 2
4) print sum

flowchart