Assignment - 1.

Submission Date => 12-09-2024

Algorithms and flowchart.

1. check if the given number is even or odd.

Algorithm:-

i) Declare num. take input from user
num = int (input ("enter number")).

ii) check num % 2 == 0.

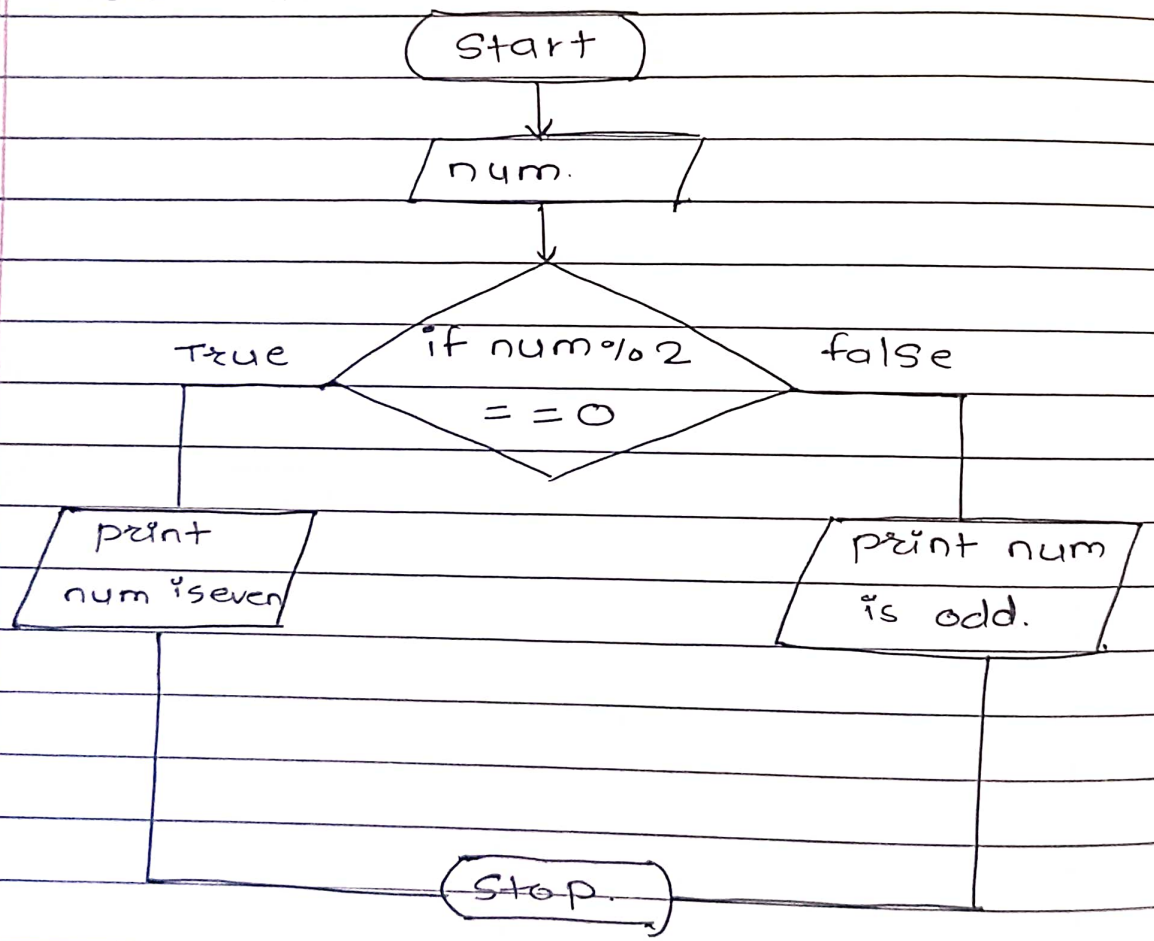
iii) if (num % 2 == 0) then print num is even number

iv) else:

v) print number is not even / odd number.

vi) end.

Flowchart



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

Algorithm:-

i) Declare num variable as int take input "enter number".

ii) ~~for~~ from given number upto 1 multiply each digit

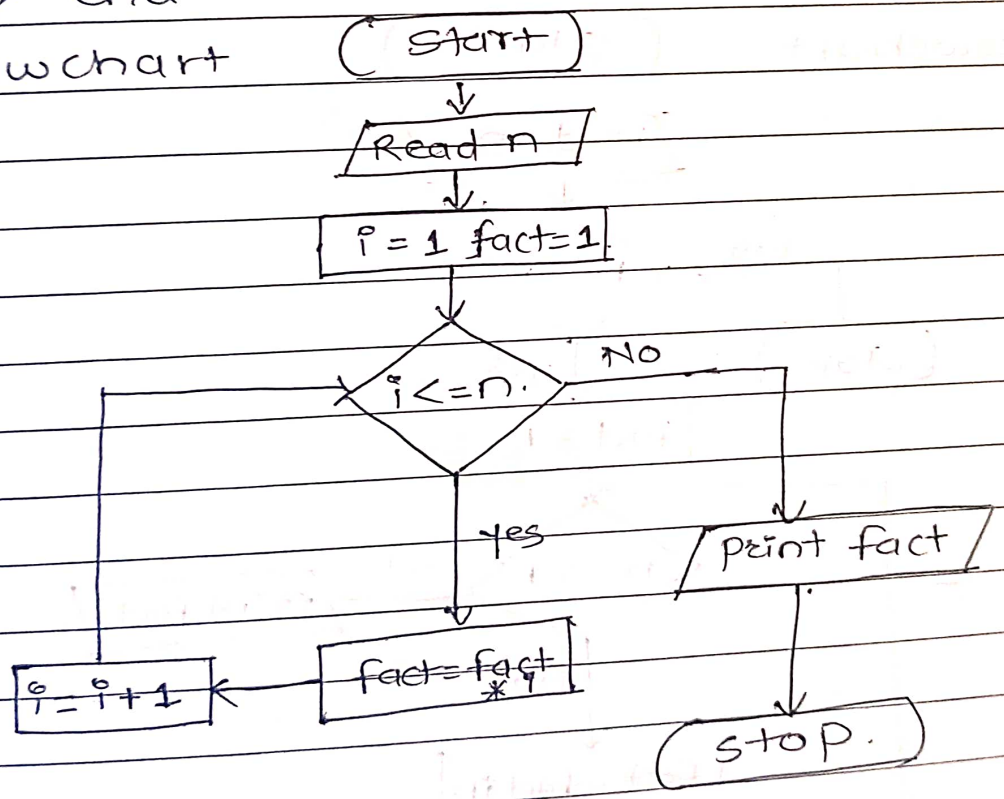
iii) Store ~~value in~~ final value in any variable

iv) After all digits multiplication till 1, is the final result.

v) Print result.

vi) end.

Flowchart



3. Find the factorial of a number using Recursion

Algorithm:-

i) Start

ii) Read n

iii) call factorial (n) // function

iv) Inside function:=

- i) If n == 1
  return 1

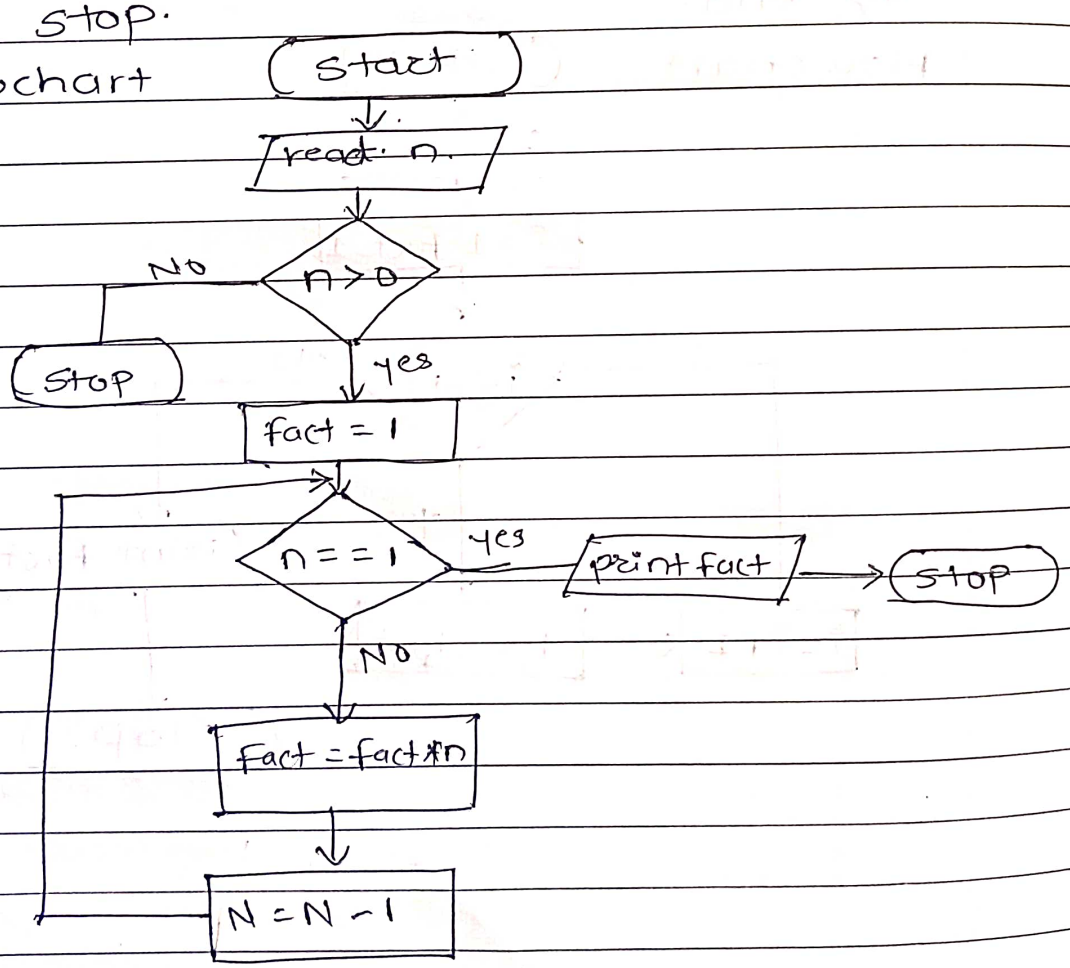
- ii) else
  f = n * factorial (n-1);

- iii) return f.

v) print factorial f.

vi) stop.

Flowchart



4. Swap two numbers without using the third variable approach.

Algorithm:-

i) start

ii) Read A, B

iii) A = A + B

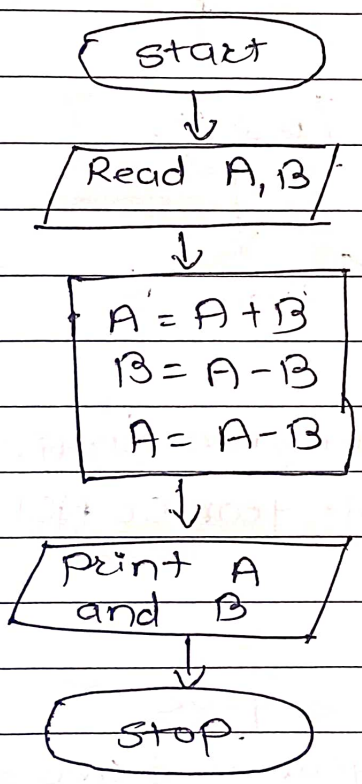
iv) B = A - B

v) A = A - B

vi) print A and B.

vii) stop

flowchart



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

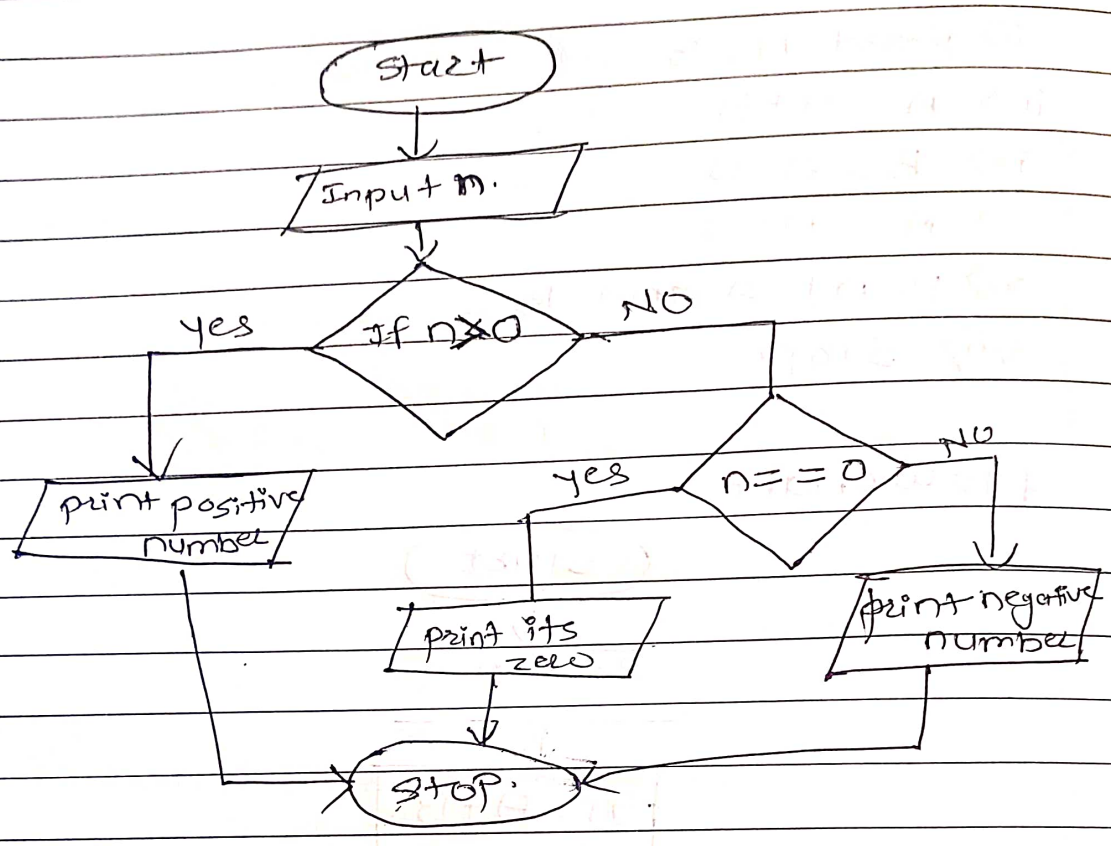
Algorithm :-

i) start

ii) take input ⇒ num.

iii) if (num < 0) then negative

iv> Else if (num>0) it is positive
v> else number zero its neutral.
vi> end / stop

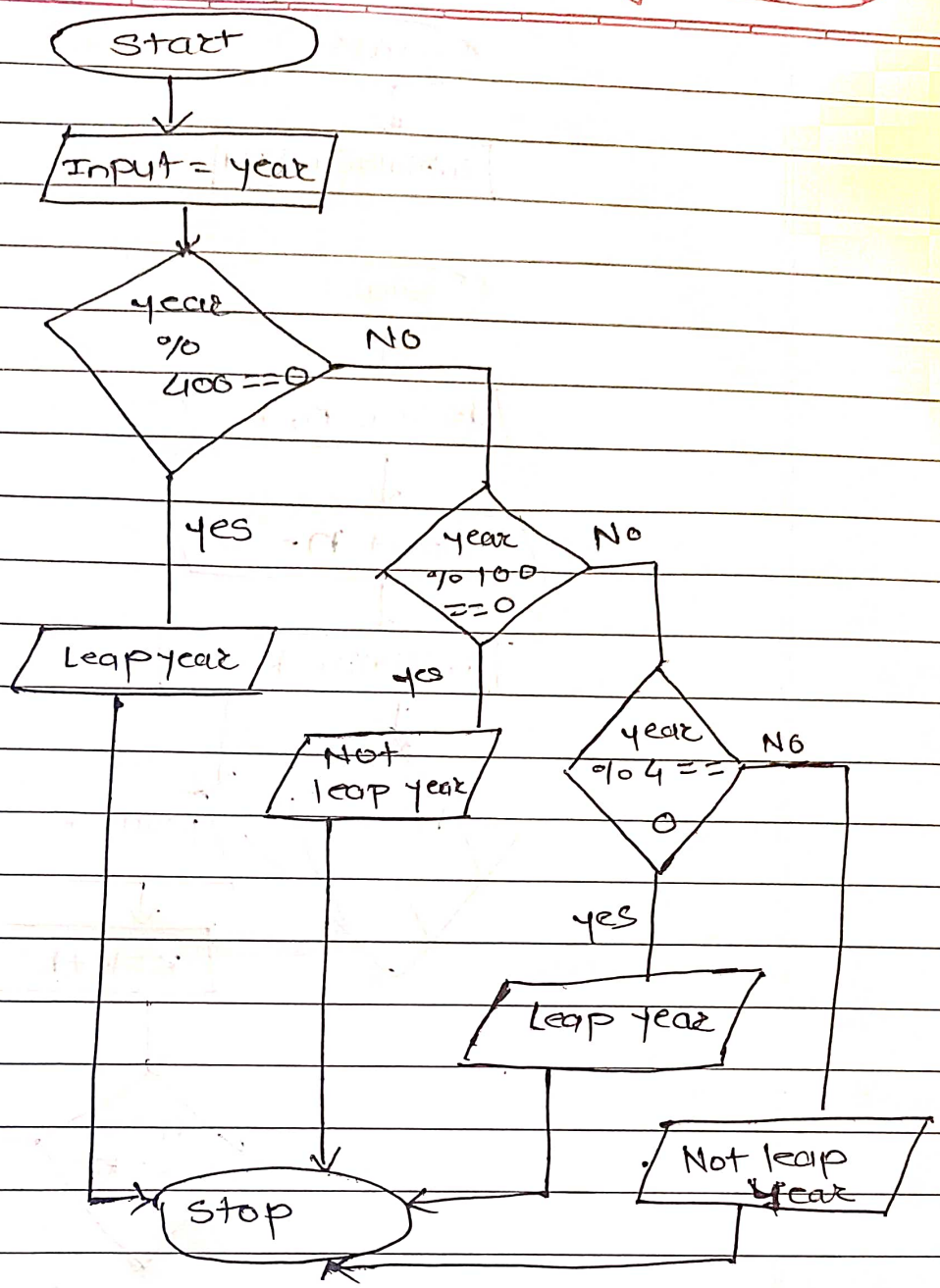


6) Write a Java program to find whether a given number is Leap Year or NOT.

⇒ Algorithm:-

- i) Start
  ii) Take Input => year
  iii) Check if year mod 400 == 0 then print "leap year".
  iv) else if year mod 100 == 0 print "not leap"
  v) else if year mod 4 == 0 print "leap year"
  vi) else ~~year mod~~ print "year is not leap"
  vii) stop.

Flowchart:-



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

⇒ Algorithm:-

i) start.

ii) initialize n = 1

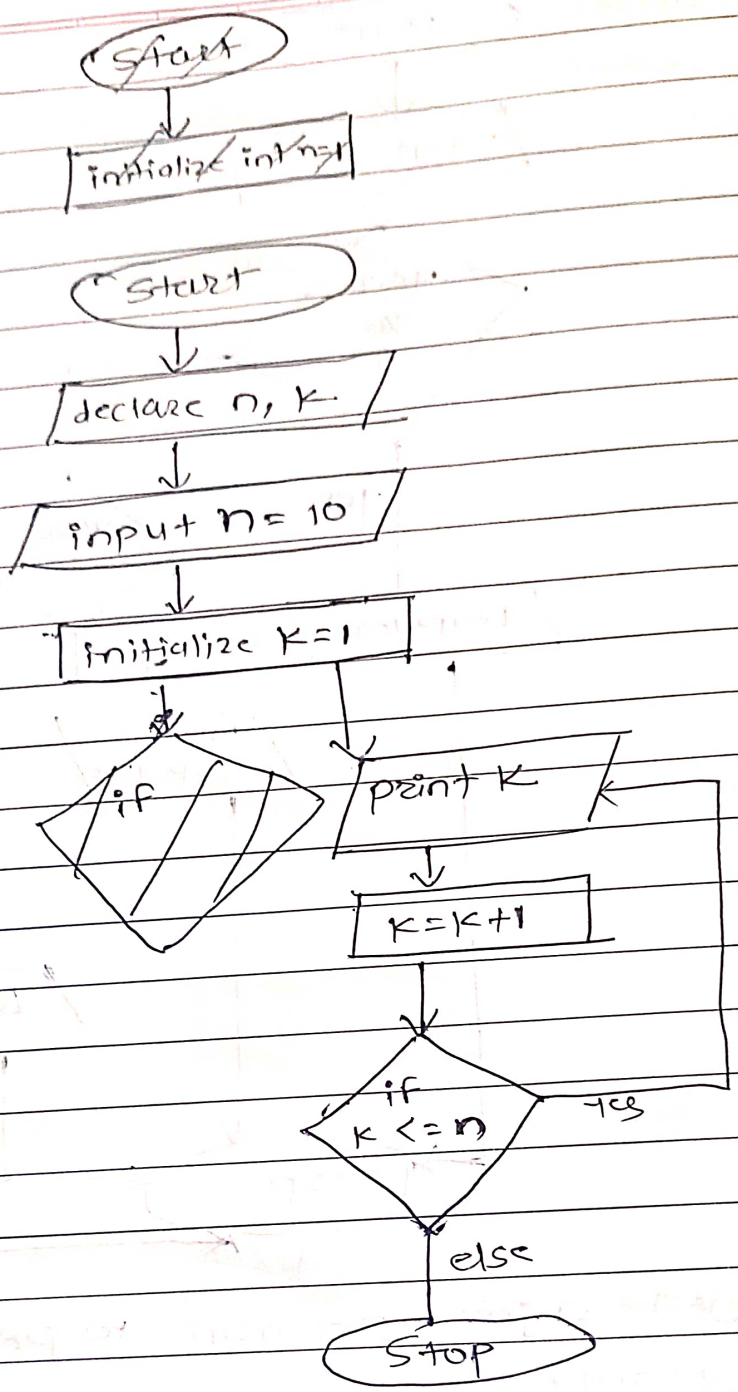
iii) print n

iv) increment value of n by 1 ⇒ n = n + 1

v) check if n <= 10 then goto step-3.

vi) else goto step-7

vii) Stop



8) write a java program to print the digits of a given number

⇒ Algorithm:-

i) Start declare count variable initialize as c=0

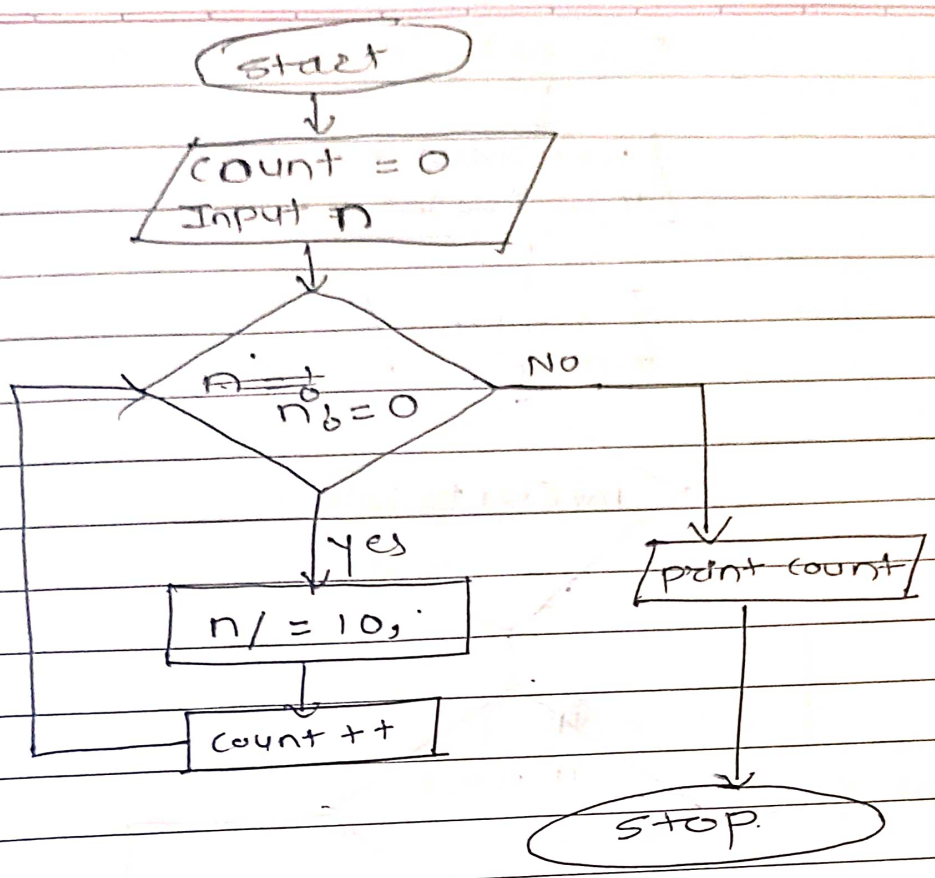
ii) Take input "n" from user

iii) Check while (n=!0) yes goto step iv) else goto step v)

iv) n%=10 & increase the c=c+1.

v) print c.

vi) stop



9) print all factors of given number

Algorithm :-

i) start take input number 'n' & i declare as in

ii) Read n

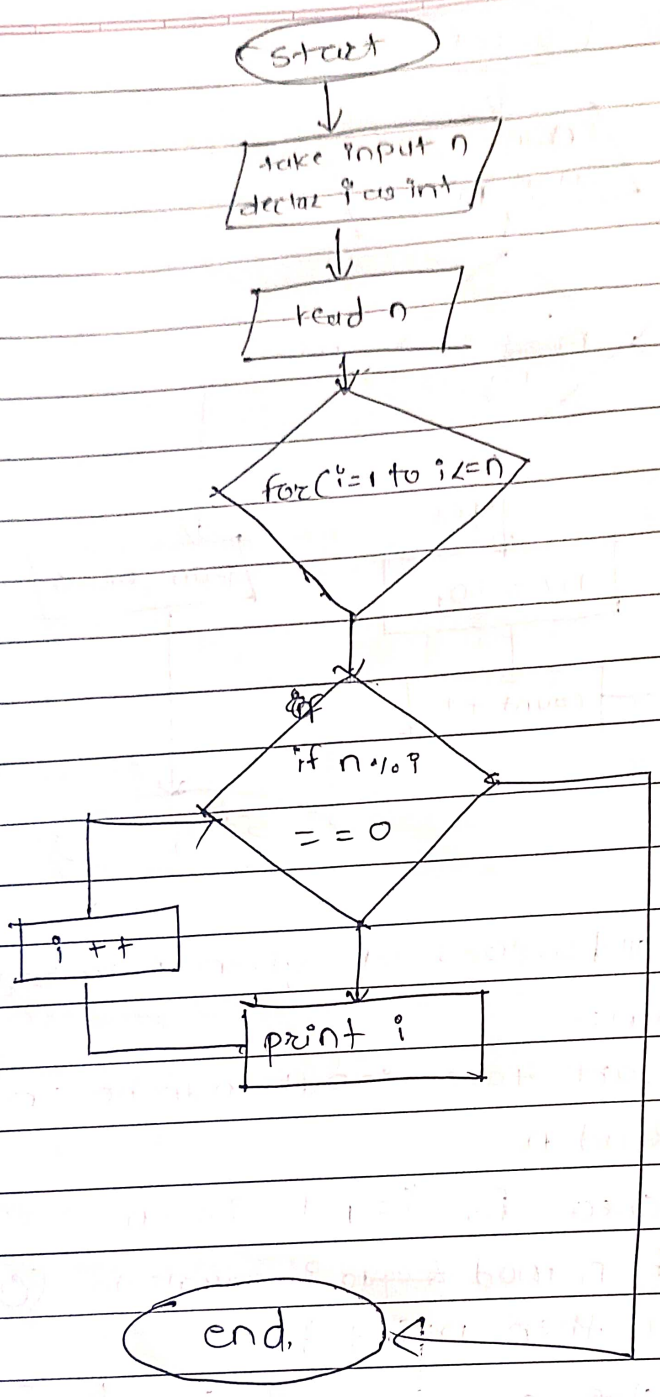
iii) check for i = 1 to i <= n

iv) if n mod ~~& equa~~ i equals to (0) zero & i ++

v) then print i

vi) ~~else~~ ~~zeap~~ repeat step iv) & v) till condition true

vii) end.



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

⇒ Algorith.

1) start take n as input from user declare r & sum=0

2) check n is not equal to zero or n>0

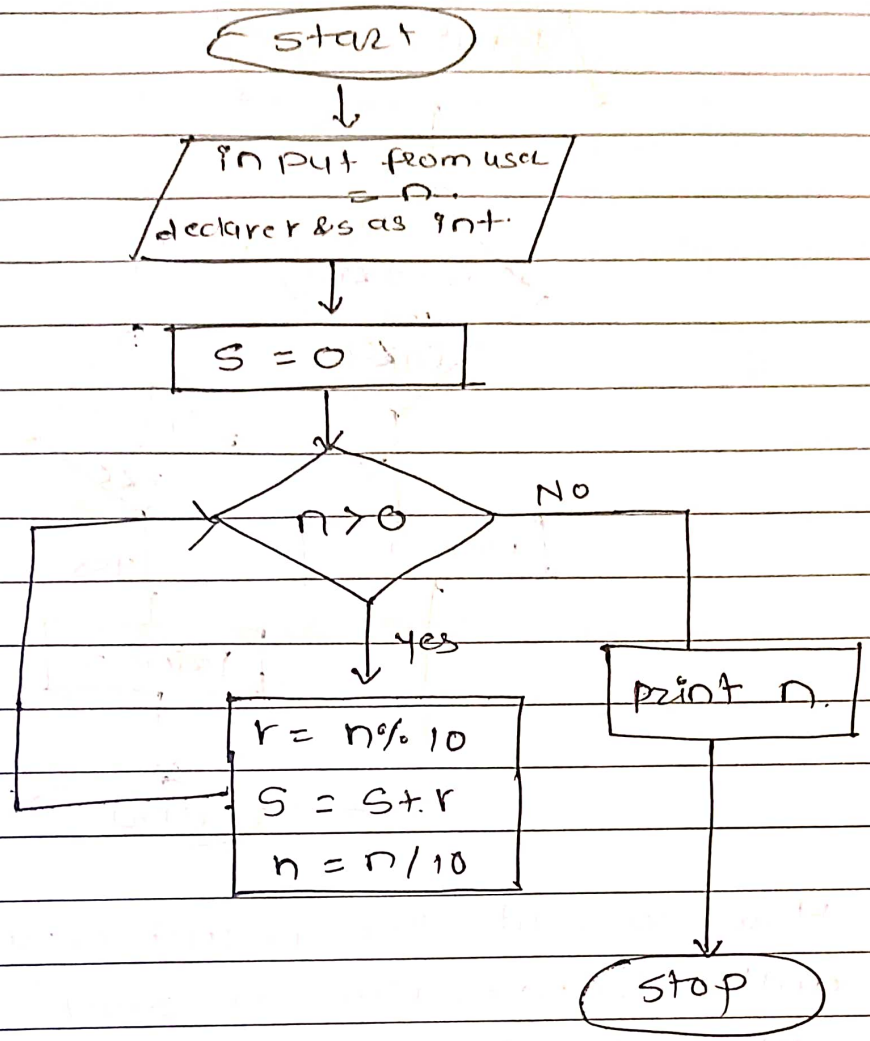
3) r = n%10

4) sum = sum + r

5) n = n/10

6) repeat step 3 till number greater than n.

7> end



11) Java program to find the smallest of 3 numbers (a, b, c).

Algorithm

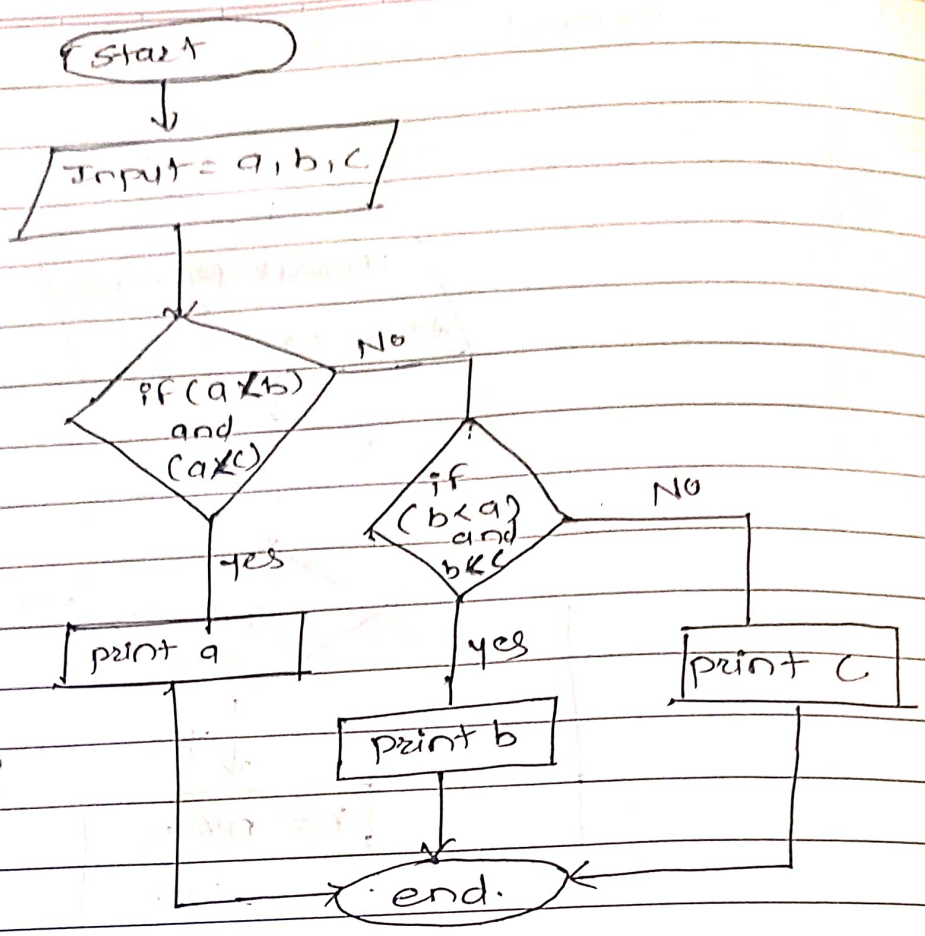
i) Start Take 3 number a, b, c. as input from user

ii) check if (a < b and a < c) then a is ~~greatest~~ smallest

iii) else if (b < a and b < c) then b ~~greatest~~ small

iv) else c is ~~greatest~~ small

v) end.



12) How to add two numbers without using the arithmetic operators in java

Algorithm :=>

i) Start take input from user => a & b.

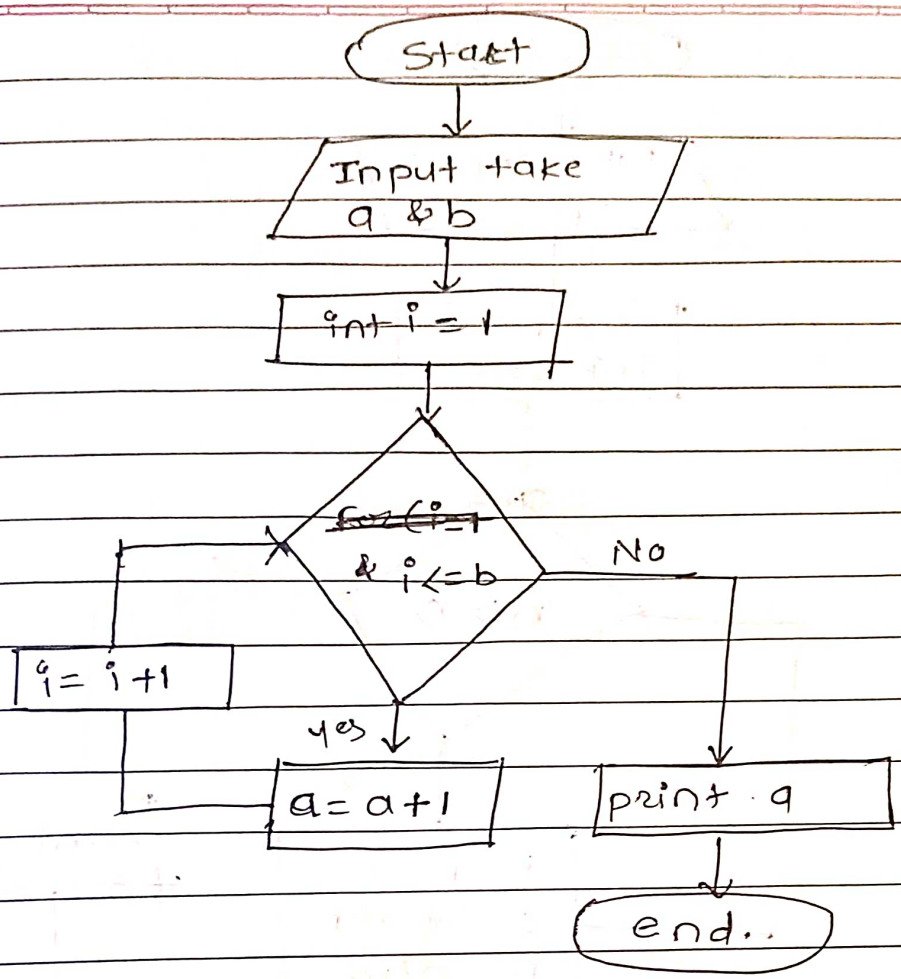
ii) declare int i

iii) for i=1 & i<=b then a = a+1 & increase i

iv) print a.

v) end.

Flowchart :-



13) write java program to reverse a given number

Algorithm:-

i) Start take number from user, declare r & sum = 0

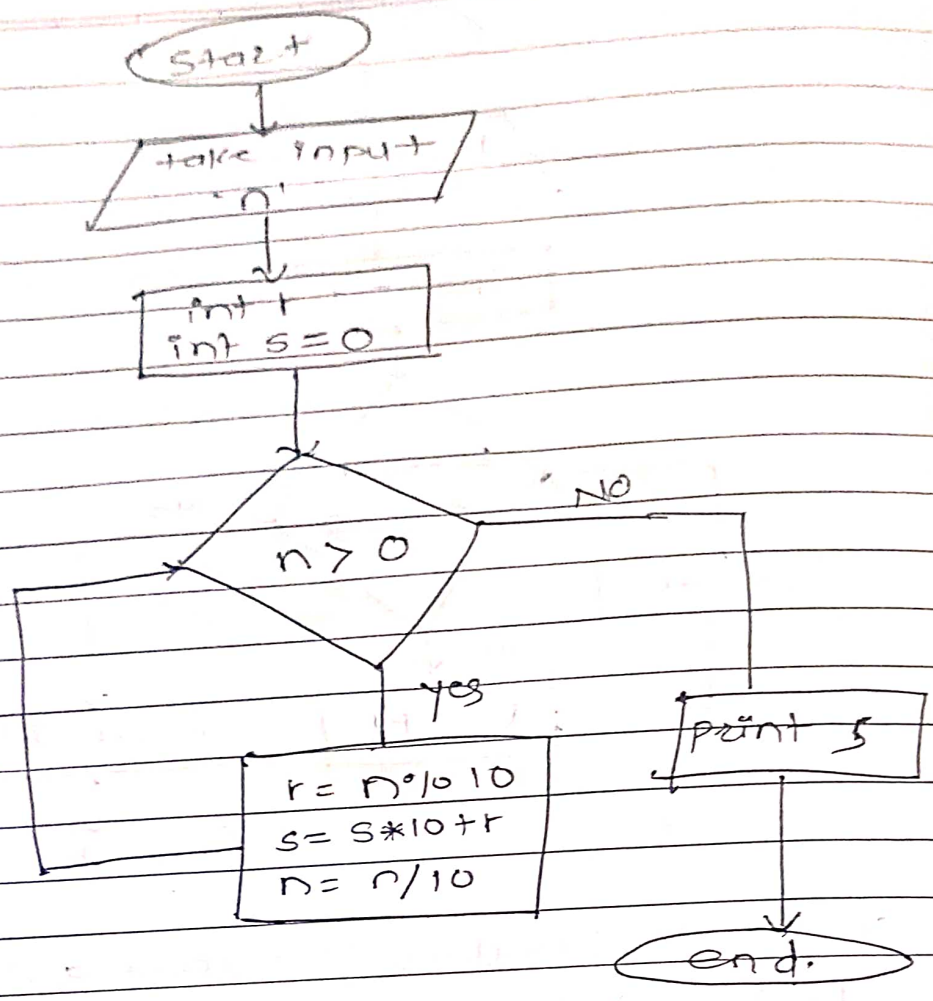
ii) check n > 0

iii) r = n mod 10 then sum = sum * 10 + r

iv) then n = n/10.

v) print sum.

vi) stop.



14) find GCD of two given numbers.

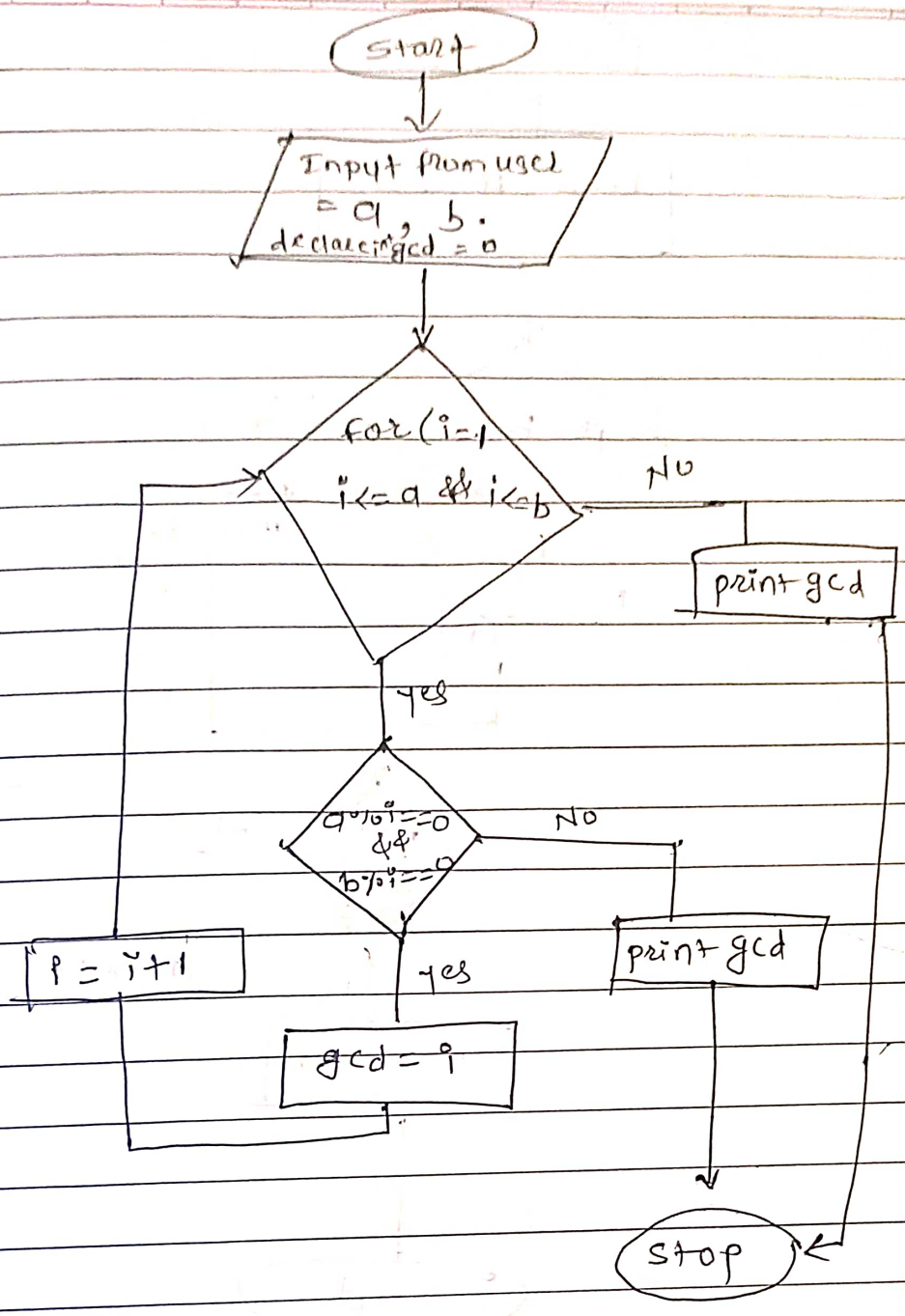
Algorithm.

i) Declare two variables a & b

ii) for (i=1 ; i<=a && i<=b ; i++)

iii) check number divides both completely if yes store it in a variable.

iv) print the variable



15) Write a java program to find LCM of two given numbers

Algorithm:-

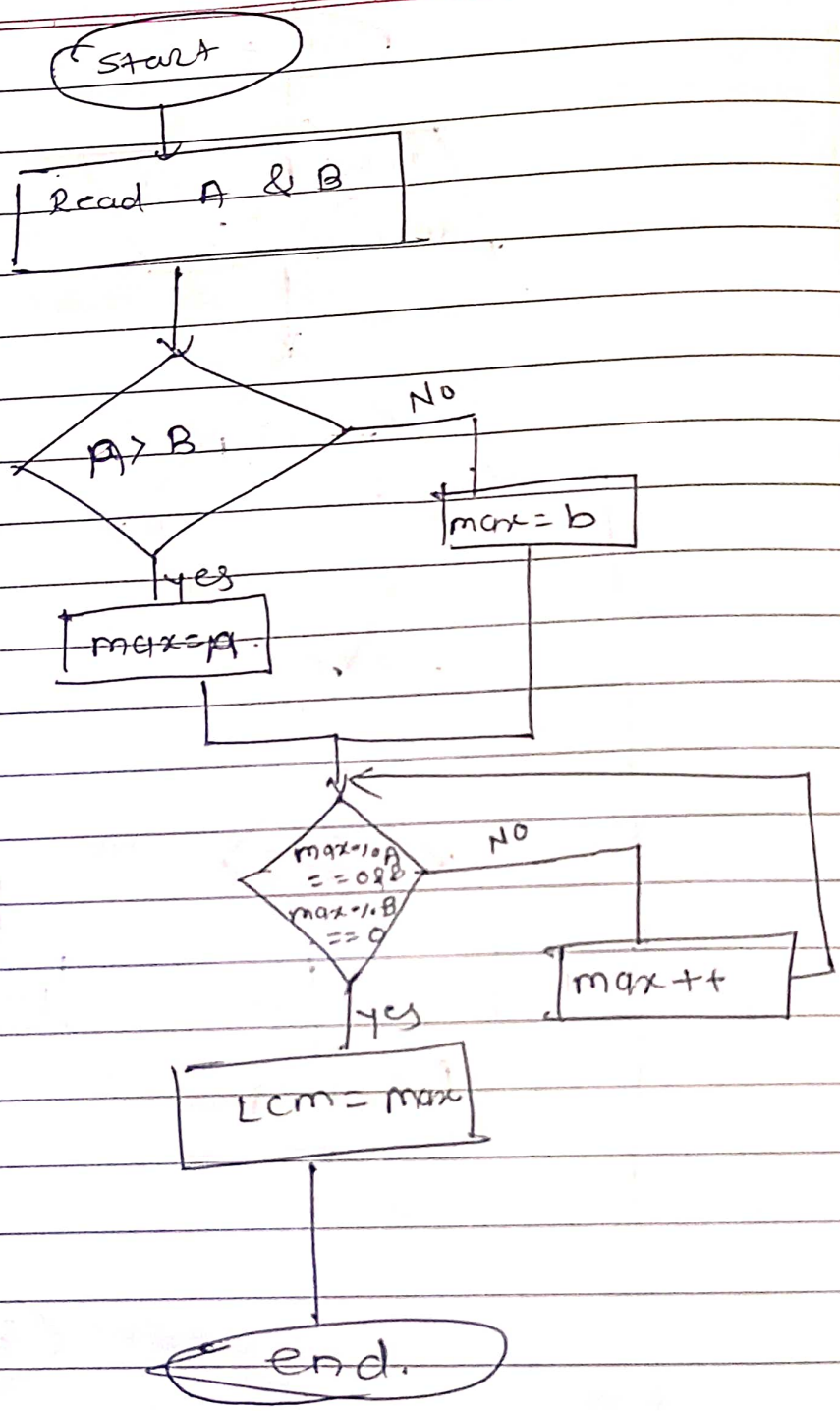
1) initialize a & B with positive integer num.

2) store max of A & B into max.

3) check max is divisible by a & B

4) if divisible print max as LCM

5) if not divisible then step increase max go to step 3.



16) using prime factor method.

Algorithm:-

17) Check whether the given number is a palindrome or not.

⇒ Algorithm:-

i) Start declare r and s, initialize s=0;

ii) take input = number from user storein to

iii) check number not equal to zero or > 0.

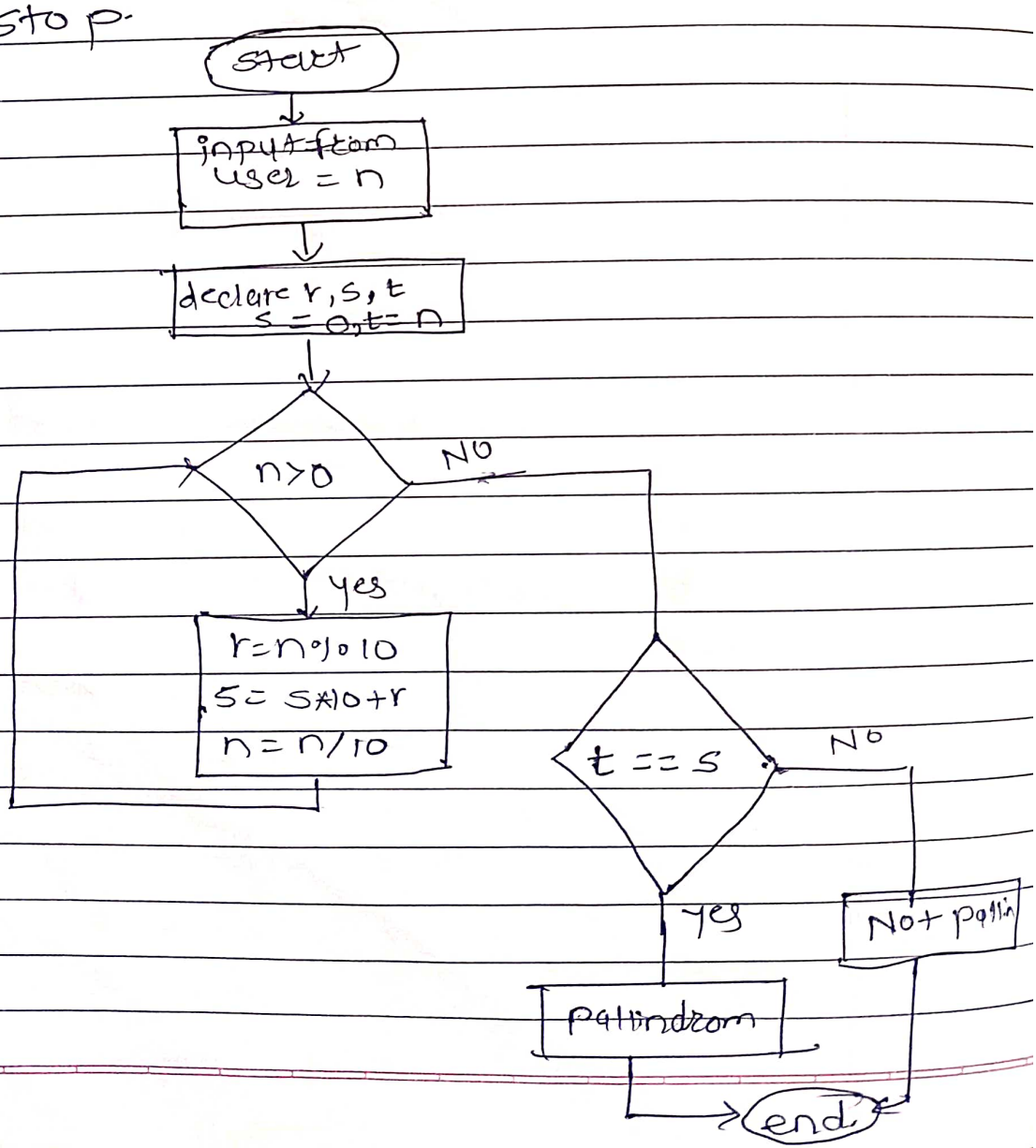
iv) r = n mod 10, sum = sum*10 + r &
n = n / 10;

v) repeat step iv) till n = 0.

vi) ~~print~~ if (sum == temp) then n is palindrom

vii) otherwise not palindrom.

viii) stop.



18) Write a java Program to print all the prime factors of ~~a~~ the given number.

=> Algorithm :-

1) Start Input N

2) P = 2

3) check while N >= P * P

4) If N mod P == 0 then print P

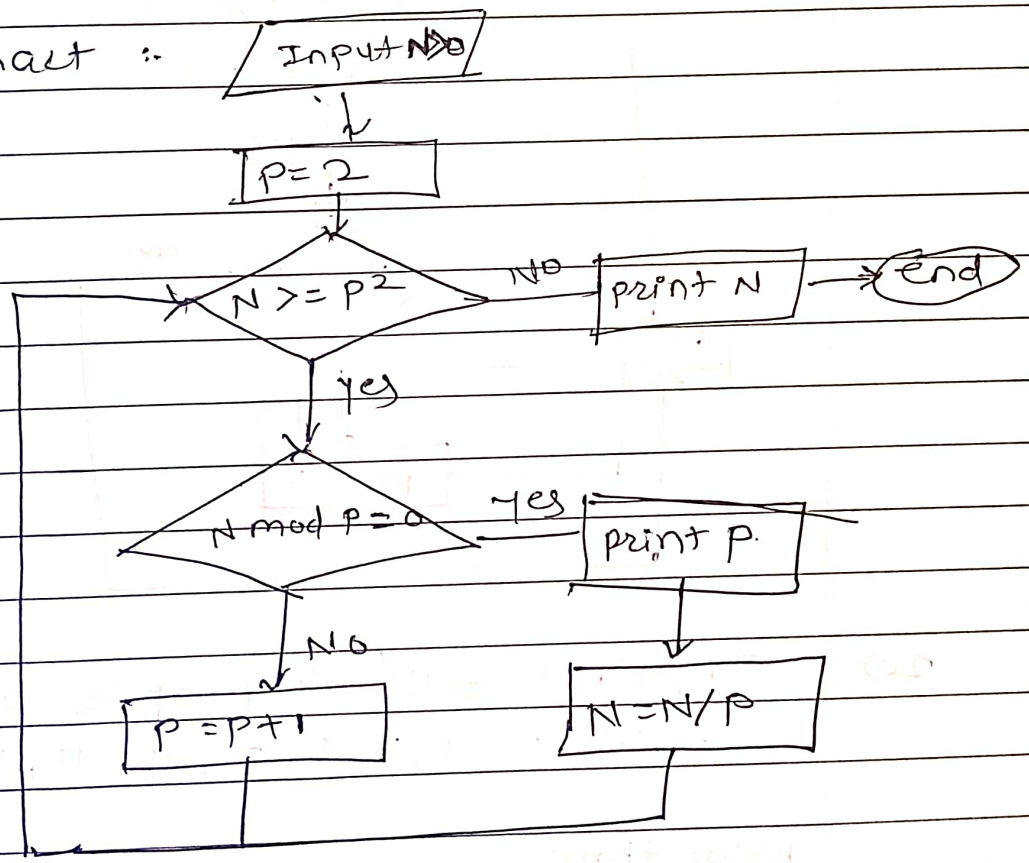
N = N / P

5) else P = P + 1

6) end if

7) print n.

flowchart :-

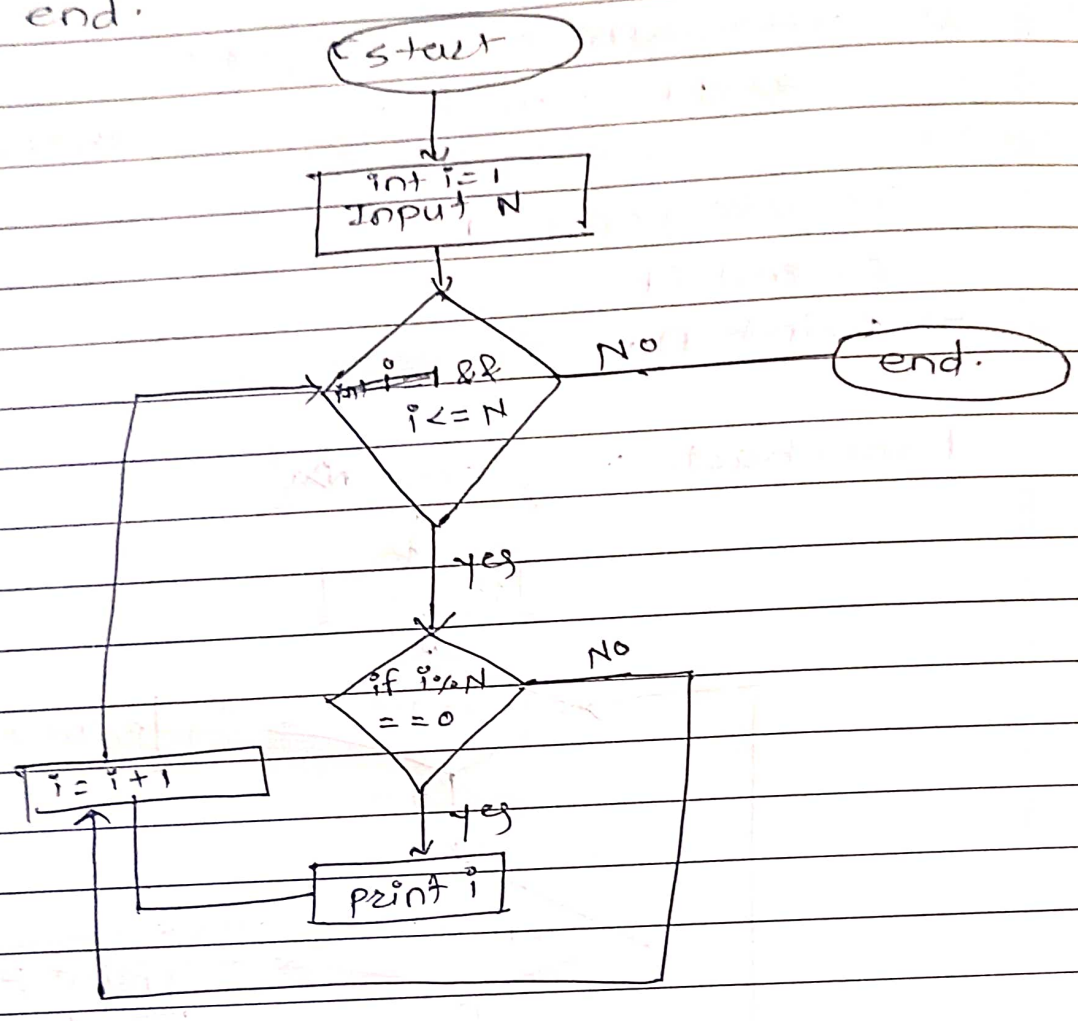


19) To print following Series Even number Series

2, 4, 6, 8, 10, 12, 14, 16 - - - - -

Algorithm :-

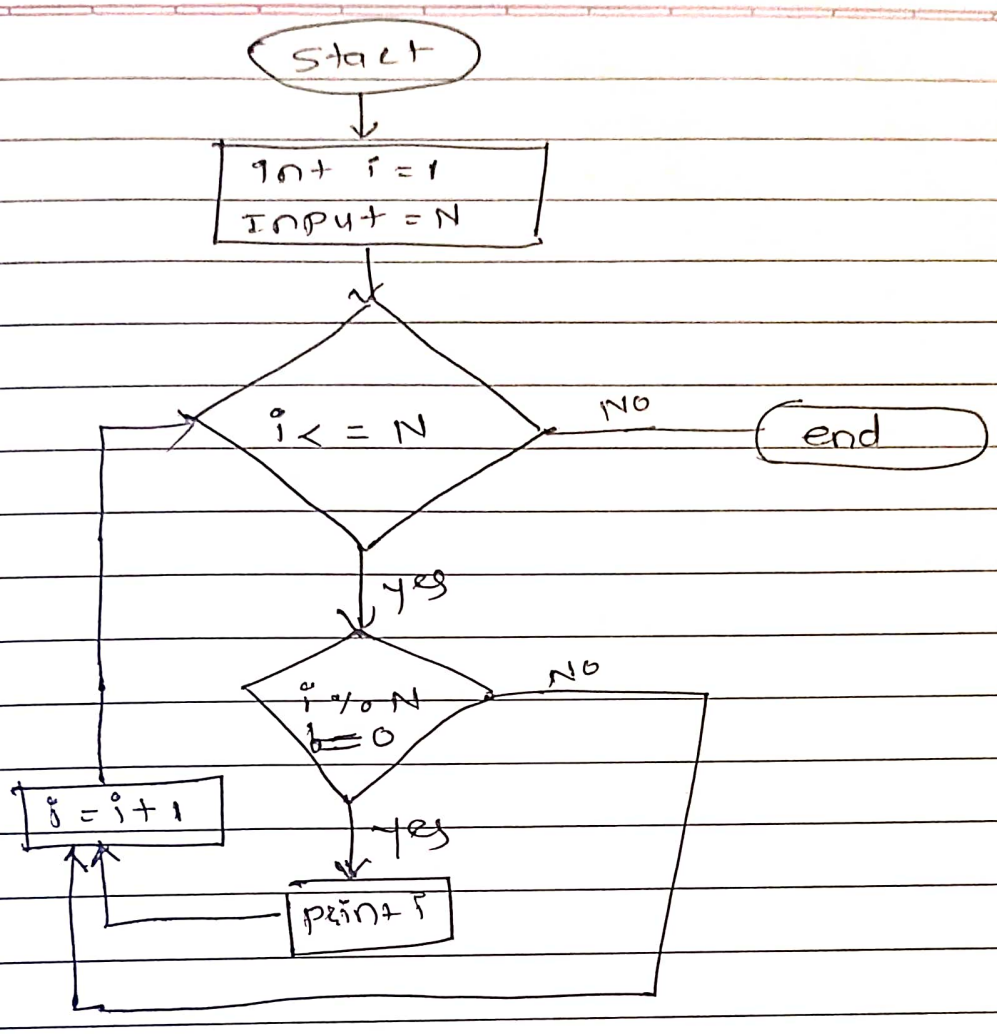
1) Input N
2) for (i=0; i<N; i++)
3) inside for loop Check if (i%2 =0) then
print i.
4) end.



2) To print following series ODD numbers
series :- 1, 3, 5, 7, 9, 11, 13 - - -

Algorithm:-

1) Input N
2) for i=1 & i<=N
check if (i%2 != 0) then print i
3) increment i=i+1 goto step 2
4) end.


start
int i = 1
INPUT = N
i <= N
NO
end
yes
i % N == 0
NO
yes
i = i + 1
print i