

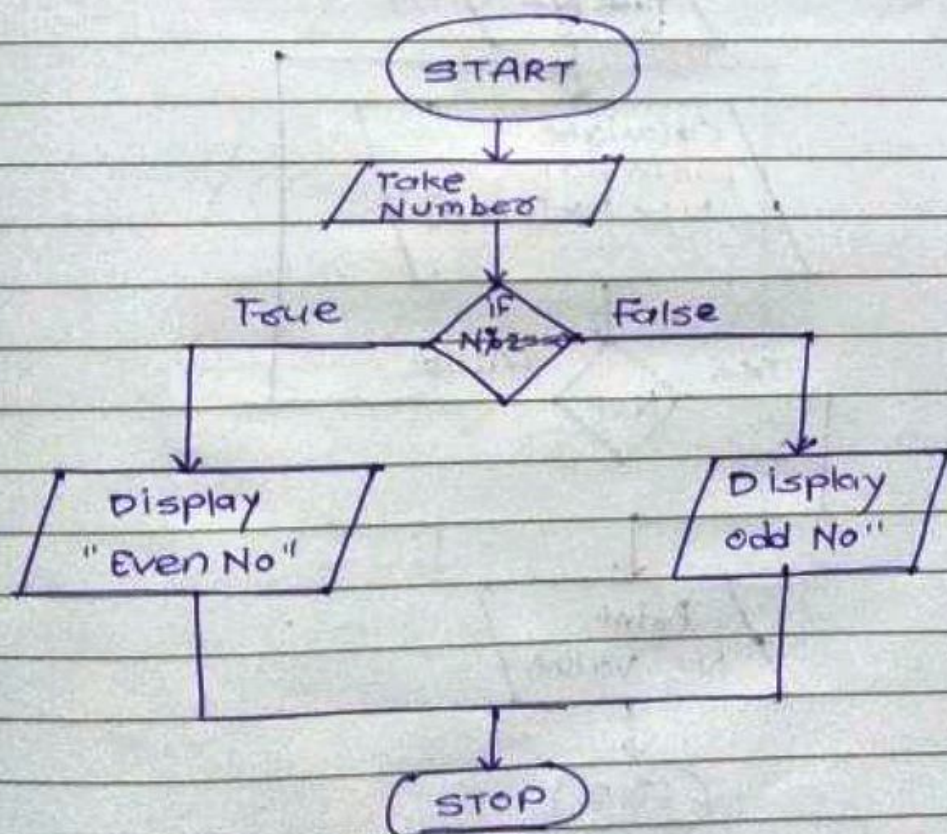
Assignment No - 1

DATE		

Q-1) check if given number is EVEN or ODD.

- i) START
- ii) Read / take the number
- iii) Divide the number by 2
- iv) if remainder is 0, then the number is even.
- v) if remainder is other than 0, then number is odd
- vi) Display the output
- vii) END.

Flowchart



Q-2) Write a Java program to find the factorial of a given number.

→ i) start

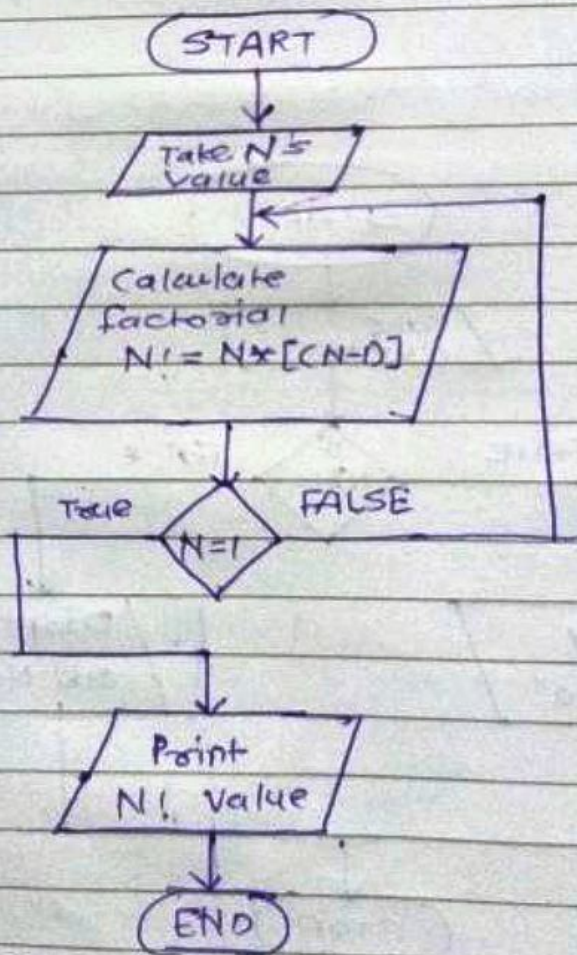
ii) Take the number N

iii) Factorial of $N! \rightarrow N \times [(N-1)]!$

iv) Repeat 3rd step until $N=1$

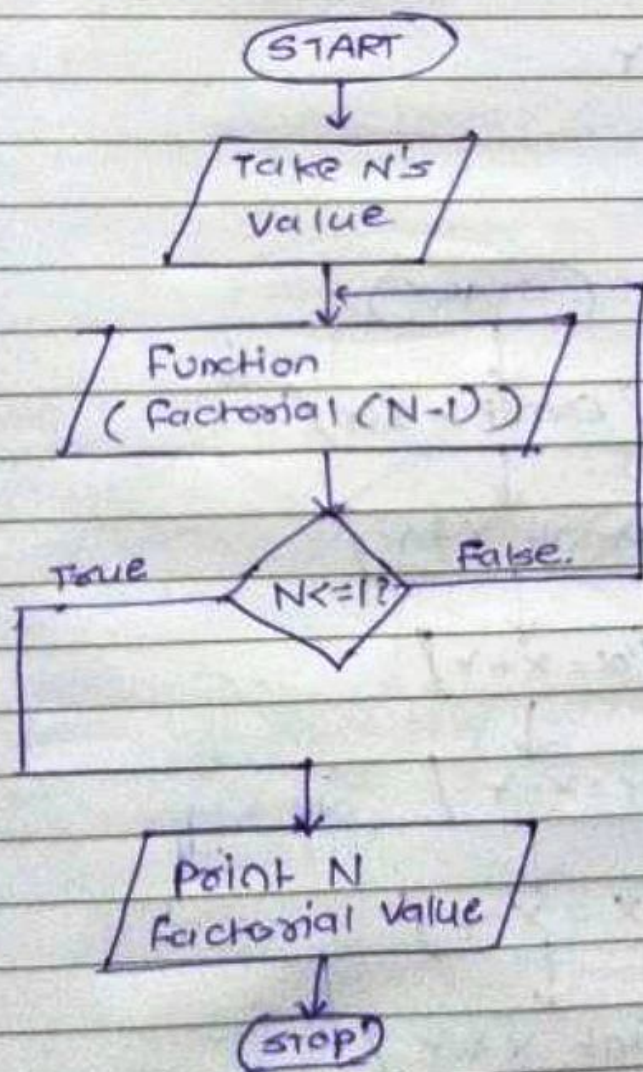
v) print $N!$ value.

vi) stop



Q-3) Find the Factorial of Number using recursion

- i) start
- ii) Take Number N
- iii) Define recursive F^N Factorial
- iv) Function (Factorial($n-1$))
- v) Repeat until $n \leq 1$
- vi) print Factorial value
- vii) STOP



Q-4] Swap two numbers without using third variable approach.

→ i] START

ii] Enter two numbers X & Y

iii] Print X & Y

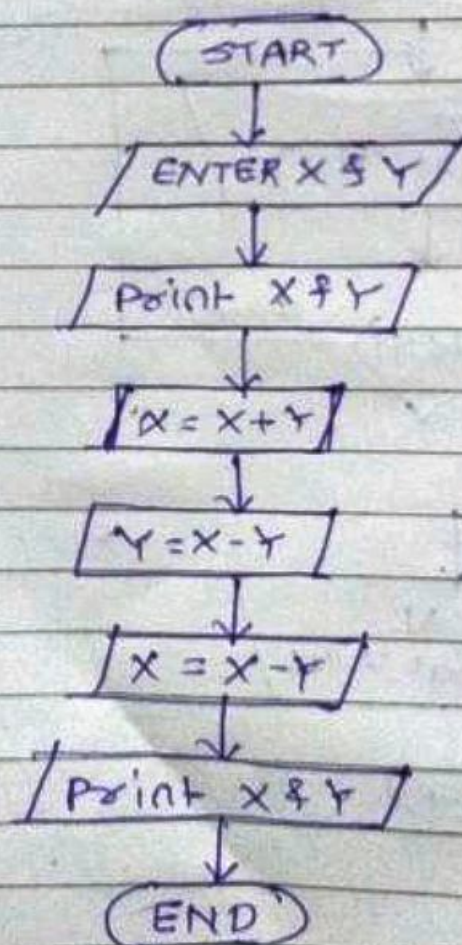
iv] $X = X + Y$

v] $Y = X - Y$

vi] $X = X - Y$

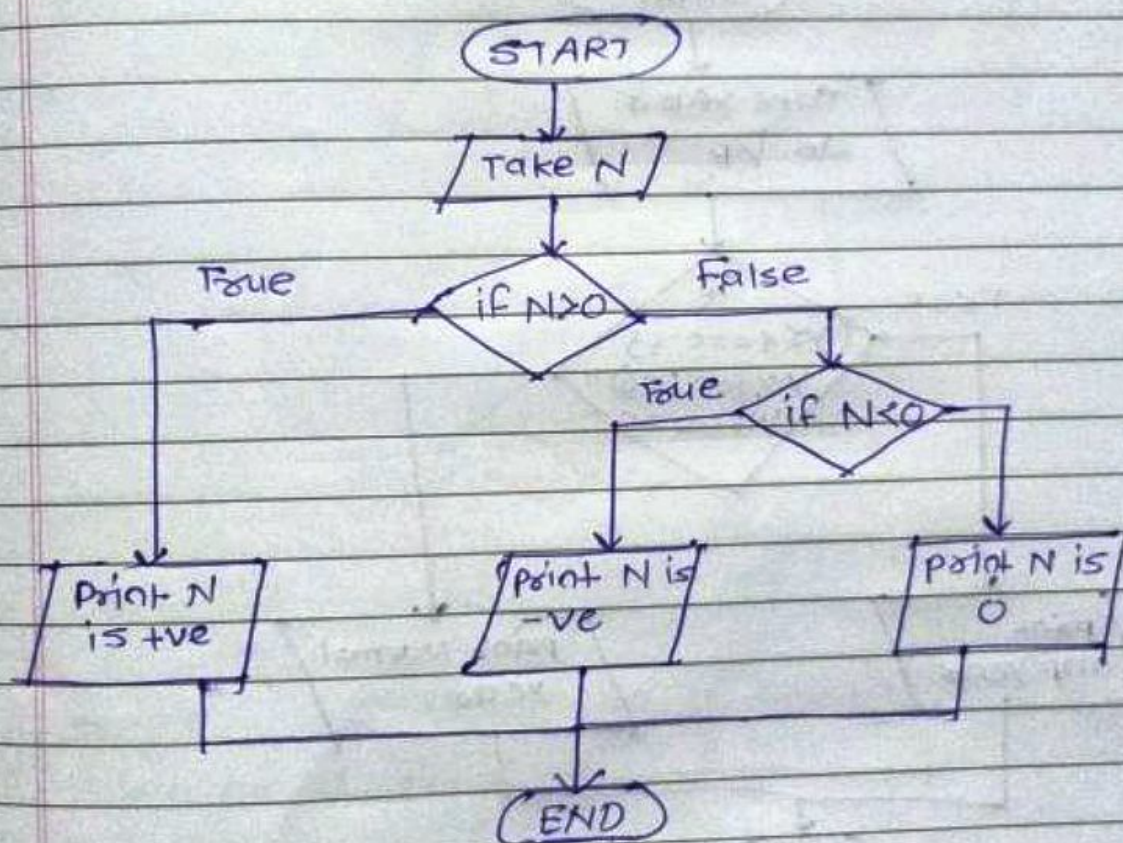
vii] Print X, Y

viii] END



Q-5) How to check whether the given number is positive or Negative in Java?

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- i) START
 - ii) Take the Number.
 - iii) IF Number is less than zero it is -ve.
 - iv) IF Number is more than zero it is +ve
 - v) IF Number is NO -ve & NO +ve then it is 0.
 - vi) print answer
 - vii) STOP/END.



Q-5) write a java program to find whether a given number is leap year or Not.

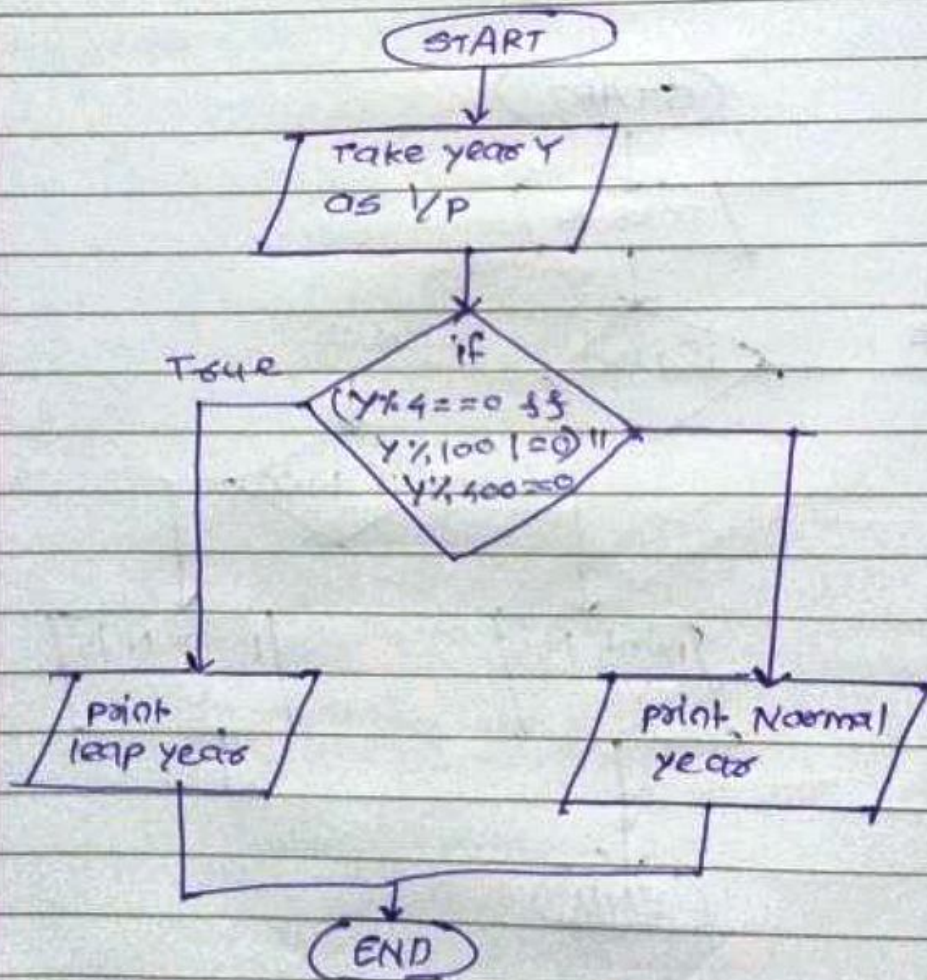
→ 1) START

ii) Take input Y as a year.

iii) if $(Y \% 4 == 0 \ \&\& \ Y \% 100 != 0) \ || \ Y \% 400 == 0$ then it is leap year, else Not leap year.

iv) Display result.

v) END.

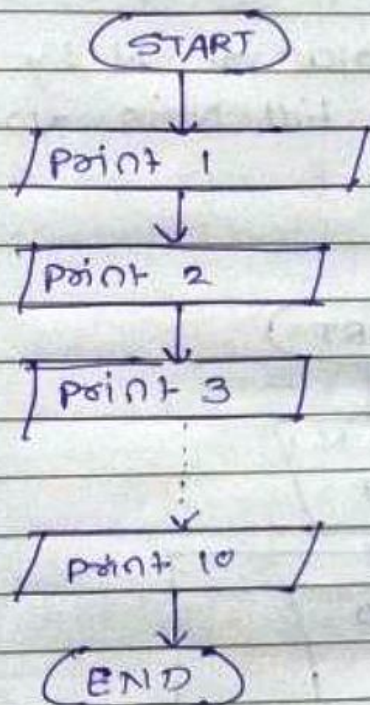


Q-7) Write a java program to print 1 to 10 without using loop.

→ i) START

ii) print 1 to 10 using System.out.println.

iii) END.



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Using Recursion.

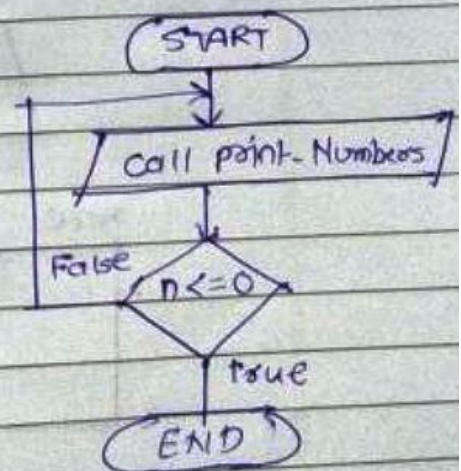
1) START

2) When $n \leq 0$, return

3) call printNumbers recursively

4) print while returning from recursion

5) END



Q-8] Write a java program to print the digits of a given number.

→ 1] START

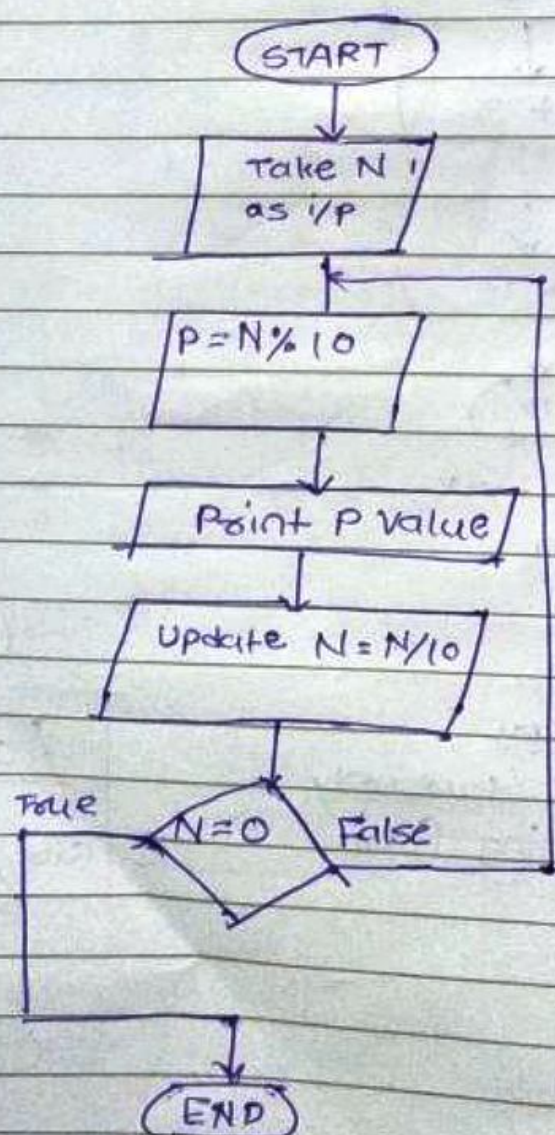
ii] Take Number as a input N.

iii] Extract last digit by $N \% 10$ & store in another Variable, & print

iv] Now update Value of N by $N / 10$ & repeat step 3 till N is not equals to 0

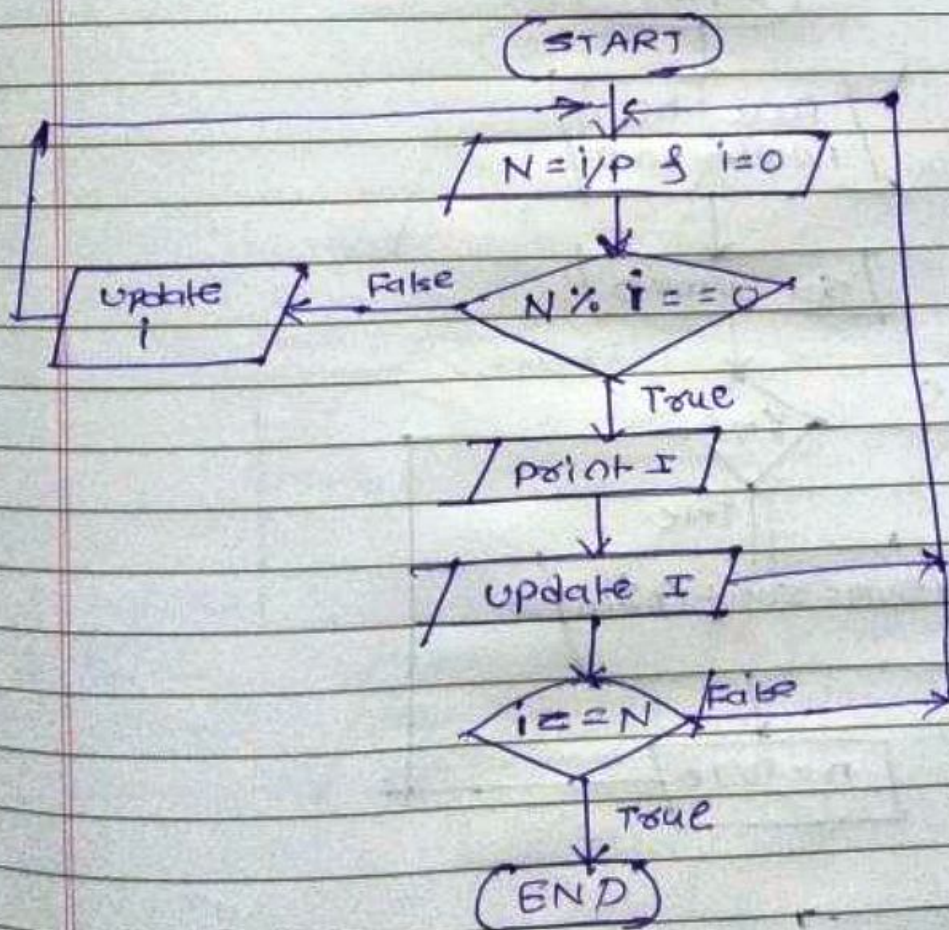
v] Print Numbers

vi] STOP



Q-9) Write a java program to print all factors of a given number.

-
- i) ~~Take~~ START
 - ii) Take number as N input.
 - iii) declare another variable $i = 1$
 - iv) From i to N, if in betⁿ any ~~at~~ number can able to divide N completely, it is factor of N.
 - v) check $\text{number} \% i = 0$ if true print i value if false go next & update i .
 - vi) repeat steps until $i = N$.
 - vii) END.



Q-10] Write a java program to find sum of digits of a given number.

→ i] START

ii] Read/Take number N as i/p.

iii] set $sum = 0$

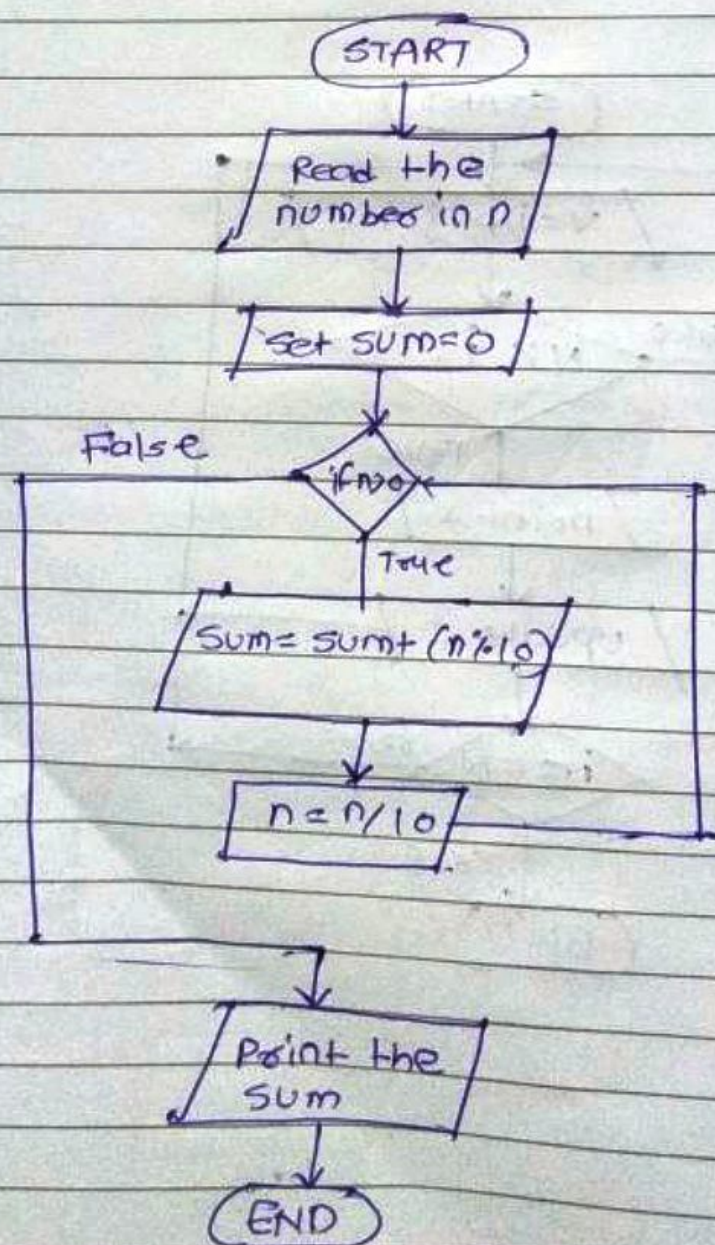
iv] if $n > 0$, $sum = sum + (n \% 10)$

v] update $n = n / 10$

vi] Repeat step 4 until $n > 0$.

vii] print the sum

viii] stop/END



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

→ i) Start.

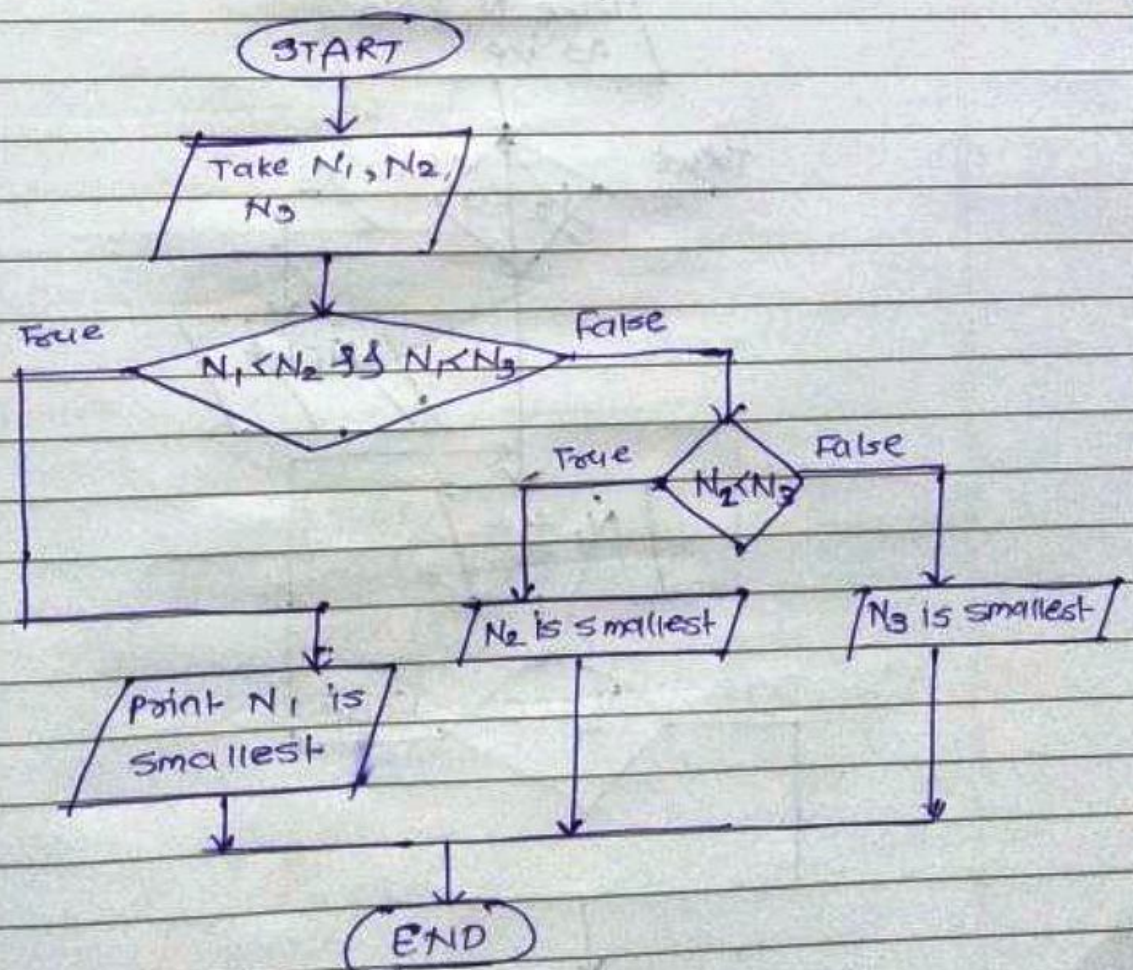
ii) take three numbers N_1 , N_2 , N_3 as a input.

iii) check N_1 is smaller than N_2 & N_3 , if true then print N_1 is smallest.

iv) Else check num2 or num3 is smallest.

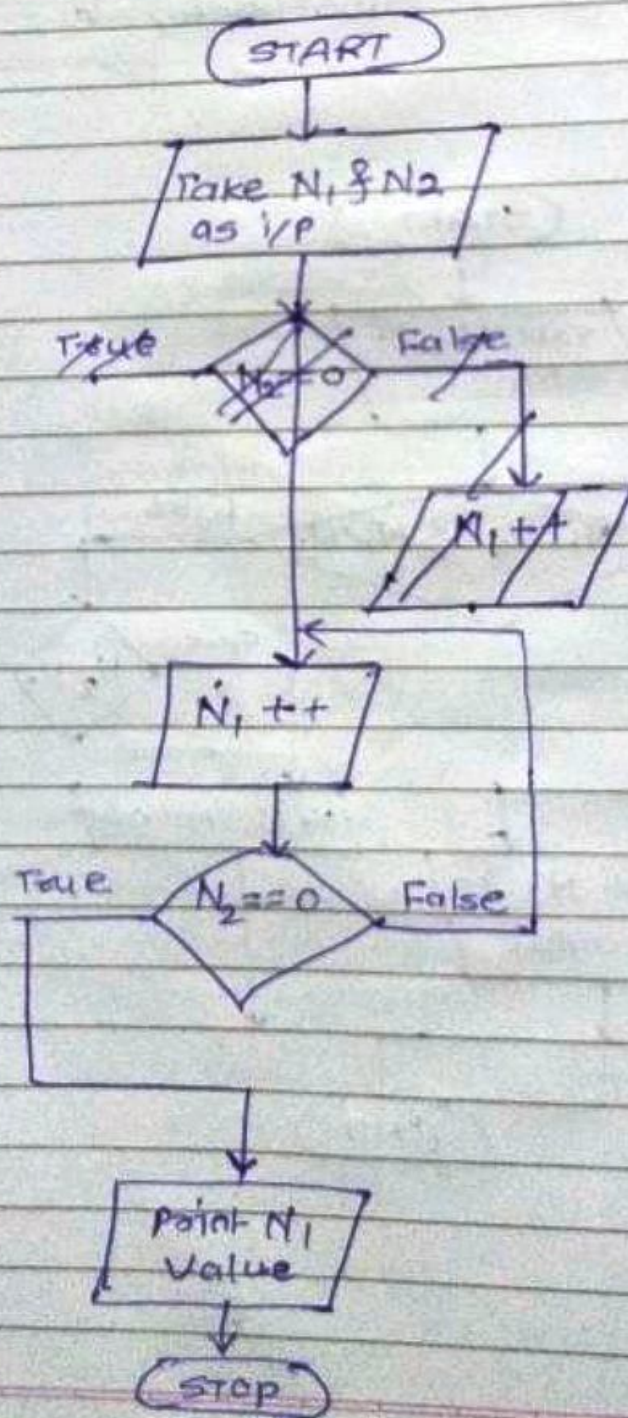
v) if num2 is greater than num3 then print num3 is smallest, else num2 is smallest.

vi) END.



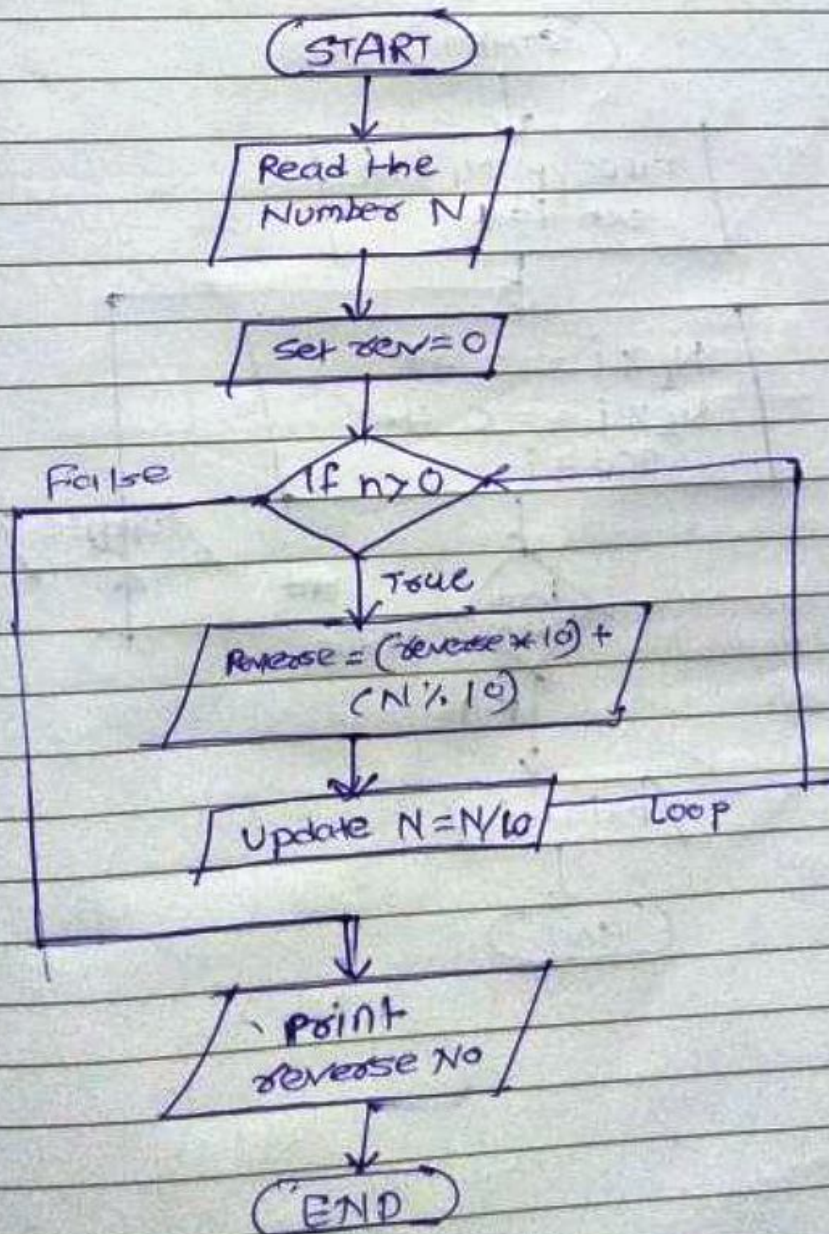
Q-12) How to add two numbers without using arithmetic operators in java?

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- i) START
 - ii) Take two numbers N_1 & N_2
 - iii) increase N_1 by 1 using $N++$ until $N_2 == 0$
 - iv) decrease N_2 by 1 using $N--$
 - v) print Value of N_1 as addition.
 - vi) STOP



Q-13] Write a java program to reverse a given number.

-
- i] START
 - ii] Take Number as N
 - iii] set reverse = 0
 - iv] If $N > 0$, then $reverse = (reverse \times 10) + (N \% 10)$
 - v] update $N = N / 10$
 - vi] repeat 4th step until $N > 0$
 - vii] print the reverse Number.
 - viii] END



Q-13) Find Java program to Find GCD of two given numbers. (HCF)

→ i) START

ii) Take two numbers N_1 & N_2 as i/p.

iii) set variable $i = 1$.

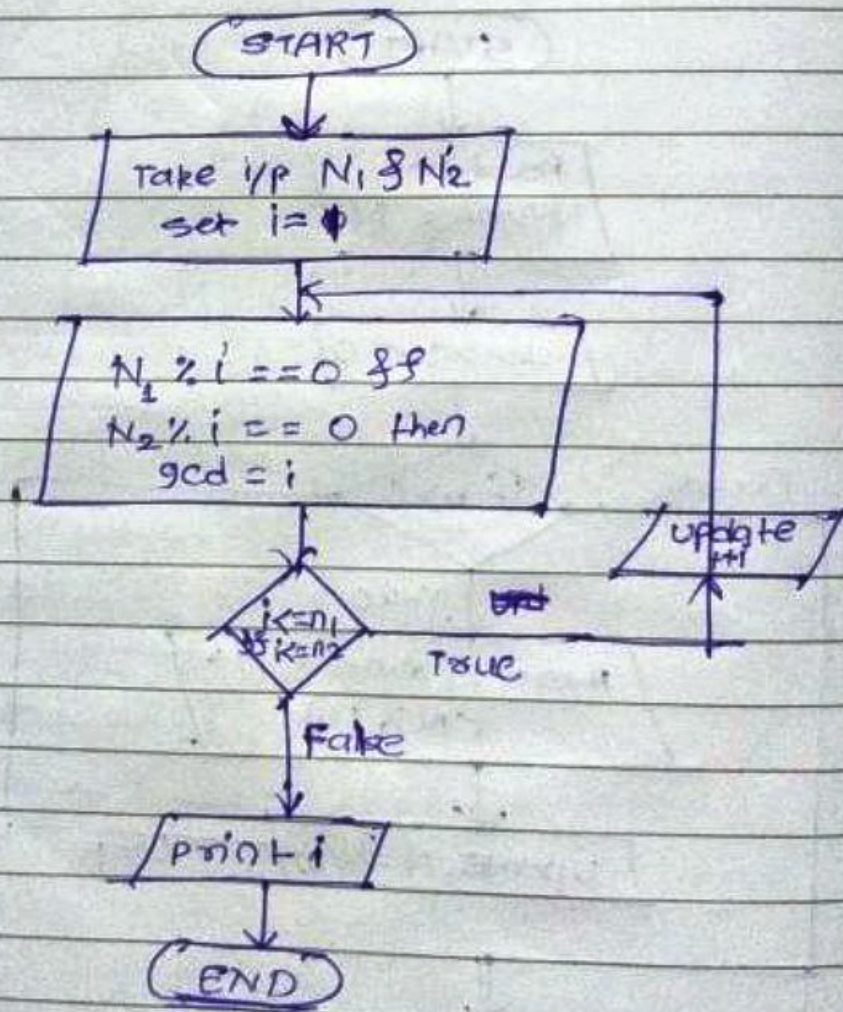
iv) if $N_1 \% i == 0$ & $N_2 \% i == 0$ then $gcd = i$

v) repeat step 4 until $i \leq N_1$ & $i \leq N_2$.

vi) update value of i before step v.

vii) print i value after step 4 if true.

viii) END.



Q-15] Write a java program to LCM of two given numbers.

→ i] START

ii] Take two numbers N_1 & N_2 as i/p

iii] Set Variable $i = 1$.

iv] if $N_1 \% i == 0$ & $N_2 \% i == 0$ then $gcd = i$

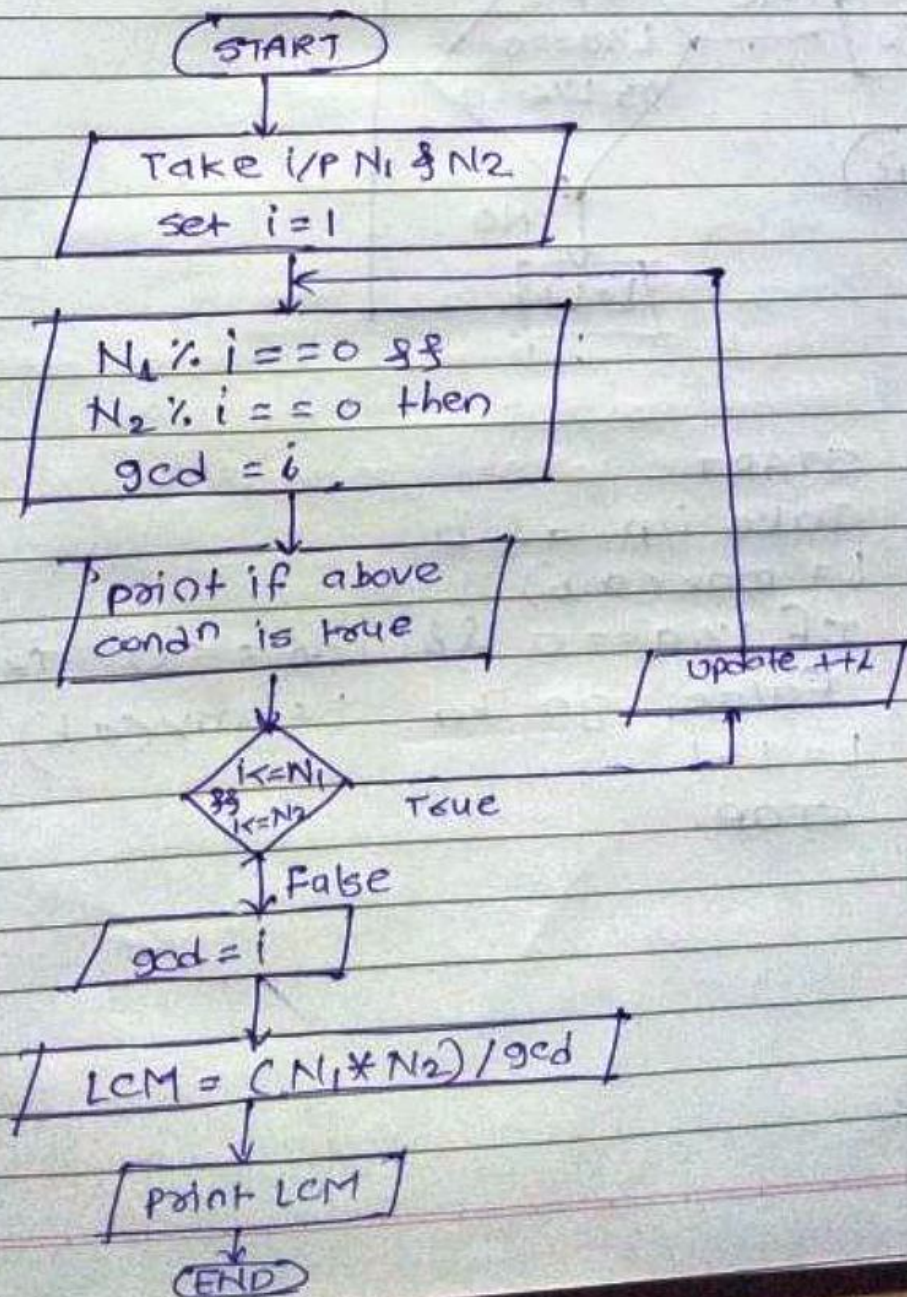
v] repeat step 4 until $i = N_1$ & $i \leq N_2$

vi] Update Value of i before step v.

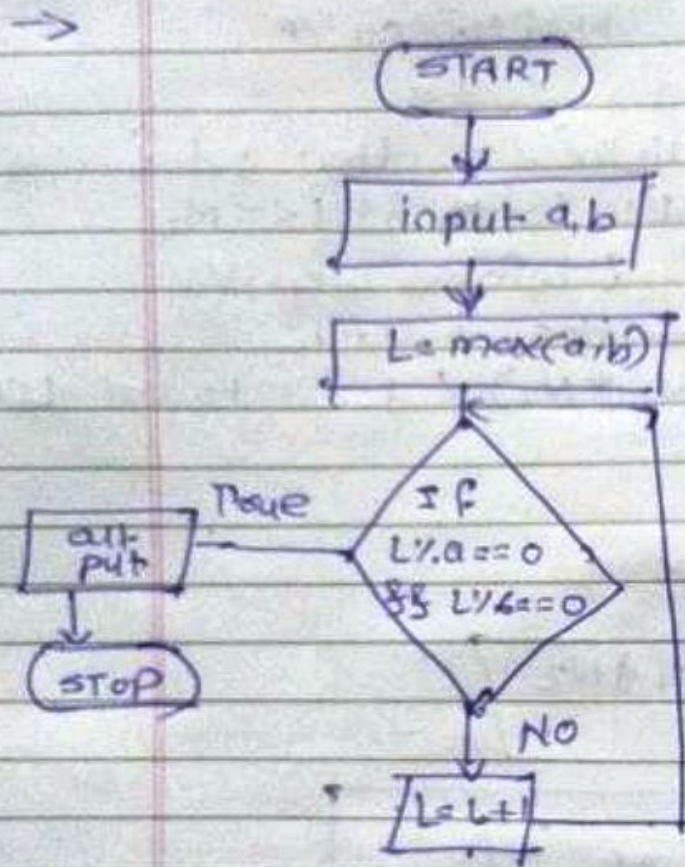
vii] Now gcd value is the i value

viii] use $LCM = (N_1 * N_2) / gcd$ to cal LCM.

ix] print LCM Value.



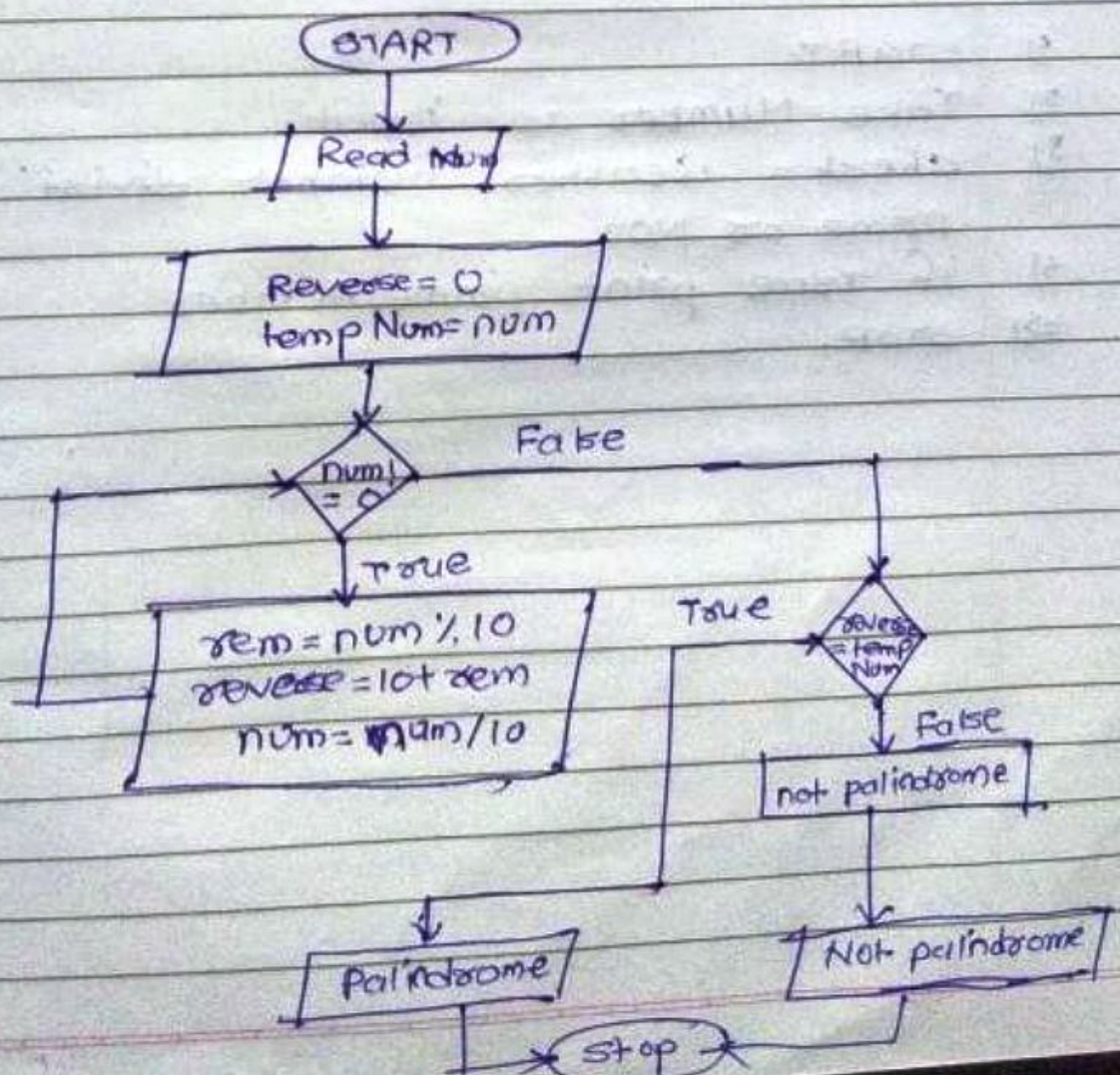
Q-16] Write a java program to LCM of two given numbers using the prime factors method.



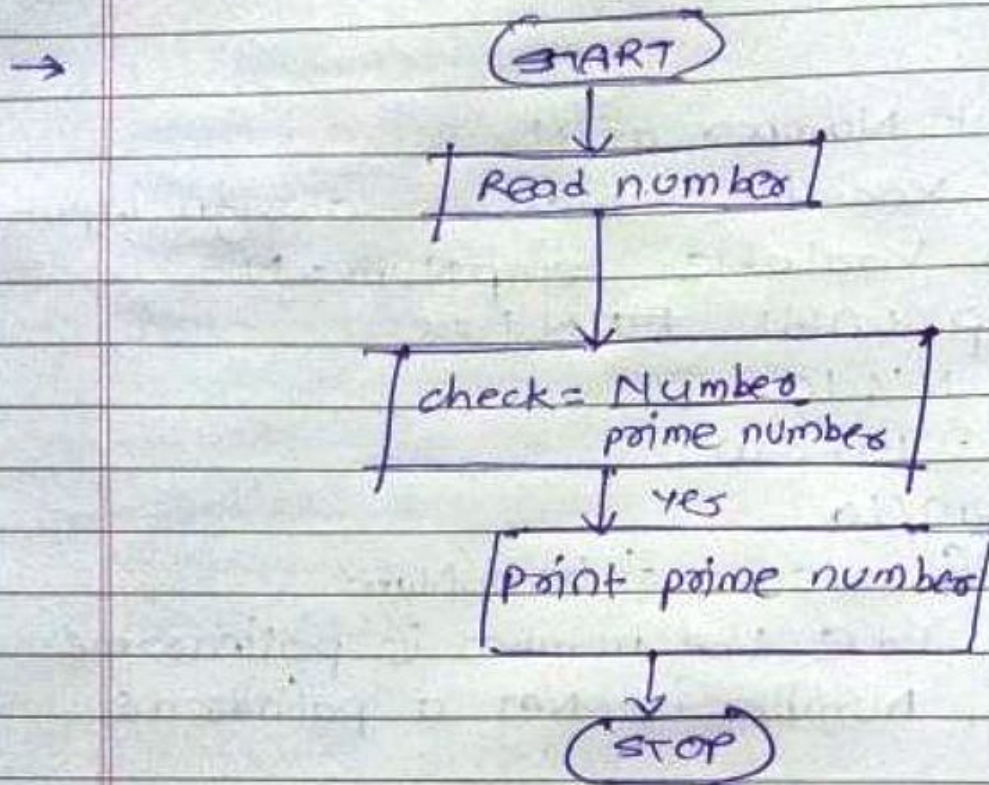
- 1) START
- 2) Take i/p a & b
- 3) $L = \max(a, b)$
- 4) IF $L \% a == 0$ & $L \% b == 0$ True o/p, False go to $L = \max(a, b)$
- 5) $L = L + 1$
- 6) STOP.

Q-17] check whether the given Number is a palindrome or Not.

-
- i] start
 - ii] take input Number as N
 - iii] Declare Variable reverse. assign input to temp Variable tempNum = N
 - iv] Use loop, until ~~N~~ N != 0
 - v] $rem = N \% 10$
 $reverse = 10 + rem$
 $N = num / 10$
 - vi] check if $reverse = tempNum$
 - vii] if it is true the number is palindrome
 - viii] if NOT, Number is NOT a palindrome.
 - ix] stop.



18) Write a java program to print all the prime factors of a given program.



- 1) START
- 2) Take Number as input.
- 3) check = whether number divisi is prime or Not
- 4) if True print prime numbers
- 5) stop.

19] To print the following series EVEN numbers
Series 2 4 6 8 10 12 14 16...

→ i] START

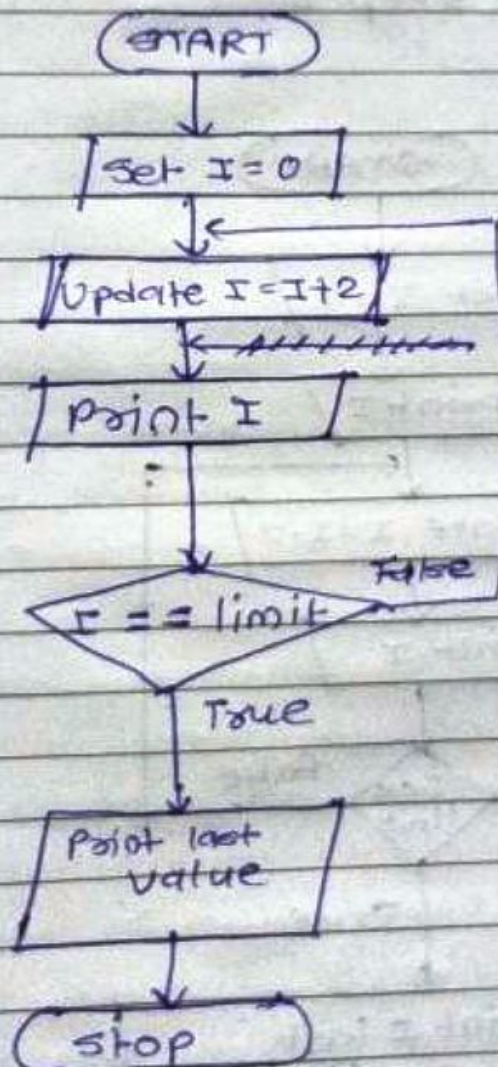
ii] Take variable $I = 0$

iii] Update $I = I + 2$

iv] print I

v] Repeat 3rd step until you want to reach your limit,

vi] END.



Q-20] To print the following odd number series
1, 3, 5, 7, 9, 11, 13.

- i] START
- ii] Set variable $I = 1$
- iii] Print I
- iv] ~~the~~ update $I = I + 2$
- v] print I value
- vi] check $I == \text{your given limit}$
- vii] if $I == \text{limit}$, print last value, if not, repeat step 4,
- viii] STOP.

