

Q Write an algorithm & draw a Flowchart for the following Programs.

1. check if the given number is Even or Odd.

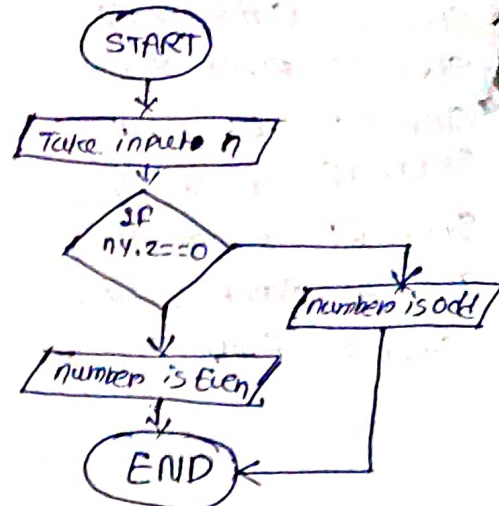
step 1: Start.

step 2: Take input of any number in "n".

step 3: check for "n" module "2" is exactly equals to "zero", then print "number is Even".

step 4: else print "number is odd".

step 5: END.



2. Write a program to Find Factorial of given numbers.

step 1: Start.

step 2: Take input of any number "n".

step 3: Consider two variable "m" & "fact" & assign them equals to "zero".

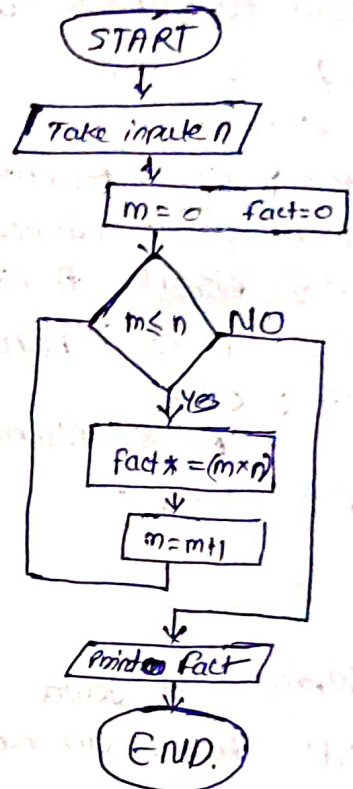
step 4: for "m" less than equals to "n".

step 5: $fact * = (m * n)$;

step 6: upgrade value of $m + = 1$;

step 7: when m is non less than or equals to n then Print Factorial (fact).

step 8: End.



3 Find the Factorial of a number using Recursion.

step 1: Start

step 2: Read number n

step 3: call Factorial (n)

Step 4: Factorial (n)

Steps: In $n == 1$ then return 1

Step 6: $G1x$

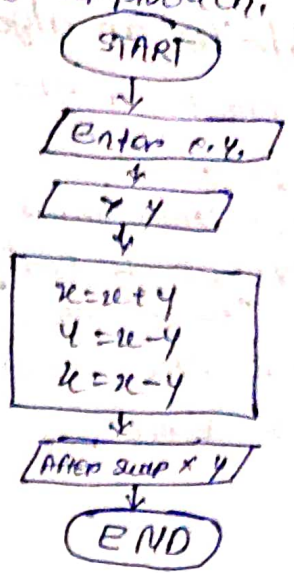
$F = n * \text{Factorial}(n-1)$

Step 7: Return F

step 8: STOP.

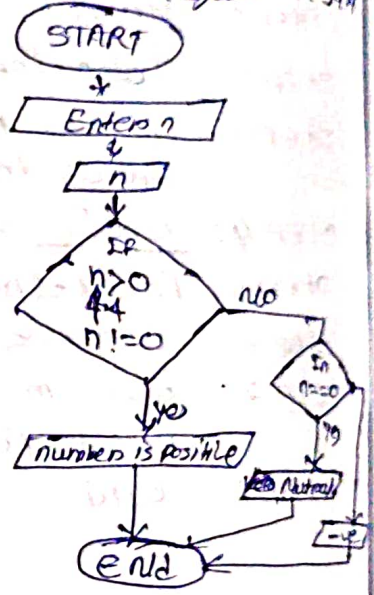
4) Swap two numbers without using the third variable approach.

- Step 1: START.
- Step 2: Enter x, y .
- Step 3: Print x, y .
- Step 4: $x = x + y$.
- Step 5: $y = x - y$.
- Step 6: $x = x - y$.
- Step 7: Print x, y .
- Step 8: END.



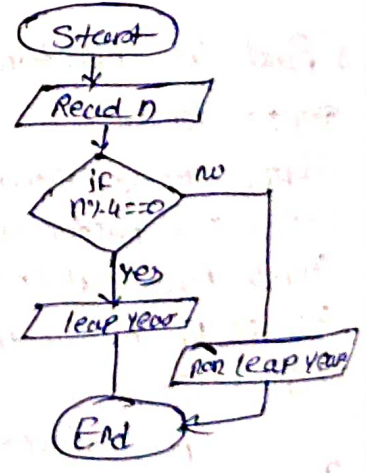
5) How to check whether the given number is positive or Negative or Zero.

- Step 1: Start.
- Step 2: Enter n .
- Step 3: Check if n is greater than 0 "44" not equals to 0.
- Step 4: Print "number is positive".
- Step 5: else if n is exactly equals to 0.
- Step 6: Print "Number is Neutral".
- Step 7: else print "Number is Negative".
- Step 8: End.



6) Write a Java program to find whether a given number is leap year or not.

- Step 1: Start
- Step 2: Read n
- Step 3: If $n \% 4 == 0$
- Step 4: Print "Year is leap year".
- Step 5: else
- Step 6: Print "Year is non leap year."
- Step 7: End.



9) write a java program to print 1 to 10 without using Loop.

step 1: start

step 2: print 1

step 3: Repeat step 2 then for 2, 3, 4, 5, 6, 7, 8, 9, 10

step 4: End

10) write a java program to print the digits of a given Number.

step 1: start

step 2: Read Number "n"

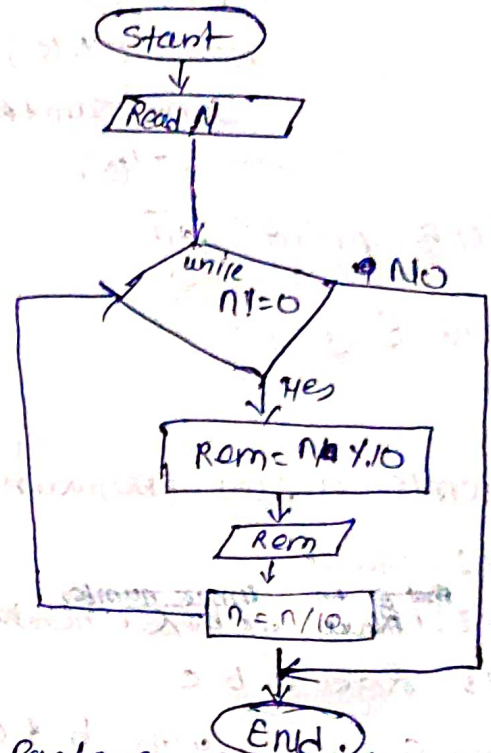
step 3: while (n != 0)

Rem = n % 10;

n = n / 10;

Print Rem;

step 4: End.



11) write a java program to print all the factors of the given number.

step 1: start

step 2: declare int i, n

step 3: Read n

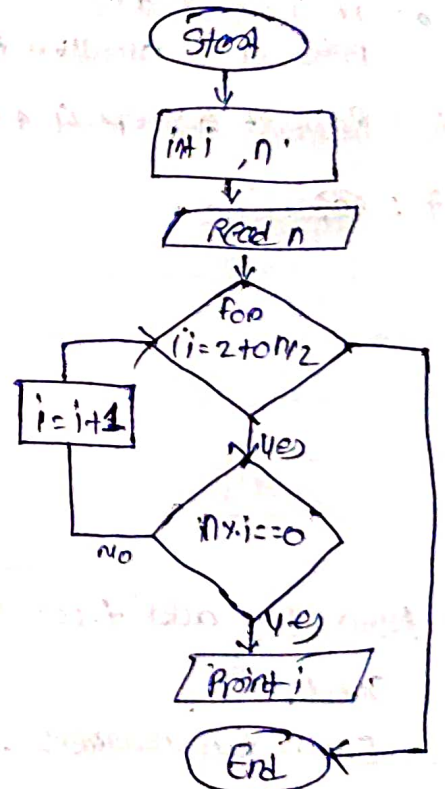
step 4: for i = 2 to n/2, i = i + 1

step 5: check if n % i == 0

step 6: print i

step 7: else

step 8: End.



10) write a program to find ~~smallest~~ of 3 numbers the sum of the digits of a given number.

Step 1: Start

Step 2: Read n

Step 3: Declare & initialize $\text{int sum} = 0$

Step 4: while ($n \neq 0$)

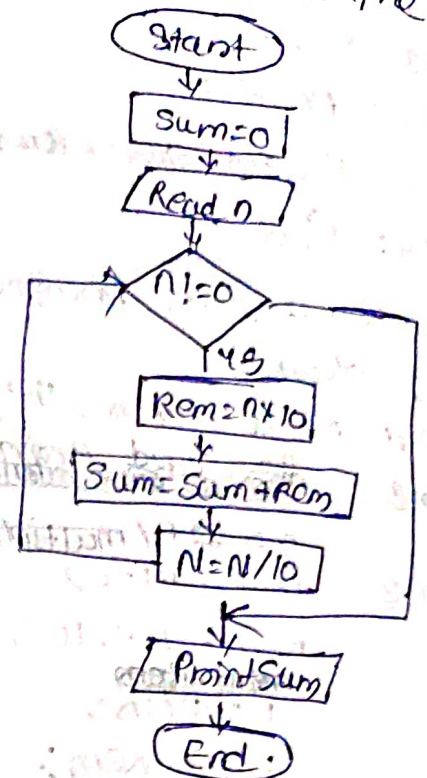
$\text{Rem} = n \% 10;$

$\text{Sum} = \text{Sum} + \text{Rem};$

$n = n / 10;$

Step 5: print "Sum"

Step 6: End



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

Step 1: Start

Step 2: Print Enter three numbers

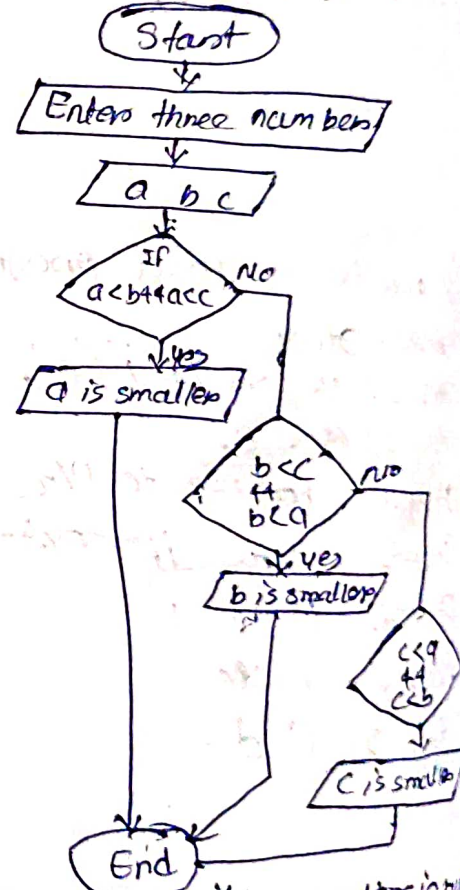
Step 3: Read a b c

Step 4: compare a with b & c

Step 5: IF $a < b$ & $a < c$
print a is smaller than b & c.

Step 6: Repeat step 4 & step 5 for b & c

Step 7: End



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

Step 1: Start

Step 2: Enter two numbers

Step 3: Read x & y

Step 4: if $y \neq 0$ then print x

Step 5: else while ($y \neq 0$)

Step 6: declare carry variable & assign with $x \& y$

$x = x \oplus y;$

$y = \text{carry} \ll 1;$

step 7: After step 5 & step 6 print sum

step 8: End.

13) Write a Java program to reverse a given number.

step 1: Start

step 2: Declare n , reverse & remainder

step 3: Read n .

step 4: Check while n is not equal to zero

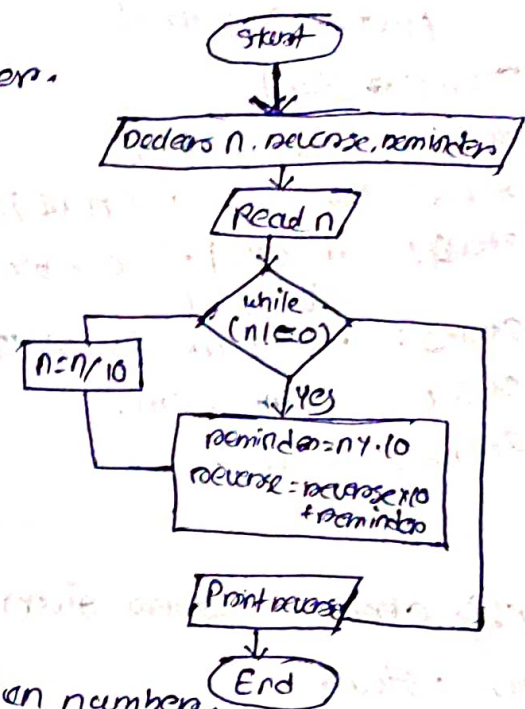
step 5: $remainder = n \% 10$;

$reverse = reverse \times 10 + remainder$;

$n = n / 10$

step 6: Print reverse

step 7: End.



14) write a Java program to find GCD of two given numbers.

step 1: Start

step 2: Declare variable $n_1, n_2, gcd = 1, i = 1$

step 3: Input n_1 & n_2

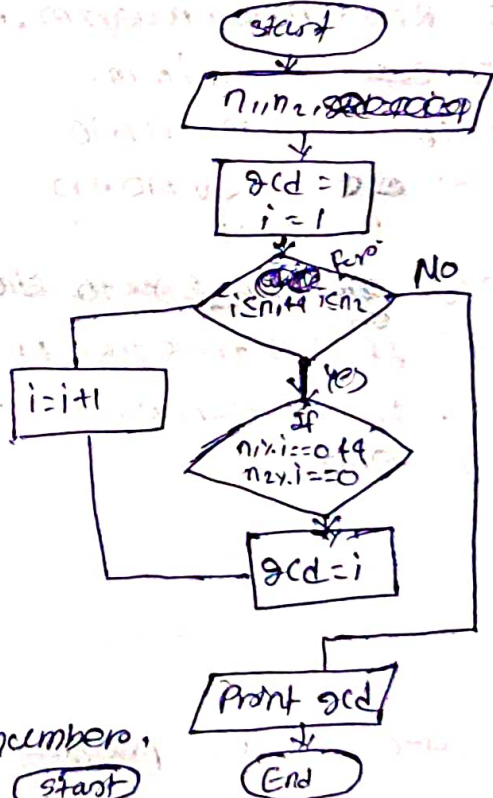
step 4: Repeat until $i \leq n_1$ & $i \leq n_2$

if $n_1 \% i == 0$ & $n_2 \% i == 0$

$gcd = i$

step 5: Print gcd.

step 6: Stop.



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

step 1: Start

step 2: Read n_1 & n_2

step 3: Declare LCM

step 4: $LCM = (n_1 \times n_2) / \text{GCD}(n_1, n_2)$

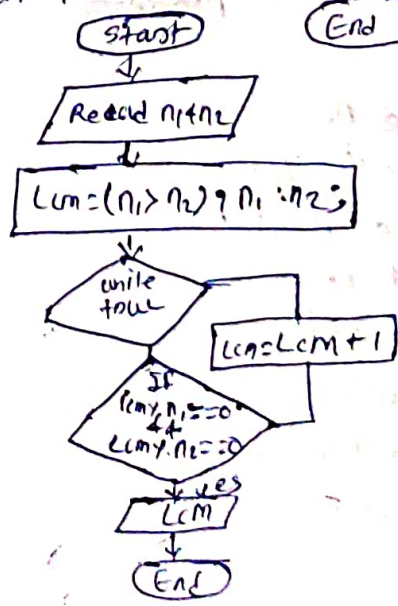
step 5: when while is true

if $(LCM \times n_1 == 0 \text{ & } LCM \times n_2 == 0)$

step 6: Print LCM

step 7: increment LCM

step 8: End.

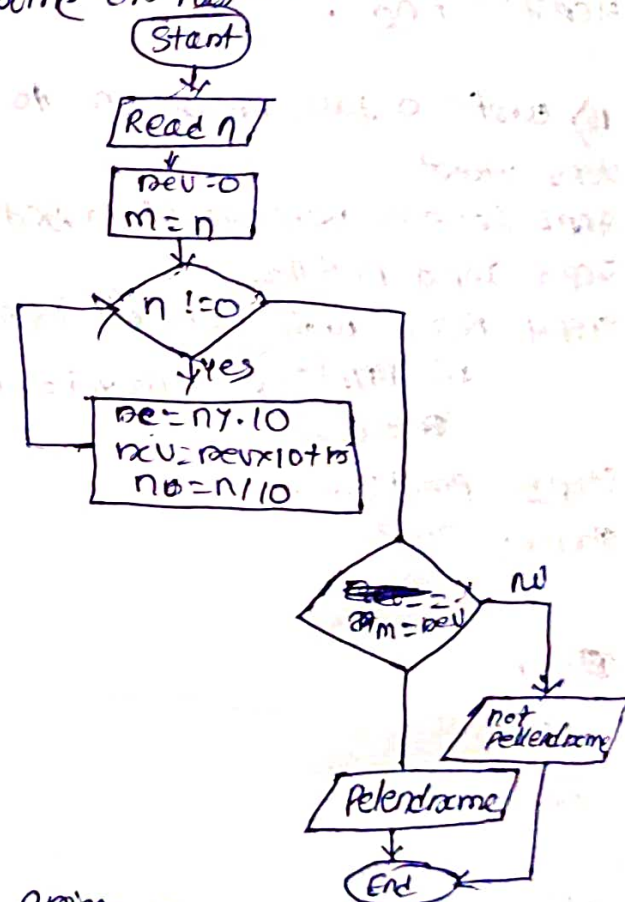


16) write a java program to LCM of Two given numbers using the prime factors method.

- Step 1: Start
 Step 2: Read n_1 & n_2
 Step 3: For $i = 1$ to $i \leq a \wedge i \leq b$
 Step 4: If $a \% i = 0 \wedge b \% i = 0$
 $gcd = i$
 Step 5: int $Lcm = (a * b) / gcd$
 Step 6: Print Lcm.
 Step 7: End.

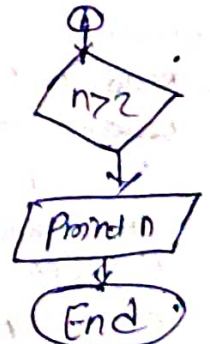
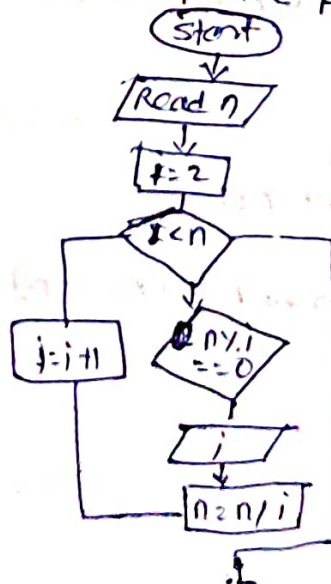
17) check whether given number is a palindrome or Not.

- Step 1: Start
 Step 2: Read n , declare m , $rev = 0$
 Step 3: ~~copy~~ copy n in m .
 Step 4: perform $rev = rev * 10 + n$
 Step 5: $rev = rev * 10 + n$
 $n = n / 10$
 Step 6: check $rev == m$
 Step 7: If it is true then print palindrome
 Step 8: If not then print not palindrome
 Step 9: End.



18) write a java program to Print all the prime factors of a given number.

- Step 1: Start
 Step 2: Read n .
 Step 3: Loop $i = 2$ to $i < n$, $i++$
 Step 4: while $n \% i = 0$
 Step 5: print i .
 Step 6: $n = n / i$
 Step 7: If $n > 2$
 Step 8: print n
 Step 9: End.



19) To print the following series Even number series 2, 4, 6

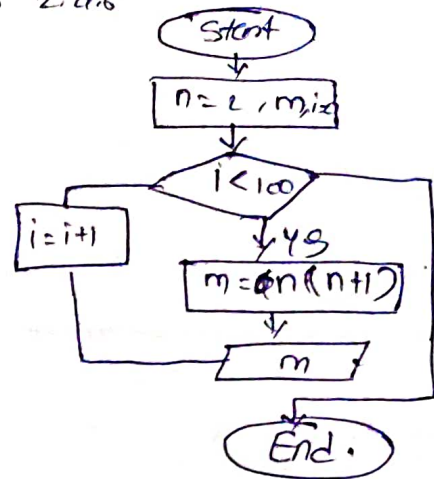
Step 1: Start

Step 2: $n = 2, m$

Step 3: For $i = 0$ to $i < 100, i++$

Step 4: $m = n(n+1);$
Print m .

Step 5: End.



20) To print the following series of Odd numbers.

Step 1: Start

Step 2: $n = 100$

Step 3: For $i = 1, i < n$

Step 4: If $i \% 2 \neq 0$

Step 5: Print i

Step 6: End.

