

# Assignment - 1

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\* Write algorithm as Flowchart for the following programs.

1) check if the given number is EVEN or odd.

Step 1 - Start the program.

Step 2 - Read the number 'n'.

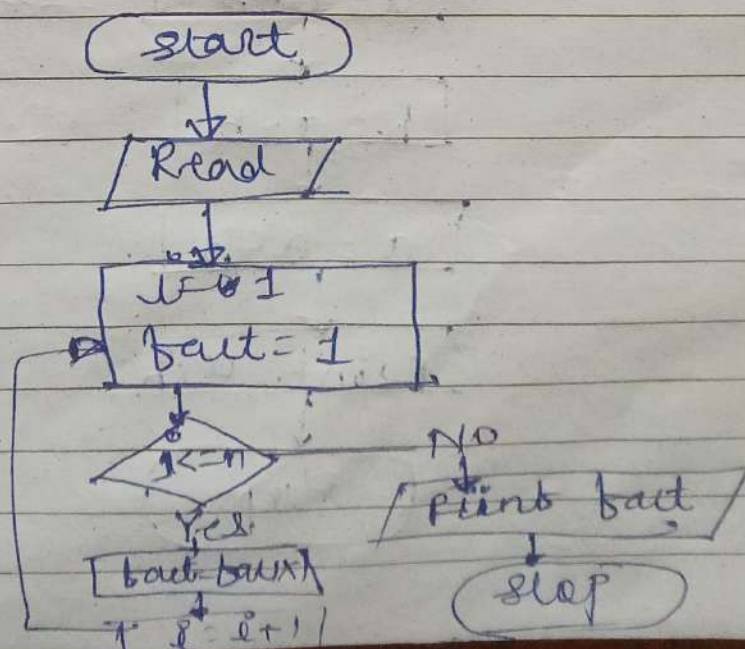
Step 3 - If  $n \% 2 == 0$  then the entered number is even.

Step 4 - else the number is odd.

Step 5 - Display the output.

Step 6 - Stop the execution of program.

② Flowchart for factorial of given number.





③

Algorithm for to find factorial of given number using recursion

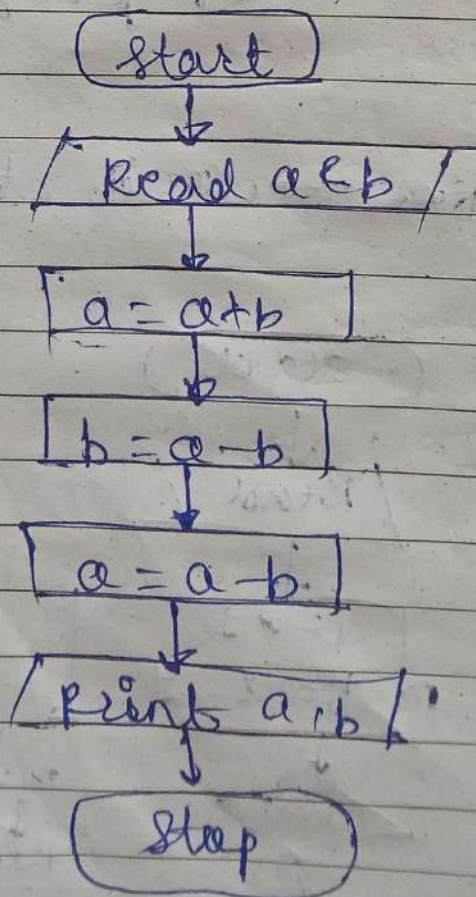
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- Step 1 - Start
  - Step 2 - Read number  $n$
  - Step 3 - call factorial( $n$ )
  - Step 4 - print factorial  $f$
  - Step 5 - Stop

for function factorial( $n$ )

- Step 1 - If  $n == 1$  then return 1
- Step 2 - Else  $f = n * \text{factorial}(n-1)$
- Step 3 - Return  $f$

④

Swap variables without using third variables





⑤ check whether the number is positive or negative

→

- Step 1 - Start
- Step 2 - Set  $n$
- Step 3 - if  $n > 0$   
then number is positive
- Step 4 - else  
number is negative
- Step 5 - End./step

⑥ check whether entered year is leap year or non-leap year

→

- Step 1 - Start
- Step 2 - Set / Read  $n$
- Step 3 - Set  $n$
- Step 4 - if  $(n \% 4 == 0 \parallel n \% 400 == 0)$   
then entered year is leap
- Step 5 - entered year is non-leap year
- Step 6 - Stop

⑦ print 1-10 without using loops

- Step 1 - Start
- Step 2 - print(1);  
↓ so on till 10.
- Step  $n$  - stop



⑧ Write java programs to prints the digits of given number

→  
suppose  
we  
have  
taken  
4  
digit  
numbers  
as an input

Step 1 - start  
Step 2 - <sup>declare</sup> get a, b, c, d, n.  
Step 3 - Read n  
Step 4 - set n  
Step 5 -  $d = n \% 10$   
Step 6 -  $n = n / 10$   
Step 7 - Repeat same for all elements  
Step 8 - print a, b, c, d  
Step 9 - End.

⑨ Algorithm for sum of digits of number

→  
Step 1 - Start  
Step 2 - Read number  
Step 3 -  $\text{number} \% 10$   
Step 4 - set Remainder in sum  
Step 5 - Divide the number by 10  
Step 6 - Repeat the step 2 to 4 while  $n > 0$ .  
Step 7 - END.



⑩ Write Algorithm or Flowchart to find smallest of three numbers

→

- Step 1 - Start
- Step 2 - Read  $a, b, c$ .
- Step 3 - If  $(a < b \ \&\& \ a < c)$   
then  $a$  is smallest
- Step 4 - If  $(b < a \ \&\& \ b < c)$   
 $b$  is smallest in case  
ab else
- Step 5 - else  $c$  is smallest
- Step 6 - End.

⑪ Write Algorithm or Flowchart to find factorials of given numbers

→

Algorithm

- Step-1 - Start
- Step-2 - Read  $n$
- Step 3 - Iterate loop from  
1 to that number
- Step-4 - If  $n \% i == 0$  then  
print  $i$
- Step 5 - Stop/End,

⑫ Algorithm for to add two num. numbers without using the arithmetic operators

- Step 1 - Start
- Step 2 - Create a function  
 $add()$  in a main  
which takes two arguments  
as  $int$
- Step 3 - Now, in main, read  
 $a$  &  $b$  from user



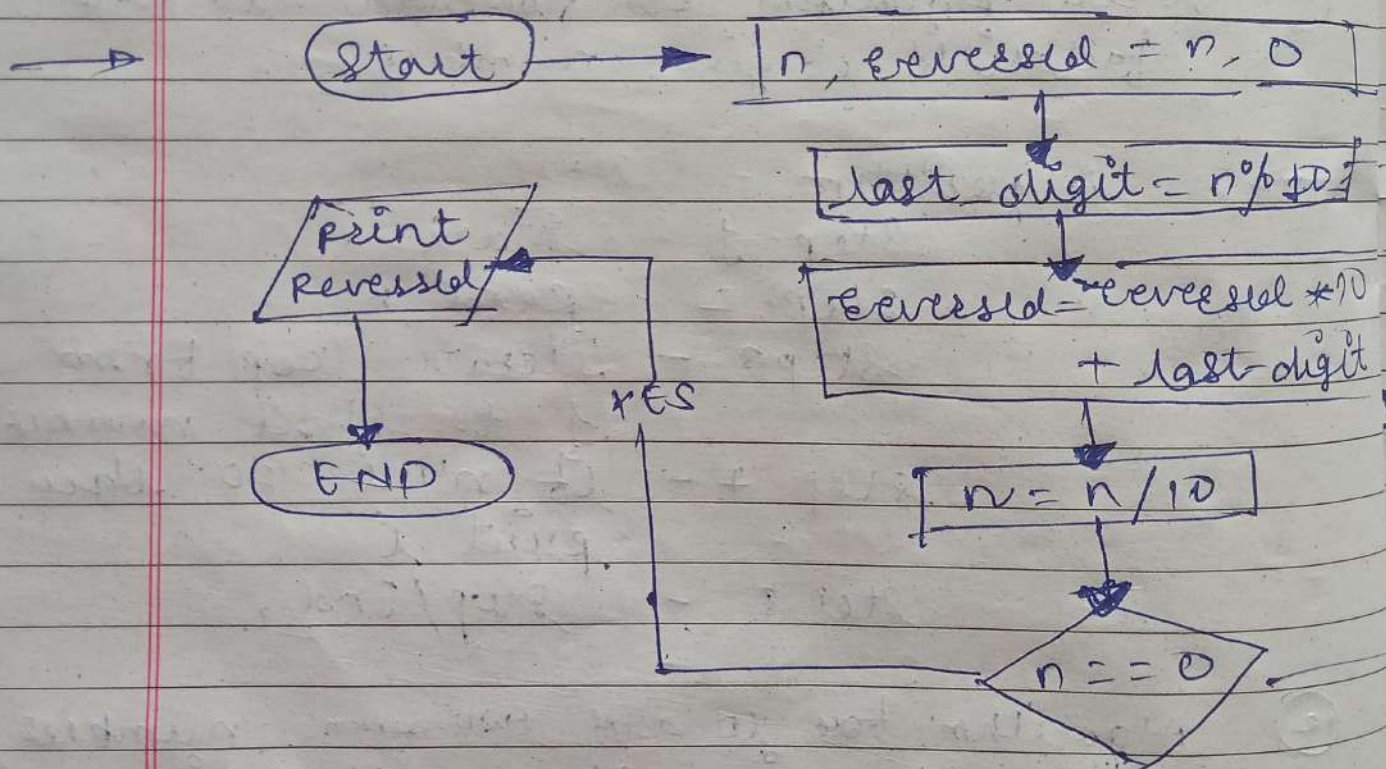
Step 4- Call that add() function from main a & b as an argument

Step 5- Now in that function we will increase the value of a till b by 1 every time by using loop

Step 6- print a i.e. sum

Step 7- END

13) Flowchart to Reverse the given number



14) Algorithm for to find GCD of two numbers

Step 1- Read x & y

Step 2- find factorial for both the numbers

Step 3- check that the number divide x & y completely or not



①5

Algorithm to find LCM of two nos.



Step-1 - Read & initialize both  $a$  &  $b$

Step-2 - Store the common multiple of both  $A$  &  $B$  in max variable

Step-3 - Check whether the max is divisible by both  $A$  &  $B$

Step-4 - If max is divisible, then display max as LCM

Step-5 - Else, the value of max is increased & go to step 3

Step-6 - Stop.

①7

Algorithm for to check whether no. is palindrome or not



Step-1 - Read no.

Step-2 - Hold the no. in temporary variable

Step-3 - Reverse the no.

Step-4 - Compare the temporary no. with reversed no.

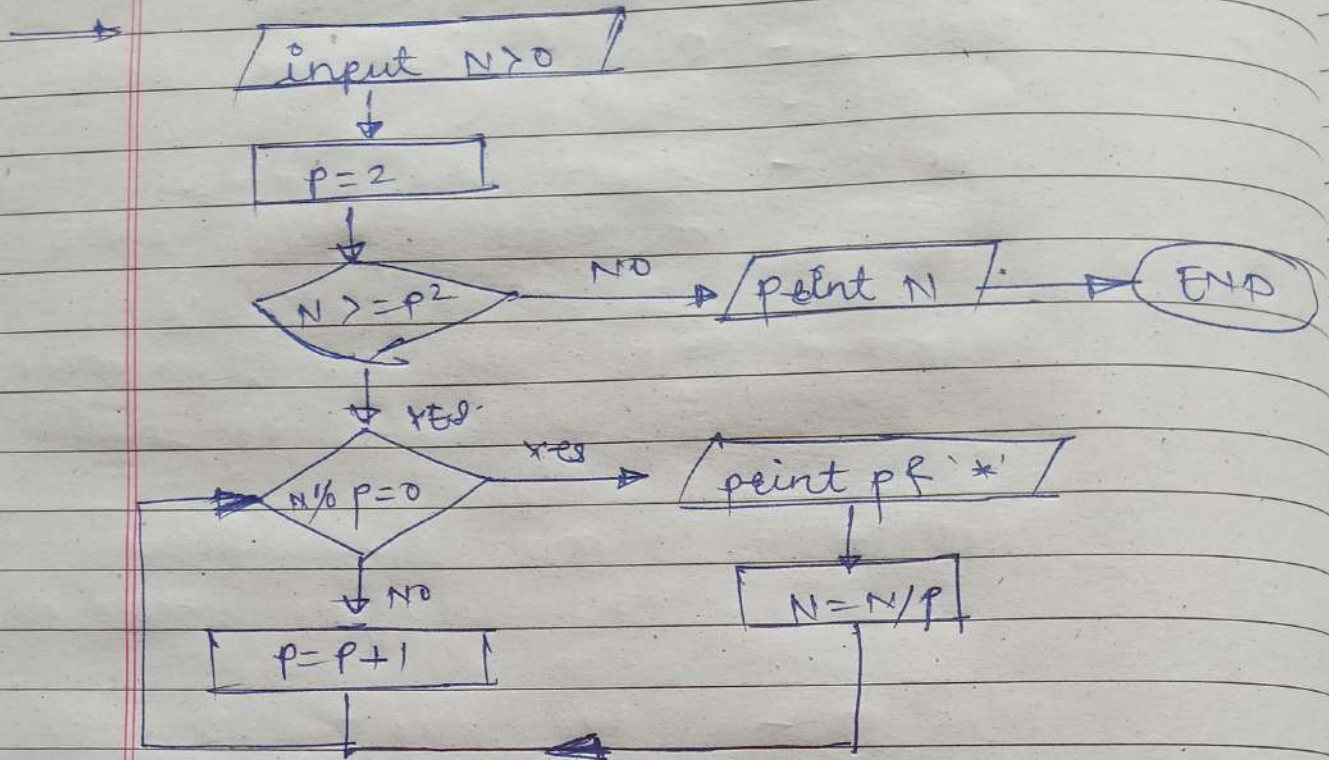
Step-5 - If both the nos. are equal then print entered no. is palindrome number

Step-6 - Else, print enter no. is not palindrome number



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Algorithm to find prime factors of given numbers (Flowchart)



19

Algorithm to print even number series

- Step 1 - Start
- Step 2 - Read the number
- Step 3 - Iterate loop till use according to use
- Step 4 - Inside loop, use if with  $n \% 2 == 0$  condition to print even numbers
- Step 5 - Stop / END

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Algorithm to print odd numbers series

