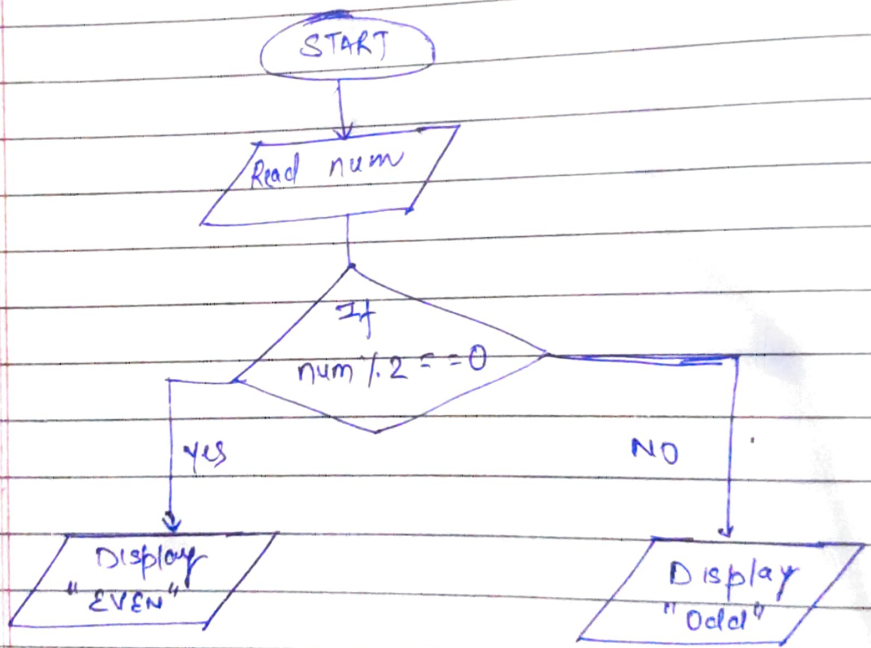
Assignment - 1

Algorithm and flowchart for following -

1) Check if the given number is even or odd.

Algorithm:-

1. Start
2. Read num
3. If num % 2 = 0
   Go to step 4, else step 5
4. Display 'even' and stop.
5. Display 'Odd' and stop.



2. Factorial of a number;-

① Start

② Read a number n
   Initialize i=1, fact = 1

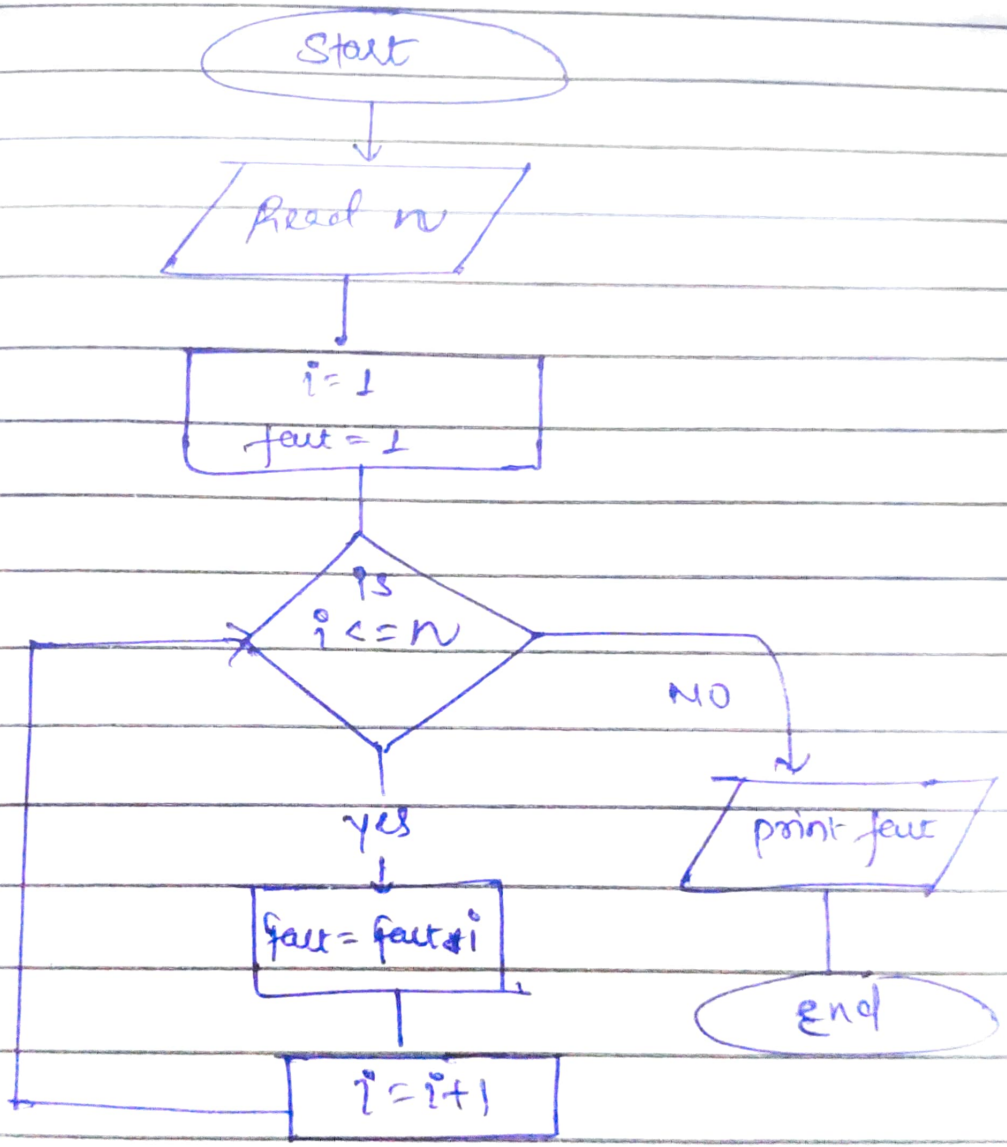
③ If i <= n go to step 4, else step 7

④ Calculate, fact = fact * i

(5) Increase i by 1 (i = i+1) & go to [redacted] 3

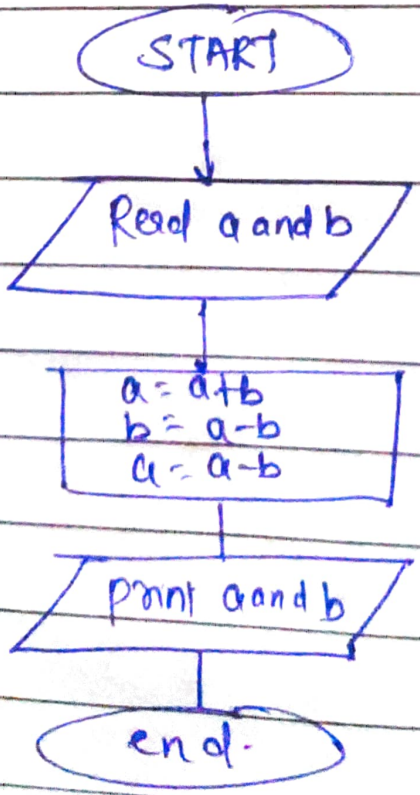
(6) print fact

(7) End.



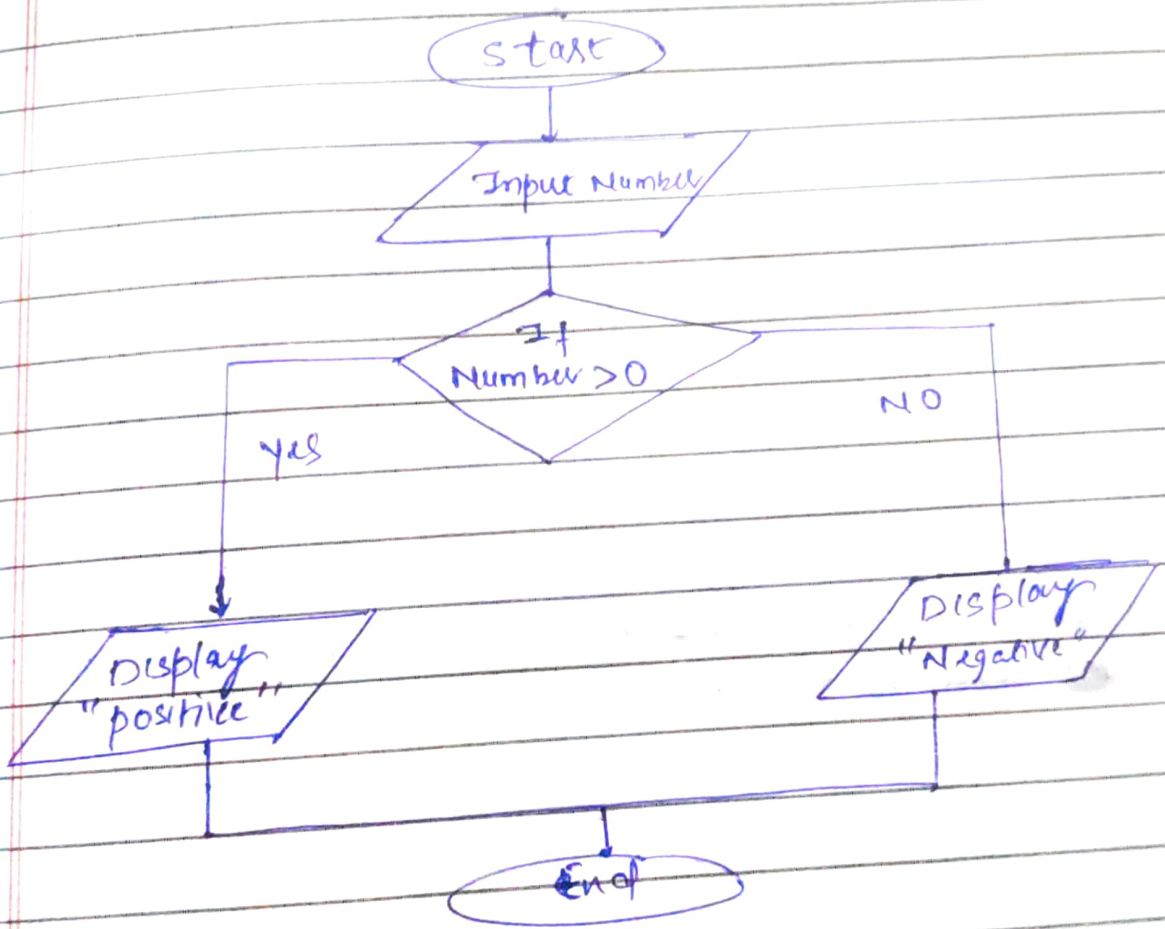
(4) Swap two numbers without using third

1. Start
2. Read two numbers a and b
3. a = a+b
   b = a-b
   a = a-b
4. print a and b
5. Stop



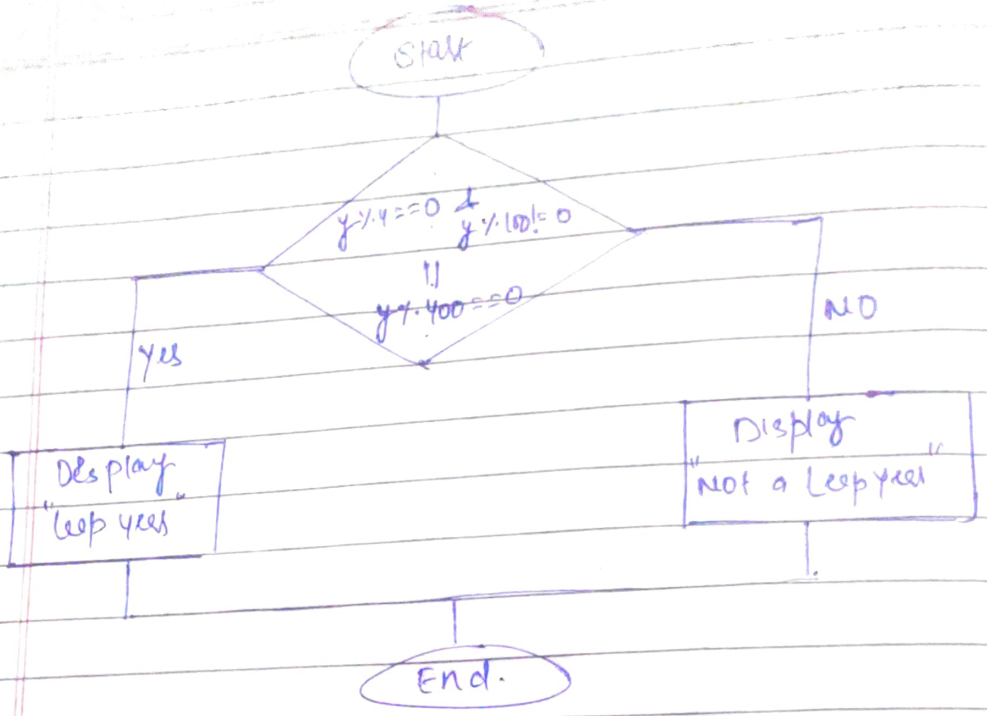
(5) check whether a number is positive or negative.

1. START
2. Read number n
3. check if n >= 0
4. If true print n is positive
5. If false print n is Negative
6. STOP.



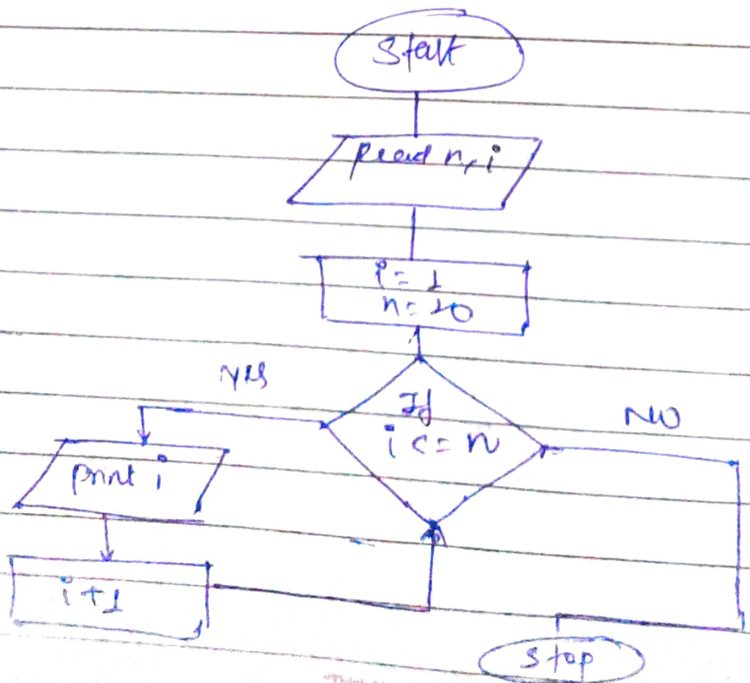
(6) Check whether a year is leap year or not

1. Start
2. Read year
3. Check if year is divisible by four but not hundred, print le
4. check if a year is divisible by four Hundred, print leap year
5. Otherwise print Not a leap year.
6. End.



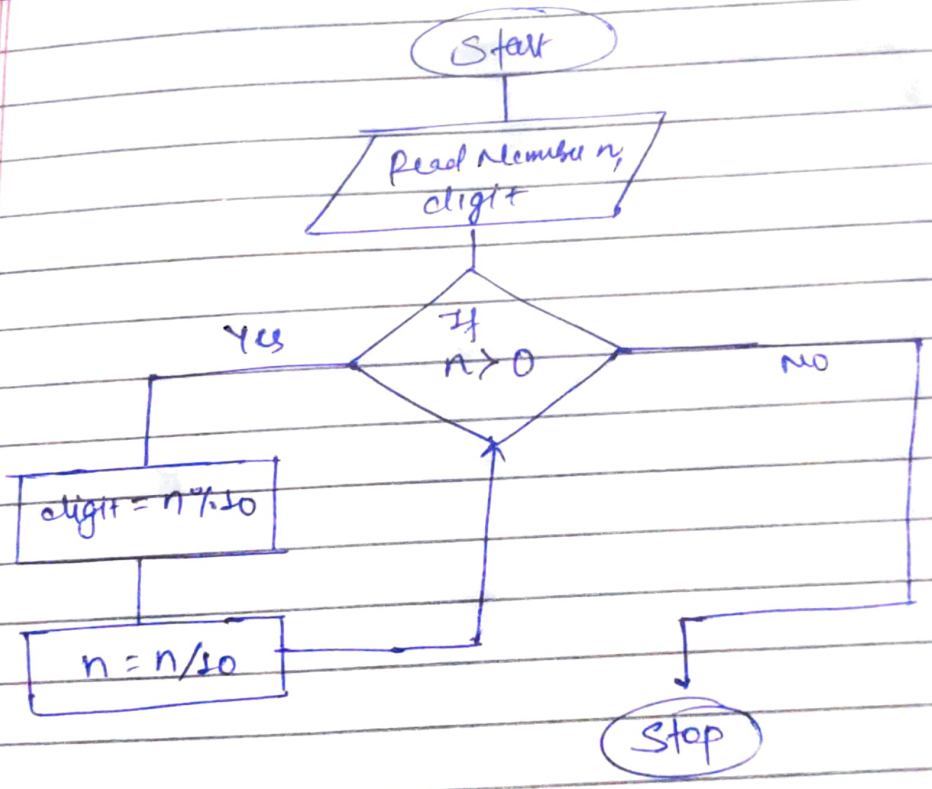
7) print 1 to 10 without using loop.

1. Start
2. Read n, i
3. i = 1, n = 10
4. Check if i <= n, print i & go to step 5, else go to step 7
5. print i and go to step 6
6. i+1
7. End.



⑧ print digits of a given number.

1. Start
2. Read a Number n, digit
3. Read digit
4. Check whether n is greater than zero, go to step 5, else step 8.
5. digit = n % 10
6. print digit
7. n = n / 10
8. Stop

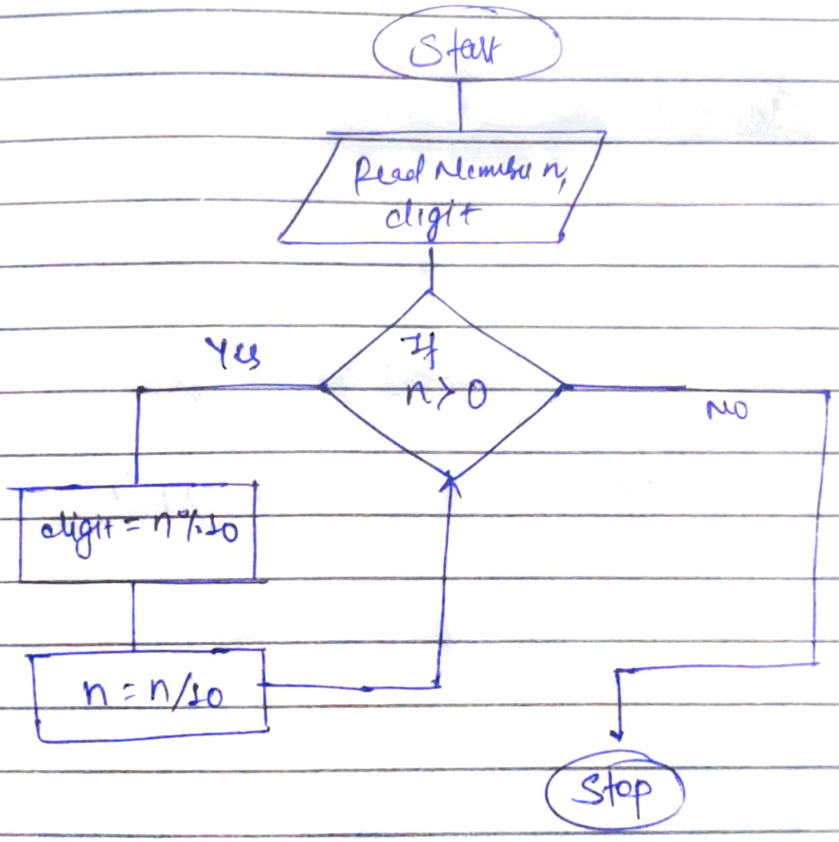


⑨ To print out factors of a given number:-

1. Start
2. Read n
3. Read i
4. for i = 1 to n/2 and increment i by 1
5. check if (n % i == 0) go to 6, else go to step 7
6. print i

(8) print digit of a given number.

1. Start
2. Read a Number n, digit
3. Read digit
4. Check whether n is greater than zero, go to step 5, else step 8.
5. digit = n % 10
6. print digit
7. n = n/10
8. Stop



(9) To print all factors of a given number:-

1. Start
2. Read n
3. Read i
4. for i = 1 to n/2 and increment i by 1
5. check if (n%i==0) go to 6, else go to step 7
6. print i
7. Stop

10. Sum of digit of a given number:

1. Start
2. Read a number n.
3. Read sum = 0, n.
4. Check if n > 0 go to step 5, else go to step 9.
5. m = n % 10
6. sum = sum + m
7. n = n / 10
8. print sum
9. Stop.

11. Smallest of three no (a, b, c).

1. Start
2. Read three numbers a, b, c.
3. Check if a < b & a < c, go to step 4, else go to step 5
4. print a is shortest.
5. check if b < c go to step 6, else go to step 7
6. print b is shortest.
7. c is shortest.
8. stop

13. Reverse a number :-

1. Start
2. Read number num.
3. Read rev, rv
4. for num ≥ 0 , go to step 5 / else go to step 7
5. rv = num % 10
   rev = rev * 10 + rv
   num = num / 10
6. print rev.
7. stop

14. GCD of two numbers :-

1. Start
2. Declare variable n_1, n_2, gcd = 1, i = 1
3. Input n_1 & n_2.
4. Repeat until i <= n_1 and i <= n_2
   step 4 : 1. If $n_1 \% i == 0$ & & $n_2 \% i == 0$
   2. gcd = i
5. print gcd.
6. stop.

15. Lcm of two numbers -

1. Start
2. Read num1 and num2.
3. Read max., Lcm
4. Store max of num1 and num2 to variable max.
5. If max is divisible by num1 and num2,
   Lcm = max(num1, num2)
6. If not divisible, increment max by 1 go to step 5, until a no. has been printed.
7. stop

7. Check if given no. is palindrome or not

1. start
2. Read number num.
3. Read rev, temp, rem
4. start while loop until num != 0 become
   rem = num % 10
   rev = 10 * rem
   num = num / 10.
5. Check if rev = num., go to step 6
6. print Number is palindrome
7. No is not palindrome
8. stop.

print even no. sum.

start

Input Number = 2

for n % = 0

1. start.
2. input num = 2
3. Read m.
4. using for loop. (num < m)
5. { num = num + 2
6. print num
7. stop.