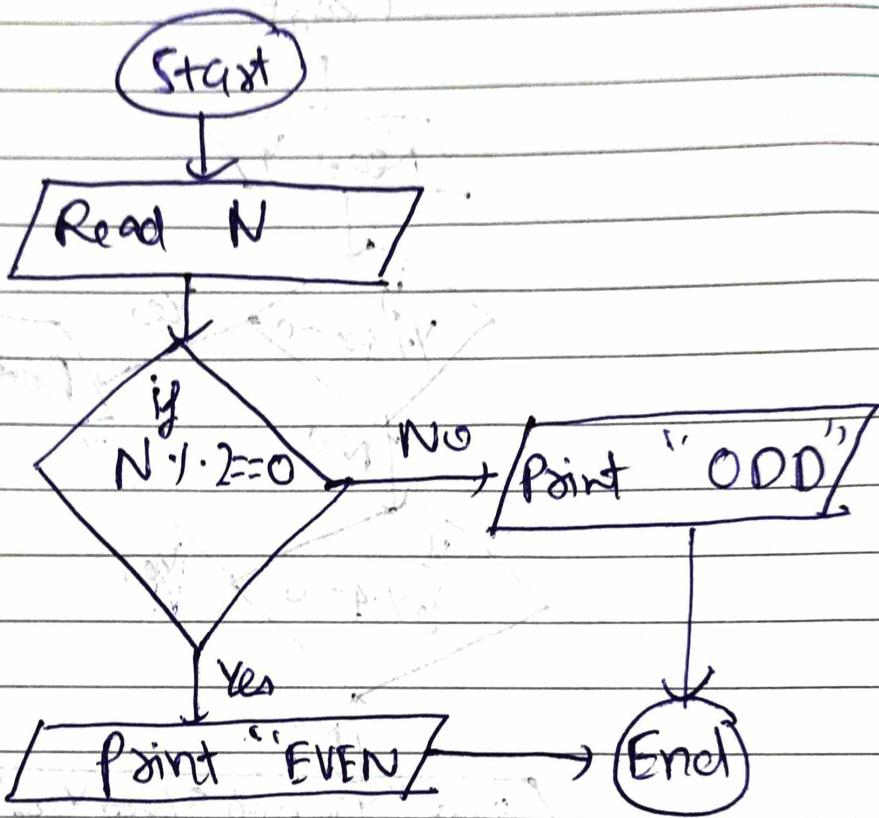


# ASSIGNMENT - 1

① EVEN or ODD



①

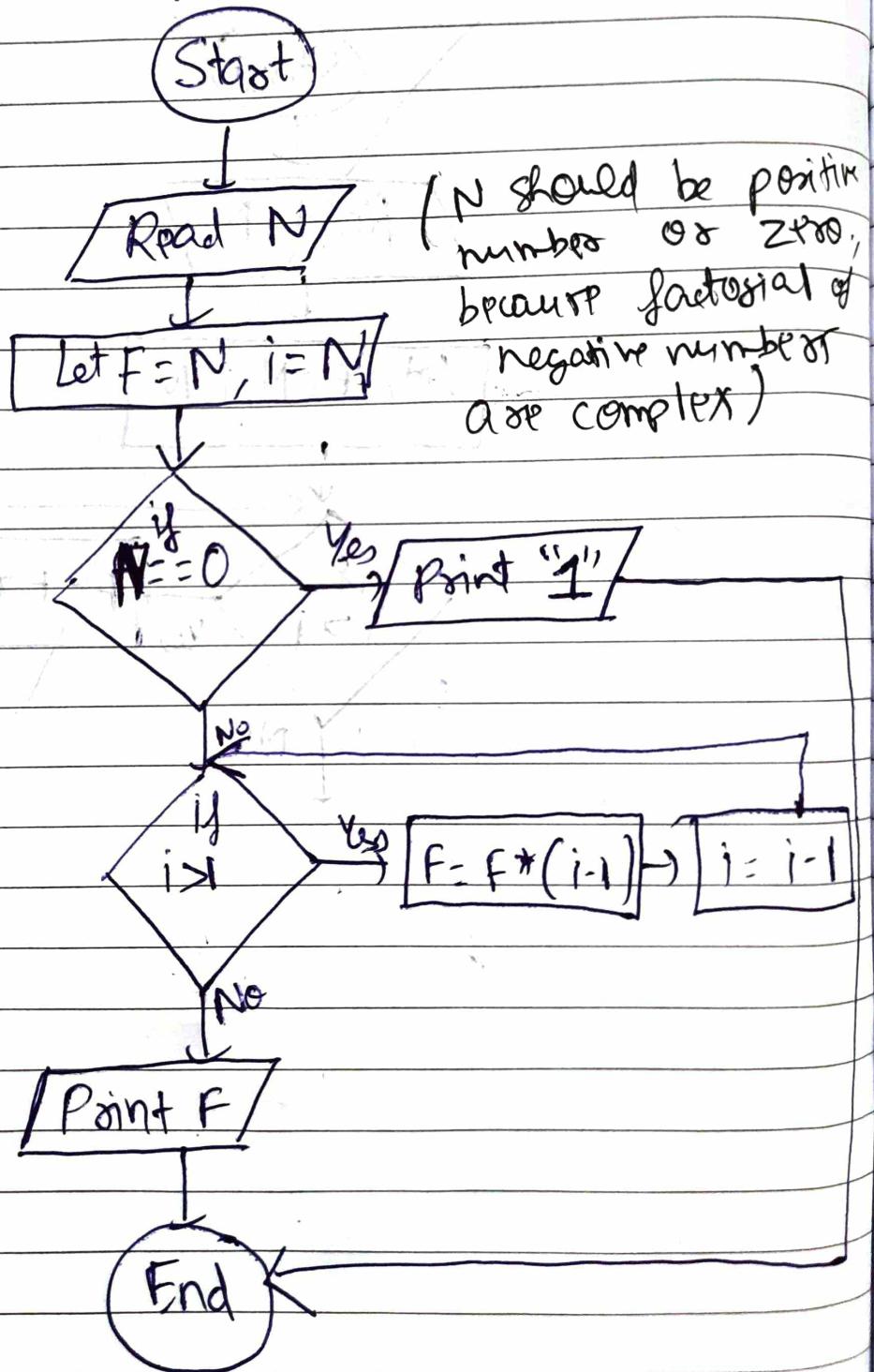
Step 1: START

Step 2: Read the number as N

Step 3: If  $N \% 2 == 0$ , Point "EVEN"  
else Point "ODD"

Step 4: END.

(2)

Factorial of N

(2)

Step 1: Start

Step 2: Read N [N can be 0 or positive]

Step 3: Let F = N, i = N

Step 4: if  $N \neq 0$ , Print "1"

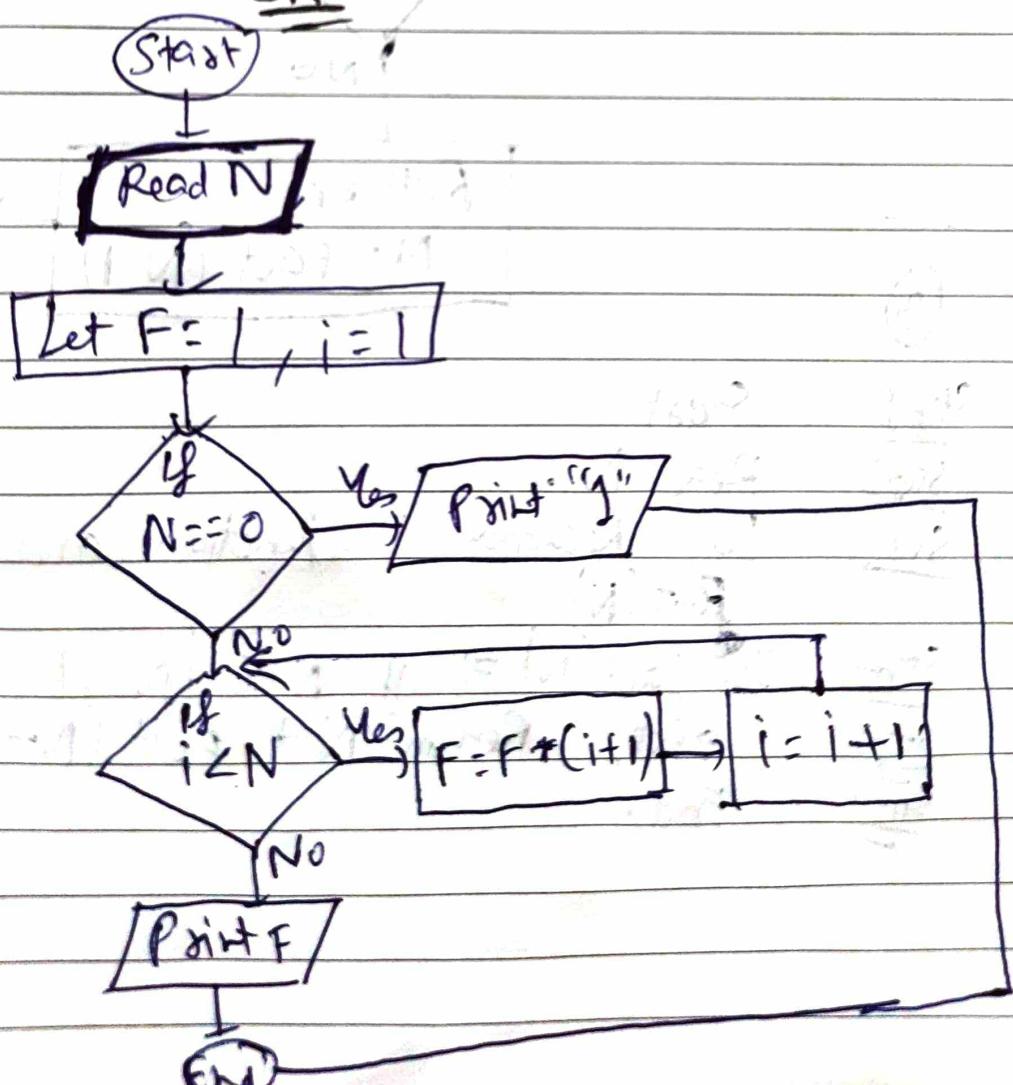
Step 5: For, from value N to 1 multiply each digit and store it in F.

Step 6: Print F.

Step 7: End.

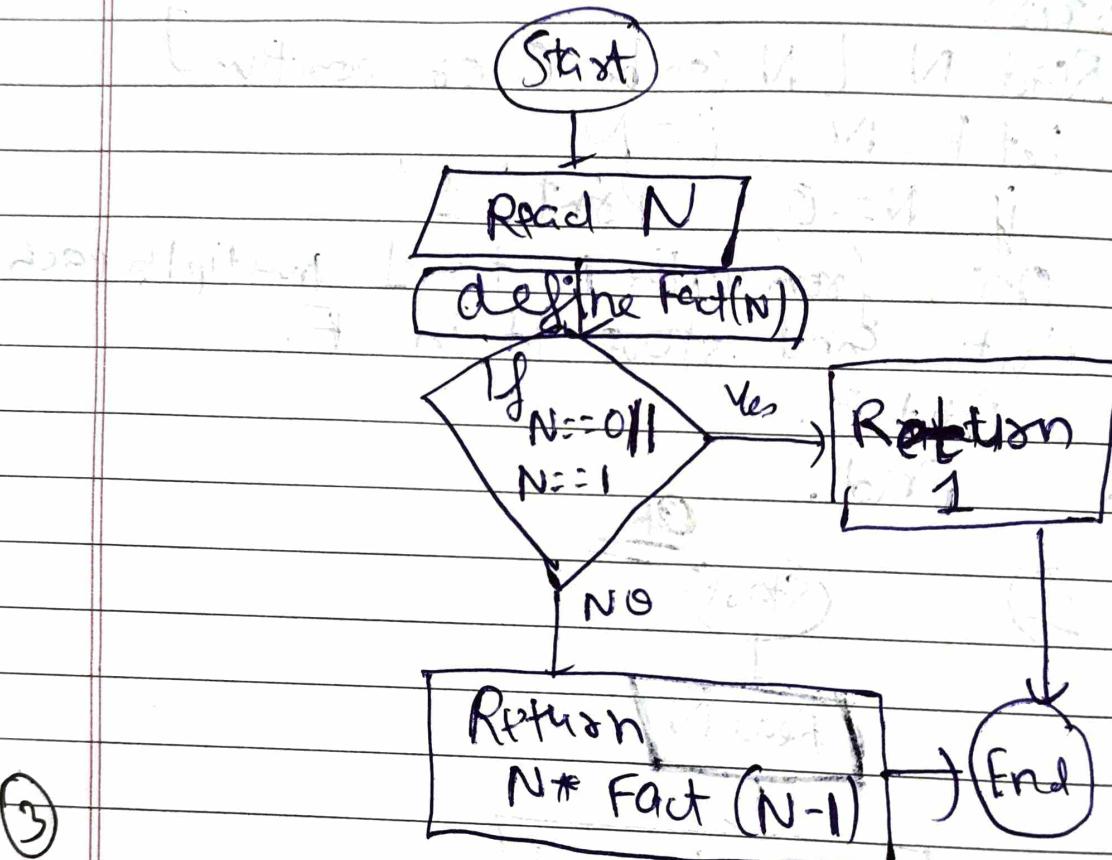
OR

(2)



(3)

## Factorial using Recursion

Step 1:

Start

Step 2:

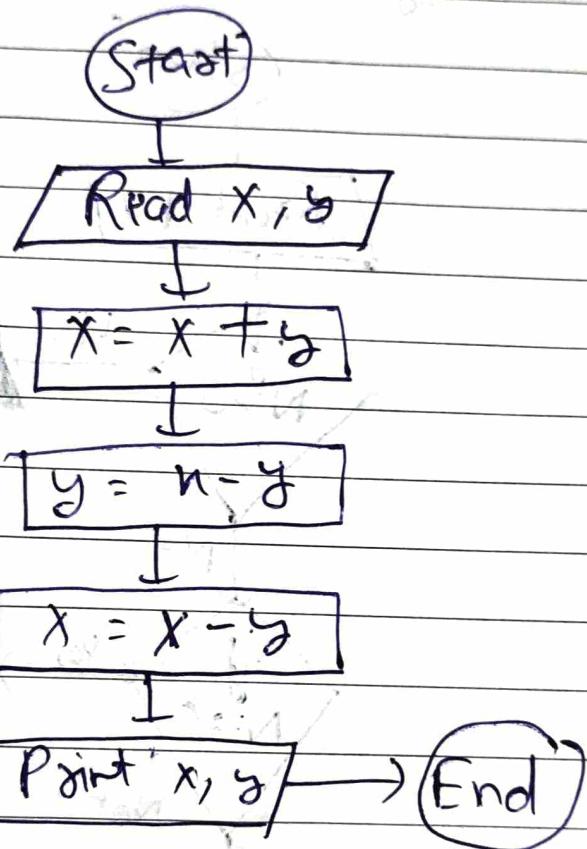
Read N.

Step 3:Use Recursion in function and define it as  $\text{Fact}(N)$ Step 4:In  $\text{fact}(N) \Rightarrow$  if  $N=0 \text{ || } N=1$ , Return 1Step 5:Else, Return  $N * \text{Fact}(N-1)$ Step 6:

End.

(4)

Swap 2 numbers without using 3rd variable  
Approach.

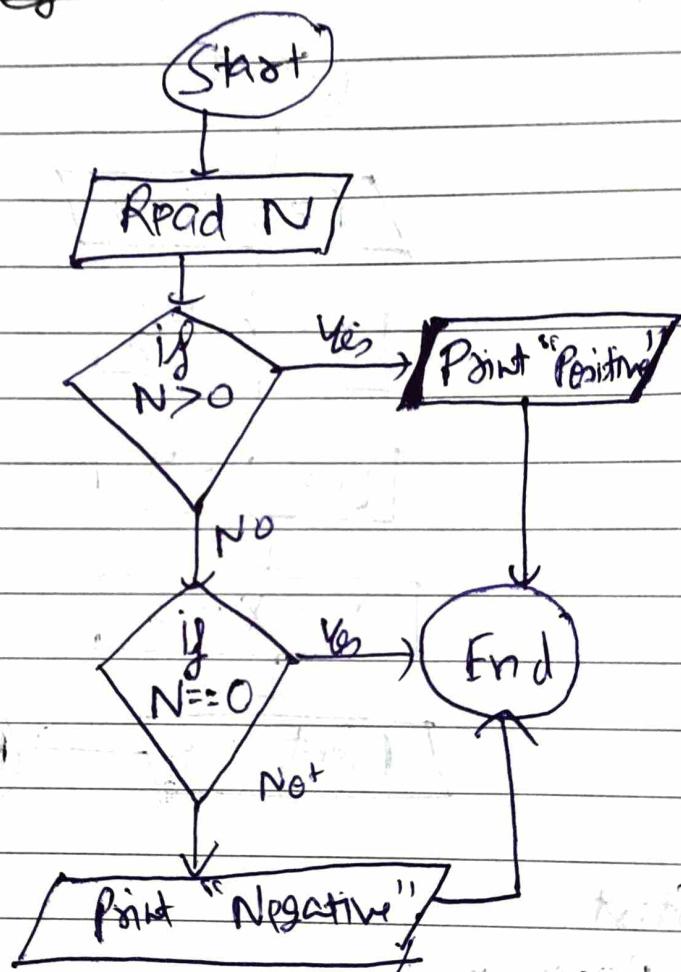


(4)

Step 1: StartStep 2: Read  $x, y$ Step 3:  $x = x + y$  (Perform this operation)Step 4:  $y = x - y$  (Perform this operation)Step 5:  $x = x - y$  (Perform this operation)Step 6: Point  $x, y$ Step 6: End

(5)

Check whether the given no. is positive or negative.

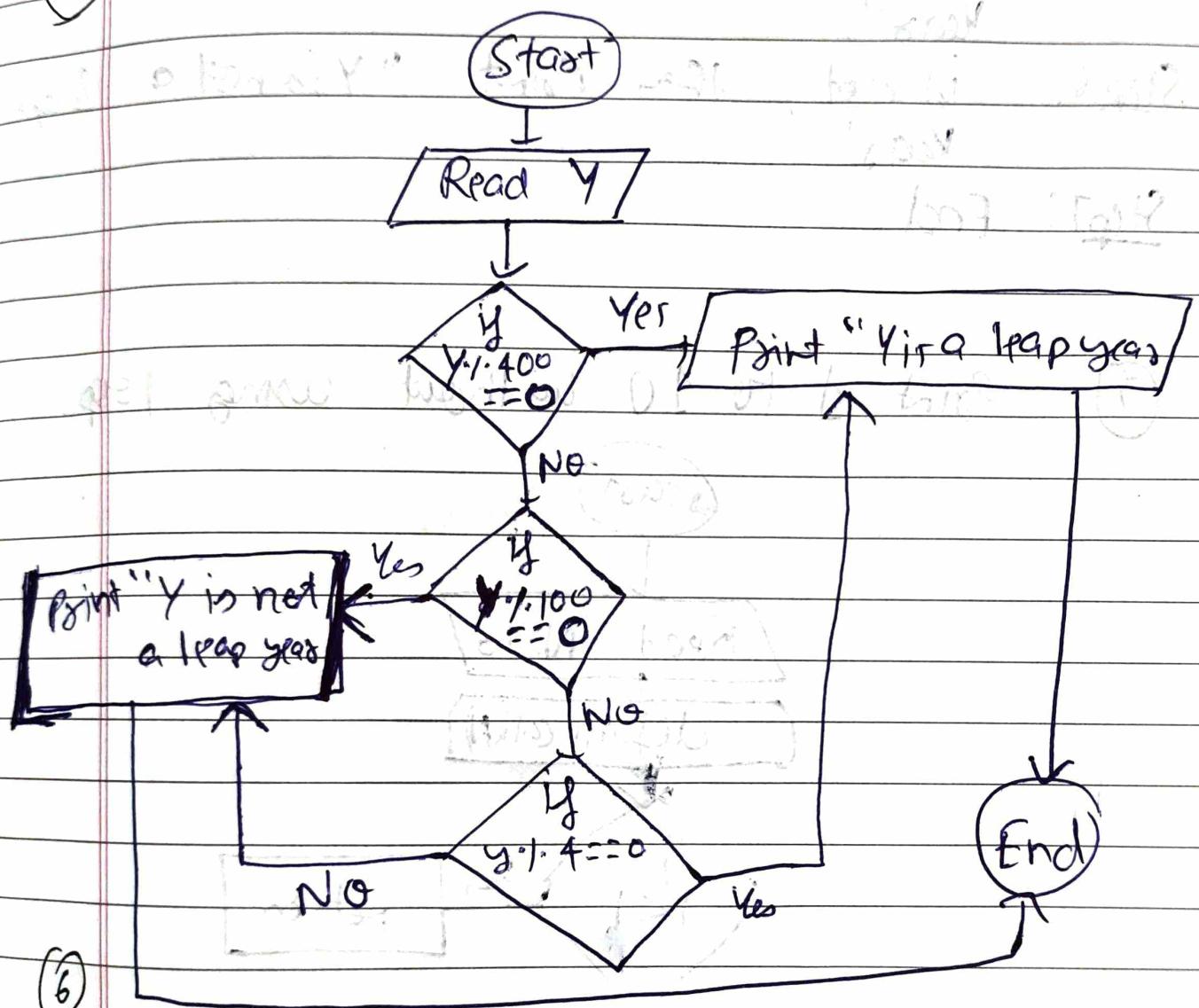


(5)

- Step1: start
- Step2: Read N.
- Step3: if  $N > 0$ , Point "Positive".
- Step4: if  $N$  is not greater than 0, then check if  $N = 0$ , then just end.
- Step5: if  $N$  is not 0, then Point "Negative".

(6)

Leap year or not.

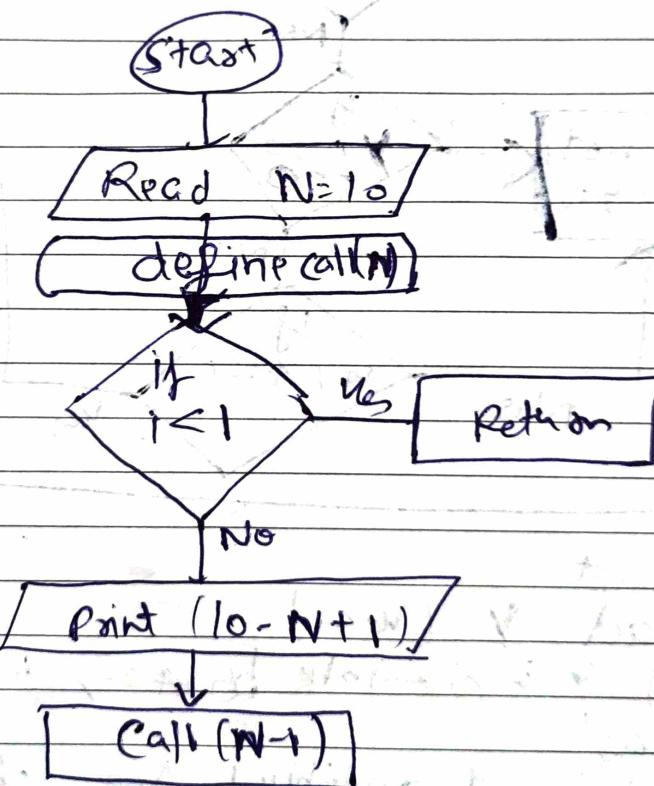
Step 1: StartStep 2: Read Y (Year)Step 3: if Y is divisible by 400, then Print "Y is a leap year".Step 4: if Y is not divisible by 400, check if  $Y \% 100 == 0$ , then Print "Y is not a leap year"Step 5: if Y is not divisible by 400 and 100, then Check

if  $y - f == 0$ , then print "Y is a leap year".

Step 1: is not, then print "Y is not a leap year".

Step 2: End.

⑦ Point 1 to 10 without using loop.



(7)

Step 1: Start

Step 2: Read  $N = 10$

Step 3: Define  $C_{LL}(N)$  such that

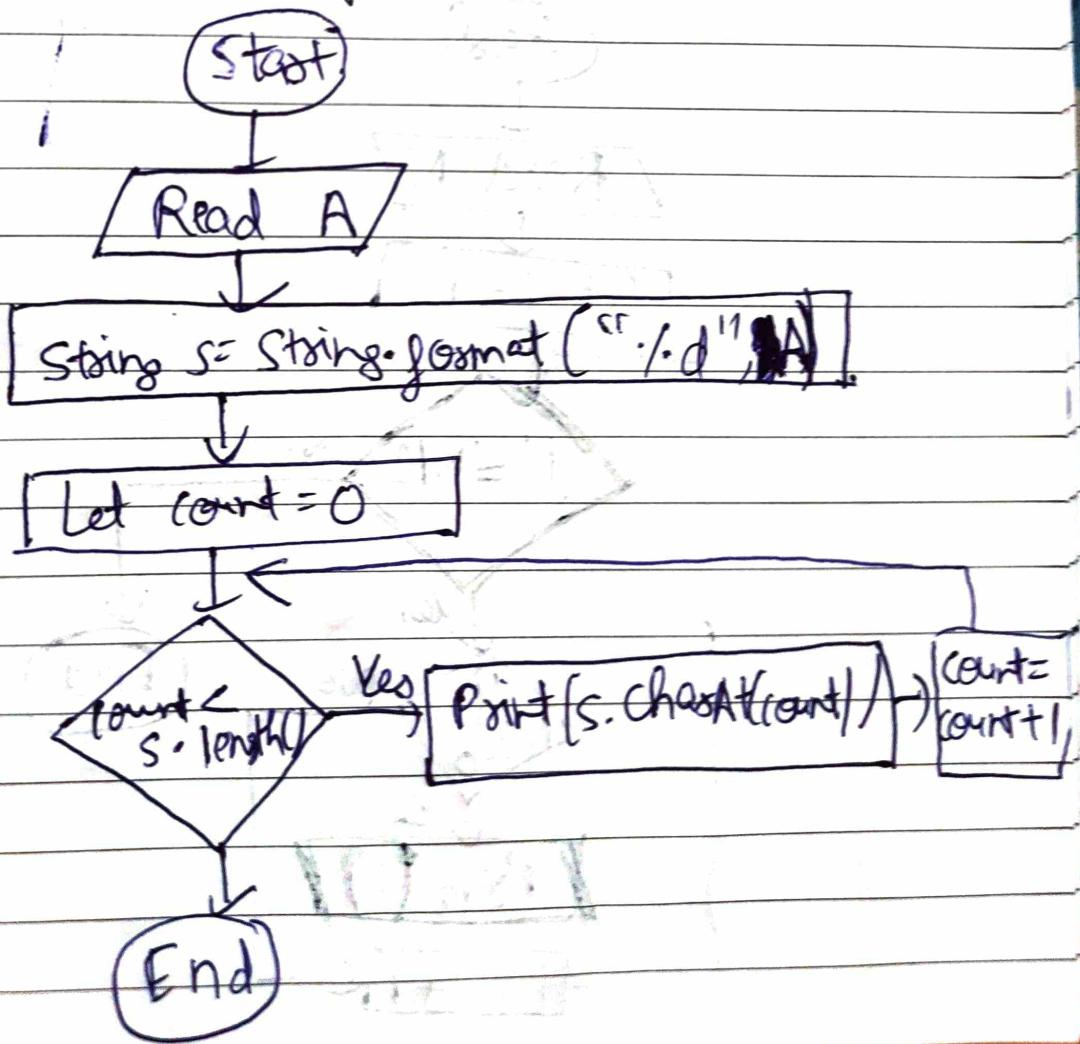
if  $i < 1$ , option nothing

Step 4: Else option ( $C_{LL}(N-i)$ ) after

printing  $10-N+i$ . Use using Recursion.

Step 5: End.

(8) Printing all digits of a given number



(8)

Step 1: Start  
Step 2: Read A

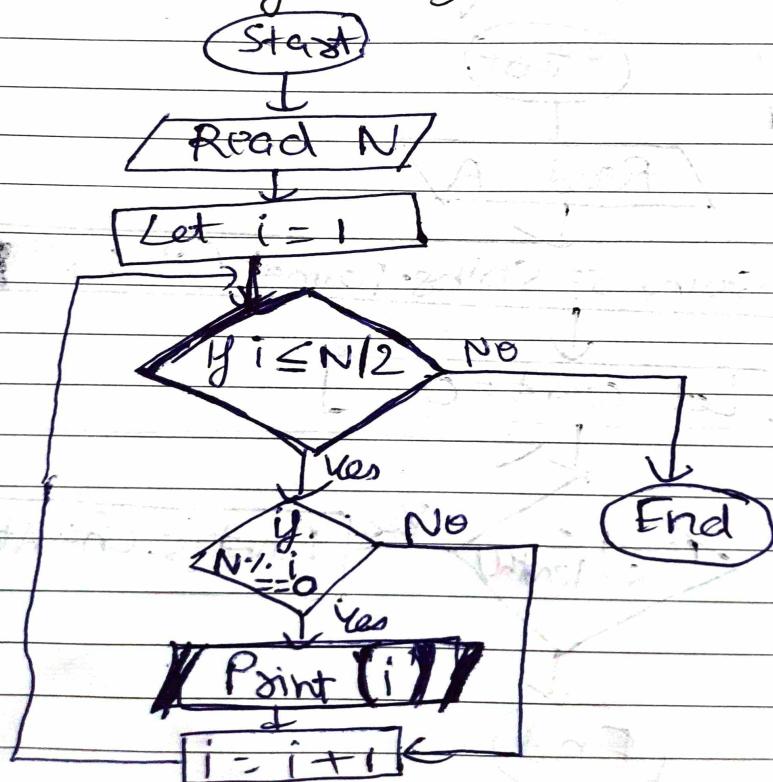
Step 3: Convert A into string S using  
 String S = String.format("%f", A)

Step 4: Let count = 0.

Step 5: if count < S, point(S.charAt(count))

Step 6: else, end.

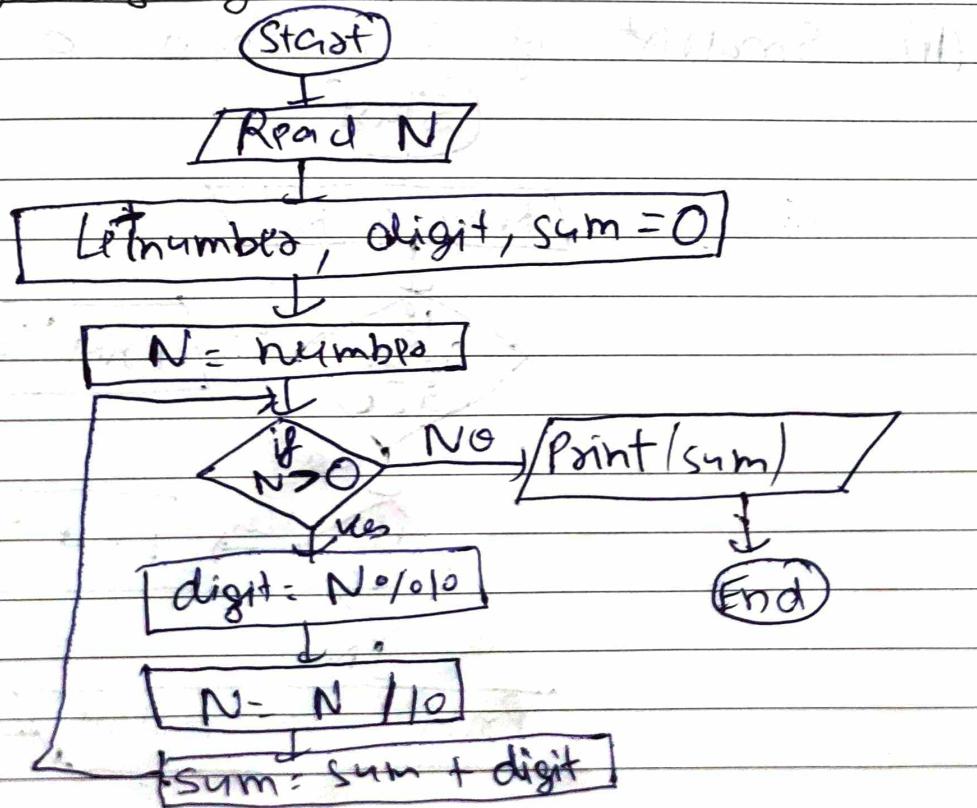
(9) Factors of a given number



(3)

- Step 1: Start
- Step 2: Read N
- Step 3: Initialize i as 1
- Step 4: if  $i \leq N/2$ , then check if  $N \cdot i = 0$ ,  
if true then print (i) & do  $i = i + 1$
- Step 5: else if  $N \cdot i = 0$  is false, then  
just do  $i = i + 1$ .
- Step 6: if  $i \leq N/2$  is false, then just i.e.  
end else
- Step 7: Repeat step 4 and 5

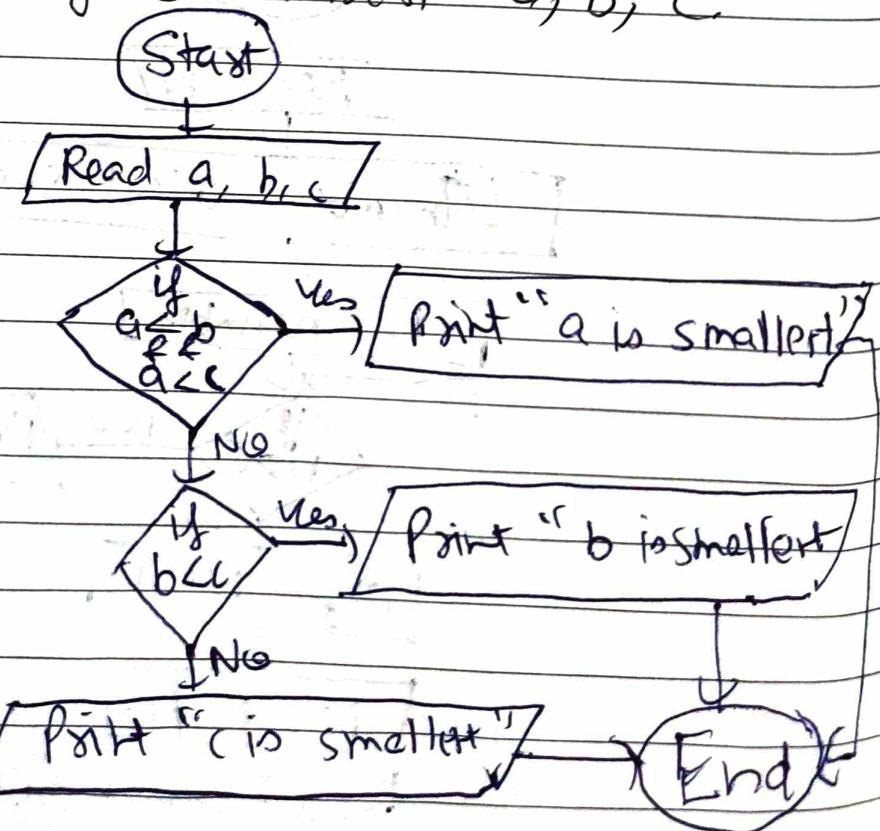
(10) Sum of digits of a number.



(10)

Step 1: StartStep 2: Read number as  $N$ Step 3: Initialize digit,  $sum = 0$ Step 4: if  $N > 0$ , then digit =  $N \% 10$ Step 5: sum will become  $sum + digit$ Step 6: then the number  $N$  will become  $N / 10$ .Step 7: if  $N > 0$  still true, repeat step 4Step 8: if  $N > 0$  still true, repeat step 4 to 6Step 9: if  $N > 0$  is false, print ( $sum$ ).Step 10: End.

(11)

Smallest of 3 numbers  $a, b, c$ .

11) Step 1: Start

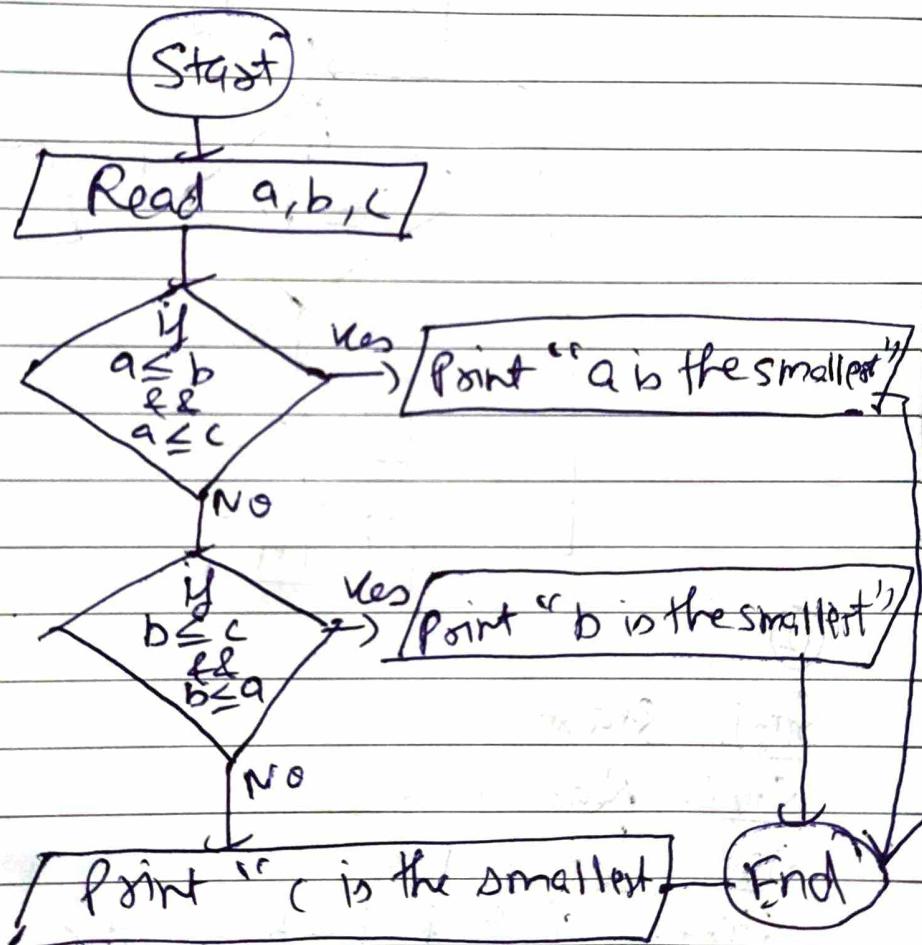
Step 2: Read a, b, and c

Step 3: Check if  $a \leq b$  &  $a \leq c$ , then print  
"a is the smallest" and end

Step 4: Else if  $b \leq a$  &  $b \leq c$ , then print  
"b is the smallest" and just end

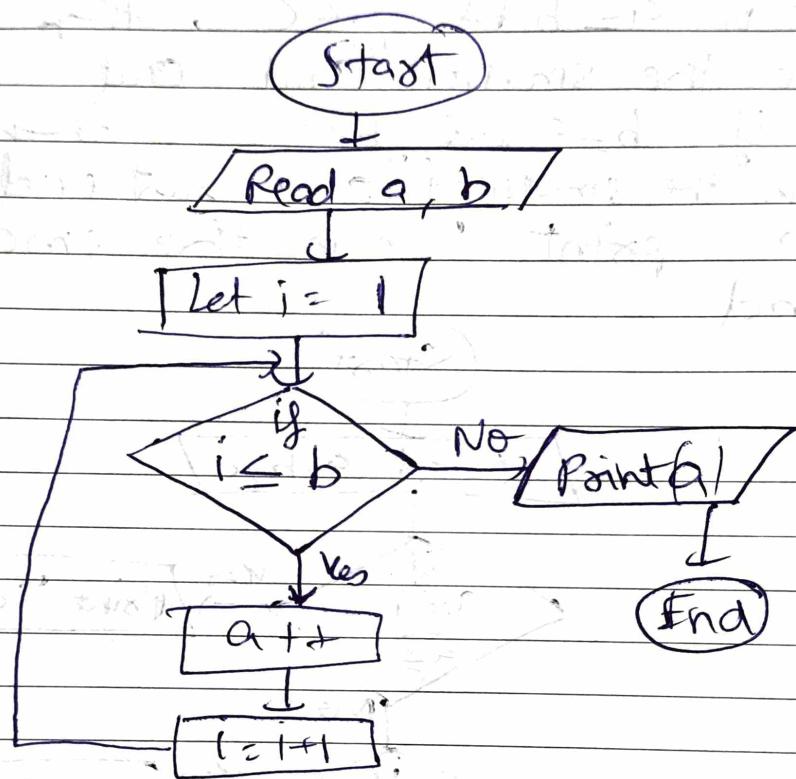
Step 5: Else point "c is the smallest".

Step 6: End



(12)

Sum without using Arithmetic operators.



(12)

Step 1: Start

Step 2: Read a, b

Step 3: Let i=1

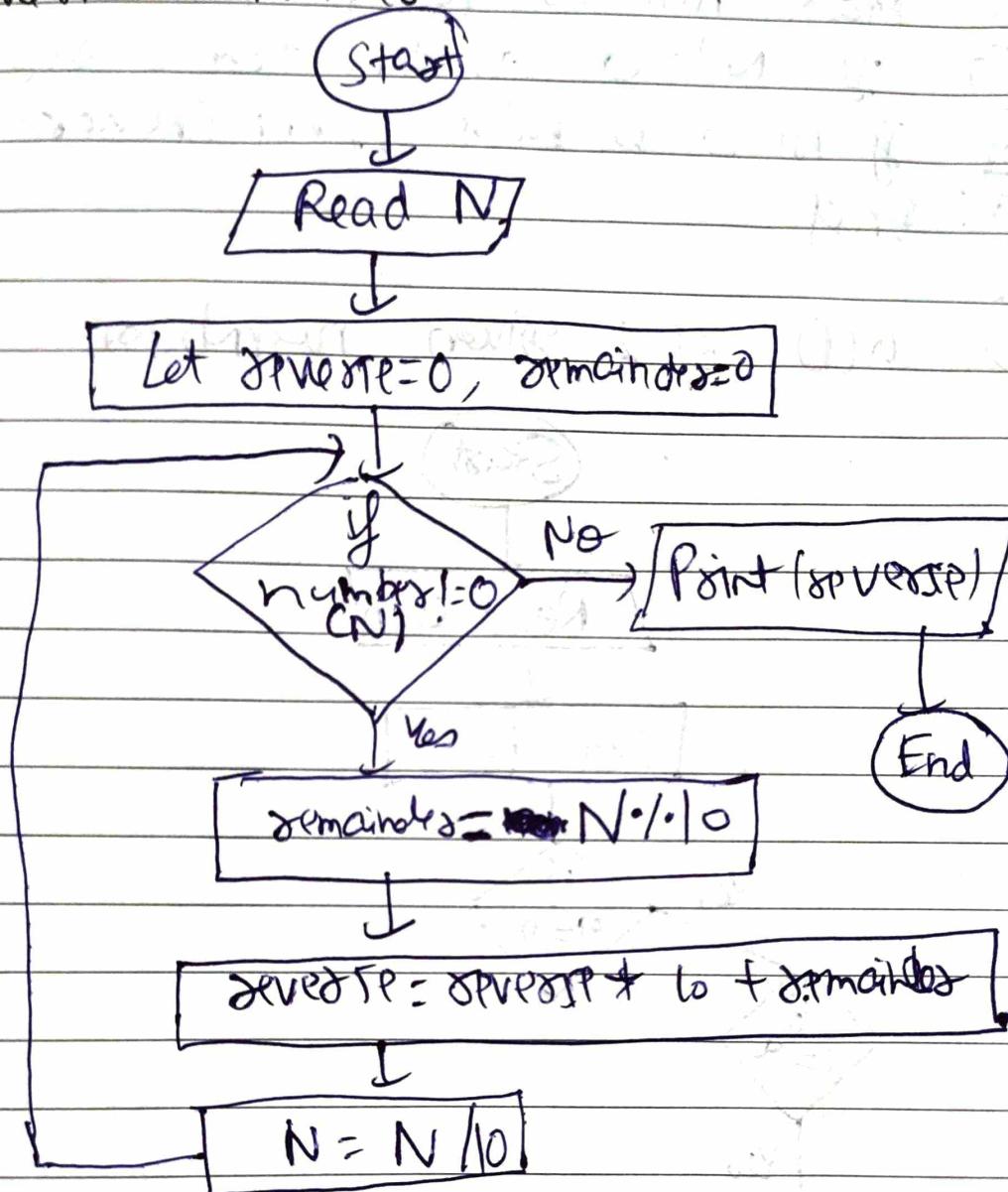
Step 4: Check if  $i \leq b$ , do  $a++$ .

Step 5: Make  $i = i + 1$

Step 6: if again  $i \leq b$ , Repeat .

Step 7: if  $i \leq b$  is false, print(a).

(13) Reverse a number



(13)

Step 1: Start

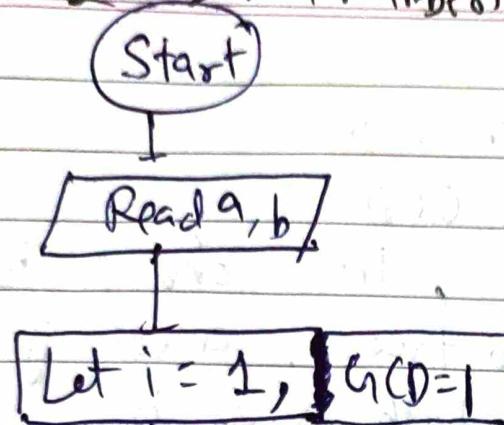
Step 2: Read number as  $N$

Step 3: Take 2 variables  $\&reverse$  and  $\&remainder$  and initialize  $\&remainder = 0$ .

Step 4: if  $|N| = 0$ , then  $\&remainder = N \% 10$

Step 5: Make  $\&reverse = \&reverse * 10 + \&remainder$

④ GCD of 2 given numbers



if  $a \leq b$

No

if  
 $i \leq a$

Yes

Print GCD

(End)

if  
 $i \leq b$

No

if  
 $a \% i == 0$   
&  
 $b \% i == 0$

Yes

GCD = i

i = i + 1

if  
 $a \% i == 0$   
or  
 $b \% i == 0$

Yes

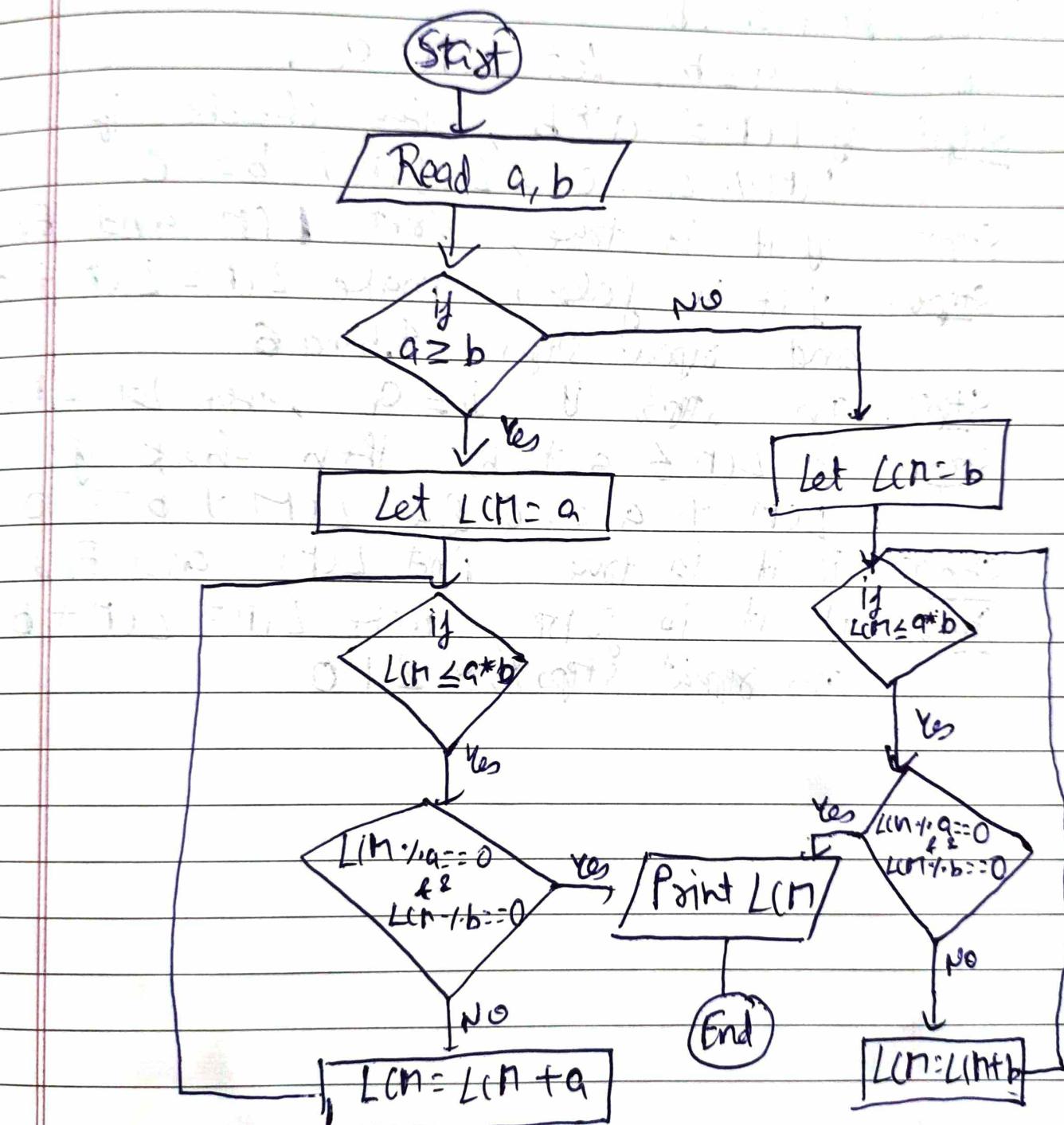
GCD = i

i = i + 1

(14)

- Step 1: Start
- Step 2: Read  $a$  &  $b$ .
- Step 3: let  $i = 1$ ,  $GCD = 1$
- Step 4: if  $a \leq b$ , then check if  $i \leq a$
- Step 5: if  $i \leq a$  is true, check if  $i$  is a divisor of both  $a$  &  $b$ .
- Step 6: if it is, then make  $GCD = i$
- Step 7: make  $i = i + 1$  and
- Step 8: if  $b \leq a$ , then iterate  $i$  from 1 to  $b$
- Step 9: Repeat steps 5, 6, 7
- Step 10: When ' $i \leq a$ ' gets false in case of  $a \leq b$  or when ' $i \leq b$ ' gets false in case of  $b \leq a$ , Print ( $GCD$ )
- Step 11: End.

(15)

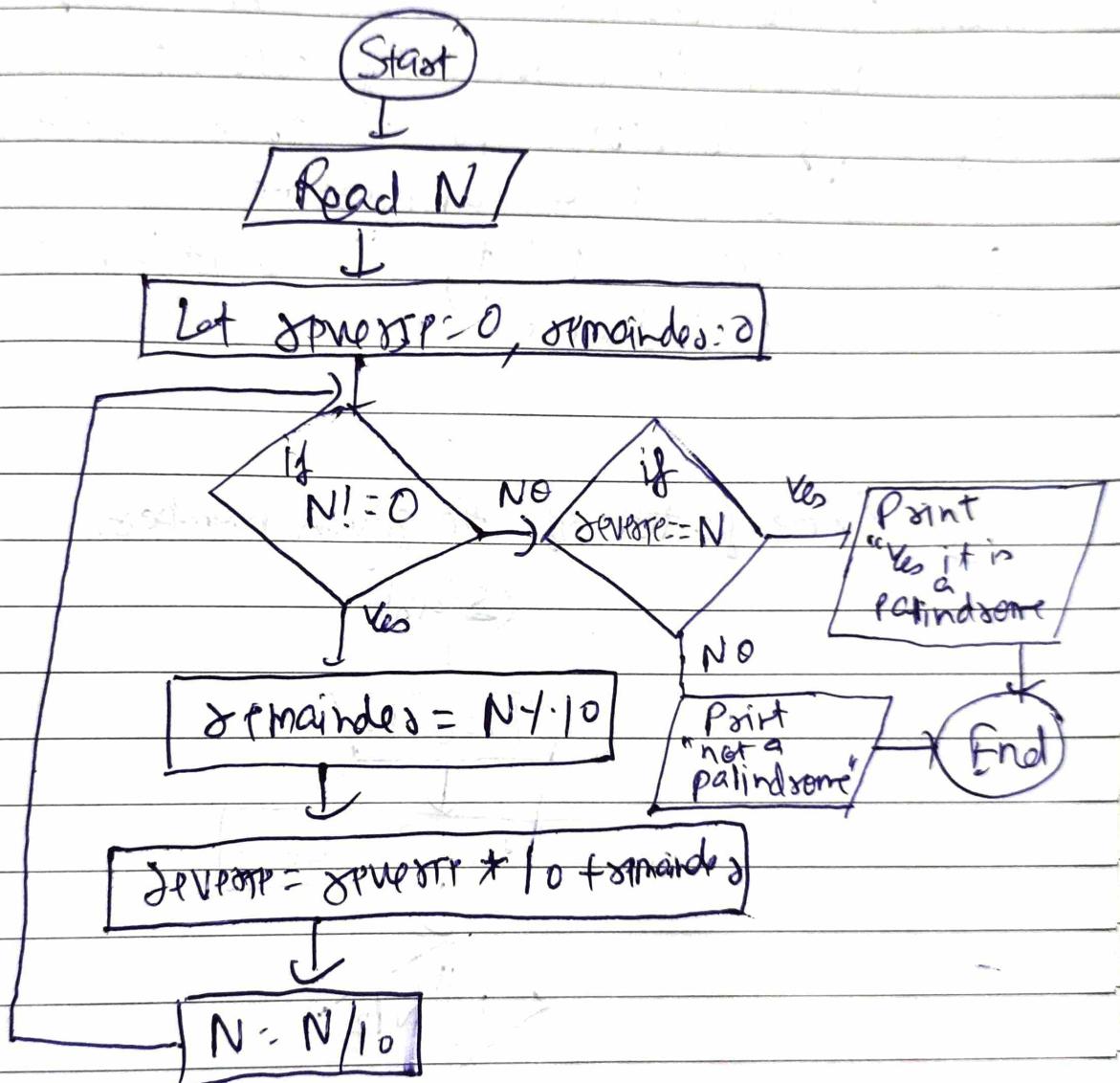
LCM of 2 numbers

(15)

- Step 1: Start
- Step 2: Read  $a, b$
- Step 3: if  $a \leq b$ , let  $LCM = a$ .
- Step 4: if  $LCM \leq a+b$ , then check if  
 $LCM \cdot 1 \cdot a = 0 \& LCM \cdot 1 \cdot b = 0$
- Step 5: if it is true, print  $LCM$  and End
- Step 6: if it is false, make  $LCM = LCM + a$   
and repeat steps 4, 5 and 6.
- Step 7: In step 3, if  $b \leq a$ , then let  $LCM = b$
- Step 8: if  $LCM \leq a+b$ , then check if  
 $LCM \cdot 1 \cdot a = 0 \& LCM \cdot 1 \cdot b = 0$
- Step 9: if it is true, print  $LCM$  and End
- Step 10: if it is false, make  $LCM = LCM + b$   
and repeat steps 8, 9 & 10

(17)

Given number is Palindrome or not.



(h)

Step1:

Start

Step2:

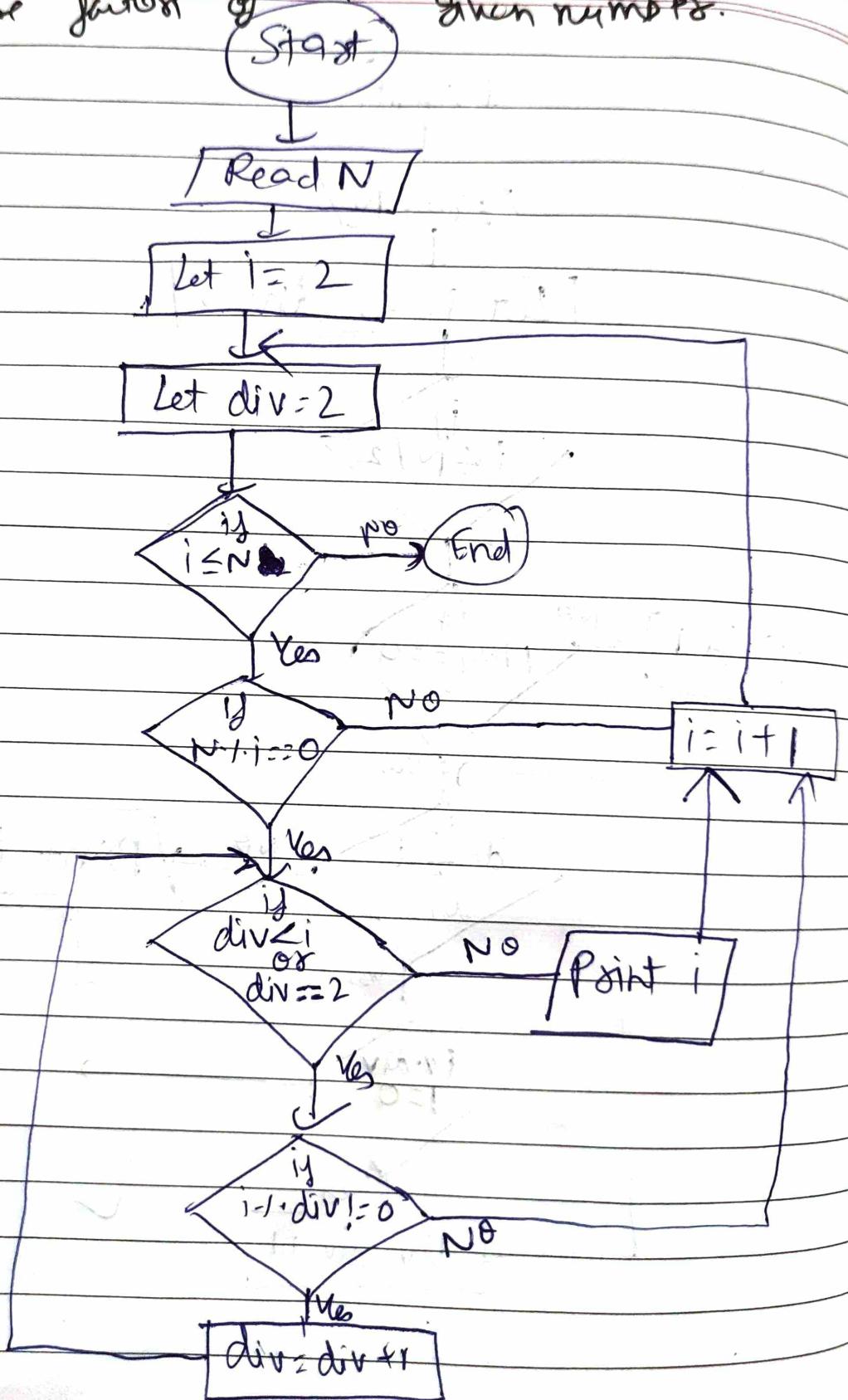
Read N

Step3:

let &amp;lt;br&amp;gt; &amp;gt;reverse, &amp;gt;remainder = 0.

Step4:Check the condition if  $N \neq 0$ Step5if true, make  $\text{remainder} = N \% 10$ Step6make  $\text{reverse} = \text{reverse} * 10 + \text{remainder}$

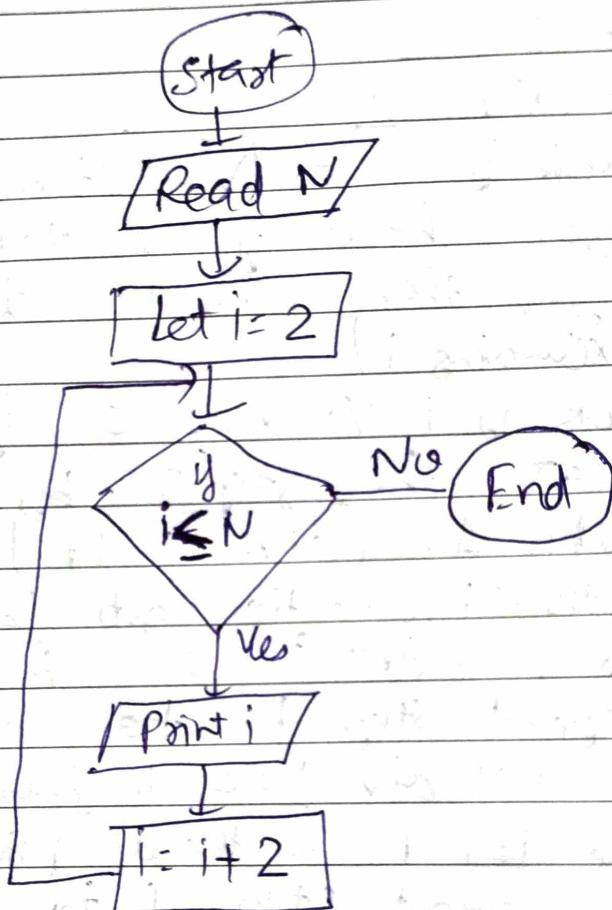
(18) Prime factors of a given number.



(18)

Step 1: StartStep 2: Read NStep 3: Let  $i = 2$ Step 4: Let div = 2Step 5: Check if  $i \leq N$  [iterating i from 2 to N]Step 6: If yes, check if  $N \cdot i \cdot i = 0$ Step 7: If yes, then iterate div from 2 to  
(excluding i).Step 8: Check if  $i \cdot div = 0$  If yes, then  
repeat the step 7 by increasing  
div by 1. [div = div + 1]Step 9: If  $div < i$  condition gets false, iteration gets  
over, print i and make  $i = i + 1$ ,  
repeat step 4 to step 9.Step 10: If  $i \cdot div = 0$  is false, then just  
make  $i = i + 1$  without printing anything  
and repeat steps 4 to 10.Step 11: If in step 5  $i \leq N$  is false,  
then just End.

(19) To print the even series 2 4 6 8 10 12 14  
16 ...



(19)

Step 1: Start

Step 2: Read N

Step 3: Let i = 2

Step 4: Check if  $i \leq N$ . (iterating i from 2 to N)

Step 5: Print i if (condition in step 4 is true).

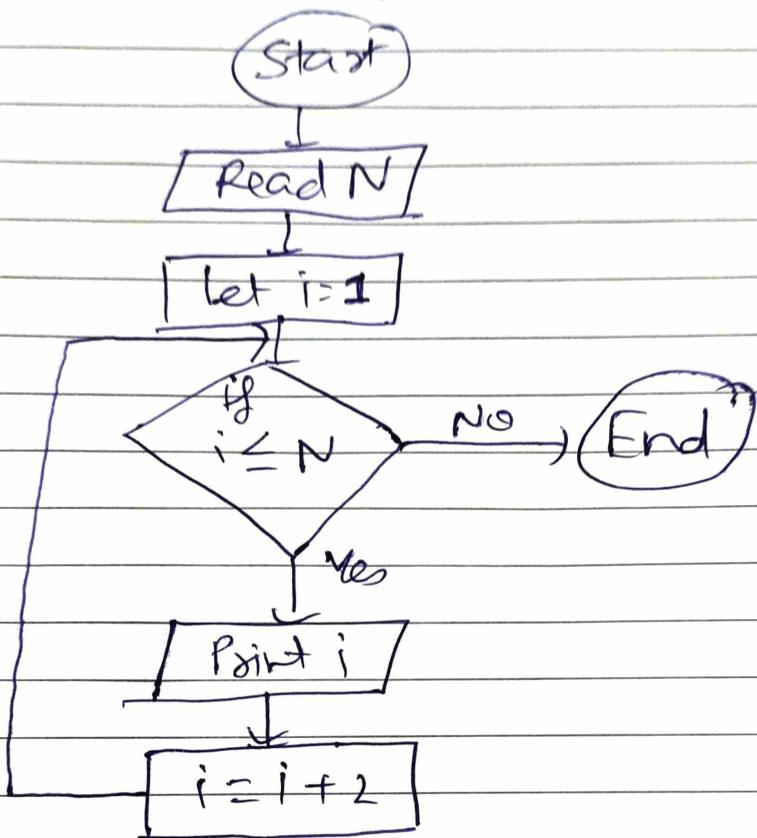
Step 6: make  $i = i + 2$

Step 7: Repeat steps 4 to 6 until  $i \leq N$  is false

Step 8: End.

(20)

Printing odd number series : 1 3 5 7 9 11 13...



(20)

Step 1: Start

Step 2: Read N.

Step 3: Let i=1

Step 4: Check if  $i \leq N$  (iterating i from 1 to N).

Step 5: Print i (if condition in step 4 is true).

Step 6: Make  $i = i + 2$

Step 7: Repeat steps 4 to 6 until  $i \leq N$  is false

Step 8: End.