

Assignment No.1

Q.1 check if the given number is even or odd.

→ Algorithm:-

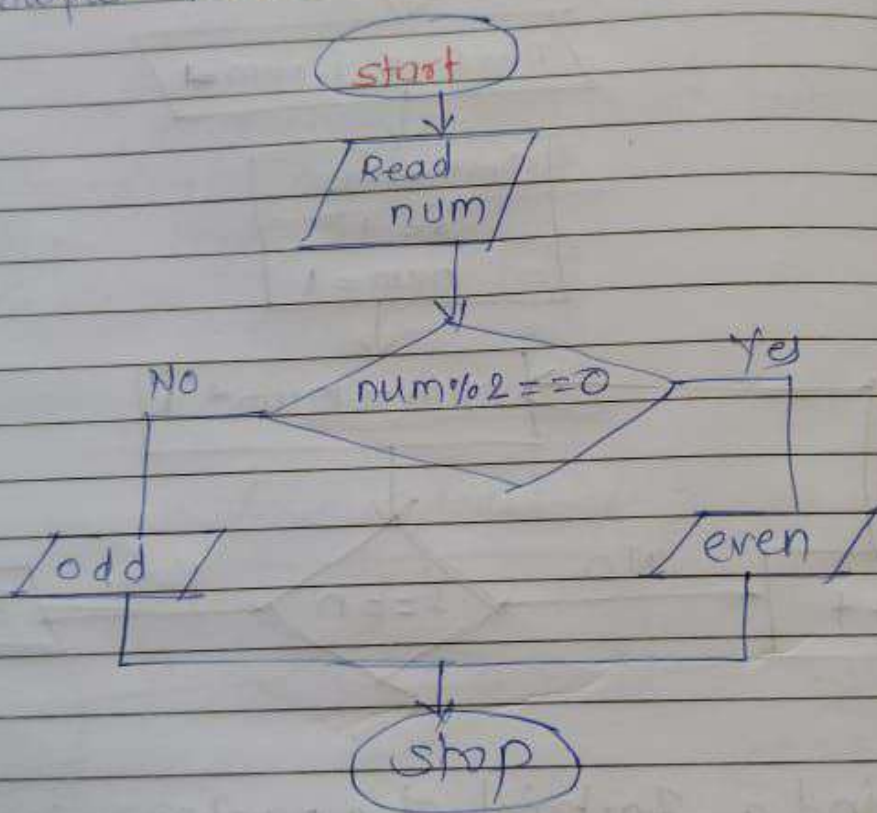
Input :- enter a number - num

IF $\text{num} \% 2 == 0$

output :- even

else

output :- odd



Q.2. Write a java program to find the factorial of a given number.

→ Input :-

Step 1 :- declare n & i as integer variables and also num.

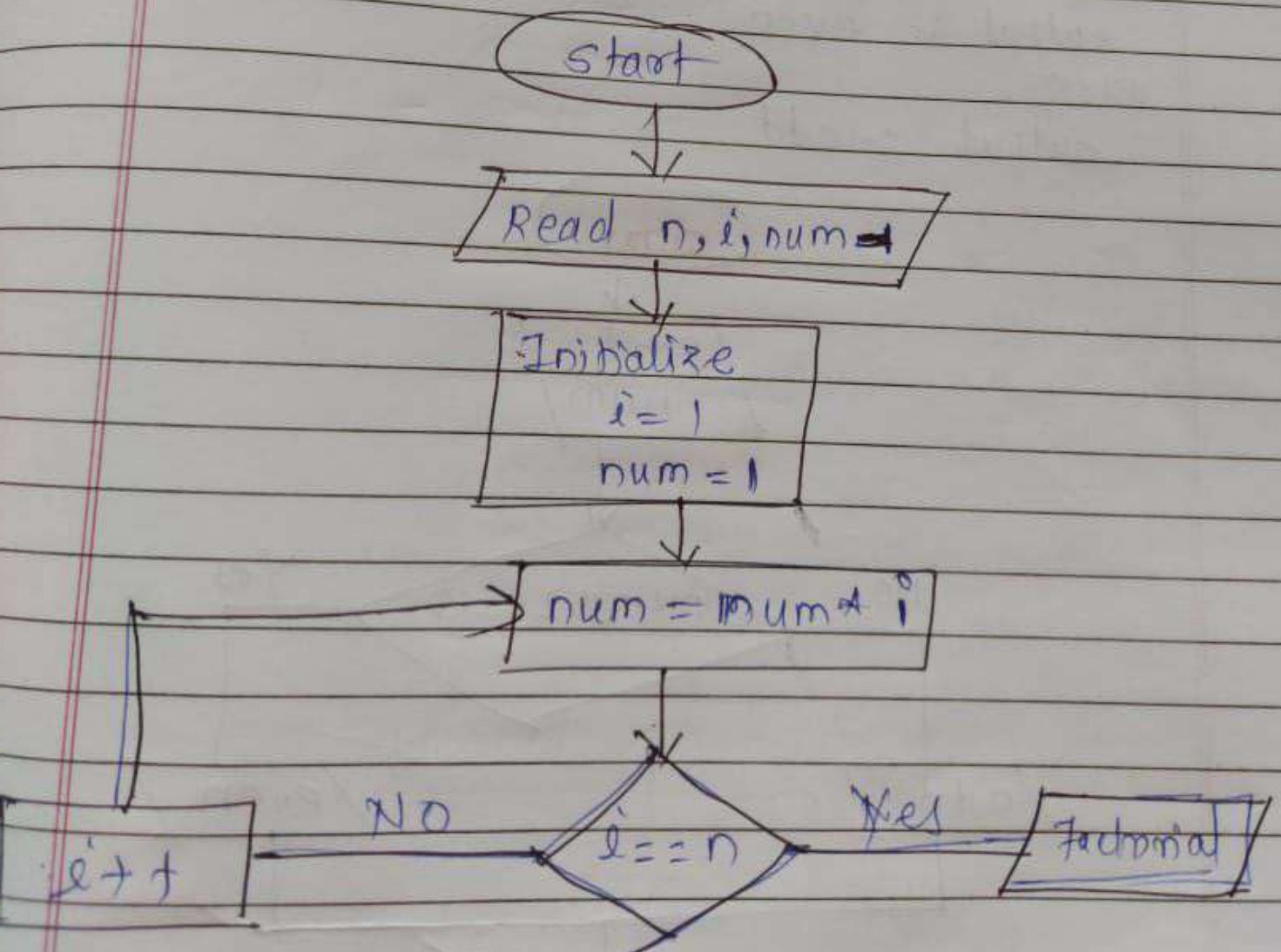
Step 2 :- Initialize num = 1

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step 3 :- Take input as integer, from user

step 4 :- For value of $i = 1$ to number
check calculate factorial = factorial * value

step 5 :- print factorial.



steps:- Print value of F .

Q.3. Find factorial of number using recursion.

step 1:- Read input \rightarrow num, result.

step 2:- call factorial (n)

step 3:- factorial (n)

1) if $\text{num} \leq 0$

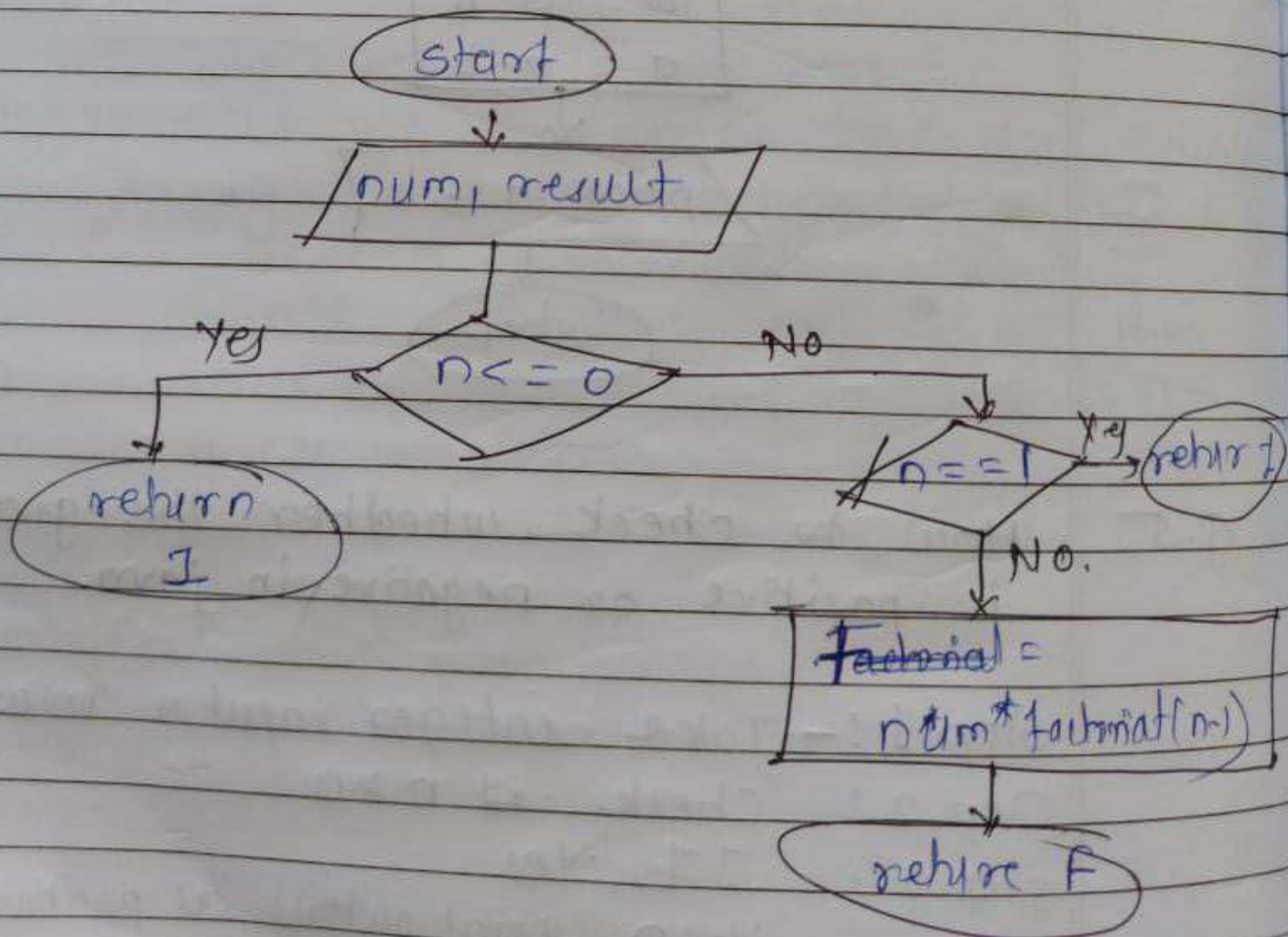
then return value 1

2) else calculate

$F = \text{fact num} * \text{factorial}(n-1)$

3) return factorial F

step 4:- Print factorial



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

Step 1 :- start

Step 2 :- Read inputs a, b.

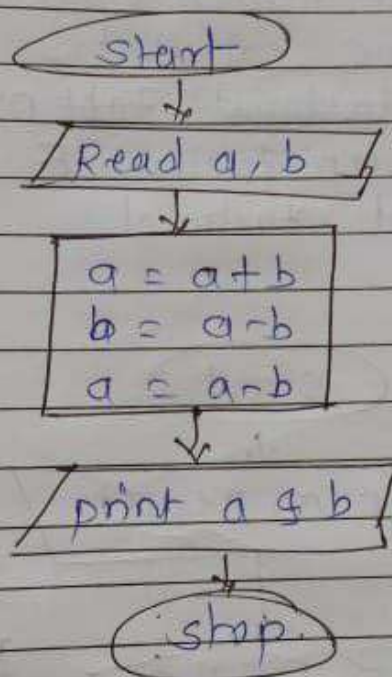
Step 3 :- Logic

$$a = a + b$$

$$b = a - b$$

$$a = a - b$$

Step 4 :- print a & b.



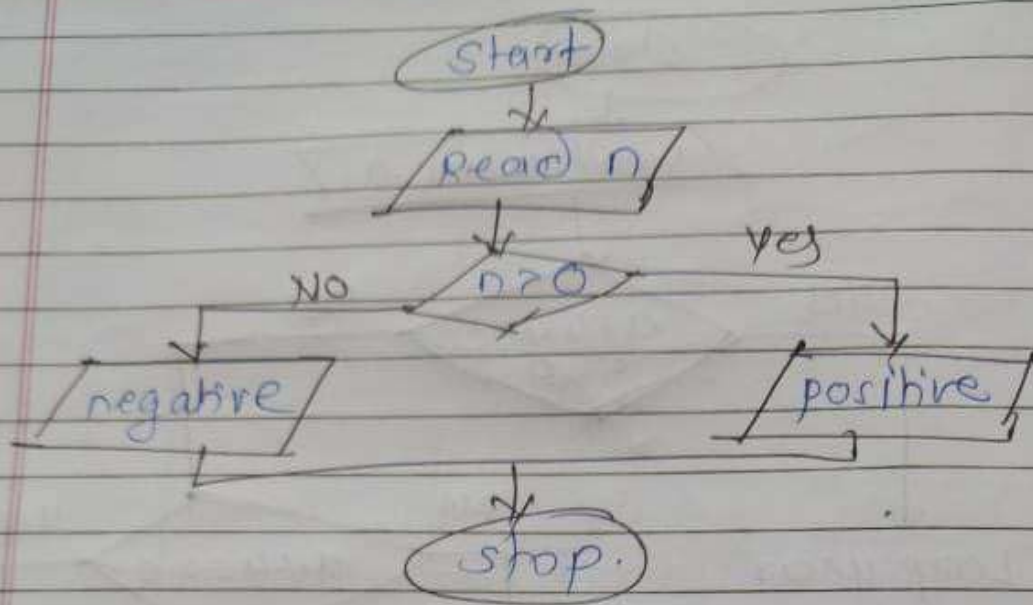
Q. 5. How to check whether the given number is positive or negative in java.

Step 1 :- Take integer input n from user

Step 2 :- Check if $n > 0$

Step 3 :- If Yes

then print output as positive
otherwise print output as negative.

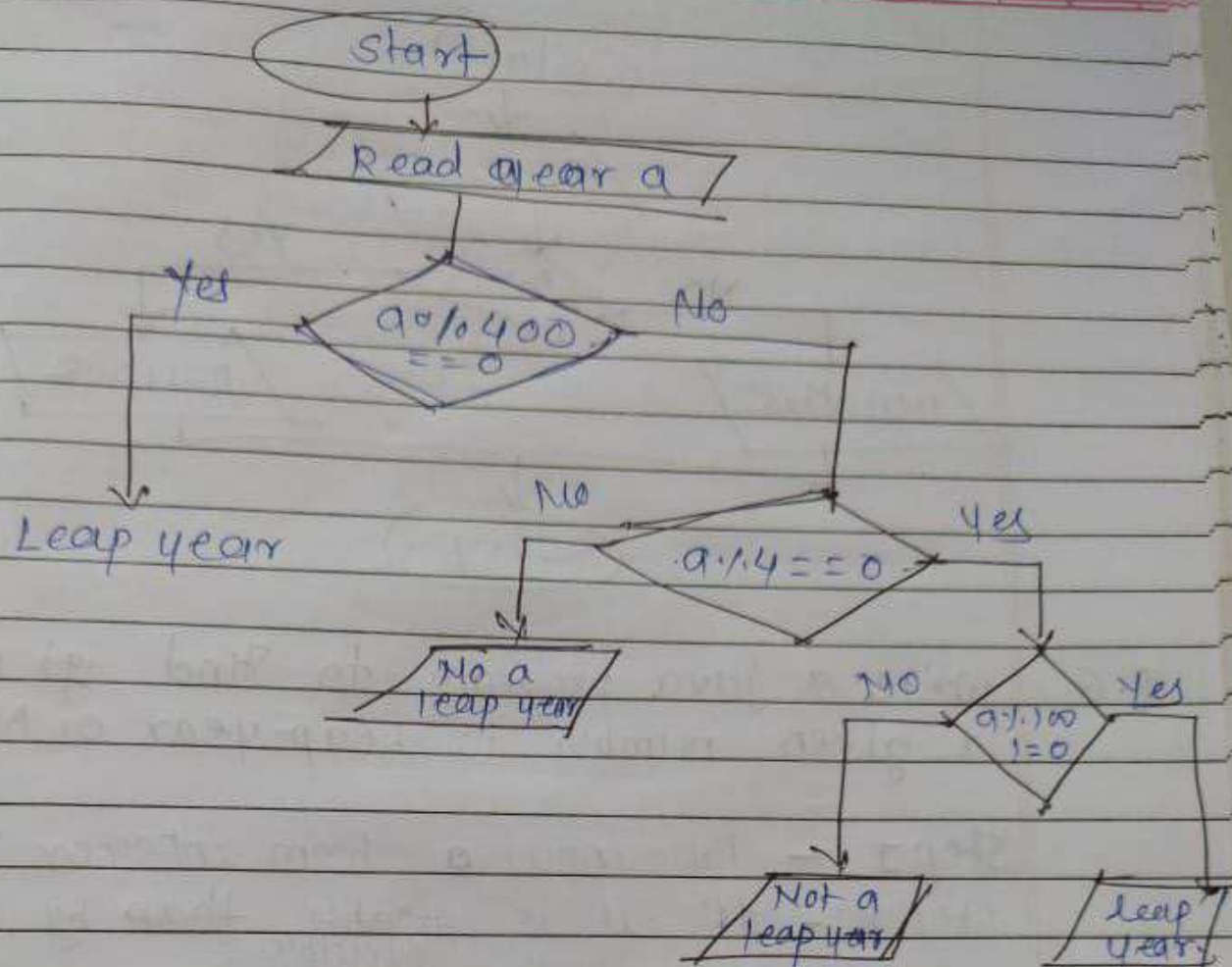


Q.6. Write a java program to find whether a given number is Leap year or Not?

Step I:- Take input a from integer 'a' as year.

Step II:- If it is greater than by 400 then it is a ^{divisible} leap year.

Step III:- If not then check for, if it is divisible by 4 if ~~yes~~ No then not a leap year & if yes check if it is not divisible by 100, if yes then it is a leap year. otherwise it is a common year.



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

step I - Take input as a number 'n' from user, initialize counter = 0

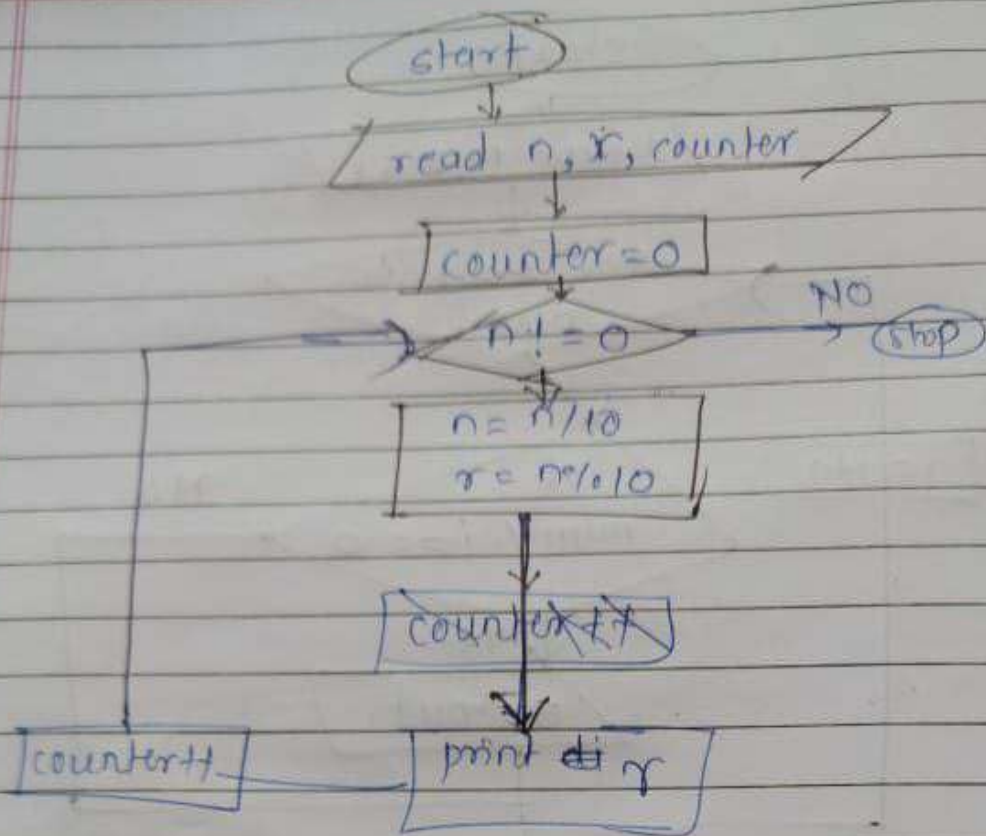
step II - check condition number · n != 0
if yes then stop.

if no then follow step III

step III - ~~ch number~~ number = number / 10
digit = number % 10

or

step IV = print digit



Q.9. write a java program to print all the factors of a given number.

step I :- Take input = num

step II :- ~~for~~ check the

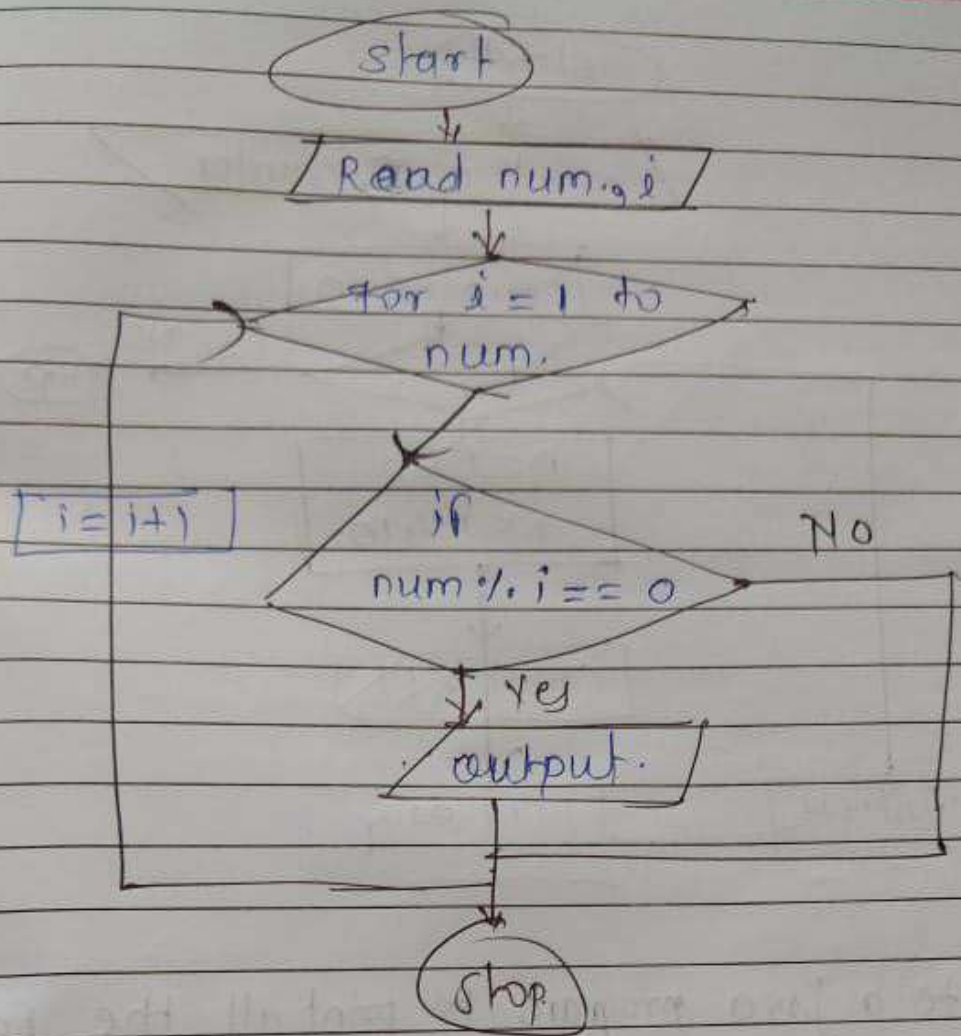
Take the loop from 1 to num.

step III :- check if $\text{num} \% i == 0$

if yes then follow step given b.

step follow step given below for loop
if no then stop.

step IV :- print output.



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

Step I :- Read input a, b, sum.

Step II :- initialize sum = 0

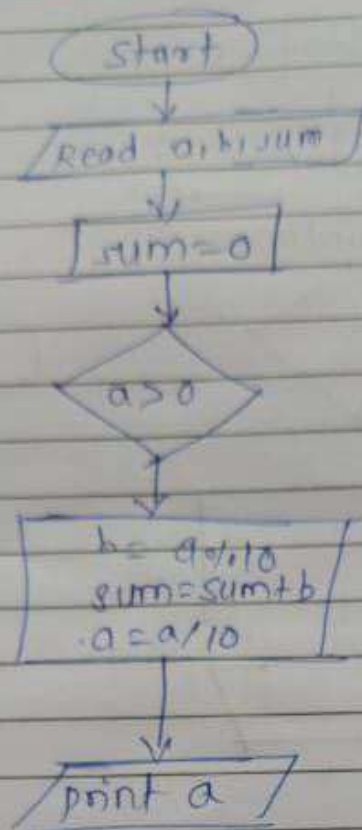
Step III :- If ~~a~~ a > 0 then

Step IV :- calculate $b = a \% 10$

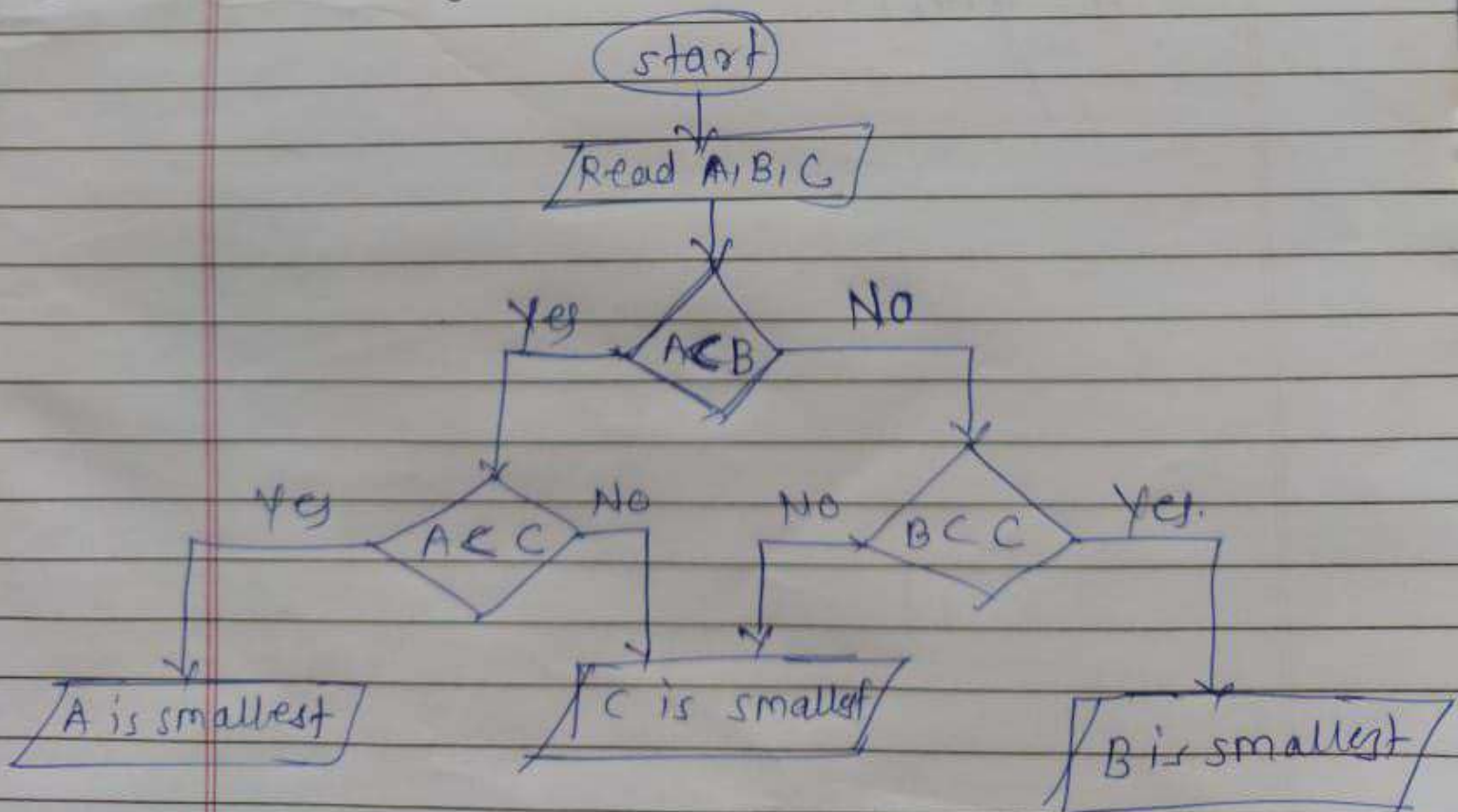
$sum = sum + b$

$a = a / 10$

Step V :- print a



Q.11 Java program to find smallest of given numbers.

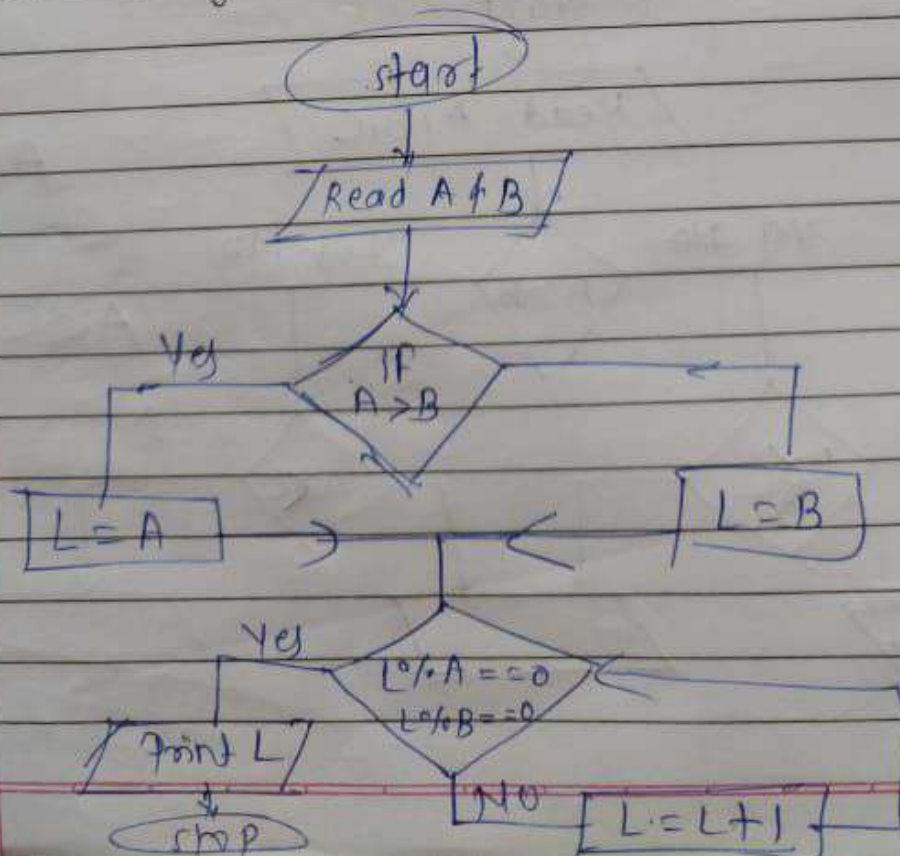


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step I \rightarrow Take inputs A, B, C.
 step II \rightarrow check whether A is less than B
 if yes follow step III & if no
 follow step IV
 step III \rightarrow check if $A < C$, if
 if true then follow step V
 step IV \rightarrow check if $B < C$
 if true then follow step VI
 step V \rightarrow A is smallest - print
 step VI \rightarrow B is smallest - print
 step VII \rightarrow print neither step III & IV are
 true then
 print C is smallest.

Q. 12 write a program to find gcd of two given numbers

Q. 15 write a java program to find gcd & LCM of two given numbers.



step I \rightarrow start

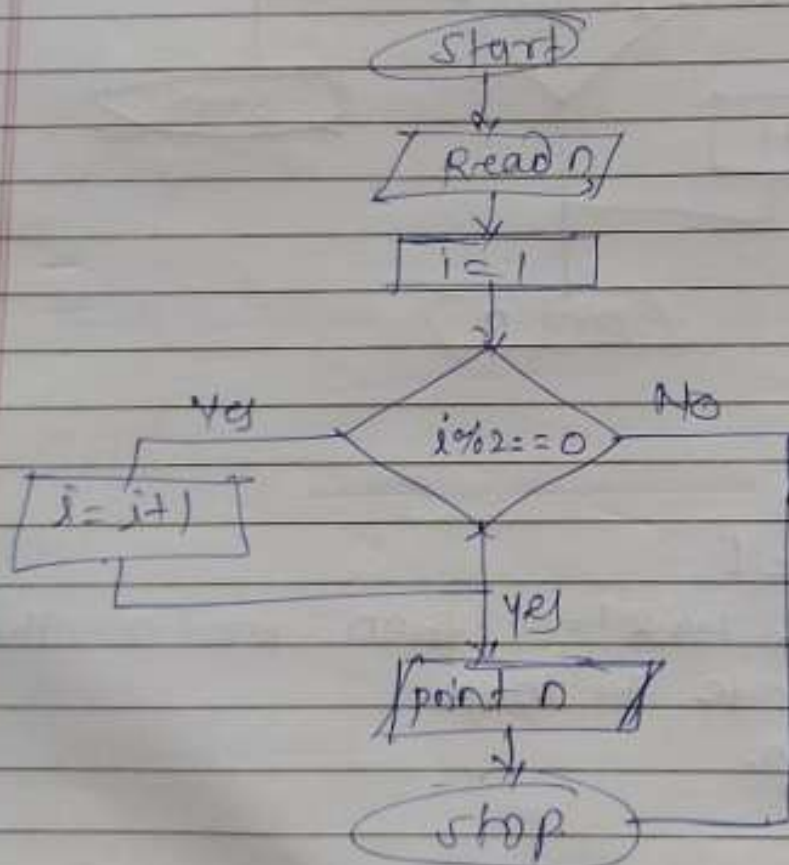
step II \rightarrow Read A & B

step III \rightarrow check $A \neq B$ then $L = A$ otherwise $L = B$

step IV \rightarrow check $L \% A == 0$ & $L \% B == 0$
if condition true then L is LCM otherwise
 $L = L + 1$ continue loop

step V \rightarrow stop

Q.19 Print the following even number series
2, 4, 6, 8, 10, 12, 14, 16, ...



step I] - start

step II] - Read n

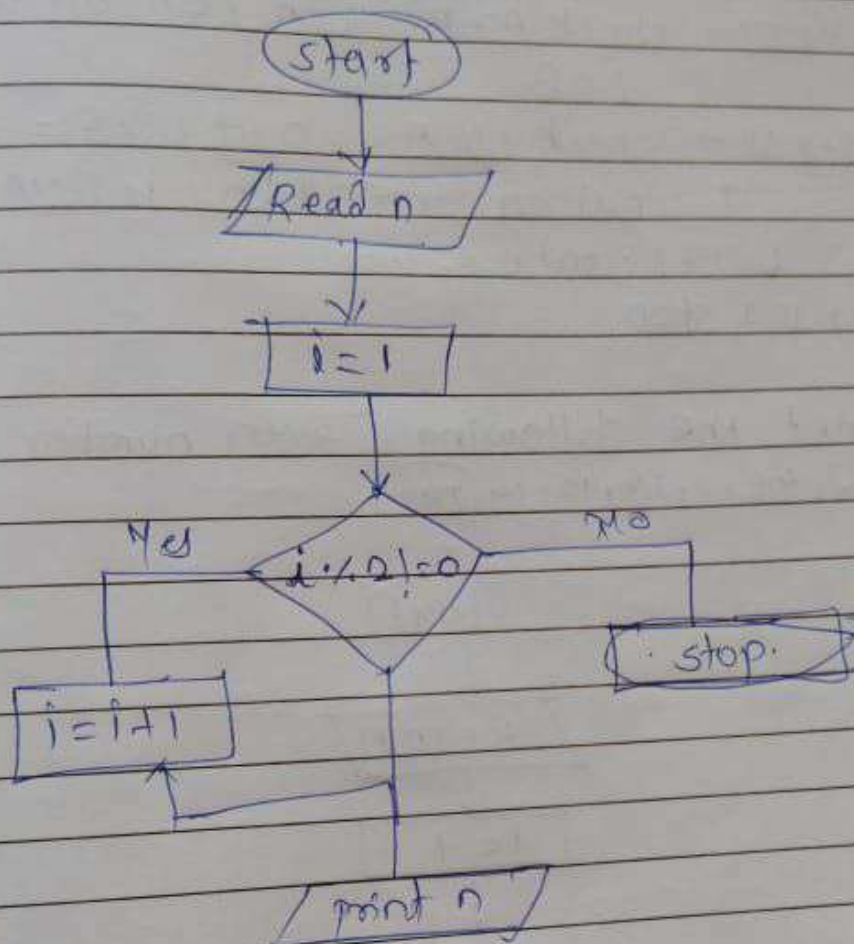
step III] - set $i = 1$

step IV] - check $i \% 2 == 0$ it is true then p
otherwise continue loop.

step V] - stop

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Print the following odd series



- ① start
- ② read n
- ③ set $i = 1$
- ④ check $i \% 2 \neq 0$ then print n otherwise continue the loop
- ⑤ stop.