Assignment - 1

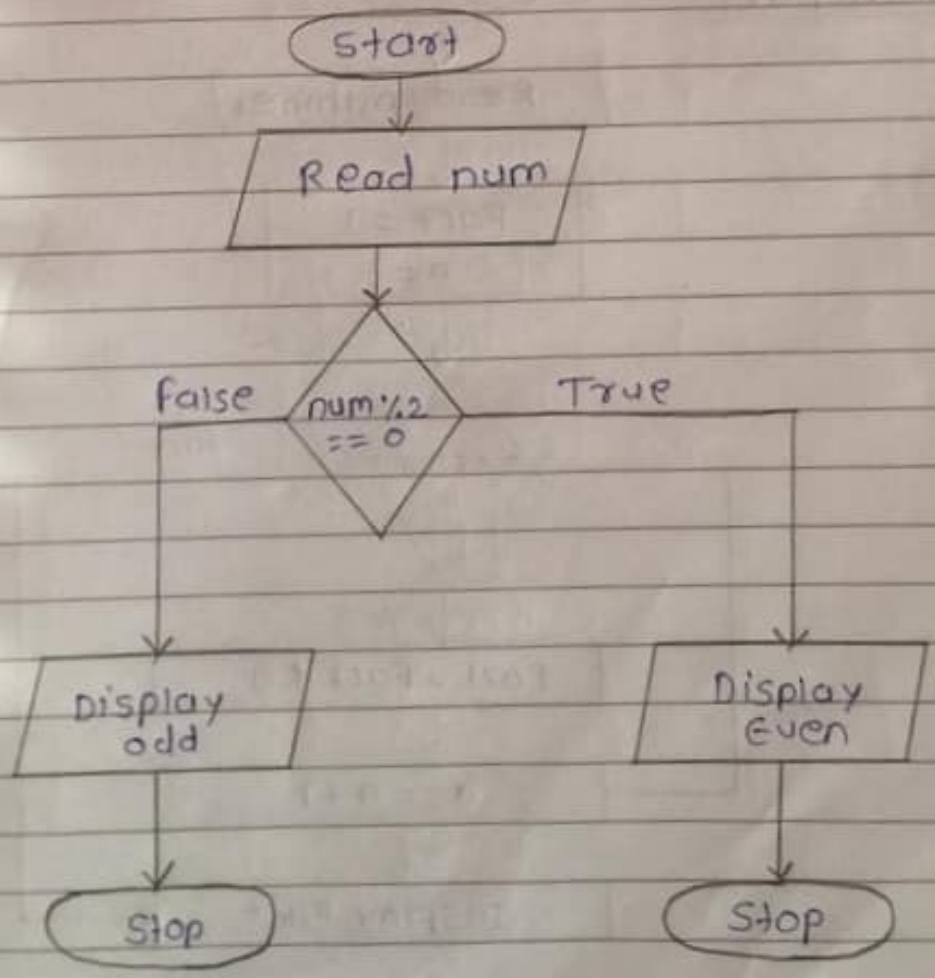
7/9/2022

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

Algorithm

step - 1 : start
step - 2 : Read number
step - 3 : IF number is divisible by 2 go to
Step - 4 else step - 5
step - 4 : Display "Even" and stop.
Step - 5 : Display "odd" and stop.

Flowchart

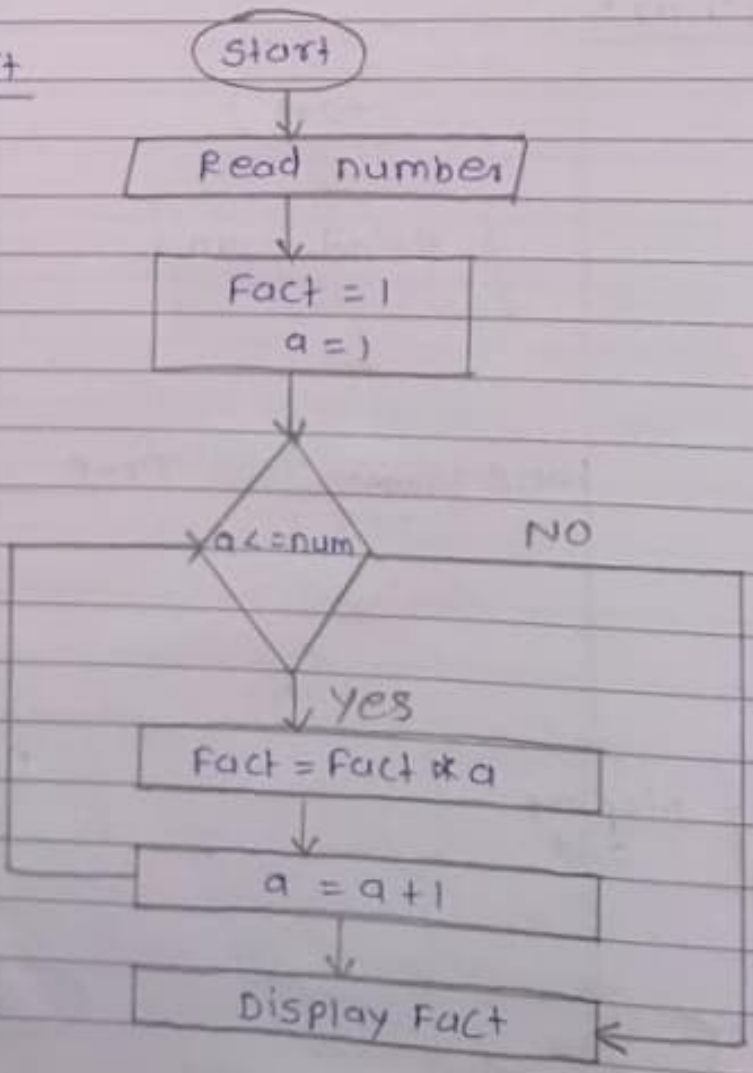


Q.2 write a java program to find the factorial of a given number

Algorithm

Step-1 : Start
Step-2 : Read number
Step-3 : set fact = 1, a = 1
step-4 : check condition a <= number
if false go to step 7
step-5 : Fact = fact * a;
step-6 : update a = a+1 go to step 4
step-7 : Display Fact
step-8 : Stop.

Flowchart

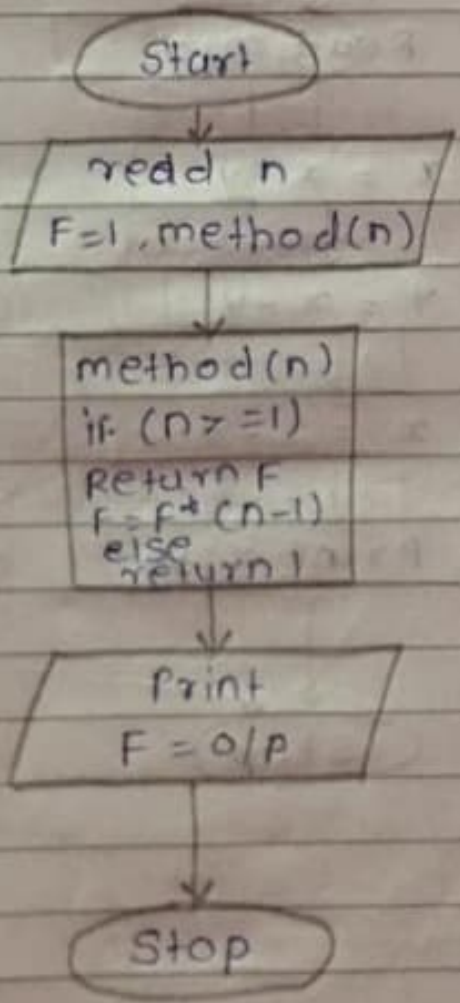


Q.3 Find the Factorial of a number using recursion.

Algorithm

Step - 1 : Start
Step - 2 : Read number n
Step - 3 : set F = 1
Step - 4 : Function method if (n >= 1)
return F = F * (n-1)
else return 1
Step - 5 : print output
Step - 6 : Stop.

Flowchart

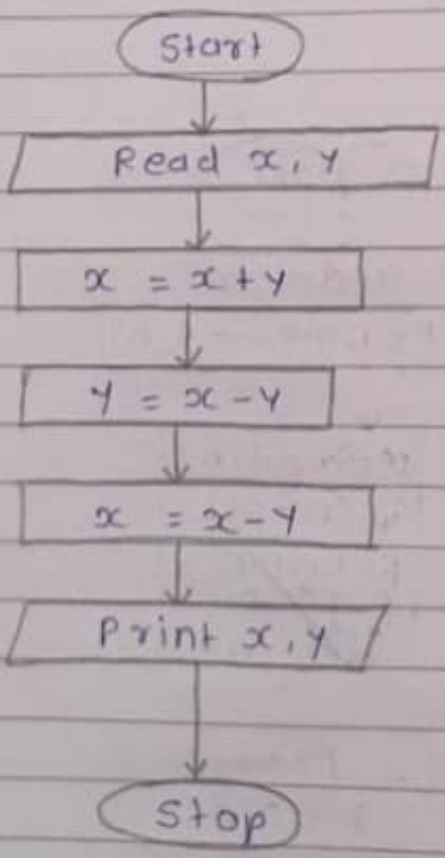


Q.4 Swap two numbers without using the th variable approach.

Algorithm

Step-1 : Start
Step-2 : Read x, y
Step-3 : x = x + y
Step-4 : y = x - y
Step-5 : x = x - y
Step-6 : Print x, y
Step-7 : Stop

Flowchart



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

Algorithm :

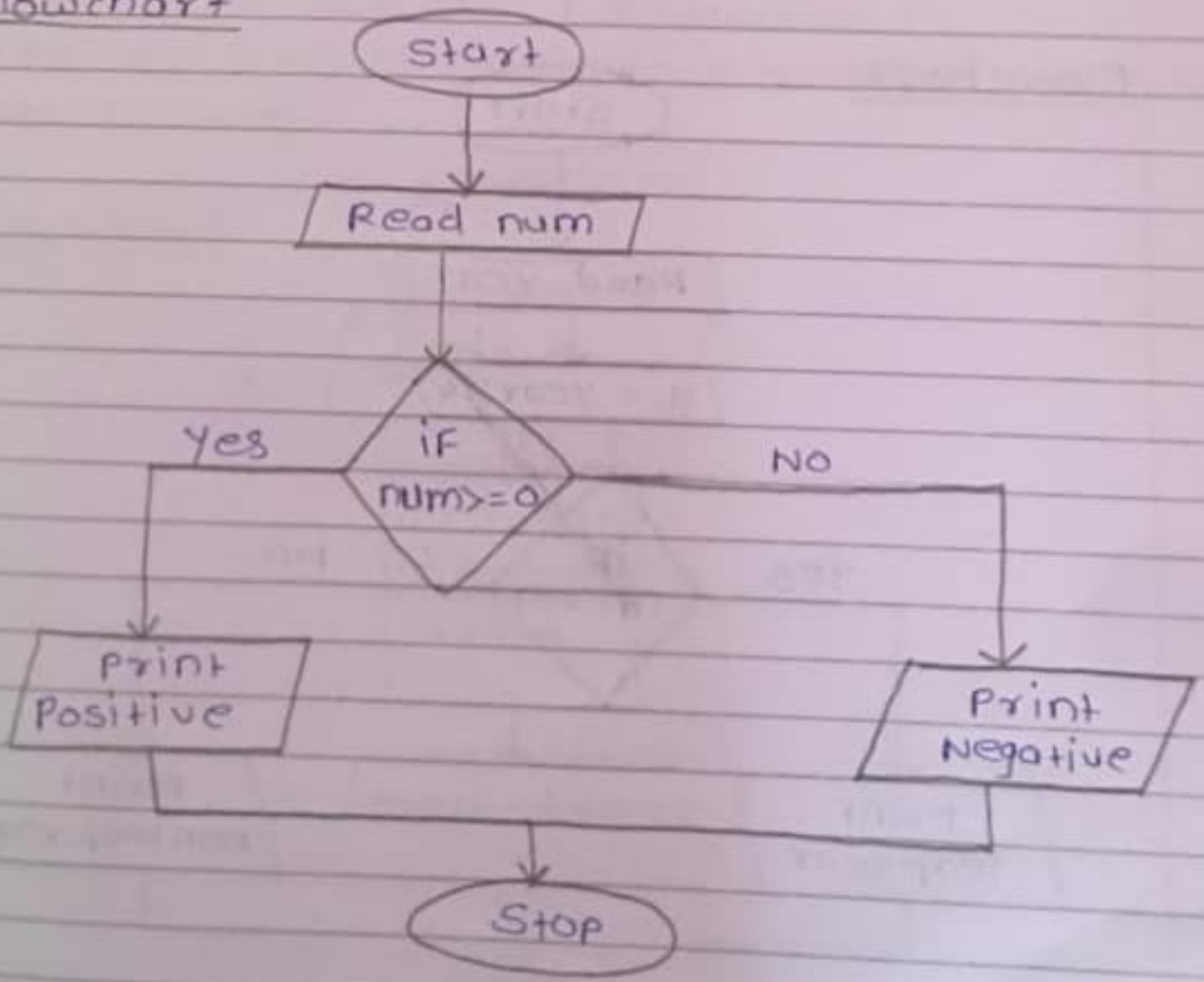
Step - 1 : Start

Step - 2 : Read number

Step - 3 : If (num >= 0) then
Print " num is positive "
else
Print " num is negative "

Step - 4 : Stop.

Flowchart

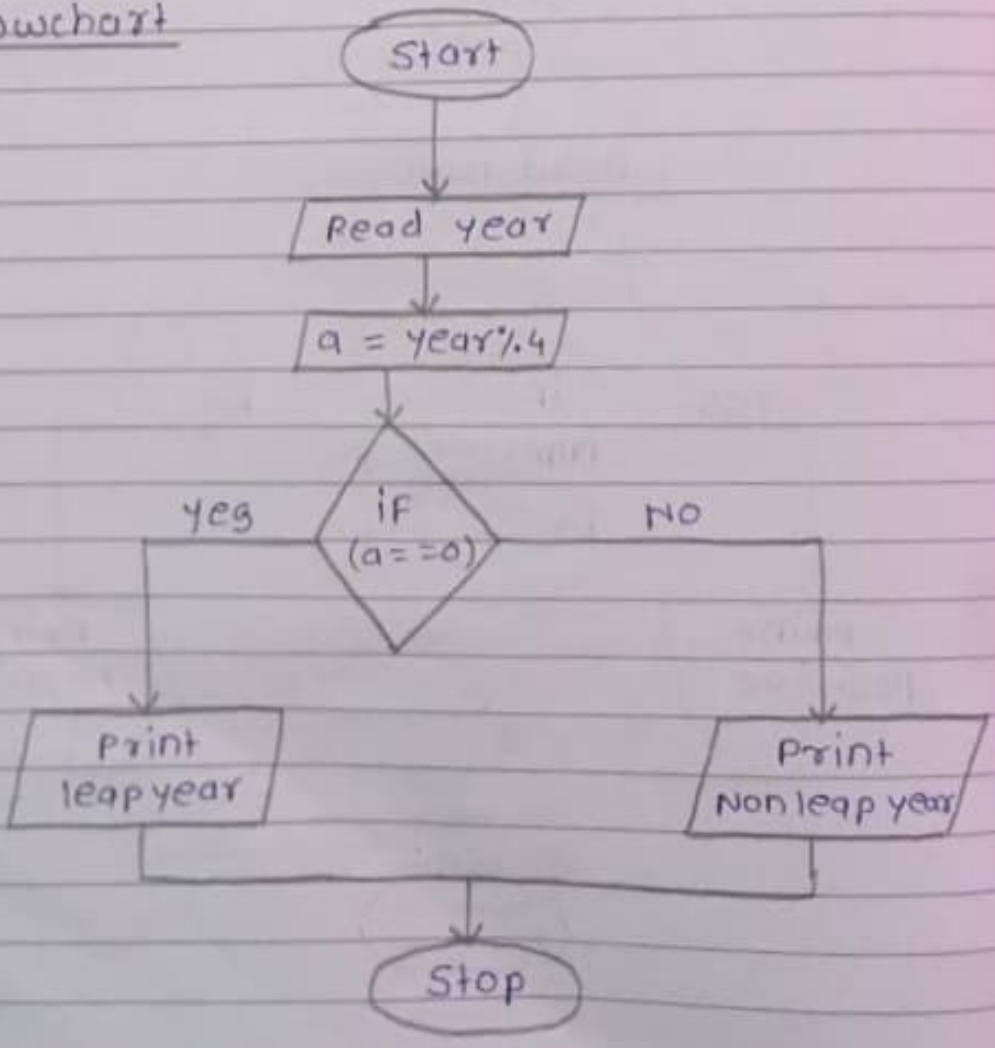


Q.6 Write a java program to find whether a given number is leap year or NOT

Algorithm:

Step-1 : Start
Step-2 : Read year
Step-3 : a = year % 4
Step-4 : if (a == 0) then
Print " Leap year"
else
Print " Non leap year "
Step-5 : Stop.

Flowchart



Q.7 write a java program to print 1 to 10 without using loop.

Algorithm

Step-1 : start

Step-2 : Read a
generate a method to print value and take number as a parameter.

Step-3 : condition → check whether number is "<= value"

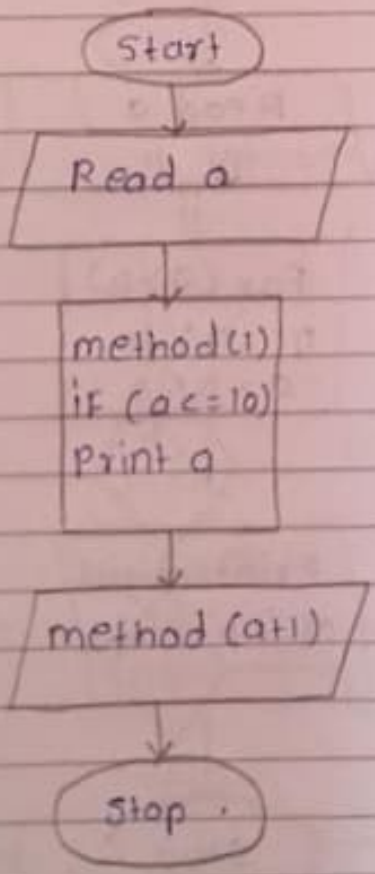
Step-4 : print the number

Step-5 : call the method from itself and add 1 in number (Recursion)

Step-6 : output → Taken parameter upto limit

Step-7 : stop.

Flowchart

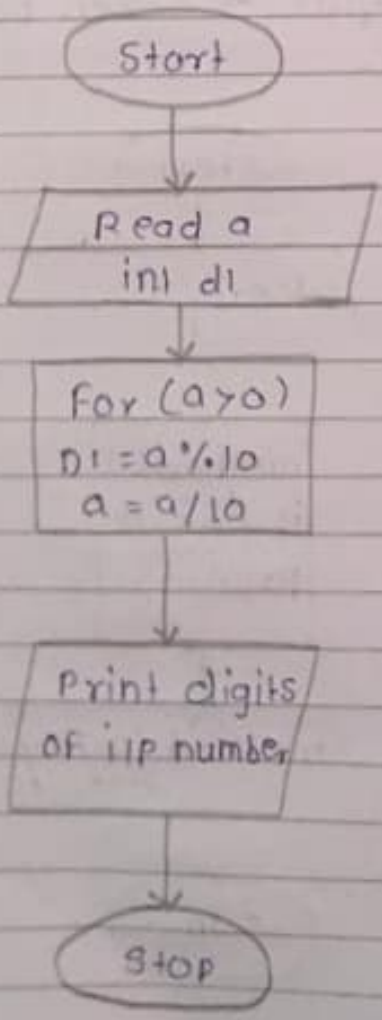


Q.8 write a java program to print the digits of a given number

Algorithm

Step - 1 : Start
Step - 2 : Read number to print its digits
Step - 3 : Condition - for a is greater than zero number
value = number % 10
number = number / 10
Step - 4 : Print the number
step - 5 : o/p Digits of input number
step - 6 : Stop.

Flowchart

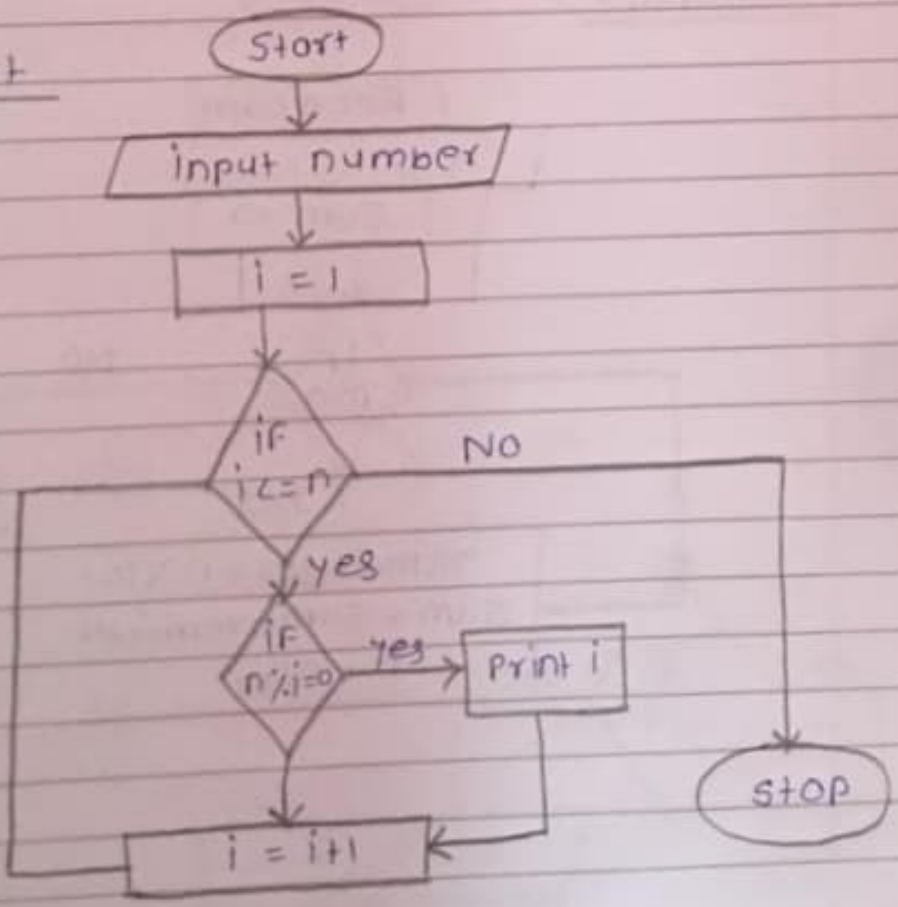


Q.9 write a java program to print all the Factors of the given numbers

Algorithm

Step-1 : Start
Step-2 : Read number
Step-3 : i = 1
Step-4 : if i <= num goto step 5
else goto step 7
step-5 : if num % i = 0
Print 'i'
else goto step-6
Step-6 : increased i by 1 and again go to step 4 and repeat
step-7 : stop

Flowchart

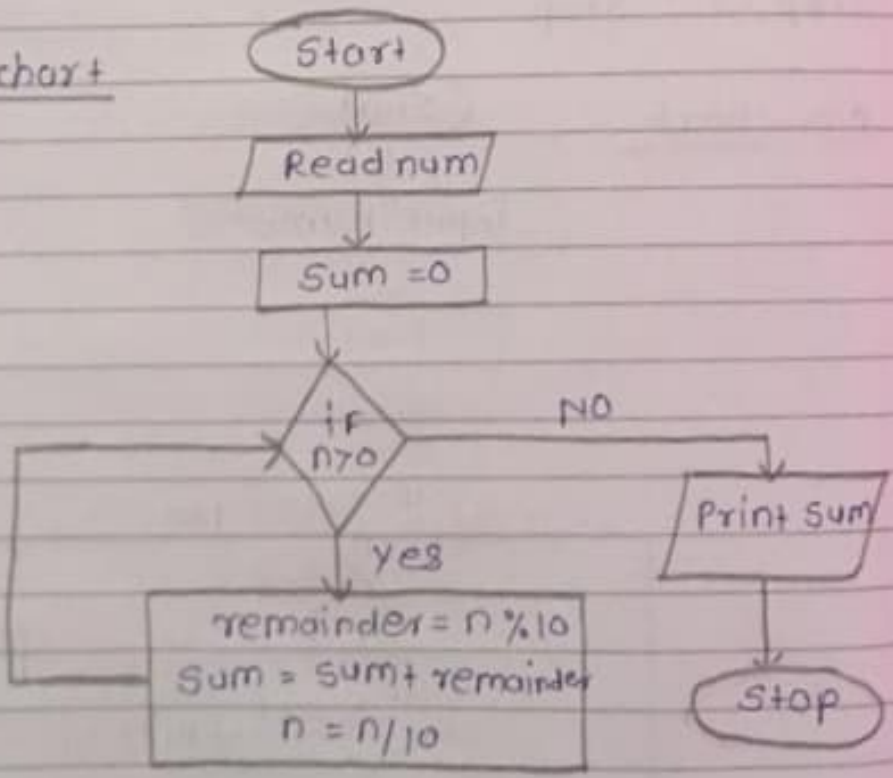


Q.10 Write a java program to find the sum of the digits of a given number.

Algorithm:

Step - 1 : Start
step - 2 : Read num
step - 3 : Declare sum = 0
step - 4 : remainder = n % 10
Sum = Sum + remainder
n = n/10
step - 5 : if (n > 0) then go to step 4
else go to step 6
step - 6 : Print sum
step - 7 : stop

Flowchart

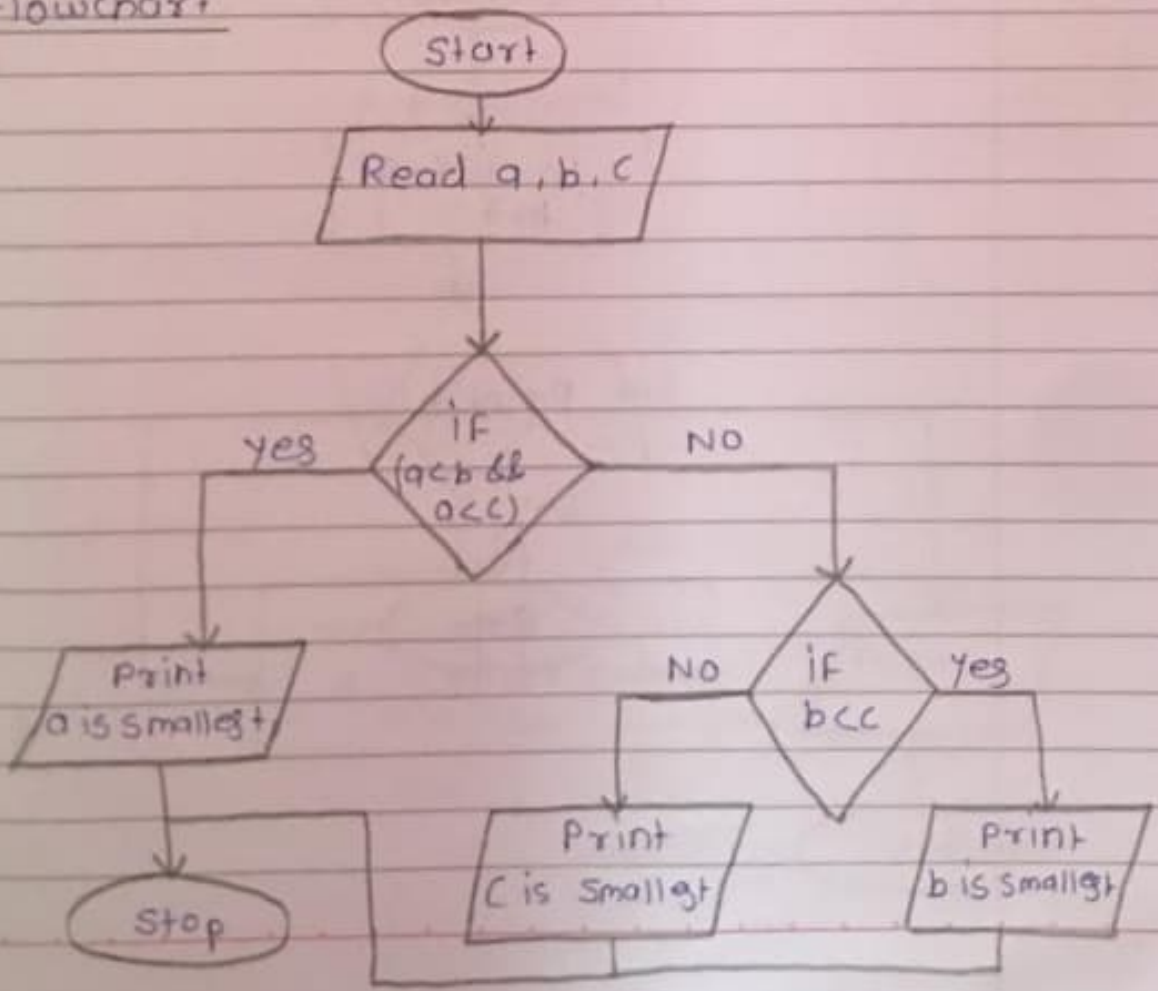


Q.11 write a java program to find the smallest of 3 numbers (a, b, c).

Algorithm

Step - 1 : Start
Step - 2 : Read three numbers a, b, c
Step - 3 : IF (a < b && a < c)
Print (a is smallest)
else
if (b < c)
print (b is smallest)
else
Print (c is smallest
step - 4 : Stop

Flowchart



Q.12 How to add two numbers without using the arithmatic operators in java

Algorithm

Step-1 : Start

Step-2 : Read two numbers a and b to add

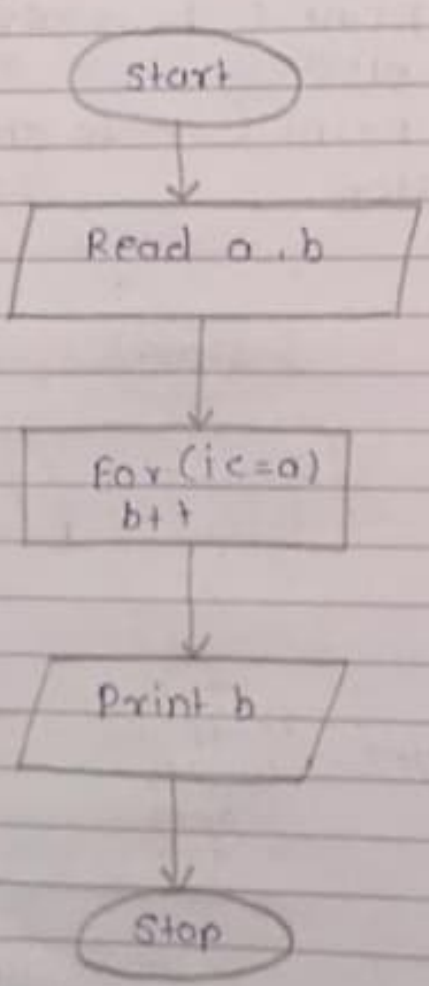
Step-3 : For loop (i<=num1)

num2++

Step-3 : num2

Step-5 : Stop

Flowchart

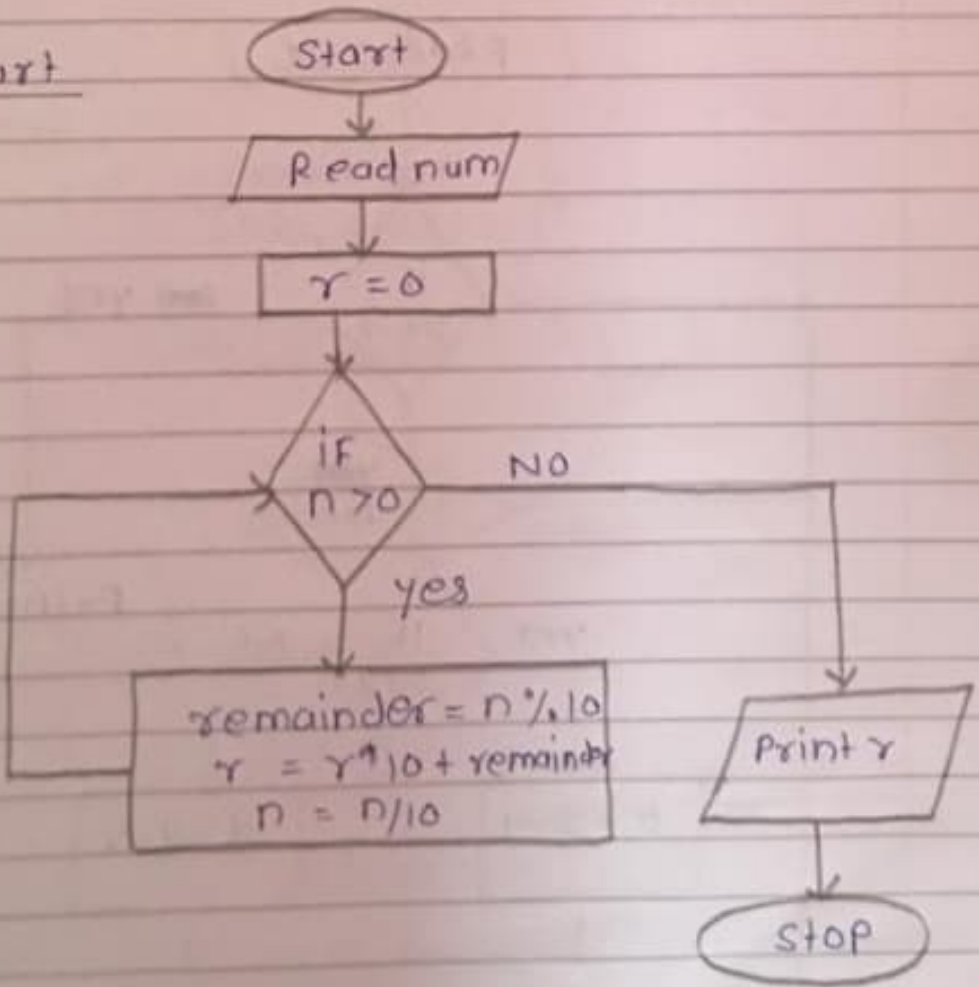


Q.13 write a java program to reverse a given number

Algorithm

Step - 1 : Start
Step - 2 : Read num
Step - 3 : Delare r = 0
Step - 4 : remainder = n % 10
r = r * 10 + remainder
n = n/10
Step - 5 : if (n > 0) then go to step 4
else go to step 6
Step - 6 : Print r
Stop - 7 : Stop

Flowchart

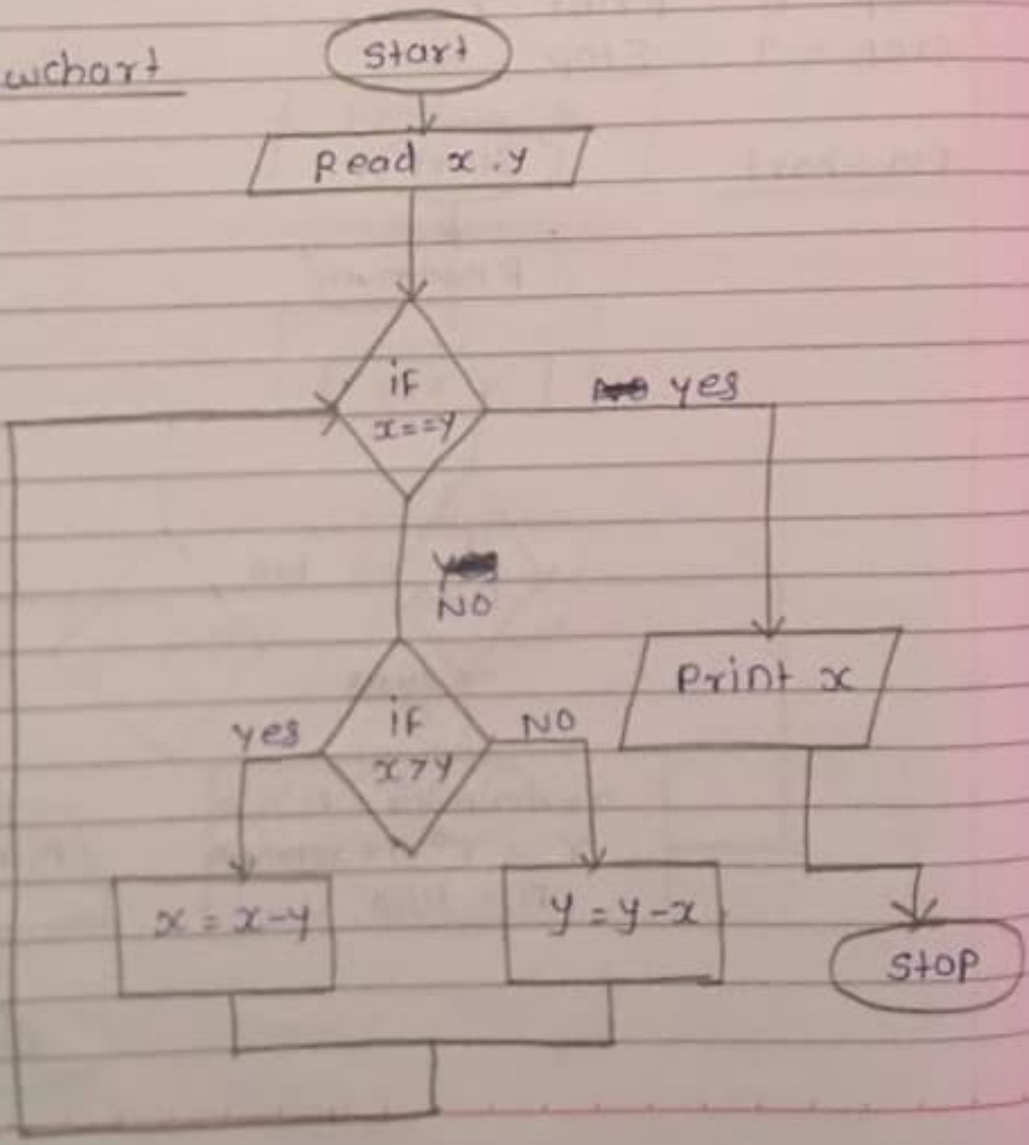


Q.14 Write a java program to find the GCD of two given numbers

Algorithm:

Step - 1 : Start
Step - 2 : Read x, y
Step - 3 : if (x == y) then go to step 5
Step - 4 : if (x > y)
then x = x - y goto step 3
else y = y - x goto step 3
Step - 5 : Print x
step - 6 : Stop

Flowchart

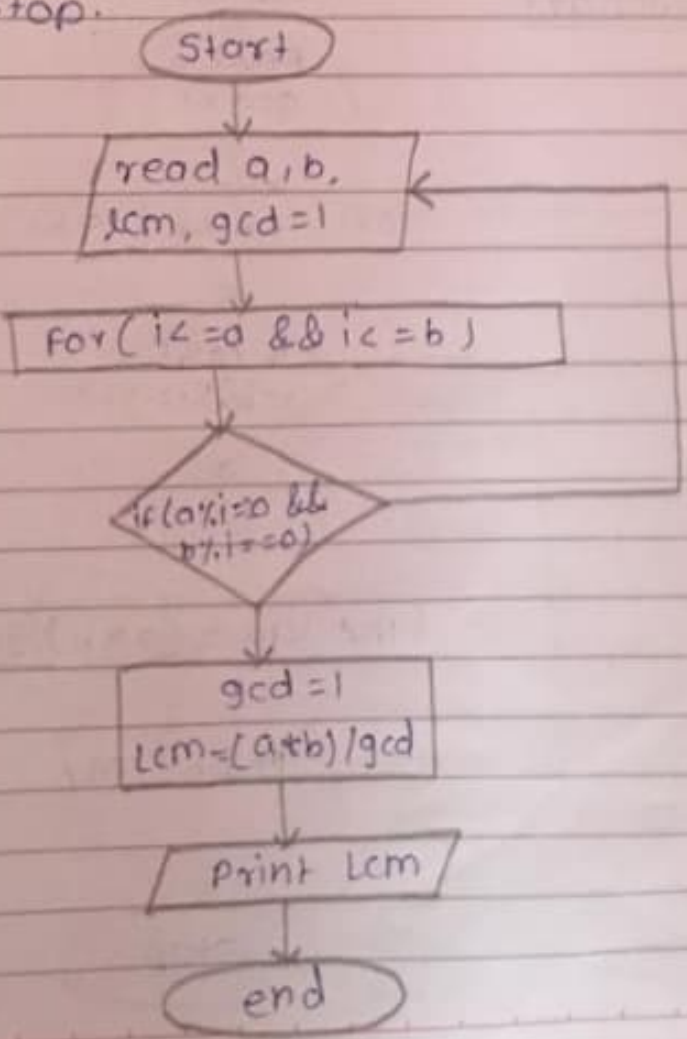


Q.15 write a java program to find the LCM of two given numbers

Algorithm

Step - 1 : Start
Step - 2 : Read a , b to find GCD
Step - 3 : Condition - To check the number which is less than both number.
Step - 4 : if the number divides both the num. Process - increament number by 1
Take the greates number int GCD variable
Step - 5 : then LCM = (num1 * num2) / GCD
Step - 6 : o/p print LCM
Step - 7 : Stop.

Flowchart



Q.16 write a java program to LCM of two given numbers using prime factors method.

Algorithm

Step - 1 : Start

Step - 2 : Read a, b to find its lcm (a, b)

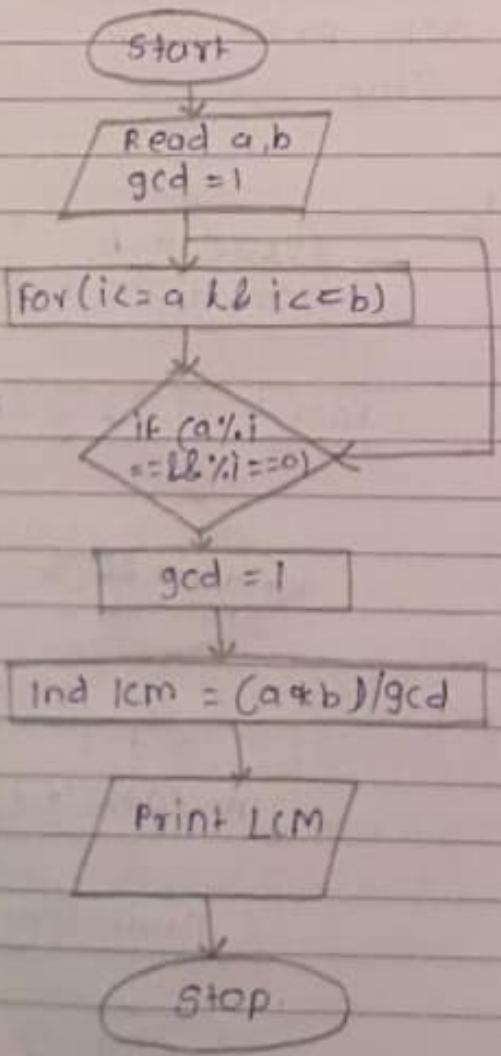
Step - 3 : Process Find factors of given numbers (i)

Step - 4 : if a and b are exactly divisible by Factor Gcd equal to factors

Step - 5 : o/p → multiply two numbers
→ divide by Gcd = Lcm print → LCM

Step - 6 : Stop.

Flowchart

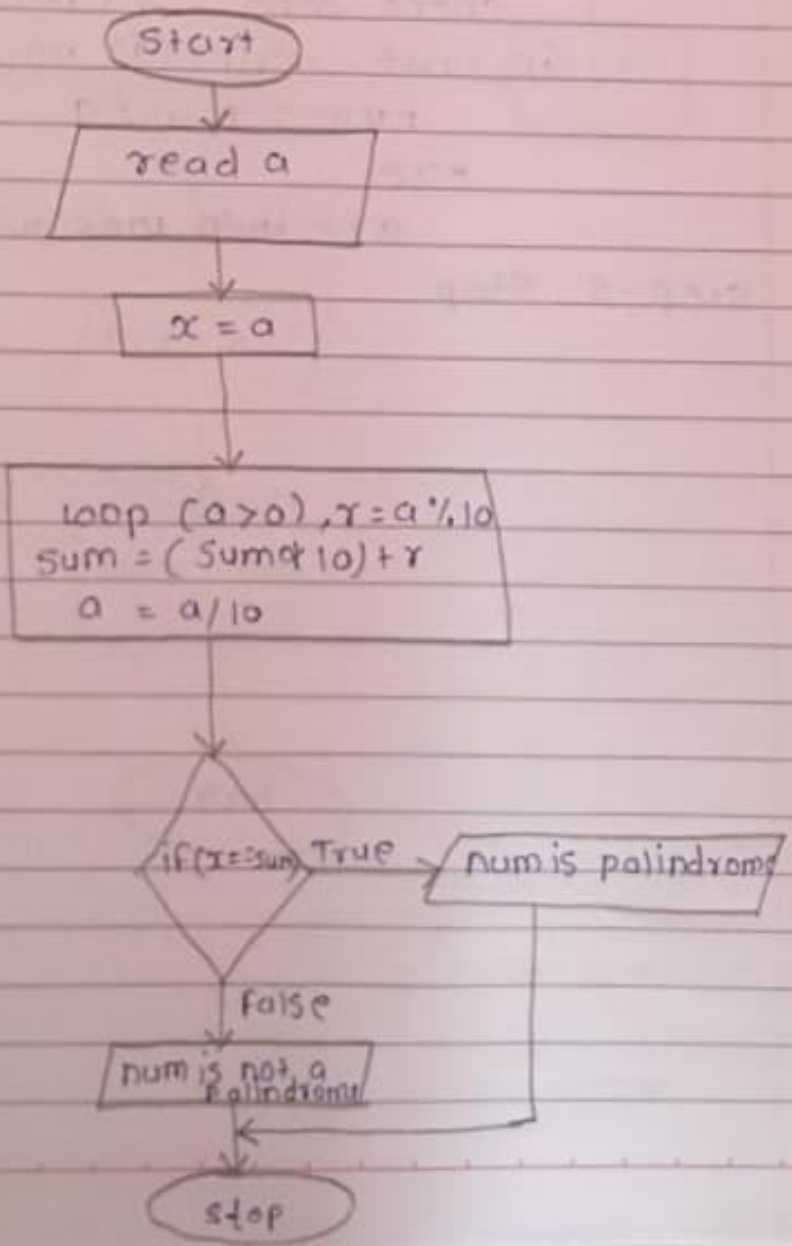


Q.17 check whether the given number is a palindrome or NOT

Algorithm:

Step-1 : Start
Step-2 : Read variable (i/p)
Step-3 : Reverse the number
Step-4 : compare the input no with rev num if true num is palindrome & else its not a palindrome
Step-5 : Stop

Flowchart

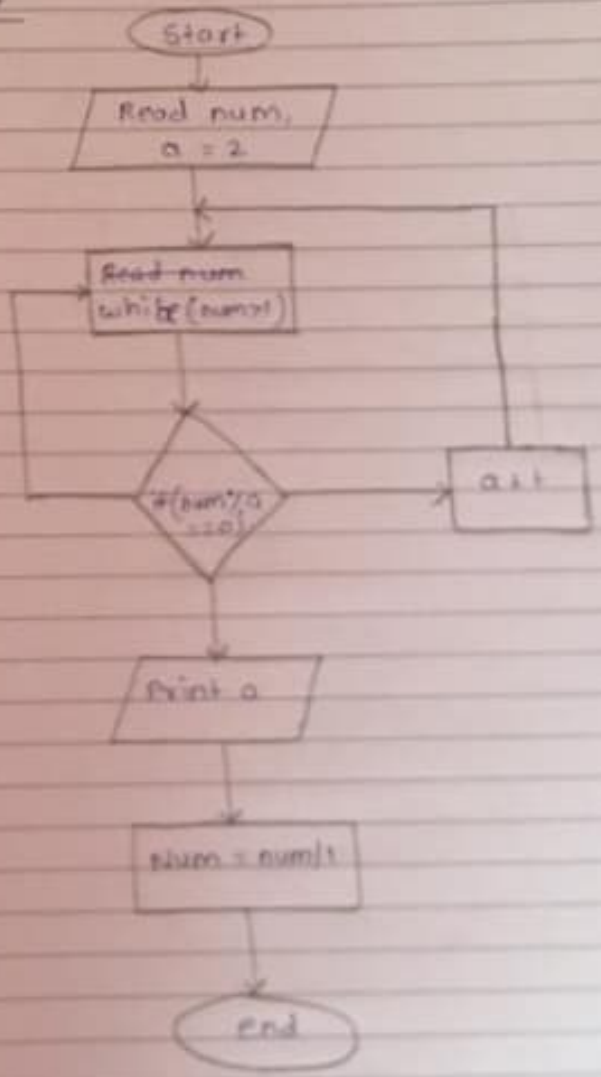


Q.18 write a java program to print all the prime factors of the given number.

Algorithm :

Step - 1 : Start
Step - 2 : Read the number
Step - 3 : Take a = 2
Step - 4 : check the input number is greater than enter in loop.
while (num > 1)
check cond^n if (num % a = = 0)
if true print(a) value on termina
num = num / a
else
a ++ then loop will iterate again
Step - 5 : Stop

Flowchart

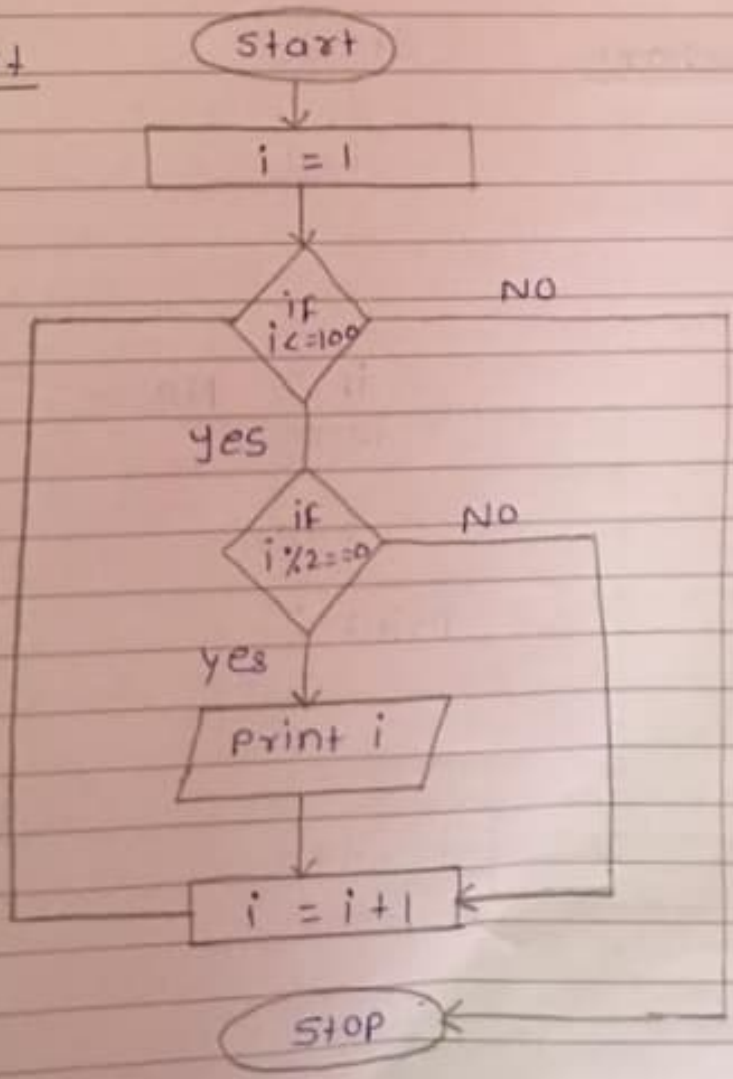


Q.19 To print the following series Even numbers
Series 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 ....

Algorithm

Step - 1 : start
Step - 2 : Initialize the variable
i = 1
Step - 3 : if (i % 2 == 0)
Print the number " i "
Step - 4 : else increament the i
and go to step 3 and repeat
Step - 5 : stop.

Flowchart



Q.20 To print the following series odd numbers series 1, 3, 5, 7, 9, 11, 13.....

Algorithm

Step - 1 : Start

Step - 2 : Declare i = 1

Step - 3 : if (i ≤ 100)
Print i and go to step 4
else go to step 5

Step - 4 : i = i + 2 and again goto step - 3 and repeat

Step - 5 : Stop

Flowchart