ASSIGNMENT 1

Date: 12.09.2022

Q1] Check if the given number is even or odd.

Step 1: Start

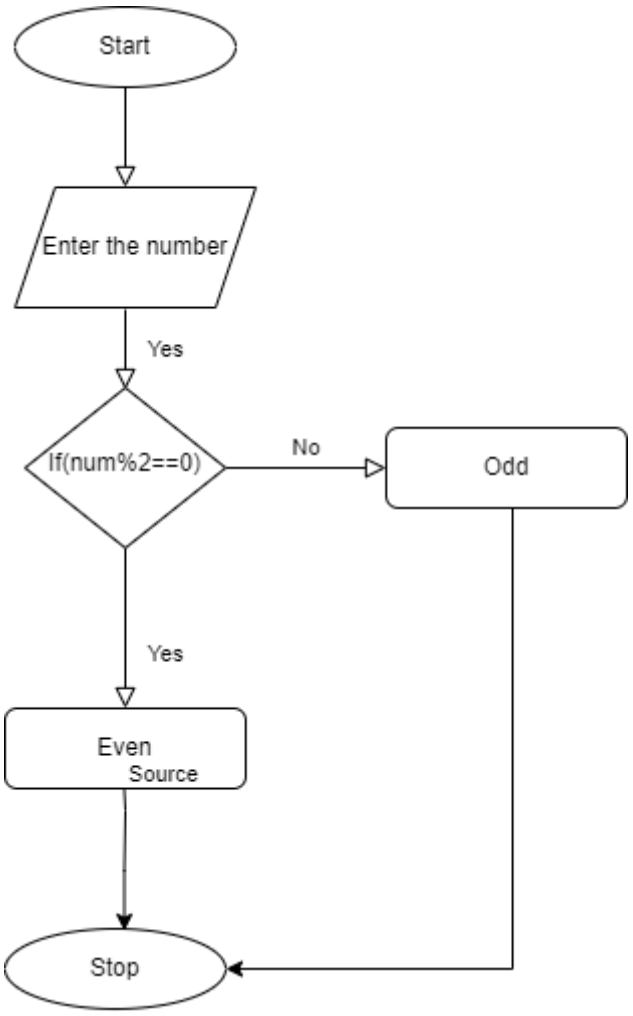
Step 2: Take user input. Store integer in a variable **num**.

Step 3: Using If statement, check entered number when divided by 2 leaves reminder is 0. **(num%2==0)**

Step 4: If reminder is 0 then given number is even and go to Step 6.

Step 5: Else, entered number is odd.

Step 6: End



Q2] Write a Java Program to find the Factorial of given Number

Step 1: Start

Step 2: Take user input. Store integer in a variable **a.**

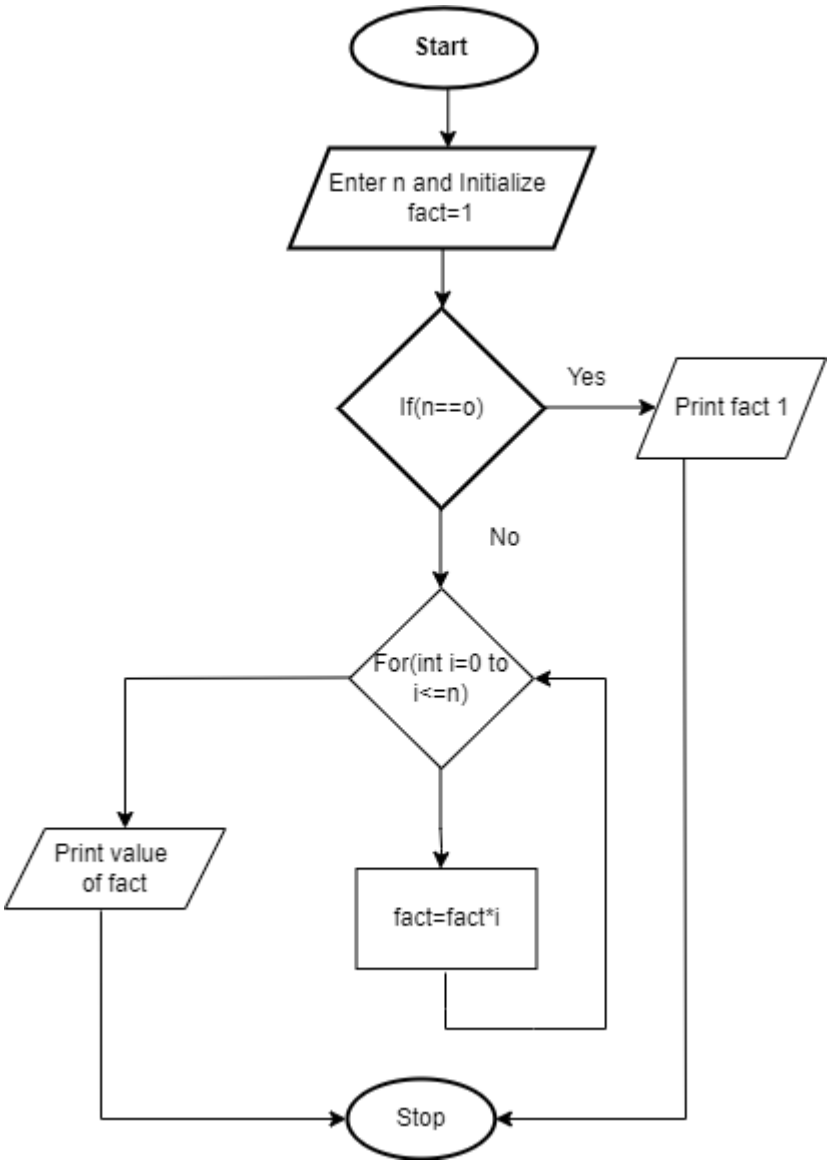
Step 3: Declare and Initialize variable **fact** to 1.

Step 4: Using If statement, check if variable **a** is 0, if yes, factorial is 1. If not, move to Step 5.

Step 5: Using for statement, run the loop from 1 to **a**, multiply each digit and store value in fact.

Step 6: Final value stored in the variable fact is factorial of entered number.

Step 7: End



Q4] Swap two number without using the third variable approach

Step 1: Start

Step 2: Take 2 variable from user. Store the entered value in variable **a** & **b**.

Step 3: Print the value of **a** and **b** before swapping.

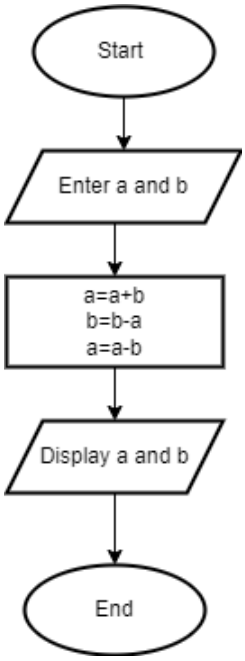
Step 4: **a = a + b**

Step 5: **b = a – b**

Step 6: **a = a – b**

Step 7: Print the value of **a** and **b** after swapping.

Step 8:End



Q5] **How to check whether the given number is Positive or Negative in Java**

Step 1: Start

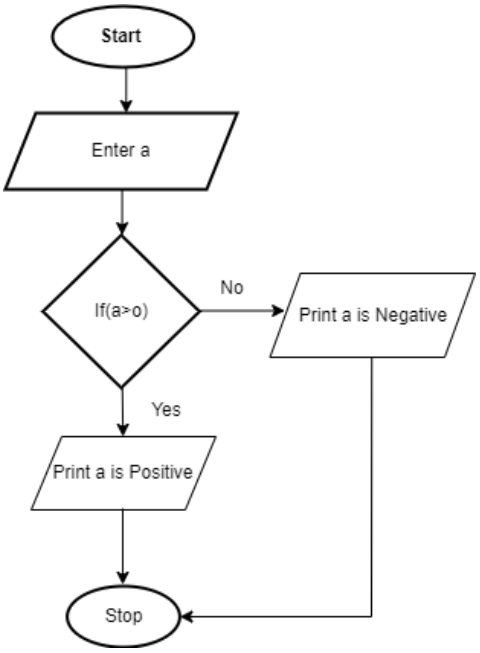
Step 2: Take user input. Store integer in a variable **a.**

Step 3: Using If statement, check whether the entered number is greater then zero.

Step 4: If yes, then the entered number is Positive and go to Step 6.

Step 5: Else, it is an negative number.

Step 6: End



Q6] Write a Java Program to find whether a given year is a Leap year or not

Step 1: Start

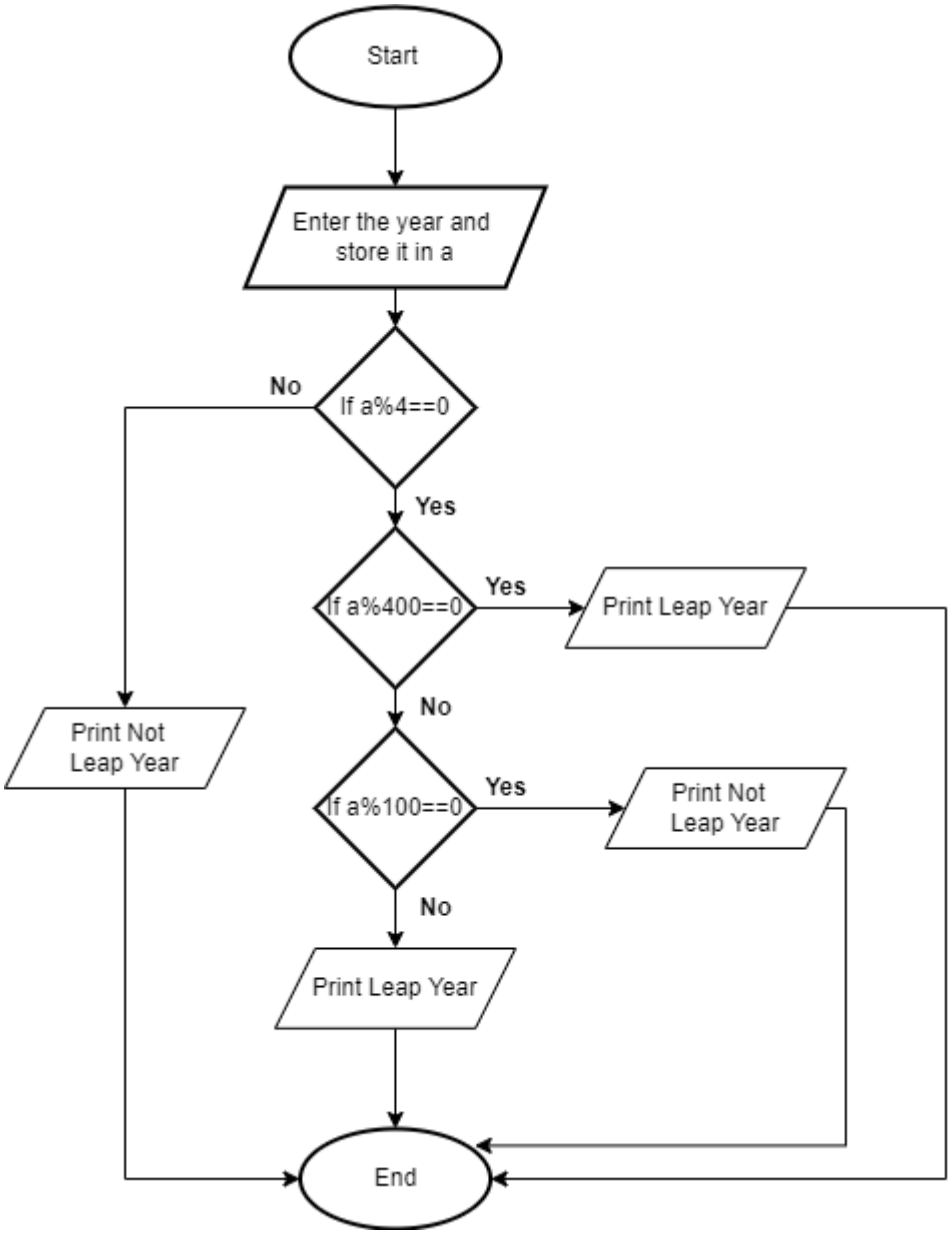
Step 2: Take Year to be checked from user and store it in a variable **a**.

Step 3: Using If statement, check if **a** is divisible by 4. If yes, go to step Step 4 otherwise print not a leap year. Jump to Step 6.

Step 4: Using if statement, check if **a** is divisible by 400. If yes, print leap year and go to Step 6. If no, otherwise go to Step 5.

Step 5: Using if statement, check if **a** is divisible by 100. If yes, print Not a Leap year otherwise print Leap Year.

Step 6: End



Q8] Write the Java Program to print all digits of given number.

Step 1: Start

Step 2: Take user input. Store integer in a variable **a.**

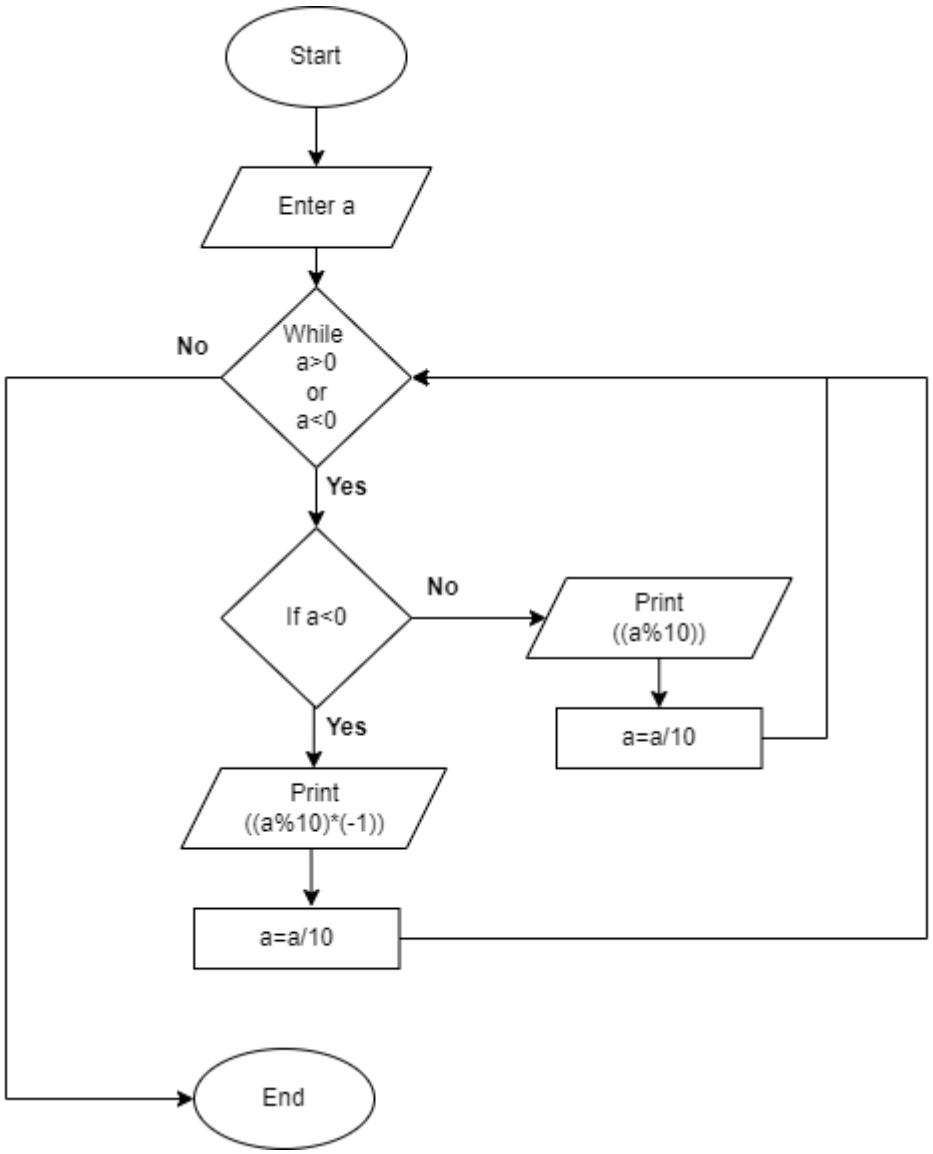
Step 3: Using while statement, check if **a** is greater than 0 or a is less than 0. If yes, go to Step 4 otherwise Step 5.

Step 4: Using if statement, **a** is negative number.

Step 5:If yes, print ((n%10)*(-1 divide a by 10 and store back in **a**. Go back to Step 3.

Step 6: If no, print (n%10) and divide a by 10 and store back in **a**. Go back to Step3.

Step 5: End



Q9] Write the Java Program to print all the factors of Given Number

Step 1: Start

Step 2: Take user input. Store integer in a variable **a.**

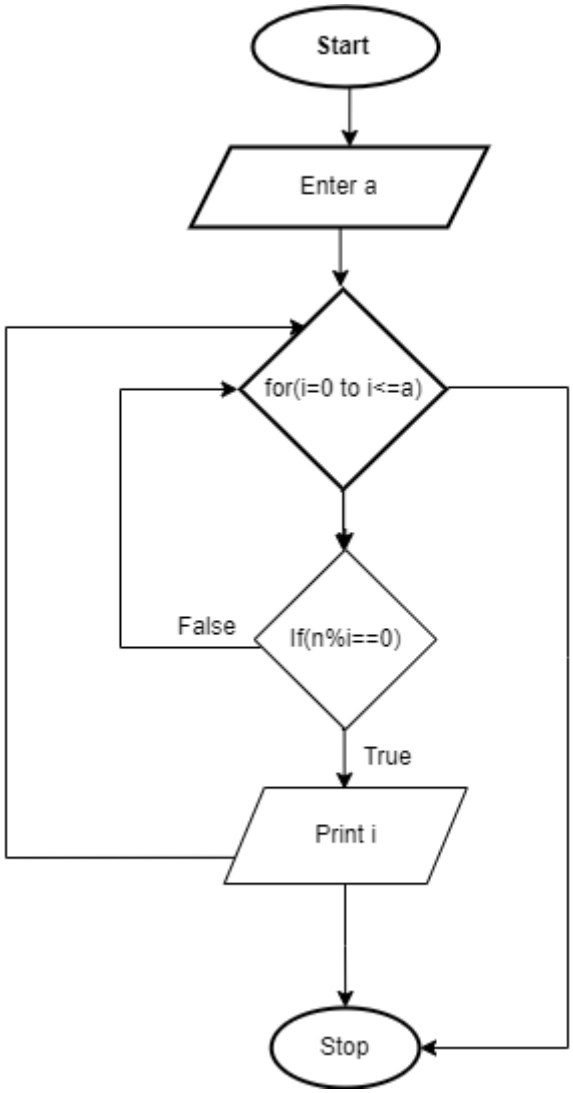
Step 3: Using for statement, run the loop from 1 to **a**.

Step 4: Then Using if statement, check if number is divide by number **i**.

Step 5: If yes, then **i** is factor of number. Print the value of **i** and back to step 3.

Step 6: If No, then back to step 2.

Step 7: End



Q 10] Write the Java Program to find the sum of the digits of given number

Step 1: Start

Step 2: Take user input. Store integer in a variable **a.**

Step 3: Using while loop, check if **a** is greater than 0. If yes, then go to step 3 otherwise exit the while loop and jump to Step 9.

Step 4: Get the modulus/remainder of the number

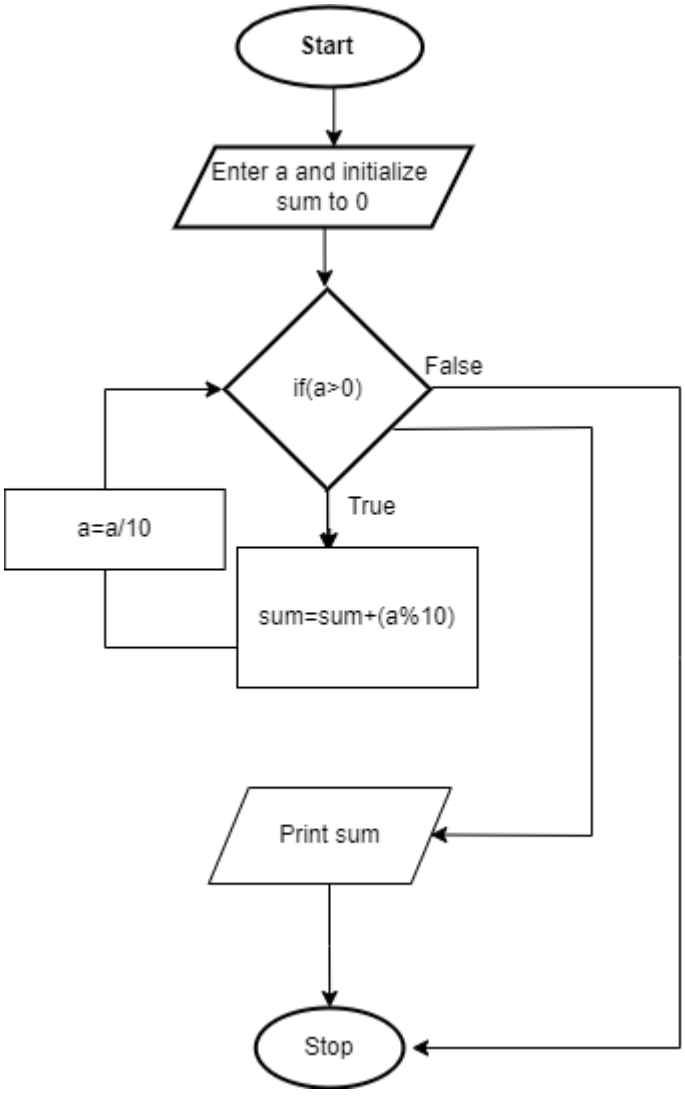
Step 5: sum the remainder of the number

Step 6: Divide the number by 10.

Step 7: Repeat the step 3 till number is greater than 0.

Step 8: Print sum when out of while loop.

Step 9: End



Q 11] Write the Java Program to find the smallest number of 3 numbers.

Step 1: Start

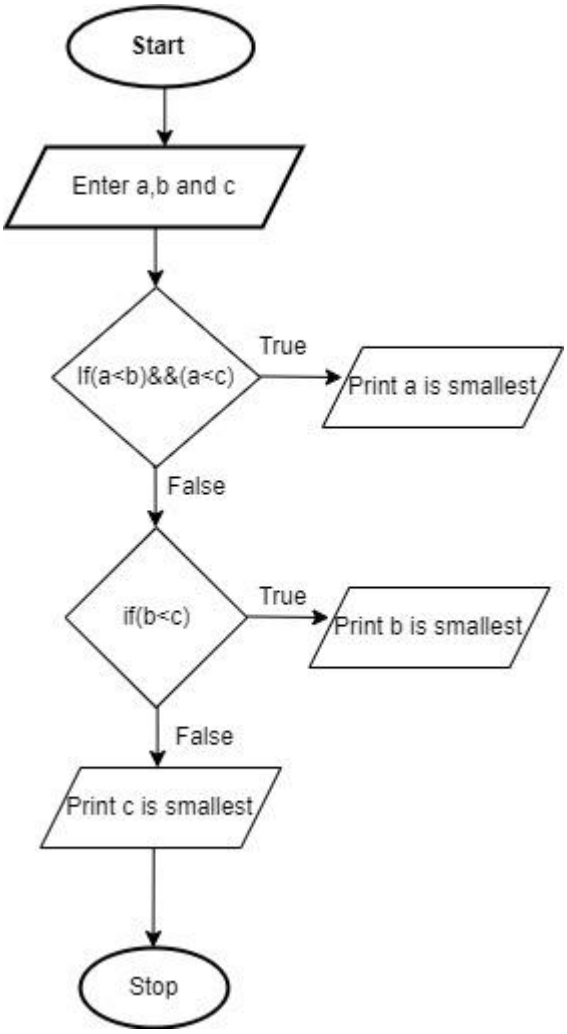
Step 2: Take three numbers from user. Store the integer in variable **a, b** & **c**.

Step 2: Using if Check if **a** is less than **b** and a is less than c. Print **a** is smallest.

Step 3: Else if b is less than c. Print b is smallest.

Step 4: Else print c is smallest.

Step 5: End



Q 12] How to add two numbers without using the arithmetic operators in java

Step 1: Start

Step 2: Take two number from user. Store it in variable **a** and **b**.

Step 3: Using if statement, check if b is greater than 0. If yes then go to Step 4 otherwise go to Step 7.

Step 3: Using for statement, run loop from 0 to b. i.e **for(int i=0;i<b;i++)**

Step 4: Increment value of **a** and back to Step 3 until for statement condition is false.

Step 5: Print value of **a** and jump to Step 10.

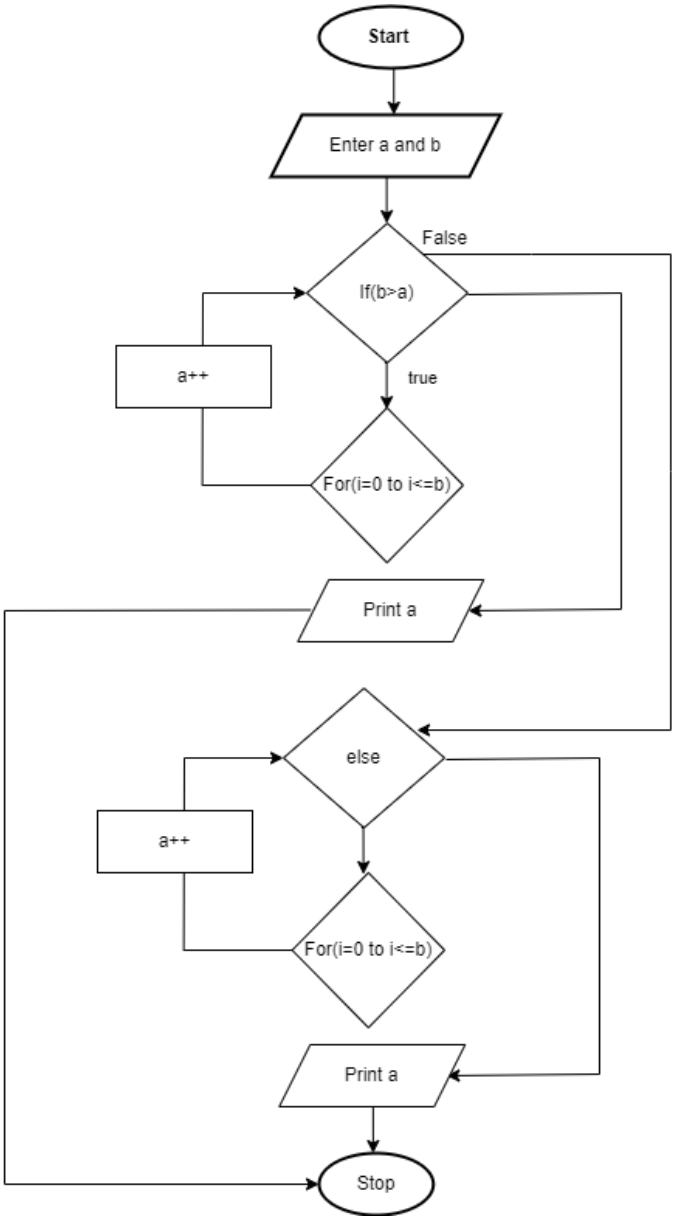
Step 6: If **b** is less than 0, go to step 7.

Step 7: Using for statement, run loop from 0 to **b**. i.e **for(int i=0;i>b;i--)**

Step 8: Decrement value of **a** and back to Step 7 until for statement condition is false.

Step 9: Print value of **a.**

Step 10: End



Q 13] Write the Java Program to reverse the given number.

Step 1: Start

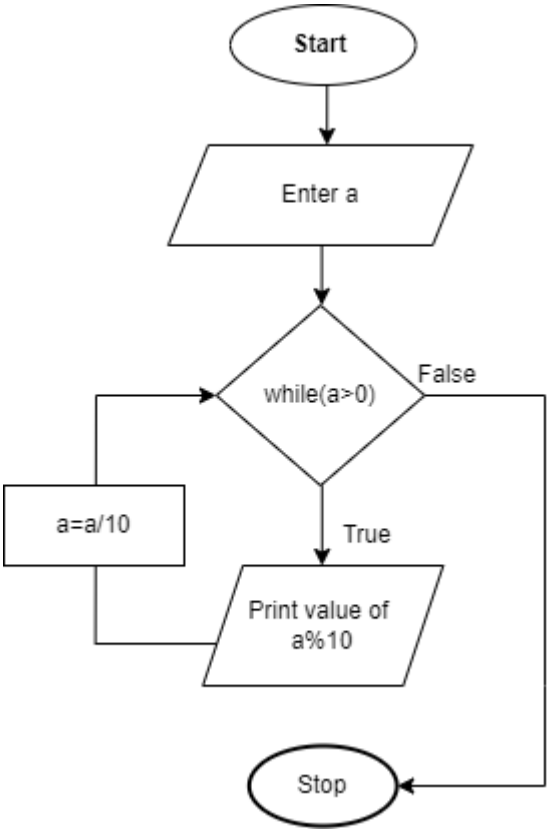
Step 2: Take user input. Store it in variable **a**.

Step 2: Using wile Statement, check if **a** is greater than 0 otherwise go to step 5.

Step 3: Store the value of modulus of number by 10 and print.

Step 4: Divide a by 10. Go back to Step 2.

Step 5: End



Q 14] Write Java Program to find the GCD of two given Number.

Step 1:Start

Step 2: Take two number from user. Store it in variable **a** and **b**.

Step 3: Using if statement, check if a less than b. If yes, go to step 4 otherwise go to Step 7 .

Step 4: Using for statement, run loop from 1 to **a**.

Step 5: Again using If statement, check whether value of i is completely divisible by both **a** and **b**.

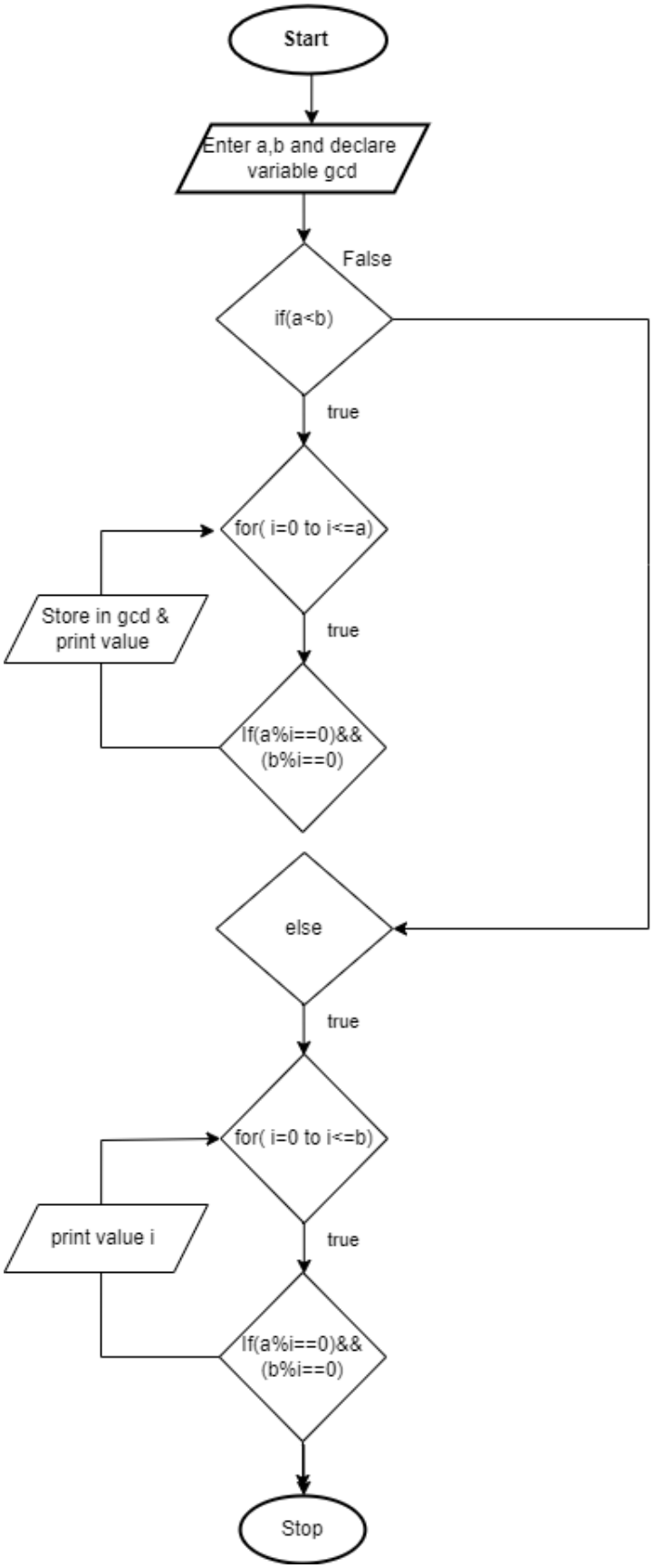
Step 6: If yes, then store it in variable **gcd** and display.

Step 7: Using for statement, run loop from 1 to **b**.

Step 8: Again using If statement, check whether value of i is completely divisible by both **a** and **b**.

Step 9: If yes, then store it in variable **gcd** and display.

Step 10: End


Start
Enter a,b and declare variable gcd
False
if(a<b)
true
for(i=0 to i<=a)
Store in gcd & print value
true
If(a%i==0)&& (b%i==0)
else
true
for(i=0 to i<=b)
print value i
true
If(a%i==0)&& (b%i==0)
Stop

Q 15] Write the Java Program to Find the LCM of two number

Step 1: Start

Step 2: Step 1: Take two number from user. Store it in variable **a** and **b**.

Step 3: Using if statement, check if **a** less than **b**. If yes, go to step 4 otherwise go to Step 8.

Step 4: Using for statement, run loop from 1 to **a**.

Step 5: Again using If statement, check whether value of i is completely divisible by both a and **b**.

Step 6: If yes, then store it in variable **gcd**.

Step 7: Multiply value of **a** and **b** and divide it by final value of **gcd**. Display the value as **LCM** of **a** and **b**.

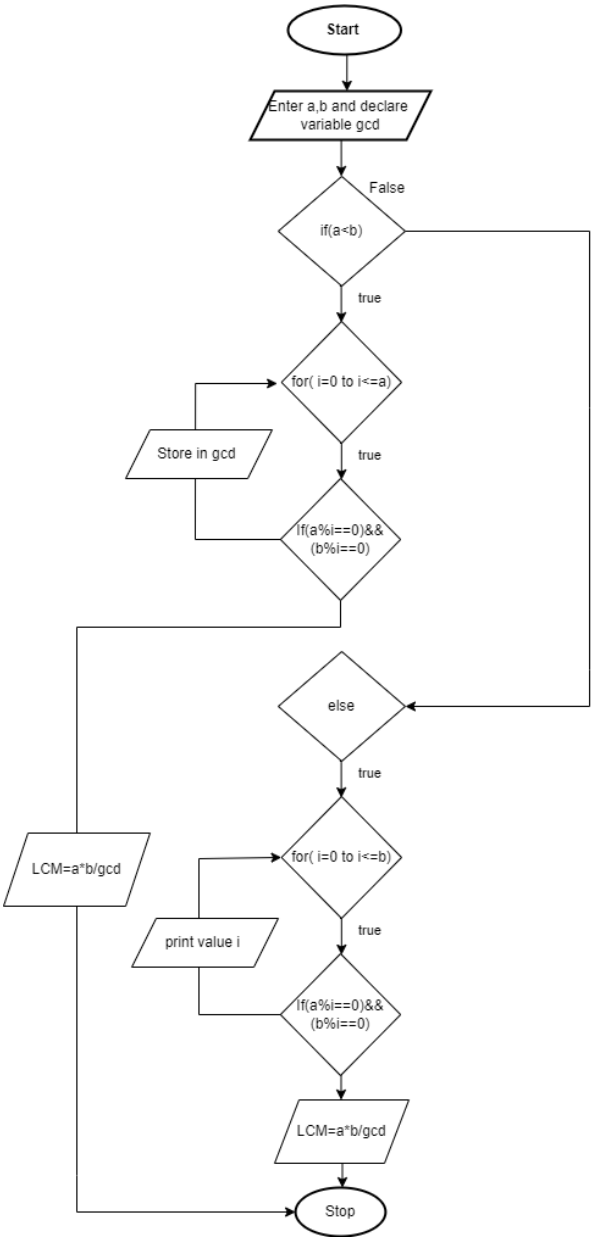
Step 8: Using for statement, run loop from 1 to **b**.

Step 9: Again using If statement, check whether value of i is completely divisible by both **a** and **b**.

Step 10: If yes, then store it in variable **gcd** and display.

Step 11: Multiply value of **a** and **b** and divide it by final value of **gcd**. Display the value as **LCM** of **a** and **b**.

Step 12: End



Q 17] Check whether the given Number is a Palindrome or NOT.

Step 1: Start

Step 2: Take user input. Store it in variable **a** and **temp.** Along with it initialize variable **sum** and **b** to 0

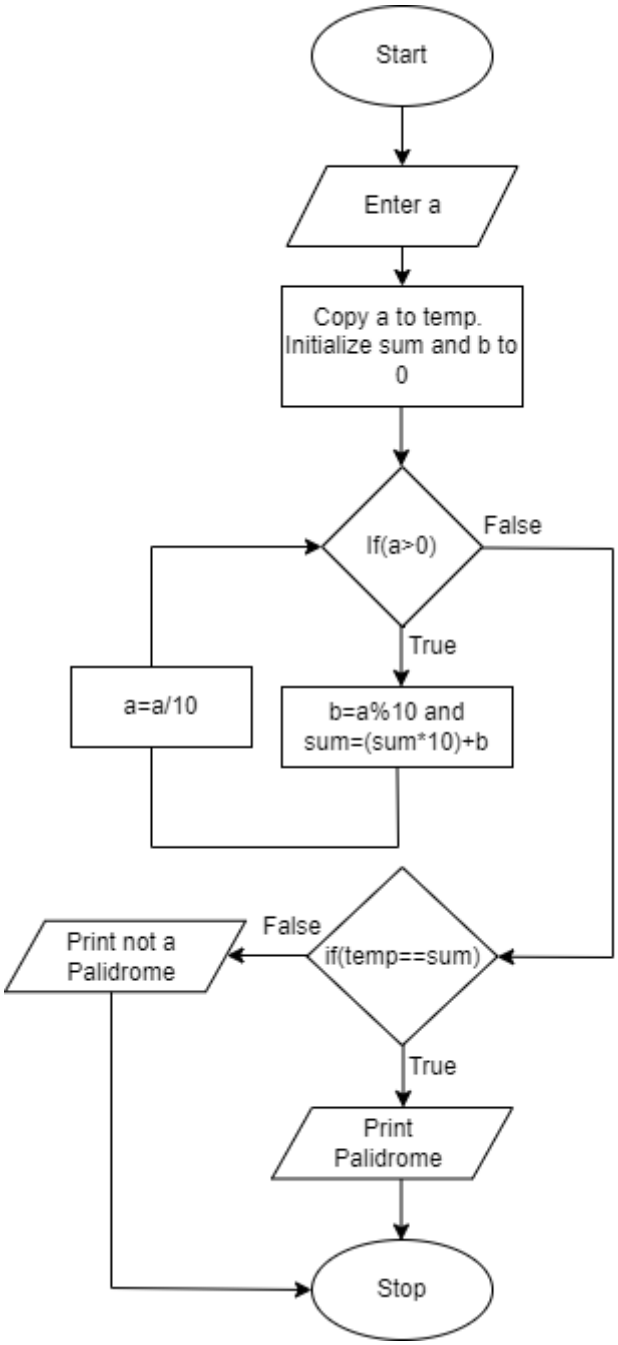
Step 2: Using wile Statement, check if **a** is greater than 0. If yes go step 3, otherwise go to step 5.

Step 3: Store the value of modulus of number by 10 in **b** and **sum=(sum*10)+b**.

Step 4: Divide **a** by 10 and store it in **a**. Go back to Step 2.

Step 5: Compare value of sum and temp. If same, Print Palindrome Number otherwise not a Palindrome Number.

Step 6: End



Q 18] Write a Java Program to print all the Prime factors of given Number.

Step 1: Start

Step 2: Take input from user. Store it in variable **a**.

Step 3: Using for statement, run loop from 2 to **a**. i.e **for(int i = 2; i< number; i++)** If condition is false jump to Step 8.

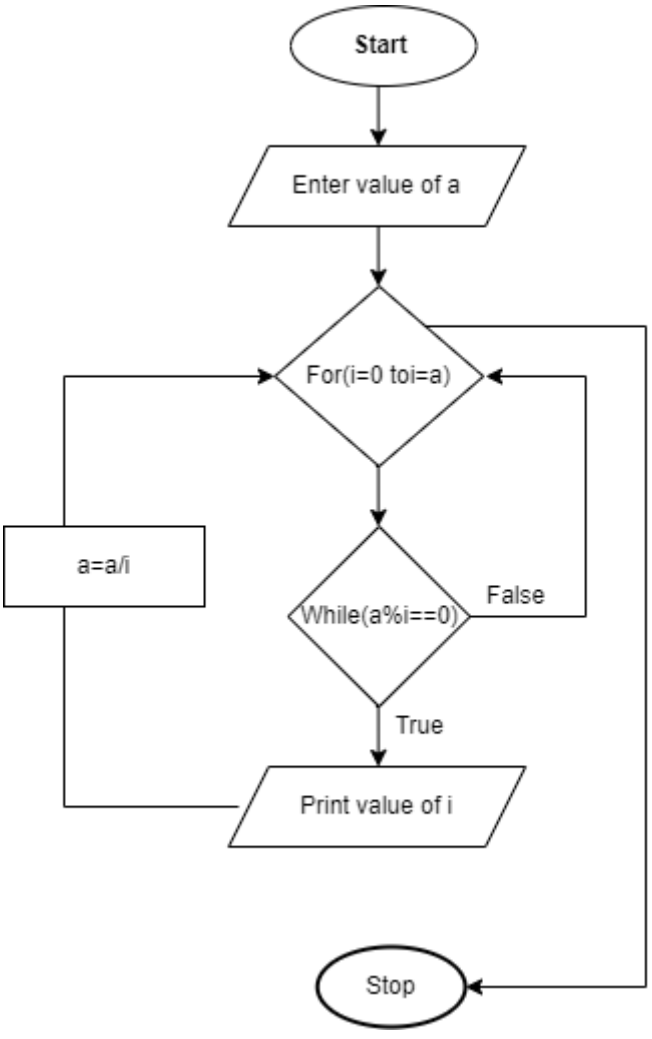
Step 4: Using while statement, check if modulus of a by **i** is zero. If yes go to Step 4 otherwise go to Step 3.

Step 5: Print the value of **i**.

Step 6: Divide a by **i** and store it back in a. Step 3 until condition is false.

Step 7: Using if statement check, whether **a** is greater than 2. If yes print value.

Step 8:End



Q 19] To print the following series Even number series 2 4 6 8 10 12 14 16…

Step 1: Start

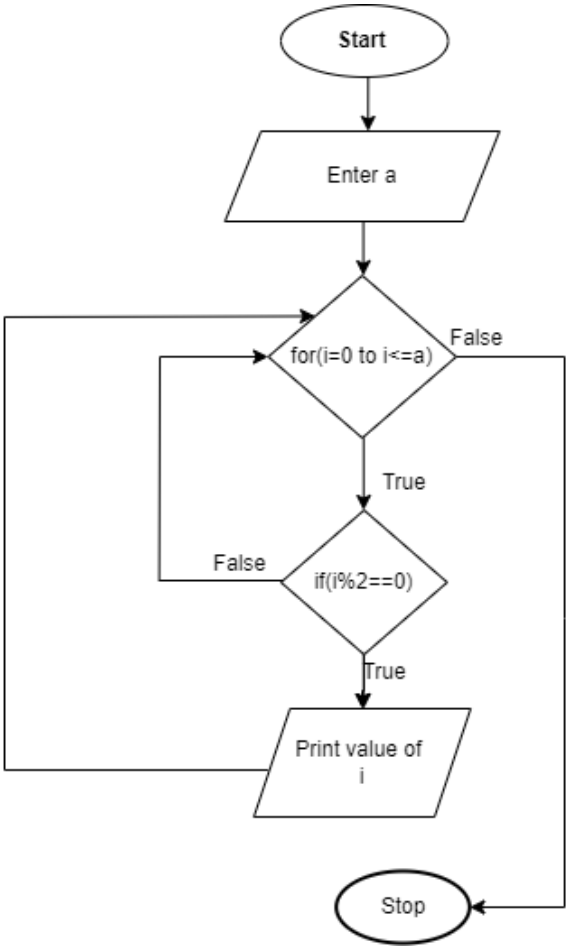
Step 2: Take last number of series from user and store it in variable **a**.

Step 3: Using for statement, run loop from 1 to **a**. If condition is false jump to Step 6.

Step 4: Using if statement, check if modulus of **i** by 2 is equal to zero. If no, go back to Step 3.

Step 4: Print value of **i** and go back to Step 2.

Step 5: End



Q 20] To print the following series Odd number series 1 3 5 7 9 11 13..

Step 1: Start

Step 2: Take last number of series from user and store it in variable **a**.

Step 3: Using for statement, run loop from 1 to **a**.

Step 4: Using if statement, check if modulus of **i** by 2 is equal to one. If no, go back to Step 3.

Step 5: Print value of **i** and go back to Step 3.

Step 6: End