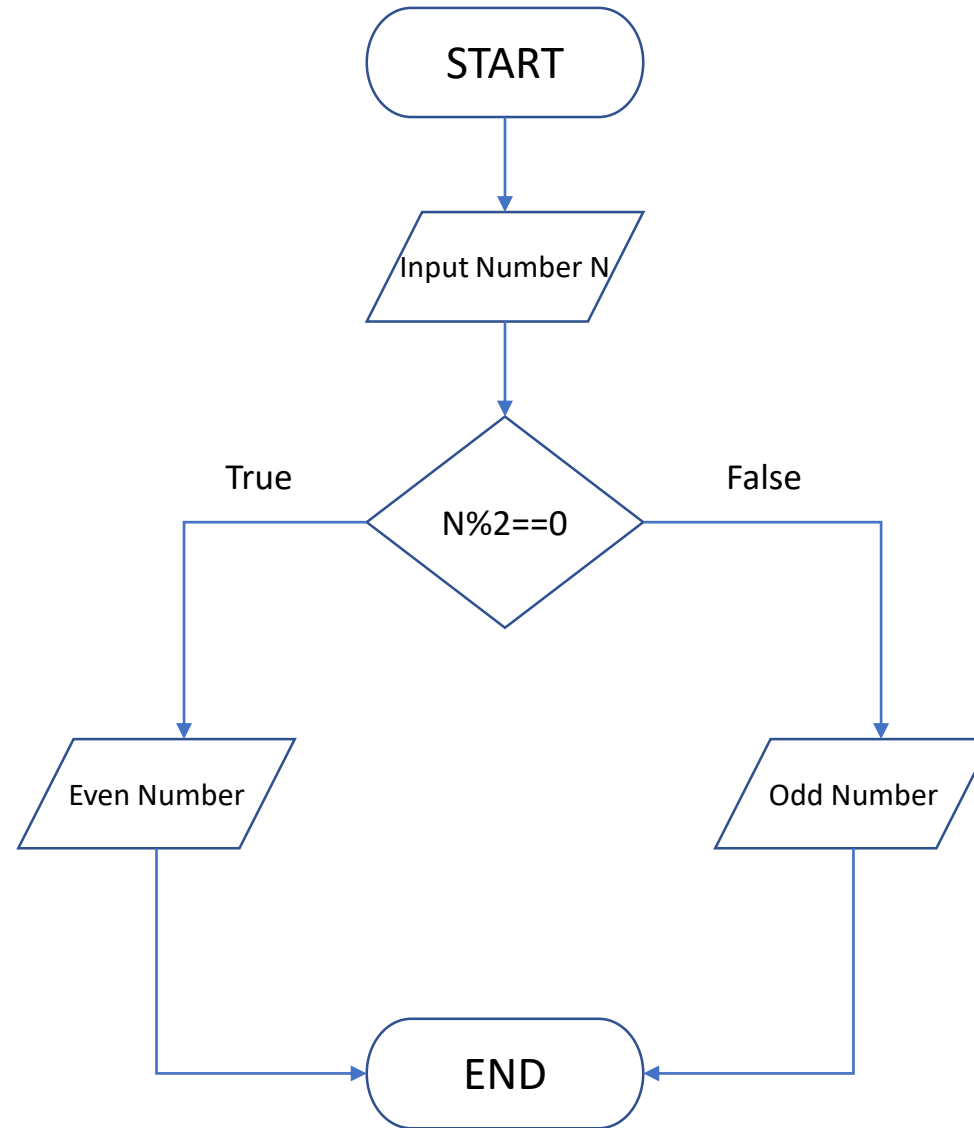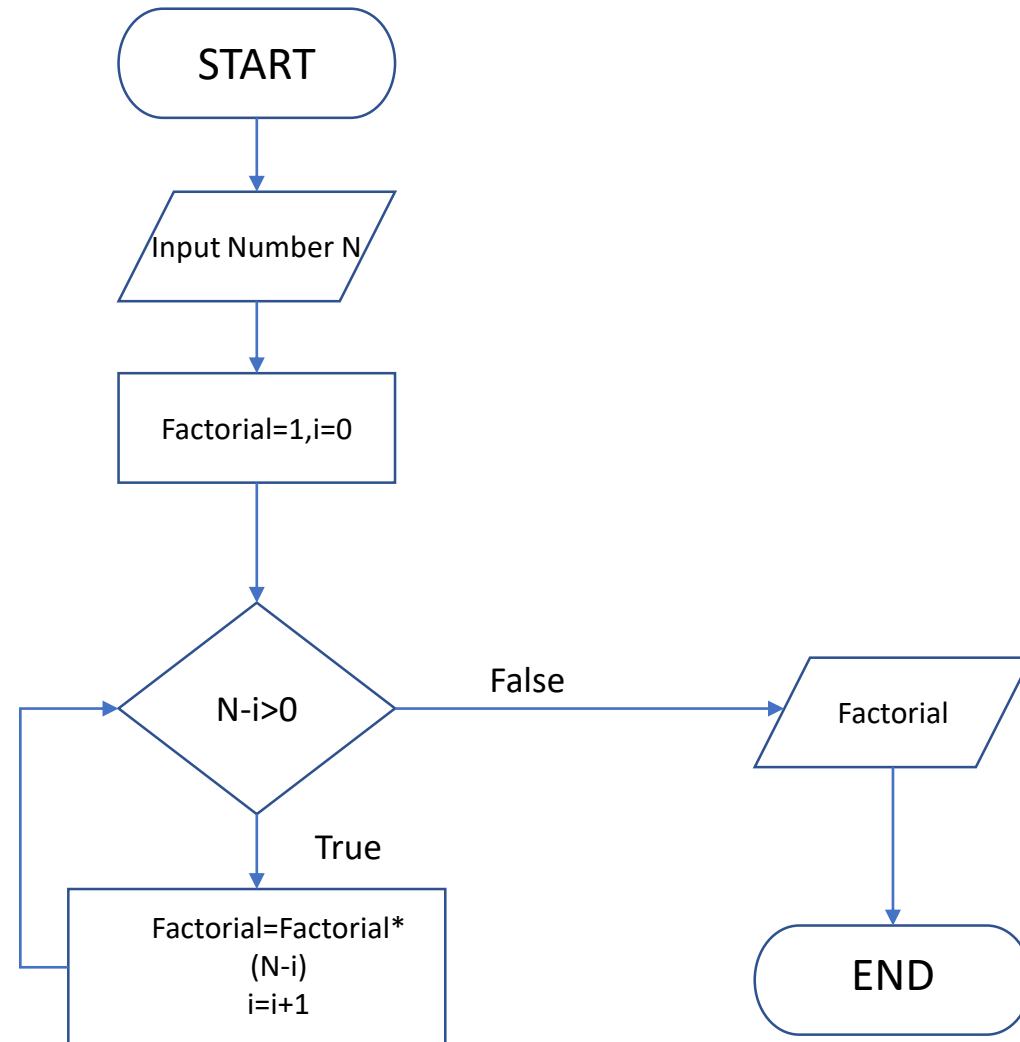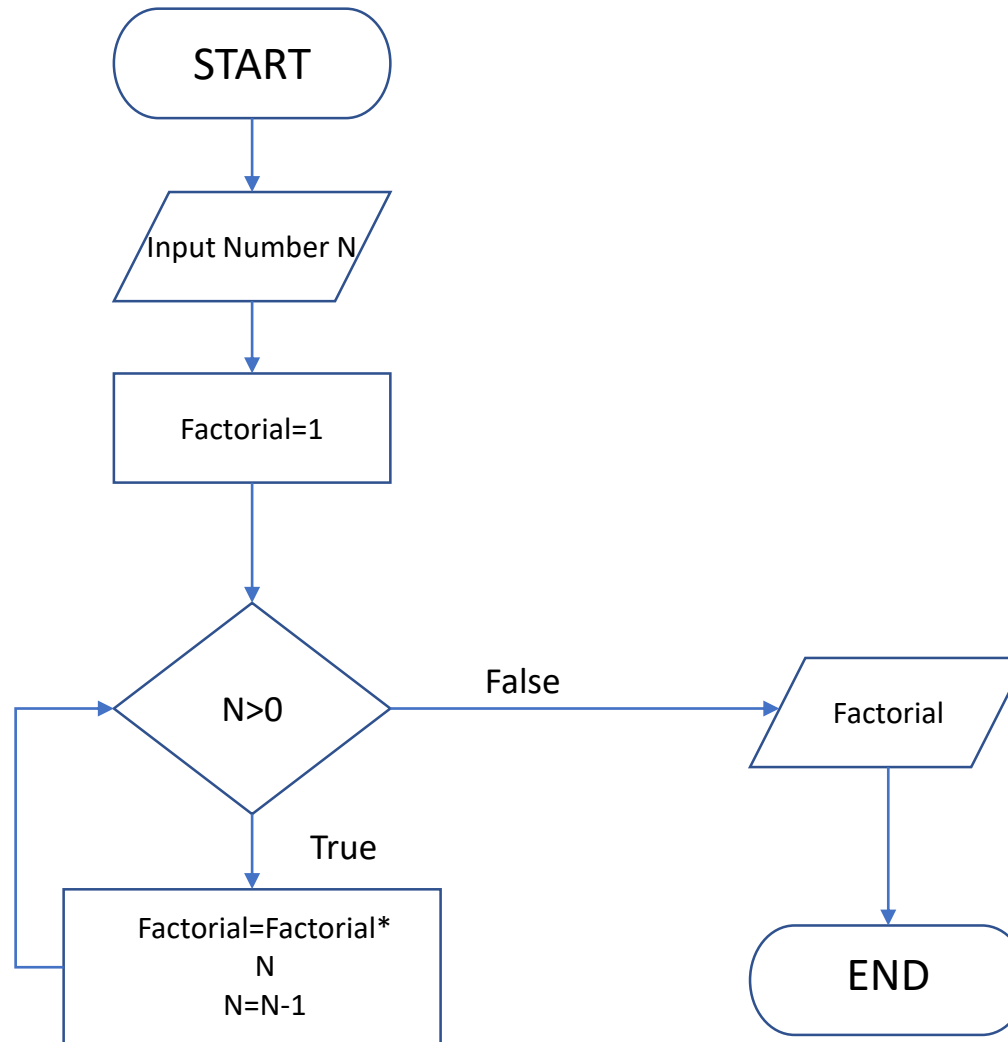**1. Check if the given number is EVEN or ODD.**

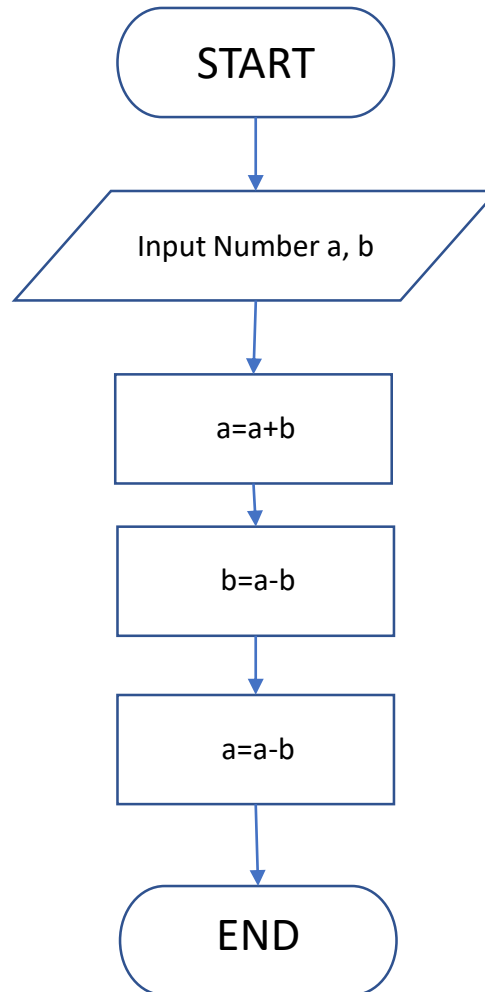**2. Write a Java Program to find the Factorial of a given number.**

3. Find the Factorial of a number using Recursion.

START

Input Number N

Factorial=1

N>0

False → Factorial

True

Factorial=Factorial*
N
N=N-1

END

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

```
START
  |
  v
Input Number a, b
  |
  v
a=a+b
  |
  v
b=a-b
  |
  v
a=a-b
  |
  v
END
```

5. How to check whether the given number is Positive or Negative in Java?

```
                    ┌─────────────┐
                    │   START     │
                    └─────────────┘
                           │
                           ▼
                    ╱──────────────╲
                    │ Input Number N │
                    ╲──────────────╱
                           │
                           ▼
        True          ◆ N>=0 ◆           False
      ┌────────────────╱      ╲────────────────┐
      │                                        │
      ▼                                        ▼
╱──────────────╲                      ╱──────────────╲
│Positive Number │                    │ Negative Number │
╲──────────────╱                      ╲──────────────╱
      │                                        │
      │            ┌─────────────┐             │
      └───────────►│    END      │◄────────────┘
                   └─────────────┘
```
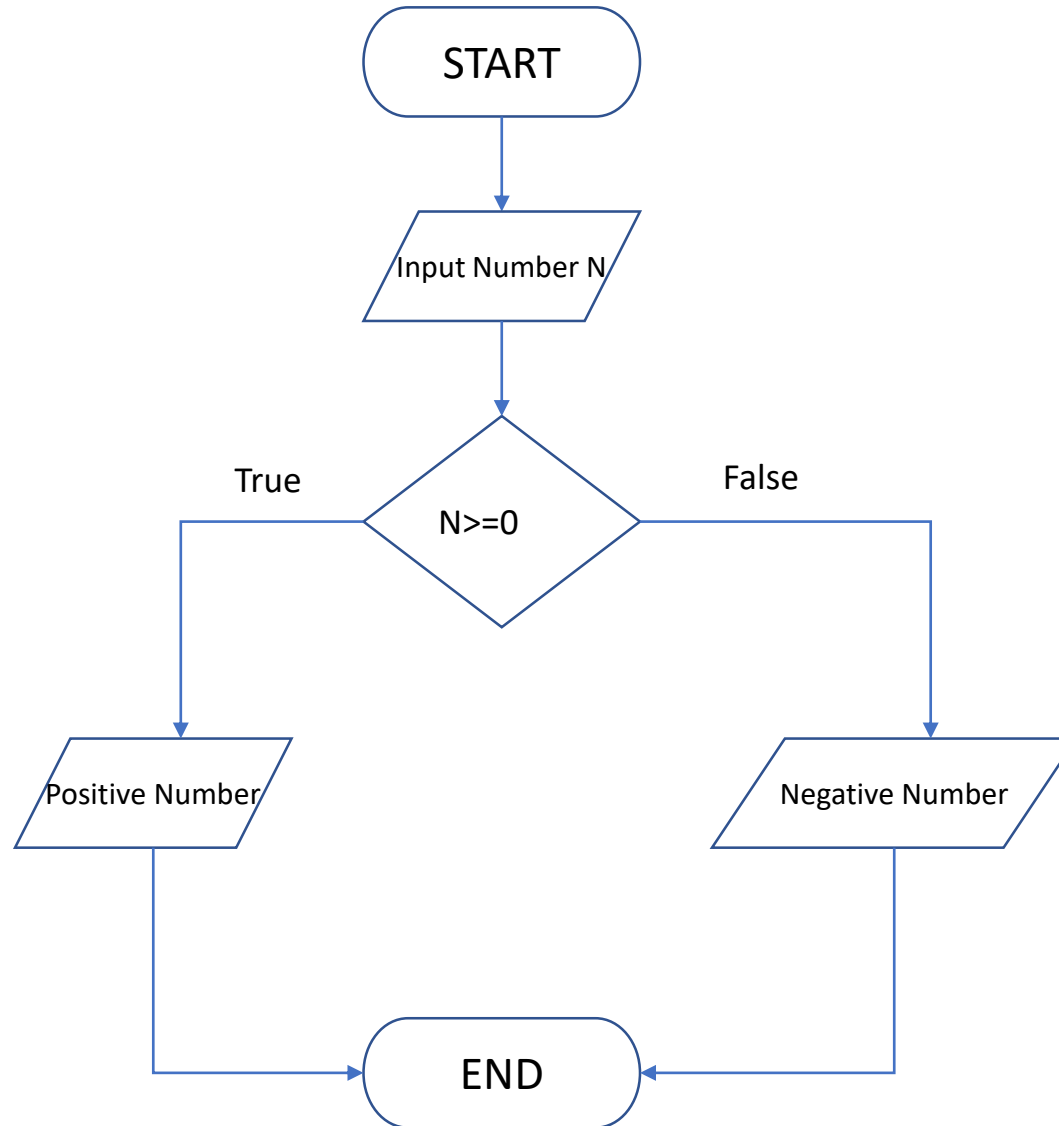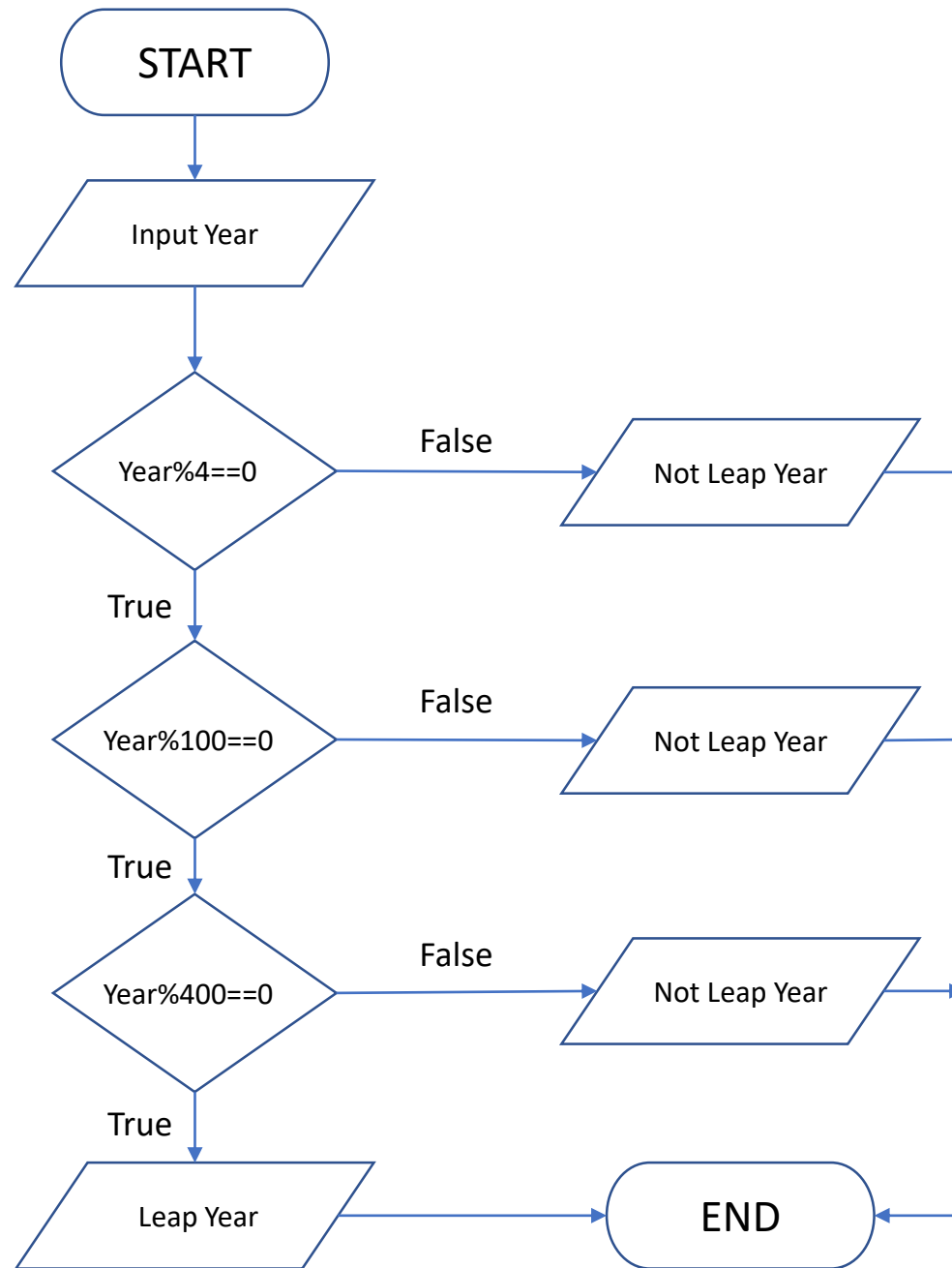
6. Write a Java Program to find whether a given number is Leap year or NOT.

START

Input Year

Year%4==0 — False → Not Leap Year

True

Year%100==0 — False → Not Leap Year

True

Year%400==0 — False → Not Leap Year

True

Leap Year

END

7. Write a Java Program to Print 1 To 10 Without Using Loop.

START

N=1

N

N<10

True

N=N+1

False

END
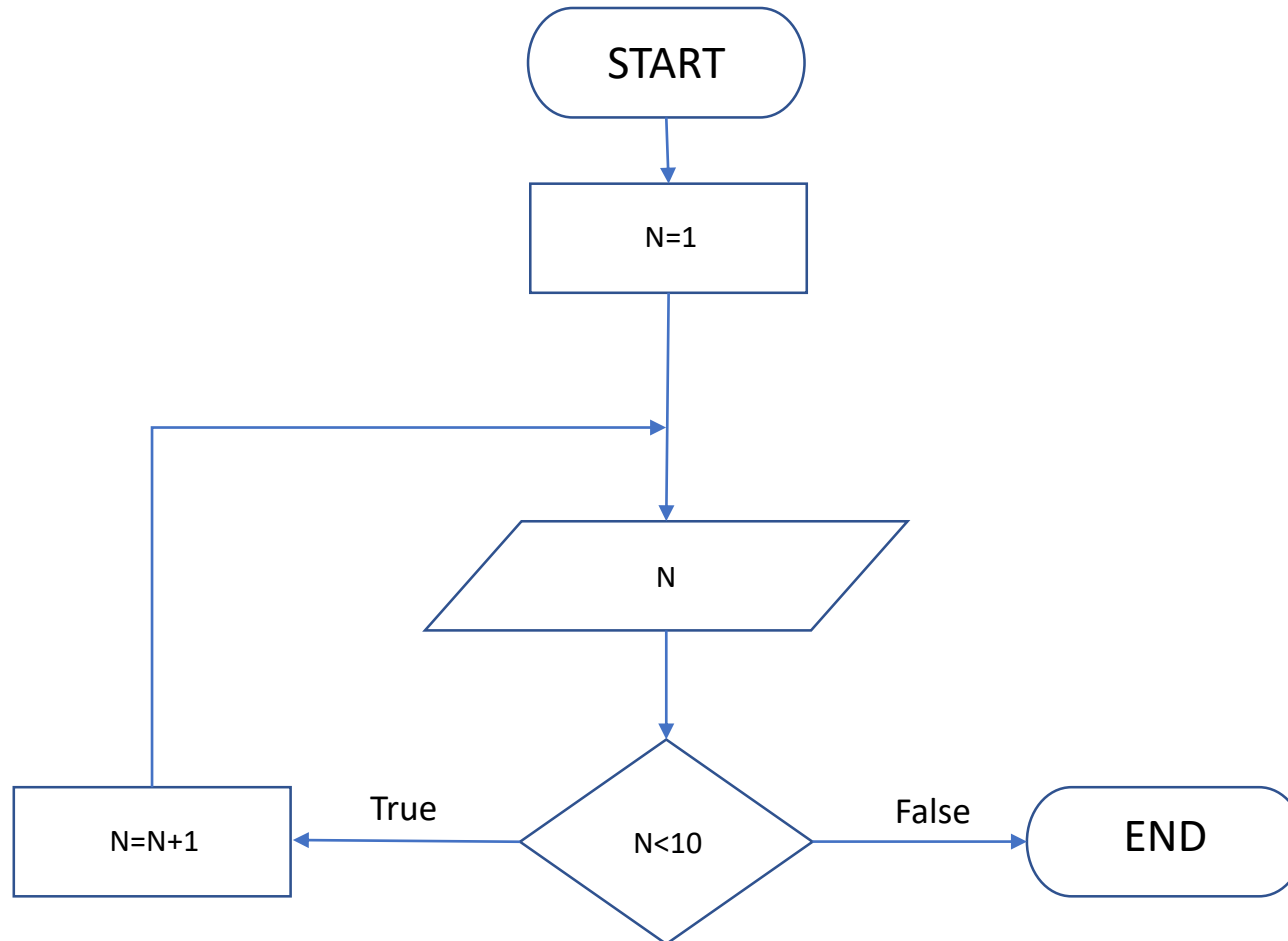
8. Write a Java Program to print the digits of a Given Number.

START

Number N
No. of digit i

i=0

True → END

False

N%10

N=N/10
i=i-1
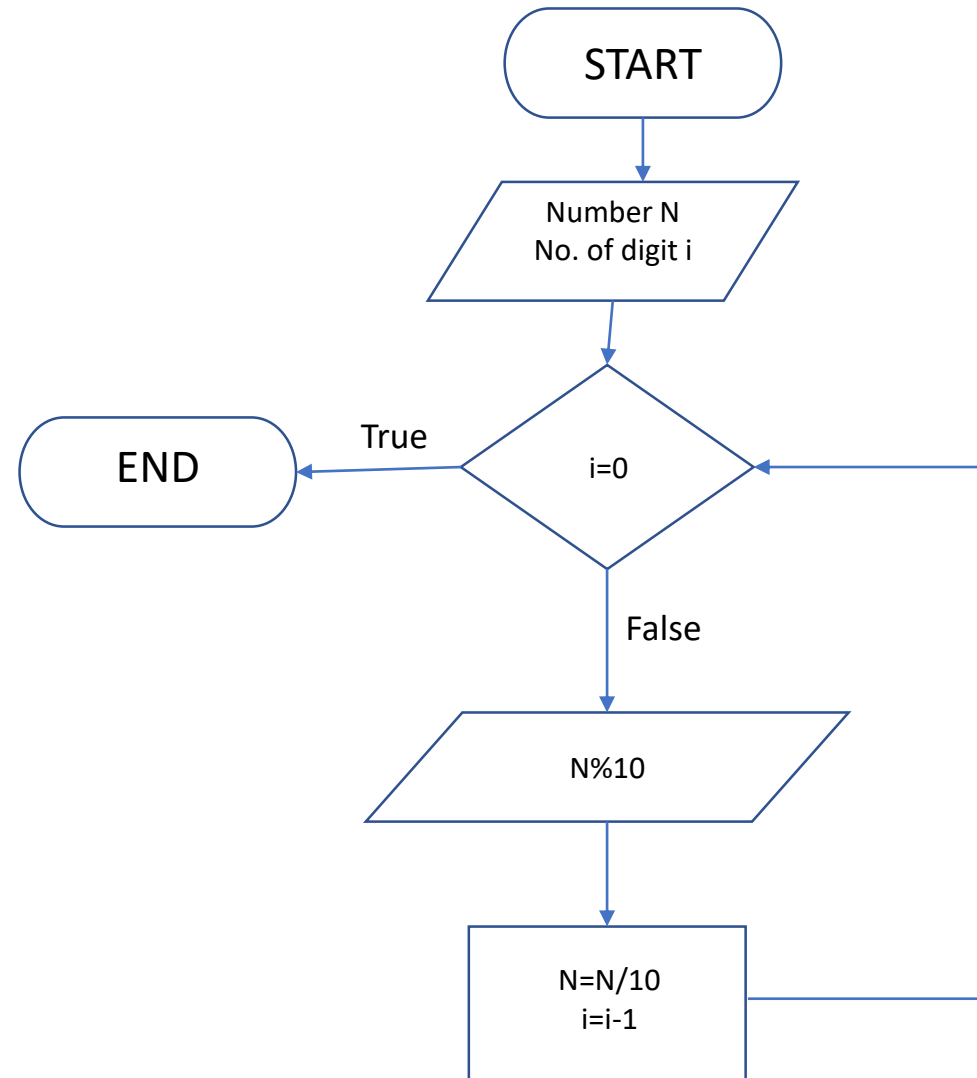
9. Write a Java Program to print all the Factors of the Given number.

```
          ┌──────────────┐
          │    START     │
          └──────┬───────┘
                 │
                 ▼
          ╱──────────────╲
         ╱  Number N       ╲
         ╲  i=2            ╱
          ╲──────────────╱
                 │
                 ▼
   False     ◇ N%i==0 ◇ ◄──────────────┐
  ◄───────────                         │
         │              True           │
         ▼                │            │
      ◇ i<=N/2 ◇          ▼            │
  False ◄──────  ◄──  ╱────────╲       │
 ┌─────┐    │         ╲   i    ╱       │
 │ END │    │          ╲──────╱        │
 └─────┘    │ True                     │
            ▼                          │
       ┌──────────┐                    │
       │  i=i+1   │────────────────────┘
       └──────────┘
```
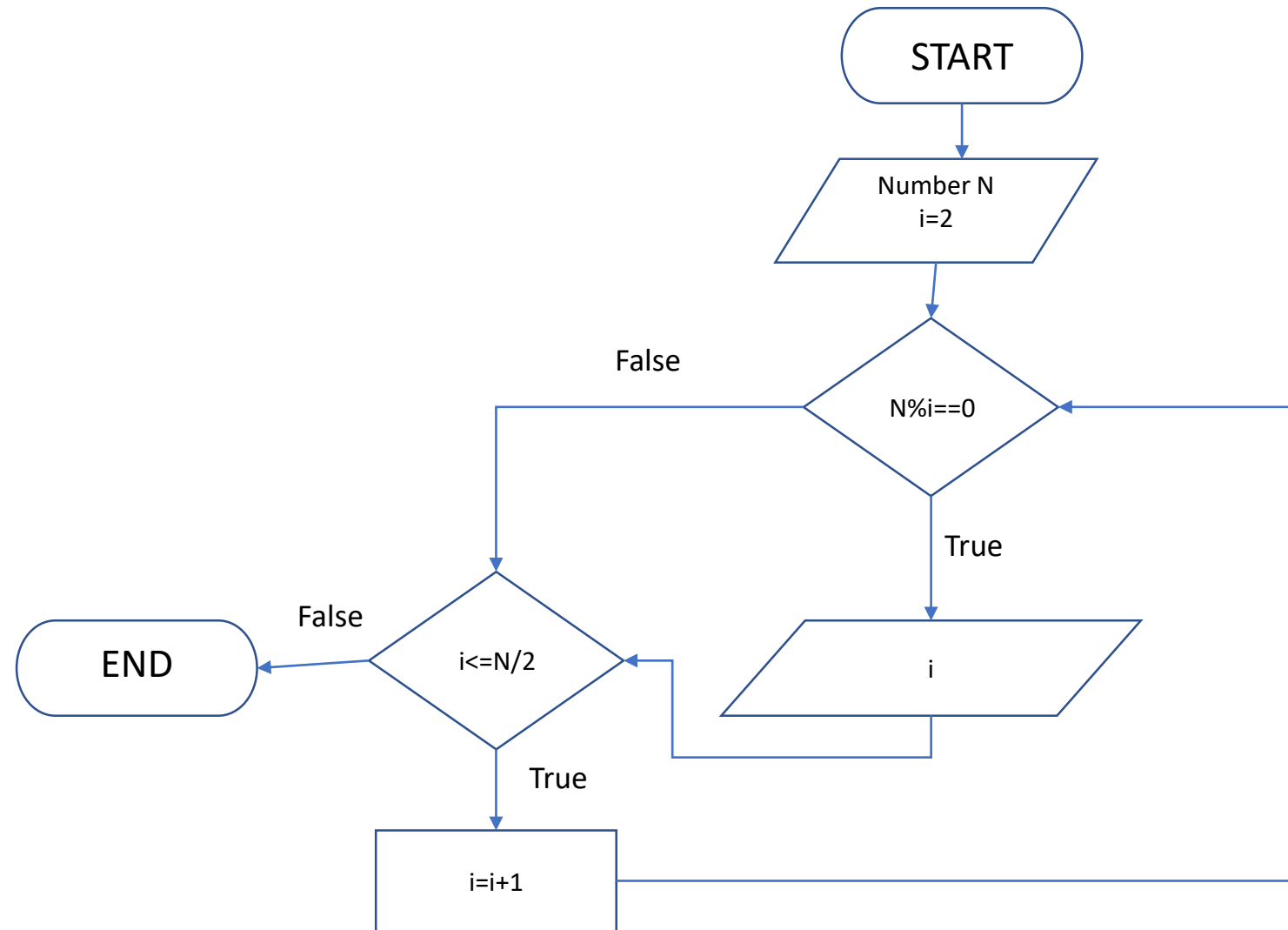
10. Write a Java Program to find the sum of the digits of a given number.

START

Number N, Sum=0
No. of digit i

i=0

True → Sum

False

Sum=Sum+N%10

N=N/10
i=i-1

END
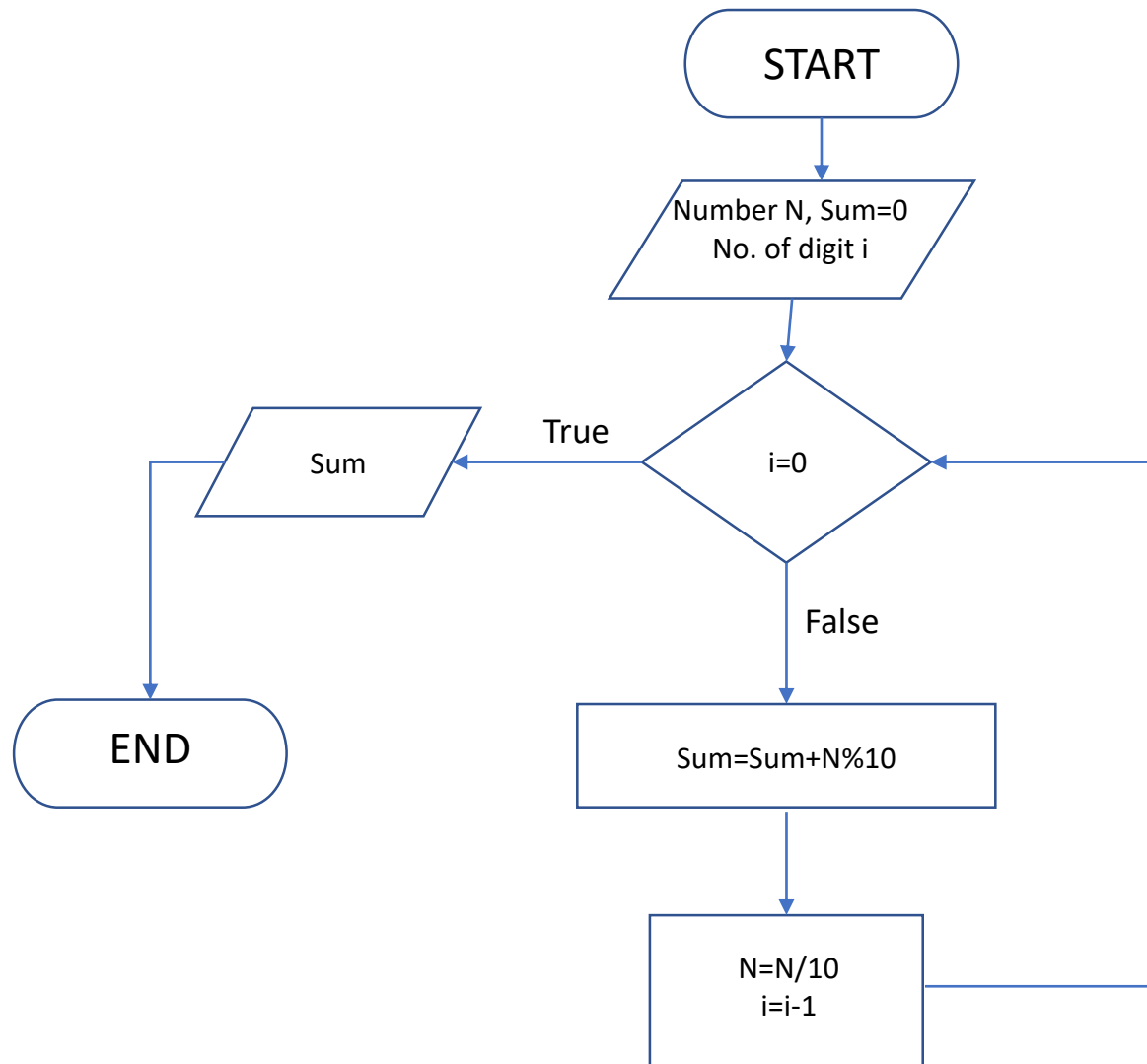
11. Write a Java Program to find the smallest of 3 numbers (a,b,c)

START

Number a,b,c

a<b

True

False

a<c

False

b<c

False

True

a

c

b

True

END
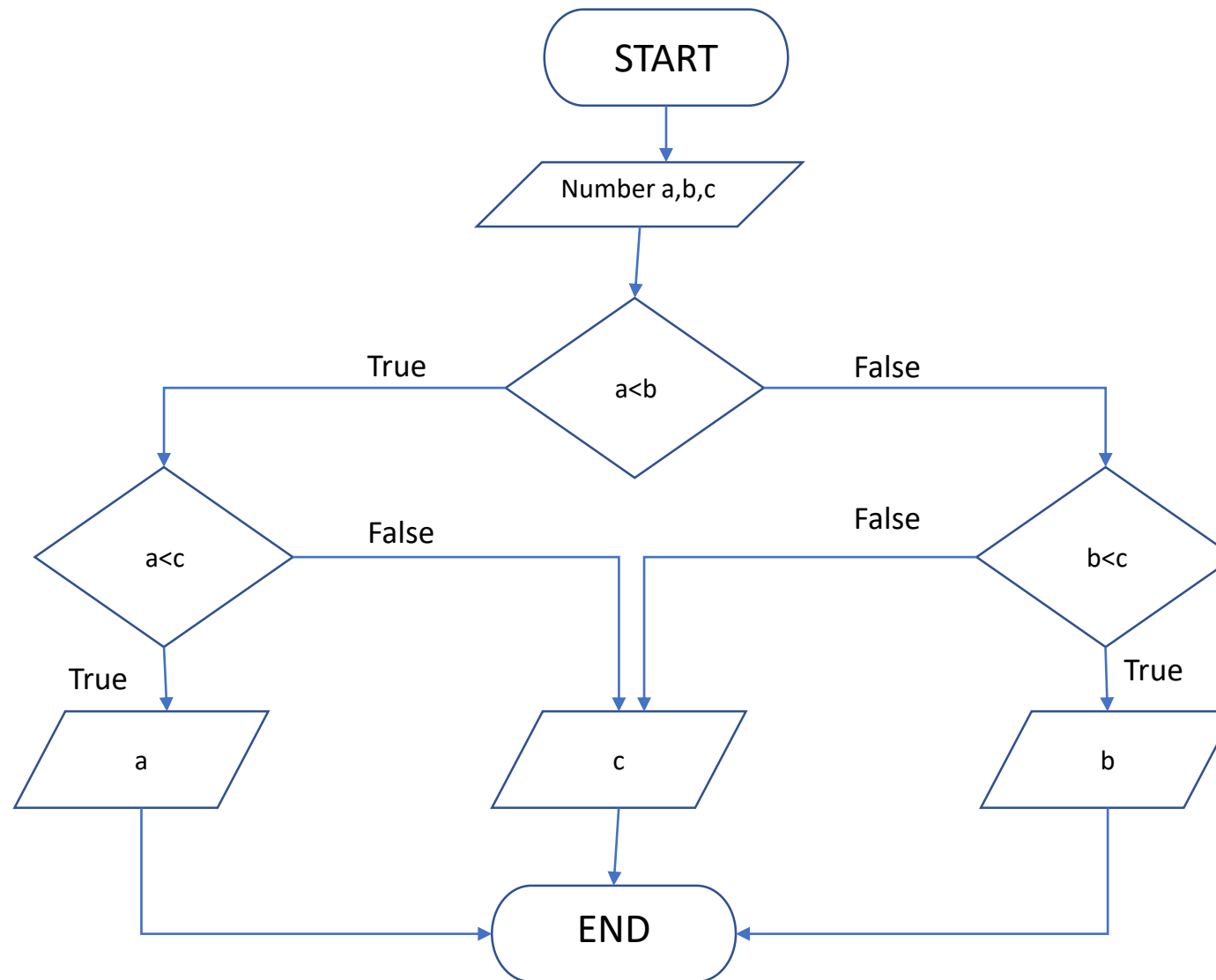
12. How to add two numbers without using the arithmetic operators in Java?

START

Number a,b

b=0

True → a

False

a++

END
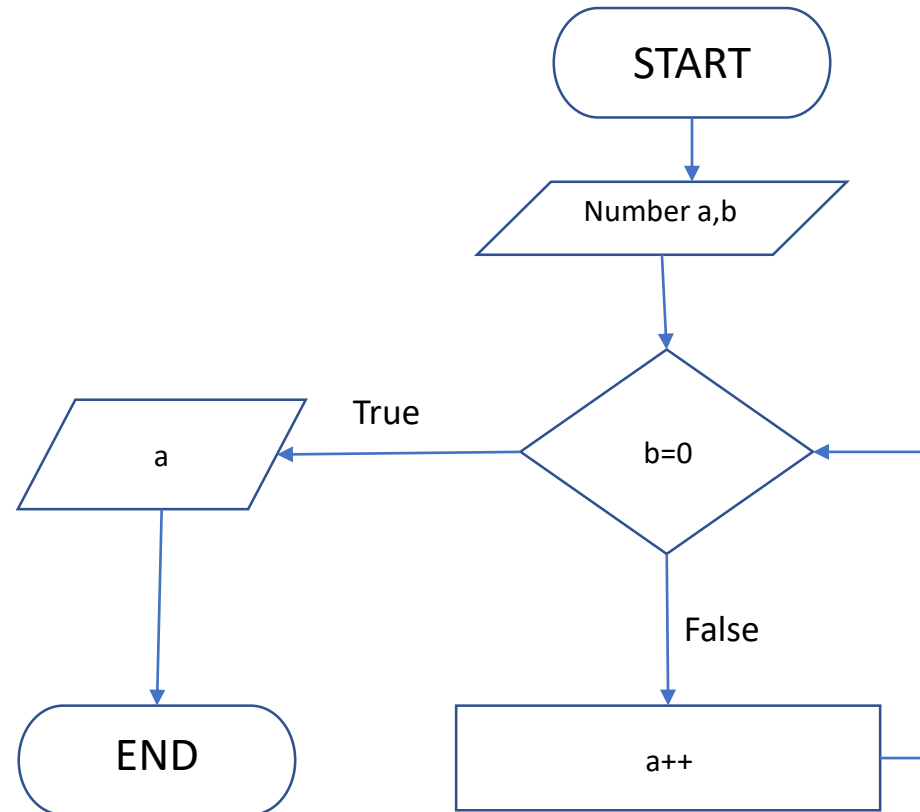
13. Write a java program to Reverse a given number.

START

Number N
No. of digit i

i=0

True → END

False

N%10

N=N/10
i=i-1
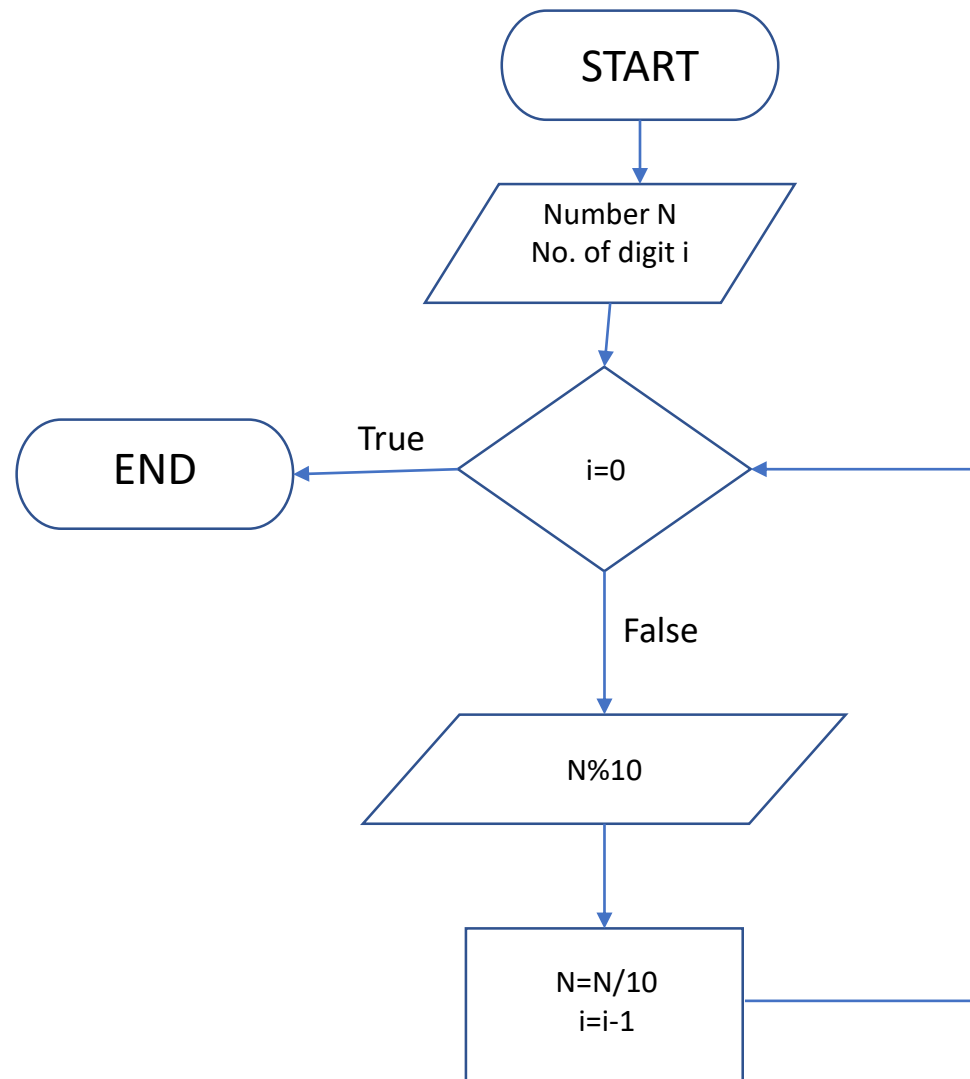
14. Write a Java Program to find the GCD of two given numbers.

15. Write a java program to LCM of TWO given numbers.

START

Number a,b

LCM=max(a,b)

LCM%a==0 AND
LCM%b==0

True → LCM

False → LCM=LCM+1

LCM → END
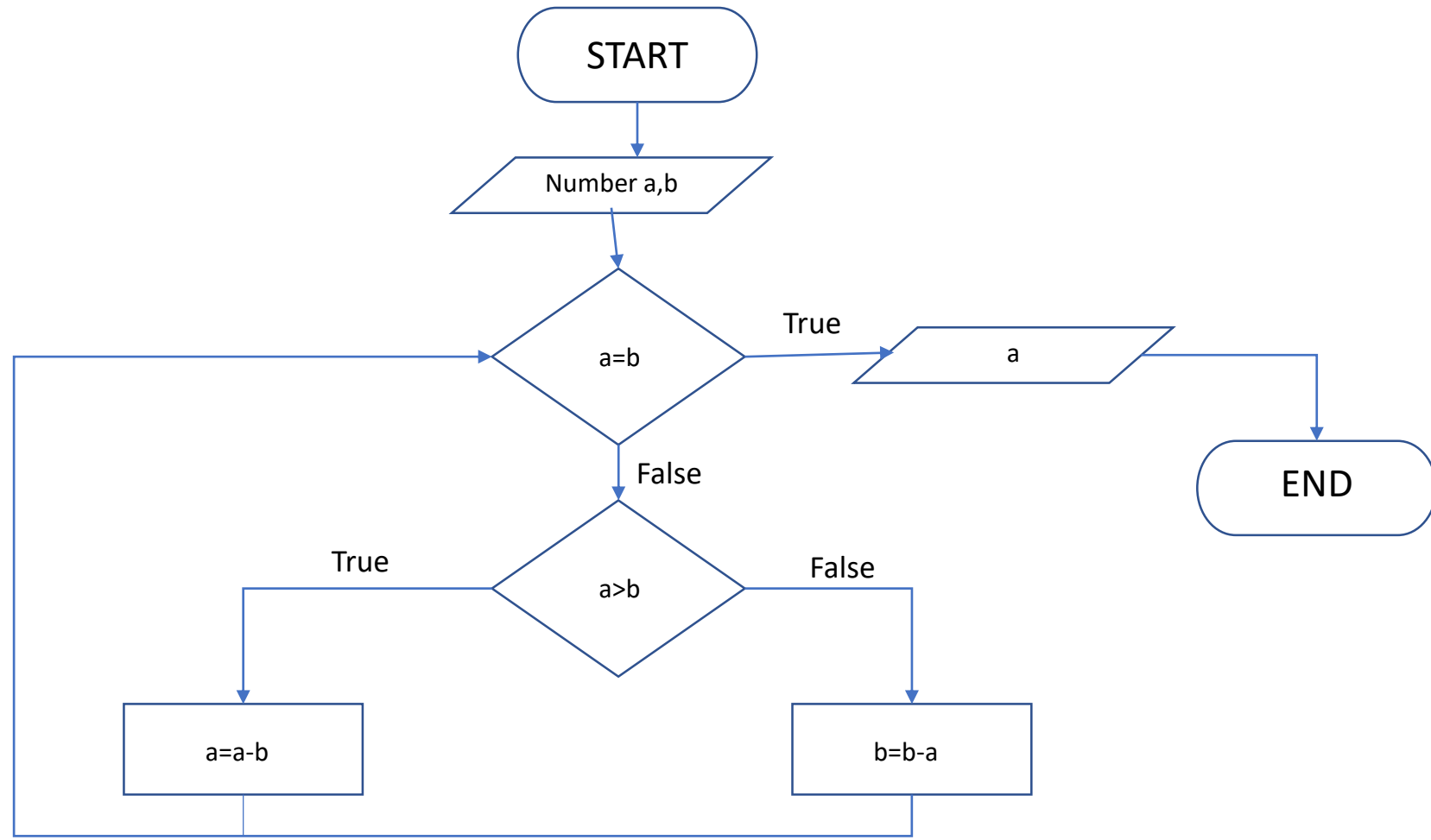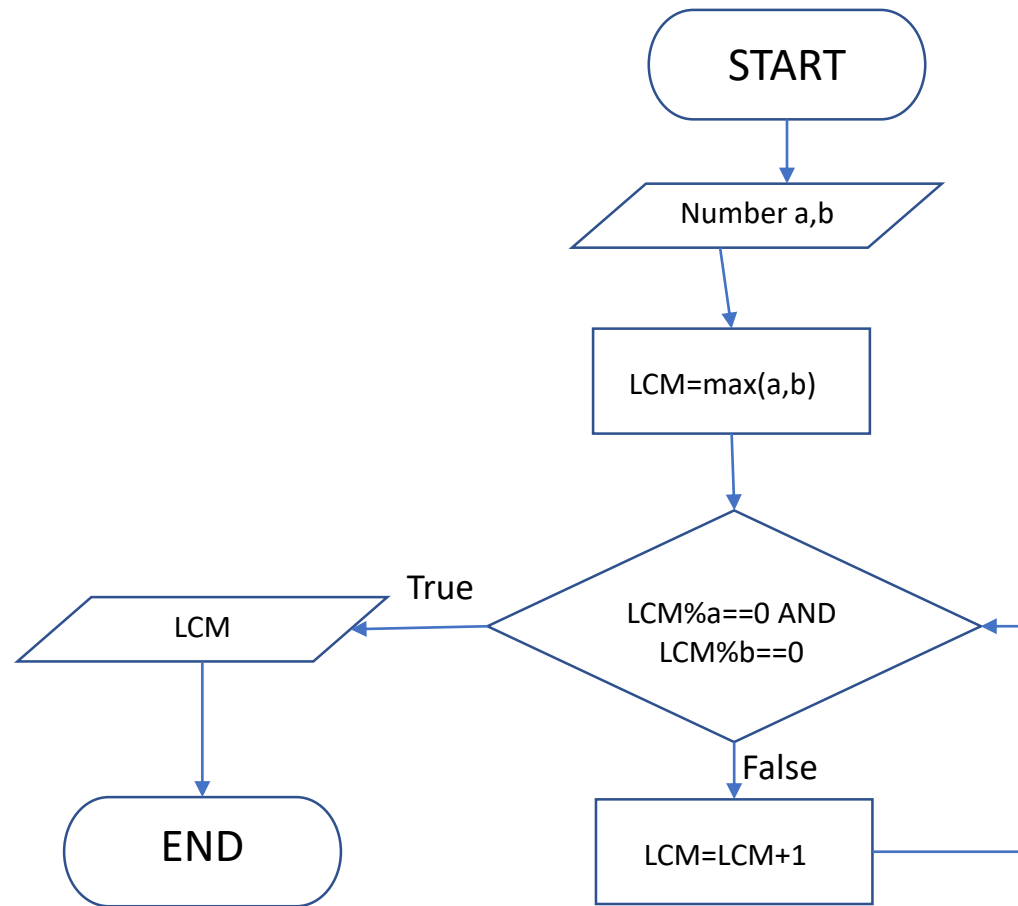
16. Write a java program to LCM of TWO given numbers using the Prime Factors method.

1. Take numbers a,b and LCM=1
3. Take array buffer1=[]
4. for i=2 to i=a/2:
          while(n%i)==0:
               buffer1.append(i)
               a=a/i
5. For i in buffer1:
        LCM=LCM*i
6. Take array buffer2=[]
7. for i=2 to i=b/2:
          while(n%i)==0:
               if i not in buffer1:
                    buffer2.append(i)
               b=b/i
8. For i in buffer2:
        LCM=LCM*i
9. Print output LCM

17. Check whether the Given Number is a Palindrome or NOT.

START

String s1

String
s2=reversed s1

s1==s2

True → Palindrome

False → Not Palindrome

END
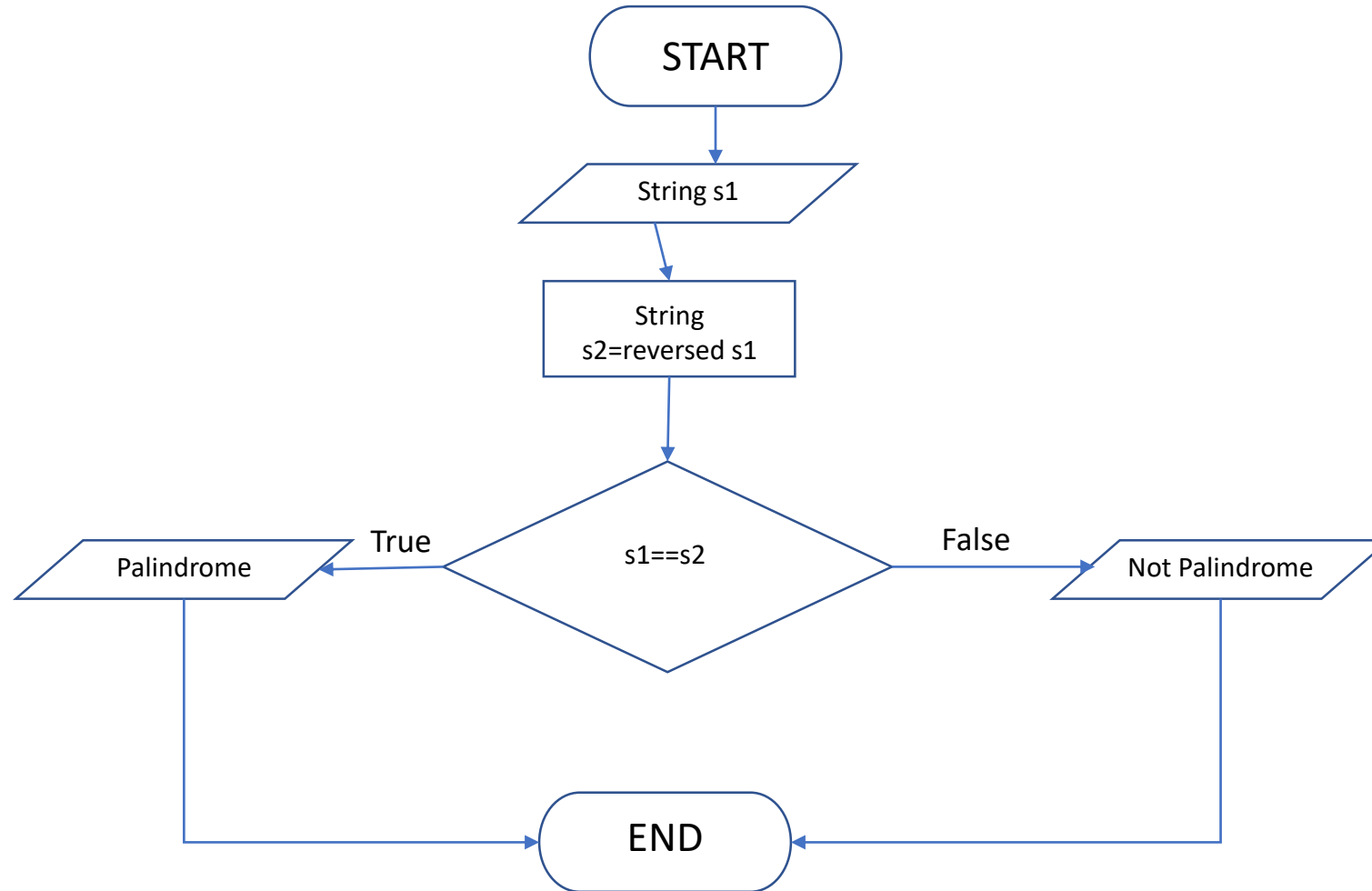
18. Write a Java Program to print all the Prime Factors of the Given Number.

1. Take numbers a

2. Write additional program isPrime(number) to check if number id prime.

      for i=2 to i=n/2:

            if number%i==0:

                  output=False

                  break

      else:

            output=True

3. Take array buffer1=[]

4. for i=2 to i=n/2:

      if a%i==0 and isPrime(i)==True:

            buffer1.append(i)

5. Print buffer1 as output

19. To print the following series EVEN number Series 2 4 6 8 10 12 14 16 .....

```
                    ┌─────────────┐
                    │    START    │
                    └──────┬──────┘
                           │
                           ▼
                    ┌─────────────┐
                    │     i=2     │
                    └──────┬──────┘
                           │ ◄──────────┐
                           ▼            │
                    ┌─────────────┐     │
                    │    i=i+2    │     │
                    └──────┬──────┘     │
                           │            │
                           ▼            │
                    ╱─────────────╱     │
                   ╱    Print i   ╱─────┘
                  ╱─────────────╱
```
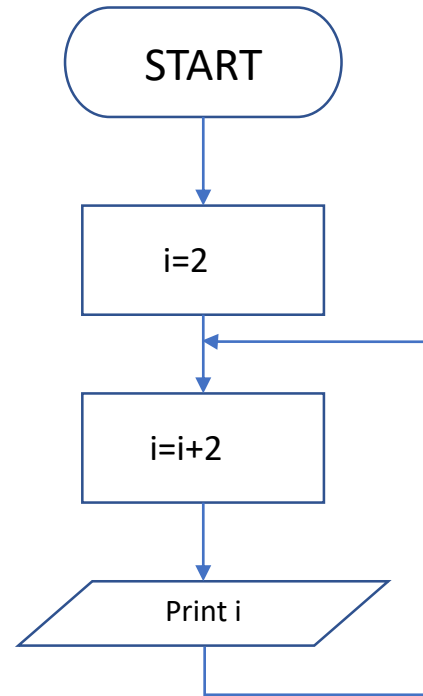
20. To print the following series ODD number Series 1 3 5 7 9 11 13...

```
        ┌─────────────┐
        │    START    │
        └─────────────┘
               │
               ▼
        ┌─────────────┐
        │    i=1      │
        └─────────────┘
               │
               ▼◄──────────┐
        ┌─────────────┐    │
        │   i=i+2     │    │
        └─────────────┘    │
               │           │
               ▼           │
         ╱───────────╲     │
        ╱   Print i   ╲────┘
        ╲─────────────╱
```