

# Assignment

Q Write algorithm and develop flowchart for the following problems.

- TO calculate simple interest and compound interest

Algorithm: calculate simple interest & compound interest

Step 1: Start

Step 2: Read P(principal), T(time), R(rate)

Step 3: Read choice ( 1 for SI, 2 for CI )

Step 4: If choice = 1

$$\circ \text{SI} = (P * T * R) / 100$$

◦ Print SI

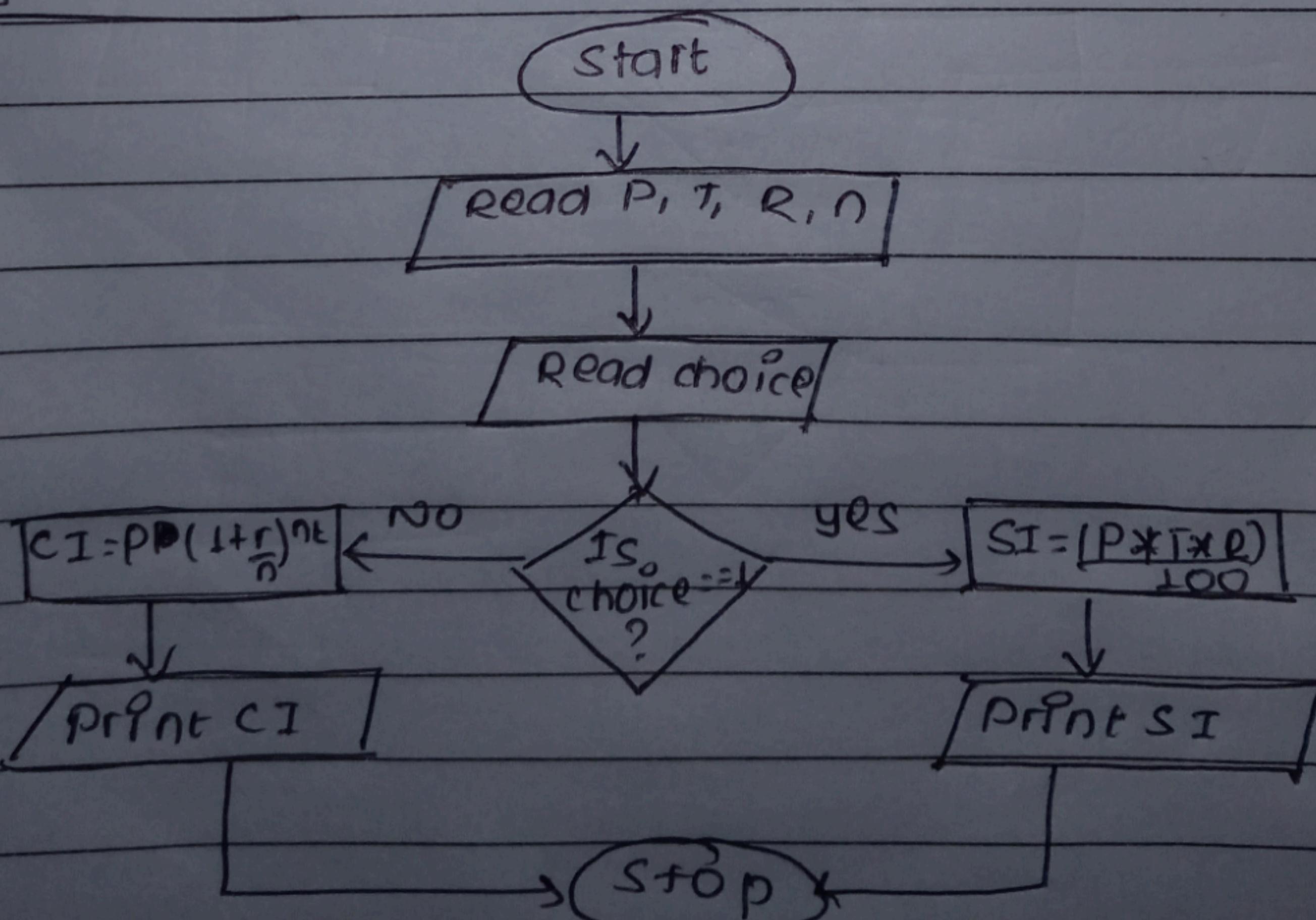
Step 5: Else

$$\circ \text{CI} = P(1+R/100)^n$$

◦ Print CI

Step 6: STOP

flowchart



- To check whether a given character by user is alphabet or not.

Algorithm: To check whether a given character by user is alphabet or not.

Step 1: Start

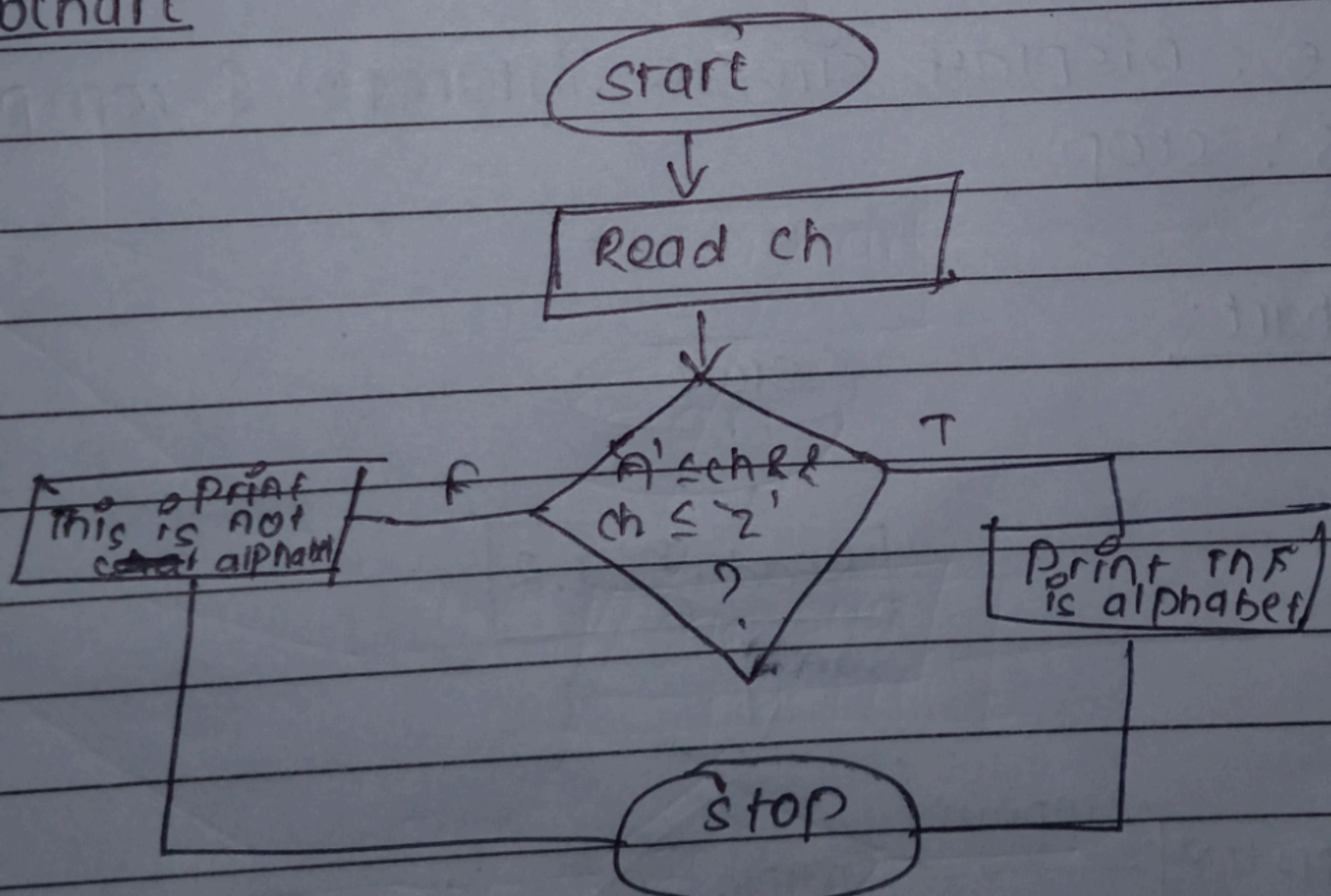
Step 2: Read character

Step 3: check if ' $'A' \leq ch \& ch \leq 'Z'$ ' || ' $'a' \leq ch \& ch \leq 'z'$ '

Step 4: print the result

Step 5: Stop.

Flowchart



- To calculate factorial of a given integer by user.

Algorithm : To calculate factorial of a given integer by user.

Step 1 : Start

Step 2 : Read num.

Step 3 : Check if Initialize a variable fact = 1

Step 4 : If  $n < 0 \rightarrow$  Display "factorial not defined for negative numbers"

Step 5 : else

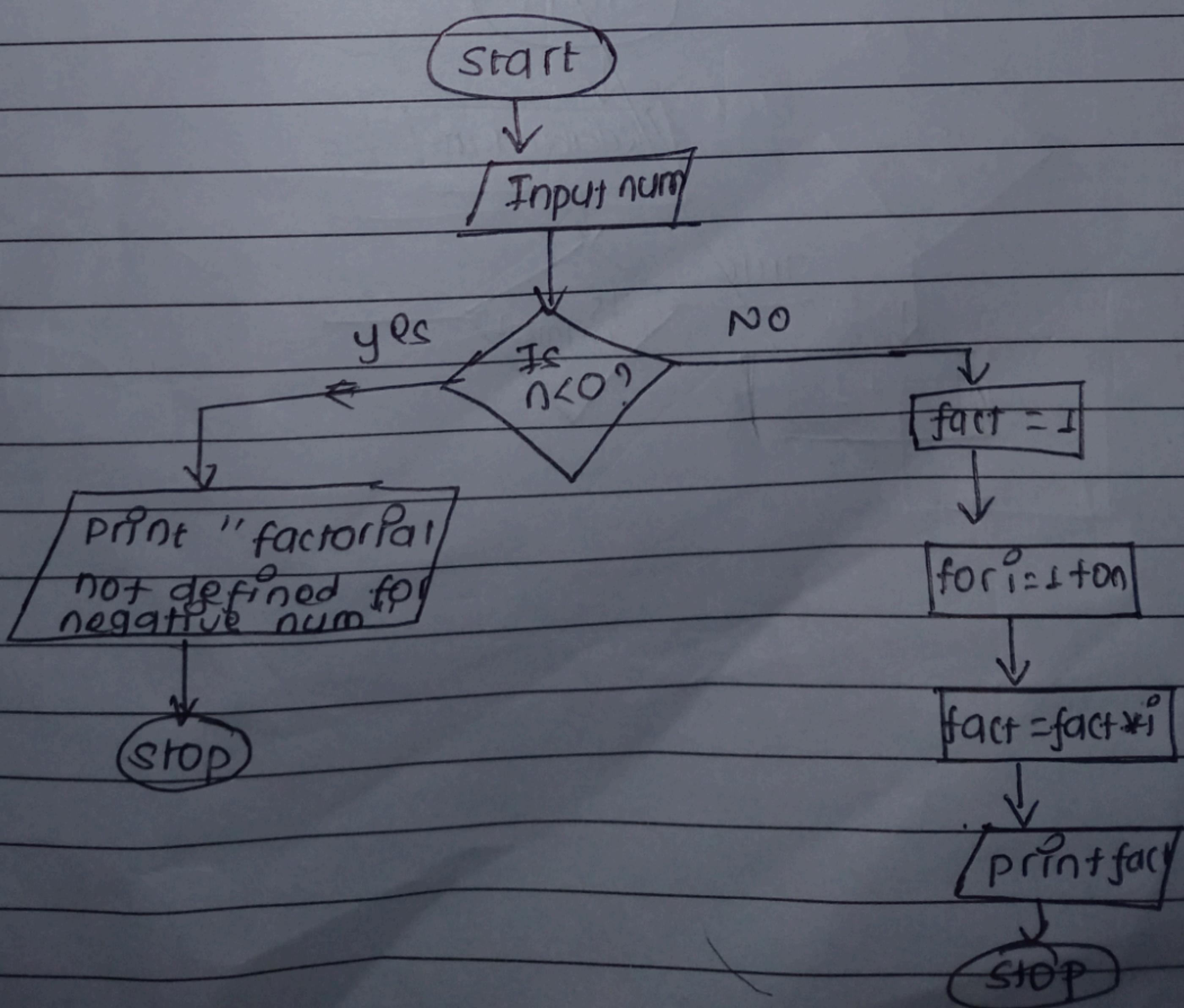
for  $i=1$  to  $n$

•  $fact = fact * i$

Step 6 : Display fact as the factorial of  $n$

Step 7 : Stop.

### flowchart



- To check whether a given integer by user is prime number or not

Algorithm:

Step 1: Start

Step 2: Read num

Step 3: If  $num \leq 1$ ,  $isPrime = 0$

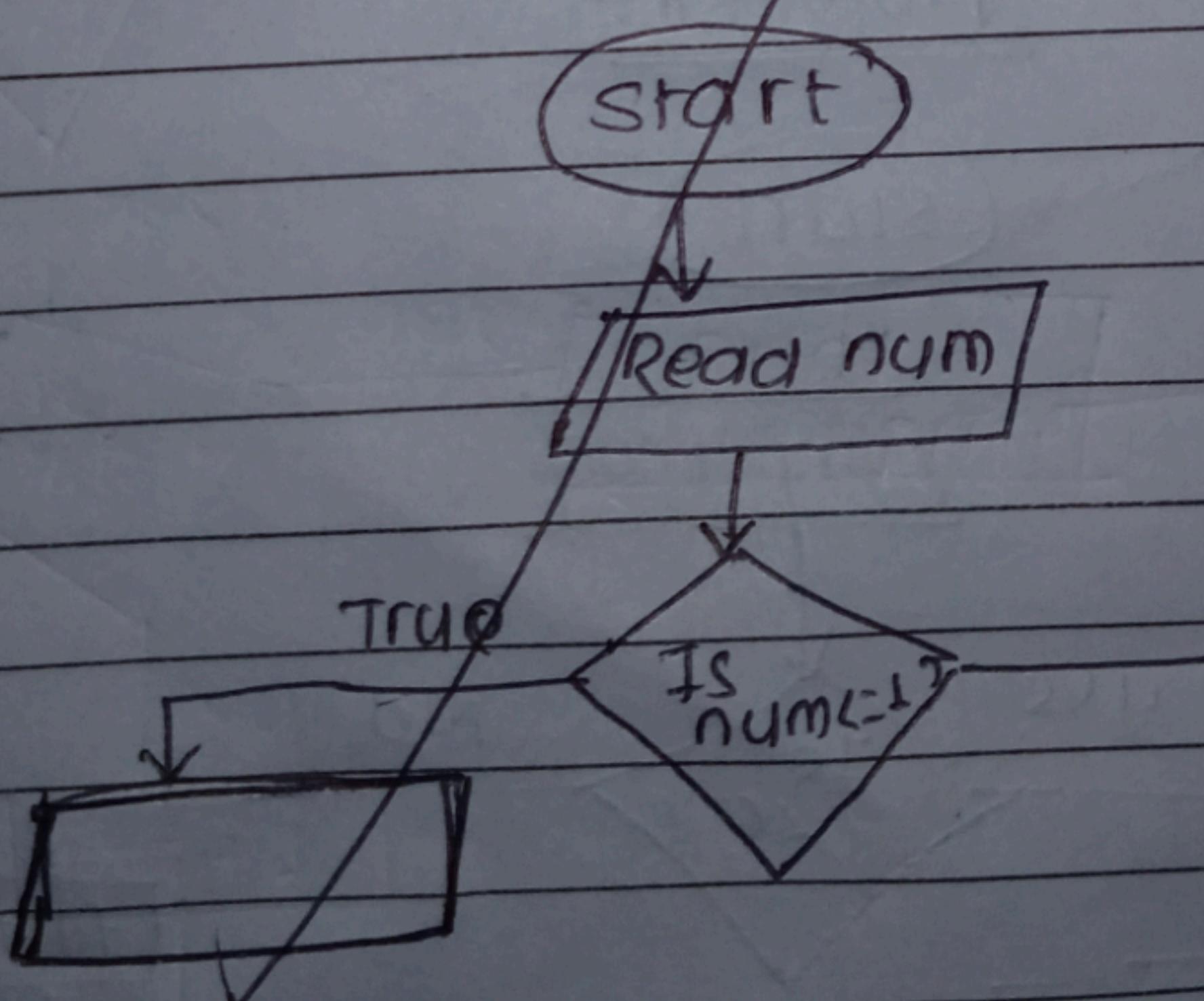
Step 4: else for ( $i = 2; i \leq num/2; i++$ ) →  
if ( $num \% i == 0$ ) then  
 $isPrime = 0$

Step 5: if ( $isPrime == 0$ ) → Display "not a prime  
number"

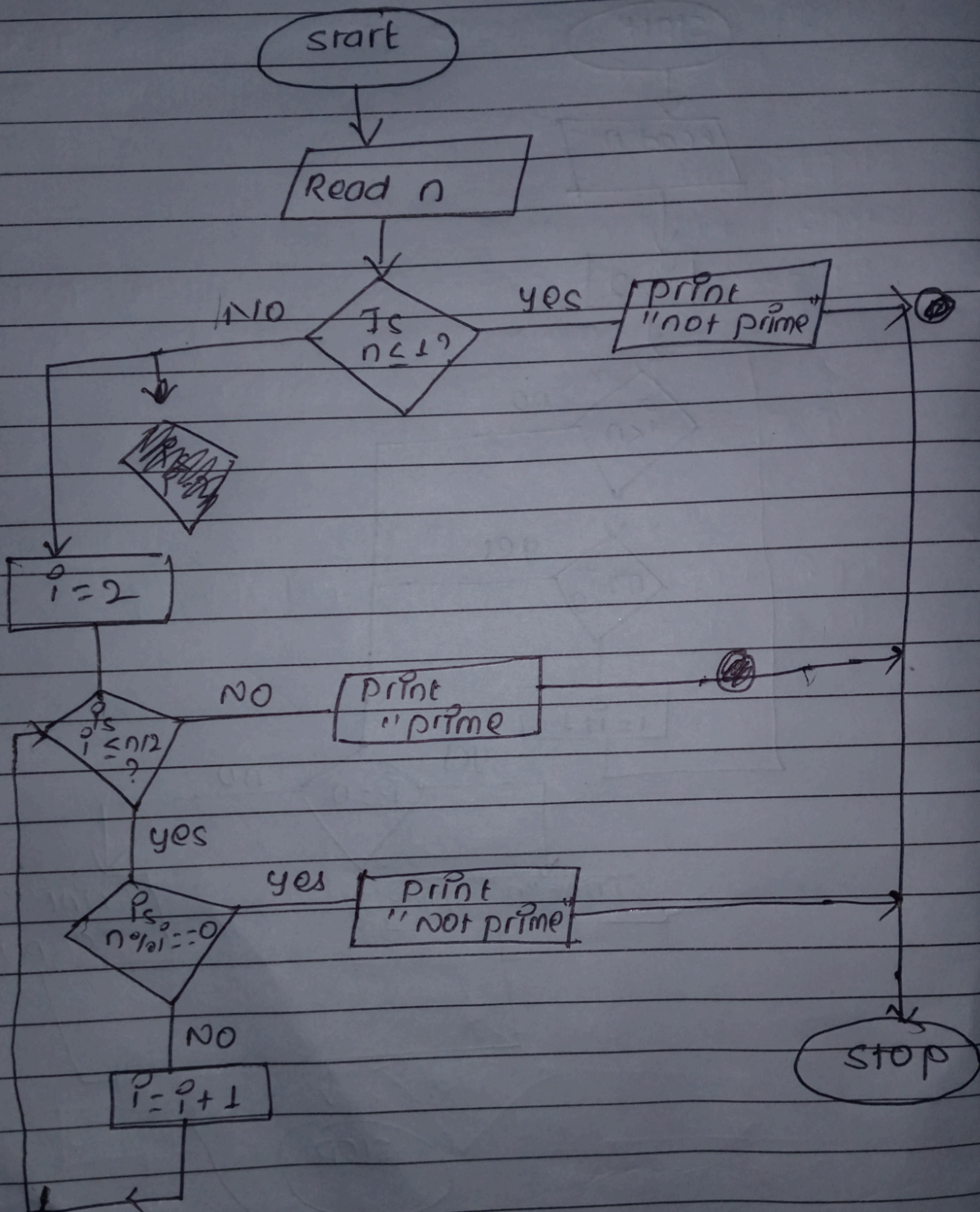
Step 6: else display "prime number"

Step 7: STOP

flowchart



# Flowchart



- To find sum of digits of given number.

Algorithm : sum of digits of a given number.

Step 1: Start

Step 2: Read num, sum = 0 ~~digit~~

Step 3: If  $num > 0$ , digit = num % 10  
sum = sum + digit  
num = num / 10

until  $n = 0$

Step 4: Display sum

Step 5: STOP

flowchart

