Ex. No.: 1   Date: 3·10·2024

Calculate Area and Perimeter

Write an Algorithm and draw a Flowchart to Calculate the area and perimeter of a square.
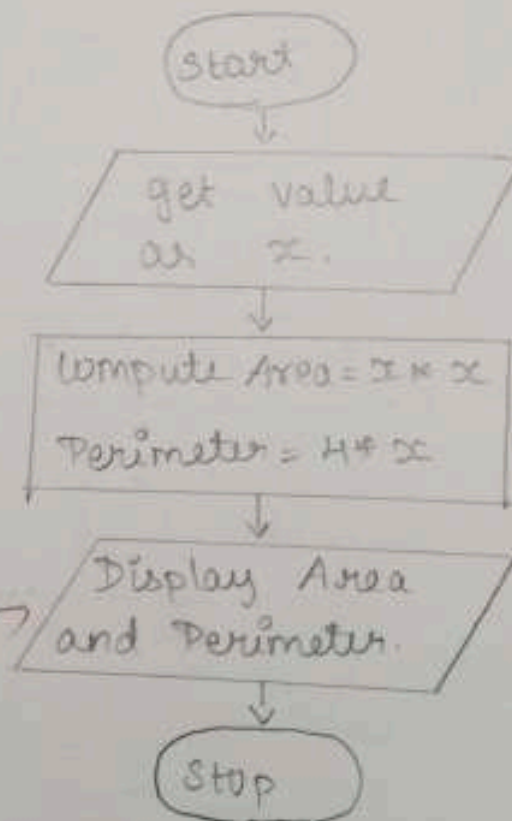
Algorithm:

Step-1 : Start

Step-2 : Get side as x

Step-3 : compute Area = x*x , perimeter = 4*x

Step-4 : Display Area and Perimeter

Step-5 : Stop.

Flowchart:

```
        ┌──────────┐
        │  start   │
        └────┬─────┘
             ↓
      ╱─────────────╱
     ╱ get value   ╱
    ╱  as  x.     ╱
   ╱─────────────╱
             ↓
    ┌────────────────────┐
    │ compute Area = x * x│
    │ Perimeter = 4* x   │
    └────────┬───────────┘
             ↓
      ╱──────────────╱
     ╱ Display Area  ╱
    ╱ and Perimeter.╱
   ╱───────────────╱
             ↓
        ┌──────────┐
        │   stop   │
        └──────────┘
```

Days to Year Conversion

Write an Algorithm and draw a Flowchart to convert the given days into years & months.

Algorithm: Step-1: Start

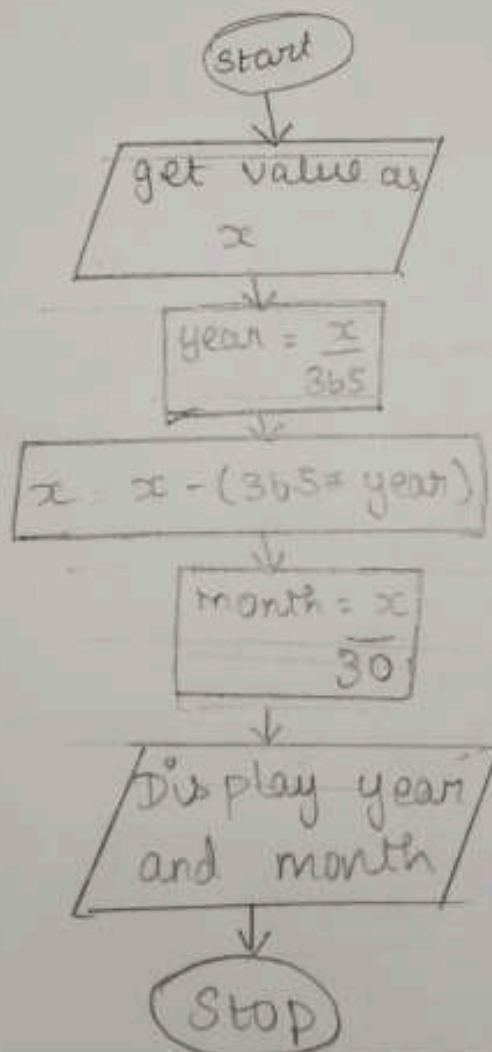Step-2: get no. of days as x

Step-3: compute year = $x/365$

Step-4: $x = x - (365 * years)$

Step-5: compute month = $x/30$

Step-6: Display year and month

Step-7: Stop.

Flowchart:

start

get value as x

year = $\dfrac{x}{365}$

$x = x - (365 * year)$

month = $\dfrac{x}{30}$

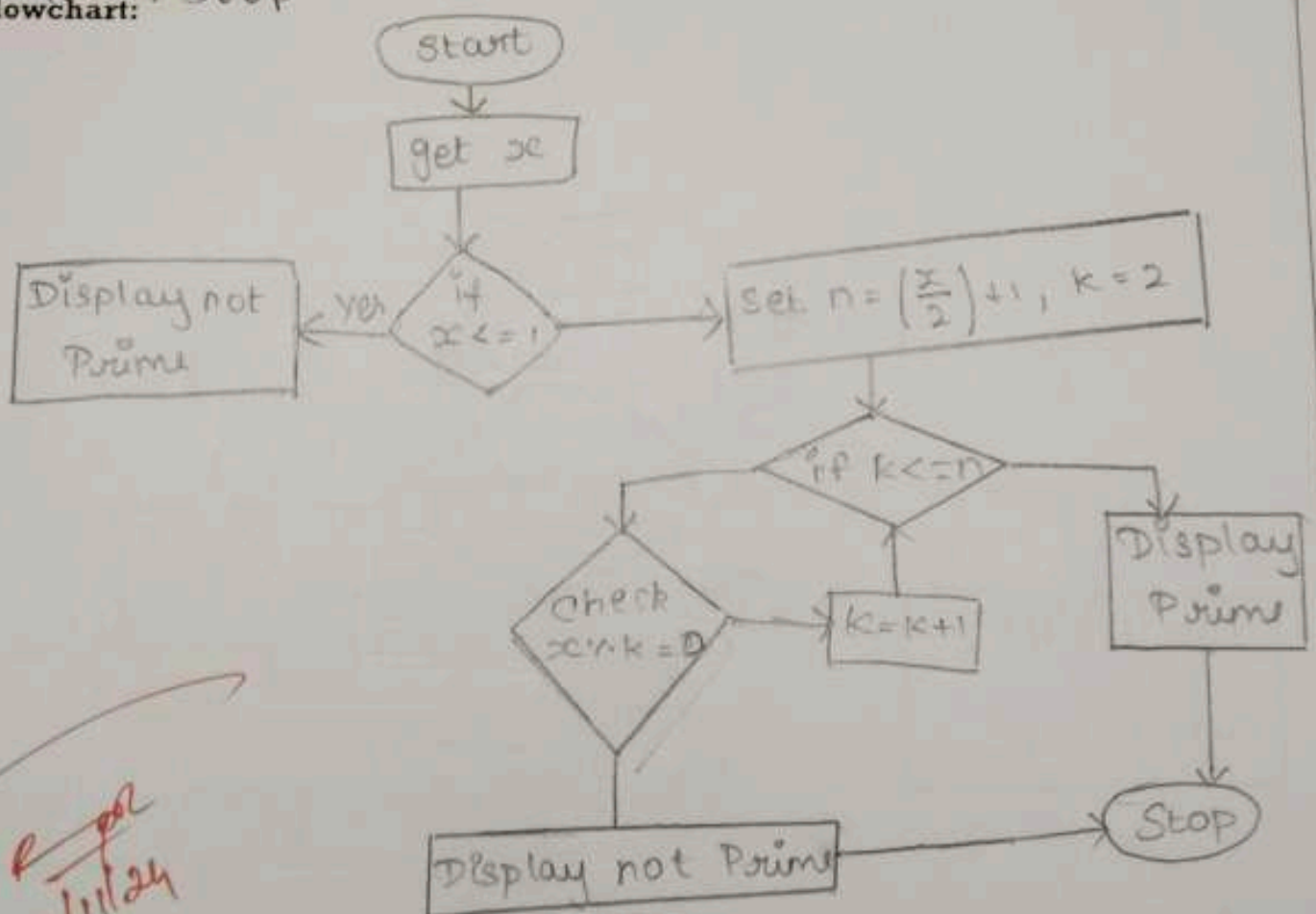Display year and month

stop

Prime Number

Write an Algorithm and draw a Flowchart to check whether the given number is Prime or not.

Algorithm:

Step-1: Start

Step-2: get x

Step-3: check whether $x \leq 1$, else go 5.

Step-4: Display not a prime

Step-5: Set $n = \left(\frac{x}{2}\right) + 1$, $k = 2$

Step-6: if $k \leq n$, otherwise go 10

Step-7: check $x \% k == 0$, otherwise go 9.

Step-8: Display not a prime. Set $k = k+1$ go to 6.

Step-9: Display prime

Step-10: Stop

Flowchart:

Start

get x

if $x \leq 1$ — yes → Display not Prime

Set $n = \left(\frac{x}{2}\right) + 1$, $k = 2$

if $k \leq n$

Check $x \% k = 0$ $k = k+1$

Display not Prime

Display Prime

Stop

Date: 3·10·2024

Ex. No.: 4

Leap Year

Write an Algorithm and draw a Flowchart to check whether the given year is Leap year or not.

Algorithm:
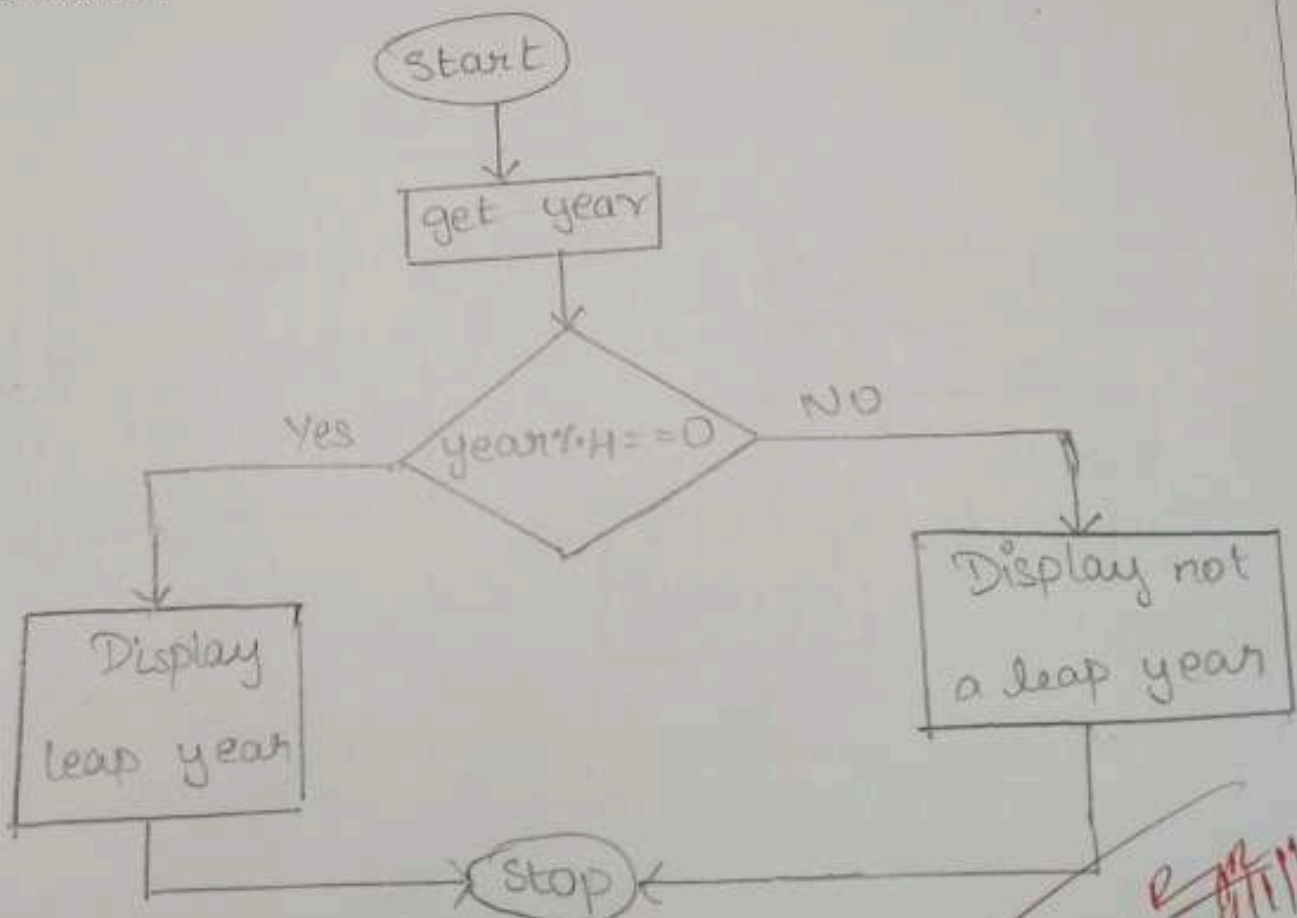
Step-1: Start

Step-2: get year

Step-3: check If (year %4 ==0)

Step-4: ~~Di~~ Display leap year

Step-5: Else, Display not a leap year.

Step-6: Stop.

Flowchart:

```
              ( Start )
                 |
                 v
           [ get year ]
                 |
                 v
      Yes      < year%4==0 >      NO
      |                            |
      v                            v
 [ Display            [ Display not
   leap year ]         a leap year ]
      |                            |
      +------> ( Stop ) <----------+
```

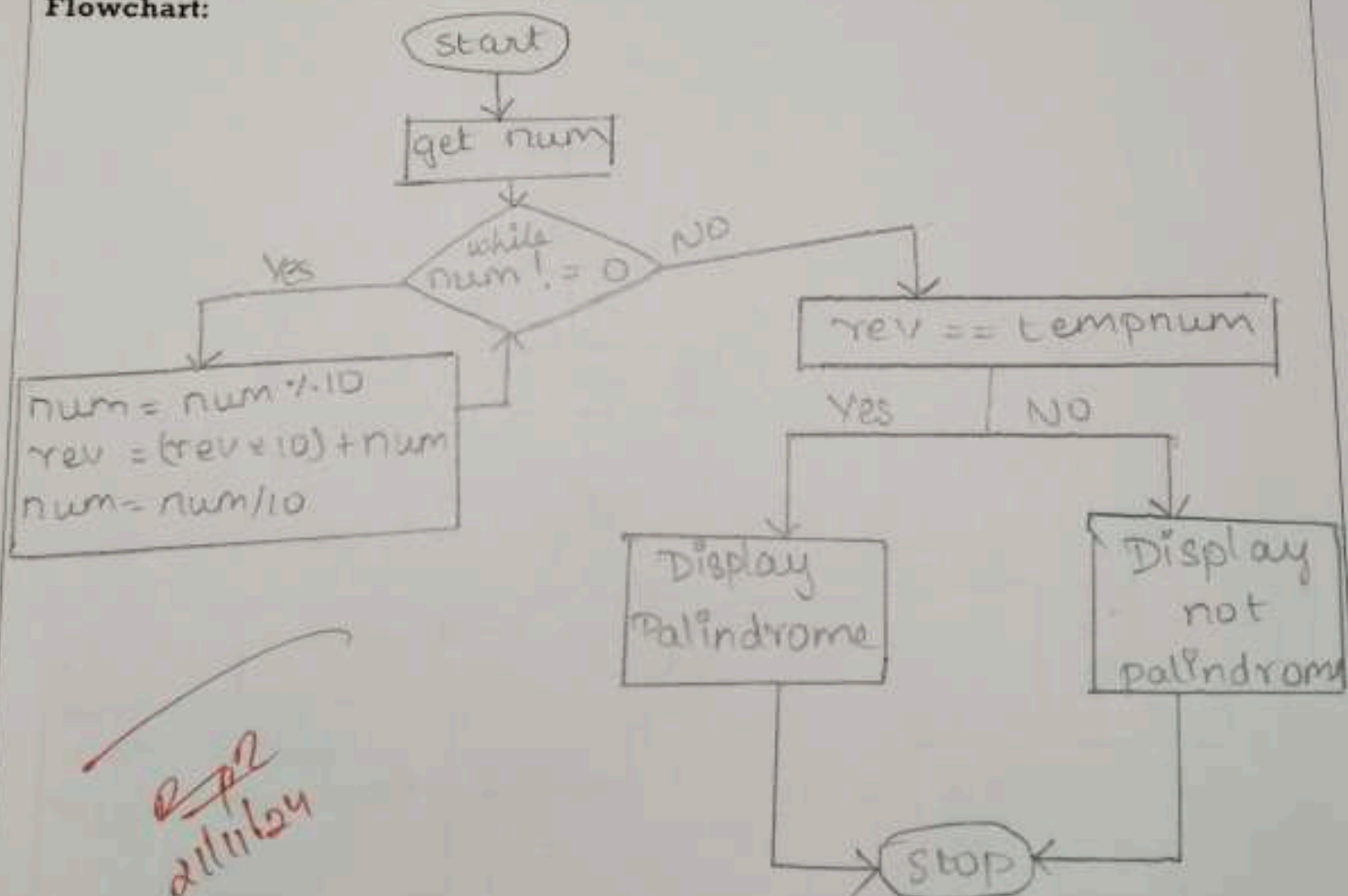**Ex. No.: 5**   Date: 3·10·2024

Palindrome Number

Write an Algorithm and draw a Flowchart to check whether the given number is palindrome number or not.

Algorithm: Step-1 : Start

Step-2 : get num

Step-3 : Declare rev = 0 & tempnum = num

Step-4 : Use while loop (num != 0)

num = num % 10

rev = rev * 10 + num

num = num/10

Step-5 : check if (rev == tempnum)

Step-6 : If true display palindrome

Step-7 : else display not a palindrome
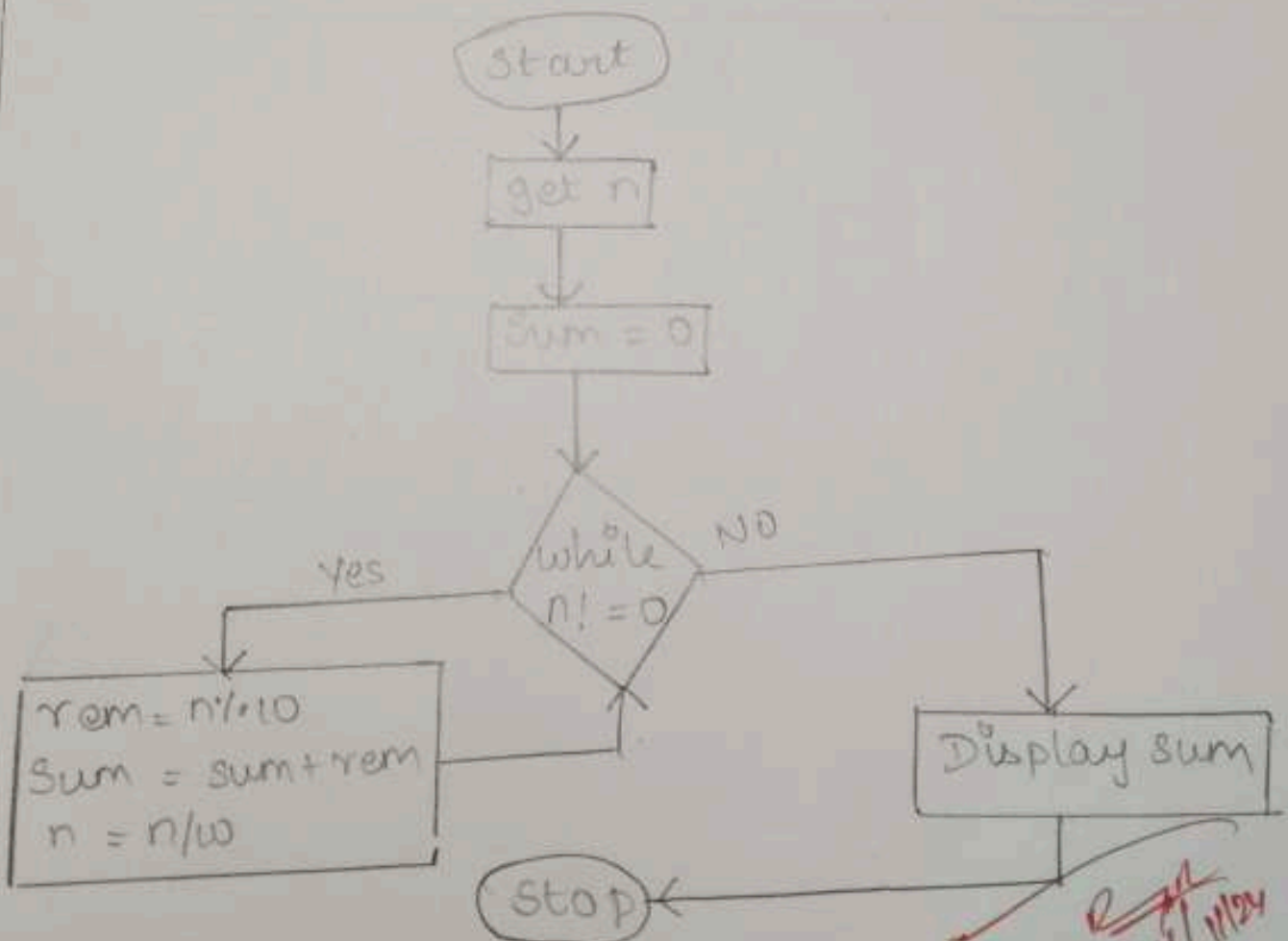
Step-8 : Stop.

Flowchart:

Ex. No.: 6

Sum of Digits

Write an Algorithm and draw a Flowchart to calculate the sum of digits in the given number.

Algorithm:

Step - 1 : Start

Step - 2 : get n

Step - 3 : Initialize sum = 0

Step - 4 : use while loop (n! = 0)
$$\text{rem} = n \% 10$$
Sum = Sum + rem
n = n/10

Step - 5 : Display sum

Step - 6 : End.

Flowchart: