Ex. No.: I   Date: 22·10·24

Calculate Area and Perimeter

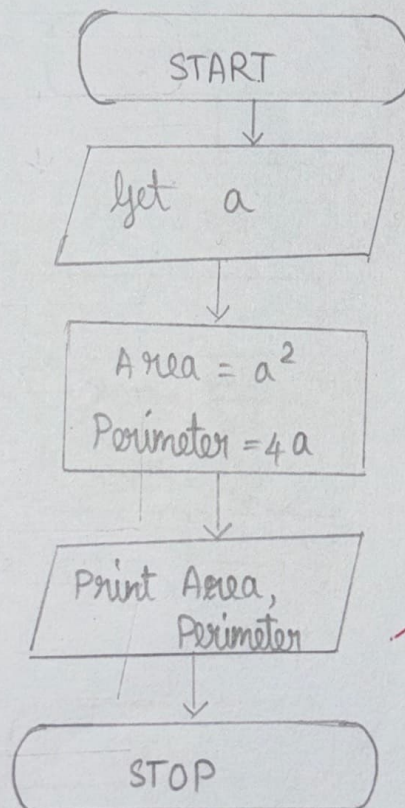Write an Algorithm and draw a Flowchart to Calculate the area and perimeter of a square.

Algorithm:

STEP 1 : Take the sides of the square as a. Get the value of a.

STEP 2 : To find the area of the square. Area = a^2. Print area.

STEP 3 : To find the Perimeter of the square. Perimeter = $4a$ Print Perimeter.

Flowchart:

```
        ( START )
            |
            v
      / Get a        /
            |
            v
     | Area = a²      |
     | Perimeter = 4a |
            |
            v
     / Print Area,  /
     / Perimeter    /
            |
            v
        ( STOP )
```

Ex. No.: II

Days to Year Conversion

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

Algorithm:

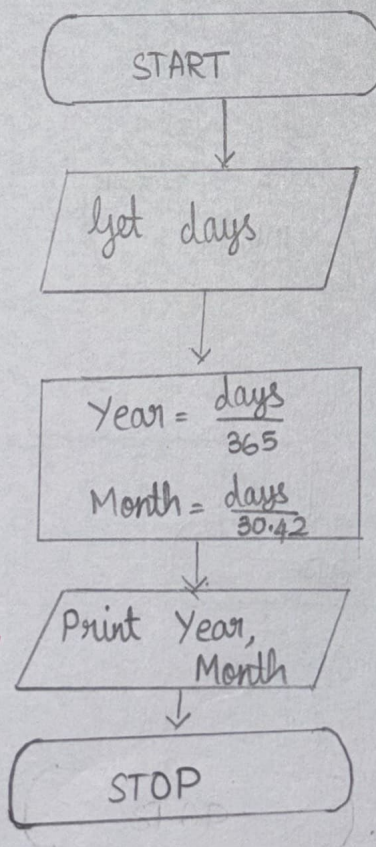STEP 1: Get the number of days

STEP 2: Year = days / 365. Print Year.

STEP 3: Month = days / 30.42. Print Month.

Flowchart:

START

Get days

$Year = \dfrac{days}{365}$

$Month = \dfrac{days}{30.42}$

Print Year, Month

STOP

Ex. No.: **3II**
Date: 22.10.24

Prime Number

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

Algorithm:

STEP 1: Get a number n.

STEP 2: Iterate a for loop from $(i=2, i<n, i++)$

STEP 3: If $n \% i == 0$. Print It's not a prime number.

STEP 4: If not its a prime number.

Flowchart:

```
                    START

                   get n

                   i = 2

                   i < n  ──────────┐
                     │              │
                     ▼              ▼
                  i + 1 = i    i % n == 0
                     │         T  ╱    ╲  F
                     │      ┌────┘      └────┐
                     │      ▼                ▼
                     │   It's a prime    Not a prime
                     │   number          number
                     │      │                │
                     └──────┴────────────────┘
                            │
                          STOP
```
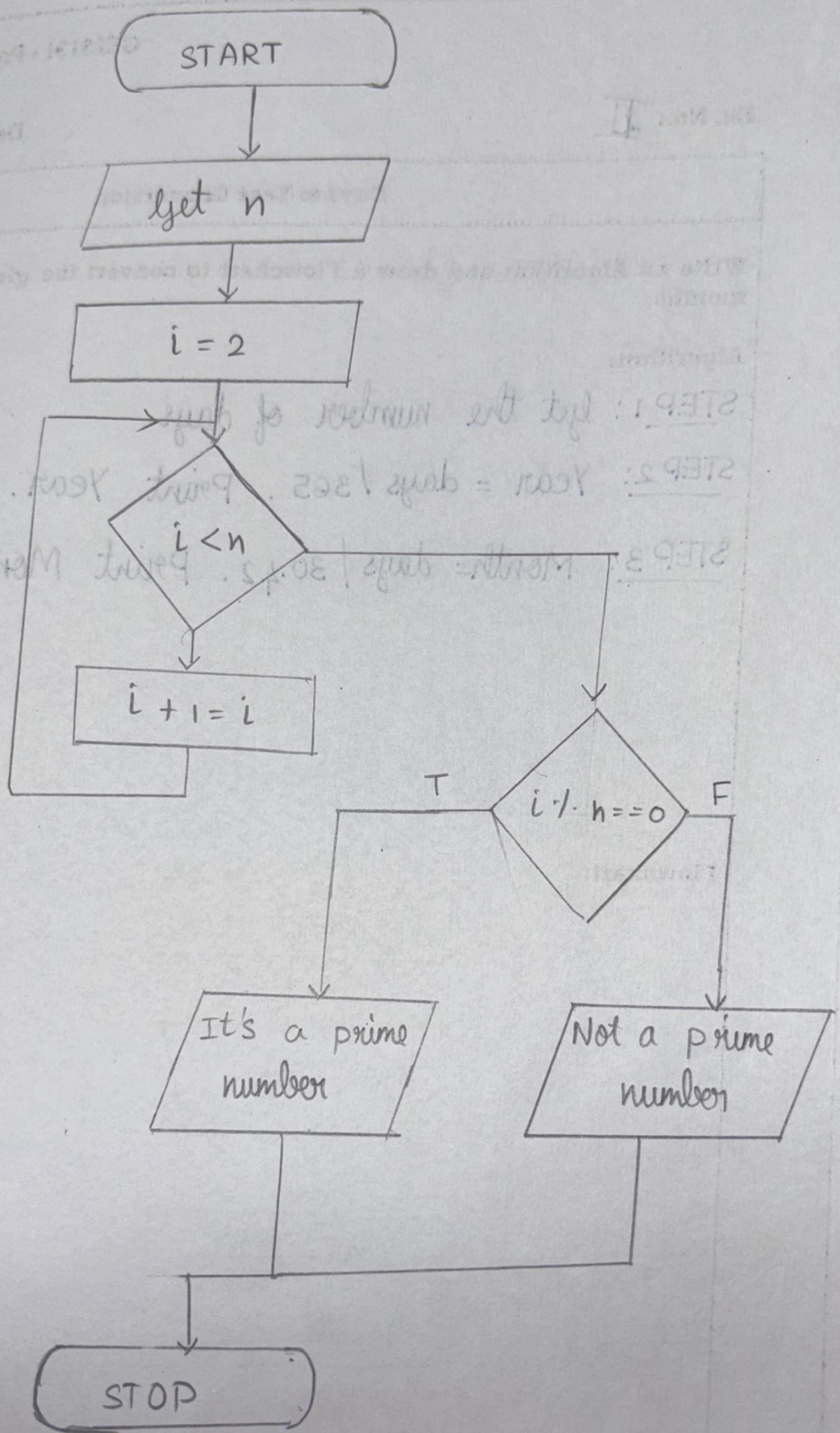
Ex. No.: 4V   **Date:** 22.10.24

Leap Year

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

Algorithm:

STEP 1 : Get the year

STEP 2: Check if year % 4 == 0

STEP 3: If true print. It's a leap year.

STEP 4: If false print It's not a leap year.

Flowchart:

START

↓

Get year

↓

year % 4 == 0

F ←   → T

Print
Not a leap year

Print
It's a leap year

STOP

RPR

Ex. No.: V   Date: 22.10.24

Palindrome Number

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

Algorithm:
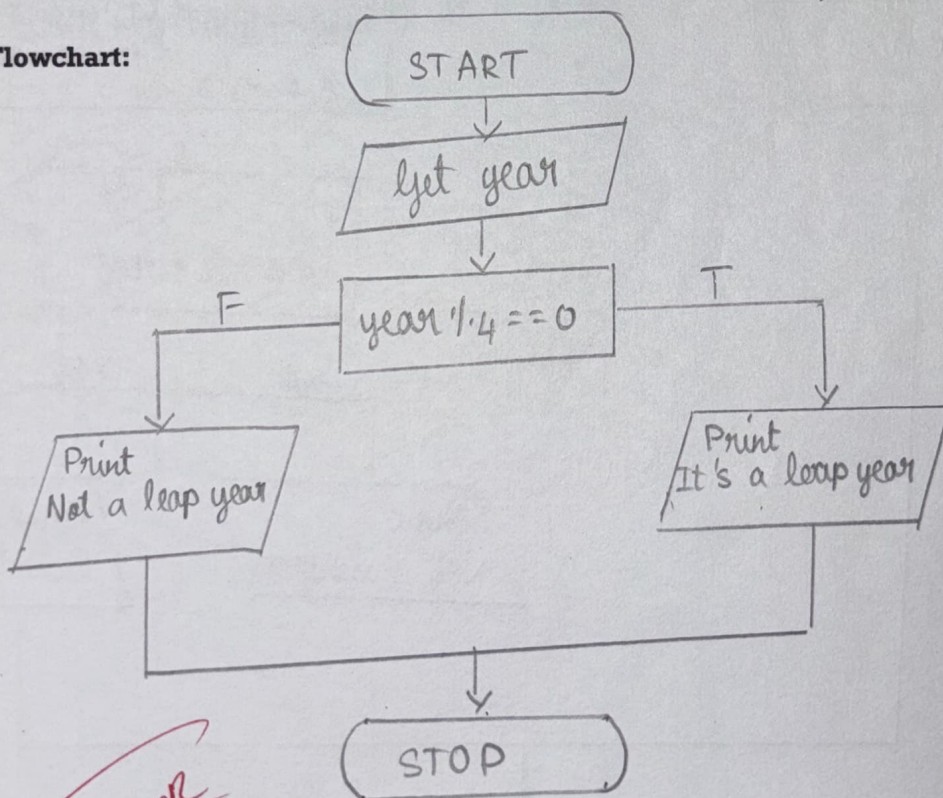
STEP 1: Get a number n.

STEP 2: Declare rev = 0, rem, original

STEP 3: Assign Original = n

STEP 4: When (n != 0), rem = n % 10

STEP 5: rev = rev * 10 + rem

STEP 6: n = n/10. The loop continues till the condition is true

STEP 7: If (original == rev). It's palindrome. On it is not palindrome.

Flowchart:

RPR

START

Get n

Declare rev=0, rem,
Original

Original = n

When
n) =0

No → Print n

Yes →
rem= n./. 10
rev = rev *10+ rem
n = n/10

If..
original = rev

No → Print
Not Palindrome

Yes → Print
Palindrome

STOP

Ex. No.: **VI**
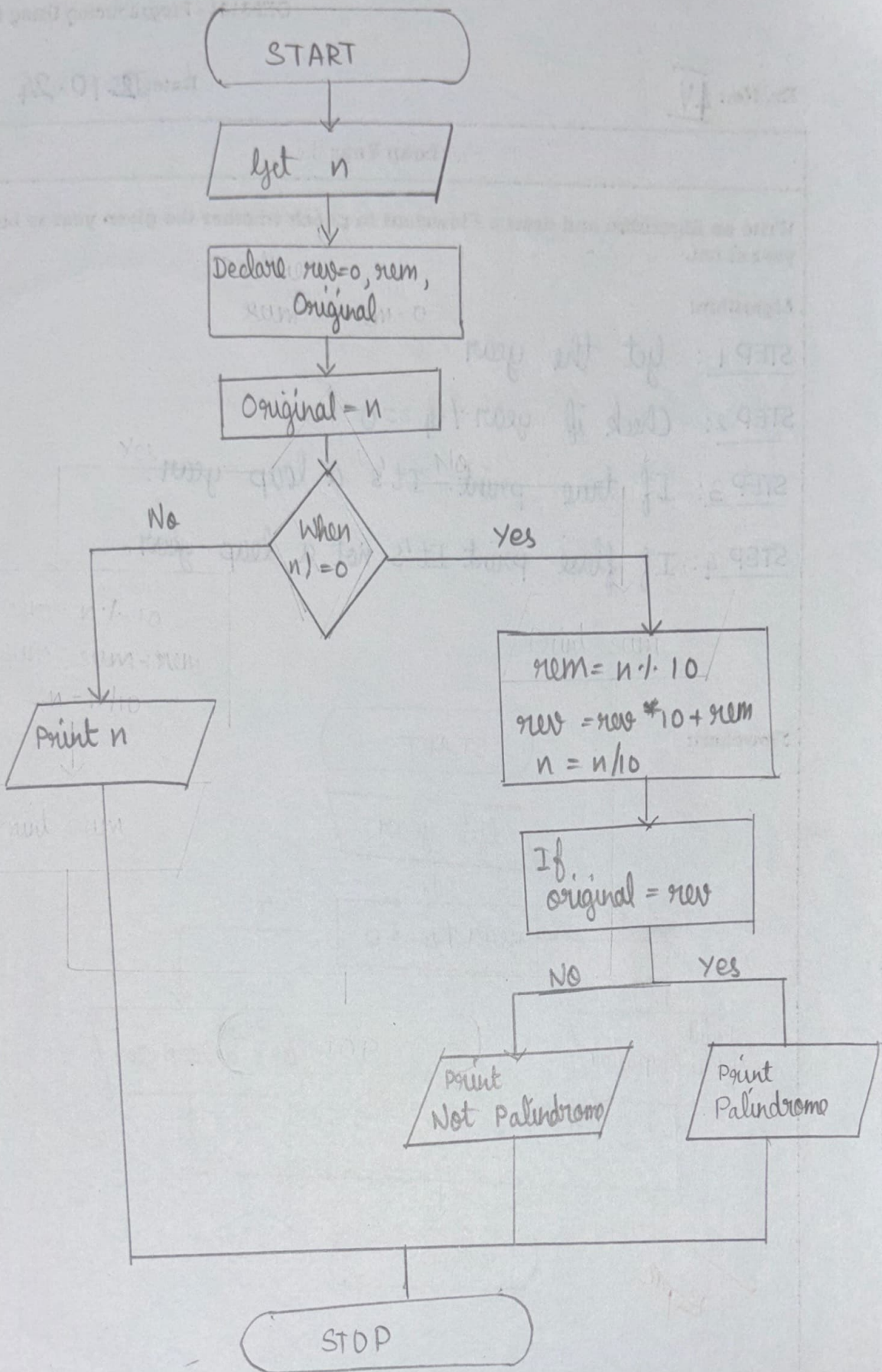
Date: 22·10·24

Sum of Digits

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

Algorithm:

STEP 1: Get a number n.

STEP 2: Declare sum = 0, rem = 0

STEP 3: When $n > 0$, rem = $n \% 10$

STEP 4: sum = sum + rem

STEP 5: $n = n/10$. The loop continues till the condition is true.

STEP 6: Print sum.

Flowchart:

```
                    ┌──────────────┐
                    │    START     │
                    └──────┬───────┘
                           │
                    ┌──────▼───────┐
                    │   Get n      │
                    └──────┬───────┘
                           │
                    ┌──────▼───────┐
                    │  Declare     │
                    │ sum=0, rem=0 │
                    └──────┬───────┘
                           │
                     ╱─────▼─────╲
              Yes   ╱    When      ╲   No
          ┌────────◄     n>0        ►────────┐
          │         ╲             ╱          │
          │          ╲─────┬─────╱           │
          │                                  │
  ┌───────▼────────┐              ┌──────────▼──────────┐
  │  rem = n%10    │              │     Print sum       │
  │  sum = sum+rem │              └──────────┬──────────┘
  │  n = n/10      │                         │
  └───────┬────────┘                         │
          │                                  │
  ┌───────▼────────┐                         │
  │   Print sum    │                         │
  └───────┬────────┘                         │
          │                                  │
          └──────────────┬───────────────────┘
                         │
                  ┌──────▼───────┐
                  │     STOP     │
                  └──────────────┘
```