

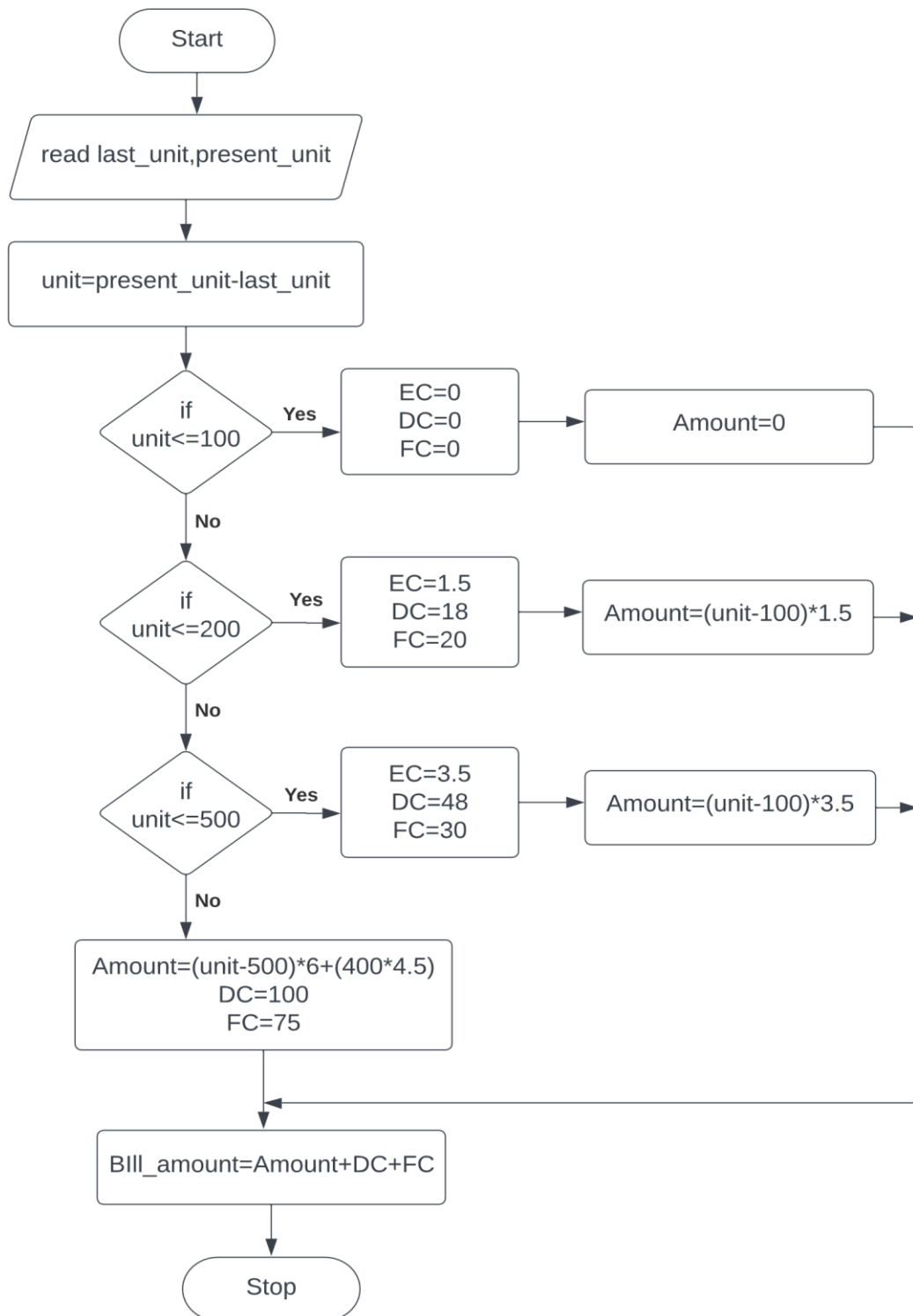
Aim:

To draw flowchart and algorithm for calculating the electricity bill.

Algorithm:

- Step 1** : Start
- Step 2** : read last month unit and present month unit
- Step 3** : unit=present month – last month units
- Step 4** : Check if unit<=100
- Step 4.1** : If Yes, then Amount=0 and go to Step 5
- Step 4.2** : If No, then check if unit<=200
- Step 4.2.1** : If Yes, then assign DC=1.8, FC=20, Amount = (unit-100)*1.5
 And go to Step 5
- Step 4.2.2** : If No, then check if units<=500
- Step 4.2.2.1** : If Yes, then Amount = (units-100)*3.5, EC=3.5, DC=48, FC=30
 And go to Step 5
- Step 4.2.2.2** : If No, then Amount = (unit-500)*6 + (400*4.5). DC=100, FC=75
 And go to Step 5
- Step 5** : Bill amount = Amount + DC + FC
- Step 6** : display Bill amount
- Step 7** : Stop

FLOWCHAT:



Pseudocode:

```
BEGIN
GET last_unit, present_unit
COMPUTE = present_unit – last_unit
IF unit<=100
    ASSIGN EC=0, DC=0, FC=0, amount=0
ELSE IF unit<=200
    ASSIGN EC=1.5, DC=18, FC=20
    COMPUTE amount=(unit-100)*1.5
ELSE IF unit<=500
    ASSIGN EC=3.5, DC=48, FC=30
    COMPUTE amount=(unit-100)*3.5
ELSE
    ASSIGN DC=100, FC=75
    COMPUTE (unit-500)*6+(400*4.5)
END IF
COMPUTE bill amount=amount+DC+FC
PRINT bill amount
STOP
```

Result:

The algorithm and flowchart is written for the given problem

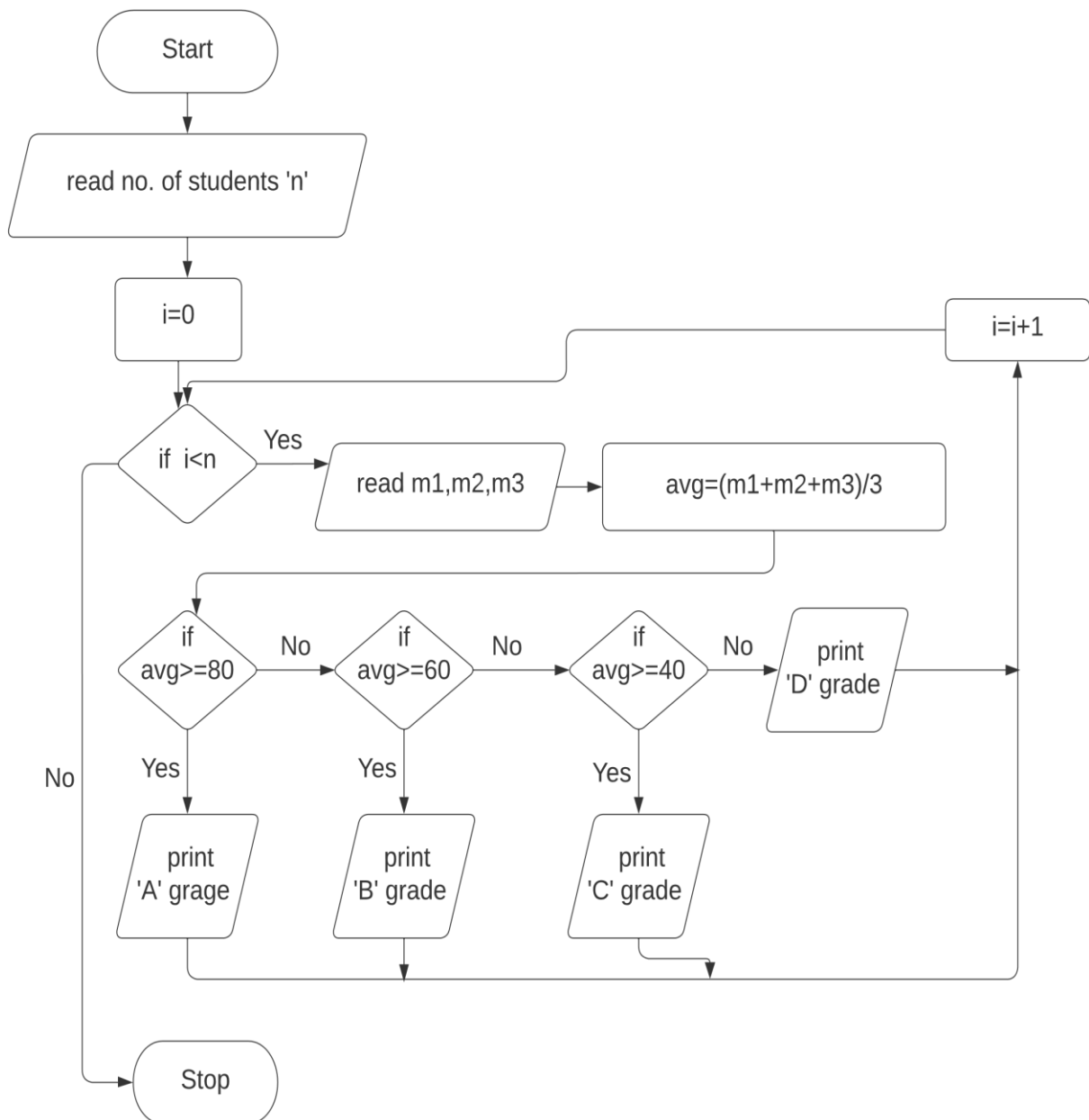
Aim:

To draw flow chart and write algorithm for Student Mark Analysis.

Algorithm:

- Step 1** : Start
- Step 2** : read No. of students as 'n'
- Step 3** : initialize the counter i=0
- Step 4** : check if i<n
- Step 4.1** : If yes, read m1, m2, m3
- Step 4.2** : Compute $avg = (m1+m2+m3)/3$
- Step 4.3** : Check if $avg \geq 80$
- Step 4.3.1** : If Yes, print 'A-grade' and $i=i+1$ and go to step 4
- Step 4.3.2** : If No, check if $avg \geq 60$
- Step 4.3.2.1** : If Yes, print 'B-grade' and $i=i+1$ and go to step 4
- Step 4.3.2.2** : If No, check if $avg \geq 40$
- Step 4.3.2.2.1** : If Yes, print 'C-grade' and $i=i+1$ and go to step 4
- Step 4.3.2.2.2** : If No, print 'D-grade' and $i=i+1$ and go to step 4
- Step 4.4** : If No, then go to step 5
- Step 5** : Stop

Flowchart:



Pseudocode:

```
BEGIN
GET n          // number of students
ASSIGN i=0
WHILE I<N
    GET m1, m2, m3
    COMPUTE avg= (m1+m2+m3)/3
    IF avg>=80
        PRINT 'A-grade'
        I=i+1
    ELSE IF avg>=60
        PRINT 'B-grade'
        I=i+1
    ELSE IF avg>=40
        PRINT 'C-grade'
        I=I+1
    ELSE
        PRINT 'D-grade'
        I=I+1
    END IF
END WHILE
END
```

Result:

The algorithm and flowchart is written for the given problem

Expt. No. : 1(c)
Date : 29-11-2022

WEIGHT OF STEEL BARS

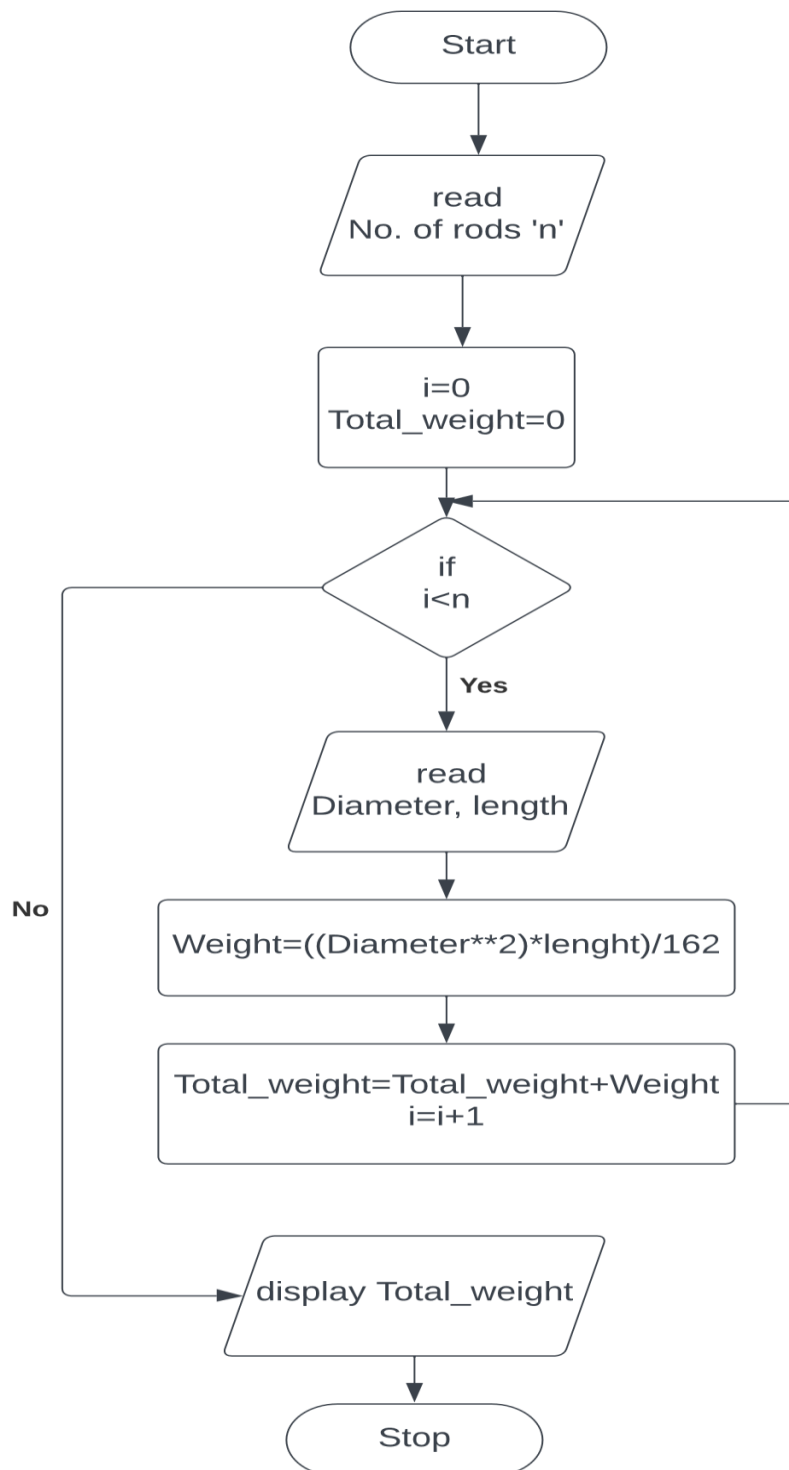
Aim:

To draw flowchart and algorithm for the given problem

Algorithm:

- Step 1** : Start
- Step 2** : read value of No. of rods as 'n'
- Step 3** : initialise the counter as i=0
- Step 4** : Total_weight=0
- Step 5** : Check if i<n
- Step 5.1** : If Yes, then read Diameter, length of rod
- Step 5.2** : Compute $\text{Weight} = ((\text{Diameter}^2 * D) * \text{length}) / 162$
- Step 5.3** : Compute $\text{Total_weight} = \text{Total_weight} + \text{Weight}$, $i = i + 1$ and go to step 5
- Step 5.4** : If No, then go to step 6
- Step 6** : display Total_weight
- Step 7** : Stop

Flowchart:



Pseudocode:

```
BEGIN
GET n           // number of rods
ASSIGN I=0, Total weight=0
IF i<n
    GET Diameter, length
    COMPUTE weight=((Diameter**2)*length)/162
    COMPUTE Total weight=Total weight+weight
    COMPUTE i=i+1
END IF
PRINT Total weight
END
```

Result:

The algorithm and flowchart is written for the given problem.

Expt. No. : 1(d) WEIGHT OF THE MOTOR BIKES
Date : 29-11-2022

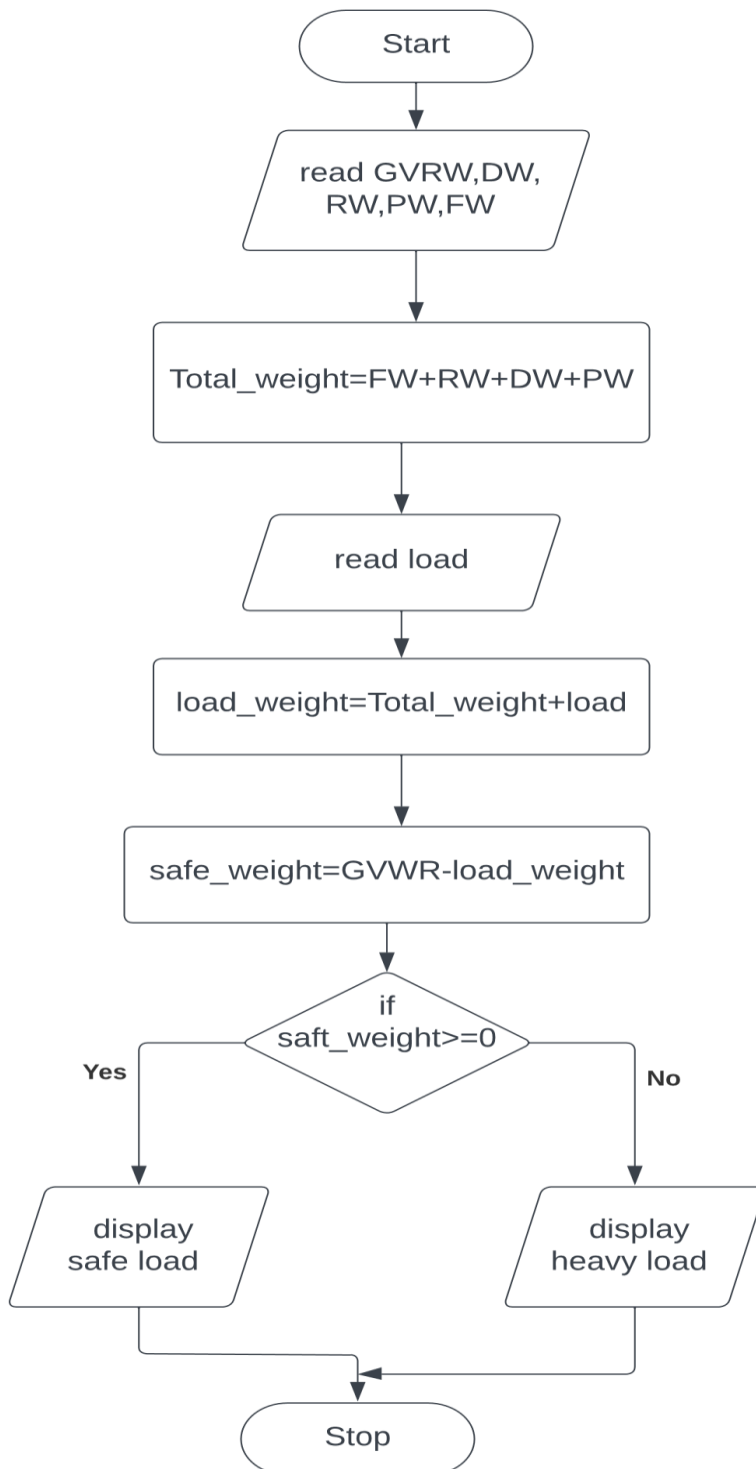
Aim:

To draw flowchart and write algorithm for the given problem.

Algorithm:

- Step 1 : Start**
- Step 2 : read GVRW, DW, RW, PW, FW**
- Step 3 : Compute Total weight= $FW+RW+DW+PW$**
- Step 4 : read the value of load**
- Step 5 : Compute load weight = Total weight+load**
- Step 6 : Compute safe weight = $GVWR - \text{load weight}$**
- Step 7 : Check if safe weight ≥ 0**
- Step 7.1 : If Yes, then display safe load and go to step 8**
- Step 7.2 : If No, then display heavy load and go to step 8**
- Step 8 : Stop**

Flowchart:



Pseudocode:

```
BEGIN
GET GVRW, DW, RW, PW, FW
COMPUTE Total weight-  $FW+RW+DW+PW$ 
GET load
COMPUTE load weight = Total weight+load
COMPUTE safe weitht =  $GVWR - \text{load weight}$ 
IF safe weight  $\geq 0$ 
    PRINT safe load
ELSE
    PRINT heavy load
END IF
END
```

Result:

The algorithm and flowchart written for the given problem.

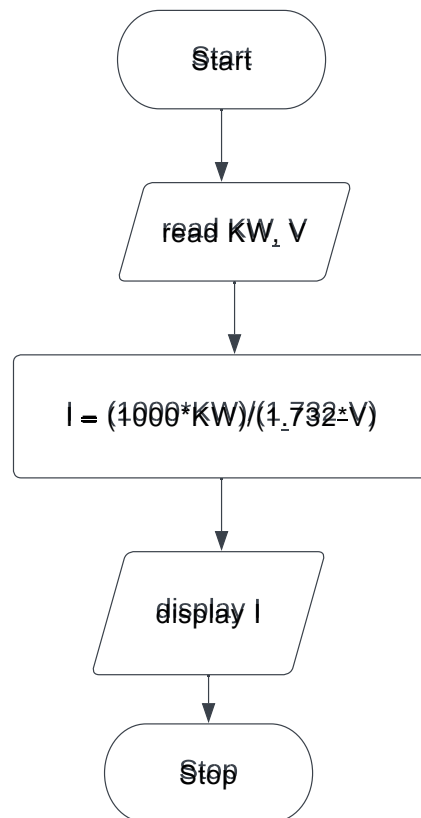
Aim:

To draw flowchart and write algorithm for the given problem

Algorithm:

- Step 1** : Start
- Step 2** : read the values of KW and V
- Step 3** : Compute $I = (1000 * KW) / (1.732 * V)$
- Step 4** : display I
- Step 5** : Stop

Flowchart:



Pseudocode:

```
BEGIN  
GET KW, V  
COMPUTE  $I = (1000 * KW) / (1.732 * V)$   
PRINT I  
END
```

Result:

The algorithm and flowchart is written for the given problem.

Expt. No. : 1(f)
Date : 21-11-2022

RETAIL SHOP BILLING

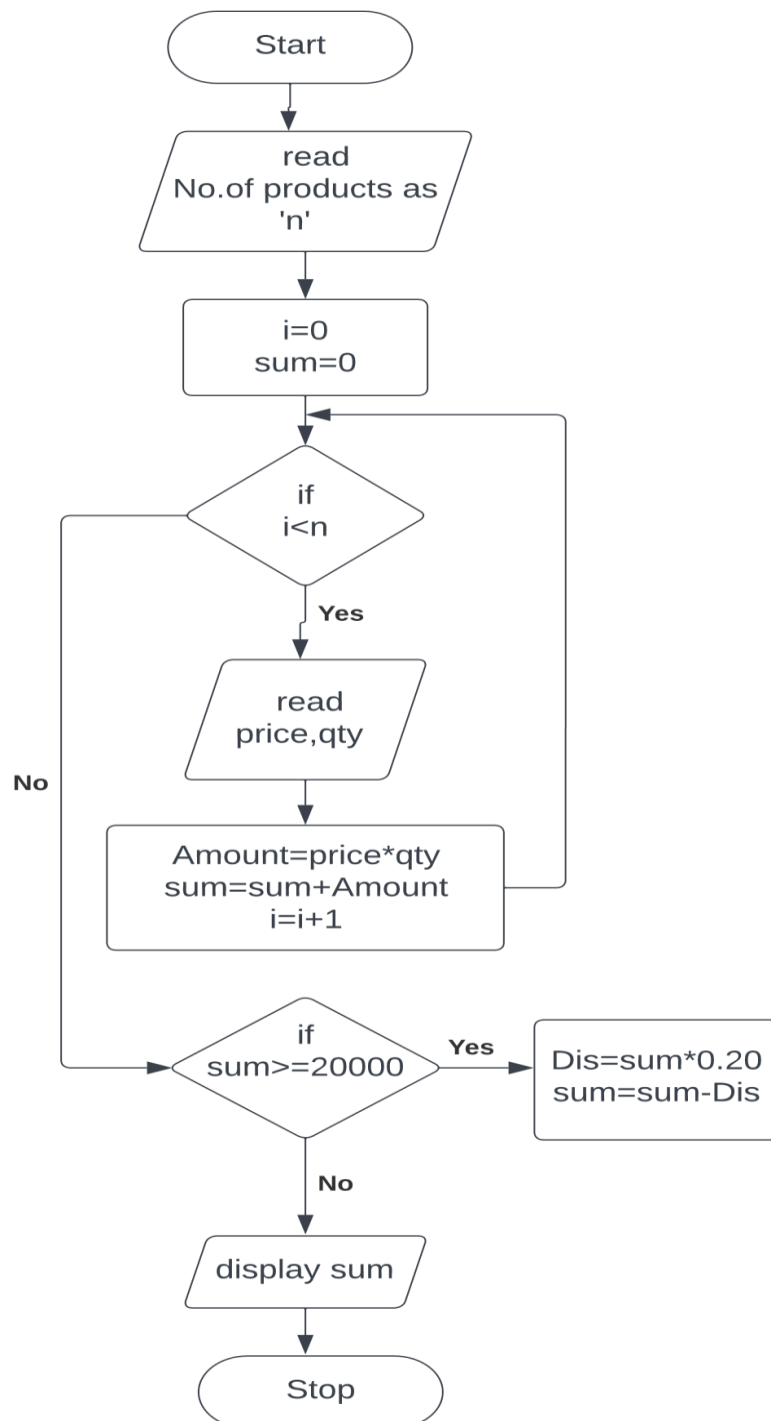
Aim:

To draw flowchart and algorithm for retail shop billing.

Algorithm:

- Step 1** : Start
- Step 2** : read no of products 'n'
- Step 3** : initialise the counter $i=0$
- Step 4** : $sum=0$
- Step 5** : Check if $i < n$
- Step 5.1** : If Yes, then read price, quantity
- Step 5.2** : Compute $amount = price * qty$, $sum = sum + amount$, $i = i + 1$
And go to step 5
- Step 5.3** : If No, go to step 6
- Step 6** : Check if $sum \geq 2000$
- Step 6.1** : If Yes, then $Dis = sum * 0.20$, $sum = sum - Dis$
- Step 6.2** : If No, then display sum and go to step 7
- Step 7** : Stop

Flowchart:



Pseudocode:

```
BEGIN
GET n           // number of products
ASSIGN I=0, sum=0
WHILE i<n
    GET price, qty
    COMPUTE amount=price*qty
    COMPUTE sum=sum+amount
    COMPUTE i=i+1
END WHILE
IF sum>=2000
    COMPUTE Dis=sum*0.20
    COMPUTE sum=sum-Dis
ELSE
    CONTINUE
END IF
PRINT sum
END
```

Result:

The algorithm and flowchart is written for the given problem.

Expt. No. : 1(g)
Date : 29-11-2022

SINE SERIES

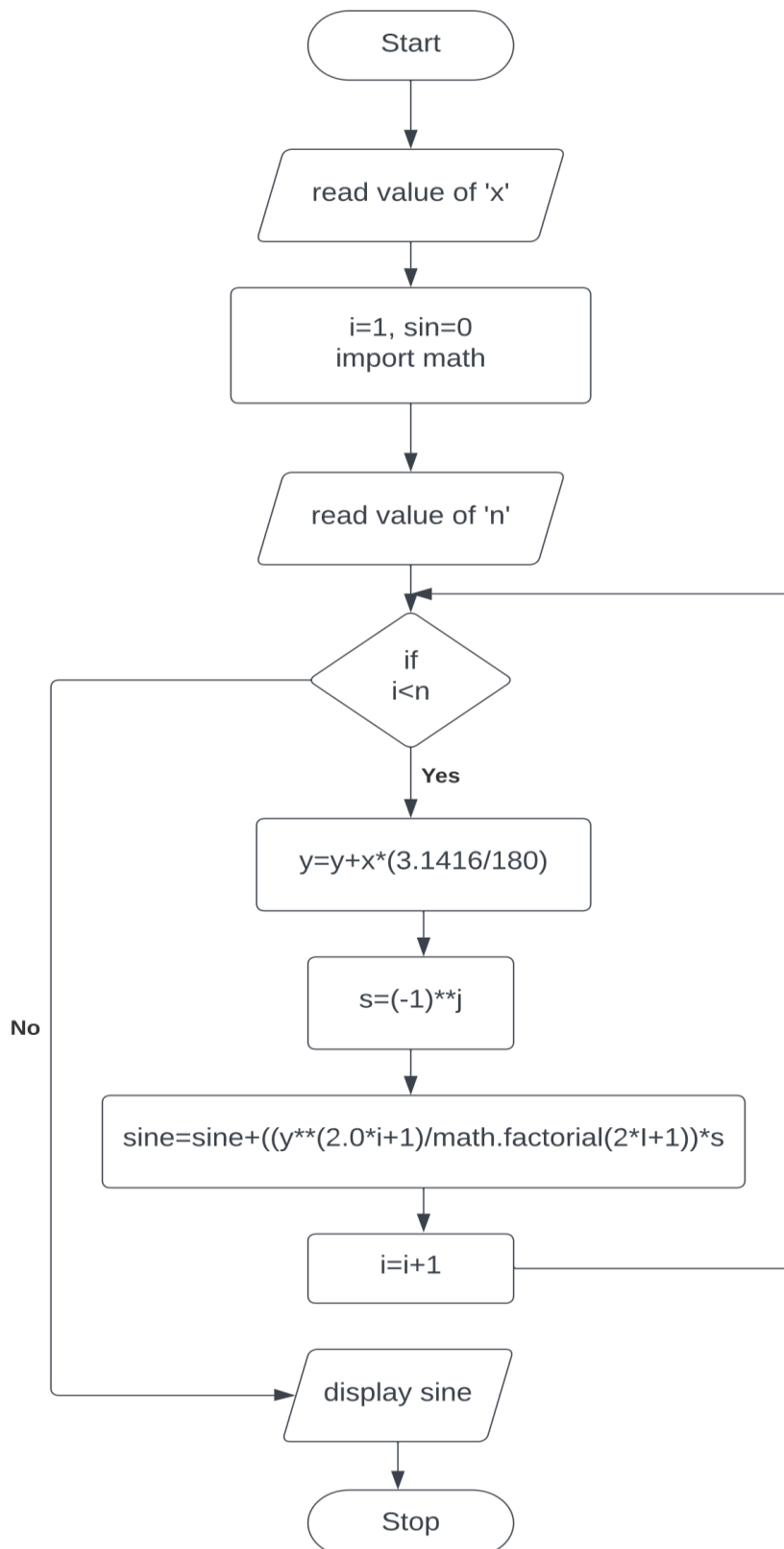
Aim:

To draw flowchart and write algorithm for the sine series.

Algorithm:

- Step 1** : Start
- Step 2** : read value of x
- Step 3** : Compute i=1, sine=0, import math
- Step 4** : Check if i<n
- Step 4.1** : If Yes, then $y=y+x*(3.1416/180)$, $s=(-1)**j$
- Step 4.2** : Compute $i=i+1$, go to step 4
- Step 5** : display sine and go to step 6
- Step 6** : Stop

Flowchart:



Pseudocode:

```
BEGIN
GET x
ASSIGN i=1, sine=0, import math
GET n
WHILE i<n
    COMPUTE y=y+x*(3.1416/180)
    COMPUTE s=(-1)**j
    COMPUTE sine=sine+((y**(2*i+1)/math.factorial(2*i+1))*s
    COMPUTE i=i+1
END WHILE
PRINT sine
END
```

Result:

The algorithm and flowchart is written for the given problem.