Expt. No. : 1(a) **ELECTRICITY BILL GENERATION**

Date : 21-11-2022

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

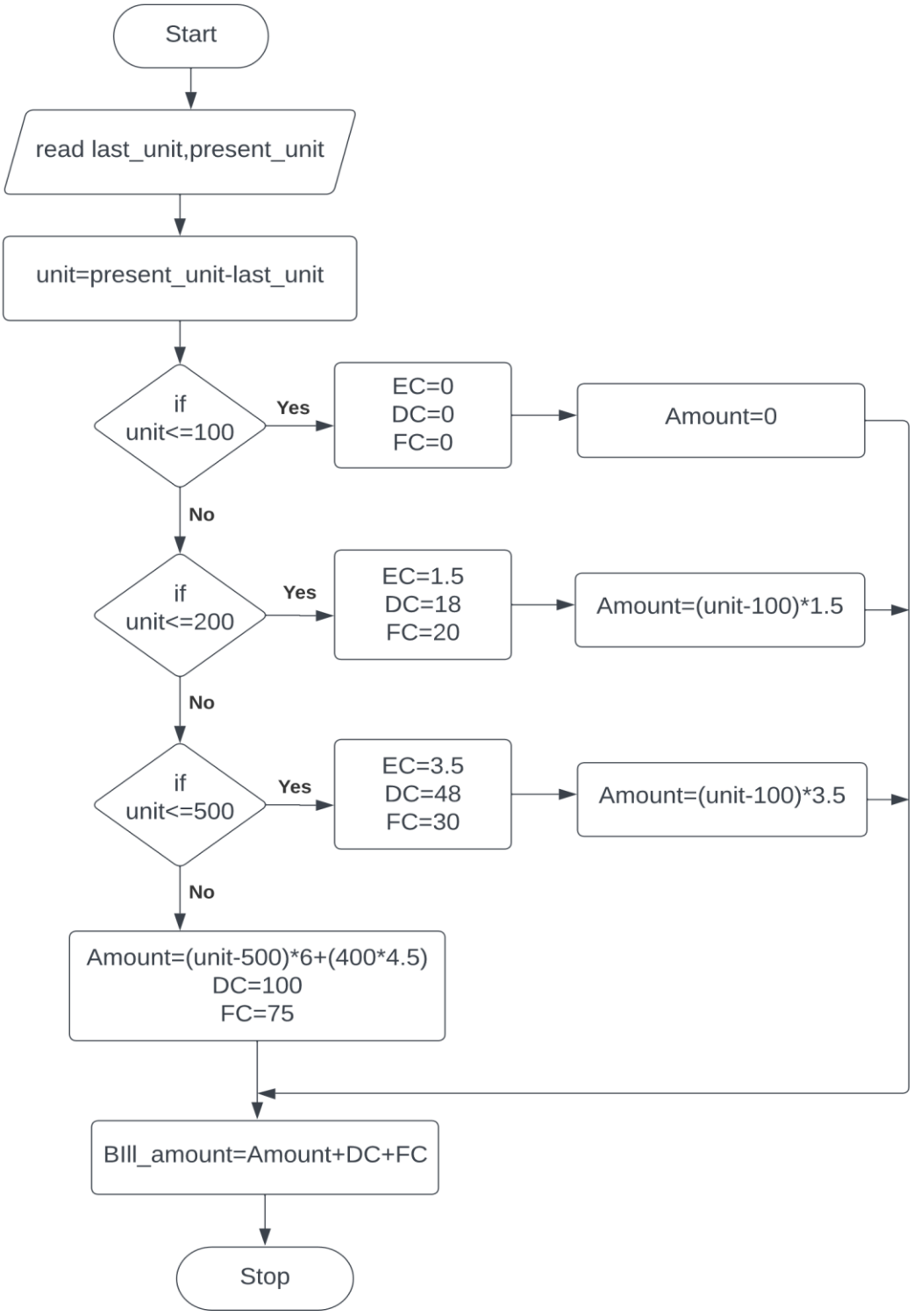
Step 4.2.2.2 : If No, then Amount = (unit-500)*6 + (400*4.5). DC=100, FC=75
And go to Step 5

Step 5 : Bill amount = Amount + DC + FC

Step 6 : display Bill amount

Step 7 : Stop

Flowchart:


Start
read last_unit,present_unit
unit=present_unit-last_unit
if unit<=100
Yes
EC=0
DC=0
FC=0
Amount=0
No
if unit<=200
Yes
EC=1.5
DC=18
FC=20
Amount=(unit-100)*1.5
No
if unit<=500
Yes
EC=3.5
DC=48
FC=30
Amount=(unit-100)*3.5
No
Amount=(unit-500)*6+(400*4.5)
DC=100
FC=75
BIll_amount=Amount+DC+FC
Stop

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

Expt. No. : 1(b) **STUDENT MARK ANALYSIS**
Date : 21-11-2022

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>=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>=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>=40

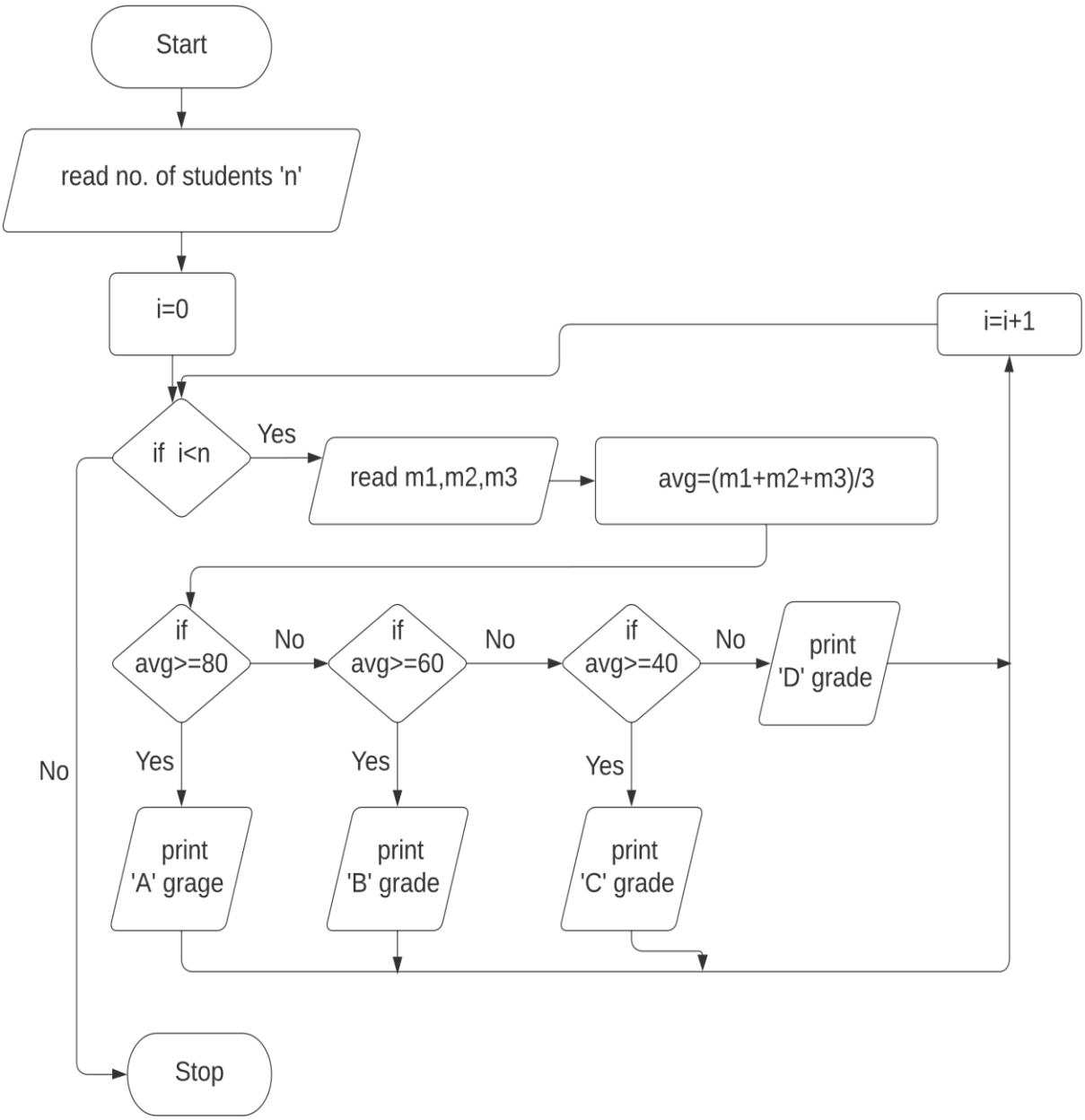
Step 4.3.2.2.1 : If Yes, print 'C-grade' and i=i+1 and go to step 4

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:


Start
read no. of students 'n'
i=0
i=i+1
if i<n
Yes
read m1,m2,m3
avg=(m1+m2+m3)/3
if avg>=80
No
if avg>=60
No
if avg>=40
No
print 'D' grade
Yes
Yes
Yes
No
print 'A' grage
print 'B' grade
print 'C' grade
Stop

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) **WEIGHT OF STEEL BARS**
Date : 29-11-2022

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 Weight=((Diameter**D)*length)/162

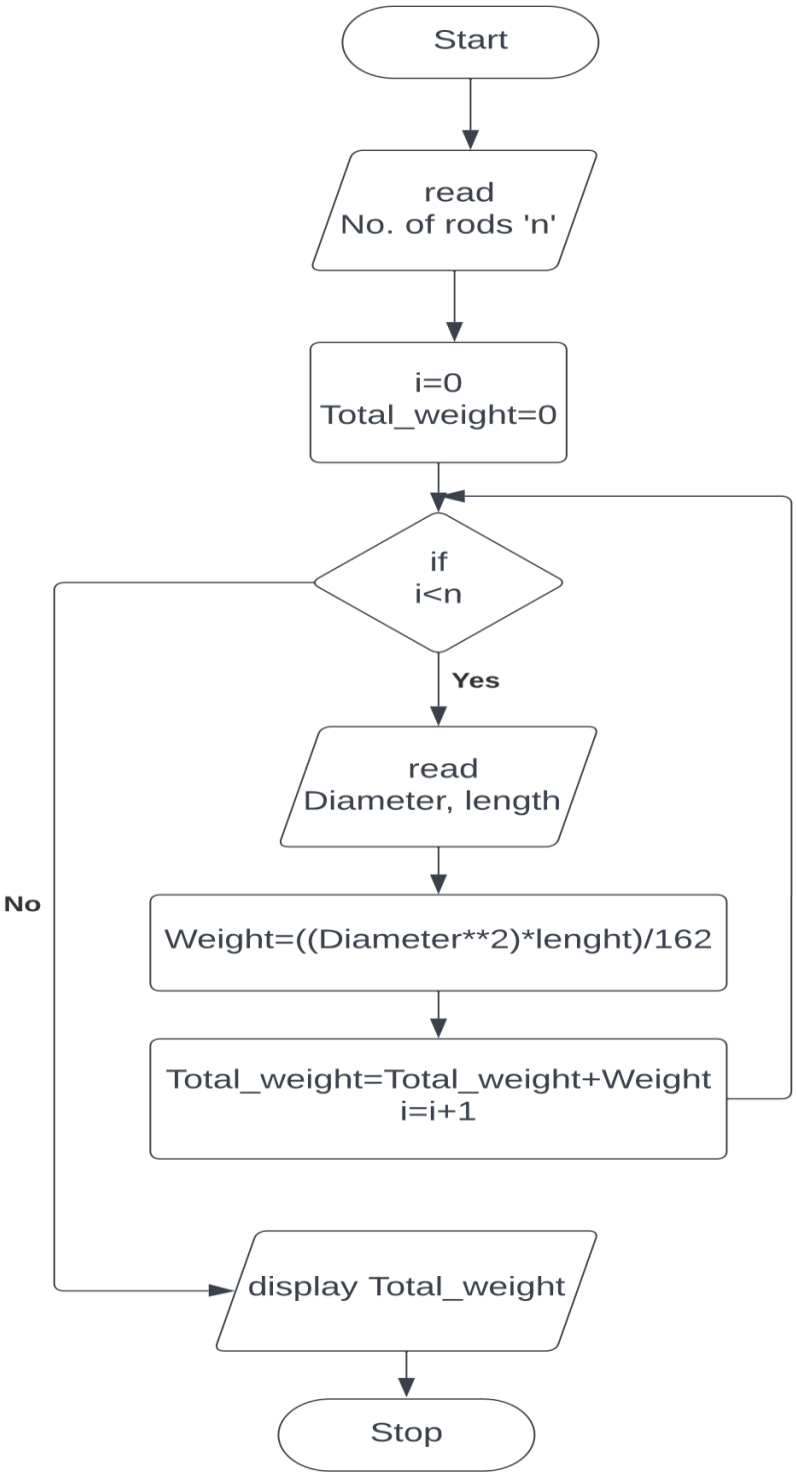
Step 5.3 : Compute Total_weight=Total_weght + Weight , i=i+1 and go to step 5

Step 5.4 : If No, then go to step 6

Step 6 : display Total_weight

Step 7 : Stop

Flowchart:


Start
read
No. of rods 'n'
i=0
Total_weight=0
if
i<n
Yes
No
read
Diameter, length
Weight=((Diameter**2)*lenght)/162
Total_weight=Total_weight+Weight
i=i+1
display Total_weight
Stop

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 – load weight

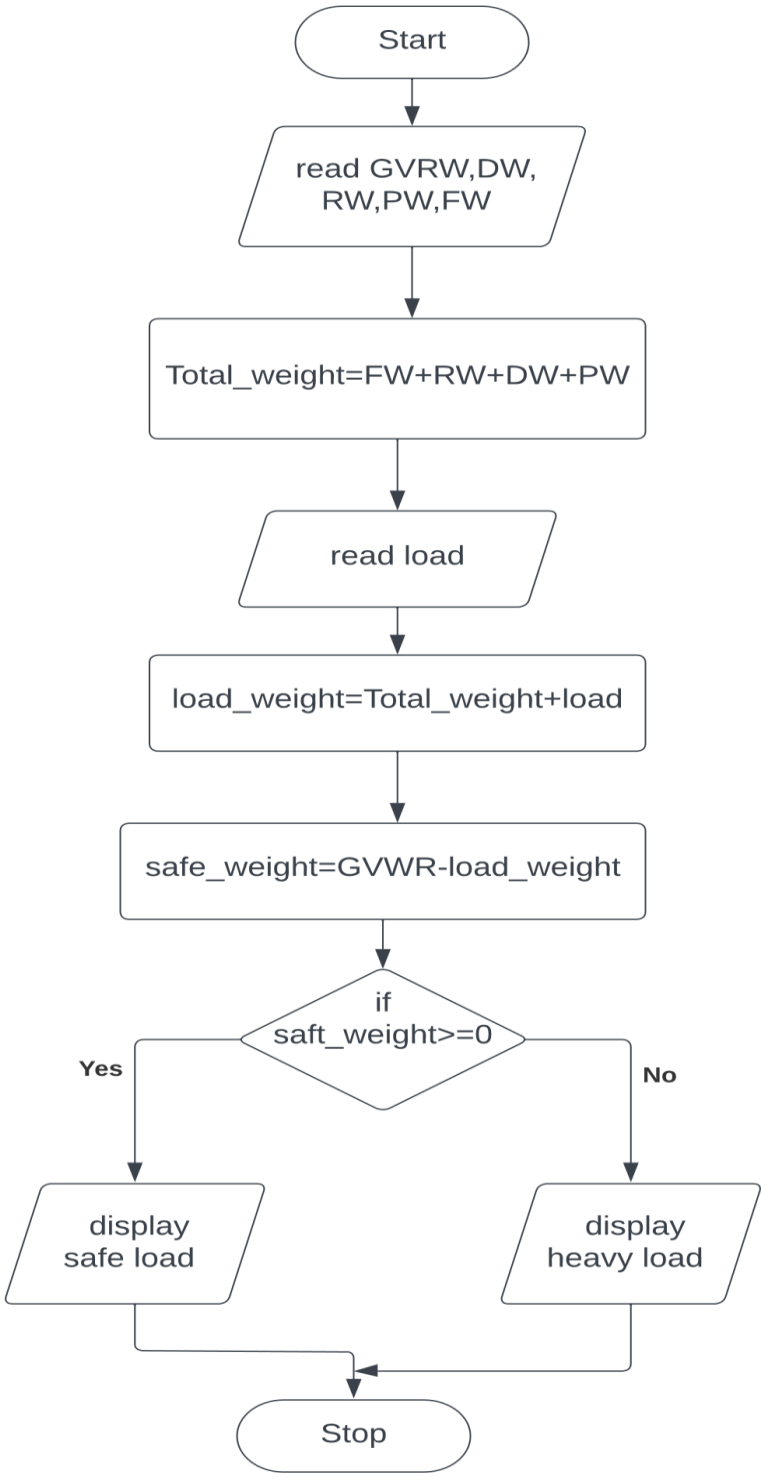
Step 7 : Check if safe weight >=0

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:


Start
read GVRW,DW,
RW,PW,FW
Total_weight=FW+RW+DW+PW
read load
load_weight=Total_weight+load
safe_weight=GVWR-load_weight
if
saft_weight>=0
Yes
No
display
safe load
display
heavy load
Stop

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 – load weight

IF safe weight>=0

    PRINT safe load

ELSE

    PRINT heavy load

END IF

END

Result:

The algorithm and flowchart written for the given problem.

Expt. No. : 1(e) **ELECTRICAL CURRENT IN THREE PHASE AC CIRCUIT**
Date : 29-11-2022

Aim:

To draw flowchart and write algorithm for the given problem

Algorithm:

Step 1 : Start

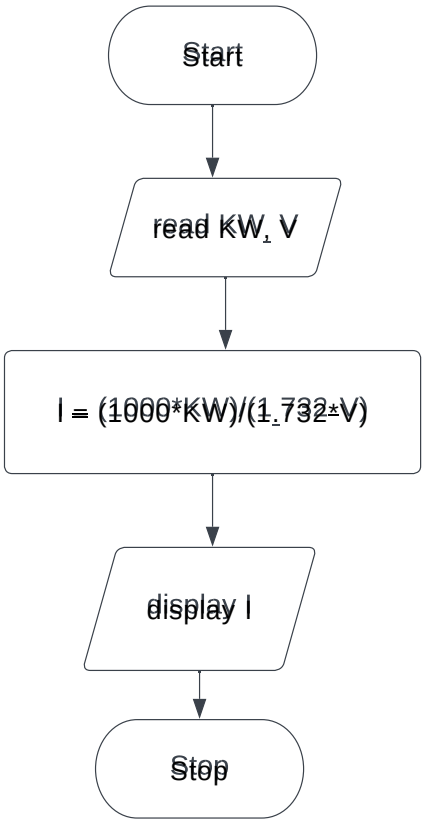
Step 2 : read the values of KW and V

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) **RETAIL SHOP BILLING**
Date : 21-11-2022

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 prince, 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 stpe 6

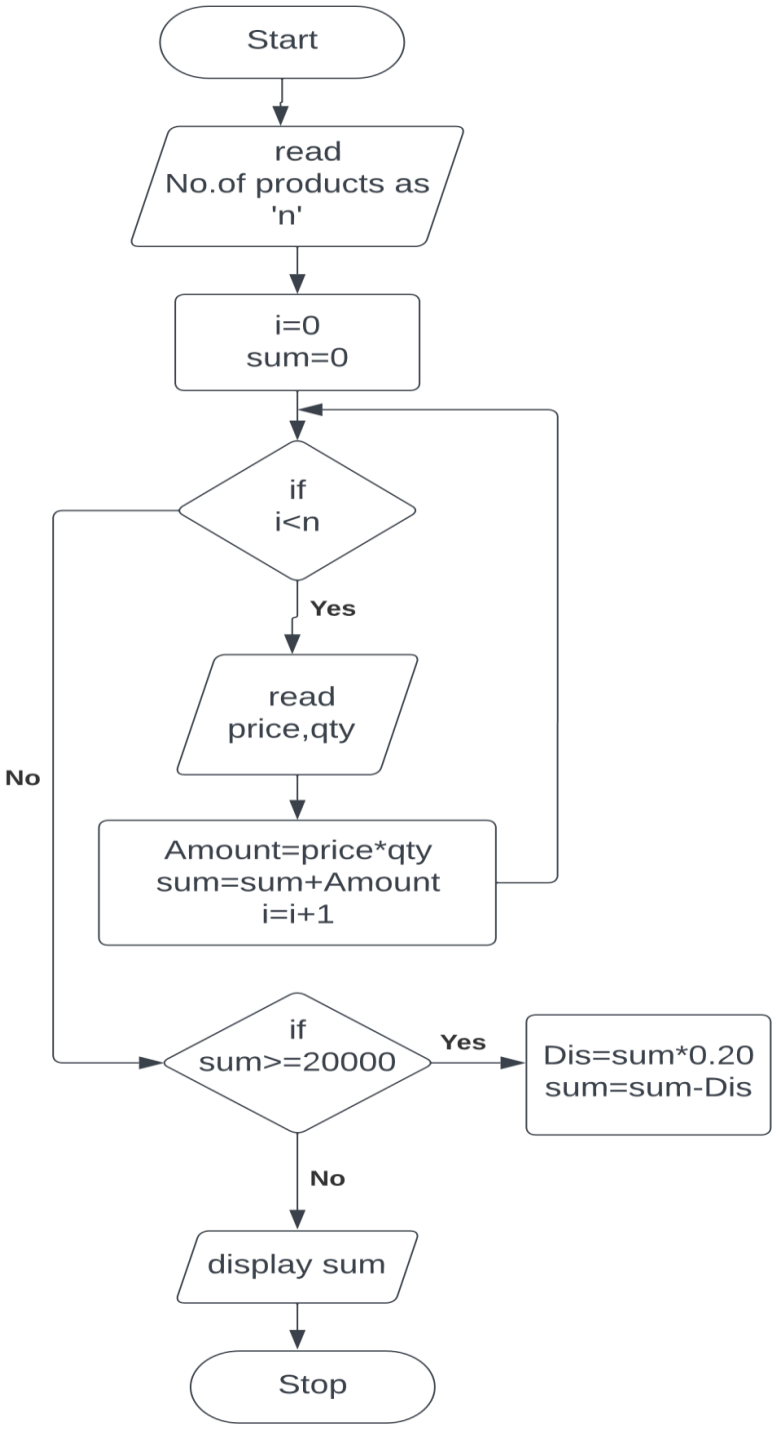
Step 6 : Check if sum>=2000

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:


Start
read
No.of products as
'n'
i=0
sum=0
if
i<n
Yes
read
price,qty
No
Amount=price*qty
sum=sum+Amount
i=i+1
if
sum>=20000
Yes
Dis=sum*0.20
sum=sum-Dis
No
display sum
Stop

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) **SINE SERIES**
Date : 29-11-2022

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

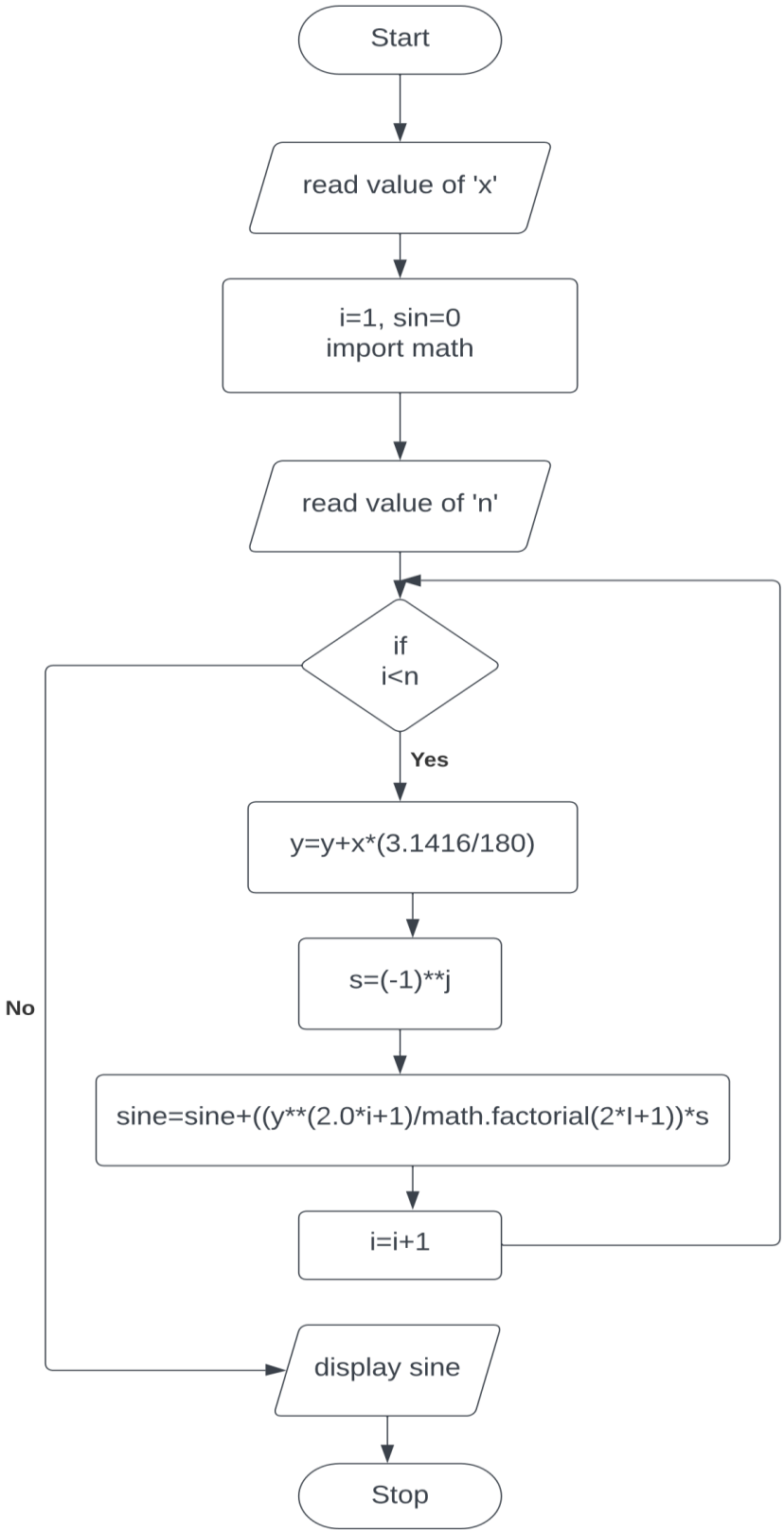
Step 4.1 : If Yes, then y=y+x*(3.1416/180), s=(-1)**j

Step 4.2 : Compute i=i+1, go to step 4

Step 5 : display sine and go to step 6

Step 6 : Stop

Flowchart:


Start
read value of 'x'
i=1, sin=0
import math
read value of 'n'
if
i<n
Yes
No
y=y+x*(3.1416/180)
s=(-1)**j
sine=sine+((y**(2.0*i+1)/math.factorial(2*I+1))*s
i=i+1
display sine
Stop

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.