DRAW FLOWCHART AND WRITE ALGORITHM FOR THE FOLLOWING PROBLEM

INDEX

TOOLS USED

- Used Diagram.net to design the flowchart
- Easy User Interface to draw the flowchart

Exp No : 1 - A **STUDENT GRADE ANALYSIS**
Date : 29-11-2022

AIM :

To draw flowchart and write algorithm for the following problem.

ALGORITHM :

STEP 1 : Start

STEP 2 : Get the number of students (N)

STEP 3 : Assign i = 0

STEP 4 : Check for the condition i < N

4.1 : If true, Get Name, Roll Number and Marks m1, m2, m3, m4, m5

4.2 : Calculate Total = m1 + m2 + m3 + m4 + m5 and Average = Total / 5

4.3 : Display Name and Roll Number

4.4 : Check for condition avg >= 30 and avg < 50

4.4.1 : If true, Display the message "Your grade is C" and increase i value by 1

4.5 : Check for condition avg > 50 and avg < 80

4.5.1 : If true, Display the message "Your grade is B" and increase i value by 1

4.6 : Check or the condition avg > 80 and avg ≤ 100

4.6.1 : If true, Display the message "Your grade is A" and increase i value by 1

4.7 : Check for the condition avg < 30

4.7.1 : If true, Display the message "Your grade is D"

STEP 5 : If false, go to step 6

STEP 6 : Stop

PSEUDO CODE:

START

GET n

INITIALIZE i=0

IF i > n THEN

GET name, Roll no, m1, m2, m3, m4, m5

CALCULATE Total = m1 + m2 + m3 + m4 + m5

Average = Total /3

PRINT name , Roll no

IF avg > = 30 and avg < 50 THEN

PRINT Your grade is C

ELIF avg > 50 and avg < 80

PRINT Your grade is B

ELIF avg > 80 and avg ≤ 100

PRINT Your grade is A

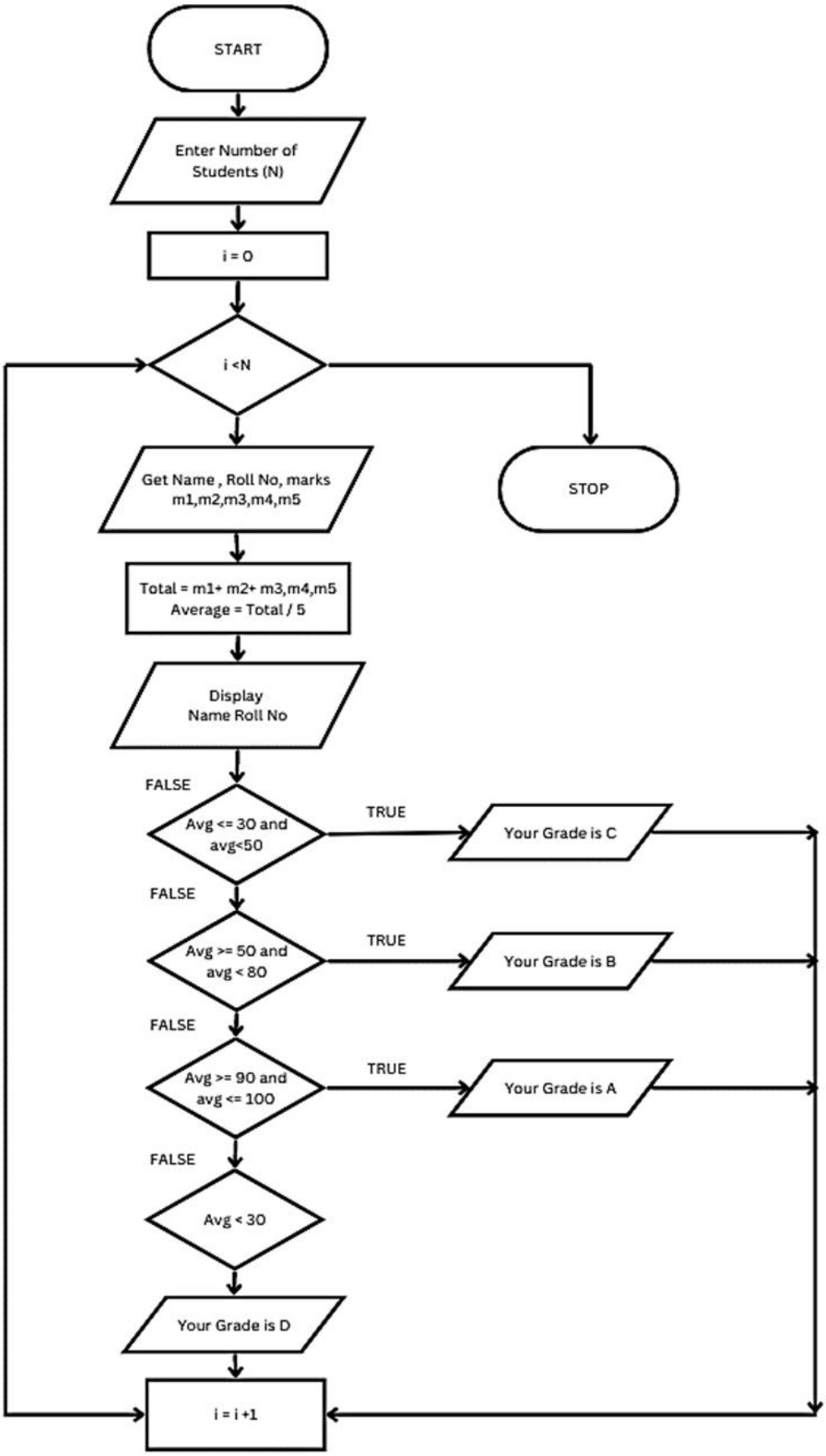
ELIF avg < 30

PRINT Your grade is D

ENDIF

STOP

FLOWCHART :



RESULT :

Thus, the algorithm and flowchart are written for the given problem.

Exp No : 1 - B **WEIGHT OF A STEEL ROD**
Date : 29-11-2022

AIM :

To draw flowchart and write algorithm for the following problem.

ALGORITHM :

STEP 1 : Start

STEP 2 : Get the number of iron rod required (N)

STEP 3 : Initialize i = 0 and Total = 0

STEP 4 : Check if the value of i is less than n

4.1 : If true, get the diameter of the rod (D)

4.1.1 : Calculate the unit weight using formula D**2 / 162 = W

4.1.2 : Get the number of rod with diameter D

4.1.3 : Calculate the weight of the rod using formula Number of Rod * D * Unit Weight

4.1.4 : Add the weight to Total

4.1.5 : Increment the value of i by 1

4.2 : If condition is false, Display total as total weight of the rod

STEP 5 : Stop

PSEUDO CODE:

START

GET n

INITIATE i = 0, Weight = 0

IF i = n THEN

    GET D

    CALCULATE W = D * 2 / 162

    CALCULATE TW = TW + W i = i+1

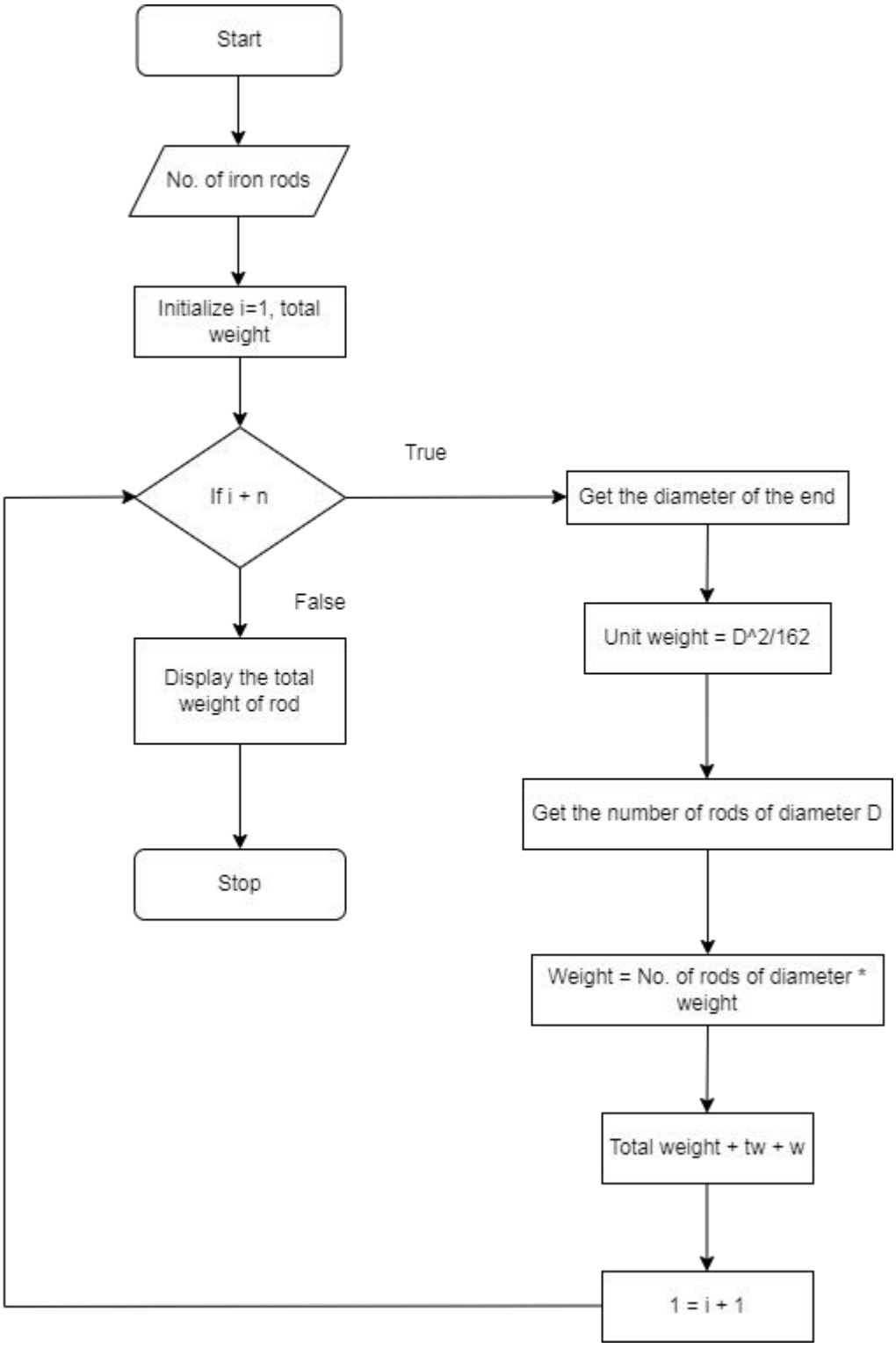
ELSE

PRINT TW

END IF

STOP

FLOWCHART :



RESULT :

Thus, the algorithm and flowchart are written for the given problem.

Exp No : 1 - C **ELECTRICITY BILL**
Date : 29-11-2022

AIM :

To draw flowchart and write algorithm for the given problem.

ALGORITHM :

STEP 1 : Start

STEP 2 : Enter Current Unit (CU)

STEP 3 : Enter Old Unit (OU)

STEP 4 : Calculate N = CU - OU

STEP 5 : Check the condition N <= 100

5.1 : If true, Calculate EC using formula FC = 0, DC = 0, EC = 0

5.2 : Calculate Total charges = FC + DC + EC

5.3 : Display amount needed to pay and go to Step 9

STEP 6 : Check for condition N <= 200

6.1 : If true, Calculate EC using formula FC = 20, DC = 18, EC = (N-100) * 1.5

6.2 : Calculate the Total charges = FC + DC + EC

6.3 : Display amount needed to pay and go to Step 9

STEP 7 : Check for condition N <= 500

7.1 : If true, Calculate EC using formula FC = 73, DC = 48, EC = (N - 100) * 3.5

7.2 : Calculate the Total charges = FC + DC + EC

7.3 : Display amount needed to pay and go to Step 9

STEP 8 : Check for condition N > 500

8.1 : If true, Calculate EC using formula FC = 75, DC = 100, EC = (400*4.5) + (N - 500) * 6

8.2 : Calculate Total charges = FC + DC + EC

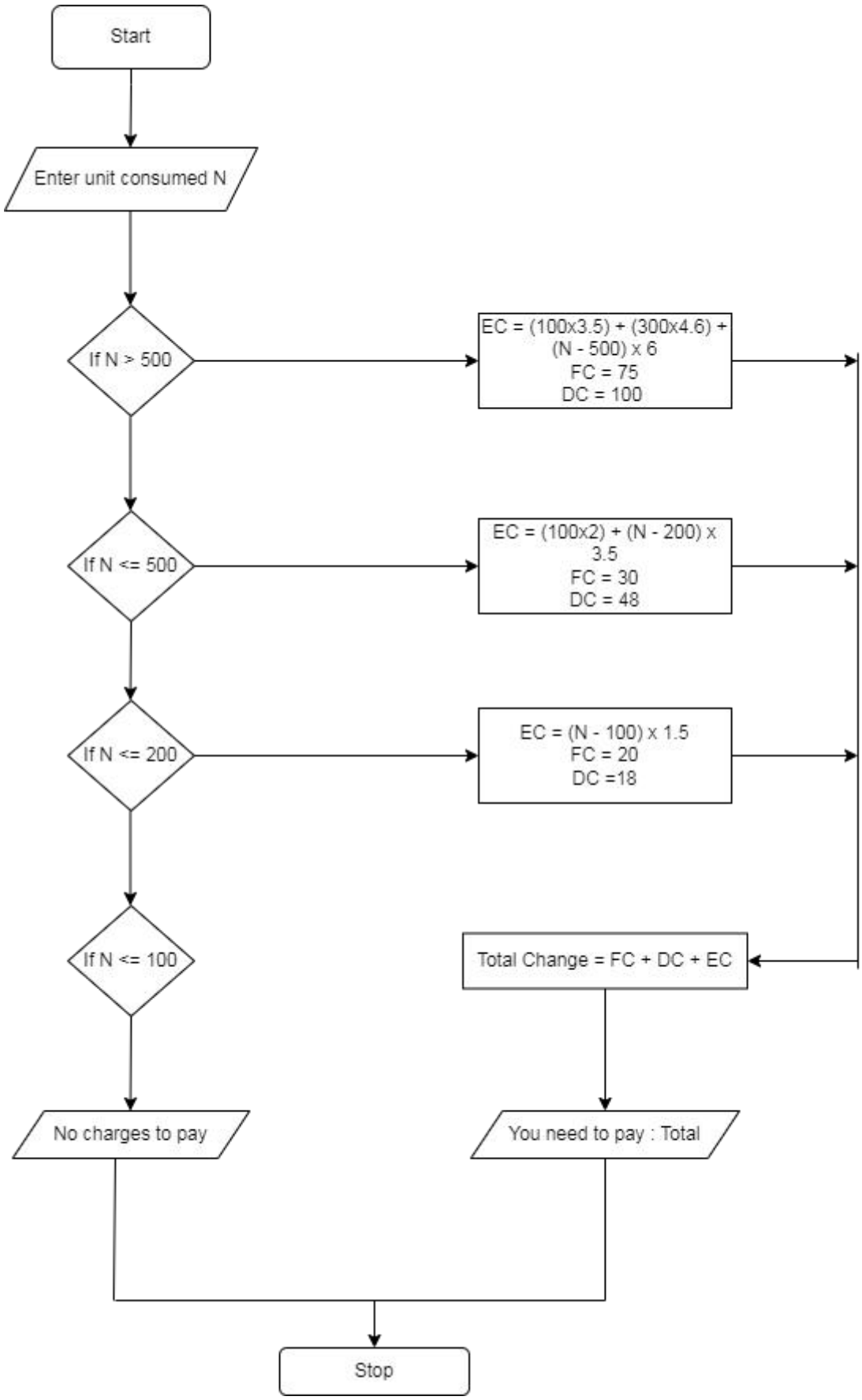
8.3 : Display amount needed to pay and go to Step 9

STEP 9 : Stop

PSEUDO CODE:

```
START
GET CU
GET OU
CALCULATE N=CU-OU
IF N < = 100 THEN
        FC = 0, DC = 0, EC = 0
        CALCULATE EC
ELIF N < = 200 THEN
        FC = 0, DC = 0, EC= 0
      CALCULATE EC = (N – 100) * 1.5
ELIF N < = 500 THEN
        FC = 0, DC = 0, EC= 0
      CALCULATE EC = ( N - 100) * 3.5
ELIF N >500 THEN
        FC = 0, DC = 0, EC = 0
                CALCULATE EC = (400 * 4.5) + (N - 500) * 6
END IF
PRINT Total Charges = FC + DC + EC
STOP
```

FLOWCHART :



RESULT :

Thus, the algorithm and flowchart are written for the given problem.

Exp No : 1 - D **RETAIL SHOP BILLING**
Date : 29-11-2022

AIM :

To draw flowchart and write algorithm for the given problem.

ALGORITHM :

STEP 1 : Start

STEP 2 : Get the Bill number

STEP 3 : Get Customer Name and Phone Number

STEP 4 : Get the value of total number of items purchased

STEP 5 : Initialize the values for i = 0, Total = 0 and Subtotal = 0

STEP 6 : Check if condition i <= n

6.1 : If true, get Item name, Price, Quantity and Discount

6.2 : Calculate the Subtotal = Quantity * Price - Discount

6.3 : Calculate the Total = Total + Subtotal

6.4 : Increment the value i and go to Step 6

STEP 7 : If false, get the GST value

STEP 8 : Calculate Total Bill Amount = Total + GST / 100

STEP 9 : Display the Total Bill Amount

STEP 10 : Stop

PSEUDO CODE:

START

GET Bill Number

GET Customer name , number

INITIALIZE I = 0, Total = 0, Net Amount = 0, Gross = 0

IF I < = n

GET Item Name, Price, Count, Discount

CALCULATE The Gross = Price * Count

CALCULATE The Disc = Gross * Discoun t%

CALCULATE The Subtotal = Gross - Disc

CALCULATE the Total = Total + Net Amount

i = i + 1

ELSE

GET GST

CALCULATE GST AMOUNT = (GROSS * GST%) / 100.

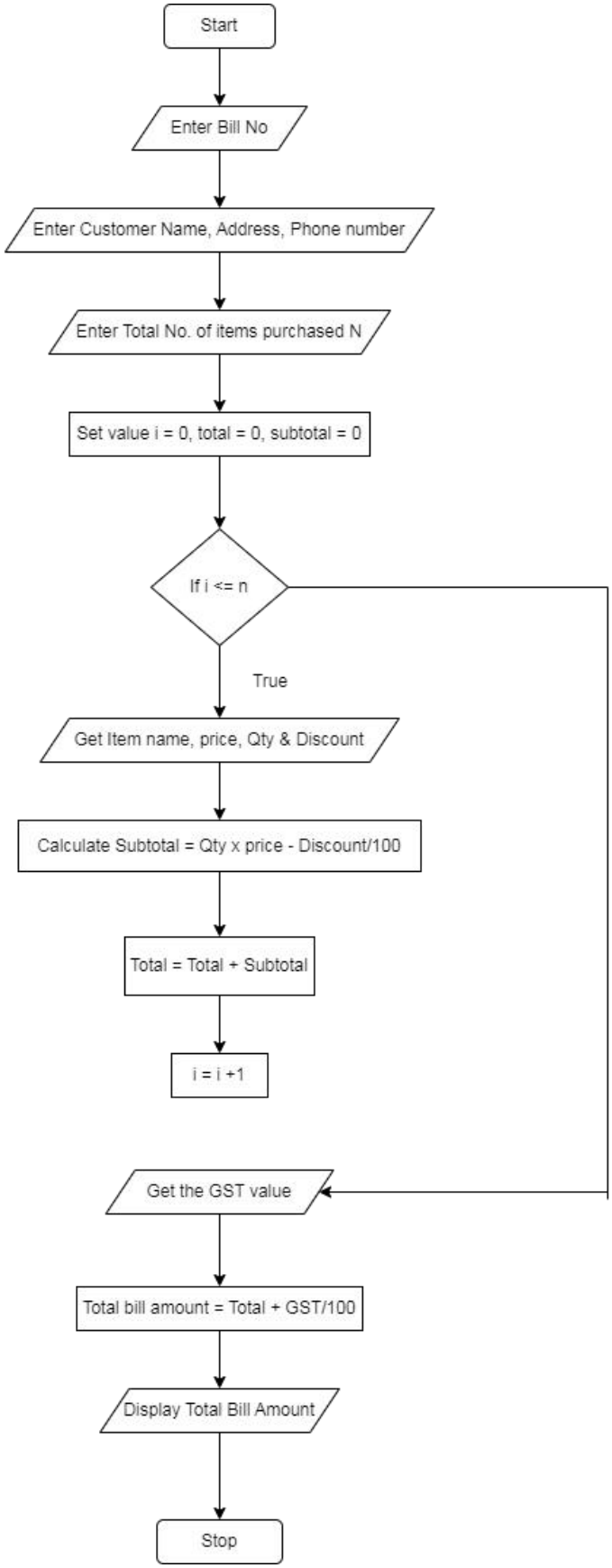
CALCULATE the BILL Price = Total + GST Amount

PRINT Bill Price

ENDIF

STOP

FLOWCHART :



RESULT :

Thus, the algorithm and flowchart are written for the given problem.

Exp No : 1 - E **WEIGHT OF A MOTOR BIKE**
Date : 29-11-2022

AIM :

To draw flowchart and write algorithm for the given problem.

ALGORITHM :

STEP 1 : Start

STEP 2 : Get gross vehicle weight Rating GVWR

STEP 3 : Get Dry weight (DW)

STEP 4 : Get Fuel weight (FW)

STEP 5 : Get Raider weight (RW)

STEP 6 : Get Passenger weight (PW)

STEP 7 : Calculate Total weight = DW+FW+RW+PW

STEP 8 : Get Load Value

STEP 9 : Calculate safe weight = GVWR - Load weight.

STEP 10 : Check the condition safe weight >= 0

10.1 : If true, print the message "You have a safe load and you can drive" go to Step 11

10.2 : If false, print the message "Reduce the load and then drive"

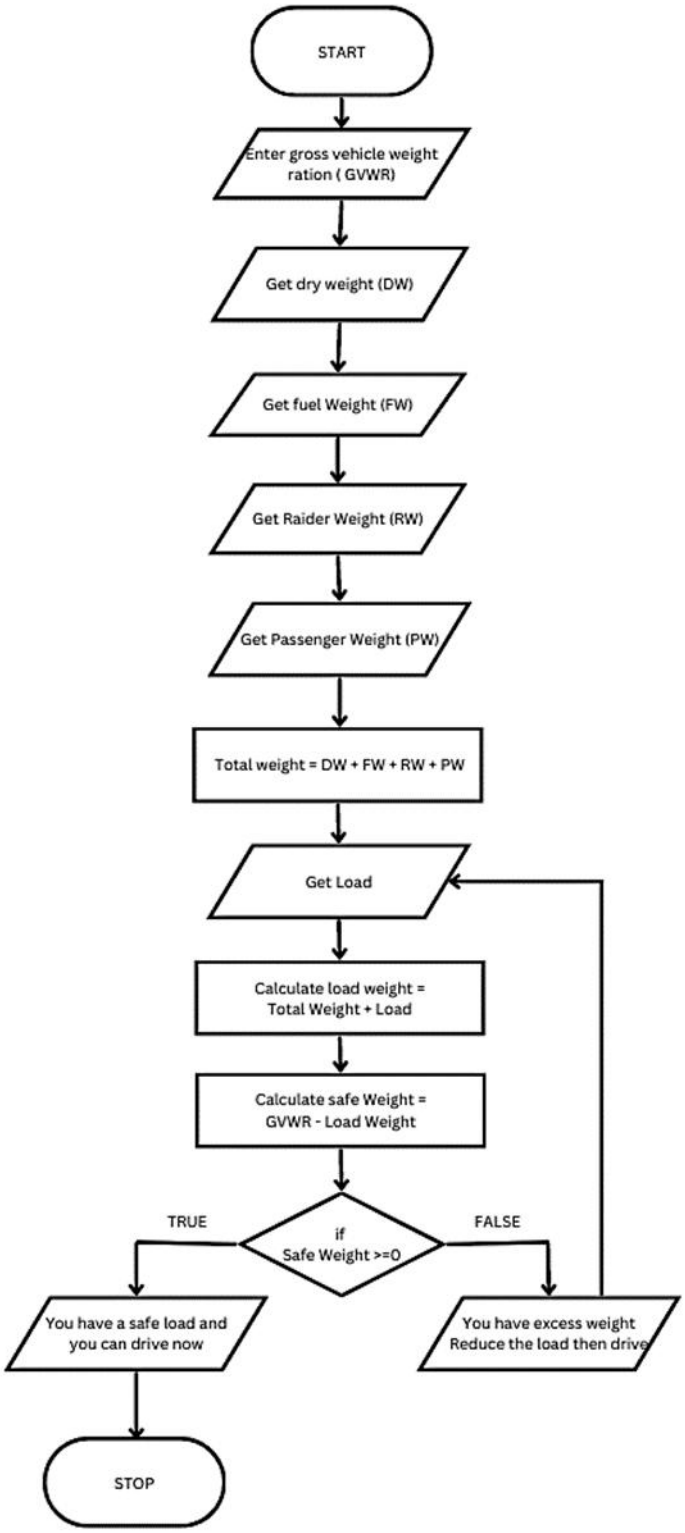
10.2.1 : Go to Step 8

STEP 11 : Stop

PSEUDO CODE:

START
GET GVWR
GET DW
GET FW
GET RW
GET PW
CALCULATE Total Weight = DW + FW+ RW + PW
GET Load
CALCULATE Load Weight = Total Weight + Load
CALCULATE Safe Weight = GVWR = Load Weight
IF Safe Weight >= 0 Then
PRINT You have a safe load and you can drive
ELSE
PRINT You have excess weight, Reduce the load and then drive
ENDIF
STOP

FLOWCHART :



RESULT :

Thus, the algorithm and flowchart are written for the given problem.

Exp No : 1 - F **ELECTRIC CURRENT IN 3 PHASE AC CIRCUIT**
Date : 29-11-2022

AIM :

To draw flowchart and write algorithm for the given problem.

ALGORITHM :

STEP 1: Start

STEP 2: Get value of Power Factor (PF)

STEP 3: Get value of Current (I)

STEP 4: Get value of voltage (V)

STEP 5: Calculate P using the formula P = √3 * PF * I * V

STEP 6: Display the value of P

STEP 7: Stop

PSEUDO CODE:

START

GET P

GET I

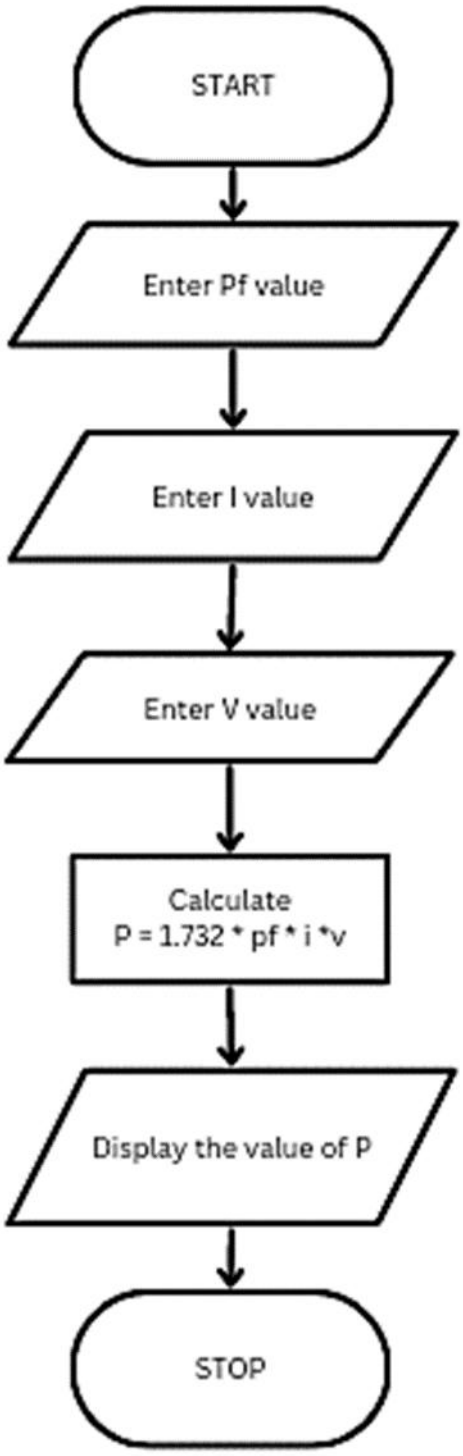
GET V

CALCULATE P = 1.732 * I * V

PRINT P

STOP

FLOWCHART :



RESULT :

Thus, the algorithm and flowchart are written for the given problem.

Exp No : 1 - G **SINE SERIES**
Date : 29-11-2022

AIM :

To draw flowchart and write algorithm for the given problem.

ALGORITHM :

STEP 1 : Start

STEP 2 : Get the value of x

STEP 3 : Initialize the values of 1 = 1, sine = 0 and import moth

STEP 4 : Get the value of N

STEP 5 : Check weather value do i less than N

5.1 : If condition is true, convent a to radian and adding it to y

5.1.1 : Let value of s be (-1) to the power I

5.1.2 : Now calculate the series using the formula

Sine = sine + ((y * * 2 * i + 1)) / math factorial (21 + 4) + S

5.1.3 : Increment value of i by 1

5.2 : If condition is false display sine

STEP 6 : Stop

PSEUDO CODE:

START

GET x

INITIALIZE i=1,sine=0

IMPORT math

GET n

IF i < n

CALCULATE y = y + x (3.416 % 100)

ASSIGN s = (-1) ** i

CALCULATE Sine = sine + ((y**2* i +1))/ math factorial (2*i*1) S.

i=i+1

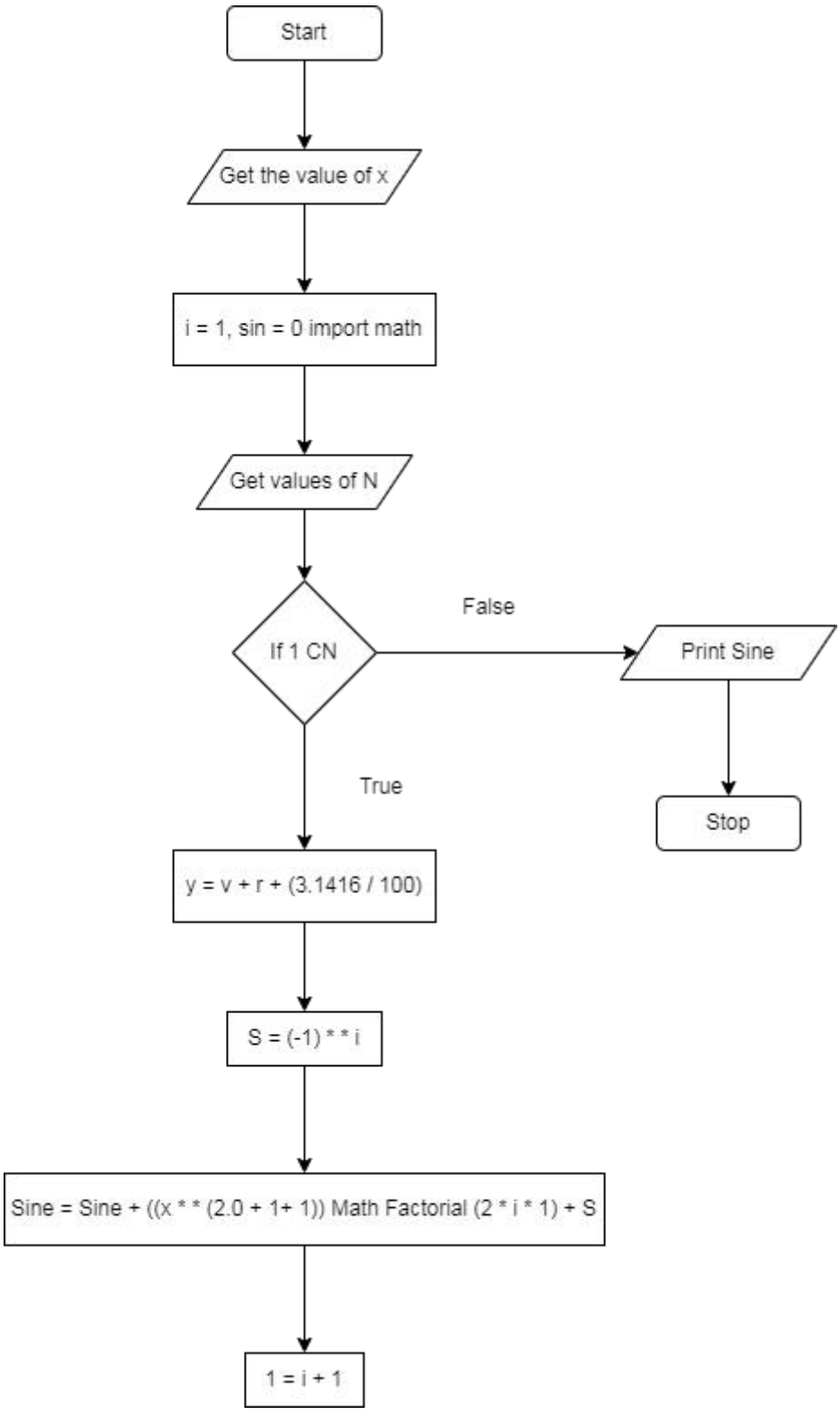
ELSE

PRINT Sine

ENDIF

STOP

FLOWCHART :

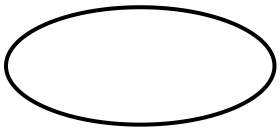
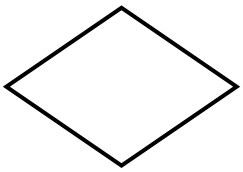
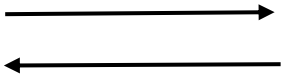
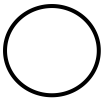


RESULT :

Thus, the algorithm and flowchart are written for the given problem.

FLOWCHART:

- Flowchart A graphical representation of the logic for the problem solving
- The purpose of the flowchart is making the logic of the program in a visual representation
- Flowcharts is a diagram made up of boxes, diamonds and other shapes, connected by arrows
- Each shape represents a step-in process and arrows show the order in which they occur

	OVAL – TERMINAL SYMBOL
	Parallelogram - Input/ Output symbol
	Rectangle - Process symbol
	Diamond- Decision symbol
	Arrow lines - Flow lines
	To represent a function
	Circle – Connector

TOOLS USED TO DRAW FLOWCHART

1. Smart Draw

2. Canva

3. Diagrams.net

4. Luidchart

5. Visme

6. Zen Flow Chart

7. Visual Paradiagram

8. Creat
9. ly

10. Google Draw