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

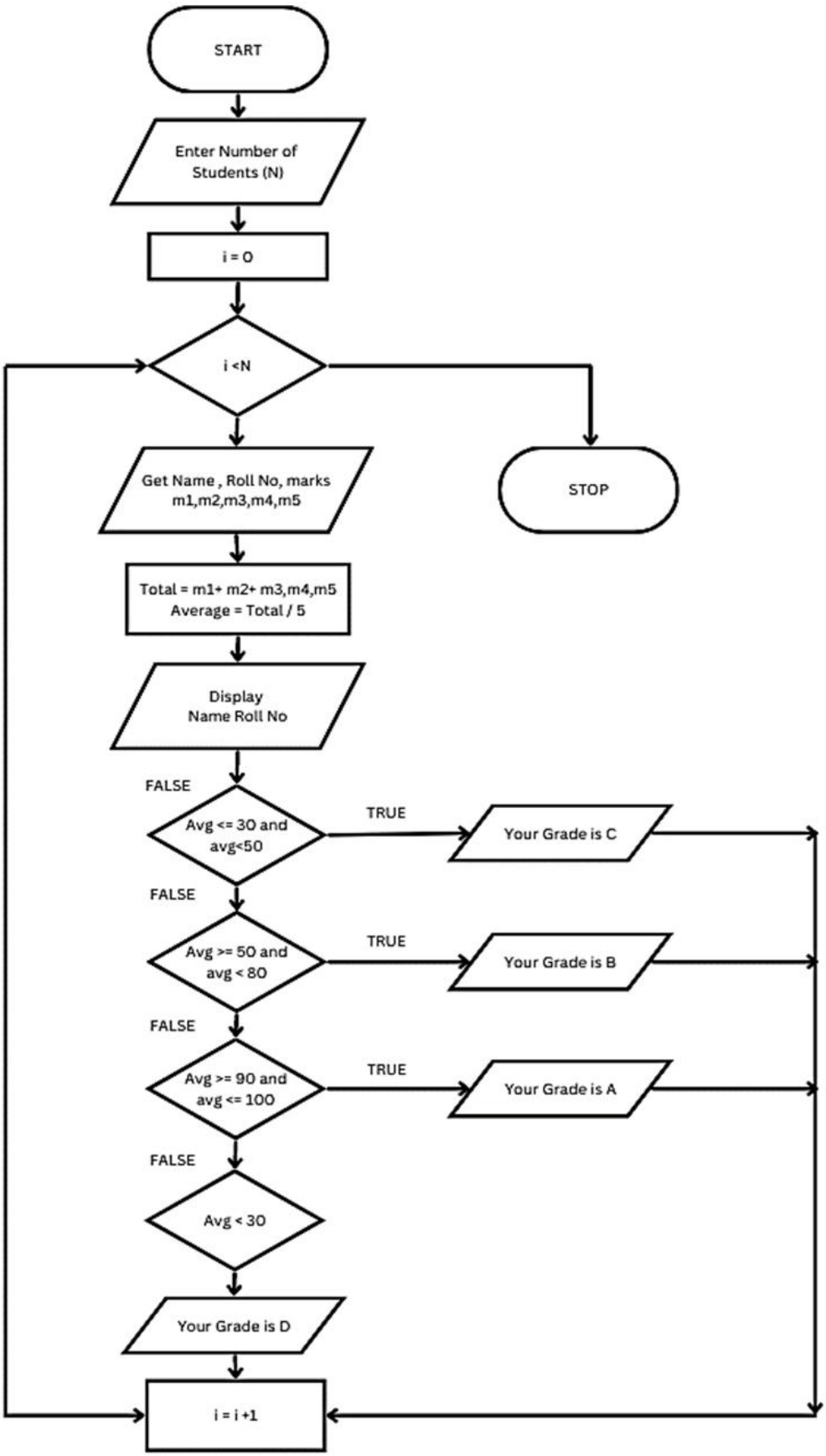
ELIF avg < 30

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

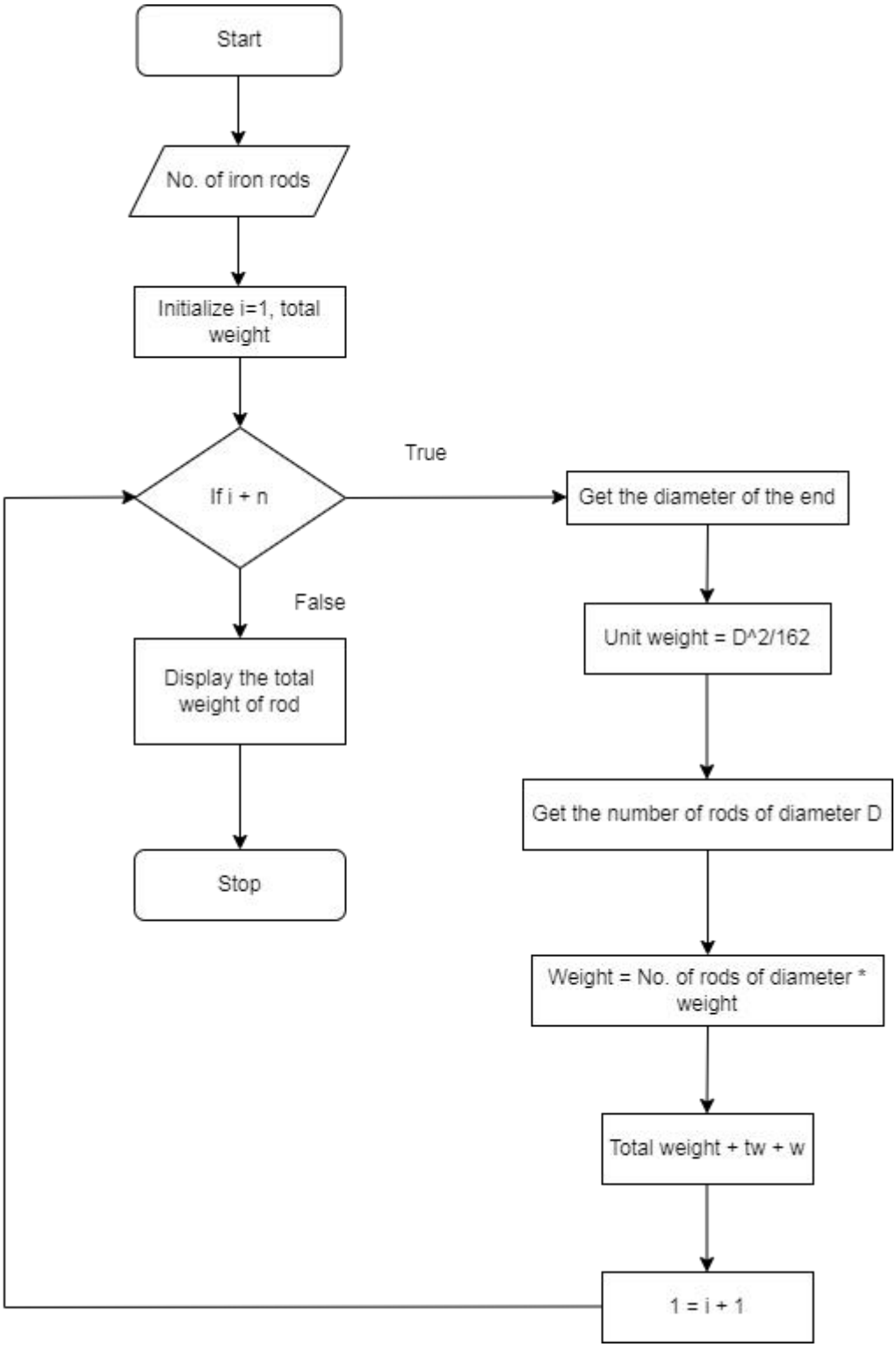
ELSE

PRINT TW

END IF

STOP

FLOWCHART :


Start
No. of iron rods
Initialize i=1, total weight
If i + n
True
False
Get the diameter of the end
Unit weight = D^2/162
Get the number of rods of diameter D
Weight = No. of rods of diameter * weight
Total weight + tw + w
1 = i + 1
Display the total weight of rod
Stop

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

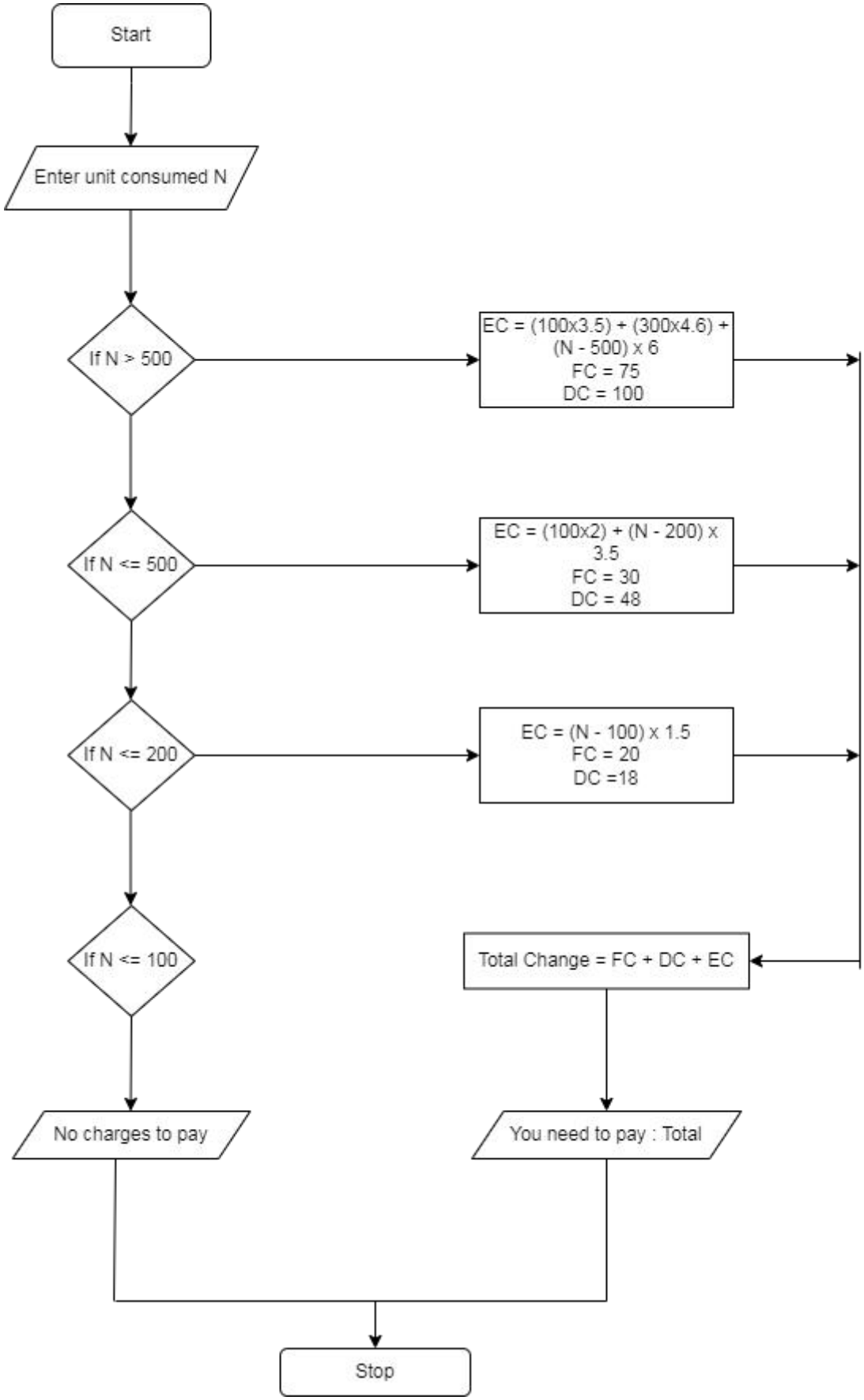
8.3 : Display amount needed to pay and go to Step 9

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.

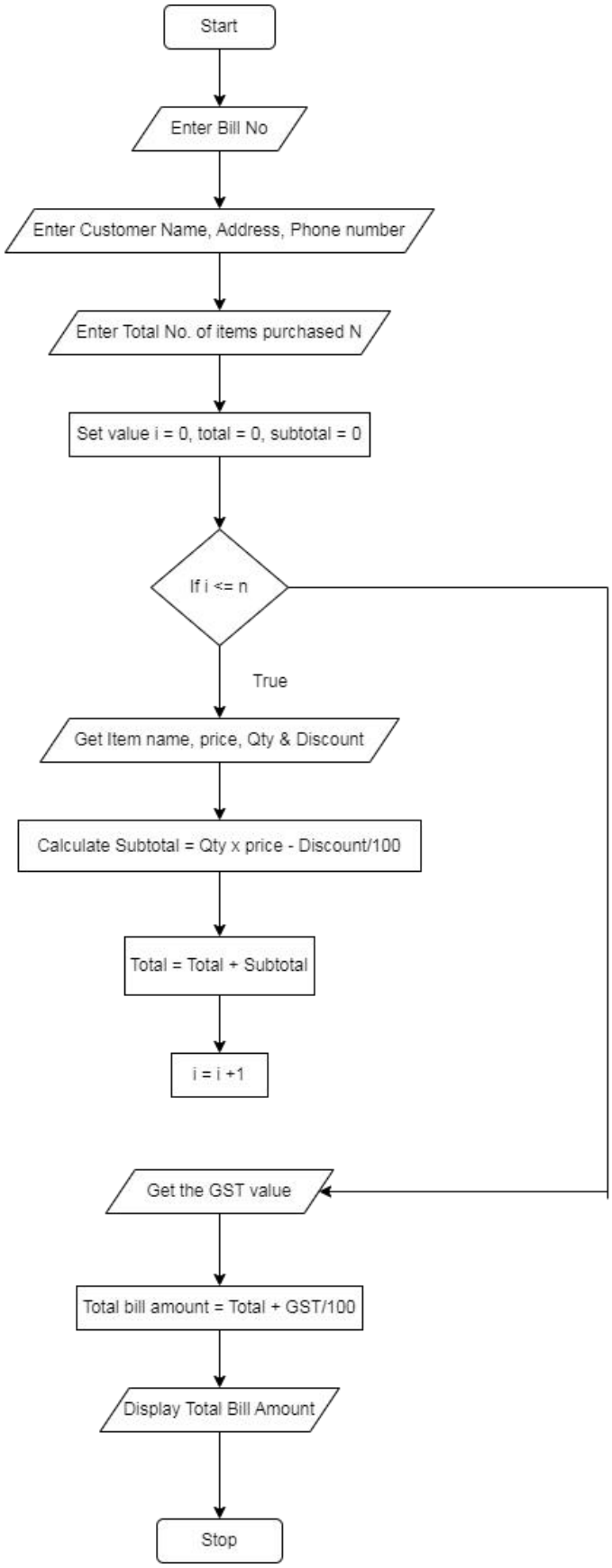
CALCULATE the BILL Price = Total + GST Amount

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

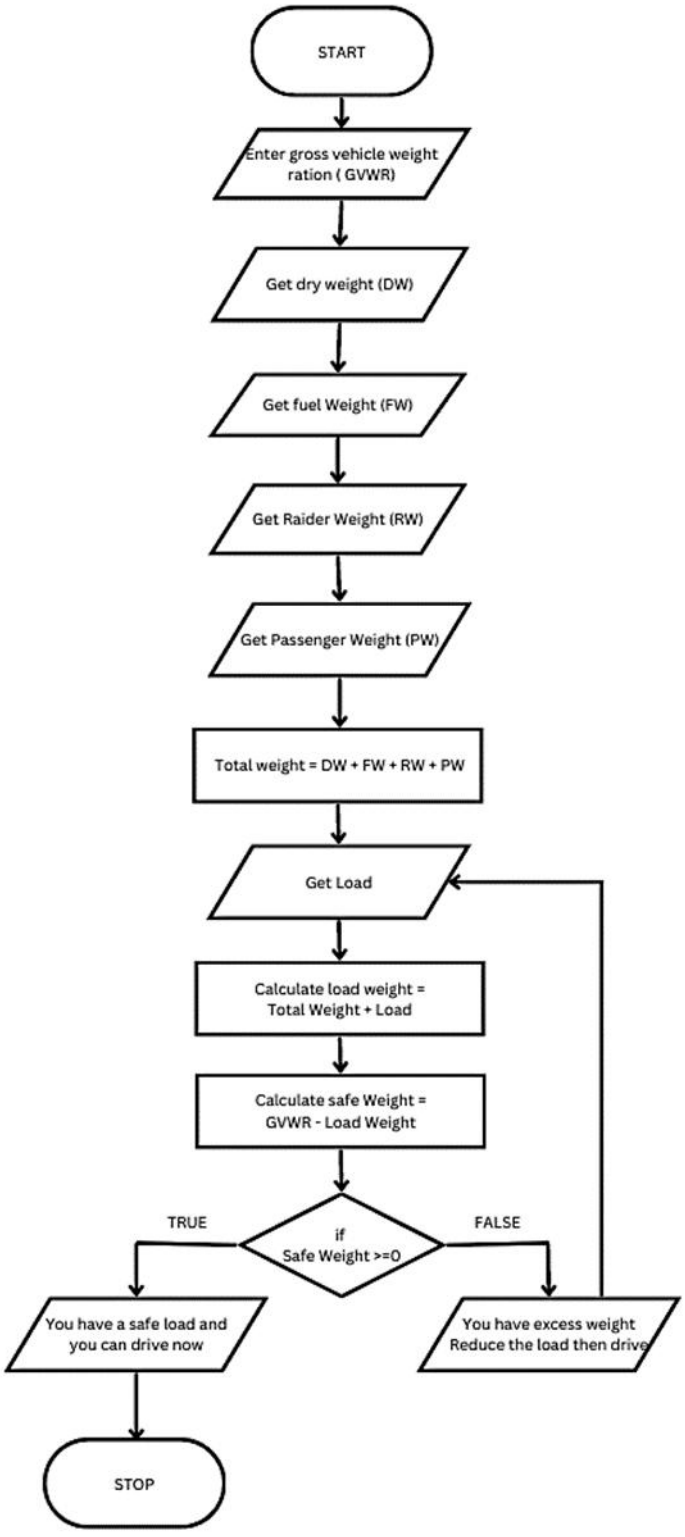
ELSE

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

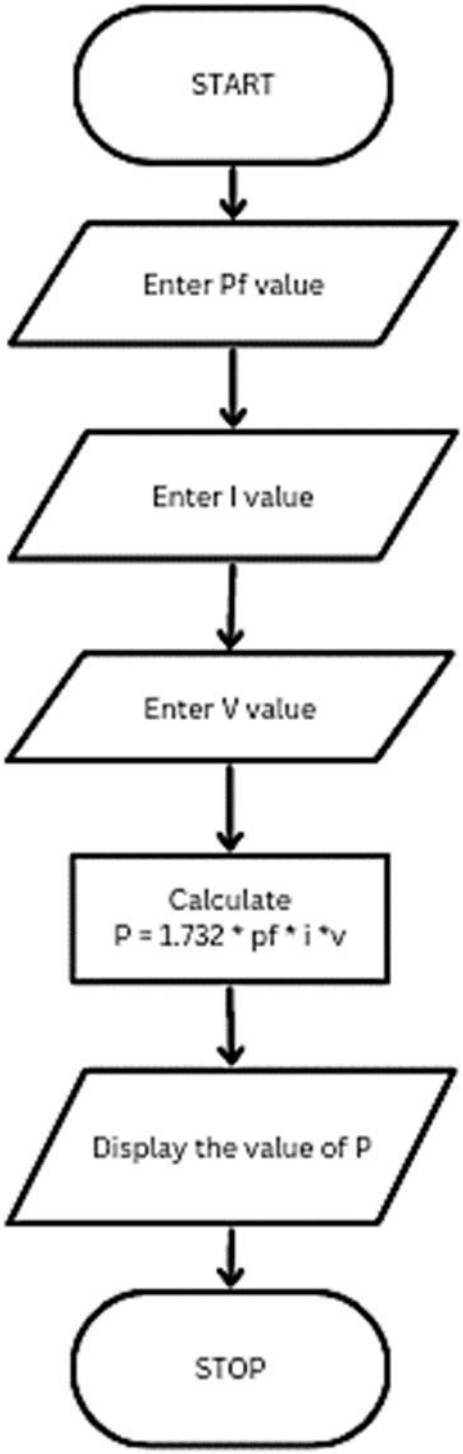
GET V

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

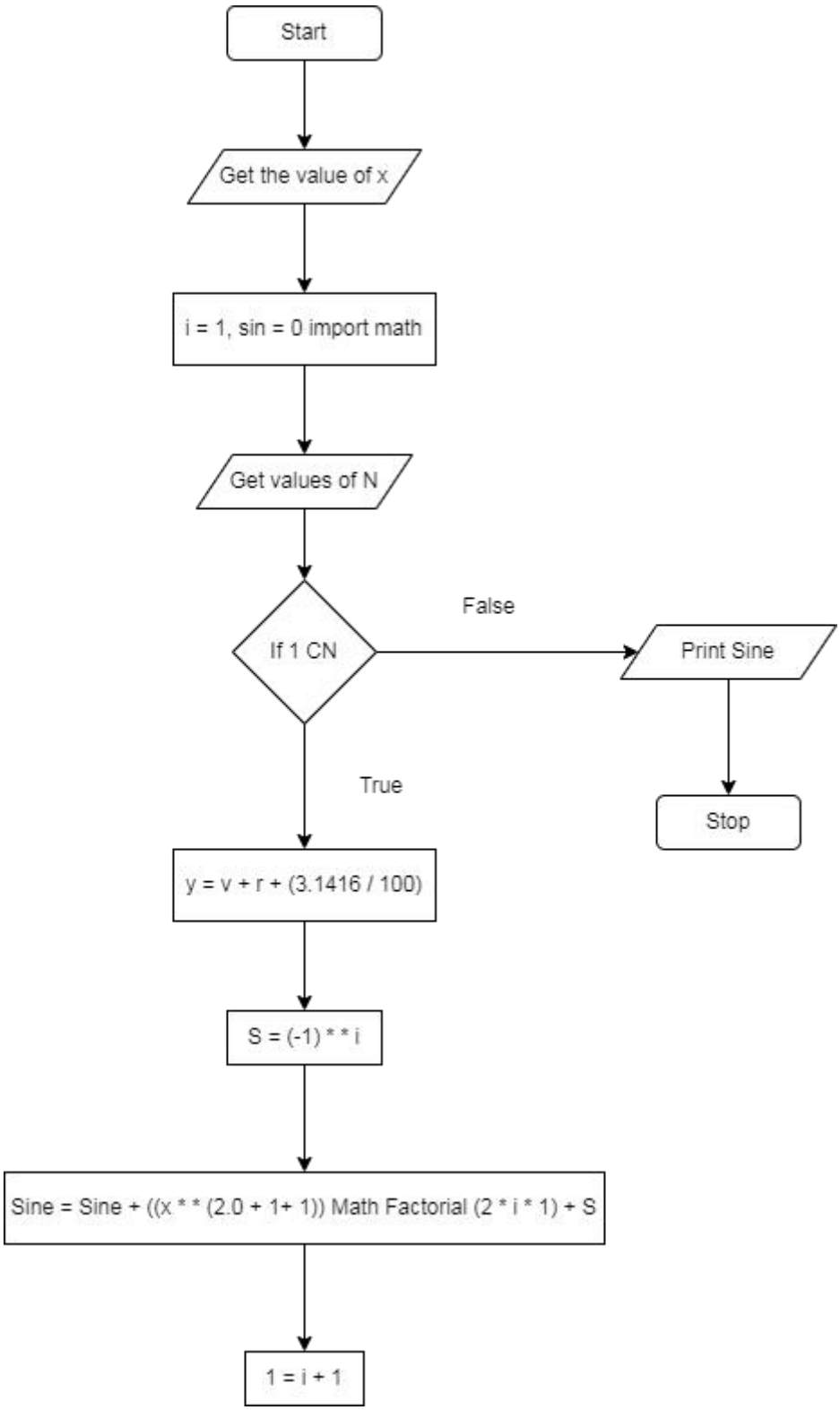
ELSE

PRINT Sine

ENDIF

STOP

FLOWCHART :

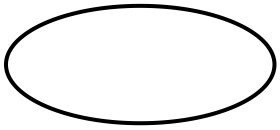
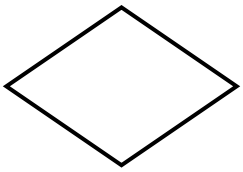
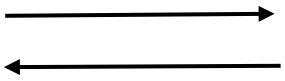

Start
Get the value of x
i = 1, sin = 0 import math
Get values of N
If 1 CN
False
Print Sine
Stop
True
y = v + r + (3.1416 / 100)
S = (-1) * * i
Sine = Sine + ((x * * (2.0 + 1+ 1)) Math Factorial (2 * i * 1) + S
1 = i + 1

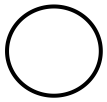
RESULT :

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. Lucidchart
5. Visme
6. Zen Flow Chart
7. Visual Paradiagram
8. Creatly
9. Google Draw