DRAW FLOWCHART AND WRITE ALGORITHM FOR THE FOLLOWING PROBLEM

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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 write Algoritm , Pseudocode and draw the Flowchart for student grade analysis

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

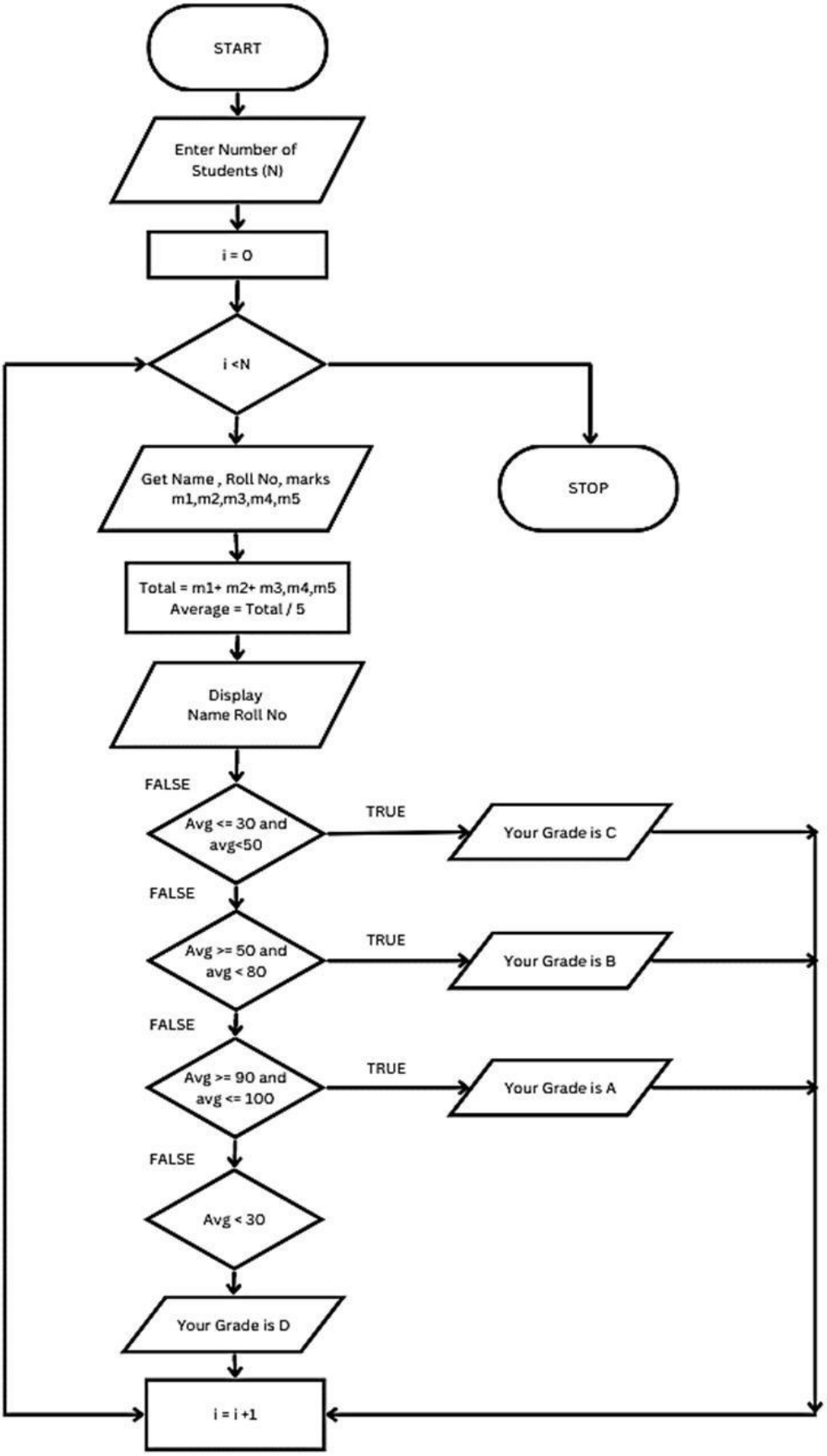
4.7 : Check for the condition avg < 30

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

STEP 5 : If false, go to step 6

STEP 6 : Stop

FLOWCHART :


START
Enter Number of Students (N)
i = 0
i <N
STOP
Get Name , Roll No, marks m1,m2,m3,m4,m5
Total = m1+ m2+ m3,m4,m5
Average = Total / 5
Display Name Roll No
FALSE
Avg <= 30 and avg<50
TRUE
Your Grade is C
FALSE
Avg >= 50 and avg < 80
TRUE
Your Grade is B
FALSE
Avg >= 90 and avg <= 100
TRUE
Your Grade is A
FALSE
Avg < 30
Your Grade is D
i = i +1

PSEUDOCODE:

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

RESULT :

Thus, the Algorithm , Pseudocode and Flowchart are written for the given problem.

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

AIM :

To write Algorithm , Pseudocode and draw the Flowchart for finding weight of a steel bar/rod.

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

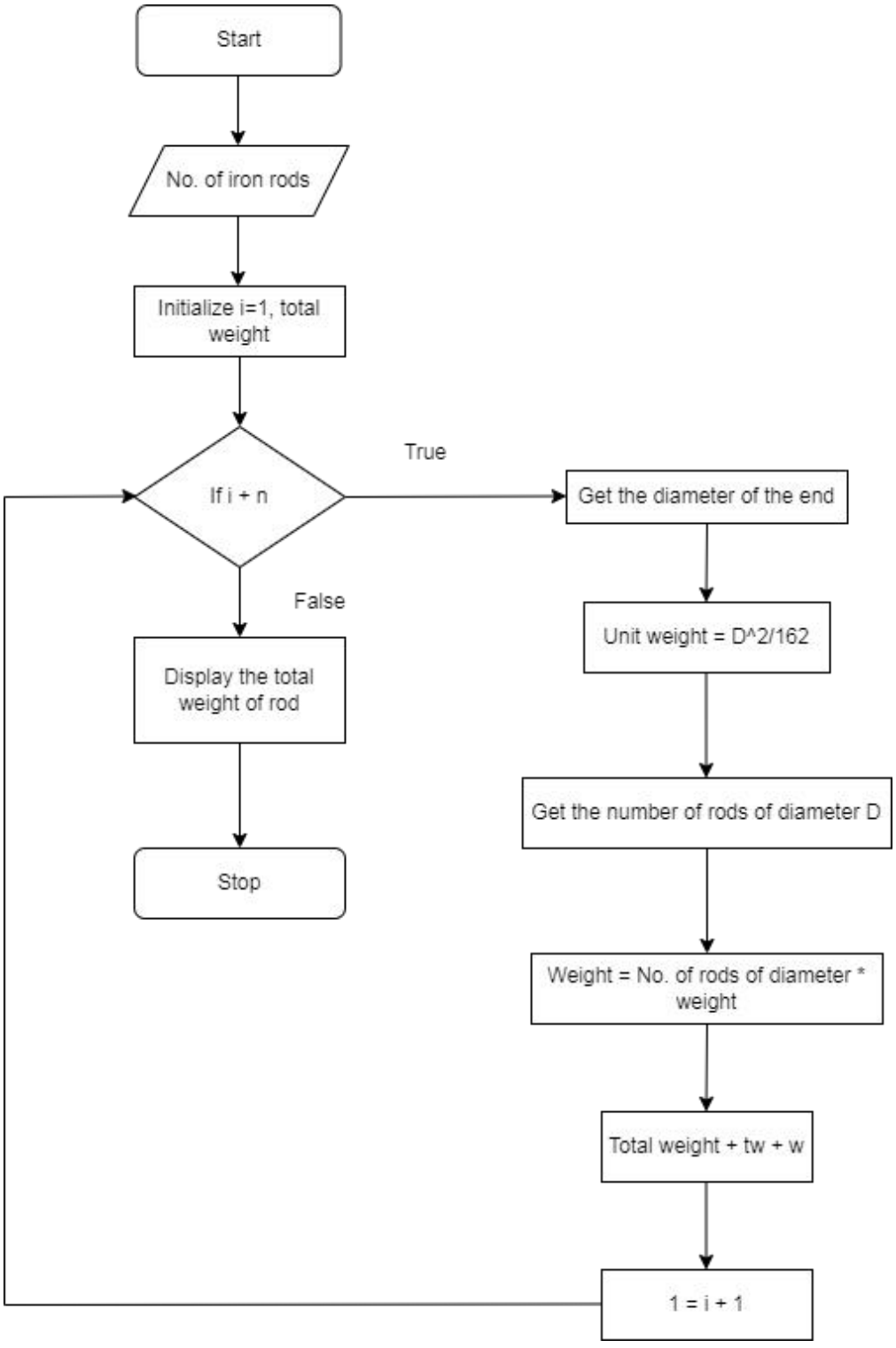
4.1.4 : Add the weight to Total

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

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

PSEUDOCODE:

START

GET n

INITIATE I = 0 , Weight = 0

IF I = n THEN

    GET D

    CALCULATE W = D 8 2 / 162

    CALCULATE TW = TW + W , i = i + 1

ELSE

PRINT TW

ENDIF

STOP

RESULT :

Thus, the Algorithm , Pseudocode and Flowchart are written for the given problem.

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

AIM :

To write Algoritm , Pseudocode and draw the Flowchart for generating the electricity bill.

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

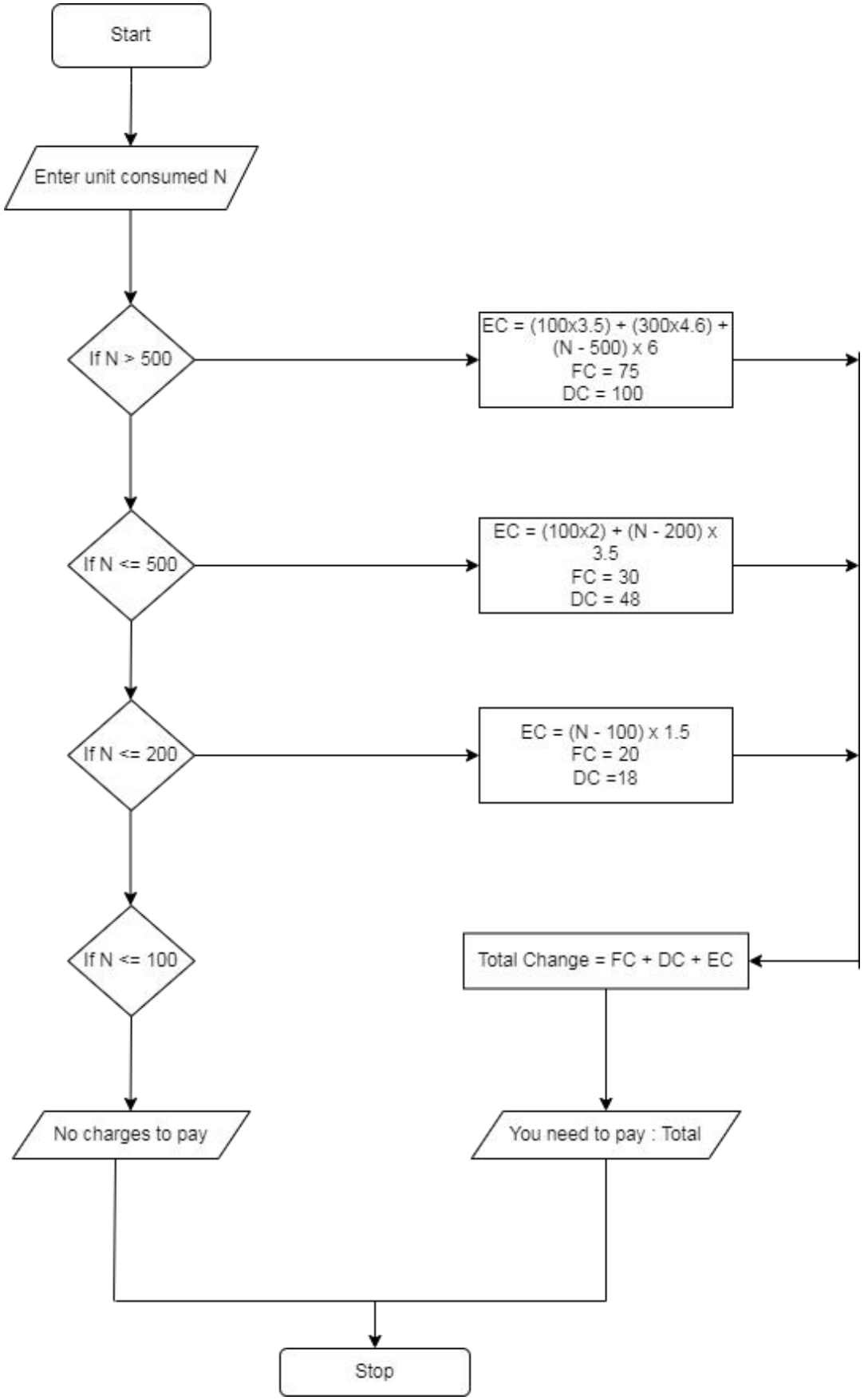
8.1 : If true, Calculate EC using formula FC = 75,DC = 100,EC = (400*4.5) +(N – 500)*6

8.2 : Calculate Total charges = FC + DC + EC

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

STEP 9 : Stop

FLOWCHART :


Start
Enter unit consumed N
If N > 500
EC = (100x3.5) + (300x4.6) + (N - 500) x 6
FC = 75
DC = 100
If N <= 500
EC = (100x2) + (N - 200) x 3.5
FC = 30
DC = 48
If N <= 200
EC = (N - 100) x 1.5
FC = 20
DC =18
If N <= 100
Total Change = FC + DC + EC
No charges to pay
You need to pay : Total
Stop

PSEUDOCODE:

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) * 31.5

ELIF N < = 500

    FC = 0 , DC = 0 , EC = 0

    CALCULATE EC = (400 8 4.5 0 + (N – 500) * 6

ENDIF

PRINT Total Charges = FC + DC + EC

STOP

RESULT :

Thus, the Algorithm , Pseudocode and Flowchart are written for the given problem.

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

AIM :

To write Algoritm , Pseudocode and draw the Flowchart for Retail Shop Billing.

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

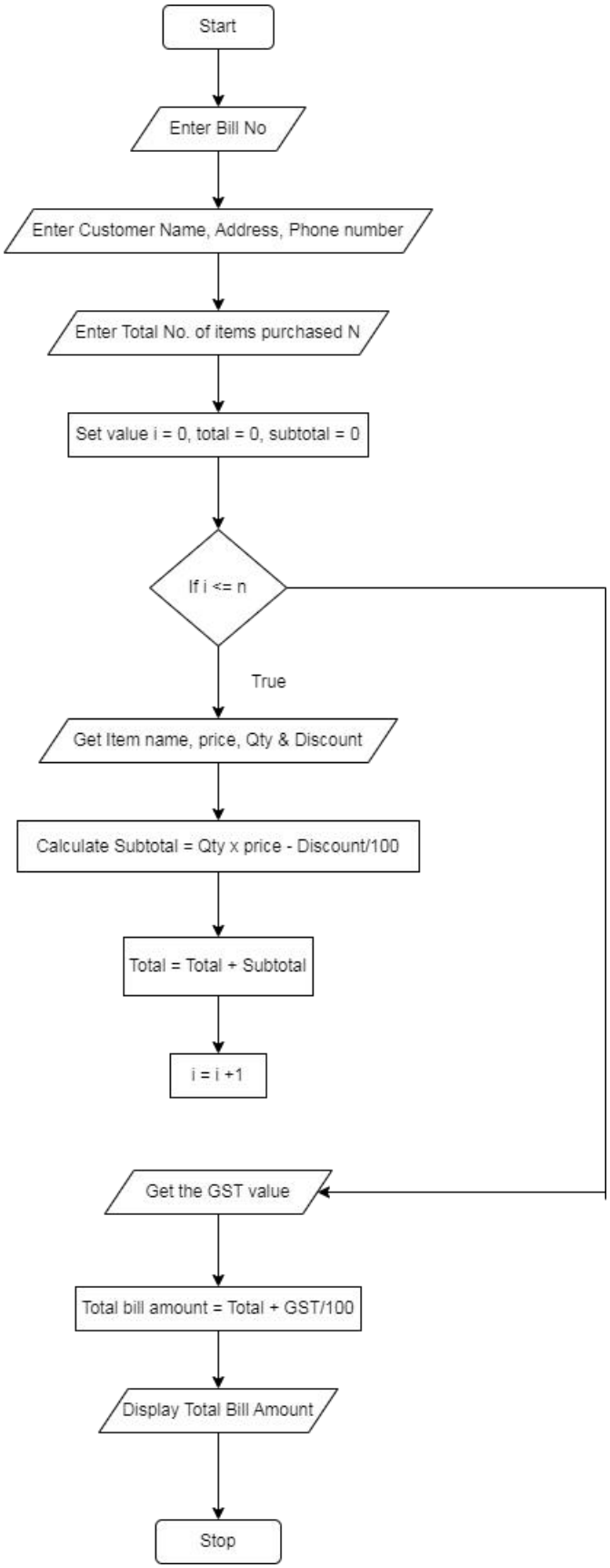
STEP 7 : If false, get the GST value

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

STEP 9 : Display the Total Bill Amount

STEP 10 : Stop

FLOWCHART :


Start
Enter Bill No
Enter Customer Name, Address, Phone number
Enter Total No. of items purchased N
Set value i = 0, total = 0, subtotal = 0
If i <= n
True
Get Item name, price, Qty & Discount
Calculate Subtotal = Qty x price - Discount/100
Total = Total + Subtotal
i = i +1
Get the GST value
Total bill amount = Total + GST/100
Display Total Bill Amount
Stop

PSEUDOCODE:

START GET Bill Number

GET Customer name , number

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

IF I < =n

GET Item name , Prize , Count , Discount

CALCULATE The Gross = Price * Count

CALCULATE The Disc = Gross * Discount t%

CALCULATE The Total = Total + Net Amount

I = I + 1

ELSE

GET GST

CALCULATE GST Amount = (Grossn * GST %) / 100

CALCULATE The Bill Price = Total + GST Amount

PRINT Bill Price

ENDIF

STOP

RESULT :

Thus, the Algorithm , Pseudocode and Flowchart are written for the given problem.

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

AIM :

To write Algoritm , Pseudocode and draw the Flowchart for finding Weight of a Motor Bike.

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

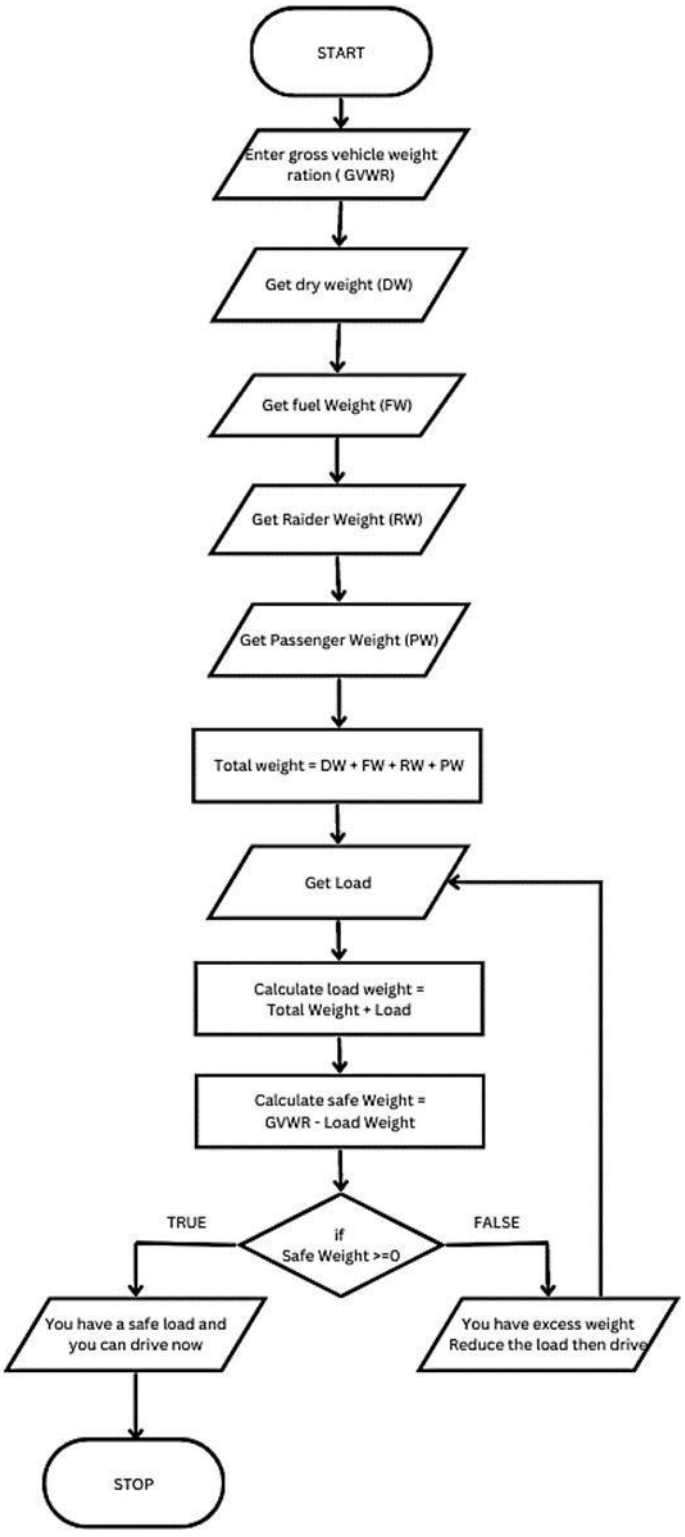
10.1 : If true, print the message "You have a safe load and you can drive" go to Step 11

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

10.2.1 : Go to Step 8

STEP 11 : Stop

FLOWCHART :


START
Enter gross vehicle weight ration (GVWR)
Get dry weight (DW)
Get fuel Weight (FW)
Get Raider Weight (RW)
Get Passenger Weight (PW)
Total weight = DW + FW + RW + PW
Get Load
Calculate load weight = Total Weight + Load
Calculate safe Weight = GVWR - Load Weight
if Safe Weight >=0
TRUE
FALSE
You have a safe load and you can drive now
You have excess weight Reduce the load then drive
STOP

PSEUDOCODE:

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

RESULT :

Thus, the Algorithm , Pseudocode 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 write Algoritm , Pseudocode and draw the Flowchart for finding Electric Current in 3 Phase AC Circuit.

ALGORITHM :

STEP 1: Start

STEP 2: Get value of Power Factor (PF)

STEP 3: Get value of Current (I)

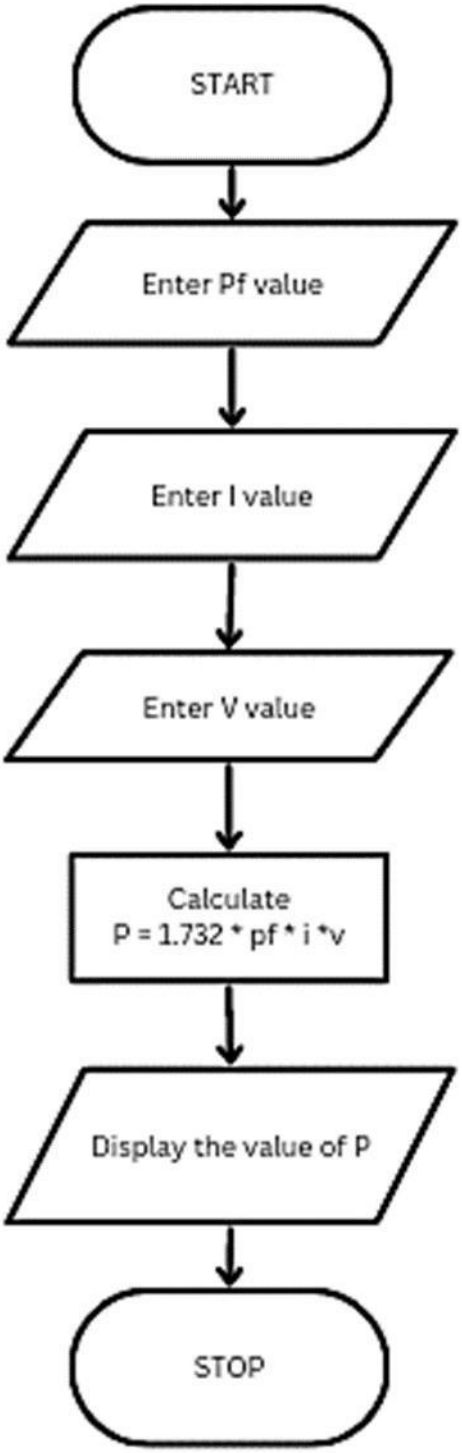
STEP 4: Get value of voltage (V)

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

STEP 6: Display the value of P

STEP 7: Stop

FLOWCHART :


START
Enter Pf value
Enter I value
Enter V value
Calculate
P = 1.732 * pf * i *v
Display the value of P
STOP

PSEUDOCODE:

START

GET P

GET I

GET V

CALCULATE P = 1.732 * I * V

PRINT P

STOP

RESULT :

Thus, the Algorithm , Pseudocode and Flowchart are written for the given problem.

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

AIM :

To write Algoritm , Pseudocode and draw the Flowchart for finding the Sine Series.

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

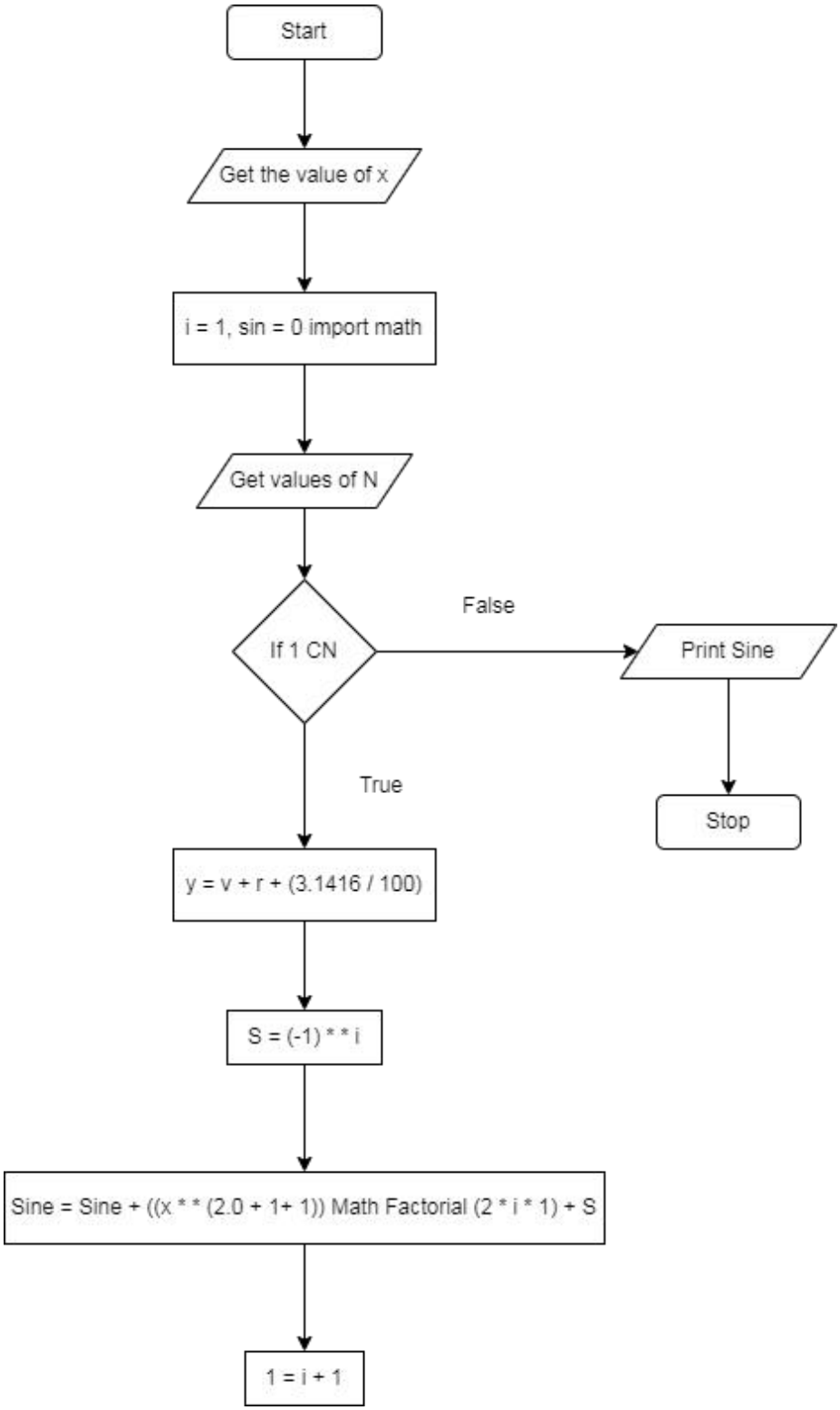
5.1.2 : Now calculate the series using the formula
Sine = sine + ((y * * 2 * i + 1)) / math factorial (21 + 4) + S

5.1.3 : Increment value of i by 1

5.2 : If condition is false display sine

STEP 6 : Stop

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

PSEUDOCODE:

START

GET s

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

RESULT :

Thus, the Algorithm , Pseudocode and Flowchart are written for the given problem.