**Exp No: 1- A STUDENT GRADE ANALYSIS**

**Date: 29/ 11/22**

**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.no 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 "You grade is B" and increase i value by 1.

**4.6:** Check for 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, goto step 9

**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

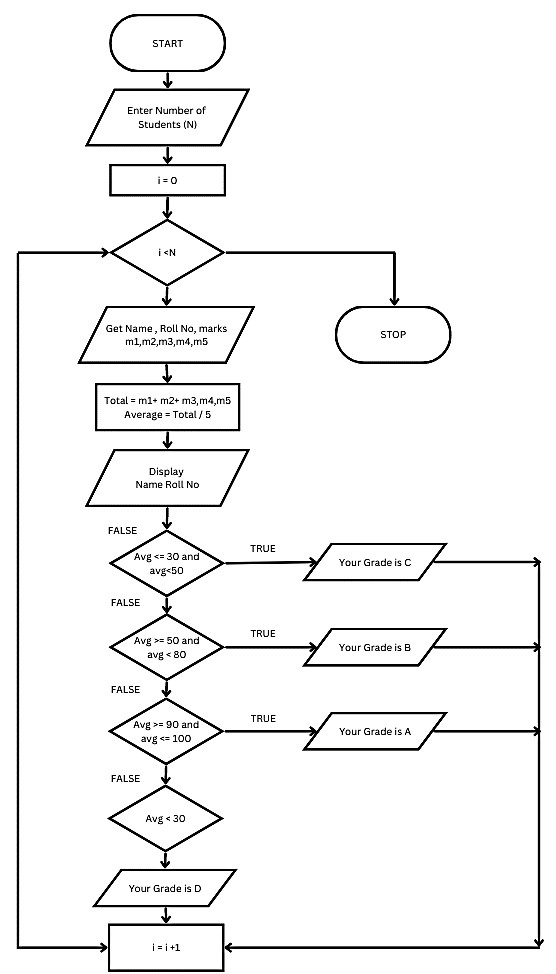
ELIF avg < 30

PRINT Your grade is D

ENDIF ENDIF i=i+1

STOP

**FLOWCHART:**



**RESULT:**

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

**Exp No: 1- B**  **CALCULATING ELECTRIC BILL**

**Date: 29/ 11/22**

**AIM:**

To draw flowchart and write algorithm for calculating the electric 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 for the condition N<=100 If true.

**5.1**: Calculate E.C using formula. FC = 0, DC = 0, EC= 0

**5.2:** Calculate the Total charges = FC + DC + EC

**5.3:** Display Total charges and go to Step 7.

**STEP 6:** Check for condition N<=200 If true.

**6.1**: Calculate E.C using formula FC = 20, DC = 18, EC = (N – 100) \* 1.5

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

**6.3:** Display Total charges and go to Step 7.

**STEP 7:** Check condition N<=500 of take.

**7.1:** 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 Total charges and go to Step 7.

**STEP 5:** Check for the condition N>500 If true.

**5.1:** Calculate the E.C using FC=75, DC=100, EC = (400 \* 4.5) + (N - 500) \* 6

**5.2:** Calculate Total charges = FC + DC + EC

**5.3:** Display the Total charges and go to Step 7.

**STEP 7:** 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

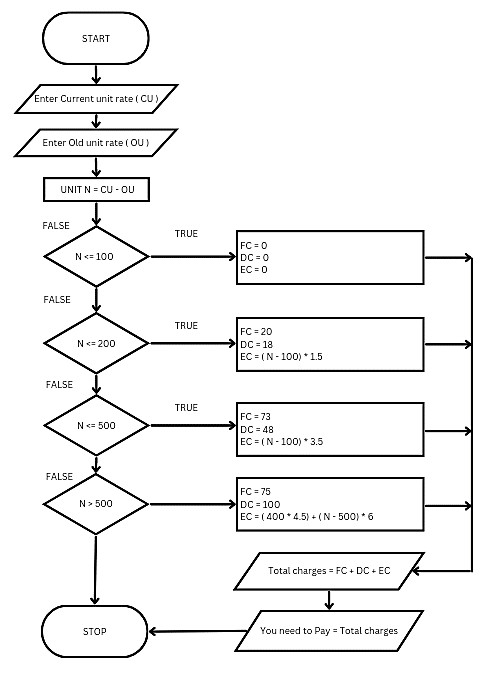
CALCULATE EC = (400 \* 4.5) + (N - 500) \* 6

ENDIF

PRINT Total Charges = FC + DC + EC

STOP

**FLOWCHART:**



**RESULT:**

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

**Exp No: 1- C**

**Date: 29/ 11/22 AIM:**

**CALCULATE WEIGHT OF IRON ROD**

To draw flowchart and write algorithm for calculating the weight of a steel Rod.

**ALGORITHM:**

**STEP 1:** Start.

**STEP 2:** Get the number of Iron rods.

**STEP 3:** Initialize the value I and weight as 0.

**STEP 4:** Check for the condition i = n.

**4.1:** If True, get the diameter of the rod.

**4.2:** Calculate the weight-unit-weight using the formula d\*2 /162 = W

**4.3:** Calculate the weight using the formula. Tw = No. of rods \* weight

**4.4:** Calculate total weight = TW+W.

**4.5:** Increment the value of i by 1 goto step 4.

**4.1:** If false display the total weight.

**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

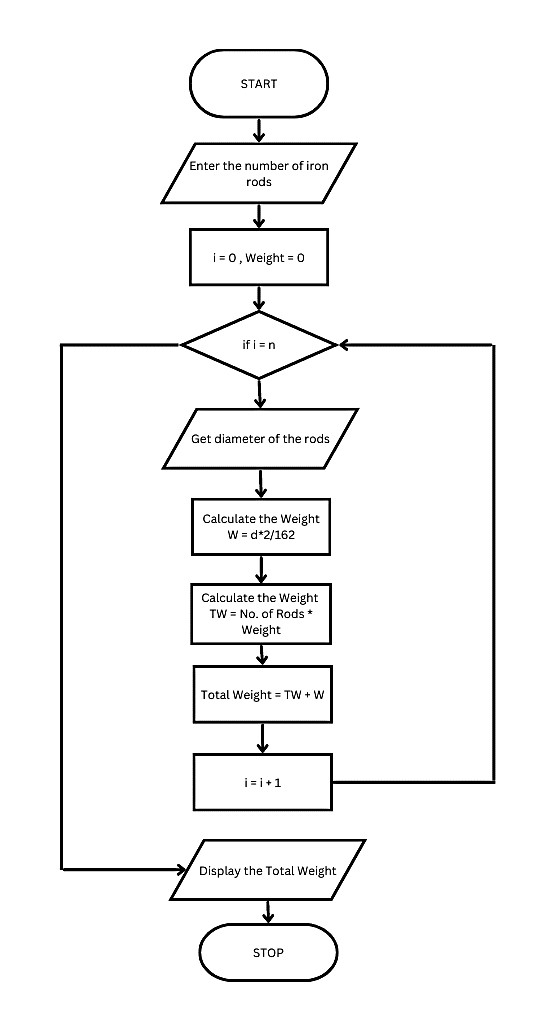
ELSE

PRINT Tw

ENDIF

STOP

**FLOWCHART:**



**RESULT:**

Thus, the algorithm and the flowchart is given for the problem.

**Exp No: 1- D CALCULATE WEIGHT OF A MOTORBIKE**

**Date: 29/ 11/22**

**AIM:**

To draw flowchart and write algorithm for calculating weight of a motorbike.

**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.

**STEP 9:** Calculate Load Weight = Total Weight + Load **STEP 10:** Calculate Safe Weight = GVWR – Load Weight **STEP 11:** Check the condition safe weight >=0.

**11.1:** If true, print the message “You have a safe load and you can drive" goto stop.

**11.2:** If false, print the message "Reduce the load and then drive”.

**11.2.1:** GOTO step 8.

**STEP 12:** 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

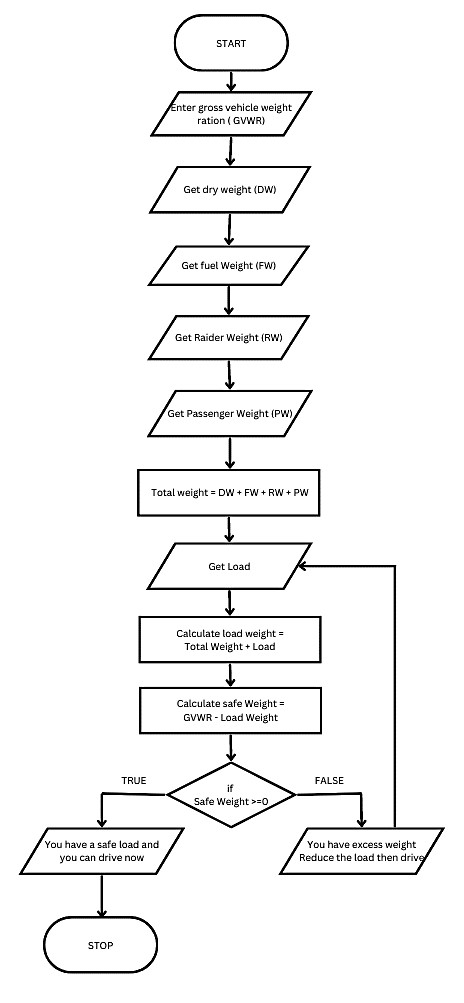
ELSE

PRINT You have excess weight, Reduce the load and then drive

ENDIF

STOP

**FLOWCHART:**



**RESULT:**

Thus, the flowchart and the algorithm is written for the problem.

**Exp No: 1- E**

**Date: 29/ 11/22**

**CALCULATE ELECTRIC CURRENT IN**

**3 PHASE A/C CIRCUIT**

**AIM:**

To draw flowchart and write algorithm. to- calculate electrical current in 3 phase AC circuit.

**ALGORITHM:**

**STEP 1:** Start

**STEP 2:** Get value of pf (power factor) **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 Pf

GET I

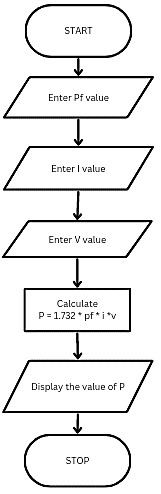
GET V

CALCULATE P = 1.732 \* I \* V

PRINT P

STOP

**FLOWCHART:**



**RESULT:**

Thus the flowchart and the algorithm is written for the given problem.

|  |  |
| --- | --- |
| **Exp No: 1- F**  **Date: 29/ 11/22** | **RETAIL SHOP.** |

**AIM:**

To draw the flowchart and write the algorithm for the retail shop billing.

**ALGORITHM:**

**STEP 1:** Start

**STEP 2:** Get the Bill number.

**STEP 3:** Get costumer Customer name and phone number **STEP 4:** Get the value of total No. of Items purchased.

**STEP 5:** Initialize the values for i =0, Total =0, Net Amount = 0 and Gross=0.

**STEP 6:** Check if condition i<=n.

**6.1:** If true, get Item name, Price, Quantity and the discount.

**6.2:** Calculate the Gross = Price \* quantity Calculate the Disc = Gross \* Discount%

Calculate the Net Amount = Gross-Disc

**6.3:** Calculate the Total = Total + Net Amount.

**6.4:** Increment the value of i and goto step 6.

**STEP 7:** If False, get the GST value.

**STEP 8:** Calculate GST Amount = ( Gross \* GST% ) / 100.

Calculate the BILL Price = Net Amount + GST Amount **STEP 9:** Display the Bill Amount **STEP 10:** Stop.

**PSEUDO CODE:**

START

GET Bill Number

GET custoumer name , number

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

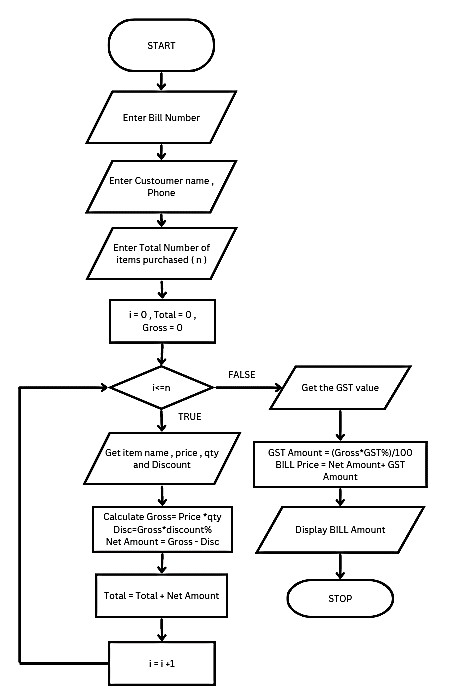
|  |  |
| --- | --- |
| IF I<=n |  |
|  | GET Item Name, Price, Quantity, Discount |
|  | CALCULATE The Gross = Price \* quantity  CALCULATE The Disc = Gross \* Discount%  CALCULATE The Net Amount = Gross-Disc |
|  | CALCULATE the Total = Total + Net Amount |
| ELSE | i=i+1 |
|  | GET GST |
|  | CALCULATE GST AMOUNT = (GROSS \* GST%) / 100. |
|  | CALCULATE the BILL Price = Net Amount + GST Amount |

PRINT BILL Price

ENDIF

STOP

**FLOWCHART:**



**RESULT:**

Thus, the flowchart and the algorithm is written for the problem

**Exp No: 1- G SINE SERIES.**

**Date: 29/ 11/22**

**AIM:**

To draw flowchart and write algorithm for 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 math.

**STEP 4:** Get the value of N.

**STEP 5:** Check weather value does i less than N

**5.1:** If condition is true, calculate y = y + x ( 3.416 % 100 )

**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 (2\*i\*1) 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

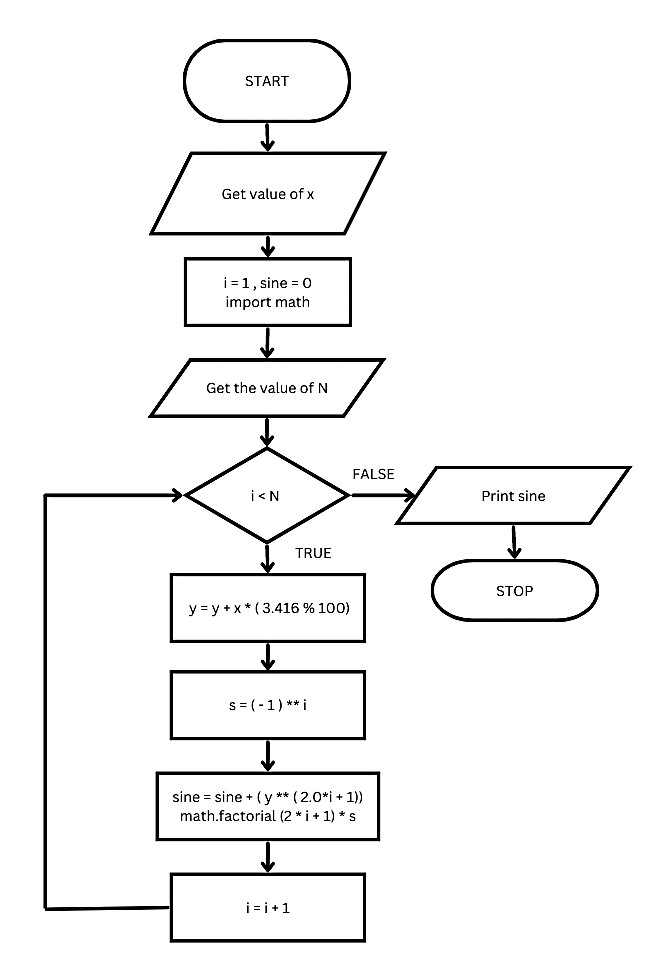
ELSE

PRINT Sine

ENDIF

STOP

**FLOWCHART:**



**RESULT:**

Thus, the flowchart and the algorithm is written for the problem