

Expt no: 1 a

CALCULATING ELECTRIC BILL

Aim:

To draw Flowcharts and write algorithm for calculating Electric Bill.

Algorithm:

Step 1: Start

Step 2: Enter this month unit, previous month unit.

Step 3: Obtain Unit= This month Unit - Previous month unit.

Step 4: Check $\text{Unit} \leq 100$, if true, No amount to pay else move to next Step 5.

4.1: Calculate amount, Total charges.

4.2: Display the amount (Tot. amount) and go to Step 8.

Step 5: Check $\text{Unit} > 100$ & $\text{Unit} \leq 200$, if true, proceed 5.1 else go to Step 6.

5.1: Calculate amount, Total Charges.

5.2: Display the amount (Tot. amount) and go to Step 8.

Step 6: Check $\text{Unit} > 200$ & $\text{Unit} \leq 400$, if true proceeded 6.1 else go to Step 7.

6.1: Calculate amount, Total Charges

6.2: Display Total Amount and go to Step 8

Step 7: Check $\text{Unit} > 400$, if true Proceed 7.1 else go to Step 8.

7.1: Calculate amount, DC, FC

7.2: Display Tot amount and go to Step 8

Step 8: Stop.

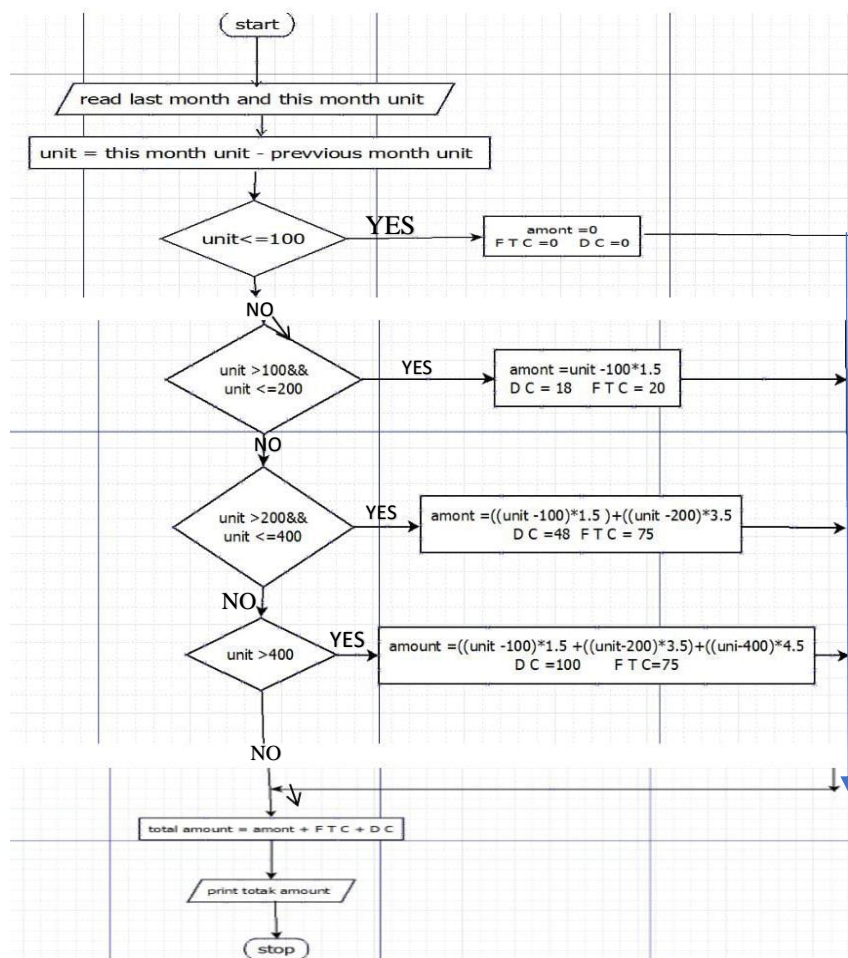
Result:

Thus the algorithm and flowchart is written for given program.

ROLL NO: 22CSEA37

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Result:

Thus the algorithm and flowchart is written for given program.

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Expt no: 1 b

SINE SERIES

Aim:

To draw flowchart an algorithm for the following problem [Sine Series]

Algorithm:

Step 1: Start

Step 2: Get the value of x

Step 3: Initialize the value of i=1, Sine=0 and import math

Step 4: Get the value of N

Step 5: Check the value of i is less than N

5.1: If condition is true, convert x to radian and adding i to Y

$$Y=Y+X*(3.146/100)$$

5.2: Let the value of S be (-1) to the power i

5.3: Now calculate sine series using formula

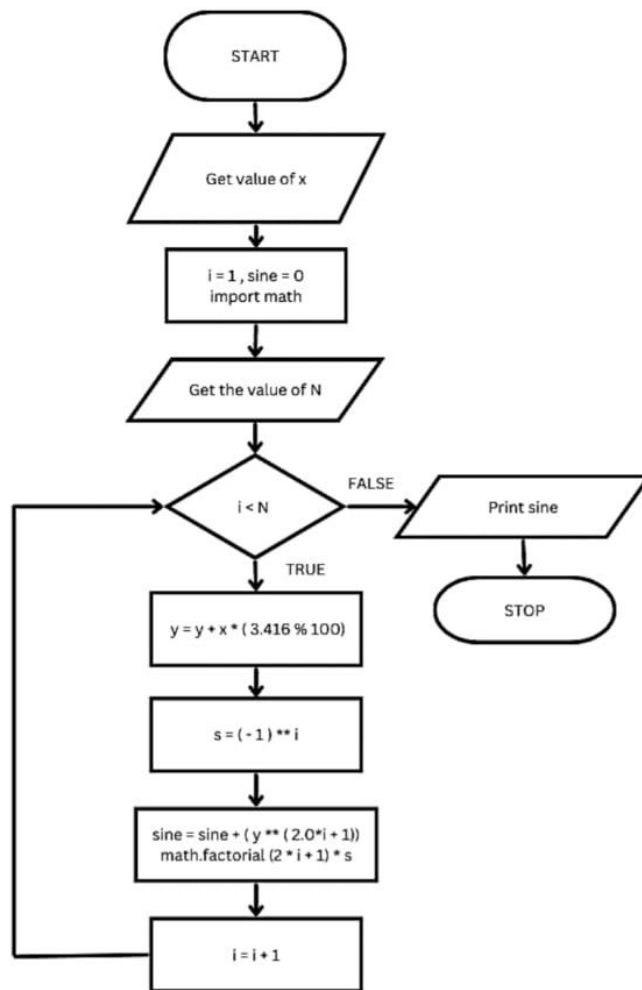
$$\text{Sum} = [((-1) ** i) * [x ** (2 + i) (2i + 1) 1]]!$$

5.4: Increment value of i by 1, go to Step 5

5.5: If condition is false, display sine.

Step 6: Stop

FLOWCHART:



Result:

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

Expt no: 1 c

Calculate Electric Current in three phase AC Circuit

Aim:

To draw flowchart and write algorithm for the given problem.

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

$$P=\sqrt{3}*PF*I*V$$

Step 6: Display the Value of P

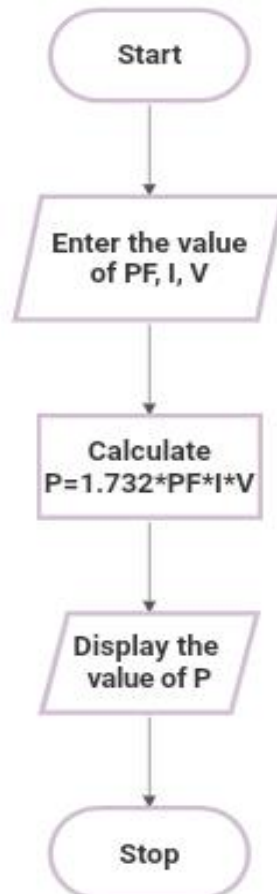
Step 7: Stop

Result:

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

Flowchart:

where,
PF-Power Factor
I -Current
V -Voltage



Result:

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

Expt no: 1 d

Calculate weight of Steel Rod

Aim:

To draw flowchart and write algorithm for calculating the weight of a Steel rod.

Algorithm:

Step 1: Start

Step 2: Get the no of iron rods

Step 3: Initialize value i and weight as 0.

Step 4: Check for condition $i=n$

4.1: If true, get the diameter of the rod

4.2: Calculate the weight, Unit Weight using the formula,

$$d*d/162=W$$

4.3: Calculate the weight using the Formula,

$$\text{No. of rods} * \text{Weight} = \text{TW}$$

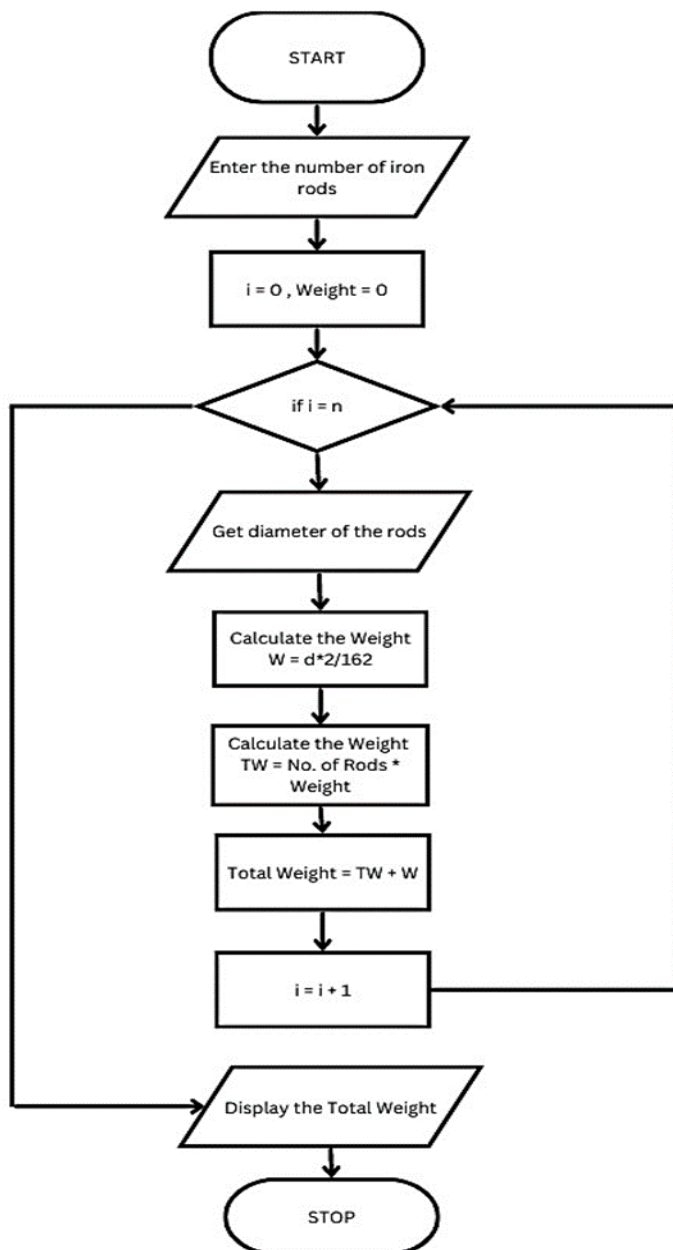
4.4: Calculate total weight= $\text{TW}+W$

4.5: Increment the value of i by 1, go to step 4

4.6: If false display the total weight

Step 5: Stop

Flowchart:



Result:

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

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Expt no: 1 e

Retail Bill Shopping

Aim:

To draw flowchart and write algorithm for the following problems.

Algorithm:

Step 1: Start

Step 2: Get the Bill number

Step 3: Get Customer name, Addr and Ph.no

Step 4: Get the Value of total no. of items purchased

Step 5: Initialize the values for $i=0$, $Total=0$, $Subtotal=0$

Step 6: Check if condition, $i \leq n$

6.1: If true, get item name, price, Qty and discount

6.2: Calculate the $Subtotal = Qty * Price - Discount$

6.3: Calculate the $Total = Total + Subtotal$

6.4: Increment the value of i and go to Step 6

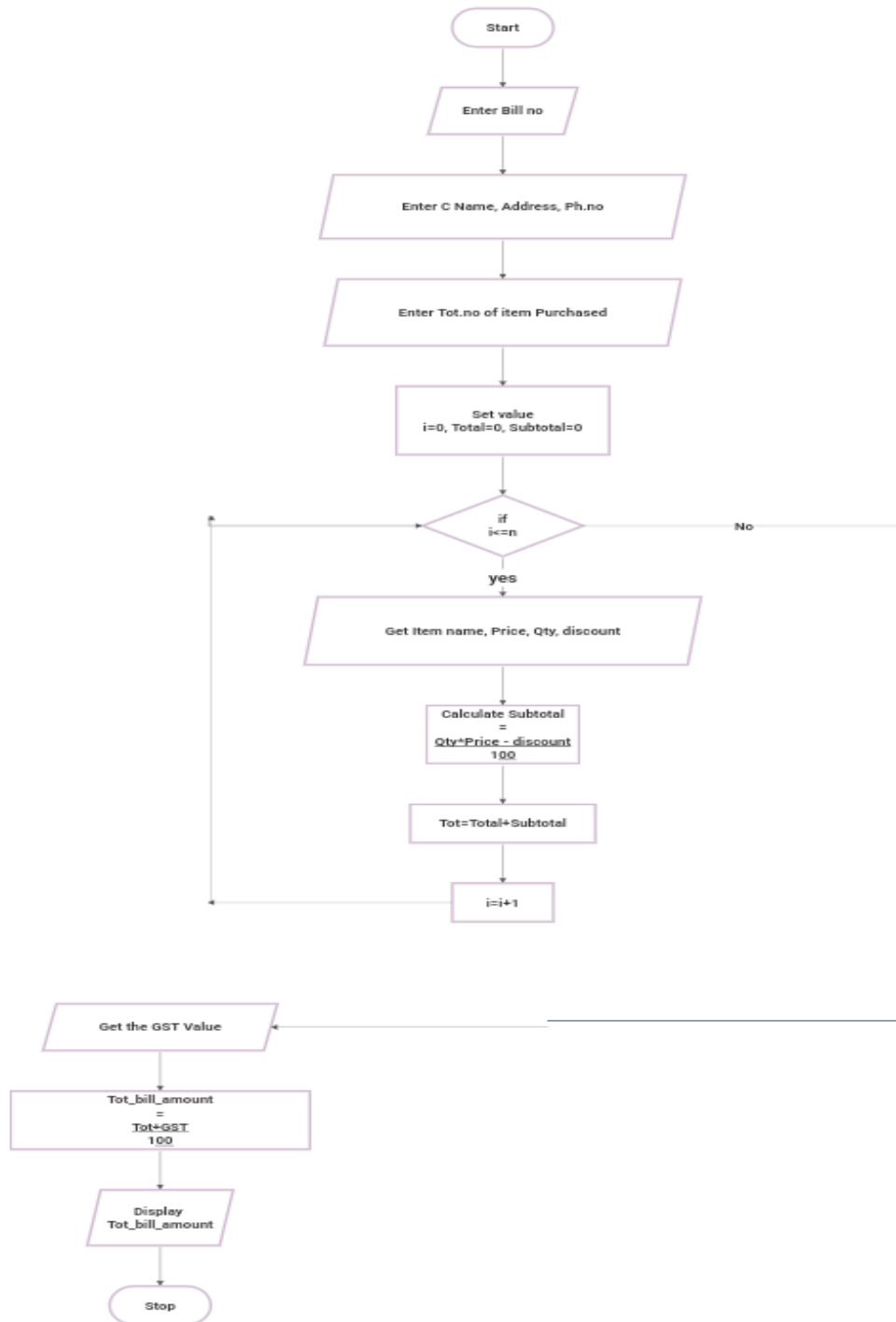
Step 7: If false, get the GST value

Step 8: Calculate $Tot_bill_amount = (Total + GST) / 100$

Step 9: Display Tot_bill_amount

Step 10: Stop

FLOWCHART:



Result:

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

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Expt no: 1 f

Weight of a Motorbike

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 Rider Weight RW

Step 6: Get Passenger Weight PW

Step 7: Calculate Total Weight= $DW+FW+RW+PW$

Step 8: Get load

Step 9: Calculate Safe Weight = $GVWR - \text{Load Weight}$

Step 10: Check the condition, Safe weight ≥ 0

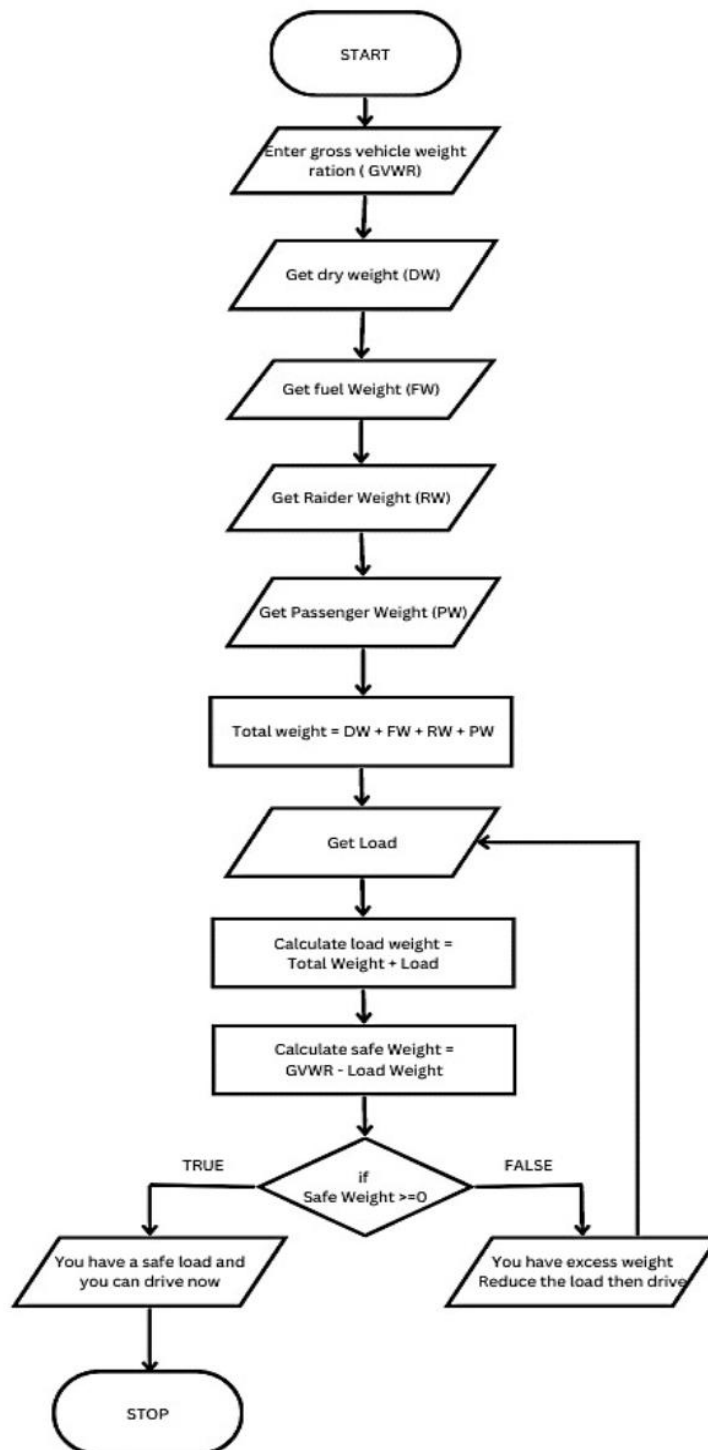
10.1: If true, print the message “You have a Safe load and you can drive” go

Go to step 11

10.2: If false, Print the message “Reduce the load and then drive” go Step 8

Step 11: Stop

Flowchart:



Result:

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

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Expt no: 1 g

Student Grade Analysis

Aim:

To draw a flowchart and write algorithm for calculating Students Grade analysis

Algorithm:

Step 1: Start

Step 2: Read the no of Students: 'N'

Step 3: Initialize $i=1$

Step 4: if $i \leq N$, go to Step 5, False, Go to Step 15

Step 5: Read the m_1 , m_2 , m_3 and Name of the Students

Step 6: $Total = m_1 + m_2 + m_3$

Step 7: $Average = Total / 3$

Step 8: If $avg \geq 90$ & $avg \leq 100$; go to step 8.1; else go to Step 9

8.1: Grade=0

Step 9: If $avg \geq 75$ & $avg < 90$; go to step 9.1; else go to Step 10

9.1: Grade=A

Step 10: If $avg \geq 50$ & $avg < 75$; go to step 10.1; else go to Step 11

10.1: Grade=B

Step 11: If $avg \geq 35$ & $avg < 50$, go to Step 11.1, else go to Step 12

11.1: Grade=C

Step 12: If $avg < 35$; yes; go to step 12.1; No go to Step 13

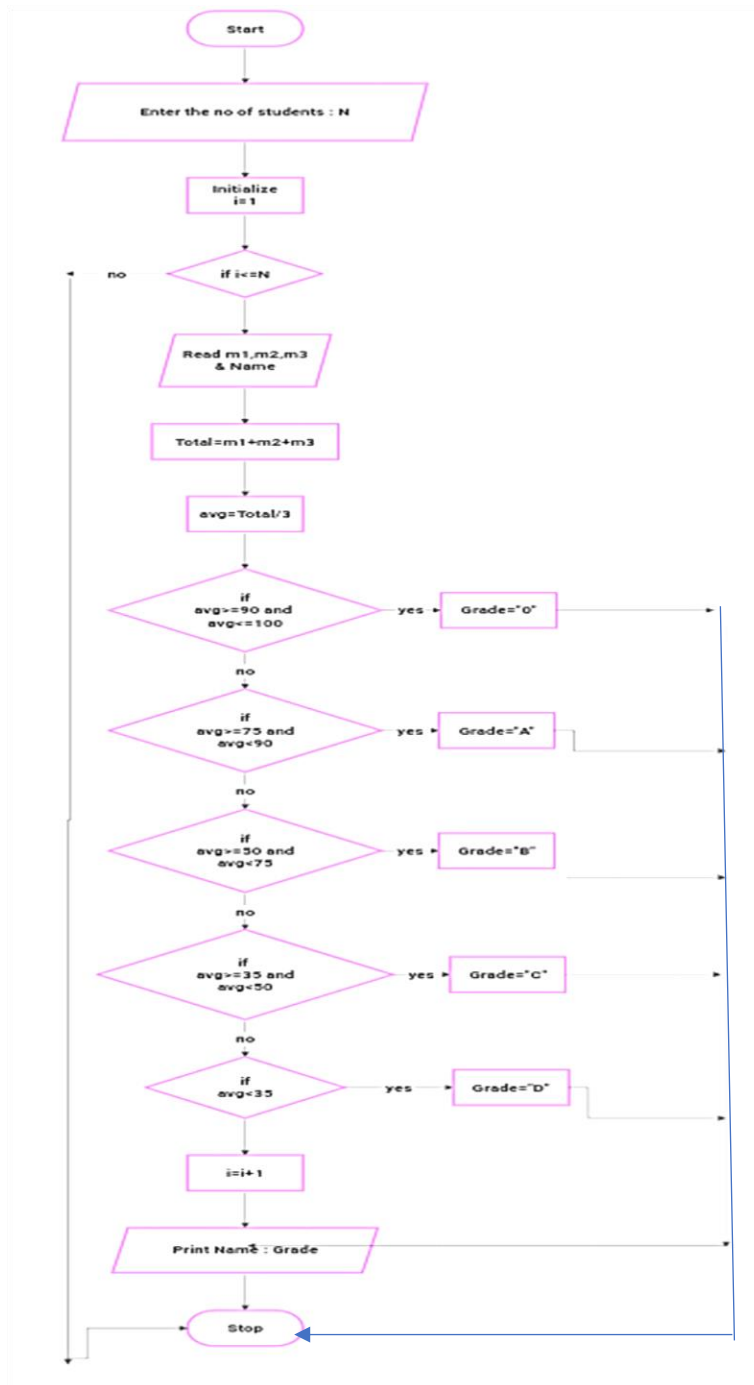
12.1: Grade=D

Step 13: Increment I, $i=i+1$

Step 14: Print Name and Grade

Step 15: Stop

Flowchart:



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Result:

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