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

**Date: 29/ 11/22**

## AIM:
To draw flow chart and write algorithm for analysize the student grade.

## ALGORITHM:
Step 1: Start
Step 2:Enter the No.of students(n)
Step 3: Initialise i=1
Step 4:If i<=n
     4.1: Read m1, m2, m3
     4.2: Calculate Total=m1+m2+m3
     4.3: Calculate avg=Total/3
     4.4:Increment i value by 1,goto Step 4
Step 5: If 91 <= avg <= 100
     5.1: Grade = 0 else goto Step 6
Step 6:If 81<= avg <= 90
     6.1:Grade= A else goto Step 7
 Step 7: If  71<= avg <=80
      7.1:Grade=B else goto Step 8
Step 8: If 61<= avg <=70
        8.1: Grade=C else goto Step 9
Step 9: If 50<= avg <=60
     9.1: Grade=D else Grade=Fail
step 10: Display Grade
Step 11: Stop

ROLL NO: 22CSEB59

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

**PSEUDOCODE:**
START
GET No.of students n
INITIALIZE i=1
IF i<=n
   GET m1,m2,m3
   CALCULATE Total=m1+m2+m3
   CALCULATE avg=Total/3
   INCREMENT i by 1
ENDIF
IF 91<=avg<=100
   Grade=O
IF 81<=avg<=90
   Grade=A
IF 71<=avg<=80
   Grade=B
IF 61<=avg<=70
   Grade=C
IF 50<=avg<=60
   Grade=D
ELSE
   Grade=Fail
DISPLAY Grade
ENDIF
END
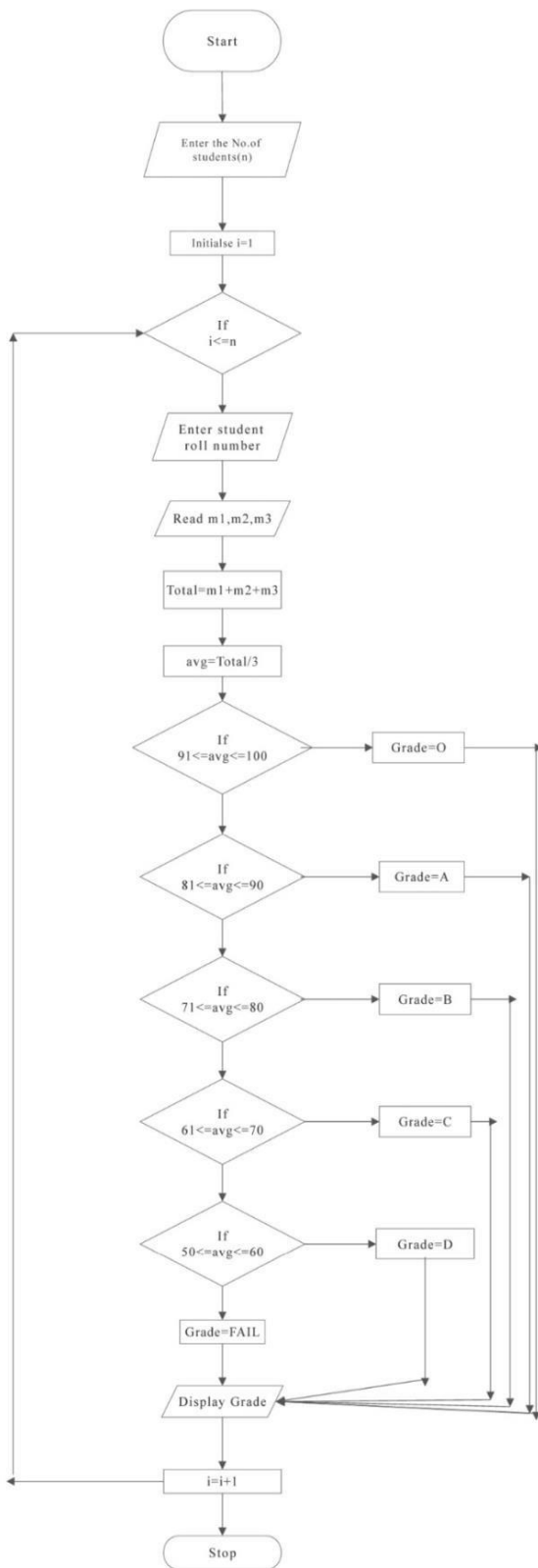
ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

**FLOWCHART:**



**RESULT:**

Thus the Flow chart and the algorithm is written for the given program.

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

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

**Date: 29/ 11/22**

## AIM:

To draw flow chart and write algorithm for calculating the electric bill.

## ALGORITHM:

Step 1: Start

Step 2: Read the Unit consumed (Unit)

Step 3:If 0<=Unit< = 100 goto Step 7 else goto Step 4

Step 4: If 101<= Unit <=200 goto Step 8 else goto Step 5

Step 5:If 101<= Unit <=500 goto Step 9 else goto Step 6

Step 6:If Unit >500 goto step 10 the Break

Step 7: Energy charge =0,Duty charge=0,Fixed total charge=0 then goto Step11

Step 8: Energy charge= (Unit-100)* 1.5,Duty charge=18,Fixed total charge=20 then goto Step 11

Step 9:Energy charge=(Unit-100)*3.5, Duly charge=48,Fixed total charge=30 then goto Step 11

Step 10:Energy charge=(400* 4.5)+(Unit-500)*6.0, Duty charge=100,Fixed total charge=75 then goto Step 11

Step 11:Electric Bill=Energy charge + Duty charge + Fixed total charge Step 12: Display the Electric Bill

Step 13: Stop

PSEUDOCODE:

ROLL NO: 22CSEB59

<u>NAME: VINOTH KUMAR K B</u>

START

READ Unit

IF 0<=Unit<=100

    EC=0,DC=0,FC=0

IF 101<=Unit<=200

    EC=(Unit-100)*1.5,DC=18,FC=20

IF 101<=Unit<=500

    EC=(Unit-100)*3.5,DC=48,FC=30

IF Unit>500

    EC=(400*4.5)+(Unit-500)*6.0,DC=100,FC=75

ENDIF

CALCULATE EB=EC+DC+FC

DISPLAY EB

END

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

## FLOWCHART:



EC=Eenergy Charge
DC=Duty Charge
FC=Fixed total Charge
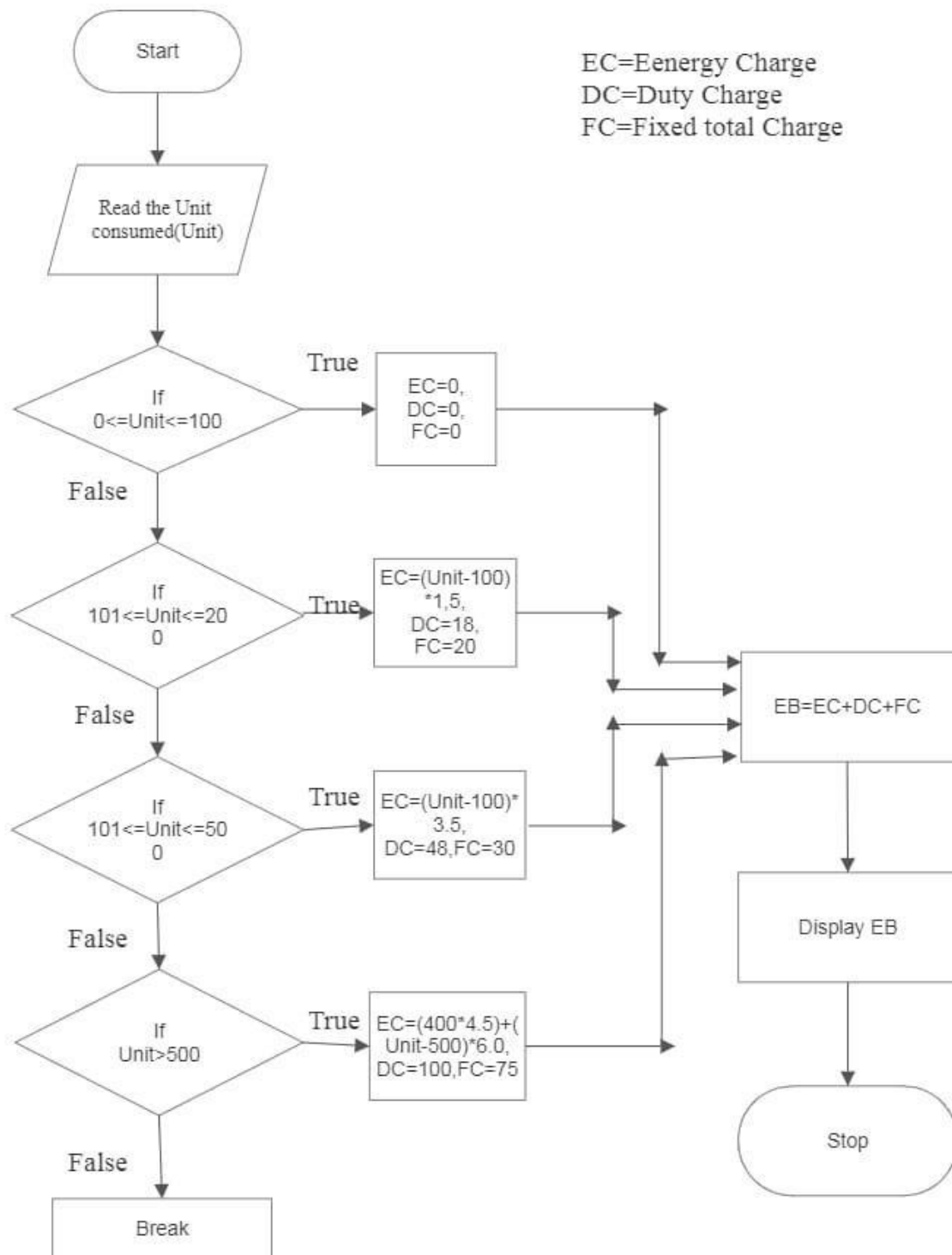
## RESULT:

      Thus the flow chart and the algorithm is written for the given program.

**Exp No:1-C**                  **WEIGHT OF THE STEEL BAR**

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

**Date:29/12/22**

**AIM:**

To draw flow chart and write algorithm for calculating the weight of the steel bar.

**ALGORITHM**:

Step 1: Start
Step 2:Enter the No.of steel bars(n) and Diameter (D)
Step 3: Calculate the weight = D*D/162
Step 4:Total weight of steel bars=n*weight
Step 5:Display Total weight of steel bars
Step 6:Stop

**PSEUDOCODE:**

START

GET n,D

CALCULATE Weight=D*D/162
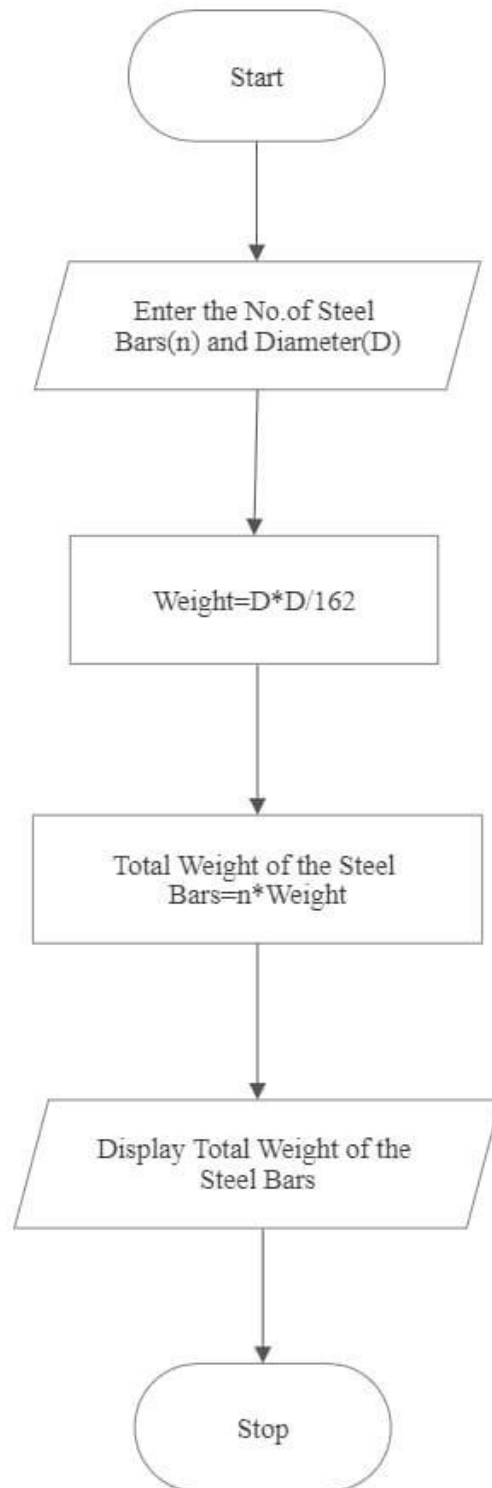
CALCULATE Total weight of steel bars=n*Weight

DISPLAY Total weight of steel bars

END

**FLOWCHART:**

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         │
                         ▼
              ╱────────────────────╲
             ╱  Enter the No.of Steel╲
            ╱   Bars(n) and Diameter(D)╲
            ╲──────────┬──────────────╱
                       │
                       ▼
            ┌────────────────────────┐
            │    Weight=D*D/162       │
            └───────────┬────────────┘
                        │
                        ▼
            ┌────────────────────────┐
            │  Total Weight of the Steel│
            │      Bars=n*Weight      │
            └───────────┬────────────┘
                        │
                        ▼
             ╱────────────────────╲
            ╱  Display Total Weight of the╲
            ╲    Steel Bars       ╱
             ╲──────────┬────────╱
                        │
                        ▼
                  ┌──────────┐
                  │   Stop   │
                  └──────────┘
```

 **RESULT**:

       Thus the flow chart and the algorithm is written for the given program.

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

**Date: 29/ 11/22**

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

## AIM:

To draw flow chart and write algorithm for calculating the weight of the motorbike.

## ALGORITHM:

Step 1: Start

Step 2:Get Gross Vehicle Weight Rating (GVWR), Dry Weight(DW), Rider Weight (RW). Passenger Weight (PW) and Fuel Weight (FW)  Step

3:Calculate Total weight=FW+RW+DW+PW step 4:Gel

Load value

Step 5:Calculate Load weight=Total weight + Load

Step 6: Calculate Safe weight=GVWR -Load weight

Step 7: If Safe weight >=0

    7.1: If true, Display Safe Load

    7.2: If False, Diplay Heavy Load

Step 8: Stop

## PSEUDOCODE:

START

GET GVWR,DW,RW,PW,FW

CALCULATE Total weight=FW+RW+DW+PW

GET Load

CALCULATE Load weight=Total weight+Load

ROLL NO: 22CSEB59
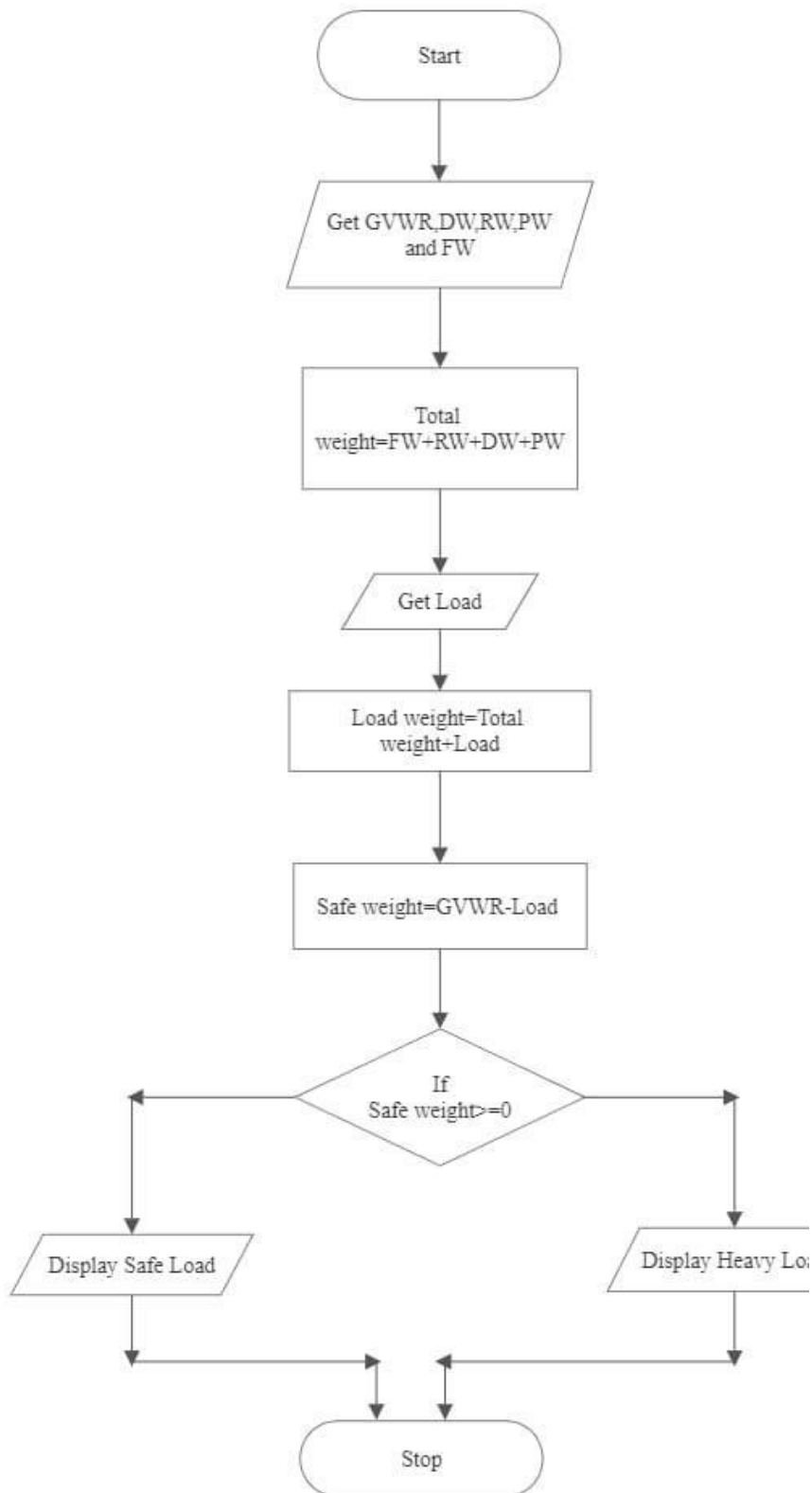
NAME: VINOTH KUMAR K B

CALCULATE Safe weight=GVWR-Load weight
IF Safe weight>=0 THEN
    DISPLAY Safe Load
ELSE
    DISPLAY Heavy Load
ENDIF
END

**FLOWCHART:**

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

**RESULT:**

Thus the flow chart and the algorithm is written for the given program.

| | |
|---|---|
| **Exp No: 1- E** | **CALCULATE ELECTRIC CURRENT IN** |
| **Date: 29/ 11/22** | **3 PHASE A/C CIRCUIT** |

**AIM:**

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

To draw flow chart and write algorithm for calculating the electrical current in 3 phase AC circuit.

**ALGORITHM:**
Step 1: Start
Step 2: Read Voltage (V), Current (I) and Power Factor (PF)
Step 3: Calculate Electrical current=(V*I*PF*1.732)/1000
 Step 4: Display Electrical Current (KW)
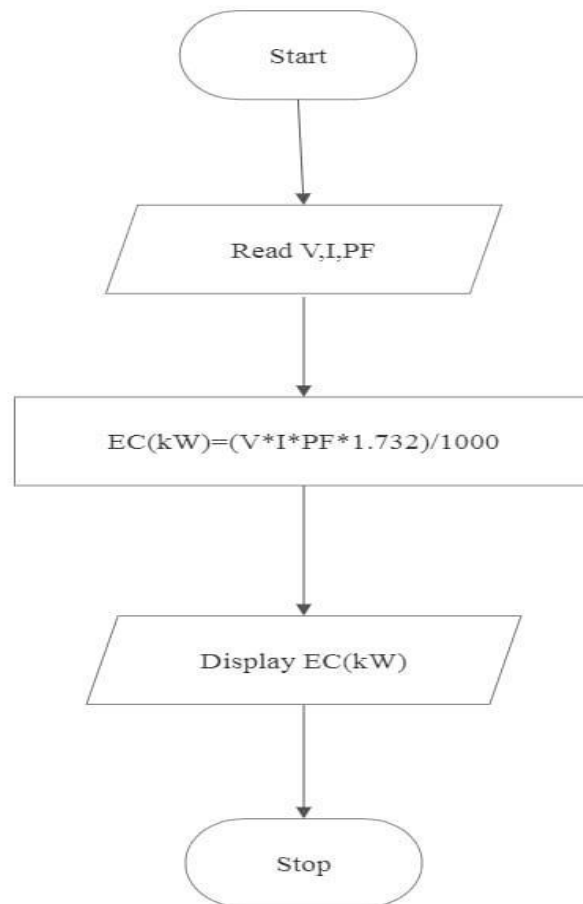Step 5:Stop

**PSEUDOCODE:**

 START

 GET V,I,PF

 CALCULATE EC(kW)=(V*I*PF*1.732)/1000

 DISPLAY EC(kW)

 END

**FLOWCHART:**

```
                    ╭─────────────╮
                    │    Start     │
                    ╰──────┬──────╯
                           │
                           ▼
                 ╱──────────────────────╲
                 │    Read V,I,PF         │
                 ╲──────────────────────╱
                           │
                           ▼
            ┌──────────────────────────────────┐
            │  EC(kW)=(V*I*PF*1.732)/1000        │
            └──────────────────────────────────┘
                           │
                           ▼
                 ╱──────────────────────╲
                 │    Display EC(kW)      │
                 ╲──────────────────────╱
                           │
                           ▼
                    ╭─────────────╮
                    │    Stop      │
                    ╰─────────────╯
```

**RESULT:**

　　　　Thus the flow chart and the algorithm is  written for the given program.

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

**Exp No: 1- F**                                    **RETAIL SHOP.**

**Date: 29/ 11/22**


<u>**AIM:**</u>

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

<u>**ALGORITHM:**</u>

Step 1: Start
Step 2: Enter the No. of Items (n)
Step 3: For i=0;i<=n
Step 4: Enter the Item name, Quantity, GST and price
Step 5: Calculate the amount = (price* GST) *Quantity
Step 6:i<=n then i=i+1 goto Step 3 else goto Step 7
Step 7: If amount > 500
     7.1: If True Enter Discount($)
     7.2: Calculate the Final amount=amount-Discount
  7.3: If False goto step 8
Step 8: Display Final amount,Thank you! come again!
Step 9: Stop


<u>PSEUDOCODE</u>:


ROLL NO: 22CSEB59
<u>NAME: VINOTH KUMAR K B</u>

START

GET n

FOR i=0;i<n

GET Item name,Quantity,GST and price

CALCULATE amount=(price*GST)*Quantity

INCREMENT I by 1

IF amount>500

    GET Discount

    CALCULATE Final amount=amount-Discount

    DISPLAY Final amount,Thank you!come again!

ENDIF

END

**FLOWCHART:**

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B
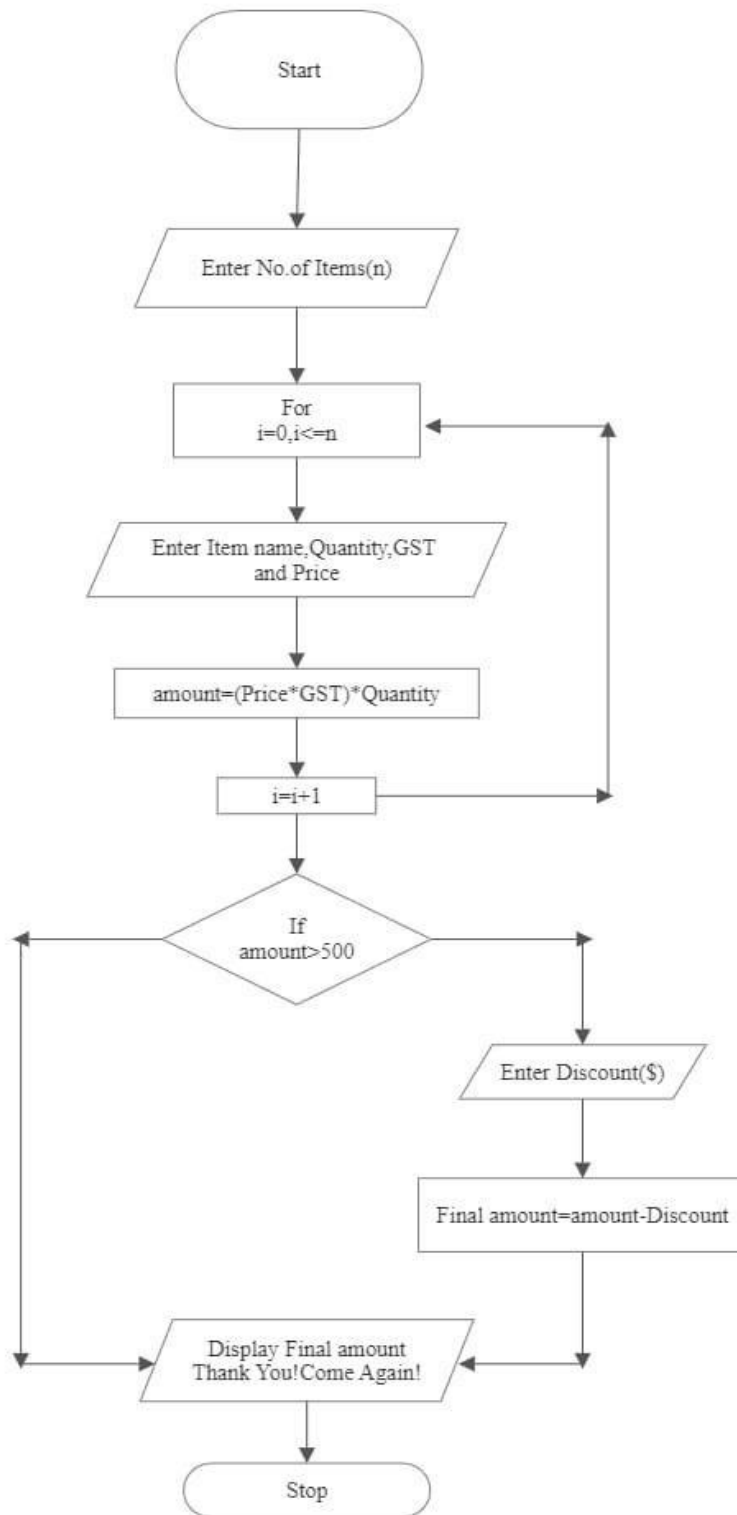
**RESULT:**

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

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

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

**Date: 29/ 11/22**


<u>**AIM:**</u>
   To draw flow chart and write algorithm for calculating the Sine series.


<u>**ALGORITHM:**</u>
Step 1: Start
Step 2:Get the value of x
Step 3:Initiate i=1, sin=0 and import math
Step 4:Get the value of N
Step 5:If i<N
    5.1:If true,convert x to radian and adding i to y
    5.2:Let the value of S to be S=(-1)**i
    5.3:Calculate Sine series using formula
Sine=Sine+[(y**(2*i+1))/math factorial(2*i+1)]*S

    5.4:Then increment i value by 1, goto Step 5
    5.5:If False, Print Sine


<u>PSEUDOCODE</u>:

START

GET x

INITIALIZE i=0,sine=0

GET N

IF I<N

   CALCULATE Y=Y+x*(3.146/100)

   CALCULATE S=(-1)**i

   CALCULATE sine=sine+(Y**(2.0*i+1))/math factorial(2*i+1)*S

   INCREMENT i by 1

   PRINT sine

ENDIF

END
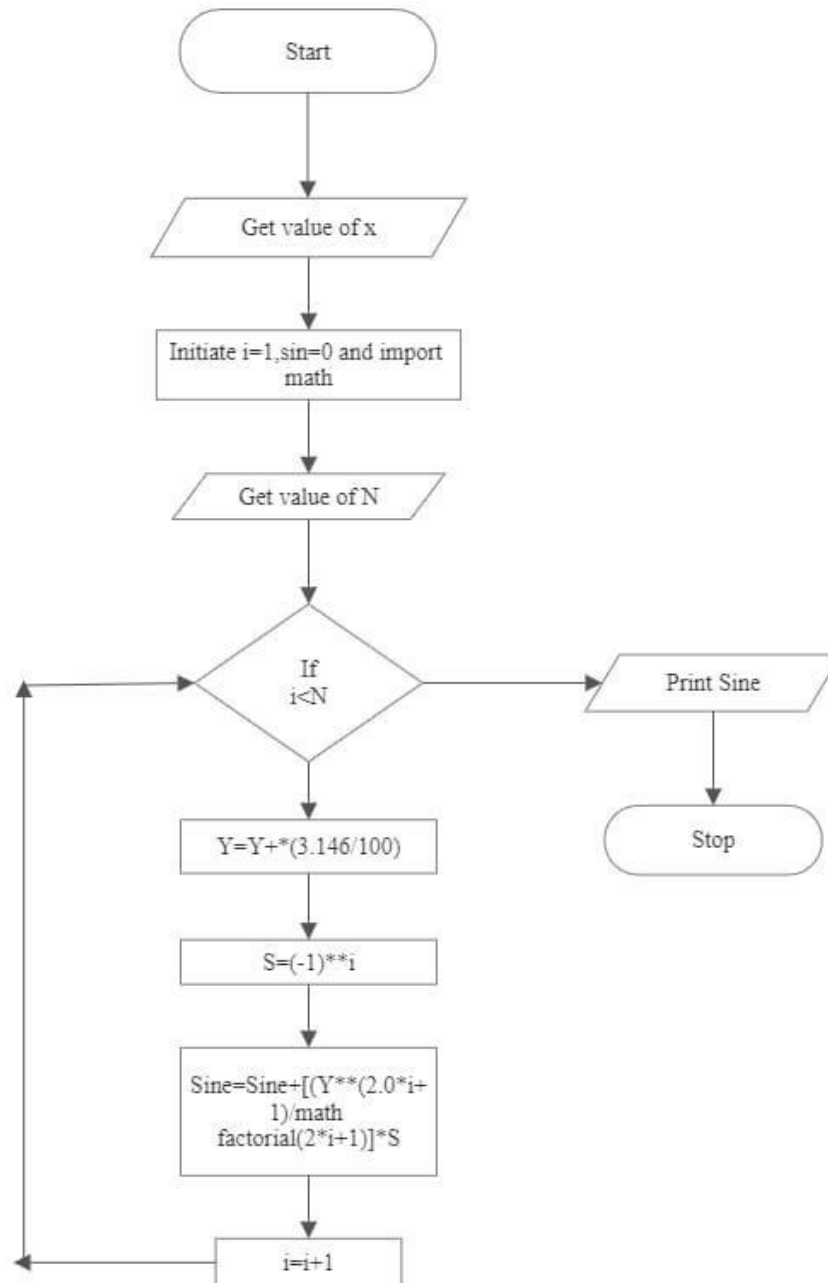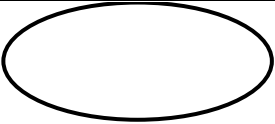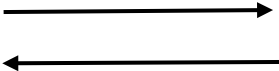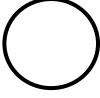

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

FLOWCHART:



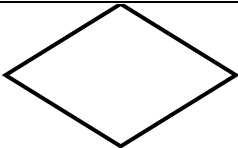**RESULT:**

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

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

# 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 |

ROLL NO: 22CSEB59
NAME: VINOTH KUMAR K B

# TOOLS USED TO DRAW FLOWCHART

1. **Smart Draw** – A good tool to draw and understand but can't save the file in system it can be used for free up to 7 days after that we must pay to use it.

2. **Canva** – A user-friendly tool which allows the user to view in mobile using the application and can be saved in any format. Without even subscription all the features were available.

3. **App.Diagrams.net -** The diagrams can be saved and also at any destination you want it to be. But the Output Wasn't precise and not in single page the saved diagrams open up to the website.

4. **Lucidchart -** The diagrams can be directly stored into the system and has all the features and also easy to use. It is required to be paid after some uses .

5. **Visme** – The tool is used for flowchart animation and content creating and in teaching, but more tools are available when you pay for them.

6. **Zenflowchart** – The diagrams can be directly stored into the system and has all the features and also easy to use. But it restricts to use more than 20 shapes on using the 21st shape it must be paid.

7. **Visual Paradiagram** – Visual paradiagram is explicitly designed for flowchart drawing, it is also paid one to use but in complex algorithm cases it is the best

8. **Creatly** – This tool is used to design Unified Modeling Language (UML) and flowcharts.

9. **Google Draw** – All the features are available and they are directly stored in the Google Drive. It should be logged in using Email. But the page size was limited also typing the algorithm wasn't comfortable.