

Exp No: 1- A

STUDENT GRADE ANALYSIS

Date: 29/ 11/22

AIM:

To draw flow chart and write algorithm for analyze the student grade.

ALGORITHM:

Step 1: Start

Step 2: Enter the No. of students(n)

Step 3: Initialise i=1

Step 4: If $i \leq n$

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 $91 \leq \text{avg} \leq 100$

5.1: Grade = 0 else goto Step 6

Step 6: If $81 \leq \text{avg} \leq 90$

6.1: Grade = A else goto Step 7

Step 7: If $71 \leq \text{avg} \leq 80$

7.1: Grade = B else goto Step 8

Step 8: If $61 \leq \text{avg} \leq 70$

8.1: Grade = C else goto Step 9

Step 9: If $50 \leq \text{avg} \leq 60$

9.1: Grade = D else Grade = Fail

step 10: Display Grade

Step 11: Stop

PSEUDOCODE:

START

GET No.of students n

INITIALIZE i=1

IF $i \leq n$

 GET m1,m2,m3

 CALCULATE $Total = m1 + m2 + m3$

 CALCULATE $avg = Total / 3$

 INCREMENT i by 1

ENDIF

IF $91 \leq avg \leq 100$

 Grade=O

IF $81 \leq avg \leq 90$

 Grade=A

IF $71 \leq avg \leq 80$

 Grade=B

IF $61 \leq avg \leq 70$

 Grade=C

IF $50 \leq avg \leq 60$

 Grade=D

ELSE

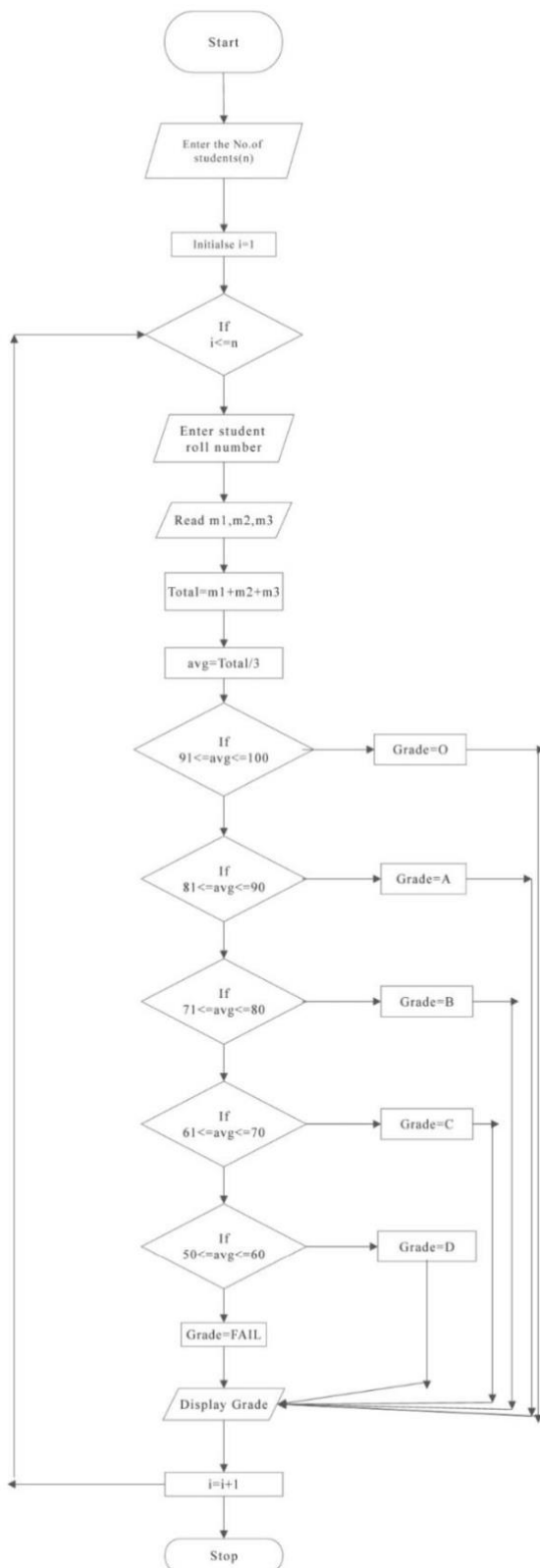
 Grade=Fail

DISPLAY Grade

ENDIF

END

FLOWCHART:



RESULT:

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

ROLL NO: 22CSEB57

NAME: UDHAYA CHANADRA PANDIAN S

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 $0 \leq \text{Unit} \leq 100$ goto Step 7 else goto Step 4

Step 4: If $101 \leq \text{Unit} \leq 200$ goto Step 8 else goto Step 5

Step 5: If $101 \leq \text{Unit} \leq 500$ 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 Step 11

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

Step 9: Energy charge = $(\text{Unit} - 100) * 3.5$, Duty charge = 48, Fixed total charge = 30 then goto Step 11

Step 10: Energy charge = $(400 * 4.5) + (\text{Unit} - 500) * 6.0$, 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:

START

READ Unit

IF $0 \leq \text{Unit} \leq 100$

$\text{EC}=0, \text{DC}=0, \text{FC}=0$

IF $101 \leq \text{Unit} \leq 200$

$\text{EC}=(\text{Unit}-100)*1.5, \text{DC}=18, \text{FC}=20$

IF $101 \leq \text{Unit} \leq 500$

$\text{EC}=(\text{Unit}-100)*3.5, \text{DC}=48, \text{FC}=30$

IF $\text{Unit} > 500$

$\text{EC}=(400*4.5)+(\text{Unit}-500)*6.0, \text{DC}=100, \text{FC}=75$

ENDIF

CALCULATE $\text{EB}=\text{EC}+\text{DC}+\text{FC}$

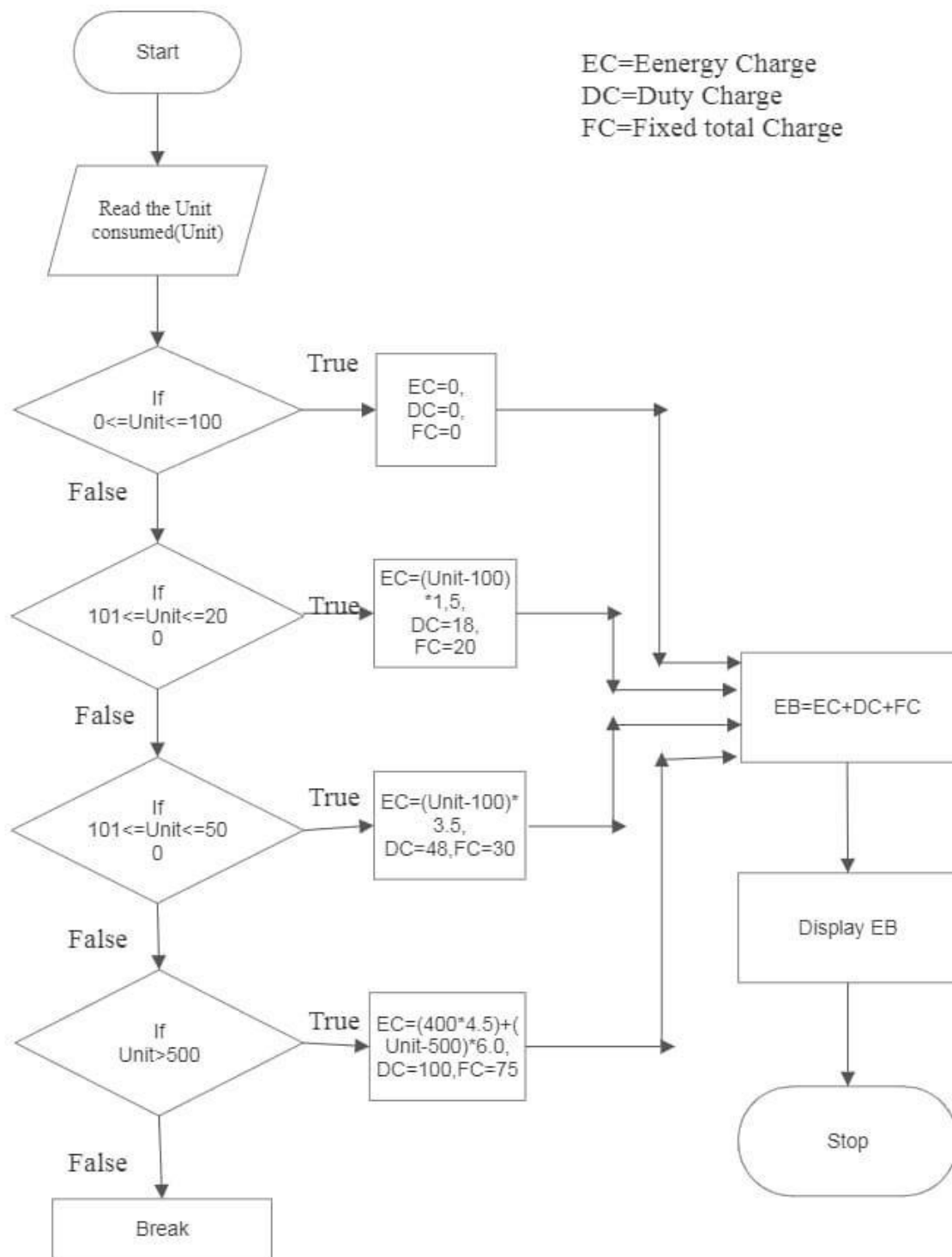
DISPLAY EB

END

ROLL NO: 22CSEB57

NAME: UDHAYA CHANADRA PANDIAN S

FLOWCHART:



RESULT:

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

Exp No:1-C
Date:29/12/22

WEIGHT OF THE STEEL BAR

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 = $D^2/162$
Step 4: Total weight of steel bars = $n \times \text{weight}$
Step 5: Display Total weight of steel bars
Step 6: Stop

PSEUDOCODE:

START

GET n,D

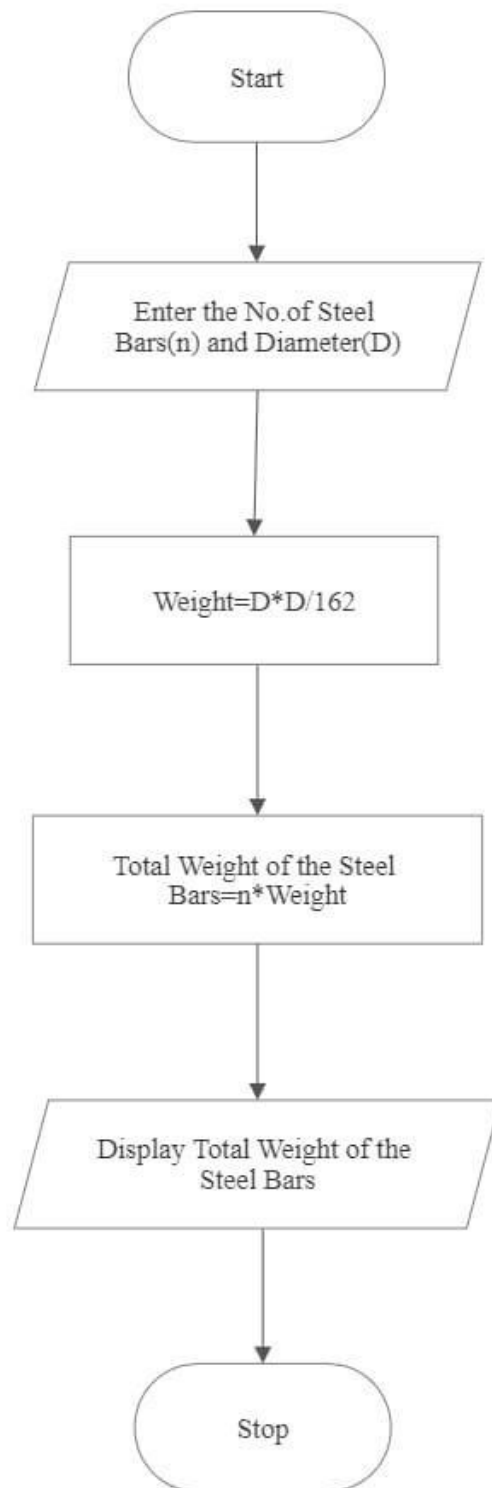
CALCULATE Weight = $D^2/162$

CALCULATE Total weight of steel bars = $n \times \text{Weight}$

DISPLAY Total weight of steel bars

END

FLOWCHART:



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

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: Get

Load value

Step 5: Calculate Load weight = Total weight + Load

Step 6: Calculate Safe weight = $GVWR - \text{Load weight}$

Step 7: If Safe weight ≥ 0

7.1: If true, Display Safe Load

7.2: If False, Display 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

CALCULATE Safe weight=GVWR-Load weight

IF Safe weight \geq 0 THEN

 DISPLAY Safe Load

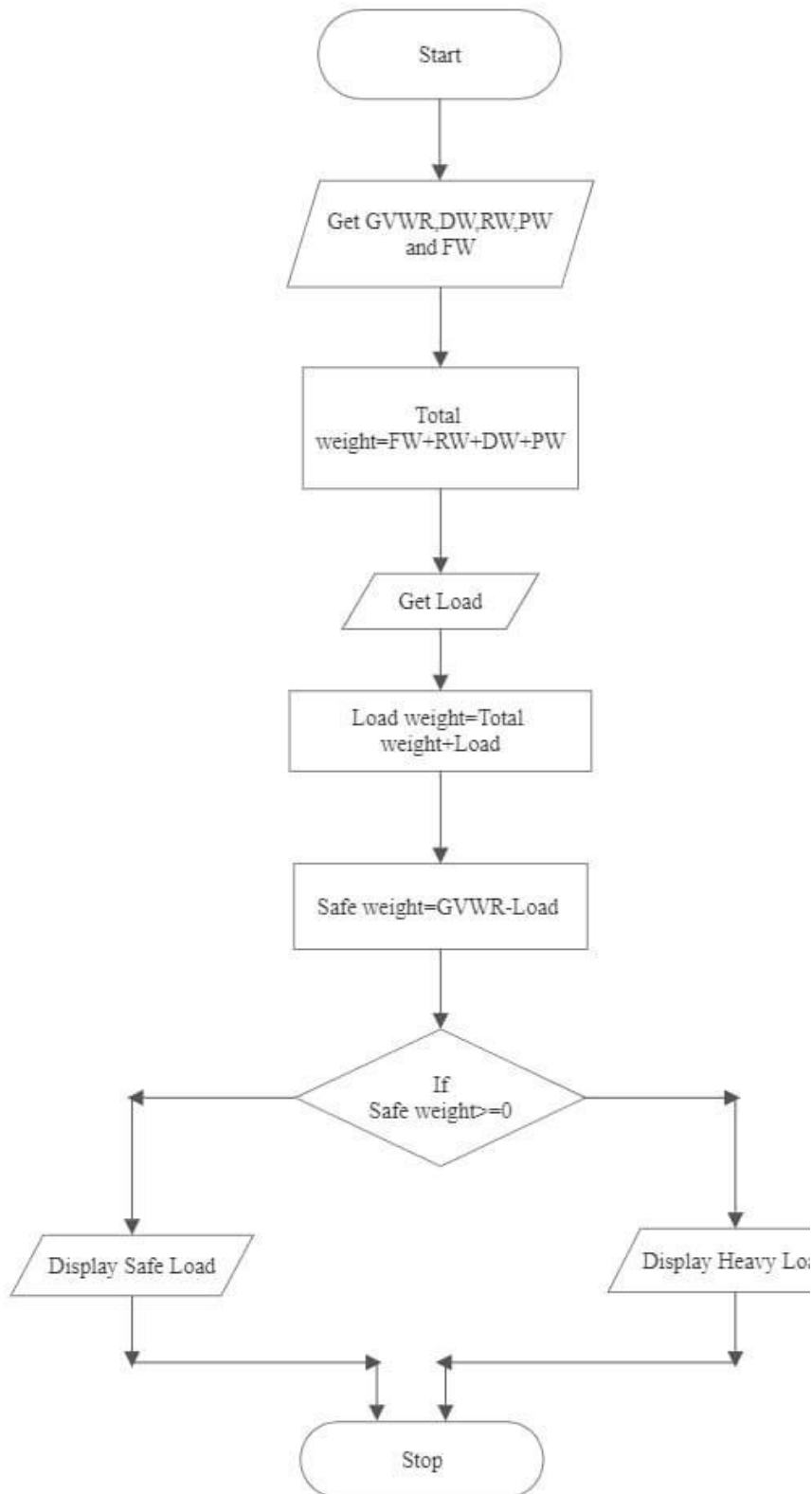
ELSE

 DISPLAY Heavy Load

ENDIF

END

FLOWCHART:



RESULT:

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

ROLL NO: 22CSEB57

NAME: UDHAYA CHANADRA PANDIAN S

Exp No: 1- E

**CALCULATE ELECTRIC CURRENT IN
3 PHASE A/C CIRCUIT**

Date: 29/ 11/22

AIM:

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

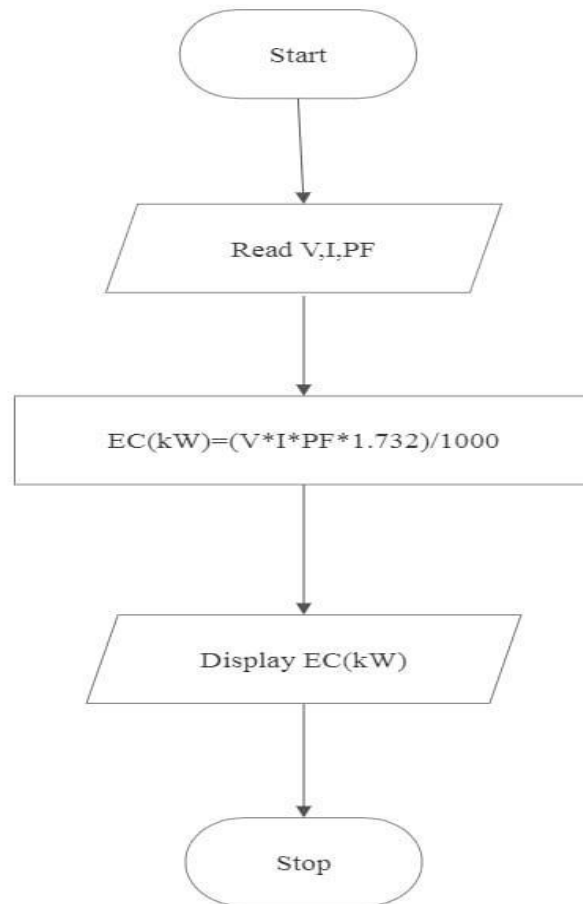
GET V,I,PF

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

DISPLAY EC(kW)

END

FLOWCHART:



RESULT:

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

Exp No: 1- F

RETAIL SHOP.

Date: 29/ 11/22

AIM:

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

ALGORITHM:

Step 1: Start

Step 2: Enter the No. of Items (n)

Step 3: For $i=0; i \leq n$

Step 4: Enter the Item name, Quantity, GST and price

Step 5: Calculate the amount = (price* GST) *Quantity

Step 6: $i \leq n$ 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

PSEUDOCODE:

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

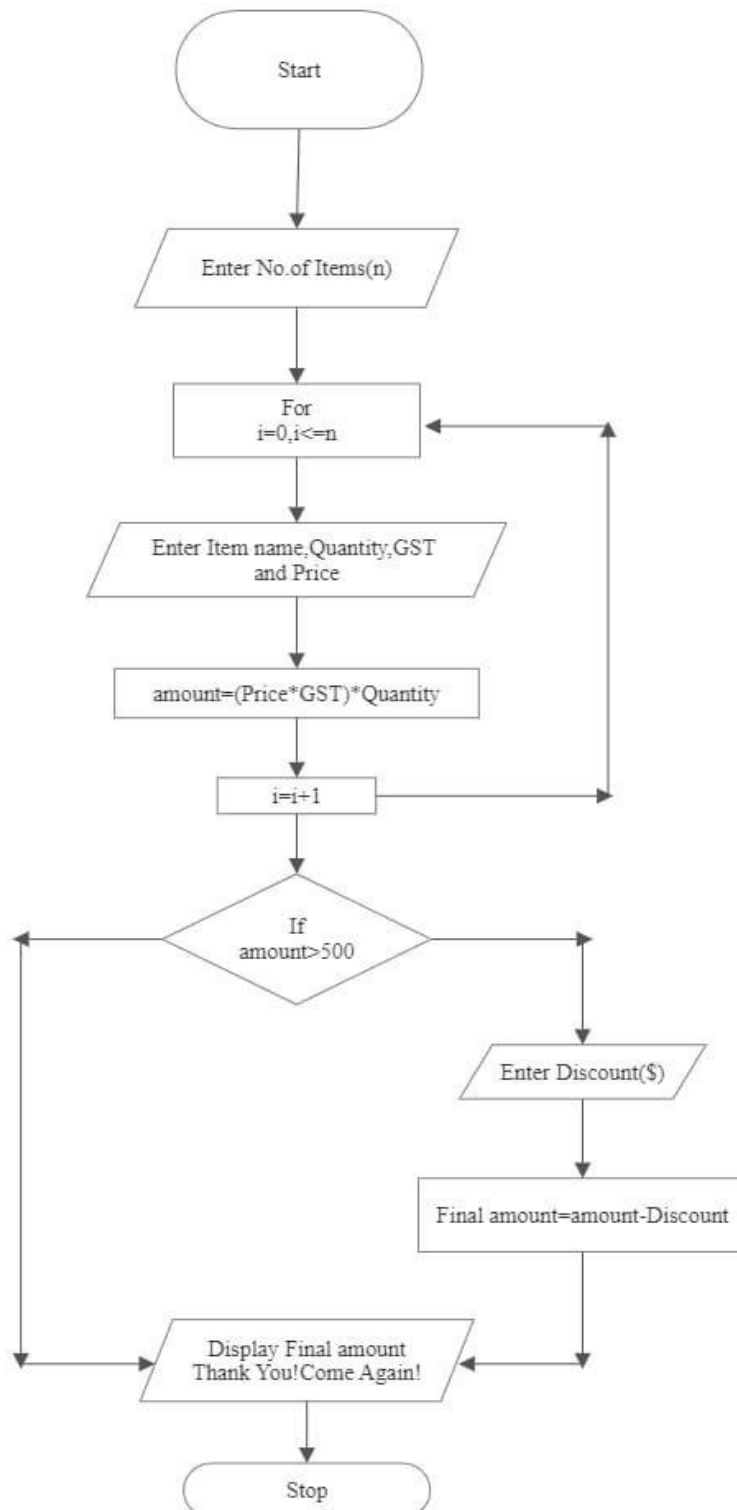
 CALCULATE Final amount=amount-Discount

 DISPLAY Final amount,Thank you!come again!

ENDIF

END

FLOWCHART:



RESULT:

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

Exp No: 1- G

SINE SERIES.

Date: 29/ 11/22

AIM:

To draw flow chart and write algorithm for calculating the Sine series.

ALGORITHM:

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 add 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

PSEUDOCODE:

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

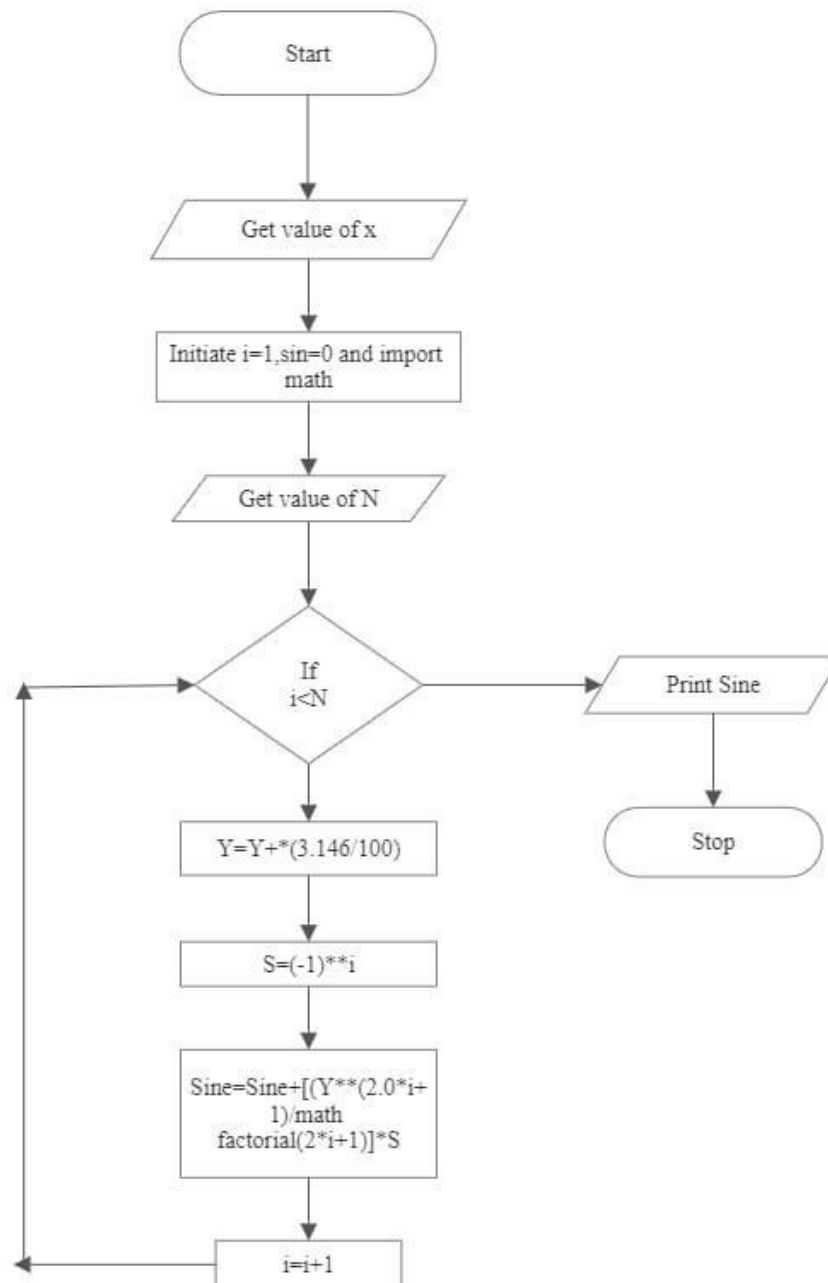
ENDIF

END

ROLL NO: 22CSEB57

NAME: UDHAYA CHANADRA PANDIAN S

FLOWCHART:

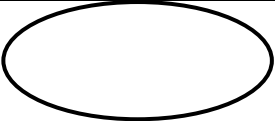


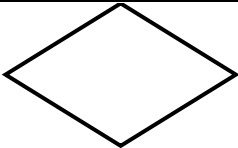
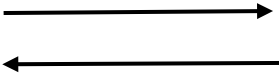



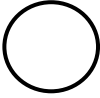
RESULT:

Thus the flowchart and the algorithm is 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** – 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.