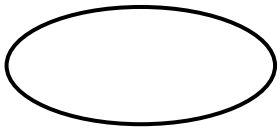
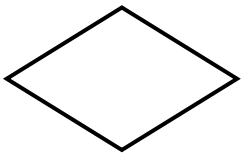
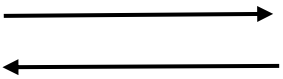
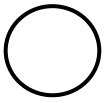
FLOWCHART:

- 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.

Exp No: 1- A **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.

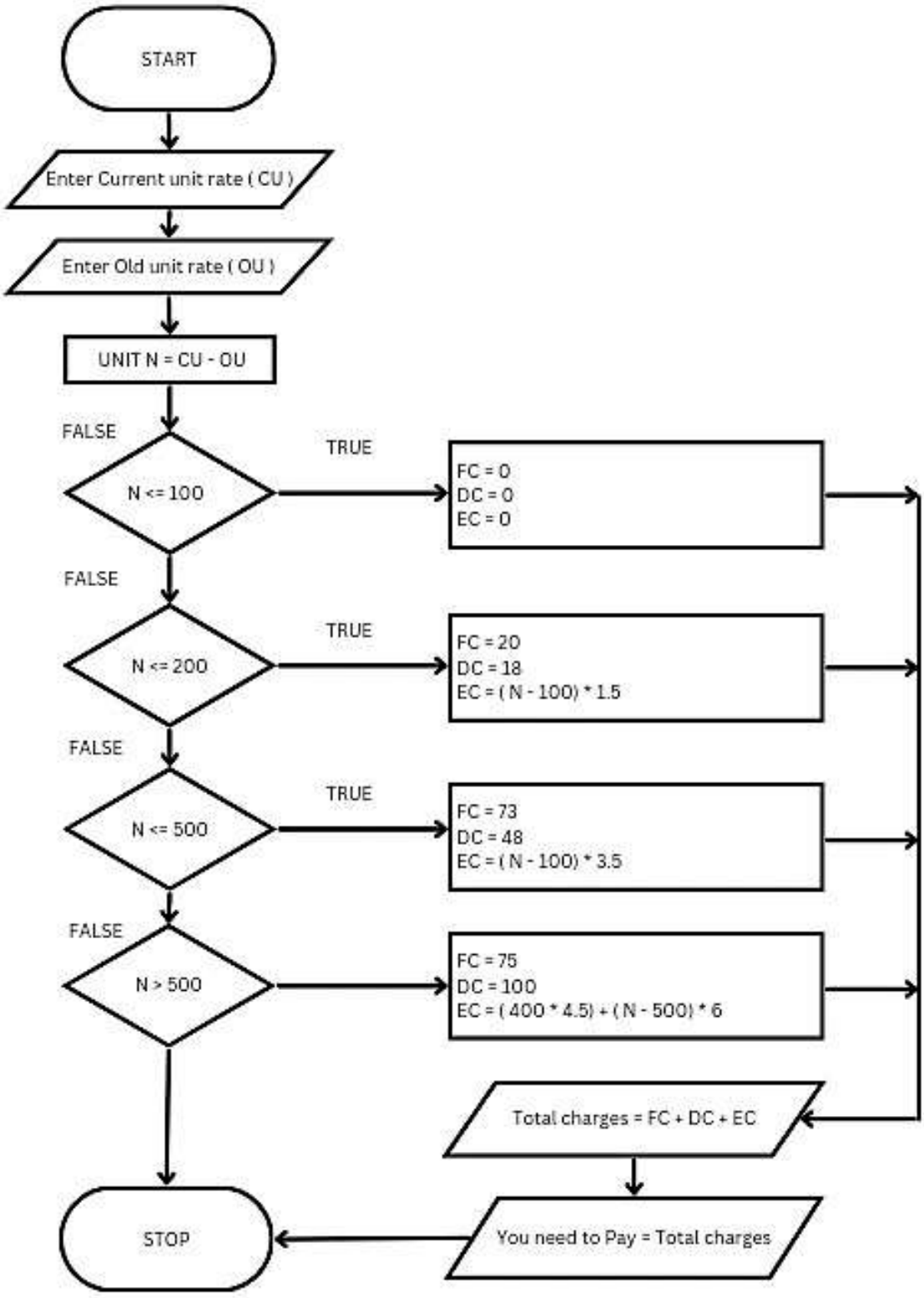
ROLL No: 22CSEB11
Name: KALYANI S

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
```

ROLL No: 22CSEB11
Name: KALYANI S

FLOWCHART:



RESULT:

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

ROLL No: 22CSEB11
Name: KALYANI S

Ex No : 1-B **RELAIL SHOP**
Date: 29.11.2022

AIM:

To draw a flowchart and write an algorithm, flowchart and pseudo code for retail shop

ALGORITHM:

Step1: Start
Step2: Get the Bill No., details of the customer, date
Step3: Get the number of items purchased n
Step4: Initialise i=0, Gross=0, Net price=0
Step5: check for the condition i<n , if true go to step 5.1 else go to step 5.2
5.1: Get item name, item price and discount
5.1.1: Calculate Gross = n*item price
5.1.2: Calculate Discount amount =Gross*discount/100
5.1.3: Calculate Net price =Gross-Discount amount
5.1.4: Increament of I by 1
5.2: Get the value of GST
5.2.1: Calculate the GST amount = Net price*GST/100
5.2.2: Calculate Bill amount = Net price +GST amount
Step 6: Print Bill No, details of the customer ,Date, Bill Amount

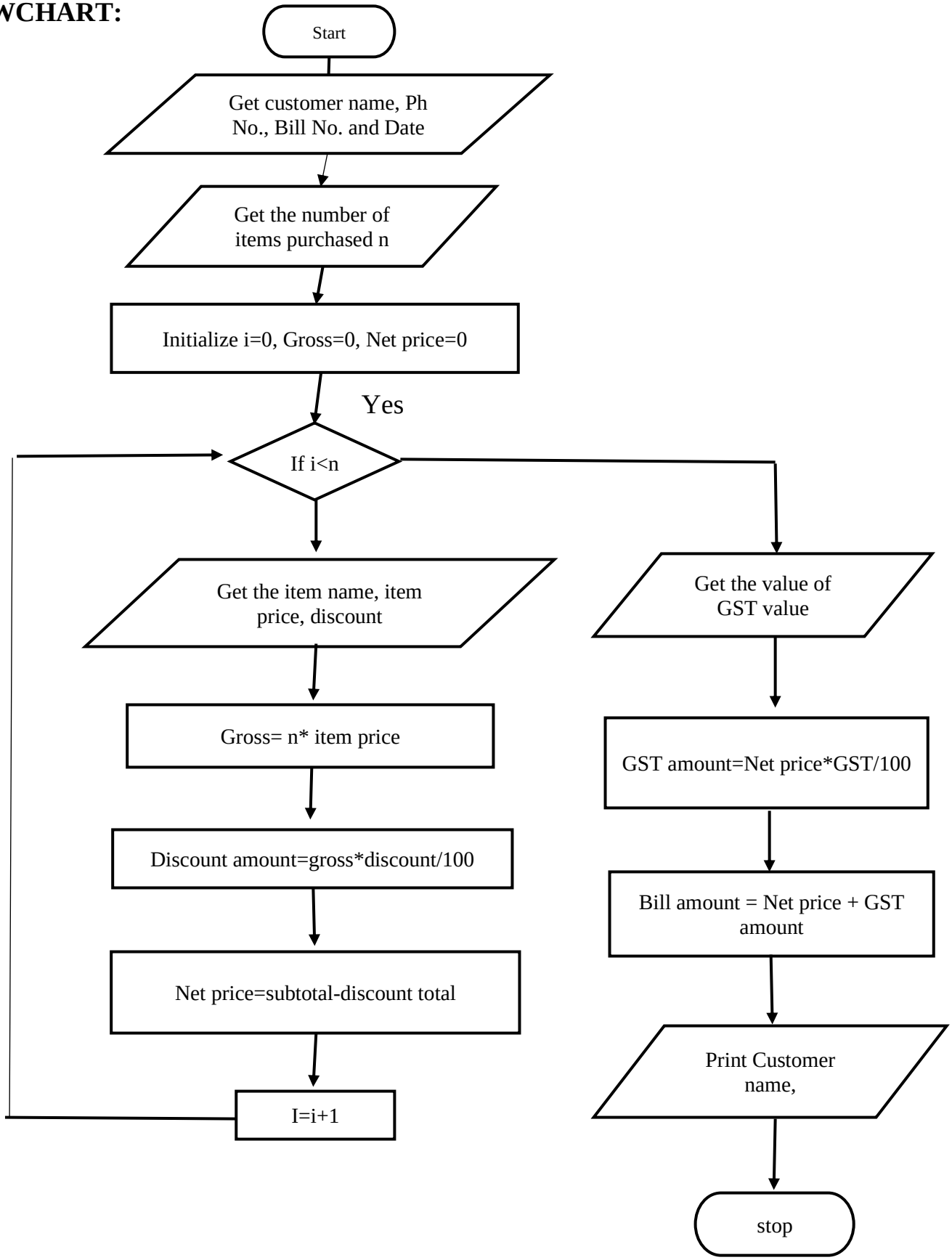
ROLL No: 22CSEB11
Name: KALYANI S

PSEUDO CODE:

START
GET the Bill No., customer name, Ph no., Date
GET the number of items purchased as n
INITIALISE i=0, Net price=0, Gross =0
FOR i<n
    GET item name, item price and discount
    CALCULATE Gross = n*item price
        Discount amount =Gross*Discount/100
        Net price= Gross-discount amount
    INCREAMENT i by 1
ELSE
    GET the GST value
    CALCULATE GST amount=Net price*GST value
        Bill amount = Net price +GST Amount
PRINT Bill No., customer name, Ph no., Date, Bill amount
STOP

ROLL No: 22CSEB11
Name: KALYANI S

FLOWCHART:



RESULT:

Thus the flowchart, algorithm and pseudo code is written for the given problem

ROLL No: 22CSEB11
Name: KALYANI S

Ex. No.:1-C **WHEIGHT OF STEEL ROD**

Date:29.11.2022

AIM:

To draw a flow chart and write an algorithm for calculating weight of steel rod

ALGORITHM:

Step1: Start

Step2: Get the number if iron rods (n), diameter(D), length(L)

Step3: Initialize with i=0, total weight=0, unit weight=0

Step4: Check for condition i <=n

Step5: If yes, calculate unit weight =D^2L/162

5.1: Calculate total weight =n*D^2L/162

Step6: If the condition is false, display total weight of rod and stop.

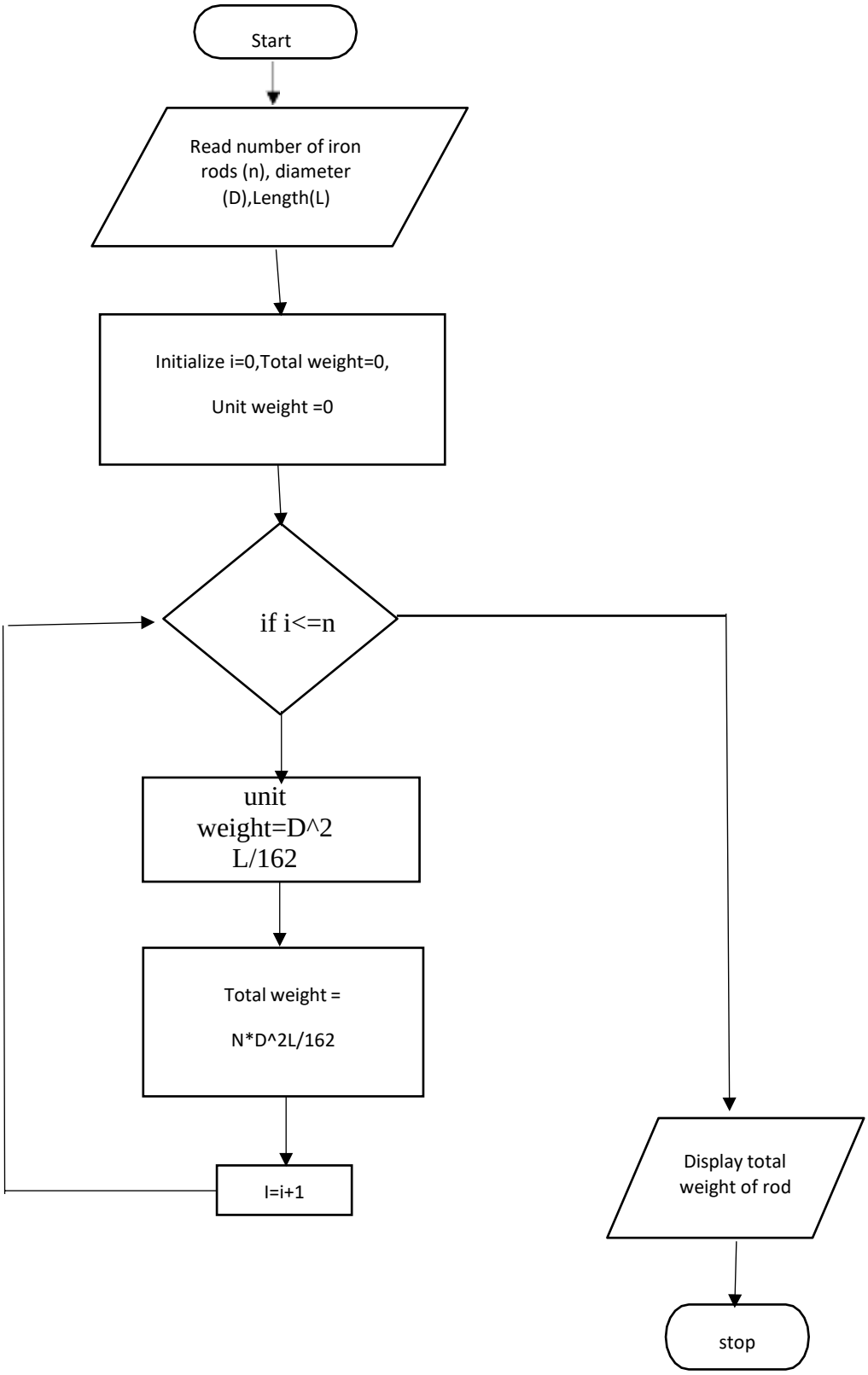
ROLL No: 22CSEB11
Name: KALYANI S

PSEUDOCODE:

START
READ number of iron rods(n)
diameter(D)
Length(X)
INITALISE i=1
Totalweight=0
Unitweight=0
FOR i<=n
CALCULATE Unit weight D^2 L / 162
Total weight = n*(D^2 L / 162)
INCREAMENT i=i+1
ElSE
DISPLAY Total weight of rod
STOP

ROLL No: 22CSEB11
Name: KALYANI S

FLOW CHART:



RESULT:

Thus the flow chart and the algorithm is written for the given problem**.**

ROLL No: 22CSEB11
Name: KALYANI S

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

Date: 29/ 11/22

AIM:

To draw a flow chart and write and algorithm for student grade analysis.

ALGORITHM:

Step 1: Start
Step 2: Read the number of students n
Step 3: Check for the condition i<n
    3.1: If yes go to step 4
    3.2: If no, go to step 11
Step 4: Get student name, roll number, m1, m2, m3
Step 5: Calculate the percentage using the formula, m1+m23+m3/3*100
Step 6: Check for the condition, 90<percentage<=100
    6.1: If yes, print name, roll number, “O+” and stop
    6.2: If no, then go to the next condition.
Step 7: Check for the condition, 80<percentage<=90
    7.1: If yes, print name, roll number, “O” and stop
    7.2: If no, then go to the next condition
Step 8: Check for the condition, 70<percentage<=80
    8.1: If yes, print name, roll number, “A” and stop
    8.2: If no, then go to the next condition
Step 9: Check for the condition, 60<percentage<=70
    9.1: If yes, print name, roll number, “B” and stop
    9.2: If no, print name, roll number, “Fail” and stop
Step 10: Increment of i by 1
Step 11: stop

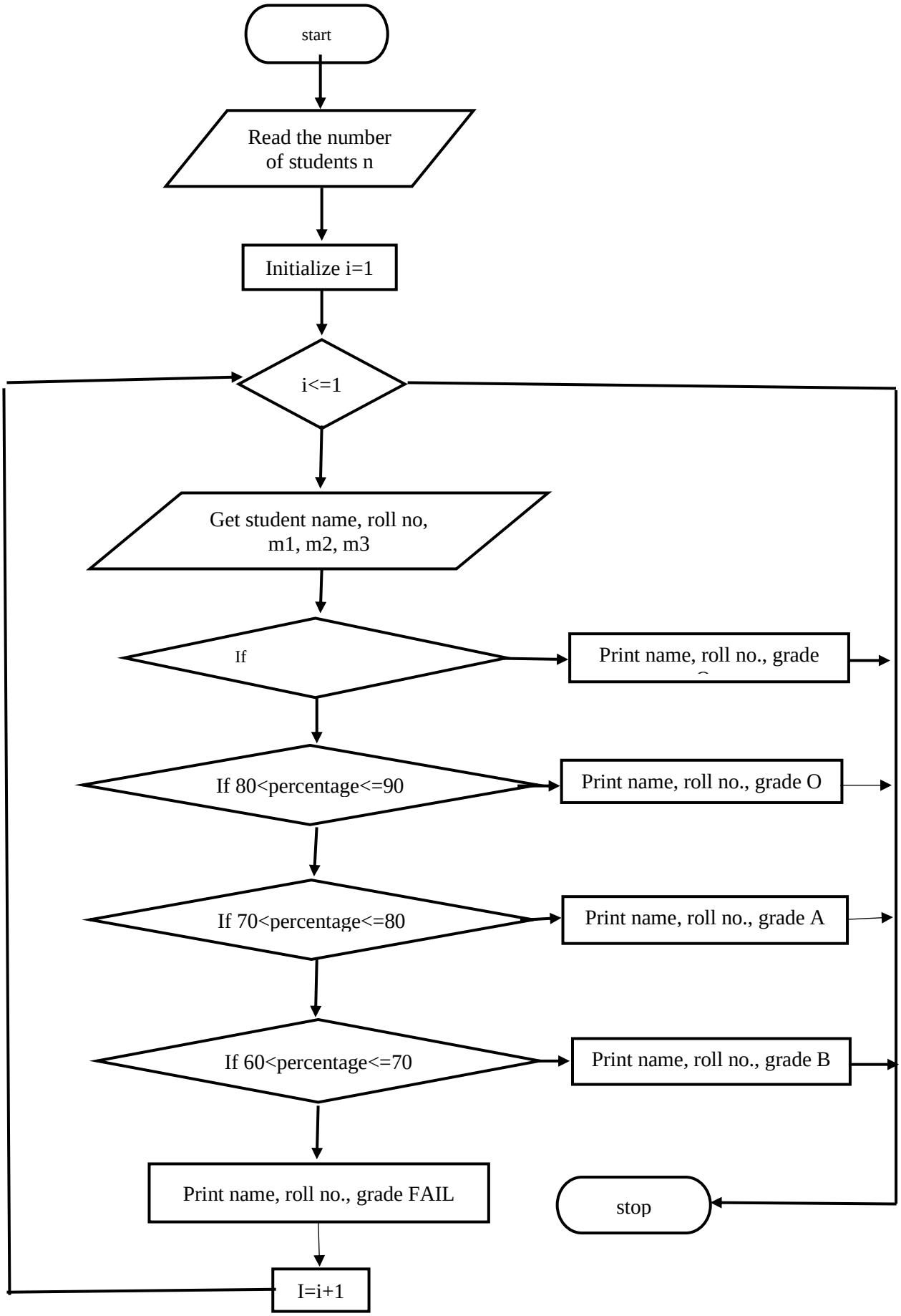
ROLL No: 22CSEB11
Name: KALYANI S

PSEUDOCODE:

START
READ number of students n
INITIALISE i=1
FOR i<=n
    GET student name, roll no., m1, m2, ,3
    CALCULATE percentage=m1+m2+m3/3*100
    IF 90<percentage<=100
    Print name, roll no., grade O+
    ELIF 80<percentage<=90
    Print name, roll no., grade O
    ELIF 70<percentage<=80
    Print name, roll no., grade A
    ELIF 60<percentage<=70
    Print name, roll no., grade B
    ELSE
    Print name, roll no., grade FAIL
    END IF
    INCREAMENT
ENDFOR
STOP

ROLL No: 22CSEB11
Name: KALYANI S

FLOWCHART



RESULT:

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

ROLL No: 22CSEB11
Name: KALYANI S

Exp No: 1- E **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.

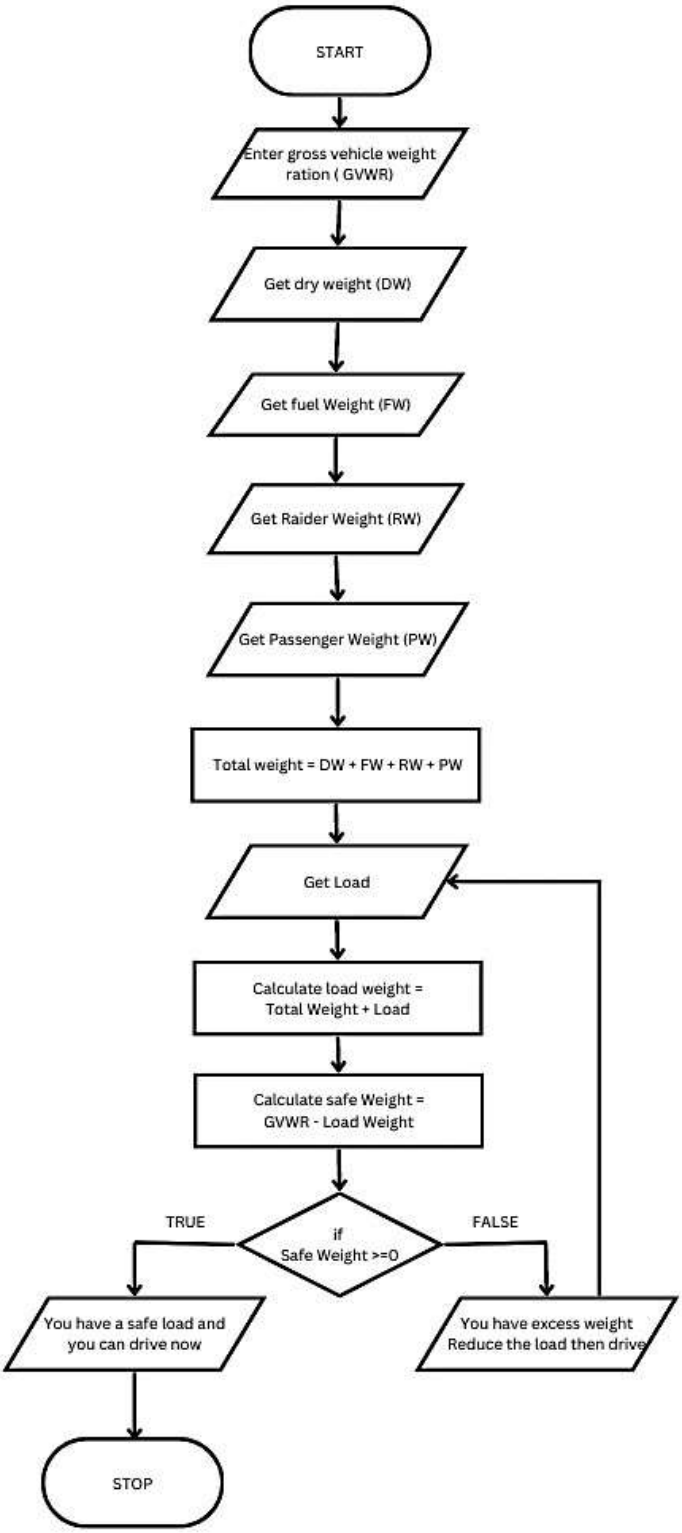
ROLL No: 22CSEB11
Name: KALYANI S

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
```

ROLL No: 22CSEB11
Name: KALYANI S

FLOWCHART:



RESULT:

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

ROLL No: 22CSEB11
Name: KALYANI S

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

Date: 29/ 11/22

AIM:

To draw a flow chart and write an algorithm for sine series.

ALGORITHM:

Step 1: Start

Step 2: Get the value of x, n

Where x must be in degree.

Step 3: Initialize i=1, s= -1**I, sine=0 and import math.

Step 4: Check for condition i<=n

4.1: If condition is true, convert x to radian using the formula

4.2: Then calculate sine series using the formula:

Sine=sine +y**(2*i=1).factorial(2*i+1)*s

4.3: Increment of i by 1

Step 5: If condition is false, display sine and goto stop

ROLL No: 22CSEB11
Name: KALYANI S

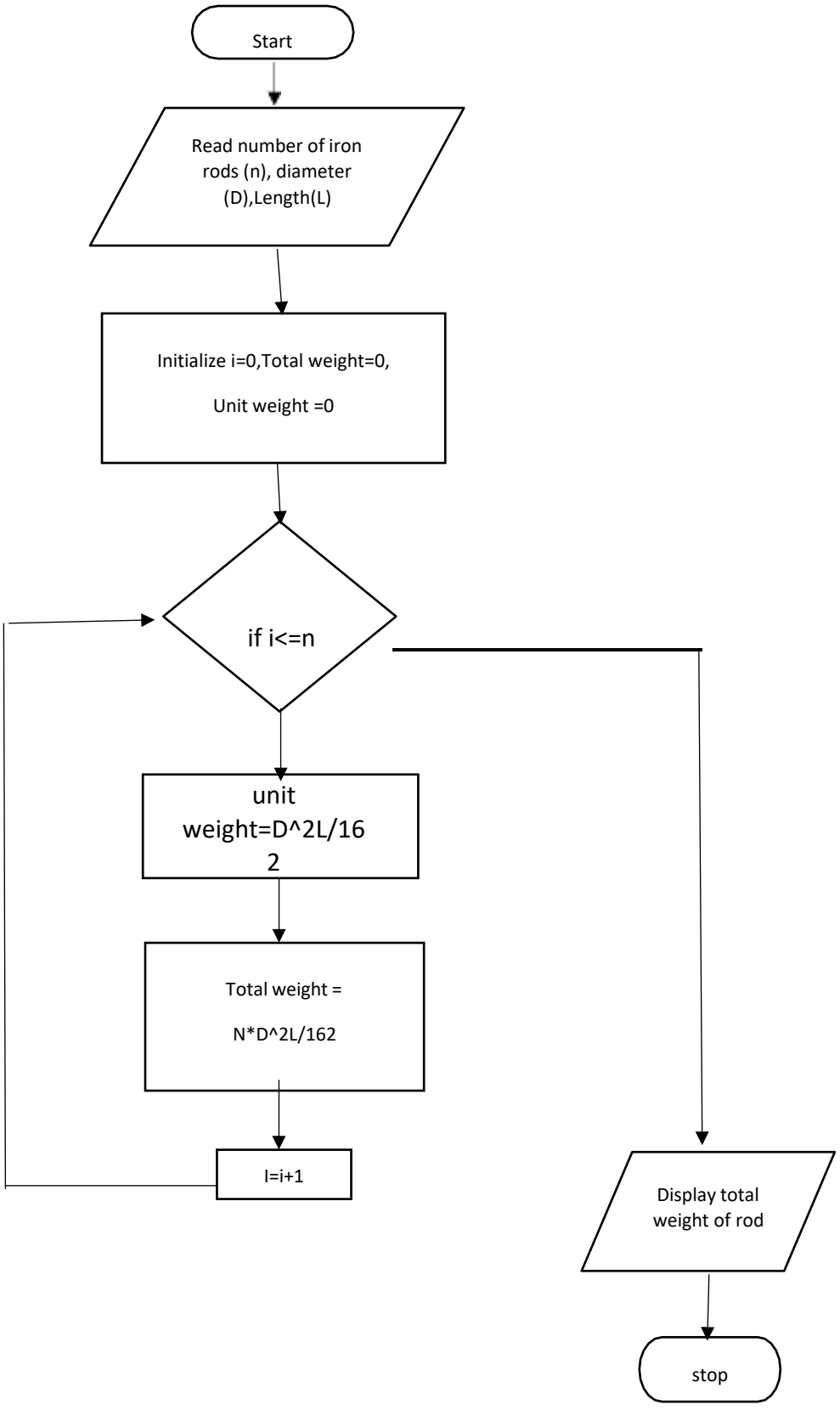
PSEUDOCODE:

START
GET The value of x in degrees and n in nos.
INITIALISE i=1 , (-1)**I , sine=0 and import math
FOR i<n
    CONVERT x to radianby y=x*π / 180
    CALCULATE sine = y**(2*i+1). factorial(2*i+1)*s
    INCREMENT I by 1
ELSE
    PRINT sine
ENDFOR
STOP

Roll No. 22CSEB11

Name: KALYANI S

FLOW CHART



RESULT:

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

Roll No. 22CSEB11

Name: KALYANI S

Exp No: 1- G CALCULATE ELECTRICAL CURRENT IN 3 PHASR AC CIRCUIT

Date: 29.11.2022

AIM:

To draw a flow chart and write an algorithm to calculate electrical current in 3 phase AC circuit

ALGORITHM:

Step1: Start

Step2: Read the values pf, I and V

Step3: Calculate P using the formula p=√3*pf*I*V

Step4: Print the value of P which is the electrical current in 3 phase AC circuit

Roll No. 22CSEB11

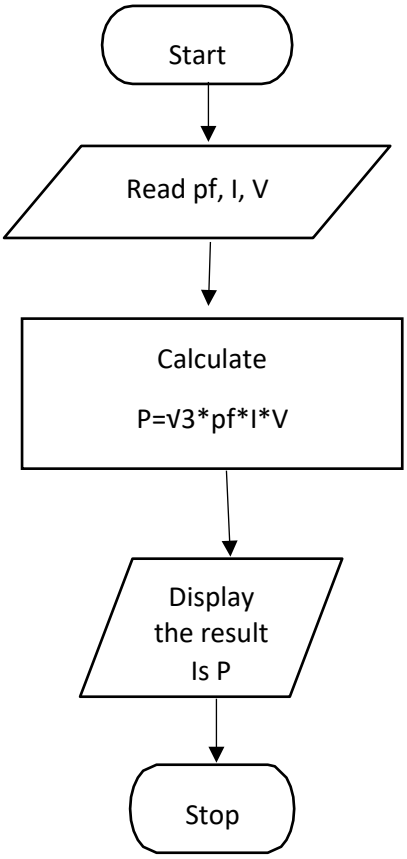
Name: KALYANI S

PSEUDOCODE:

START
READ Pf, I, V
CALCULATE P= √ 3 * pf * I * v
PRINT The Result is P

ROLL No: 22CSEB11
Name: KALYANI S

FLOW CHART:



RESULT:

Algorithm and flowchart is written for the given problem

ROLL No: 22CSEB11
Name: KALYANI S