Ex.no.1a.

24/11/2022

Identification and solving of simple real life or technical problems, and developing flow charts for the same.

1.ELECTRICITY BILLING

AIM:

To draw flowchart and write algorithm for calculating the electricity bill.

ALGORITHM:

Step1: Start

Step2: Enter this month unit, previous month unit.

Step3: Unit=This month unit-pre month unit.

Step4: Check unit<=100, if true, no amount, no amount to pay, else move to next step.

Step5: Check unit>100&&unit<=200, if true, print the process of condition.

Step6: Check unit>200&&unit<=400, if true, print the process for that condition.

Step7: Check unit>400, if true, print its process.

Step8: Total amount=amount

Step9: Print Total amount.

Step10: Stop

PSEUDO CODE:

BEGIN

READ the value of this month unit, pre month unit

COMPUTE Unit= This month unit, pre month unit.

IF unit<=100

  Yes, Amount=0

ELSE,

  Move to next step

IF Unit >100& Unit<=200

  Yes, PRINT the process for that condition

IF Unit>200& Unit<=400

  Yes, PRINT the process for that condition

IF Unit>400

  Yes, PRINT its process

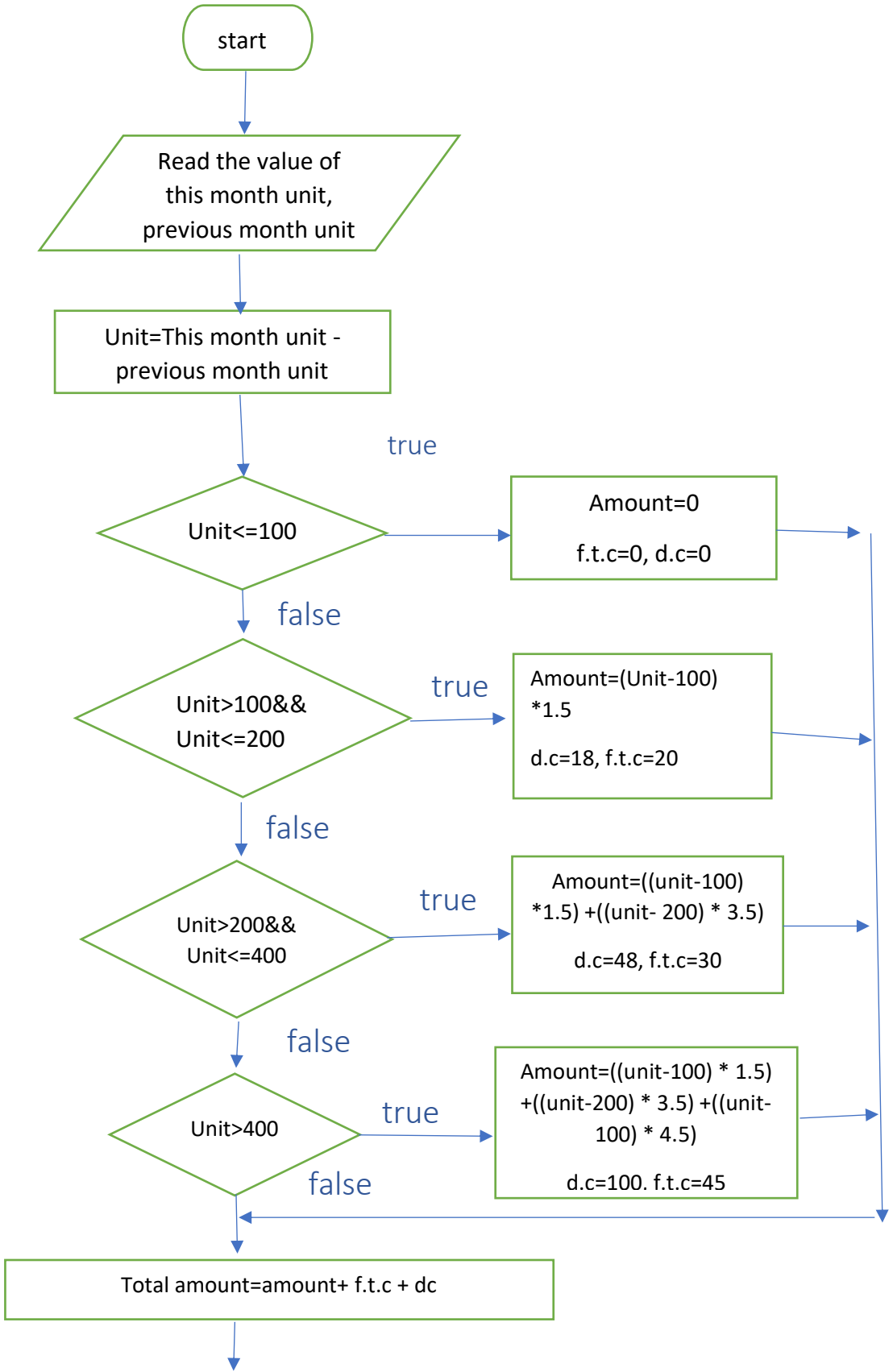
COMPUTE Total amount= amount

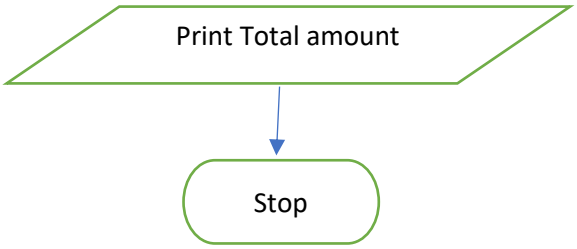
PRINT TOTAL AMOUNT

ENDIF

END

FLOWCHART:


start
Read the value of this month unit, previous month unit
Unit=This month unit - previous month unit
true
Unit<=100
Amount=0
f.t.c=0, d.c=0
false
Unit>100&& Unit<=200
true
Amount=(Unit-100) *1.5
d.c=18, f.t.c=20
false
Unit>200&& Unit<=400
true
Amount=((unit-100) *1.5) +((unit- 200) * 3.5)
d.c=48, f.t.c=30
false
Unit>400
true
Amount=((unit-100) * 1.5) +((unit-200) * 3.5) +((unit-100) * 4.5)
d.c=100. f.t.c=45
false
Total amount=amount+ f.t.c + dc



RESULT:

Thus, the algorithm, Pseudo code and flowchart are written for given algorithm.

Ex.no.1b

24/11/2022

2.CALCULATING SINE SERIES:

AIM:

To draw flowchart and write algorithm for calculating sine series.

ALGORITHM:

Step1: Start.

Step2: Get the number of items(n)

Step3: Initialize fact =1, series=x.

Step4: If I<=n.

Step4.1: if true: sum= [(-1) **I] * [x**(2i+1)]/(2i+1)! Go to step 4.2, else go to step5.

4.2: series =series + sum

4.3: I=i+1

Step5: print series.

Step6: stop.

PSEUDO CODE:

BEGIN

GET the number of items(n)

INITIALIZE i=1, Series=x

IF (i<=n) DO

ELSE

BREAK ENDIF

COMPUTE SUM= [(-1) **i] *[x**(2i+1)]/(2i+1)1

Series = Series +sum

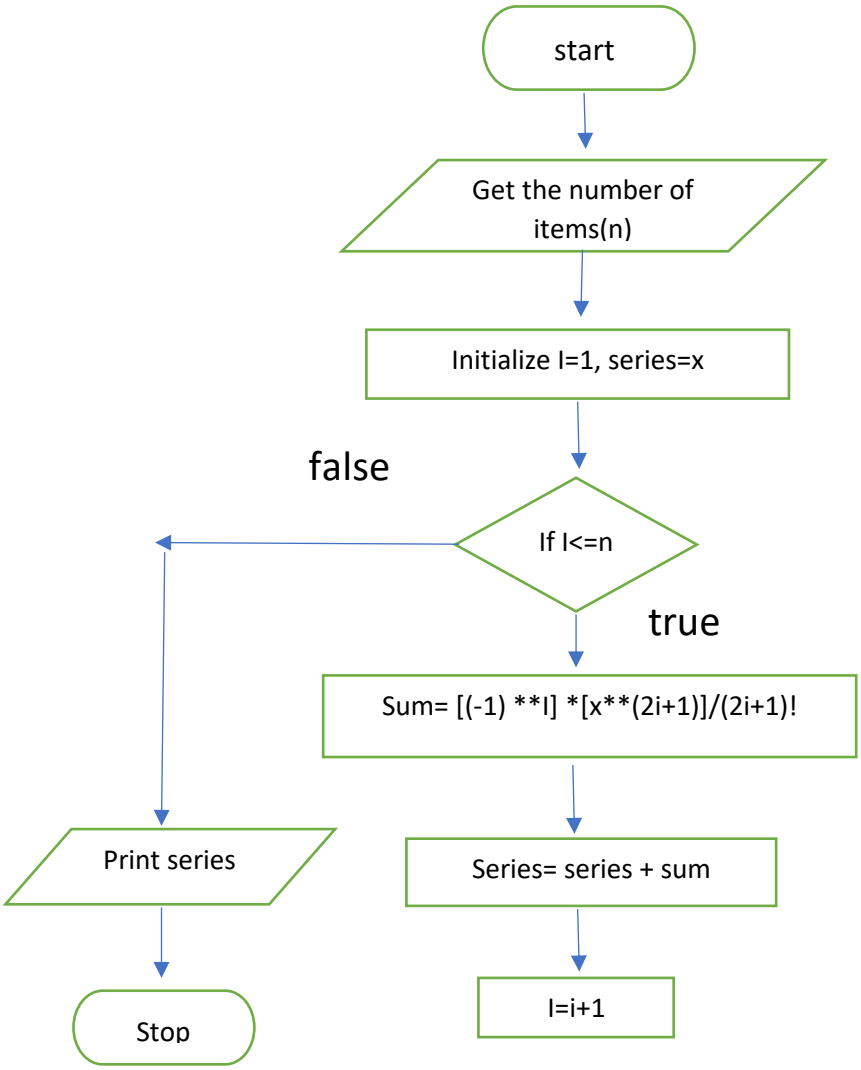
INCREMENT i=i+1

PRINT Series

ENDIF

END

FLOWCHART:



RESULT:

Thus, the algorithm, Pseudo code and flowchart are written for given program.

Ex.no.1.c

24/11/2022

3. COMPUTE ELECTRICAL CURRENT IN 3 PHASES AC CIRCUIT.

AIM:

To draw flowchart and write algorithm for compute electrical current in 3 phase AC circuit.

ALGORITHM:

Step1: Start

Step2: Read the value of k.w.v.

Step3: To find the I calculate (1000 * kw)/1.732*v

Step4: Display the value I

Step5: Stop

PSEUDO CODE:

BEGIN

READ the value K, W, V

COMPUTE I= (1000*KW)/ (1.732*V)

PRINT I

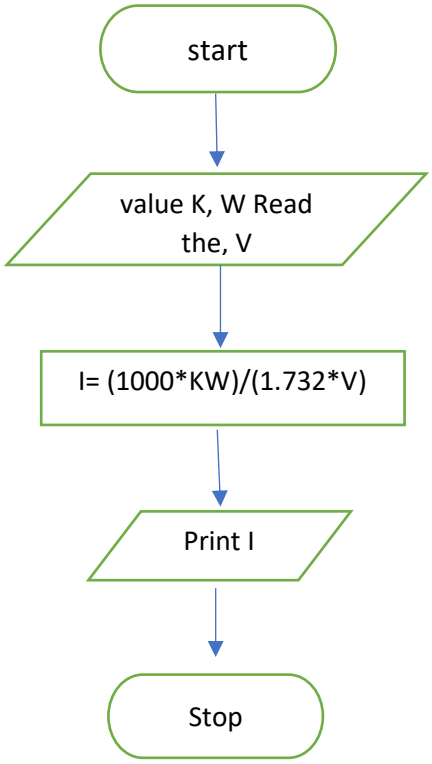
END IF

END

FLOWCHART:

Formula: kw=(V*I*PF*1.732)/1000

To find I = 1000* KW/1.732* V



RESULT:

Thus, the algorithm, Pseudo code and flowchart are written for given program.

Ex.no.1d

12/12/2022

4. WEIGHT OF STEEL RODS:

AIM:

To draw flowchart and write algorithm for calculate the weight of steel rods.

ALGORITHM:

Step1: Start

Step2: Enter the number of rods (N.R)

Step3: If NR==0, yes: 3.1, 3.2, No: go to step4.

3.1: Total weight is 0.

3.2: Go to step6.

Step4: Initialize Total weight is 0, I=1.

Step5: If N.R>=I, yes, move to 5.1. No go to step6.

5.1: Read the value D, L.

5.2: W= ((D* D) *L)/162

5.3: Total weight= Total weight + w

5.4: Increment I, I++

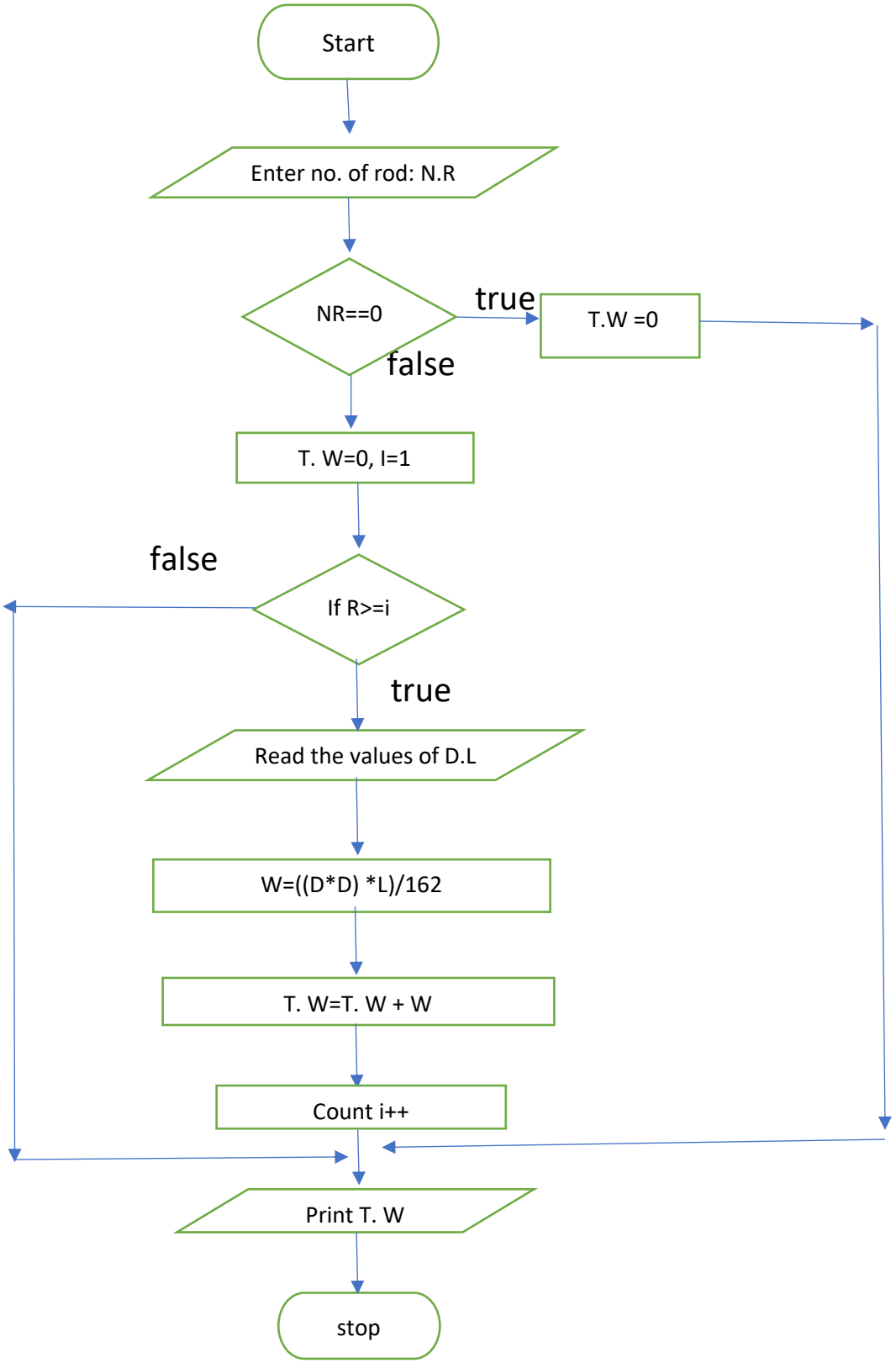
Step6: Print Total Weight

Step7: Stop.

FLOWCHART:

Formula=D^2/162

T.w = Total weight



PSEUDO CODE:

BEGIN

ENTER the no. of rods (N.R)

IF N. R=0

YES, Total weight is 0

ELSE,

Next step

INITIALISE Total weight is 0

i=1

IF N.R>=i

Yes, READ the value D, L

ELSE

BREAK ENDIF

COMPUTE W=((D*D) *L)/162

Total weight = Total weight+ w

INCREMENT I, i++

PRINT Total weight

ENDIF

END

RESULT:

Thus, the flowchart, Pseudo code and algorithm are written for the given program.

Ex.No.1e

12/12/22

5. CALCULATE THE RETAIL SHOP BILLING.

AIM:

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

ALGORITHM:

Step1: Start

Step2: Read the Bill number.

Step3: Enter the Customer name, address.

Step4: Get the total number of Item purchased: N

Step5: If N==0; Yes: 5.1, 5.2; No go to step 6.

5.1: Sum=0

5.2: Go to step 8.

Step6: Initialize i=1, sum=0

Step7: if i<=N; yes=move to further step; no=go to step 8.

7.1: Read the value of product: v

7.2: Sum =Sum + v

7.3: increment of I, i++

Step8: if sum>2000, yes=8.1, No=step 9.

8.1: Sum*0.20 =D. A (Discount amount)

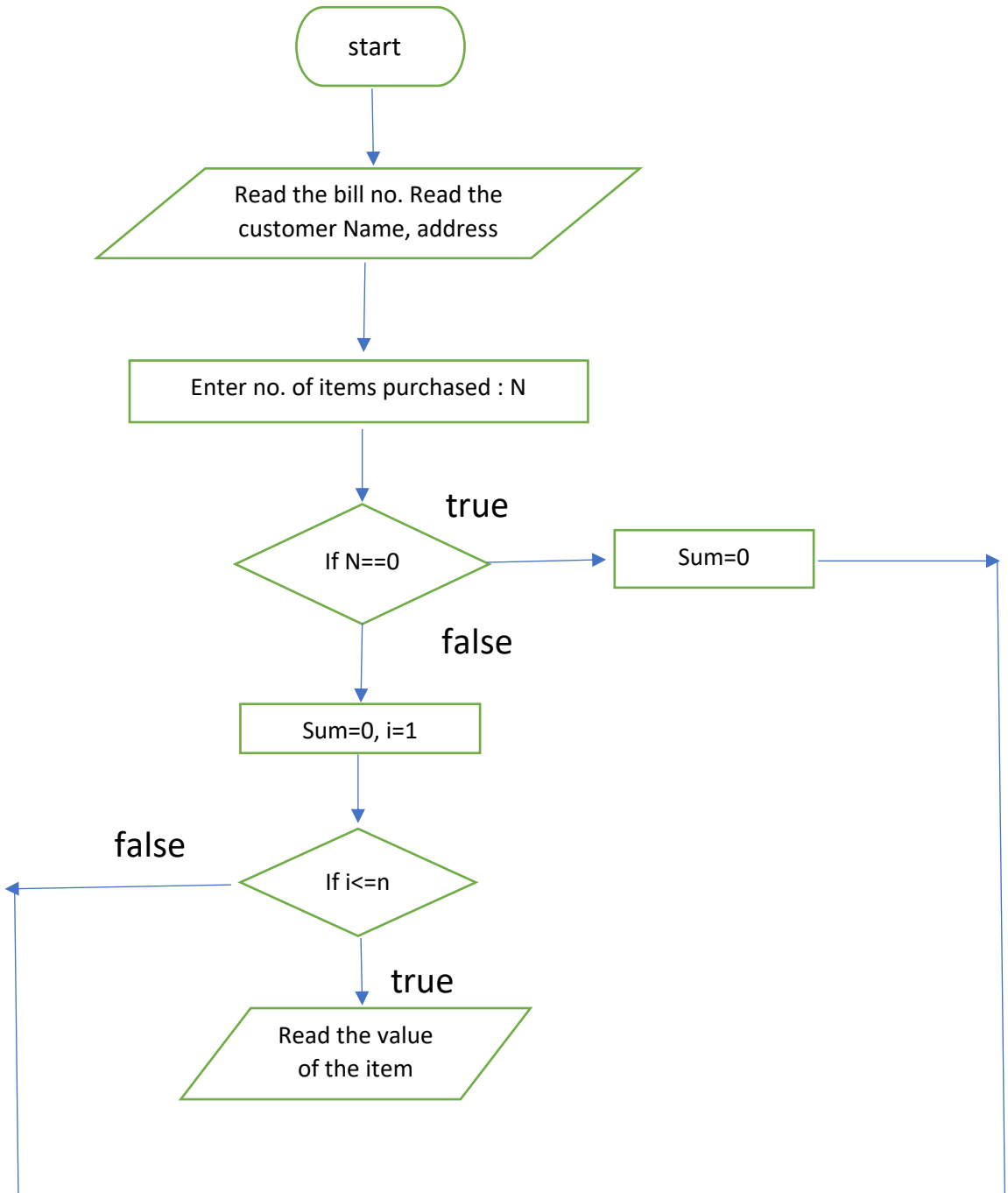
8.2: Total amount= Sum- D. A

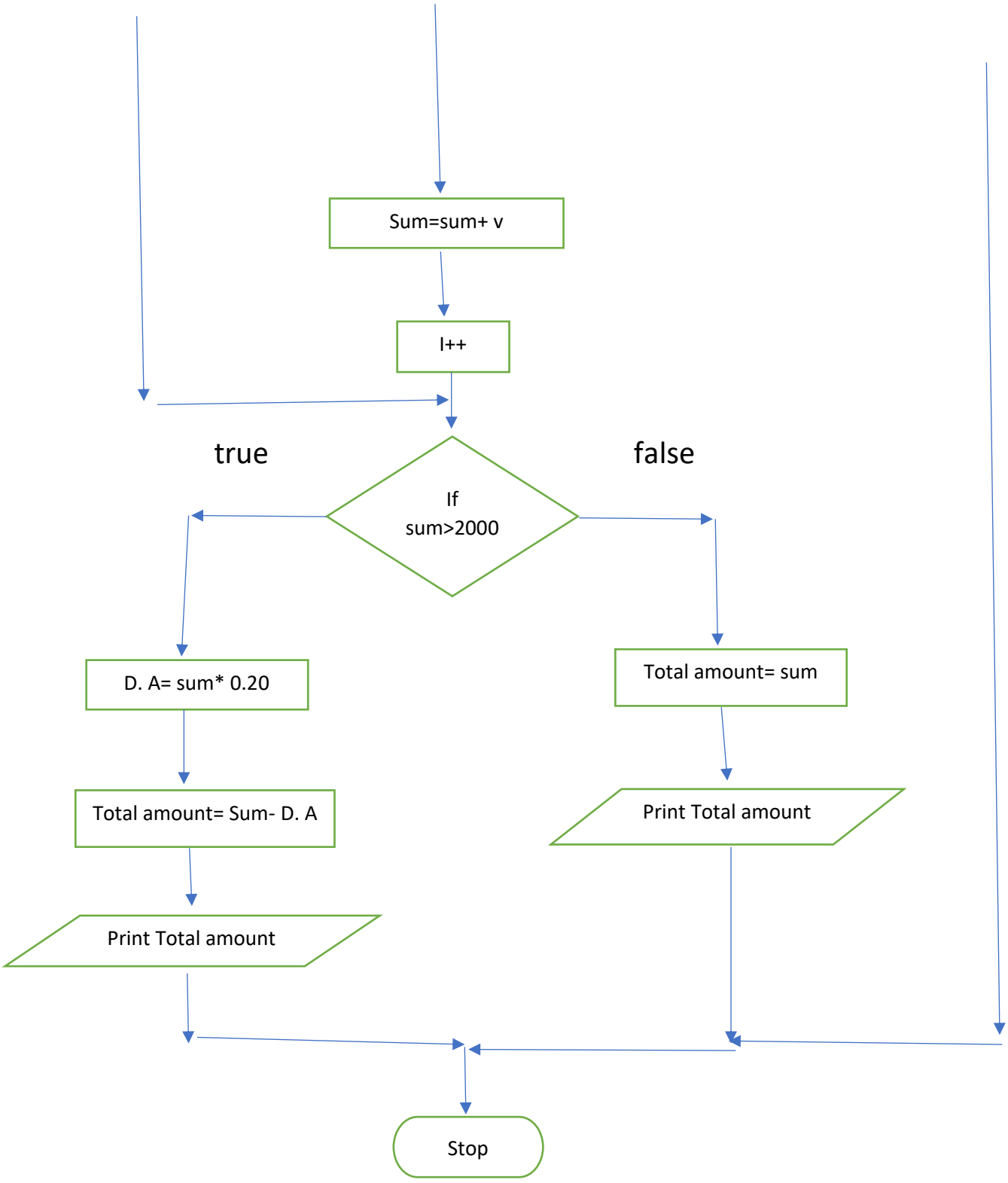
8.3: Print Total amount & Step 2,3.

Step9: Print sum.

Step10: Stop.

FLOWCHART:




Sum=sum+ v
I++
true
false
If
sum>2000
D. A= sum* 0.20
Total amount= sum
Total amount= Sum- D. A
Print Total amount
Print Total amount
Stop

PSEUDO CODE:

BEGIN

READ Bill no, Customer name, address

GET N

CHECK IF N==0 THEN

PRINT Sum=0

ELSE

INITIALIZE i=1, Sum=0

CHECK IF Sum>2000 THEN

COMPUTE Discount = Sum* 0.20

CALCULATE Total amount= Sum- Discount

PRINT Total amount

PRINT Sum

END

RESULT:

Thus, the flowchart, algorithm and Pseudo code are written for problem.

Ex.no.1f

12/12/2022

6.CALCULATING WEIGHT OF MOTAR BIKE:

AIM:

To draw a flowchart and write algorithm to calculate the weight of motor bike.

ALGORITHM:

Step-1: start

Step-2: get the type of motorcycles: m

Step-3: based on type m, choose weight as

3.1: if m= chopper, w= 317kg

3.2: if m= bobber, w= 306kg

3.3: if m= crusher, w= 256kg

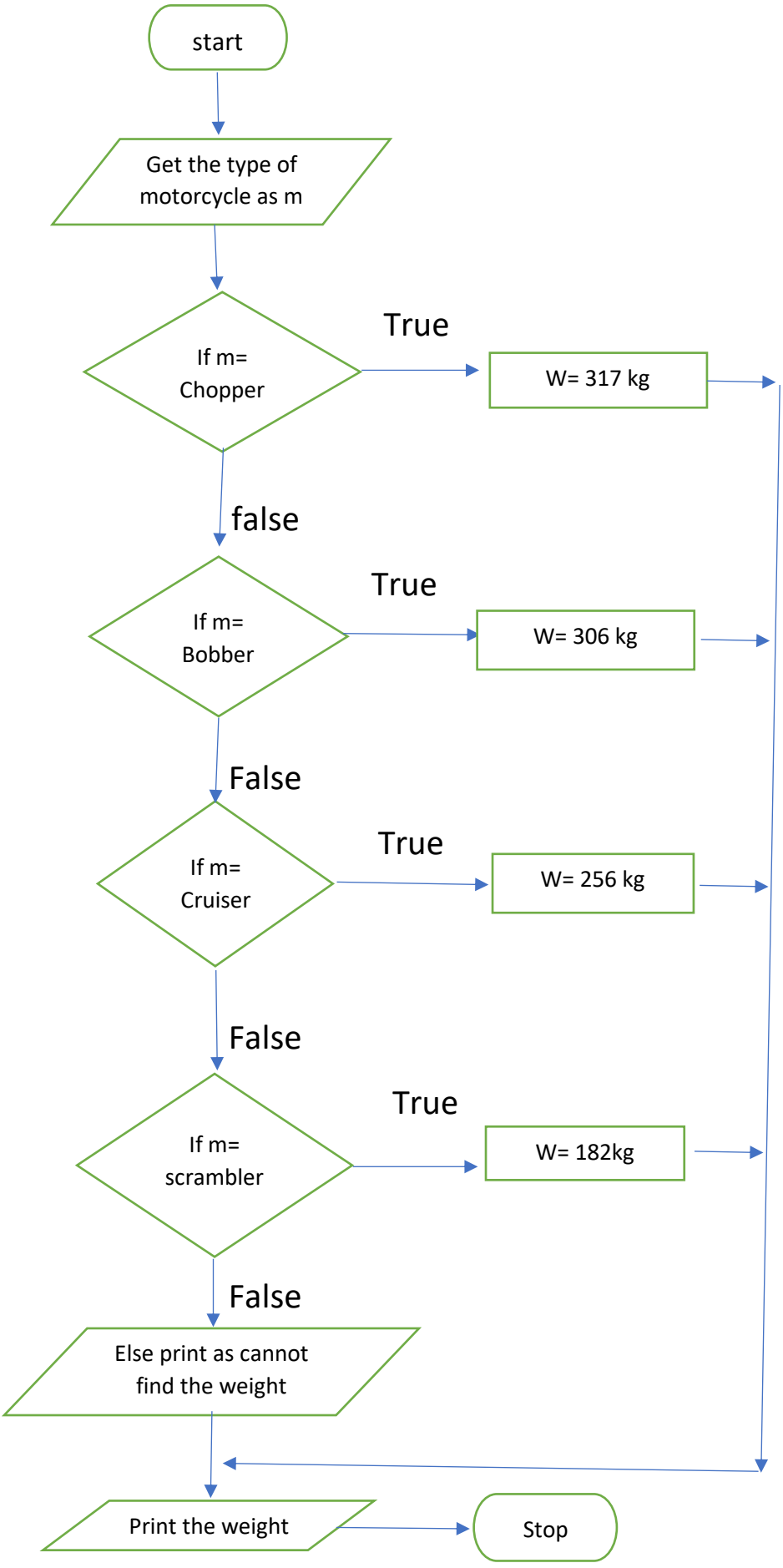
3.4: If m= scrambler, w= 182kg

Step-4: else, print as cannot find the weight

Step-5: print the weight

Step-6: stop.

FLOWCHART:


start
Get the type of motorcycle as m
If m= Chopper
True
W= 317 kg
false
If m= Bobber
True
W= 306 kg
False
If m= Cruiser
True
W= 256 kg
False
If m= scrambler
True
W= 182kg
False
Else print as cannot find the weight
Print the weight
Stop

PSEUDO CODE

BEGIN

GET T, M

IF M= chopper THEN

PRINT weight = 317kg

ELSE

IF M= bobber THEN

PRINT weight = 306kg

ELSE

IF M= cruiser THEN

PRINT weight = 256kg

ELSE

CHECK IF M = scrambler THEN

PRINT weight = 182kg THEN

PRINT WEIGHT

ELSE

PRINT weight cannot find

ENDIF

END

RESULT:

Thus, the flowchart, Pseudo code and algorithm are written for given program.

Ex.no.1g

12/12/2022

7. **CALCULATING STUDENTS GRADE ANALYSIS**:

AIM:

To draw a flowchart and write algorithm for calculating students grade analysis.

ALGORITHM:

Step-1: start

Step-2: read the number of students as 'N'

Step-3: initialize i; i=1

Step-4: if i<=N; TRUE= go to step-5

Step-5: read the marks m1, m2, m3&name of students

Step-6: total = m1+m2+m3

Step-7: average = total/3

Step-8: if aug>=90&&aug<=100; yes: go to 8.1;

No: go to step

8.1: grade = 0

Step-9: if aug>=75&&aug<90; yes: go to 9.1

No: go to step-10

9.1: grade = A

Step-10: if aug>=50&&aug<50; yes: go to 10.1

No: go to step-11

10.1: grade = B

Step-11: if aug>=35&&aug<50; yes: go to 11.1

No: go to step-12

11.1: grade = C

Step-12: if aug<35; yes: go to 12.1

No: go to step 13

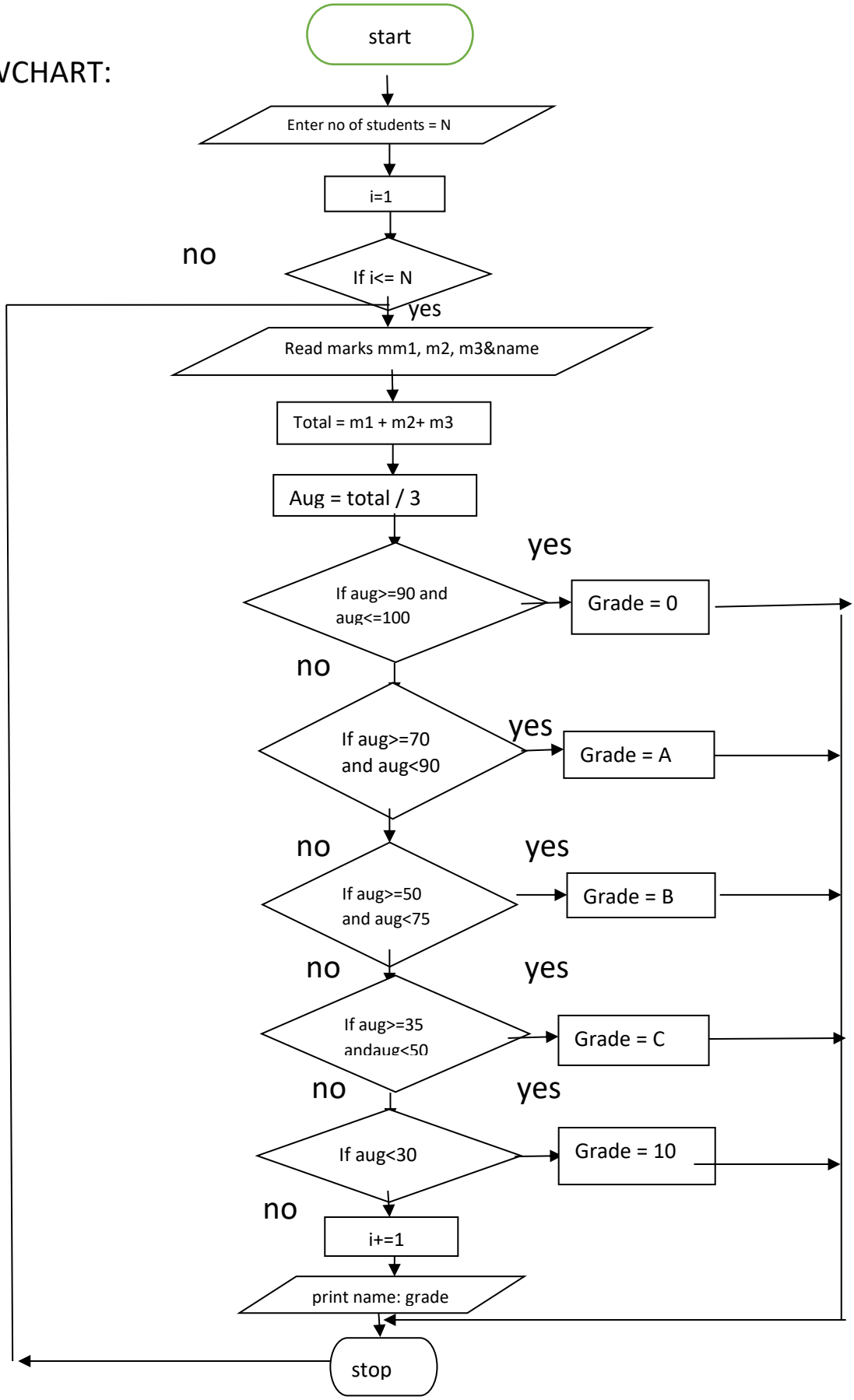
12.1: grade = D

Step-13: increment i=i+=1

Step-14: print the name&grade

Step-15: stop

FLOWCHART:


start
Enter no of students = N
i=1
no
If i<= N
yes
Read marks mm1, m2, m3&name
Total = m1 + m2+ m3
Aug = total / 3
yes
If aug>=90 and aug<=100
Grade = 0
no
If aug>=70 and aug<90
yes
Grade = A
no
If aug>=50 and aug<75
yes
Grade = B
no
If aug>=35 andaug<50
yes
Grade = C
no
If aug<30
yes
Grade = 10
no
i+=1
print name: grade
stop

PSEUDO CODE:

BEGIN

READ the number of students as ‘N’

INITIALISE i; i=1

IF i<=N;

Yes, READ the marks m1, m2, m3&name of student

ELSE

BREAK ENDIF

COMPUTE total = m1+m2+m3

Average = total/3

IF Aug>=90&&aug<=100;

Yes, grade = 0

IF aug>=75&&aug<90

Yes, grade = A

ELSE

IF aug>=50&&aug<75

Yes, grade = B

ELSE

IF Aug>=35&&aug<50

Yes, grade = C

ELSE

IF aug<35

Yes, grade = D

```
ELSE
   i=i+1
PRINT the name & grade
ENDIF
END
```

RESULT:

Thus, the algorithm, Pseudo code and flowchart are written for the given program.