**RECORD**

TO DRAW FLOWCHART AND WRITE ALGORITHM FOR THE FOLLOWING PROBLEM

FLOWCHART:

* Flowchart is defined as the pictorial representation of the logic for the problem
* solving.
* The purpose of flowchart is making the logic of the program clear in a visual representation.
* Flowcharts are better way of communicating the logic of the system.
* With the help of flowchart , a problem can be analysed in more effective way.
* Flowcharts are used for good program documentation , which is needed for various purpose

SYMBOLS USED IN FLOWCHARTS

|  |  |  |  |
| --- | --- | --- | --- |
| S,No | symbol | Name of the symbol | description |
| 1. |  | flowlines | Used to connect the symbols |
| 2. |  | terminator | Represents start and stop of the program |
| 3. |  | Input/output | Input or output operation |
| 4. |  | process | Processes  arithmetic and logical operations |
| 5. |  | decision | Decision making and branching |

ALGORITHM:

It is a ordered sequence of finite, well defined instructions for computing a task in an English like representation of logic which is use to solve the problem

TOOLS USED;

* GOOGLE DRAW - It’s a very good tool the flowcharts can be drawn very easily and the flowcharts are directly stored into the drive. But the page is limited to draw the flowchart.
* SMART DRAW - Smart draw is a very good tool to draw the flowcharts but we can’t save the flowcharts directly in the system and it cannot be used for free.
* CANVA - Canva is totally user friendly tool and we can use it for free without any subscription.
* DIAGRAMS.NET - In this tool the flowcharts can be saved easily but the output will not be that much precise.
* ZENFLOWCHART - The diagrams can be directly stored in the system and it has many good features to use. But in this tool only 20 shapes can be used for free but from 21st shape we need to pay and use it.
* VISUAL PARADIAGRAM - Visual paradiagram
* is also a very good tool used for drawing the flowcharts but one disadvantage is we need to pay for it

TO DRAW FLOWCHART AND WRITE ALGORITHM FOR THE

FOLLOWING PROBLEM

Ex no:1 a)

Calculating electric bill

AIM:

To draw and write flowchart and algorithm for calculating electric bill

ALGORITHM:

Step1: Start

Stp2: get the previous and current reading

Step3: calculate units consumed=previous – current

Step4: get the number of units consumed=units

Step5: if units<=100

5.1: energy charge=0, fixed charge=0, duty charge=0

Step6: if units<=200

6.1: energy charge=0+1.5\*(units-100) fixed charge=20, duty charge=18

Step7: if units<=500

7.1: energy charge = 3.5\*(ubits-100) fixed charge= 30, duty charge=48

Step8: if units<=7500

8.1: energy charge = 45\*(400)+6\*(units-500) fixed charge=75, duty charge = 100

Step8: bill= total charge+ fixed charge

Step9: display the current

Step 10: Stop

**PSEUDO CODE:**

GET the previous units and current units

CALCULATE units= previous units- current units

IF units<=100

THEN energy charge =0+1.5 \*(units- 100), fixed charge =20,duty charge=0

IF units <=200

THEN energy charge =0 +1.5\*(units-100), fixed charge =20, duty charge=18

IF units <=500

THEN energy charge =3.5\*(units-100), fixed charge =30, duty charge=48

IF units >7500

THEN energy charge =4.5\*(400)+6.0\*(units-500), fixed charge =75, duty charge=100

CALCULATE Bill = total charge +fixed charge + duty charge

DISPLAY the current bill

STOP

**FLOW CHART:**

Start

Previous and current reading

Unit consumed=previous-current

Get the units consumed= units

If unit <=100

Energy charge=0 fixed charge=0 duty charge =0

Ifunit<=200

Total charge +fixed charge +duty charge

Energy charge=0+(unit-100)\*1.5 fixed charge=20,duty charge=18

If unit<=500

Energy charge=0+(100\*2)+ (unit-200)\*3,fixedcharge=300, duty charge=48

Display the current bill

Energy charge=0+(100\*3.5)+(300\*4.6)+(unit-500)\*6.6 fixed charge-50, duty charge167.2

If unit<=7500

stop

break

RESULT:

Thus the flowchart and algorithm are given for the given problem

*TO DRAW FLOW CHART AND WRITE ALGORITHM FOR THE*

*FOLLOWING PROBLEM*

*Ex no :1 b)*

Student grade analysis

AIM:

To draw and write flowchart and algorithm for student grade analysis

ALGORITHM:

Step1: begin

Step2: read number of students=n

Step3: initialize i=1

Step4: if i <=n

Step5: get name, roll no, m1,m2,m3,m4.

Step6: calculate avg=m1+m2+m3+m3\4

Step7: if avg>=90

7.1: grade A

Step8: if 90>avg>=70

8.1: grade B

Step9: if 70> avg>=50 go to step:9.1 else go to step 9.2

9.1: grade C

9.2: grade D

Step10: print name, roll no, grade

Step11: stop

**PSEUDO CODE:**

START

READ no of students

INITIALIZE i=1

IF i<=n

GET name, roll no, m1, m2, m3, m4

CALCULATE avg=m1+m2+m3+m4/4 go to step 4

IF avg >90=90 THEN grade=A

ELIF 90>avg>=70 THEN grade =B

ELIF 70>avg>=50 THEN

ELSE grade = D

PRINT name, roll no , grade

END IF

STOP

FLOWCHART:

start

Read no of students

Print name, roll no, grade

Grade A

Grade C

Grade B

If 90> avg>=70

Grade D

If 70> avg>=50

If avg>=90

Get name, roll no, mi,m2,m3, m4

not valid

break

Avg=m1+m2+m3+m4/4

i<=n

initialise i=1

RESULT:

Thus the flowchart and algorithm are given for the given problem

TO DRAW FLOWCHART AND WRITE ALGORITHM FOR THE

FOLLOWING PROBLEM

Ex no:1 c)

Electric current in 3 phase AC circuit

AIM:

To draw and write flowchart and algorithm for calculating electric current in 3 phase

AC circuit.

ALGORITHM:

Step1: start

Step2: read values of pf , I,V

Step3: calculate P=√3\*PF\*I\*V

Step4: display “the result is P”

Step5: Stop

PSEUODO CODE:

START

READ values of PF,I and V

CALCULATE P=1.732\*PF\*I\*V

PRINT current P

STOP

PSEUDO CODE :

START

READ no of students

INITIALIZE i =1

IF i<=n

GET name,rollno,m1,,m2,m3,m4

CALCULATE avg=m1+m2+m3+m4/4 goto step 4

IF avg >=90 THEN grade = A

ELIF 90>avg >=70 THEN grade = B

ELIF70>avg >=50 THEN grade = C

ELSE grade = D

PRINT name,rollno,grade

END IF

STOP

FLOW CHART:

start

Read pf,I,V

RESULT:

stop

Calculate P=v3\*PF\*I\*V

8pf

Thus the flowchart and algorithm are given for the given

TO DRAW FLOWCHART AND WRITE ALGORITHM FOR THE

FOLLOWING PROBLEM

Ex no:1 d)

Calculate sine series

*AIM*:

To draw and write flowchart and algorithm for calculating sine series

ALGORITHM:

Step1: start

Step2: get the values of x

Step3: initialize i=1,sine=0

Step4: get the values of N

Step5: if N<x ,

Step6:declare PI=3.142

Step7: x=x\*PI/180

Step8: t=x

Step9: sum=x

Step10: for i<-p

Step11:t=(t\*x\*\*)2/2\*i(2\*i\*1)

Step12: sum=sum + t

Step13: go to loop

Steo14:print sum

Step15: stop

PSEUDO CODE:

START

RAED x

READ N

INITIALIZE i=1

SET PI=3.142

CALCULATE x=x\*PI/180

SET t=x

SET sum=x

FOR i<=n

THEN

CALCULATE t= -(t\*x\*\*2)/2\*i(2\*i\*1)

CALCULATE sum =sum+t

INCREMENT I by I and go to loop

ELSE

PRINT SUM

STOP

FLOWCHART:

Get x

start

I=i+1

Sum=sum-t

T=-t\*x\*x/2i(2i\*i)

stop

Print sum

If n<=n

Sum=x

Term(t)=x

I=1 PJ=3.142

Get the value ‘n’

Initialise the value i=1,sine=0 import math

RESULT:

Thus, the flowchart and algorithm are given for the given

**TO DRAW FLOWCHART AND WRITE ALGORITHM FOR THE**

**FOLLOWING PROBLEM**

Ex no:1 e***)***

Calculating weight of steel rod

AIM:

draw and write flowchart and algorithm for calculating weight of steel rod

ALGORITHM:

Step1: start

Step2: get number of rods =n

Step3: initialise i=1 and weight=0

Step4: if i<=n go to step 7 else go to step 6

Step5: get diameter (D) and the length(l)

Step7: calculate = D\*DL/162

Go to step 4

Step8: print weight

Step9: print the weight of the rod

Step10 : stop

PSEUDO CODE:

GET no of rods n

INITIALIZE I =1 and weight =0

IF i<=n go to step 8

ELSE go to step 10GET diameter D and length L

CALCULATE weight = D\*d\*L/162 go to step 4

PRINT weight

PRINT the weight of the rod

STOP

FLOWCHART:

start

stop

Print weight

Weight =D+D\*l/162

Get diameter(D) and length(l)

Print the weight of the rods

If i<=n

Weight=0

Initialise i=1

Get no.of rods =n

RESULT:

Thus, the flowchart and algorithm are given for the given problem

TO DRAW FLOWCHART AND WRITE ALGORITHM FOR THE

FOLLOWING PROBLEM

Ex no 1 f)

Calculating weight of a motor bike

AIM:

To draw and write flowchart and algorithm for calculating weight of motor bike

ALGORITHM:

Step1: start

step2:get gross vehicle weight rating GVW

step3: get dry weight DW

step4: get fuel weight FW

step5:get rider weight RW

step6: get passenger weight PW

step7: calculate total=DW+FW+PW+RW

step8: get load

step9: calculate load weight=total +load

step10: calculate safe weight=GVWR- load weight

step11: if safe weight>=0

step12: print safe ride

step13: else print for safe ride reduce weight and go to step 8

step14: stop

PSEUDO CODE :

START

GET gross vehicle weight rating GVMR

GET dry weight DW

GET fuel weight FW

GET get rider weight RW

GET passenger weight PW

CALCULATE total =DW+FW+PW+RW

GET load

CALCULATE load wait =total +load

CALCULATE sae weight =GVMR – load weight

IF safe weight >=0

PRINT safe ride

ELSE

PRINT for safe ride reduce the weight ang go to step 8

END IF

STOP

FLOWCHART:

stop

Safe ride

For safe ride reduce weight

If safe weight>=0

Safe weight= GVWR=load weight

Load weight= tot + load

Get load

Total=PW+RW+FW+DW

Get passenger weight PW

Get rider weight RW

Get fuel weight FW

Get dry weight DW

Get gross vehicle weight rating GVWR

start

RESULT:

Thus, the flowchart and algorithm are given for the given problem

TO DRAW FLOWCHART AND WRITE ALGORITHM FOR THE

FOLLOWING PROBLEM

Ex no 1 g)

Retail shop billing

AIM:

To draw and write flowchart and algorithm for retail shop billing

ALGORITHM:

Step1: start

step2: get no of items=n

step3: initialise i=1 and bill=0

step4: if i<=n

step5: get quantity of price item

step6: calculate bill= quantity(Q)\*price(P)

step7: if bill >=5000 go to step 10

step8: calculate new bill= bill – bill\*0.80 and go to step 4

step9: print new bill you have 8-% dis

step10: print bill and you have no discount

step11: stop

PSEUDO CODE:

START

GET no of items n

Step 3: initialize I =0 and bill=0

IF i<=n go to step 5

ELSE go to step 7

GET quantity and price of the item

CALCULATE bill = quantity \*price go to step 4

IF bill>=5000 go to step 9

ELSE go to step 10

CALCULATE new bill = bill-bill\*0.05 and goto step 4

PRINT new bill you have 50% of discount

PRINT bill and you have no discount

STOP

FLOWCHART:

start

Print bill and you have dis

stop

Print new bill you have 50% dis

Number =bill=bill\*0.50

If bill>500

Bill= Q\*P

Get Q and P of item

If i<=n

Bill = 0

I=1

Get number of items=n

RSEULT:

Thus, the flowchart and algorithm are given for the given problem