

ASSIGNMENT-8

1. Define a class student with the following specification

Private members of class student

admno -> integer

sname -> 20 character

eng. math, science -> float

total -> float

ctotal() -> a function to calculate eng + math + science with float return type.

Public member function of class student

Takedata() -> Function to accept values for admno, sname, eng, science and invoke ctotal() to calculate total.

Showdata() -> Function to display all the data members on the screen.

2. Define a class batsman with the following specifications:

Private members:

bcode -> 4 digits code number

bname -> 20 characters

innings, notout, runs -> integer type

batavg -> it is calculated according to the formula –

$$\text{batavg} = \text{runs} / (\text{innings} - \text{notout})$$

calcavg() -> Function to compute batavg

Public members:

readdata() -> Function to accept value from bcode, name, innings, notout and invoke the function calcavg()

displaydata() -> Function to display the data members on the screen.

3. Define a class TEST with following description:

Private Members

TestCode of type integer

Description of type string

NoCandidate of type integer

CenterReqd (number of centers required) of type integer

A member function CALCNTR() to calculate and return the number of centers as $(\text{NoCandidates}/100+1)$

Public Members

A function SCHEDULE() to allow users to enter values for TestCode, Description, NoCandidate & call function CALCNTR() to calculate the number of Centres.

A function DISPTST() to allow users to view the content of all the data members.

4. Define a class with following description:

Private Members

A data member Flight number of type integer

A data member Destination of type string

A data member Distance of type float

A data member Fuel of type float

A member function CALFUEL() to calculate the value of Fuel as per the following criteria

Distance	Fuel
<=1000	500
more than 1000 and <=2000	1100
more than 2000	2200

Public Members

A function FEEDINFO() to allow users to enter values for Flight Number, Destination, Distance & call function CALFUEL() to calculate the quantity of Fuel.

A function SHOWINFO() to allow the user to view the content of all the data members.

5. Define a class BOOK with the following specifications :

Private members of the class BOOK are

BOOK NO integer type

BOOKTITLE 20 characters

PRICE float (price per copy)

TOTAL_COST() A function to calculate the total cost for N number of copies where N is passed to the function as argument.

Public members of the class BOOK are

INPUT() function to read BOOK_NO. BOOKTITLE, PRICE

PURCHASE() function to ask the user to input the number of copies to be purchased. It invokes TOTAL_COST() and prints the total cost to be paid by the user.

6. Define a class REPORT with the following specification:

Private members :

adno 4 digit admission number

name 20 characters

marks an array of 5 floating point values

average average marks obtained

GETAVG() a function to compute the average obtained in five subject

Public members:

READINFO() -> function to accept values for adno, name, marks. Invoke the function GETAVG()

DISPLAYINFO() -> function to display all data members of a report on the screen.

7. Write the definition for a class called Rectangle that has floating point data members length and width. The class has the following member functions:

void setlength(float) to set the length data member

void setwidth(float) to set the width data member

float perimeter() to calculate and return the perimeter of the rectangle

float area() to calculate and return the area of the rectangle

void show() to display the length and width of the rectangle

int sameArea(Rectangle) that has one parameter of type Rectangle. sameArea returns 1 if the two Rectangles have the same area, and returns 0 if they don't.

a. Write the definitions for each of the above member functions.

b. Write a main function to create two rectangle objects. Set the length and width of the first rectangle to 5 and 2.5. Set the length and width of the second rectangle to 5 and 18.9. Display each rectangle and its area and perimeter.

- c. Check whether the two Rectangles have the same area and print a message indicating the result. Set the length and width of the first rectangle to 15 and 6.3. Display each Rectangle and its area and perimeter again. Again, check whether the two Rectangles have the same area and print a message indicating the result.
8. Write the definition for a class called complex that has floating point data members for storing real and imaginary parts. The class has the following member functions:
void set(float, float) to set the specified value in object
void disp() to display complex number object
complex sum(complex) to sum two complex numbers & return complex number
a. Write the definitions for each of the above member functions.
b. Write a main function to create three complex number objects. Set the value in two objects and call sum() to calculate sum and assign it in the third object. Display all complex numbers.
9. Write the definition for a class called Distance that has data member feet as integer and inches as float. The class has the following member functions:
void set(int, float) to give value to object
void disp() to display distance in feet and inches
Distance add(Distance) to sum two distances & return distance
a. Write the definitions for each of the above member functions.
b. Write a main function to create three Distance objects. Set the value in two objects and call add() to calculate the sum and assign it in the third object. Display all distances.
10. Write the definition for a class called time that has hours and minutes as integers. The class has the following member functions:
void settime(int, int) to set the specified value in object
void showtime() to display time object
time sum(time) to sum two time object & return time
a. Write the definitions for each of the above member functions.
b. Write a main function to create three time objects. Set the value in two objects and call sum() to calculate sum and assign it in the third object. Display all time objects.