Lab-2

Topic: Simple C++ programs using Classes and Objects

i. WAP to display the message "hello" followed by your name on screen.

```
#include<iostream>
using namespace std;
int main()  {
 Char name[30];
 Cout<<"Enter Your name";
  Cin>>name;
    Cout<<"Hello "<<name<<endl;;
    Return 0;
    }

    terminal
      g++  P1.cpp

                          gedit &

      ./a.out
```

ii. Create a class which stores name, roll number and total marks for a student. Input the data for a student and display it.

```
#include<iostream>
Using namespace std;
Class student{
   Char name[20];
    Int roll;
     Float marks[5];
    Float tot;
Public: void getdata(char *p, int r, int to)
{    strcpy(name, p);
cout<<"Enter Name ";
     Cin>> name;
  cout<<"Enter rollno ";
     Cin>> roll;
cout<<"Enter marks in 5 subjects ";

    For(I=0;I<5;I++)
     Cin>>marks[I];}
  Void display()
   Cout<<"Name : "<<name<<endl;
  Cout <<"roll no"<< roll<<endl;
```

```
  Tot=0;
   For (I=0;I<5;I++)
     Tot=tot+marks[I];
  Cout<<"Total marks is: "<<tot<<endl;
}
Int main()
{
   Student s;
      S.getdata();
      S.display();
      }
```

iii. Modify the program ii) to store marks in 5 subjects. Calculate the total marks and percentage of a student and display it.

iv. Create a class complex which stores real and imaginary part of a complex number. Input 10 complex numbers and display them.

```
Int main(){
Complex c[10];
  For(I=0;I<n;I++)
{     C[I].getdata();
   }
Cout<<"The complex numbers are:  "<<endl;
For(I=0;I<n;I++)

 C[I].display();

Return 0;
}
```

v. Create a class distance which stores a distance in feet and inches. Input 2 distance values in objects, add them, store the resultant distance in an object and display it.
[Write the above program in two ways.
a) store the resultant distance in the calling object:**C3.add(C1,C2)**
b) return the resultant object **C3=C1.add(C2)**

```
Class dist11{
  Float feet, inches;
Public: void add( dis11 d1, dist11 d2)
    {
      Inches=d1.inches+d2.inches;
      Feet=d1.feet+d2.feet+(inches/12);
      Inches=inches%12;
    }
Dist11 add(dist11 d2)
{  dist11 temp;
     Temp.Inches=inches+d2.inches;
        Temp.Feet=feet+d2.feet+(temp.inches/12);
        Temp.Inches=temp.inches%12;
   Return temp; }
```

vi. Create a class which stores id, name, age and basic salary of an employee. Input data for n number of employees. Calculate the gross salary of all the employees and display it along with all other details in a tabular form.

[Gross salary= Basic salary + DA + HRA,
DA = 80% of Basic salary
HRA=10% of Basic salary]

vii. Create a class which stores x and y coordinates of a point. Calculate distance between two given points and display it.

Double calc(point o1, point o2);

a) class point{ Int x, y;

Double calc(point p, point q){

Double dis;

dis=sqrt((p.x-q.x)*(p.x-q.x)+(p.y-q.y)*(p.y-q.y));

Return dis;

}

Define a class to represent a bank account. Include the following members:

Data Members

b) Name of the depositor

b) Account number c) Type of account

c) d) Balance amount in the account

Member Functions

a) To assign initial value

b) To deposit an amount

c) To withdraw an amount after checking the balance

d) To display name and balance

Write a main program to test the program.