# OPP LAB-02

**ROLLNO-21053300 NAME:- NITESH KUMAR MANDAL**

**Qn1)WAP to display the message &quot;hello&quot; followed by your name on screen.**

SOURCE CODE:-

#include<iostream>

using namespace std;

int main()

{

    char name[30];

    string nam;

    cout<<"Enter Your Name\n";

    cin.get(name,20);

    cout<<"Hello\t"<<name<<endl;

    return 0;

}

OUTPUT

Enter Your Name

NITESH KUMAR MANDAL

Hello NITESH KUMAR MANDAL

**Qn2)Create a class which stores name, roll number and total marks for a student.Input the data for a student and display it.**

SOURCE CODE:-

#include<iostream>

#include<string.h>

using namespace std;

class student{

    char name[20];

    int rollno;

    float ttl;

public:

     void getdata()

{

            cout<<"Enter Name:\n";

            cin>>name;

            cout<<"Enter Roll No:\n";

            cin>>rollno;

            cout<<"Enter Total marks\n";

            cin>>ttl;

        }

void display(){

    cout<<"Name Of Student"<<name<<endl;

    cout<<"Roll No"<<rollno<<endl;

    cout<<"Total MARK:"<<ttl<<endl;

}

};

int main(){

    student s;

    s.getdata();

    s.display();

return 0;}

OUTPUT

Enter Name:

RAM

Enter Roll No:

219032

Enter Total marks

450

Name Of Student:RAM

Roll No: 219032

Total MARK:450

**Qn3)Modify the program ii) to store marks in 5 subjects. Calculate the total**

**marks and percentage of a student and display it.**

**SOURCE CODE**

#include<iostream>

#include<string.h>

using namespace std;

class student{

    char name[20];

    int roll;

    float marks[5];

    float total;

    float per;

    public:

        void getsdata(){

            cout<<"Enter Name:";

            cin>>name;

            cout<<"Enter Roll No:";

            cin>>roll;

            cout<<"Enter 5 subject marks:";

            for(int i=0;i<5;i++){

            cin>>marks[i];

        }

    }

        void showsdata(){

            cout<<"NAME:"<<name<<endl;

            cout<<"ROLL:"<<roll<<endl;

            for(int i=0;i<5;i++){

            total+=marks[i];

            }

            cout<<"TOTAL:"<<total<<endl;

            per=total/5;

            cout<<"PERCENTAGE:"<<per<<endl;

        }

};

int main(){

    student s;

    s.getsdata();

    s.showsdata();

}

**OUTPUT**

**Enter Name:Nitesh**

**Enter Roll No:126543**

**Enter 5 subject marks:**

**12**

**33**

**35**

**56**

**76**

**NAME:Nitesh**

**ROLL:126543**

**TOTAL:212**

**PERCENTAGE:42.4**

**Qn4)Create a class complex which stores real and imaginary part of a complex number. Input 10 complex numbers and display them.**

**SOURCE CODE**

#include<iostream>

#include<string.h>

using namespace std;

class complex{

    float real,img;

    public:

        void getsdata(){

            cout<<"Enter real:";

            cin>>real;

            cout<<"Enter Img:";

            cin>>img;

        }

        void showsdata(){

            cout<<real<<"+"<<img<<"i"<<endl;

        }

};

int main(){

    complex c[10];

    for(int i=0;i<10;i++){

            c[i].getsdata();

            }

cout<<"The complex numbers are: "<<endl;

    for(int i=0;i<10;i++){

        c[i].showsdata();

        }

}

**OUTPUT**

**Enter real:12**

**Enter Img:13**

**Enter real:1**

**Enter Img:3**

**Enter real:43**

**Enter Img:23**

**Enter real:23**

**Enter Img:12**

**Enter real:43**

**Enter Img:43**

**Enter real:5**

**Enter Img:6**

**Enter real:76**

**Enter Img:7**

**Enter real:34**

**Enter Img:23**

**Enter real:34**

**Enter Img:54**

**Enter real:67**

**Enter Img:32**

**The complex numbers are:**

**12+13i**

**1+3i**

**43+23i**

**23+12i**

**43+43i**

**5+6i**

**76+7i**

**34+23i**

**34+54i**

**67+32i**

**Qn5Create 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.**

**a) store the resultant distance in the calling object:C3.add1(C1,C2)**

#include<iostream>

using namespace std;

class dist{

    int feet,inche;

    public:

        void getdata(int x,int y){

            feet=x;

            inche=y;

        }

        void showdata(){

            cout<<feet<<"'"<<inche<<"''"<<endl;

        }

        void add(dist p,dist q){

            inche=p.inche+q.inche;

            feet=p.feet+q.feet+(inche/12);

            inche=(int)inche%12;

        }

};

int main(){

    dist d1,d2,d3;

    d1.getdata(2,11);

    d2.getdata(8,3);

    d3.add(d1,d2);

    cout<<"THE RESULT IS:";

    d3.showdata();

}

**OUTPUT**

**THE RESULT IS:11'2''**

1. **C3=c2.add2(c1,c2);**

**SOURCE CODE**

#include<iostream>

using namespace std;

class dist2{

    int feet,inche;

    public:

        void getdata(int x,int y){

            feet=x;

            inche=y;

        }

        void showdata(){

            cout<<feet<<" Feet "<<inche<<" Inche "<<endl;

        }

        dist2 add(dist2 m,dist2 n){

            dist2 temp;

            temp.inche=m.inche+n.inche;

            temp.feet=m.feet+n.feet+(inche/12);

            temp.inche=(int)inche%12;

            return temp;

        }

};

int main(){

    dist2 d1,d2,d3;

    d1.getdata(5,9);

    d2.getdata(6,2);

    cout<<"The Result is:";

    d3=d2.add(d1,d2);

    d3.showdata();

}

**OUTPUT**

**The Result is:11 Feet 2 Inches**



**c) return the resultant object C3=C1.add3(C2)**

**SOURCE CODE**#include<iostream>

using namespace std;

class dist{

    int feet,inche;

    public:

        void getdata(int x,int y){

            feet=x;

            inche=y;

        }

        void showdata(){

            cout<<feet<<" Feet "<<inche<<" Inche"<<endl;

        }

        dist add(dist m){

            dist temp;

            temp.inche=m.inche+inche;

            temp.feet=m.feet+feet+(inche/12);

            temp.inche=(int)inche%12;

            return temp;

        }

};

int main(){

    dist d1,d2,d3;

    d1.getdata(7,6);

d2.getdata(1,4);

Cout<<”The Result IS: ”;

    d3=d2.add(d1);

    d3.showdata();

}

**OUTPUT**

**The Result IS: 8 Feet 4 Inche**

**Qn6)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 .**

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

**HRA=10% of Basic salary ]**

**SOURCE CODE**#include <iostream>

using namespace std;

struct employee

{

    int id;

    char name[20];

    int age;

    int bsal;

    float gsal;

    void record()

    {

        int i;

        cout<<"Name: ";

        cin>>name;

        cout<<"Id: ";

        cin>>id;

        cout<<"Age: ";

        cin>>age;

        cout<<"Basic Salary: ";

        cin>>bsal;

        gsal=bsal+(0.8\*bsal)+(0.1\*bsal);

        cout<<"\n";

    }

    void display()

    {

        cout<<"Name: "<<name<<"\t";

        cout<<"id: "<<id<<"\t";

        cout<<"Age: "<<age<<"\t";

        cout<<"Basic salary: "<<bsal<<"\t";

        cout<<"Gross salary: "<<gsal<<endl;

    }

};

int main()

{

    int n;

    cout<<"Enter the number of employees: ";

    cin>>n;

    employee \*e = new employee[n];

    for(int i=0;i<n;i++)

    {

        (e+i)->record();

    }

    cout<<("-------------- All Employees Details ---------------\n\n");

    for(int i=0;i<n;i++)

    {

        (e+i)->display();

    }

    return 0;}

**OUTPUT**

**Enter the number of employees: 4**

**Name: RAm**

**Id: 1**

**Age: 23**

**Basic Salary: 20000**

**Name: Shyam**

**Id: 2**

**Age: 34**

**Basic Salary: 32000**

**Name: Gita**

**Id: 3**

**Age: 22**

**Basic Salary: 18000**

**Name: Sita**

**Id: 4**

**Age: 31**

**Basic Salary: 25000**

**-------------- All Employees Details ---------------**

**Name: RAm id: 1 Age: 23 Basic salary: 20000 Gross salary: 38000**

**Name: Shyam id: 2 Age: 34 Basic salary: 32000 Gross salary: 60800**

**Name: Gita id: 3 Age: 22 Basic salary: 18000 Gross salary: 34200**

**Name: Sita id: 4 Age: 31 Basic salary: 25000 Gross salary: 47500**

**Qn7)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);**

**SOURCE CODE**

#include <iostream>

#include <math.h>

using namespace std;

class points

{

    int x, y;

public:

    void getdata()

    {

        cout << "Enter abscissa: ";

        cin >> x;

        cout << "Enter ordinate: ";

        cin >> y;

    }

    double dist(points a, points b)

    {

        double c = sqrt(pow(a.x - b.x, 2) + pow(a.y - b.y, 2));

        return c;

    }

    void showdata()

    {

        cout << "The distance between the two points is: ";

    }

};

int main()

{

    points p1, p2, d;

    p1.getdata();

    p2.getdata();

    d.showdata();

    double e = d.dist(p1, p2);

    cout << e << endl;

}

**OUTPUT**

**Enter abscissa: 12**

**Enter ordinate: 6**

**Enter abscissa: 4**

**Enter ordinate: 7**

**The distance between the two points is: 8.06226**

**Qn8)Define a class to represent a bank account. Include the following members:**

**Data Members**

**a) Name of the depositor**

**b) Account number c) Type of account**

**d) Balance amount in the account**

**SOURCE CODE**//Class to represent a bank account

#include<iostream>

using namespace std;

class bank{

    char name[100];

    int acc;

    float amount;

    char typ[10];

    public:

        void getdata(){

            //initial value

            cout<<"Enter name:\n";

            cin>>name;

            cout<<"Enter Account number:\n";

            cin>>acc;

            cout<<"Amount in bank:\n";

            cin>>amount;

            cout<<"Enter type of account:SAVING\tOR\tCURRENT\n";

            cin>>typ;

        }

        void deposite(){

            int m;

            cout<<"Enter amount you want to deposite:\n"<<endl;

            cin>>m;

            cout<<"Total amount after deposite:"<<amount+m<<endl;

            amount+=m;

        }

        void withdraw(){

            int x;

            cout<<"Amount you want to withdraw:"<<endl;

            cin>>x;

            if(x>amount){

                cout<<"Can't perform transaction"<<endl;

            }

            else

            amount-=x;

        }

        void showdata(){

            cout<<"Name:"<<name<<endl<<"Your Remaining Balance :"<<amount;

        }

};

int main(){

    bank b;

    int y,w;

    b.getdata();

    cout<<"WANT TO DEPOSITE:";

    cin>>y;

    if(y==1){

    b.deposite();

    }

    cout<<"WANT TO WITHDRAWAL:";

    cin>>w;

    if(w==1){

    b.withdraw();

    }

    b.showdata();

}

**OUTPUT**

**Enter name:**

**RAM**

**Enter Account number:**

**32342551**

**Amount in bank:**

**5000**

**Enter type of account:SAVING OR CURRENT**

**SAVING**

**WANT TO DEPOSITE:1**

**Enter amount you want to deposite:**

**2000**

**Total amount after deposite:7000**

**WANT TO WITHDRAWAL:1**

**Amount you want to withdraw:**

**5500**

**Name:RAM**

**Your Remaining Balance is:1500**