LAB 3

1. /*Write a object oriented program to read two numbers from the keyboard and display the larger value on the screen.*/

```
#include <iostream>
using namespace std;
class num
{
	int a,b;
	public:
		void input()
		{
			cout<<"Enter any two numbers :"<<endl;
			cin>>a>>b;
		}
		int large()
		{
			if(a>b)
				return a;
			else
				return b;
```

```
        }
};
int main()
{
int c;
    num a1;
    a1.input();
    c=a1.large();
    cout<<endl<<"The largest number is "<<c;
}
```

2. /*Create a class Temp with the required data members and member functions that are used to convert temperature given in Fahrenheit to Celsius. [c=(f-32/1.8]*/

```
#include<iostream>
using namespace std;
class c
{
    float f;
    public:
        void input()
        {
```

```
            cout<<"Enter the tempreature in fahrenheit : ";
            cin>>f;
        }
        float convert()
        {
            return((f-32)/1.8);
        }
};
int main()
{
    c a1;
    a1.input();
    cout<<"The tempreature in celsius is "<<a1.convert();
}
```

3. /*Define a class Circle with radius and area as data members and getdata, calArea and Display as member fuctions. Use this class to calculate the area of three circles.*/

```
#include<iostream>
#define PI 3.14
using namespace std;
```

```
class circle
{
	public:
		float r , a;

	void getdata()
	{
		cout<<"Enter the radius of the circle : ";
		cin>>r;
	}
	float area()
	{
		a = PI*r*r;
		return(a);
	}
	void display()
	{
		cout<<"The area of the required circle is "<<a;
	}
};
int main()
{
```

```
    circle c1,c2,c3;
    c1.getdata();
    c1.area();
    c1.display();
    cout<<endl<<endl;
    c2.getdata();
    c2.area();
    c2.display();
    cout<<endl<<endl;
    c3.getdata();
    c3.area();
    c3.display();
}
```

4. /*Write a program designing a class student With Roll, Name and marks as data members and getdata( ), showdata( ) as member functions. Read the data for five students and display the roll , name and marks of those students whose marks is greater than 70.*/

```
#include<iostream>
using namespace std;
class student
```

```
{
    public:
        int roll , marks;
        char name[15];

        void getdata()
        {
            cout<<"Enter the name, roll number and marks of the students respectively :"<<endl;
            cin>>name;
            cin>>roll;
            cin>>marks;
        }
        void showdata()
        {
            if(marks>70)
            {
                cout<<"The details of students with marks more than 70 is: "<<endl<<"Name : "<<name<<endl<<"Roll Number : "<<roll<<endl<<"Marks : "<<marks;
            }
        }
};
```

```
int main()
{
	student s[5];
	int i;

	for(i=0;i<5;i++)
	{
		s[i].getdata();
	}

	for(i=0;i<5;i++)
	{
		cout<<endl<<endl;
		s[i].showdata();
	}
}
```

5. /*Write a class Item with data members numbers and cost and members functions getdata( ) and putdata . Read the data for two Items and display the Item details.*/

```
#include<iostream>
```

```
using namespace std;
class Item
{
	public:
		int numbers , costs;

		void getdata()
		{
			cout<<"Enter the number and costs of the items :"<<endl;
			cin>>numbers>>costs;
			cout<<endl;
		}

		void putdata()
		{
			cout<<endl<<"The details for the item is as follows: "<<endl<<"Numbers : "<<numbers<<endl<<"Cost : "<<costs<<endl;
		}
};
int main()
{
```

```
        Item i[2];
        int j=0;
        for(j=0;j<2;j++)
        {
                i[j].getdata();
        }

        for(j=0;j<2;j++)
        {
                i[j].putdata();
        }
}
```

6. /*Write a program to read and display 3 objects of item class containing data member item, name ,code and price.*/

```
#include<iostream>
using namespace std;
class Item
{
        public:
                int code , price;
```

```
        char name[20];


        void getdata()
        {
            cout<<"Enter the name, code and price of the items :"<<endl;
            cin>>name>>code>>price;
            cout<<endl;
        }


        void display()
        {
            cout<<endl<<"The details for the item is as follows: "<<endl<<"Name : "<<name<<endl<<"Code : "<<code<<endl<<"Price : "<<price<<endl;
        }
};
int main()
{
    Item i[3];
    int j=0;


    for(j=0;j<3;j++)
```

```
        {
                i[j].getdata();
        }

        for(j=0;j<3;j++)
        {
                i[j].display();
        }
}
```

7. /*Create a class Employee with data members name, age and salary and member functions getdata( ) and putdata( ). Use this class to read and display the details of a manager, 3 foreman and 5 workers.*/

```
#include<iostream>
using namespace std;
class Employee
{
   string name;
   int age, salary;
   public:
   void getdata()
```

```
    {
        cout<<"Enter the data of employee name, age & salary"<<endl;
        cin>>name>>age>>salary;
        cout<<endl;
    }
    void putdata()
    {
        cout<<"Name"<<name<<endl;
        cout<<"Age:"<<age<<endl;
        cout<<"salary"<<salary<<endl;
        cout<<endl;
    }

};
int main()
{
    Employee a1, a2, a3;
    a1.getdata();
    a2.getdata();
    a3.getdata();
    a1.putdata();
```

```
    a2.putdata();
    a3.putdata();
}
```

8. /*Write a class rectangle with data members length and breadth and member functions readdata( ) , area( ), perimeter( ) and display( ). Use this class to calculate the area of three rectangles of different dimension.*/

```
#include<iostream>
using namespace std;
class Rectangle
{
        public:
                int length , breadth;

                void getdata()
                {
                        cout<<"Enter the length and breadth of the rectangle :"<<endl;
                        cin>>length>>breadth;
                        cout<<endl;
                }
```

```
        int area()
        {
            int area;

            area = length * breadth;
            return area;
        }
};
int main()
{
    Rectangle r[3];
    int j=0 , area;
    for(j=0;j<3;j++)
    {
        r[j].getdata();
        area = r[j].area();
        cout<<"The required area of the rectangle is "<<area<<endl<<endl;
    }
}
```

9. /*Write a object-oriented program to find the area and volume of two different room.*/

```
#include<iostream>
using namespace std;
class Room
{
	public:
		int length , breadth , height;
		void getdata()
		{
			cout<<"Enter the dimensions of the room :"<<endl;
			cin>>length>>breadth>>height;
			cout<<endl;
		}

		int area()
		{
			int area;

			area = length * breadth;
```

```
            return area;
        }

        int volume()
        {
            int vol;
            vol = length * breadth * height;
            return vol;
        }
};
int main()
{
    Room r[2];
    int j=0 , area , vol;
    for(j=0;j<2;j++)
    {
        r[j].getdata();
        area = r[j].area();
        cout<<"The required area of the room is "<<area<<endl;
        vol = r[j].volume();
```

```
            cout<<"The required volume of the room is "<<vol<<endl<<endl;
        }
}
```

10. /*Create a class named complex with the required data members and member functions to add two complex numbers.*/

```
#include<iostream>
using namespace std;
class complex
{
   int r, im;
   public:
   void getData()
   {
      cout<<"Enter the real and imaginary part of the number respectively :"<<endl;
      cin>>r;
      cin>>im;
      cout<<endl;
   }
```

```
    void add(complex c1, complex c2)
    {
        r = c1.r+c2.r;
        im = c1.im + c2.im;
    }
    void display()
        {
        cout<<"The addition of the complex number is "<<r<<" +
"<<im<<"i"<<endl;
    }
};
int main()
{
    complex c1, c2, c3;
    c1.getData();
    c2.getData();
    c3.add(c1,c2);
    c3.display();
}
```

11. /*Create a class named Length with the required data members and member functions to add two lengths given by the user in feet and inches format.*/

```
#include<iostream>
using namespace std;
class length
{
   int f, in;
  public:
   void getData()
   {
      cout<<"Enter the length in feet and inches respectively :"<<endl;
      cin>>f>>in;
      cout<<endl;
   }

   void add(length l1, length l2)
   {
      f = l1.f + l2.f;
      in = l1.in + l2.in;
   }
```

```
   void display()
       {
      cout<<"The sum of the lengths is "<<f<<" feet and "<<in<<" inches"<<endl;
   }
};
int main()
{
   length l1 , l2 , l3;
   l1.getData();
   l2.getData();
   l3.add(l1,l2);
   l3.display();
}
```

12. /*Create a class named Time with the required data members and member functions to add two time entered by the user in hour and minutes format.*/

```
#include<iostream>
using namespace std;
class Time
{
   int hr, min;
```

```
   public:
   void getData()
   {
      cout<<"Enter the time in hours and minutes respectively
:"<<endl;
      cin>>hr>>min;
      cout<<endl;
   }

   void add(Time t1, Time t2)
   {
      hr = t1.hr + t2.hr;
      min = t1.min + t2.min;
   }
   void display()
       {
      cout<<"The sum of the time is "<<hr<<" hours and
"<<min<<" minutes"<<endl;
   }
};
int main()
{
```

```
    Time t1 , t2 , t3;
    t1.getData();
    t2.getData();
    t3.add(t1,t2);
    t3.display();
}
```

13. /*Create a class named Currency with the required data members & member functions to add two currency entered by the user in RS and paisa format.*/

```
#include<iostream>
using namespace std;
class Currency
{
    int rs, p;
    public:
    void getData()
    {
        cout<<"Enter the currency in rupees and paisa respectively :"<<endl;
        cin>>rs>>p;
        cout<<endl;
```

```
    }
     void add(Currency c1, Currency c2)
    {
        rs = c1.rs + c2.rs;
        p = c1.p + c2.p;
    }
    void display()
        {
        cout<<"The sum of the time is Rs. "<<rs<<" and "<<p<<"
Paisa"<<endl;
    }
};
int main()
{
    Currency c1 , c2 , c3;
    c1.getData();
    c2.getData();
    c3.add(c1,c2);
    c3.display();
}
```

14. /*Write a program to count the number of objects created for a class using the static members of class.*/

```
#include<iostream>
using namespace std;
class item
{
   string name;
   int code, price;
   static int count;
   public:
   void getdata()
   {
      cout<<"Enter the item name, code and its price"<<endl;
      cin>>name>>code>>price;
      cout<<endl;
   }
   void co()
   {
      count++;
   }
   void display()
```

```
    {
        cout<<"Total number of items is "<<count<<endl;
    }
};
int item::count;
int main()
{
    item a1, a2, a3;
    a1.getdata();
    a2.getdata();
    a3.getdata();

        a1.co();
    a2.co();
    a3.co();
    a3.display();
}
```

15. /*Write a program to count the number of objects created for a class using the static members of class.*/

```
#include<iostream>
```

```
using namespace std;
class item
{
   string name;
   int code, price;
   static int count;
   public:
   void getdata()
   {
      cout<<"Enter the item name, code and its price"<<endl;
      cin>>name>>code>>price;
      cout<<endl;
   }
   void co()
   {
      count++;
   }
   void display()
   {
       cout<<"Total number of items is "<<count<<endl;
   }
};
```

```
int item::count;
int main()
{
   item a1, a2, a3;
   a1.getdata();
   a2.getdata();
   a3.getdata();

      a1.co();
   a2.co();
   a3.co();
   a3.display();
}
```