Lab No (6)

6.1 Run the following Program.

```
class student       //educational background
{  private:
  string school; //name of school or university
  string degree; //highest degree earned
  public:
  void getedu() {
cout << "Enter name of school or university: ";
cin >> school;
cout<<"Enter highest degree earned \n";
cout<<"(Highschool,BSc,MSc, PhD): ";
cin >> degree;}
void putedu() const
{ cout << "\nSchool or university: " << school;
cout<<"\nHighest degree got:"<< degree; } };
class employee {
private:
string name;  //employee name
unsigned long number; //employee number
public:
void getdata()
{ cout << "\n   Enter last name: ";
cin >> name;
  cout << "   Enter number: ";
 cin >> number;  }
  void putdata() const
{ cout << "\n   Name: " << name;
 cout << "\n   Number: " << number; } };
class manager              //management
{ private:
  string title;        //"vice-president" etc.
  double dues;          //golf club dues
  employee emp;  //object of class employee
  student stu;          //object of class student
  public:
  void getdata()
```

```
class scientist      //scientist
{ private:
  int pubs;    //number of publications
  employee emp; //object of class employee
  student stu;  //object of class student
  public:
  void getdata()
{ emp.getdata();
  cout << "   Enter number of pubs: ";
cin >> pubs;
  stu.getedu(); }
  void putdata() const
{ emp.putdata();
  cout<<"\nNo of pubs:"<< pubs;
  stu.putedu(); } };
class laborer              //laborer
{ private:
  employee emp; //object of class employee
  public:   void getdata()
        { emp.getdata(); }
void putdata() const
{ emp.putdata(); } };
int main() {
manager m1;
scientist s1, s2;
laborer l1;
cout << endl;
cout << "\nEnter data for manager 1";
m1.getdata();      //several employees
cout << "\nEnter data for scientist 1";
s1.getdata();
cout << "\nEnter data for scientist 2";
s2.getdata();
cout << "\nEnter data for laborer 1";
l1.getdata();
```

```
{ emp.getdata();
  cout << "   Enter title: ";        cin >> title;
  cout << "   Enter golf club dues: ";
cin >> dues;
  stu.getedu(); }
  void putdata() const
{ emp.putdata();
  cout << "\n   Title: " << title;
  cout << "\n   Golf club dues: " << dues;
  stu.putedu(); } };
```

```
cout<<"\nData on manager1";        //display
data for
m1.putdata();  //several employees
cout << "\nData on scientist 1";
s1.putdata();
cout << "\nData on scientist 2";
s2.putdata();
cout << "\nData on laborer 1";
l1.putdata();
cout << endl;
return 0; }
```

6.2 Imagine a publishing company that markets both book and audiocassette versions of its works. Create a class **publication** that stores the **title** (a string) and **price** (type float) of a **publication**. From this class derive two classes: **book**, which adds a **page count** (type int), and **tape**, which adds a **playing time** in minutes (type float). Each of these three classes should have a **getdata**() function to get its data from the user at the keyboard, and a **putdata**() function to display its data.

Write a **main**() program to test the book and tape classes by creating instances of them, asking the user to fill in data with **getdata**(), and then displaying the data with **putdata**().

6.3 Start with the **publication**, **book**, and **tape** classes **of problem *6.2***. Add a base class **sales** that holds an array of three floats so that it can record the **dollar sales** of a particular **publication** for the last three months. Include a **getdata**() function to get three sales amounts from the user, and a **putdata**() function to display the sales figures. Alter the **book** and **tape** classes so they are derived from both **publication** and sales. An object of class **book** or **tape** should input and output sales data along with its other data. Write a **main**() function to create a book object and a tape object and exercise their input/output capabilities.