Lab Assignment 8

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Q1. 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().

Ans:

```
#include<iostream>
#include<string>
using namespace std;
class publication{
    string title;
    float price;
    public:
    void getdata(){
        cout<<"Enter title: ";
        getline(cin,title);
        cout<<"Enter price: ";
        cin>>price;
    }
    void putdata(){
        cout<<"Title: "<<title<<"\n";
        cout<<"Price: "<<price<<"\n";
    }
};
class book:public publication{
    int count;
    public:
    void getdata(){
        publication::getdata();
        cout<<"Enter number of pages:";
        cin>>count;
    }
    void putdata(){
        publication::putdata();
        printf("Page count: %d\n",count);
    }
};
class tape:public publication{
    float time;
```

```
    public:
    void getdata(){
        cin.ignore();
        publication::getdata();
        cout<<"Enter Play time(min): ";
        cin>>time;
    }
    void putdata(){
        publication::putdata();
        printf("Play Time: %.2f\n",time);
    }
};
int main(){
    book b;
    tape t;
    b.getdata();
    b.putdata();
    t.getdata();
    t.putdata();
    return 0;
}
```

Output:

```
~/My-files $ ./a.out
Enter title: hello world
Enter price: 99.99
Enter number of pages:200
Title: hello world
Price: 99.99
Page count: 200
Enter title: c++ programming
Enter price: 199.99
Enter Play time(min): 90
Title: c++ programming
Price: 199.99
Play Time: 90.00
```

2. Suppose you have a main() with three local arrays, all the same size and type (say float). The first two are already initialized to values. Write a function called addarrays() that accepts the addresses of the three arrays as arguments; adds the contents of the first two arrays together,element by element; and places the results in the third array before returning. A fourth argument to this function can carry the size of the arrays. Use pointer notation throughout; the only place you need brackets is in defining the arrays.

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Ans:

```
#include<iostream>
using namespace std;
void addarrays(float *a1,float *a2, float *a3, int l){
    for(int i=0;i<l;i++){
        *(a3+i)=*(a1+i)+*(a2+i);
    }
}
int main(){
    float arr1[5]={1.2,2.3,3.4,4.5,6.5};
    float arr2[5]={4.5,0.45,2.4,7.7,9.1};
    float arr3[5];
    float *p1=arr1, *p2=arr2, *p3=arr3;
    addarrays(p1,p2,p3, 5);
    for(int i=0;i<5;i++)
        cout<<*(p3+i)<<" ";
    cout<<"\n";
   return 0;
}
```

Output:

```
~/My-files $ ./a.out
5.7 2.75 5.8 12.2 15.6
```