

End Module Test

```
using namespace std;
#include<iostream>
class Libraryitem{
    char title[30];
    char author[30];
    int  publication_year;
    int itemid;
public:

    Libraryitem(){
        strcpy(this->title,"not given");
        strcpy(this->author,"not given");
        this->publication_year=0;
        this->itemid=0;
    }
    Libraryitem(char*title,char*author,int year,int itemid){
        strcpy(this->title,title);
        strcpy(this->author,author);
        this->publication_year=year;
        this->itemid=itemid;
    }
    void settitle(char*title){
        strcpy(this->title,title);
    }
    void setauthor(char*author){
```

```
        strcpy(this->author,author);
    }
    void setyear(int year){
        this->publication_year=year;
    }
    void setitemid(int id){
        this->itemid=id;
    }
    char* gettitle(){
        return this->title;
    }
    char* getauthor(){
        return this->author;
    }
    int getyear(){
        return this->publication_year;
    }
    int getitemid(){
        return this->itemid;
    }
    virtual void display(){
        cout<<"Title is = "<<this->title<<endl;
        cout<<"Author is = "<<this->author<<endl;
        cout<<"publication year = "<<this->publication_year<<endl;
        cout<<"Item id = "<<this->itemid<<endl;
    }
```

```

        virtual void Assign_days()= 0;
}; // Libraryitem end here
class Book:public Libraryitem{
    int isbn;

    int no_of_pages;

    public:

        void display(){
            Libraryitem::display();
            cout<<"ISBN is = "<<this->isbn<<endl;
            cout<<"no of pages = "<<this->no_of_pages<<endl;
        }

        Book():Libraryitem(){
            this->isbn=0;
            this->no_of_pages=0;
        }

        Book(char*tit,char*aut,int yer,int id,int isbn,int
pages):Libraryitem(tit,aut,yer,id){
            this->isbn=isbn;
            this->no_of_pages=pages;
        }

        void Assign_days() {
            cout << "Books can be assigned for 15 days." << endl;
        }

        void setisbn(int isbn){
            this->isbn=isbn;

```

```

    }

    void setno_pages(int pages){
        this->no_of_pages=pages;
    }

    int getisbn(){
        return this->isbn;
    }

    int getno_pages(){
        return this->no_of_pages;
    }

```

```
}; //book end here
```

```

class Magazine:public Libraryitem{
    int issue_num;
    int volume_no;
public:
    void display(){
        Libraryitem::display();
        cout<<"Issue no = "<<this->issue_num<<endl;
        cout<<"volume no = "<<this->volume_no<<endl;
    }

    Magazine():Libraryitem(){
        this->issue_num=0;
        this->volume_no=0;
    }

    Magazine(char*tit,char*aut,int yer,int id,int issuno,int vol
):Libraryitem(tit,aut,yer,id){

```

```

        this->issue_num=issuno;
        this->volume_no=vol;
    }
    void Assign_days(){
cout << "Magazines can be assigned for 5 days." << endl;
}

```

```

void setissue_no(int no){
    this->issue_num=no;
}
void setvolume_no(int no){
    this->volume_no=no;
}
int getissue_no(){
    return this->issue_num;
}
int getvolume_no(){
    return this->volume_no;
}

```

```

}; //Magazine end here

```

```

class Dvd:public Libraryitem{
    double duration;
    double rating;
public:
    void display(){

```

```

        Libraryitem::display();

        cout<<" Duration is = "<<this->duration<<endl;
cout<<"Rating is "<<this->rating<<endl;
    }

    Dvd():Libraryitem(){
        this->duration=0.0;
        this->rating=0.0;
    }

    Dvd(char*tit,char*aut,int yer,int id,double dur,double
rat):Libraryitem(tit,aut,yer,id){
        this->duration=dur;
        this->rating=rat;
    }

    void Assign_days(){
cout << "DVDs can be assigned for 3 days." << endl;
    }


    void setduration(double duration){
        this->duration=duration;
    }

    void setrating(double rating){
        this->rating=rating;
    }

    double getduration(){
        return this->duration;
    }

    double getrating(){

```

```

        return this->rating;
    }
}; //Dvd end here

int main(){
    Libraryitem *ptr[20];
    int choice;
    char title[30];
    char author[30];
    int
    publication_year,itemid,isbn,no_of_pages,issue_no,volume_no,no,count=0;
    double duration, rating;
    do{
        cout<<"1)Add a item"<<endl;
        cout<<"2)Display the item "<<endl;
        cout<<"3)Remove the item "<<endl;
        cout<<"4)Exit"<<endl;
        cout<<"Enter the Choice = ";
        cin>>choice;

        if(choice==1){
            cout<<"1) Add Book \n 2) Add Magazin \n 3) Add dvd ";
            cout <<"\n Enter your choice = ";
            cin>>no;
            cout<<"Enter the Title = ";
            cin>>title;
            cout<<"Enter the Auther = ";
            cin>>author;

```

```

        cout<<"Enter the publication year = ";
        cin>>publication_year;
        cout<<"Enter itemid = ";
        cin>>itemid;
        if(no==1){
            cout<<"Enter the isbn = ";
            cin>>isbn;
            cout<<"Enter the no of pages = ";
            cin>>no_of_pages;
            ptr[count++]=new
Book(title,author,publication_year,itemid,isbn,no_of_pages);
        }
        else if(no==2){
            cout<<"Enter the issue no = ";
            cin>>issue_no;
            cout<<"Enter the volume no = ";
            cin>>volume_no;
            ptr[count++]=new
Magazine(title,author,publication_year,itemid,issue_no,volume_no);
        }
        else if(no==3){
            cout<<"Enter the Duration = ";
            cin>>duration;
            cout<<"Enter the rating = ";
            cin>>rating;
            ptr[count++]=new
Dvd(title,author,publication_year,itemid,duration,rating);

```



```

        }
    }
    else if(choice==2){
        for(int i=0;i<count;i++){
            cout<<"\n===== \n";
            ptr[i]->display();
            ptr[i]->Assign_days();
            cout<<"\n===== \n";
        }
    }
    else if(choice==3){
        int id;
        cout<<"Enter the id of that item = ";
        cin>>id;
        for(int i=0;i<count;i++){
            if(ptr[i]->getitemid()==id){
                for(int j=i+1;j<count;j++){
                    ptr[i]=ptr[j];
                }
                count--;
            }
        }
    }

    }

    if(choice==4){

```

```
cout<<"Exit...";
```

```
break;
```

```
}
```

```
}
```

```
while(choice!=4);
```

```
}
```

The screenshot displays an IDE with the following components:

- Editor:** Contains the C++ source code for `Endmodul.cpp`. The code defines a `LibraryItem` class with attributes `title`, `author`, `publication_year`, and `itemid`. It includes a constructor, a parameterized constructor, and a `settitle` method.
- Compiler:** Shows a successful compilation with 0 errors and 0 warnings. The output file is `C:\Users\ashut\OneDrive\Desktop\cpp Endmodul.exe`.
- Console:** Displays the program's execution. It shows a menu with options 1 (Add a item), 2 (Display the item), 3 (Remove the item), and 4 (Exit). The user selects option 1, enters details for a book titled "Nasha" by "Ashutosh" published in 2024, and then selects option 2 to display the item. The console output shows the item details and a message: "Books can be assigned for 15 days."

C:\Users\ashut\OneDrive\Desktop\cpp Endmodul.cpp - [Executing] - Embarcadero Dev-C++ 6.3

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 9.2.0 64-bit

(globals)

Project: cpp Endmodul.cpp

```
1 using namespace std;
2 #include<iostream>
3 class Libraryitem{
4     char title[30];
5     char author[30];
6     int publication_year;
7     int itemid;
8 public:
9
10    Libraryitem(){
11        strcpy(this->title,"not given");
12        strcpy(this->author,"not given");
13        this->publication_year=0;
14        this->itemid=0;
15    }
16    Libraryitem(char*title,char*author,int year){
17        strcpy(this->title,title);
18        strcpy(this->author,author);
19        this->publication_year=year;
20        this->itemid=itemid;
21    }
22    void setttitle(char*title){
23        strcpy(this->title,title);
24    }
```

Compiler Resources Compile Log Debug Find Results Console Close

Abort Compilation

Errors: 0
Warnings: 0
- Output Filename: C:\Users\ashut\OneDrive\Desktop\cpp Endmodul.exe
- Output Size: 2.99652576446533 MiB
- Compilation Time: 0.99s

Shorten compiler pat

Line: 22 Col: 31 Sel: 0 Lines: 239 Length: 5517 Insert Done parsing in 0.484 seconds

26°C Partly cloudy

C:\Users\ashut\OneDrive\Des

2) Add Magazin
3) Add dvd
Enter your choice = 1
Enter the title = needed
Enter the author = shakha
Enter the publication year = 1452
Enter itemid = 14
Enter the Duration = 25.36
Enter the rating = 3.6
1)Add a item
2)Display the item
3)Remove the item
4)Exit
Enter the Choice = 2
=====

Title is = Macha
Author is = Ashutosh
publication year = 2024
Item id = 12
ISBN is = 145263
no of pages = 125
Books can be assigned for 15 days.

=====

Title is = needed
Author is = shakha
publication year = 1452
Item id = 14
Duration is = 25.36
Rating is 3.6
DVDs can be assigned for 3 days.

=====

1)Add a item
2)Display the item
3)Remove the item
4)Exit
Enter the Choice = 1

C:\Users\ashut\OneDrive\Desktop\cpp Endmodul.cpp - [Executing] - Embarcadero Dev-C++ 6.3

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 9.2.0 64-bit

(globals)

Project: cpp Endmodul.cpp

```
1 using namespace std;
2 #include<iostream>
3 class Libraryitem{
4     char title[30];
5     char author[30];
6     int publication_year;
7     int itemid;
8 public:
9
10    Libraryitem(){
11        strcpy(this->title,"not given");
12        strcpy(this->author,"not given");
13        this->publication_year=0;
14        this->itemid=0;
15    }
16    Libraryitem(char*title,char*author,int year){
17        strcpy(this->title,title);
18        strcpy(this->author,author);
19        this->publication_year=year;
20        this->itemid=itemid;
21    }
22    void setttitle(char*title){
23        strcpy(this->title,title);
24    }
```

Compiler Resources Compile Log Debug Find Results Console Close

Abort Compilation

Errors: 0
Warnings: 0
- Output Filename: C:\Users\ashut\OneDrive\Desktop\cpp Endmodul.exe
- Output Size: 2.99652576446533 MiB
- Compilation Time: 0.99s

Shorten compiler pat

Line: 22 Col: 31 Sel: 0 Lines: 239 Length: 5517 Insert Done parsing in 0.484 seconds

26°C Partly cloudy

C:\Users\ashut\OneDrive\Des

Title is = needed
Author is = shakha
publication year = 1452
Item id = 14
Duration is = 25.36
Rating is 3.6
DVDs can be assigned for 3 days.

=====

1)Add a item
2)Display the item
3)Remove the item
4)Exit
Enter the Choice = 2
Enter the id of that item = 12
2)Add a item
2)Display the item
3)Remove the item
4)Exit
Enter the Choice = 4
Exit...

Process exited after 239.3 seconds with return value 0
Press any key to continue . . .