

**A MINI PROJECT REPORT**  
**ON**  
**LIBRARY MANAGEMENT SYSTEM**

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## ABSTRACT

This mini project in C Library Management System is a console application without graphic developed using the C programming language. In this, you can perform book-related operations like in a REAL library management system with computer. Here, you can perform functions such as add books, return books, issue books, delete record of books issued, view record of books issued, search for books, and more. File handling has been extensively used in this project for almost all functions. So, this project can definitely guide you to understand C mini projects in a better way. For library management, this project considers six departments – Computer science, Electrical and electronics, Civil, Electronics and communication, Mechanical and bio-technology . These departments work simultaneously with the operations mentioned above. You can add a book to the Civil section, delete a book from the Electrical section or view issued book details of the Mechanical department.

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## Table of Contents:

1. Introduction
  2. Existing System
  3. Drawbacks.
  4. Proposed System
    - a.) Main Menu
    - b.)Admin login
      1. Add Books
      2. Search Books
      3. Issue Books
      4. Delete Book Record
    - c.) Student Login
  5. Software Requirements
  6. Flowchart
-

## Introduction

The project titled Library Management System is Library management software for monitoring and controlling the transactions in the library. This Project is developed in C-Language in code ::Blocks. The operation performed are addition of books , searching books , borrow books, and return book. This project also displays student's information.

Library Management System is a windows application written for 64 bit windows Operating System, designed to help the user to maintain and organize library.

LIBRARY MANAGEMENT SYSTEM IS A Library management software for monitoring and controlling the transactions taking place in Library. This project is developed in C which mainly focusses on adding new, searching and returning book. The main feature added in this software is penalty method that is added if book is not returned within stipulated time.

## Existing System:

Different records are maintained for different transactions of the Library. When a new transaction takes place, the Librarian staff enters the details of the transactions in a new file depending upon the type of the transaction. The staffs have to maintain different type of operation like keeping details of the members i.e. General member as well as Student, detail records of books, keeping track of members newly registered moreover financial transactions like income and expenditure for the period. The reports are generated time to time for various operations; these should also be produced to the higher authority in timely manner. The information regarding the system needs interaction and presentation at regular intervals of time.

## Drawbacks:

Since the system is a manual one, the new transactions become time consuming. The procedure of modification and deletion with the new transaction requires much interaction with the system. Those records may already be in use at some level of processing. The lack of availability of information in the same manner between different modules of the system slows the whole process. The lack of coordination of the staffs and procedures in a horizontal manner can also speed down the whole process, which requires more or less uninterrupted flow of information.

Another drawback for the present system is lack of proper methods to know the students how are to return books. As the number of books are limited there must be a proper system so that the circulation of the books does not stop.

How the proposed system tackles the above problem?

In the proposed project we have ensured that student are issued with a the books only after he clears all the books due with him. If the penalty amount crosses a sum of 50 then the book is issued only after the payment of money. The day after the date of penalty costs one rupee. Another thing that is proposed is a student cannot borrow the same books within the period of 7 days. We have also provided a facility to display the names of students who have borrowed the book and had it even after the date of return.

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### Objective of the Proposed System:

- Provides interface between student and library
- Safety of book records
- Safety of book records
- Safety of book records

### Features

- Add Books
- Search Books
- Issue Books
- Delete book records
- Book Information
- Close Application

### Main Menu

- The main menu provides the screen consisting of two options displaying
  1. Administrator Login
  2. Student login
- Student login consists of the information about various books and the location where the books are found.
- Student login also gives information about book borrowed and also keeps track of the penalty on not issuing a book.

### Admin Login

- The main section of this project is Admin login.
  - This login page is only accessible by librarian. As he is only person responsible for changing or updating the book details.
  - The various options under this are:
    1. Add Books.
    2. Search Books.
    3. Delete Books.
    4. Issue Books.
    5. Close Application.
-

### Add Books

- This options enables the librarian to add the category to which the book belong and the shelf number in which one can find the book.
- When the add book option is chosen it asks the librarian for the category to which the book belong to.
- When category is selected it asks the name, author price and shelf number in which it is stored. The information about the books is stored files.

### Search And Issue Books

- Search book option is present to search for a given book.
- The book required to be searched can be searched on the basis of name of the book, name of the author or latest edition of the book.
- Issue of the book is done by adding an book to the account of student. Several criteria are checked before issue of book like number of due books
- Issue books also gives the deadline for submission of the books.
- The penalty option in issue books adds the penalty if the book is not returned on the date of return.

### Student Login:

This option enables the student to know about the books borrowed , books that need to be returned and penalty details.

### Software Requirements

1. Windows 10 Operating System
  2. Code::Blocks IDE
  3. Any Text Editor to store information using files.
-

## Back-End

The back end of this project on library management system consists of seven main functions and the data related to book is stored in .dat files and the information related to student is stored in .doc files. Files have been backbone of this project.

The various functions used in this project are :

1. addbooks()
2. searchbooks()
3. issuebooks()
4. viewbooklist()
5. deleterecords()
6. studentdetails()

Definition of various functions:

1. addbooks()

```
116 void addbooks(void)
117 {
118     system("cls");
119     int i;
120     printf("\nSELECT CATEGORIES\n");
121     printf("\n1=> Computer");
122     printf("\n2=> Electronics");
123     printf("\n3=> Electrical");
124     printf("\n4=> Civil");
125     printf("\n5=> Mechanical");
126     printf("\n6=> Chemical");
127     printf("\n7=> Back to main menu");
128     printf("\nEnter your choice:");
129     scanf("%d",&s);
130     if(s==7)
131         mainmenu();
132     system("cls");
133     fp=fopen("lib.dat","ab+");
134     if(getdata()==1)
135     {
136         a.cat=categories[s-1];
137         fseek(fp,0,SEEK_END);
138         fwrite(&a,sizeof(a),1,fp);
139         fclose(fp);
140         printf("\nThe Record Is Successfully Saved");
141         printf("\nDo you want to save more?(Y / N):");
142         if(getch()=='n')
143             mainmenu();
144         else
145             system("cls");
146         addbooks();
147     }
```

## 2. Deletebook()

```
180 printf("\nDo you want to delete it?(Y/N):");
181 public int __cdecl printf (const char * __restrict __Format, ...)
182 {
183     ft=fopen("test.dat","wb+");
184     rewind(fp);
185     while(fread(&a,sizeof(a),1,fp)==1)
186     {
187         if(a.id!=d)
188         {
189             fseek(ft,0,SEEK_CUR);
190             fwrite(&a,sizeof(a),1,ft);
191         }
192     }
193     fclose(ft);
194     fclose(fp);
195     remove("lib.dat");
196     rename("test.dat","lib.dat");
197     fp=fopen("lib.dat","rb+");
198     if(findbook=='t')
199     {
200         printf("\nThe Record Is Sucessfully Deleted");
201         printf("\nDelete another record?(Y/N)");
202     }
203     }
204     else
205     mainmenu();
206     fflush(stdin);
207     another=getch();
208     }
209     }
210     mainmenu();
211     }
```



```
void deletebooks()
{
system("cls");
int d;
char another='y';
while(another=='y')
{
system("cls");
printf("\nEnter the Book ID to delete:");
scanf("%d",&d);
fp=fopen("lib.dat","rb+");
rewind(fp);
while(fread(&a,sizeof(a),1,fp)==1)
{
if(a.id==d)
{

printf("\nThe Book Record Is Available");
printf("\nBook name is %s",a.name);
printf("\nRack No. is %d",a.rackno);
findbook='t';
}
}
if(findbook!='t')
{
printf("\nNo record is found modify the search");
if(getch())
mainmenu();
}
if(findbook=='t' )
{
printf("\nDo you want to delete it?(Y/N:");
```

---

Searchbooks()

```
212 void searchbooks()
213 {
214     system("cls");
215     int d;
216     printf("\n::::::::::::::::::::::::::::Search Books::::::::::::::::::::::::::::");
217     printf("\n1=> Search By ID");
218     printf("\n2=> Search By Name");
219     printf("\nEnter Your Choice");
220     fp=fopen("lib.dat", "rb+");
221     rewind(fp);
222     switch(getch())
223     {
224     case '1':
225     {
226         system("cls");
227         printf("\n:::Search Books By Id:::");
228         printf("\nEnter the book id:");
229         scanf("%d",&d);
230         printf("\nSearching....");
231         while(fread(&a,sizeof(a),1,fp)==1)
232         {
233             if(a.id==d)
234             {
235                 Sleep(2);
236                 printf("\nThe Book Is Available");
237                 printf("\nID:%d",a.id);
238                 printf("\n Name:%s",a.name);
239                 printf("\n Author:%s ",a.Author);
240                 printf("\n Quantity:%d ",a.quantity);
241                 printf("\n Price:Rs.%.2f",a.Price);
242                 printf("\n Rack No:%d ",a.rackno);
243                 findbook='t';
```

```
246 - }
247 if(findbook!='t')
248 {
249     printf("\n\naNo Record Found");
250 - }
251 printf("\n\nTry another search?(Y/N)");
252 if(getch()=='y')
253     searchbooks();
254 else
255     mainmenu();
256 break;
257 - }
258 case '2':
259 {
260     char s[15];
261     system("cls");
262     printf("\n:::Search Books By Name:::");
263     printf("\nEnter Book Name:");
264     scanf("%s",s);
265     int d=0;
266     while(fread(&a,sizeof(a),1,fp)==1)
267     {
268         if(strcmp(a.name,(s))==0) |
269         {
270             printf("\nThe Book Is Available");
271             printf("\n ID:%d",a.id);
272             printf("\n Name:%s",a.name);
273             printf("\n Author:%s",a.Author);
274             printf("\n Quantity:%d",a.quantity);
275             printf("\n Price:Rs.%.2f",a.Price);
276             printf("\n Rack No:%d ",a.rackno);
277             d++;
```

```
282 {  
283     printf("\n\naNo Record Found");  
284 }  
285 printf("\nTry another search?(Y/N)");  
286 if(getch()=='y')  
287     searchbooks();  
288 else  
289     mainmenu();  
290 break;  
291 }  
292 default :  
293     getch();  
294     searchbooks();  
295 }  
296 fclose(fp);  
297 }
```

IssueBooks()

```

298 void issuebooks(void)
299 {
300     int t;
301     system("cls");
302     printf("\n::::::::::::::::::::ISSUE SECTION::::::::::::::::::::");
303     printf("\n1=> Issue a Book");
304     printf("\n2=> View Issued Book");
305     printf("\n3=> Search Issued Book");
306     printf("\n4=> Remove Issued Book");
307     printf("\nEnter a Choice:");
308     switch(getch())
309     {
310     case '1':
311     {
312         system("cls");
313         int c=0;
314         char another='y';
315         char ch;
316         while(another=='y')
317         {
318             system("cls");
319             printf("\n:::Issue Book section:::");
320             printf("\nEnter the Book Id:");
321             scanf("%d",&t);
322             fp=fopen("lib.dat","rb");
323             fs=fopen("Issue.dat","ab+");
324             if(checkid(t)==0)
325             {
326                 printf("\nThe Book Record Is Available!");
327                 printf("\nThere are %d unissued books in library ",a.quantity);
328                 printf("\nThe name of book is %s",a.name);
329                 printf("\nEnter the name of student");

```

```

326 printf("\nThe Book Record Is Available!");
327 printf("\nThere are %d unissued books in library ",a.quantity);
328 printf("\nThe name of book is %s",a.name);
329 printf("\nEnter the name of student");
330 scanf("%s",a.stname);
331 strcat(a.stname,".doc");
332 fx=fopen(a.stname,"r");
333 ch = fgetc(fx);
334     while (ch != EOF)
335     {
336         printf ("%c", ch);
337         ch = fgetc(fx);
338     }
339 fclose(fx);
340 fx=fopen(a.stname,"a");
341 fprintf(fx,"%d\n",t);
342 fprintf(fx,"%s\n",a.name);
343 fclose(fx);
344 printf("\nEnter today's Date");
345 scanf("%d %d %d",&dd.dd,&dd.mm,&dd.yyyy);
346 printf("\nIssued Date and Time %d-%d-%d",dd.dd,dd.mm,dd.yyyy);
347 fprintf(fx,"\nIssued Date and Time %d-%d-%d",dd.dd,dd.mm,dd.yyyy);
348 printf("\nThe BOOK of ID %d is issued",a.id);
349 x.dd=dd.dd+RETURNTIME;
350 x.mm=dd.mm;
351 x.yyyy=dd.yyyy;
352 if(x.dd>30)
353 {
354     x.mm+=x.dd/30;
355     x.dd-=30;
356 }
357 if(x.mm>12)

```

```

if(x.mm>12)
{
x.yyyy+=x.mm/12;
x.mm-=12;

}
printf("\nTo be return:%d-%d-%d",x.dd,x.mm,x.yyyy);
fprintf(fx,"\nTo be return:%d-%d-%d",x.dd,x.mm,x.yyyy);
fseek(fs,sizeof(a),SEEK_END);
fwrite(&a,sizeof(a),1,fs);
fclose(fs);
fclose(fx);
c=1;
}
if(c==0)
{
printf("\nNo record found");
}
printf("\nIssue any more(Y/N):");
fflush(stdin);
another=getche();
fclose(fp);
}

break;
}
case '2':
{
system("cls");
int j=4;
printf("\n:::::::::::::::::::::Issued Book List:::::::::::::::::::::\n");
printf("\n:::::::::::::::::::::Issued Book List:::::::::::::::::::::\n");
fs=fopen("Issue.dat","rb");
while(fread(&a,sizeof(a),1,fs)==1)
{
printf("\nSTUDENT NAME:%s",a.stname);
printf("\nCATEGORY:%s",a.cat);
printf("\nID:%d",a.id);
printf("\nBOOK NAME:%s",a.name);

printf("\nISSUED DATE:%d-%d-%d",dd.dd,dd.mm,dd.yyyy );
printf("\nRETURN DATE:%d-%d-%d",x.dd,x.mm,x.yyyy);
j++;
}
fclose(fs);
returnfunc();
}
break;
case '3':
{
system("cls");
printf("\nEnter Book ID:");
int p,c=0;
char another='y';
while(another=='y')
{

scanf("%d",&p);
fs=fopen("Issue.dat","rb");
while(fread(&a,sizeof(a),1,fs)==1)
{
if(a.id==p)

```

```
`  
if(a.id==p)  
{  
    issuerecord();  
    printf("\nPress any key.....");  
    getch();  
    issuerecord();  
    c=1;  
}  
  
}  
fflush(stdin);  
fclose(fs);  
if(c==0)  
{  
    printf("\nNo Record Found");  
}  
printf("\nTry Another Search?(Y/N)");  
another=getch();  
}  
}  
break;  
case '4':  
{  
    system("cls");  
    int b;  
    FILE *fg;  
    char another='y';  
    while(another=='y')  
    {  
        printf("\nEnter book id to remove:");  
        scanf("%d",&b);  
    }
```



```

444 while(another=='y')
445 {
446     printf("\nEnter book id to remove:");
447     scanf("%d",&b);
448     fs=fopen("Issue.dat","rb+");
449     while(fread(&a,sizeof(a),1,fs)==1)
450     {
451         if(a.id==b)
452         {
453             issuerecord();
454             findbook='t';
455         }
456         if(findbook=='t')
457         {
458             printf("\nDo You Want to Remove it?(Y/N)");
459             if(getch()=='y')
460             {
461                 fg=fopen("record.dat","wb+");
462                 rewind(fs);
463                 while(fread(&a,sizeof(a),1,fs)==1)
464                 {
465                     if(a.id!=b)
466                     {
467                         fseek(fs,0,SEEK_CUR);
468                         fwrite(&a,sizeof(a),1,fg);
469                     }
470                 }
471                 fclose(fs);
472                 fclose(fg);
473                 remove("Issue.dat");
474                 rename("record.dat","Issue.dat");
480             if(findbook!='t')
481             {
482                 printf("\nNo Record Found");
483             }
484         }
485         printf("\nDelete any more?(Y/N)");
486         another=getch();
487     }
488 }
489 default:
490     printf("\nWrong Entry!!");
491     getch();
492     issuebooks();
493     break;
494 }
495 returnfunc();
496 }

```

## Viewbooklist()

```
497 void viewbooks(void)
498 {
499     int i=0,j;
500     system("cls");
501     printf("\n::::::::::::::::::::::::::::Book List::::::::::::::::::::::::::::");
502     printf(" ");
503     j=4;
504     fp=fopen("lib.dat","rb");
505     while(fread(&a,sizeof(a),1,fp)==1)
506     {
507         printf("\nCATEGORY:%s",a.cat);
508         printf("\nID:%d",a.id);
509         printf("\nBOOK NAME:%s",a.name);
510         printf("\nAUTHOR:%s",a.Author);
511         printf("\nQTY:%d",a.quantity);
512         printf("\nPRICE:%.2f",a.Price);
513         printf("\nRackNo:%d",a.rackno);
514         printf("\n\n");
515         j++;
516         i=i+a.quantity;
517     }
518     printf("\nTotal Books =%d",i);
519     fclose(fp);
520     returnfunc();
521 }
522 void editbooks(void)
523 {
524     system("cls");
525     int c=0;
526     int d,e;
527     printf("\n****Edit Books Section****");
528     char another='y';
```

```
printf("\n****Edit Books Section****");
char another='y';
while(another=='y')
{
system("cls");
printf("\nEnter Book Id to be edited:");
scanf("%d",&d);
fp=fopen("lib.dat","rb+");
while(fread(&a,sizeof(a),1,fp)==1)
{
if(checkid(d)==0)
{
printf("\nThe Book Is Available");
printf("\nThe Book ID:%d",a.id);
printf("\nEnter New Name:");
scanf("%s",a.name);
printf("\nEnter New Author:");
scanf("%s",a.Author);
printf("\nEnter New Quantity:");
scanf("%d",&a.quantity);
printf("\nEnter New Price:");
scanf("%f",&a.Price);
printf("\nEnter New Rackno:");
scanf("%d",&a.rackno);
printf("\nThe record is modified");
fseek(fp,ftell(fp)-sizeof(a),0);
fwrite(&a,sizeof(a),1,fp);
fclose(fp);
c=1;
}
```

---

```
557 | if(c==0)
558 | {
559 |     printf("\nNo record found");
560 | }
561 | }
562 | printf("\nModify another Record?(Y/N)");
563 | fflush(stdin);
564 | another=getch() ;
565 | }
566 | returnfunc();
567 | }
568 | void returnfunc(void)
569 | {
570 | {
571 |     printf("\n Press ENTER to return to main menu");
572 | }
573 | if(getch()==13)
574 |     mainmenu();
575 | }
576 | int getdata()
577 | {
578 |     int t;
579 |     printf("\nEnter the Information Below");
580 |     printf("\nCategory:");
581 |     printf("%s",catagories[s-1]);
582 |     printf("\nBook ID:\t");
583 |     scanf("%d",&t);
584 |     if(checkid(t) == 0)
585 |     {
586 |         printf("\n\aThe book id already exists\a");
587 |         getch();
588 |         mainmenu();
```

```
}
a.id=t;
printf("\nBook Name:");
scanf("%s",a.name);
printf("\nAuthor:");
scanf("%s",a.Author);
printf("\nQuantity:");
scanf("%d",&a.quantity);
printf("\nPrice:");
scanf("%f",&a.Price);
printf("\nRack No:");
scanf("%d",&a.rackno);
return 1;
}
int checkid(int t)
{
rewind(fp);
while(fread(&a,sizeof(a),1,fp)==1)
if(a.id==t)
return 0;
return 1;
}
```

Studentdetails()

---


```

651 void student()
652 {
653
654     printf("\nStudent Details\n");
655     int fine;
656     char stname[100],c;
657     printf("\nEnter the student name\n");
658     scanf("%s",stname);
659     strcat(stname,".doc");
660     fx=fopen(a.stname,"a");
661     printf("\nthe book id is %d",a.id);
662     printf("\nThe name of book is %s",a.name);
663     printf("\nIssued Date and Time %d %d %d",dd.dd,dd.mm,dd.yyyy);
664     printf("\nReturning Date:%d-%d-%d",x.dd,x.mm,x.yyyy);
665     printf("\nEnter the date on which book is returned");
666     scanf("%d %d %d",&y.dd,&y.mm,&y.yyyy);
667     printf("Returned date %d-%d-%d",y.dd,y.mm,y.yyyy);
668     if(x.dd>y.dd)
669     {
670         if(x.mm==y.mm)
671             fine=(x.dd-y.dd);
672         else
673         {
674             fine=((x.mm-y.mm)*30+(x.dd-y.dd));
675         }
676     }
677     else if(x.dd<y.dd)
678     {
679         fine=((x.mm-y.mm)*30+(y.dd-x.dd));
680     }
681     else
682     {
683         if(x.mm==y.mm)
684         {
685             fine =0;
686         }
687     }
688     printf("Fine %d",fine);
689     fprintf(fx,"the date on which book is returned %d-%d-%d",y.dd,y.mm,y.yyyy);
690     fprintf(fx,"\nFine %d",fine);
691     mainmenu();
692
693 }

```

## Design Flow

The introductory screen looks like:

 C:\Users\P SRIJAY\Lab1\mnilibrarymana.exe

```
LIBRARY MANAGEMENT SYSTEM
Enter Password:*****
Now You Are Logged In!
Press any key to countinue...
```

Main menu looks like

```
LIBRARY MANAGEMENT SYSTEM
1=> Add Books
2=> Delete Books
3=> Search Books
4=> Issue Books
5=> View Books List
6=> Edit Book's Record
7=> Student Details
8=> Close Application
Enter your choice:
```


```
SELECT CATEGORIES
```

```
1=> Computer
2=> Electronics
3=> Electrical
4=> Civil
5=> Mechanical
6=> Chemical
7=> Back to main menu
Enter your choice:1
```


Addbooks function output

```
Enter the Information Below
Category:Computer
Book ID:      123
Book Name:c
Author:manas
Quantity:100
Price:234.56
Rack No:54
The Record Is Sucessfully Saved
```

## Searchbooks function output

 C:\Users\P SRIJAY\Lab1\mnilibrarymana.exe


```
::::::::::::::::::::::::::::Search Books::::::::::::::::::::::::::::
1=> Search By ID
2=> Search By Name
Enter Your Choice
```

 C:\Users\P SRIJAY\Lab1\mnilibrarymana.exe


```
::::Search Books By Id::::
Enter the book id:3

Searching.....
The Book Is Available
ID:3
  Name:logiccircuits
  Author:sedf
  Quantity:100
  Price:Rs.234.56
  Rack No:3
Try another search?(Y/N)
```

## Issuebooks function output

 C:\Users\P SRIJAY\Lab1\mnilibrarymana.exe

```
::::::::::::::::::::::::::::ISSUE SECTION::::::::::::::::::::::::::::
1=> Issue a Book
2=> View Issued Book
3=> Search Issued Book
4=> Remove Issued Book
Enter a Choice:
```

 C:\Users\P SRIJAY\Lab1\mnilibrarymana.exe

```
::::Issue Book section:::
Enter the Book Id:3


The Book Record Is Available!
There are 100 unissued books in library
The name of book is logiccircuits
Enter the name of studentravi

Enter today's Date12 12 18

Issued Date and Time 12-12-18
The BOOK of ID 3 is issued
To be return:27-12-18
Issue any more(Y/N):
```



## Viewbook list function output

 C:\Users\P SRIJAY\Lab1\mnilibrarymana.exe

```
::::::::::::::::::::::::::Book List::::::::::::::::::::::::::
CATEGORY:Electronics
ID:3
BOOK NAME:logiccircuits
AUTHOR:sedf
QTY:100
PRICE:234.56
RackNo:3

Total Books =100
Press ENTER to return to main menu
```

## Studentdetails function output

```
Student Details


Enter the student name

srijay

the book id is 3
The name of book is logiccircuits
Issued Date and Time 12 12 18
Returning Date:27-12-18
Enter the date on which book is returned29 12 18
Returned date 29-12-18Fine 2
```

## Validation checks:


### Incorrect password

 C:\Users\P SRIJAY\Lab1\mnilibrarymana.exe

```
LIBRARY MANAGEMENT SYSTEM

Enter Password:*****
Warning!! Incorrect Password
```


### Books with same ids

 C:\Users\P SRIJAY\Lab1\mnilibrarymana.exe

```
Enter the Information Below
Category:Electronics
Book ID:      3

The book id already exists
```

Searching the books not present in the records

 C:\Users\P SRIJAY\Lab1\mnlibrarymana.exe

```
::::Search Books By Id::::  
Enter the book id:12344  
  
Searching.....  
No Record Found  
Try another search?(Y/N)
```

## Conclusion

This mini project in C Library Management System is a console application without graphic developed using the C programming language. In this, you can perform book-related operations like in a REAL library management system with computer. Here, you can perform functions such as add books, return books, issue books, delete record of books issued, view record of books issued, search for books, and more. File handling has been extensively used in this project for almost all functions. So, this project can definitely guide you to understand C mini projects in a better way. For library management, this project considers six departments – Computer science, Electrical and electronics, Civil, Electronics and communication, Mechanical and bio-technology . These departments work simultaneously with the operations mentioned above. You can add a book to the Civil section, delete a book from the Electrical section or view issued book details of the Mechanical department

---

## APPENDIX

### Source Code

```
#include<windows.h>
#include<stdio.h>
#include<conio.h>
#include <stdlib.h>
#include<string.h>
#include<ctype.h>
#include<dos.h>
#include<time.h>
#define RETURNTIME 15
int d;

char
catagories[][15]={ "Computer","Electronics","Electrical","Civil","Mechanical","Chemical" };
void returnfunc(void);
void mainmenu(void);
void addbooks(void);
void deletebooks(void);
void editbooks(void);
void searchbooks(void);
void issuebooks(void);
void viewbooks(void);
void closeapplication(void);
int  getdata();
int  checkid(int);
int  t(void);
void Password();
void issuerecord();
void loaderanim();
void student();
```

---

```
FILE *fp,*ft,*fs,*fx;

int s;

char findbook;

char password[10]="CBIT12345";

struct meroDate
{
int mm,dd,yy;
};

struct dDate{
    int dd;
    int mm;
    int yyyy;
} dd,x,y;

struct books
{
int id;
char stname[20];
char name[20];
char Author[20];
int quantity;
float Price;
int count;
int rackno;
char *cat;
struct meroDate issued;
struct meroDate duedate;
};

struct books a;

int main()
{
```

---



```
case '4':
issuebooks();
break;
case '5':
viewbooks();
break;
case '6':
editbooks();
break;
case '7':
student();
break;
case '8':
{
system("cls");
printf("\nExiting in 3 second.....>");
Sleep(3000);
exit(0);
}
default:
{
printf("\n\nWrong Entry!!Please re-entered correct option");
if(getch())
mainmenu();
}
}
}

void addbooks(void)
{
system("cls");
```

---

```
int i;

printf("\nSELECT CATEGORIES\n");

printf("\n1=> Computer");
printf("\n2=> Electronics");
printf("\n3=> Electrical");
printf("\n4=> Civil");
printf("\n5=> Mechanical");
printf("\n6=> Chemical");
printf("\n7=> Back to main menu");
printf("\nEnter your choice:");
scanf("%d",&s);
if(s==7)
mainmenu() ;
system("cls");
fp=fopen("lib.dat","ab+");
if(getdata()==1)
{
a.cat=categories[s-1];
fseek(fp,0,SEEK_END);
fwrite(&a,sizeof(a),1,fp);
fclose(fp);
printf("\nThe Record Is Successfully Saved");
printf("\nDo you want to save more?(Y / N):");
if(getch()=='n')
mainmenu();
else
system("cls");
addbooks();
}
}
```

---

```
void deletebooks()
{
system("cls");
int d;
char another='y';
while(another=='y')
{
system("cls");
printf("\nEnter the Book ID to delete:");
scanf("%d",&d);
fp=fopen("lib.dat","rb+");
rewind(fp);
while(fread(&a,sizeof(a),1,fp)==1)
{
if(a.id==d)
{

printf("\nThe Book Record Is Available");
printf("\nBook name is %s",a.name);
printf("\nRack No. is %d",a.rackno);
findbook='t';
}
}
if(findbook!='t')
{
printf("\nNo record is found modify the search");
if(getch())
mainmenu();
}
if(findbook=='t' )
```

---



```
{  
printf("\nDo you want to delete it?(Y/N):");  
if(getch()=='y')  
{  
ft=fopen("test.dat","wb+");  
rewind(fp);  
while(fread(&a,sizeof(a),1,fp)==1)  
{  
if(a.id!=d)  
{  
fseek(ft,0,SEEK_CUR);  
fwrite(&a,sizeof(a),1,ft);  
}  
}  
fclose(ft);  
fclose(fp);  
remove("lib.dat");  
rename("test.dat","lib.dat");  
fp=fopen("lib.dat","rb+");  
if(findbook=='t')  
{  
printf("\nThe Record Is Sucessfully Deleted");  
printf("\nDelete another record?(Y/N)");  
}  
}  
else  
mainmenu();  
fflush(stdin);  
another=getch();  
}
```

---

```
}  
mainmenu();  
}  
void searchbooks()  
{  
system("cls");  
int d;  
printf("\n::::::::::::::::::Search Books::::::::::::::::::");  
printf("\n1=> Search By ID");  
printf("\n2=> Search By Name");  
printf("\nEnter Your Choice");  
fp=fopen("lib.dat","rb+");  
rewind(fp);  
switch(getch())  
{  
case '1':  
{  
system("cls");  
printf("\n::::Search Books By Id::::");  
printf("\nEnter the book id:");  
scanf("%d",&d);  
printf("\nSearching.....");  
while(fread(&a,sizeof(a),1,fp)==1)  
{  
if(a.id==d)  
{  
Sleep(2);  
printf("\nThe Book Is Available");  
printf("\nID:%d",a.id);  
printf("\n Name:%s",a.name);  

```

---

```
printf("\n Author:%s ",a.Author);
printf("\n Quantity:%d ",a.quantity);
printf("\n Price:Rs.%.2f",a.Price);
printf("\n Rack No:%d ",a.rackno);
findbook='t';
}

}
if(findbook!='t')
{
printf("\n\naNo Record Found");
}
printf("\n\nTry another search?(Y/N)");
if(getch()=='y')
searchbooks();
else
mainmenu();
break;
}
case '2':
{
char s[15];
system("cls");
printf("\n::::Search Books By Name::::");
printf("\nEnter Book Name:");
scanf("%s",s);
int d=0;
while(fread(&a,sizeof(a),1,fp)==1)
{
if(strcmp(a.name,(s))==0)
```

---

```
{  
printf("\n\nThe Book Is Available");  
printf("\n ID:%d",a.id);  
printf("\n Name:%s",a.name);  
printf("\n Author:%s",a.Author);  
printf("\n Qantity:%d",a.quantity);  
printf("\n Price:Rs.%.2f",a.Price);  
printf("\n Rack No:%d ",a.rackno);  
d++;  
}  
  
}  
if(d==0)  
{  
printf("\n\naNo Record Found");  
}  
printf("\n\nTry another search?(Y/N)");  
if(getch()=='y')  
searchbooks();  
else  
mainmenu();  
break;  
}  
default :  
getch();  
searchbooks();  
}  
fclose(fp);  
}  
void issuebooks(void)
```

---

```
{
int t;
system("cls");
printf("\n::::::::::::::::::ISSUE SECTION::::::::::::::::::");
printf("\n1=> Issue a Book");
printf("\n2=> View Issued Book");
printf("\n3=> Search Issued Book");
printf("\n4=> Remove Issued Book");
printf("\nEnter a Choice:");
switch(getch())
{
case '1':
{
system("cls");
int c=0;
char another='y';
char ch;
while(another=='y')
{
system("cls");
printf("\n:::Issue Book section:::");
printf("\nEnter the Book Id:");
scanf("%d",&t);
fp=fopen("lib.dat","rb");
fs=fopen("Issue.dat","ab+");
if(checkid(t)==0)
{
printf("\nThe Book Record Is Available!");
printf("\nThere are %d unissued books in library ",a.quantity);
printf("\nThe name of book is %s",a.name);
```

---

```
printf("\nEnter the name of student");
scanf("%s",a.stname);
strcat(a.stname,".doc");
fx=fopen(a.stname,"r");
ch = fgetc(fx);
    while (ch != EOF)
    {
        printf ("%c", ch);
        ch = fgetc(fx);
    }
fclose(fx);
fx=fopen(a.stname,"a");
fprintf(fx,"\n%d\n",t);
fprintf(fx,"\n%s\n",a.name);
fclose(fx);
printf("\nEnter today's Date");
scanf("%d %d %d",&dd.dd,&dd.mm,&dd.yyyy);
printf("\nIssued Date and Time %d-%d-%d",dd.dd,dd.mm,dd.yyyy);
fprintf(fx,"\nIssued Date and Time %d-%d-%d",dd.dd,dd.mm,dd.yyyy);
printf("\nThe BOOK of ID %d is issued",a.id);
x.dd=dd.dd+RETURNTIME;
x.mm=dd.mm;
x.yyyy=dd.yyyy;
if(x.dd>30)
{
    x.mm+=x.dd/30;
    x.dd-=30;
}
if(x.mm>12)
{
```

---

```
x.yyyy+=x.mm/12;

x.mm-=12;

}

printf("\nTo be return:%d-%d-%d",x.dd,x.mm,x.yyyy);

fprintf(fx,"\nTo be return:%d-%d-%d",x.dd,x.mm,x.yyyy);

fseek(fs,sizeof(a),SEEK_END);

fwrite(&a,sizeof(a),1,fs);

fclose(fs);

fclose(fx);

c=1;

}

if(c==0)

{

printf("\nNo record found");

}

printf("\nIssue any more(Y/N):");

fflush(stdin);

another=getche();

fclose(fp);

}

break;

}

case '2':

{

system("cls");

int j=4;

printf("\n:-----Issued Book List:-----\n");

fs=fopen("Issue.dat","rb");
```

```
while(fread(&a,sizeof(a),1,fs)==1)
{
printf("\nSTUDENT NAME:%s",a.stname);
printf("\nCATEGORY:%s",a.cat);
printf("\nID:%d",a.id);
printf("\nBOOK NAME:%s",a.name);

printf("\nISSUED DATE:%d-%d-%d",dd.dd,dd.mm,dd.yyyy );
printf("\nRETURN DATE:%d-%d-%d",x.dd,x.mm,x.yyyy);
j++;
}
fclose(fs);
returnfunc();
}
break;
case '3':
{
system("cls");
printf("\nEnter Book ID:");
int p,c=0;
char another='y';
while(another=='y')
{

scanf("%d",&p);
fs=fopen("Issue.dat","rb");
while(fread(&a,sizeof(a),1,fs)==1)
{
if(a.id==p)
{
```

---



```
issuerecord();
printf("\nPress any key.....");
getch();
issuerecord();
c=1;
}

}
fflush(stdin);
fclose(fs);
if(c==0)
{
printf("\nNo Record Found");
}
printf("\nTry Another Search?(Y/N)");
another=getch();
}
}
break;
case '4':
{
system("cls");
int b;
FILE *fg;
char another='y';
while(another=='y')
{
printf("\nEnter book id to remove:");
scanf("%d",&b);
fs=fopen("Issue.dat","rb+");
```

---

```
while(fread(&a,sizeof(a),1,fs)==1)
{
if(a.id==b)
{
issuerecord();
findbook='t';
}
if(findbook=='t')
{
printf("\nDo You Want to Remove it?(Y/N)");
if(getch()=='y')
{
fg=fopen("record.dat","wb+");
rewind(fs);
while(fread(&a,sizeof(a),1,fs)==1)
{
if(a.id!=b)
{
fseek(fs,0,SEEK_CUR);
fwrite(&a,sizeof(a),1,fg);
}
}
fclose(fs);
fclose(fg);
remove("Issue.dat");
rename("record.dat","Issue.dat");
printf("\nThe issued book is removed from list");

}
}
```

---

```

}
if(findbook!='t')
{
printf("\nNo Record Found");
}
}
printf("\nDelete any more?(Y/N)");
another=getch();
}
}
default:
printf("\nWrong Entry!!");
getch();
issuebooks();
break;
}
returnfunc();
}
void viewbooks(void)
{
int i=0,j;
system("cls");
printf("\n:Book List:");
printf(" ");
j=4;
fp=fopen("lib.dat","rb");
while(fread(&a,sizeof(a),1,fp)==1)
{
printf("\nCATEGORY:%s",a.cat);
printf("\nID:%d",a.id);

```

---

```
printf("\nBOOK NAME:%s",a.name);
printf("\nAUTHOR:%s",a.Author);
printf("\nQTY:%d",a.quantity);
printf("\nPRICE:%.2f",a.Price);
printf("\nRackNo:%d",a.rackno);
printf("\n\n");
j++;
i=i+a.quantity;
}
printf("\nTotal Books =%d",i);
fclose(fp);
returnfunc();
}
void editbooks(void)
{
system("cls");
int c=0;
int d,e;
printf("\n*****Edit Books Section*****");
char another='y';
while(another=='y')
{
system("cls");
printf("\nEnter Book Id to be edited:");
scanf("%d",&d);
fp=fopen("lib.dat","rb+");
while(fread(&a,sizeof(a),1,fp)==1)
{
if(checkid(d)==0)
{
```

---

```
printf("\nThe Book Is Available");
printf("\nThe Book ID:%d",a.id);
printf("\nEnter New Name:");
scanf("%s",a.name);
printf("\nEnter New Author:");
scanf("%s",a.Author);
printf("\nAdd New Quantity:");
scanf("%d",&a.quantity);
printf("\nEnter New Price:");
scanf("%f",&a.Price);
printf("\nEnter New Rackno:");
scanf("%d",&a.rackno);
printf("\nThe record is modified");
fseek(fp,ftell(fp)-sizeof(a),0);
fwrite(&a,sizeof(a),1,fp);
fclose(fp);
c=1;
}
if(c==0)
{
printf("\nNo record found");
}
}
printf("\nModify another Record?(Y/N)");
fflush(stdin);
another=getch() ;
}
returnfunc();
}
void returnfunc(void)
```

---

```
{
{
printf("\n Press ENTER to return to main menu");
}
if(getch()==13)
mainmenu();
}
int getdata()
{
int t;
printf("\nEnter the Information Below");
printf("\nCategory:");
printf("%s",catagories[s-1]);
printf("\nBook ID:\t");
scanf("%d",&t);
if(checkid(t) == 0)
{
printf("\n\aThe book id already exists\a");
getch();
mainmenu();
return 0;
}
a.id=t;
printf("\nBook Name:");
scanf("%s",a.name);
printf("\nAuthor:");
scanf("%s",a.Author);
printf("\nQuantity:");
scanf("%d",&a.quantity);
printf("\nPrice:");
```

---

```
scanf("%f",&a.Price);
printf("\nRack No:");
scanf("%d",&a.rackno);
return 1;
}
int checkid(int t)
{
rewind(fp);
while(fread(&a,sizeof(a),1,fp)==1)
if(a.id==t)
return 0;
return 1;
}
void Password(void)
{

char d[25]="Enter The Password";
char ch,pass[10];
int i=0,j;
printf("\nEnter Password:");
while(ch!=13)
{
ch=getch();

if(ch!=13 && ch!=8){
putch('*');
pass[i] = ch;
i++;
}
}
```

---

```
pass[i] = '\0';
if(strcmp(pass,password)==0)
{
printf("\nNow You Are Logged In!");
printf("\nPress any key to countinue...");
getch();
mainmenu();
}
else
{
printf("\nWarning!! Incorrect Password");
getch();
Password();
}
}
void issuerecord()
{
system("cls");
printf("\nThe Book has taken by Mr. %s",a.stname);
printf("\nIssued Date and Time %d %d %d",dd.dd,dd.mm,dd.yyyy);
printf("\nReturning Date:%d-%d-%d",x.dd,x.mm,x.yyyy);
}
void student()
{

printf("\nStudent Details\n");
int fine;
char stname[100],c;
printf("\nEnter the student name\n");
scanf("%s",stname);
```

---



```
strcat(stname, ".doc");
fx=fopen(a.stname, "a");
printf("\nthe book id is %d", a.id);
printf("\nThe name of book is %s", a.name);
printf("\nIssued Date and Time %d %d %d", dd.dd, dd.mm, dd.yyyy);
printf("\nReturning Date: %d-%d-%d", x.dd, x.mm, x.yyyy);
printf("\nEnter the date on which book is returned");
scanf("%d %d %d", &y.dd, &y.mm, &y.yyyy);
printf("Returned date %d-%d-%d", y.dd, y.mm, y.yyyy);
if(x.dd > y.dd)
{
    if(x.mm == y.mm)
        fine = (x.dd - y.dd);
    else
    {
        fine = ((x.mm - y.mm) * 30 + (x.dd - y.dd));
    }
}
else if(x.dd < y.dd)
{
    fine = ((x.mm - y.mm) * 30 + (y.dd - x.dd));
}
else
{
    if(x.mm == y.mm)
    {
        fine = 0;
    }
}
printf("Fine %d", fine);
```

---

```
fprintf(fx,"the date on which book is returned %d-%d-%d",y.dd,y.mm,y.yyyy);
```

```
fprintf(fx,"\nFine %d",fine);
```

```
mainmenu();
```

```
}
```