



DEPARTMENT OF BASIC SCIENCE AND HUMANITIES

INSTITUTE OF ENGINEERING AND MANAGEMENT, KOLKATA

“LIBRARY MANAGEMENT SYSTEM”

Submitted by:-

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Section: A

Class Roll Number: 74

Stream: Computer Science Engineering (CSE)

Subject: Programming for Problem Solving Using C

Code: ESC-103 (Pr)

Under the supervision of:**Prof. Swarnendu
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(PROJECT REPORT SUBMITTED IN FULFILLMENT OF THE
REQUIREMENTS FOR THE SECOND SEMESTER)



CERTIFICATE OF RECOMMENDATION

We hereby recommend that the project prepared under our supervision by **Deep**

Banerjee, entitled “**Library Management System**” be accepted in fulfillment of the requirements for the degree of fulfillment of the second semester.

Head
of the Department Project Supervisor IEM, Kolkata

Basic Science and Humanities

1. Introduction:

This project is assigned to me for developing a Library Management System with the help of basic C programming language.

The basic aim of the project is to create a library management system where we need to put up basic book and reader details and thereby with the help of c programming, we have to create a portal (.exe file) for adding new books, searching books, adding new reader, searching readers, issuing books, submitting books, deleting books, deleting readers and finally seeing all the books in the library at a glance.

2. Variable Description:

The different variables used in this project are listed under:-

1. int- To store integer datatypes.
2. char- To store character datatypes.

3. Function Description:

The different functions (structures) used in this project are listed under:-

1. reader- For storing the required reader details *vis.* name, id and due date.

2. book- For storing the required book details viz. name, author, availability and reader info.

4. Programs:

Library Management System.c

```
#include <stdio.h> #include <stdlib.h> int main(){
    struct reader{ int id; char name[20]; char due; int
    dbid; } rdr[10]={0}; struct book{ int id; char
    name[30]; char author[20]; char avbl; int rid; }
    bk[20]={0}; int choice, searchid, searchid1, n, m, i;
    printf("\n\t\tWELCOME!\n"); do{ printf("\n\tLibrary Management
    System\n\t=====
    \n1. Add a new book\t\t2. Search
    book\n3. Add new reader\t4. Search reader\n5. Issue
    book\t\t6. Submit book\n7. Delete book\t\t8. Delete reader\n9. List
    of books\t10. Exit\n\nEnter your choice: "); scanf("%d", &choice);
    switch(choice){ case 1: for( i=0; i<20; i++){ if (bk[i].id==0){
    printf("Enter name of the book: "); scanf("%s", bk[i].name);
    printf("Enter name of the author: "); scanf("%s", bk[i].author);
    printf("Enter book ID: "); scanf("%d", &bk[i].id); bk[i].avbl='y';
    bk[i].rid=0; i=20; printf("Book added successfully.\n\n"); }
        }break;
        case 2:
            printf("Enter book ID: "); scanf("%d", &searchid); n=0;
            for( i=0; i<20; i++){ if (searchid == bk[i].id){ printf("\n\tBook
            Information\nBook ID: %d\tBook Name: %s\nAuthor Name:
            %s\nAvailable: %c\tDue by Reader ID: %d\n", bk[i].id, bk[i].name,
            bk[i].author, bk[i].avbl, bk[i].rid); n++;
            }
            }if(n==0){ printf("Book not found.\n\n");
            }break;
        case 3:
            for(i=0; i<10; i++){ if (rdr[i].id==0){
                printf("Enter Reader's name: ");
                scanf("%s", rdr[i].name); printf("Enter
                Reader id: "); scanf("%d", &rdr[i].id);
                rdr[i].due='n'; rdr[i].dbid=0; i=10;
                printf("Reader added successfully.\n\n"); }
            }break;
        case 4:
            printf("Enter Reader ID: "); scanf("%d", &searchid); n=0;
            for(i=0; i<10; i++){ if (searchid==rdr[i].id){ printf("\n\tReader
            Information\nReader ID: %d\tReader Name: %s\nDue: %c\t\tDue book ID: %d\n",
            rdr[i].id, rdr[i].name, rdr[i].due, rdr[i].dbid); n++; }
            }if(n==0){ printf("Reader not
            found.\n\n");
            } break; case 5:
            printf("Enter book ID: "); scanf("%d", &searchid);
            printf("Enter reader ID: "); scanf("%d",
            &searchid1); n=0; m=0; for(i=0; i<20; i++){ if
```

```

        (searchid==bk[i].id && bk[i].avbl=='y'){
        bk[i].avbl='n'; bk[i].rid=searchid1; n++; i=20;
        }
        }for(i=0; i<10; i++){ if (searchid1==rdr[i].id &&
        rdr[i].due=='n'){ rdr[i].due='y';
        rdr[i].dbid=searchid; m++; i=10; }
        }if(n==1 && m==1){ printf("Book issued
        successfully.\n\n");
        }else if(n==1 && m==0){ for(
        i=0; i<20; i++){ if
        (searchid==bk[i].id){
        bk[i].avbl='y'; bk[i].rid=0;
        i=20;
        }
        }printf("Book not issued.\nReader has a due book.\n\n");
        }break;
case 6:
        printf("Enter book ID: "); scanf("%d",
        &searchid); for(i=0;
        i<20; i++){ if
        (searchid==bk[i].id){
        bk[i].avbl='y';
        searchid1=bk[i].rid; bk[i].rid=0;
        }
        }for(i=0; i<10; i++){ if
        (searchid1==rdr[i].id){
        rdr[i].due='n'; rdr[i].dbid=0;
        }
        }printf("Book ID %d submitted successfully.\n\n", searchid);
break; case 7:
        printf("Enter book ID to be deleted: "); scanf("%d",
        &searchid); n=0; for(i=0; i<20;
        i++){ if (searchid==bk[i].id){ for(i=i; i<20;
        i++){ bk[i]=bk[i+1];
        }n++;
        }
        }if(n!=0){ printf("Book ID %d deleted.\n\n", searchid);
        }else printf("Book not found.\n\n");
break;
case 8:
        printf("Enter reader ID to be deleted: ");
        scanf("%d", &searchid); n=0; for(i=0; i<10;
        i++){ if (searchid==rdr[i].id){ for(i=i;
        i<10; i++){ rdr[i]=rdr[i+1];
        } n++;
        }
        }if(n!=0){ printf("Reader ID %d deleted.\n\n", searchid);
        }else printf("Reader not found.\n\n");
break;
case 9:

```

```
n=0; for(
i=0; i<20;
i++){
if(bk[i].
id != 0){
n++;
}
}printf("\n\t\tBook list\tTotal books:
%d\n\nID\tName\t\t\tAuthor\t\t\tAvailable\tReader ID\n\n", n); for( i=0; i<20;
i++){ if(bk[i].id != 0){ printf("%d\t%s\t\t\t%s\t\t%c\t\t%d\n",
bk[i].id, bk[i].name,
bk[i].author, bk[i].avbl, bk[i].rid);
}
}break; case 10:
printf("\n\tTHANK YOU!");
exit(0);
break; default: printf("CHOICE NOT FOUND!! Please enter choice between
1 and
10.\n\n");
}
}while(choice!=10);
return 0; }
```

5. *Outputs:*

Sample outputs (screenshots) to demonstrate the functionalities in programs are listed below.

1. Adding a book...

```

WELCOME !

Library Management System
=====
1. Add new book           2. Search book
3. Add new reader        4. Search reader
5. Issue book            6. Submit book
7. Delete book           8. Delete reader
9. List of books         10. Exit

Enter your choice: 1
Enter name of the book: Panchatantra
Enter name of the author: Kalidas
Enter book ID: 001
Book added successfully.

```

2. Searching for a book...

```
Library Management System
=====
1. Add new book          2. Search book
3. Add new reader        4. Search reader
5. Issue book            6. Submit book
7. Delete book           8. Delete reader
9. List of books         10. Exit

Enter your choice: 2
Enter book ID: 001

Book Information
Book ID: 1      Book Name: Panchatantra
Author Name: Kalidas
Available: y    Due by Reader ID: 0
```

3. Adding a new reader...

```
Library Management System
=====
1. Add new book          2. Search book
3. Add new reader        4. Search reader
5. Issue book            6. Submit book
7. Delete book           8. Delete reader
9. List of books         10. Exit

Enter your choice: 3
Enter Reader's name: Sammy
Enter Reader id: 14
Reader added successfully.
```

4. Searching for a reader...

```
Library Management System
=====
1. Add new book          2. Search book
3. Add new reader        4. Search reader
5. Issue book            6. Submit book
7. Delete book           8. Delete reader
9. List of books         10. Exit

Enter your choice: 4
Enter Reader ID: 14

Reader Information
Reader ID: 14  Reader Name: Sammy
Due: n        Due book ID: 0
```

5. Issuing a book...

```

                Library Management System
                =====
1. Add new book      2. Search book
3. Add new reader    4. Search reader
5. Issue book        6. Submit book
7. Delete book       8. Delete reader
9. List of books     10. Exit

Enter your choice: 5
Enter book ID: 001
Enter reader ID: 14
Book issued successfully.

```

6. Submitting a book...

```

                Library Management System
                =====
1. Add new book      2. Search book
3. Add new reader    4. Search reader
5. Issue book        6. Submit book
7. Delete book       8. Delete reader
9. List of books     10. Exit

Enter your choice: 6
Enter book ID: 1
Book ID 1 submitted successfully.

```

7. Removing a book...

```

                Library Management System
                =====
1. Add new book      2. Search book
3. Add new reader    4. Search reader
5. Issue book        6. Submit book
7. Delete book       8. Delete reader
9. List of books     10. Exit

Enter your choice: 7
Enter book ID to be deleted: 1
Book ID 1 deleted.

```

8. Removing a reader...

```
Library Management System
=====
1. Add new book          2. Search book
3. Add new reader        4. Search reader
5. Issue book            6. Submit book
7. Delete book           8. Delete reader
9. List of books         10. Exit

Enter your choice: 8
Enter reader ID to be deleted: 14
Reader ID 14 deleted.
```

9. Viewing the list of all books in the library...

```
Library Management System
=====
1. Add new book          2. Search book
3. Add new reader        4. Search reader
5. Issue book            6. Submit book
7. Delete book           8. Delete reader
9. List of books         10. Exit

Enter your choice: 9

Book list          Total books: 4

ID   Name           Author           Available   Reader ID
2    Cindrella        Timmy            n           14
1    Panchatantra      Kalidas          y           0
3    Potter            Jackey           y           0
4    Physics          Ramanujan        n           12
```

THANK YOU!!