STUDENT EXAMINATION PORTAL

Submitted by

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Department: *Basic Science and Humanities (BSH)*

Under the supervision of
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PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE FIRST SEMESTER

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES
INSTITUTE OF ENGINEERING AND MANAGEMENT, KOLKATA

CERTIFICATE OF RECOMMENDATION

We hereby recommend that the project prepared under our supervision by *Sayan Chakraborty*, entitled STUDENT EXAMINATION PORTAL be accepted in partial fulfillment of the requirements for the degree of partial fulfillment of the first semester.

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Head of the Department
Basic Sciences and Humanities
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Project Supervisor

1. Introduction:

A library management system is an automated system designed to manage the operations of a library, including managing book records, borrower information, circulation, and other library-related tasks. With the rapid growth of digital technology and the internet, many libraries have adopted automated systems to improve the efficiency and effectiveness of their services.

2. Objective:

The main objective of this project is to develop a library management system in C that can help library staff to manage their day-to-day tasks more efficiently. The system should be able to perform the following tasks:

- ***Maintain book records***: The system should be able to store and manage book records, including book title, author, publisher, edition, ISBN, and other relevant information.
- ***Manage borrower information***: The system should be able to manage borrower information, including name, address, contact information, and other relevant details.
- ***Circulation management***: The system should be able to manage the circulation of books, including issuing and returning books, maintaining records of borrowed books, and managing overdue books.
- ***Generate reports***: The system should be able to generate various reports, including a list of all books, borrowers, overdue books, and other reports as required.
- ***User-friendly interface***: The system should be easy to use, with a user-friendly interface that allows library staff to perform their tasks efficiently.

By achieving these objectives, the library management system will help to improve the overall efficiency of the library and enhance the quality of service provided to library users.

3. Programs :

I. Library Management System (Final).c :

```
#include <stdio.h>
#include <string.h>

struct book {
   char title[50];
   char author[50];
   int year;
   int copies;
   int borrowed;
};
```

```
struct borrower {
   char name[50];
   char book_title[50];
   int borrow_date;
   int return_date;
};

void add_book(struct book library[], int size);
void display_books(struct book library[], int size);
void borrow_book(struct book library[], struct borrower borrowers[], int size);
void return_book(struct book library[], struct borrower borrowers[], int size);
int headMessage();
int welcomeMessage();

int main()
{   int size = 0;
   struct book library[100];
   struct borrower borrowers[100];
   int choice;

   headMessage();
   welcomeMessage();

   do {
          printf("\n  -------");
      printf("\n | Menu: |\n");
      printf("  -------\n");
      printf("    1. Add Book Details\n");
      printf("    2. Display the List of Books and its details\n");
      printf("    3. Borrow book\n");
      printf("    4. Return book\n");
      printf("    5. Exit\n");
      printf("\n   Enter your choice: ");
      scanf("%d", &choice);

      switch (choice)
          {   case 1:
            add_book(library, size);
            size++;
            break;
         case 2:
            display_books(library, size);
            break;
         case 3:
            borrow_book(library, borrowers, size);
            break;
         case 4:
            return_book(library, borrowers, size);
```

```
            break;
        case 5:
            printf("Thank you for using Library Management System\n");
            break;
        default:
            printf("Invalid choice\n");
      }
   } while (choice != 5);
   return 0;
  }

void add_book(struct book library[], int size)
{   printf("\nEnter book title: ");
   scanf("%s", library[size].title);

   printf("Enter book author: ");
   scanf("%s", library[size].author);

   printf("Enter publication year: ");
   scanf("%d", &library[size].year);

   printf("Enter number of copies: ");
   scanf("%d", &library[size].copies);

   library[size].borrowed = 0;
   printf("Book added successfully\n");
}

void display_books(struct book library[], int size)
{   if (size == 0)
    printf("\nNo books in the library\n");
   else
  {   printf("\nBooks in the library:\n");
      for (int i = 0; i < size; i++)
            printf("%s by %s, published in %d, %d copies available\n", library[i].title,
library[i].author, library[i].year, library[i].copies);
      }}

void borrow_book(struct book library[], struct borrower borrowers[], int size)
{
   char title[50];
   int i, j;

   printf("\nEnter book title: ");
   scanf("%s", title);

   for (i = 0; i < size; i++)
   {
      if (strcmp(title, library[i].title) == 0)
```

```
        {
            if (library[i].copies == 0) {
                printf("Sorry, the book is currently not available.\n");
                return;
            }

            printf("Enter borrower name: ");
            scanf("%s", borrowers[i].name);

            printf("Enter borrow date (YYYYMMDD): ");
            scanf("%d", &borrowers[i].borrow_date);

            library[i].copies--;
            library[i].borrowed++;

            printf("Book borrowed successfully\n");
            return;
        }
    }
    printf("Book not found\n");
}



void return_book(struct book library[], struct borrower borrowers[], int size)
{ char title[50];
  int i, j, days;
  float fine;
  printf("\nEnter book title: ");
  scanf("%s", title);

  for (i = 0; i < size; i++)
  {  if (strcmp(title, library[i].title) == 0)
     {  break;
    }}

  if (i == size || library[i].borrowed == 0)
            printf("Book not borrowed or not found\n");
  else
  {         library[i].copies++;
            library[i].borrowed--;
            printf("Book returned successfully\n");

            for (j = 0; j < library[i].borrowed; j++)
            {   if (strcmp(borrowers[j].book_title, title) == 0)
                    {  break;
        }}
            printf("Enter return date (YYYYMMDD): ");
            scanf("%d", &borrowers[j].return_date);
```

```
                days = borrowers[j].return_date - borrowers[j].borrow_date;
            if (days > 30)
            {   fine = (days - 30) * 0.5;
           printf("Fine for late return: $%.2f\n", fine);
                    }
            printf("Borrower details updated successfully\n");
  }}

int headMessage()
{

printf("\n\t\t\t##############################################################################
#######");
   printf("\n\t\t\t#############                                              #############");
   printf("\n\t\t\t#############     Library management System Project in C      #############");
   printf("\n\t\t\t#############                                              #############");

printf("\n\t\t\t##############################################################################
#######");
   printf("\n\t\t\t--------------------------------------------------------------------------\n");
}

int welcomeMessage()
{
   printf("\n\n");
   printf("\n\t\t\t\t  **-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**\n");
   printf("\n\t\t\t\t       =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=");
   printf("\n\t\t\t\t       =              WELCOME                =");
   printf("\n\t\t\t\t       =                TO                   =");
   printf("\n\t\t\t\t       =              LIBRARY                =");
   printf("\n\t\t\t\t       =            MANAGEMENT               =");
   printf("\n\t\t\t\t       =              SYSTEM                 =");
   printf("\n\t\t\t\t       =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=");
   printf("\n\t\t\t\t  **-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**\n");
   printf("\n\t\t\t\t--------------------------------------------------------------------------\n");
}
```

4. Outputs :

```
                    ##########################################################################
                    ############                                                  ############
                    ############      Library management System Project in C      ############
                    ############                                                  ############
                    ##########################################################################
                    --------------------------------------------------------------------------



                              **-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**

                                    =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
                                    =                  WELCOME                  =
                                    =                    TO                     =
                                    =                  LIBRARY                  =
                                    =                MANAGEMENT                 =
                                    =                  SYSTEM                   =
                                    =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
                              **-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**

                    --------------------------------------------------------------------------

 -------
| Menu: |
 -------
   1. Add Book Details
   2. Display the List of Books and its details
   3. Borrow book
   4. Return book
   5. Exit

  Enter your choice:
```

In Main Menu if I enter 1,2,3,4 and 5 then, outputs will be respectively -

```
 -------
| Menu: |
 -------
   1. Add Book Details
   2. Display the List of Books and its details
   3. Borrow book
   4. Return book
   5. Exit

  Enter your choice: 1

Enter book title: Twilight_Saga
Enter book author: Stephenie_Meyer
Enter publication year: 2005
Enter number of copies: 1
Book added successfully
```

```
 -------
| Menu: |
 -------
   1. Add Book Details
   2. Display the List of Books and its details
   3. Borrow book
   4. Return book
   5. Exit

  Enter your choice: 2

Books in the library:
Twilight_Saga by Stephenie_Meyer, published in 2005, 1 copies available
```

```
 -------
| Menu: |
 -------
   1. Add Book Details
   2. Display the List of Books and its details
   3. Borrow book
   4. Return book
   5. Exit

  Enter your choice: 3

Enter book title: Twilight_Saga
Enter borrower name: Sayan
Enter borrow date (YYYYMMDD): 20230512
Book borrowed successfully
```

```
 -------
| Menu: |
 -------
   1. Add Book Details
   2. Display the List of Books and its details
   3. Borrow book
   4. Return book
   5. Exit

  Enter your choice: 4

Enter book title: Twilight_Saga
Book returned successfully
Enter return date (YYYYMMDD): 20230513
Borrower details updated successfully
```