**Project Report**

**On**

**LIBRARY MANAGEMENT**

***Submitted By:***

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**13016235: C Programming**

**First Semester, 2015**

# Project Proposal

1. Project developer

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| --- | --- |
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1. Project title

|  |
| --- |
| Library Management |

1. Project description and requirements

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| --- |
| **Project description:**  The project ‘Library Management’ is the project for managing library. The aim of the project is to develop library system using the C language that useful for librarian or organization of library which are convenience and easy to manage the data in library.  The project indicates the creation of a user interface of a system, with the use of C Graphics library.  The application uses basic C function to generate menus, show message boxes and print text on the screen.  There are 6 Different modes for administrator in the program. These are add books, delete books, search books, view book list, edit book’s record, and close administrator mode. When the administrator prompt a number 1 program will move into the add books part and do the conditions of add book part so as another part between 2 and 5. Finally, 6 mode means go back into selection mode.  In addition, There are 3 Different modes for user in the program. These are search books, view book list, and Close user mode. When the user prompt a number 1 program will move into the search books part and do the conditions of add book part so as number 2. Finally, 3 mode means go back into selection mode.  The application also implements the concept of structures to define the library items. It also effectively applies the various C concepts such as file operations, looping, structures, if-else, switch case, function, branching constructs and string manipulation functions    **Project requirements:**   * Program will only operate on ENGLISH language only. * Program has administrator mode which provides for admin to add books, delete books, search books, view book list, and edit book’s record. * Program has user mode which provides for user to search books and view book list. * Program has login function which let admin prompt the password in. If password is the same as default administrator mode will start. * Program has function which fetches the exact text memory addresses of a target location, to write text at a particular location. * Program can record the information of books by only type these information in program and can invoke that information every time that very useful and convenience for librarian or organization of library. |

# Project Source Code

There are 5 Header files (.h) and 1 C source file (.c)

**Variables.h**

#ifndef VARIABLES\_H\_INCLUDED

#define VARIABLES\_H\_INCLUDED

//list of header files

#include<windows.h> //contains color functions,etc.

#include<stdio.h> //contains printf(),scanf(),etc.

#include<conio.h> //contains delay(),getch(),gotoxy(),etc.

#include<stdlib.h> //contains system(),,etc.

#include<string.h> //contains strcmp(),strcpy(),strlen(),etc.

#include<ctype.h> //contains toupper(), tolower(),etc.

#include<dos.h> //contains \_dos\_getdate

#include<time.h> //contains clock, time

#define RETURNTIME 15

//function prototype for main program

void SelectionMode();

void Admin\_Mode();

void User\_Mode();

//function prototype for admin mode

void menuForAdmin();

void addBooks(void);

void deleteBooks();

void searchBooks();

void viewBooks(void);

void editBooks(void);

//void issueBooks(void);

int getData();

int checkID(int);

int t(void);

void searchByID();

void searchByName();

void add\_window();

void creditNclose();

//list of global files that can be acceed form anywhere in program

FILE \*fp,\*ft,\*fs;

//list of global variable

char catagories[][15]={"Mathematics","Science","Social","English","Art","Computer"};

int s;

char findbook;

char password[10] = {"1234"};

int main\_window = 1; ///////////////////////

struct meroDate

{

int mm,dd,yy;

};

struct Book

{

int id;

char stname[20];

char name[50];

char Author[50];

int quantity;

float Price;

int count;

int rackno;

char \*cat;

struct meroDate issued;

struct meroDate duedate;

};

struct Book book;

#endif // VARIABLES\_H\_INCLUDED

**core\_functions.h**

#ifndef CORE\_FUNCTIONS\_H\_INCLUDED

#define CORE\_FUNCTIONS\_H\_INCLUDED

int getdata(int choice){

int bookID;

ClearConsoleToColors(2,7);

gotoxy(20,3);printf("Enter the Information");

SetColorAndBackground(4,7);

gotoxy(20,4);printf("\xC9\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBB");

gotoxy(20,5);

printf("\xBA");gotoxy(55,5);printf("\xBA");

gotoxy(20,6);

printf("\xBA");gotoxy(55,6);printf("\xBA");

gotoxy(20,7);

printf("\xBA");gotoxy(55,7);printf("\xBA");

gotoxy(20,8);

printf("\xBA");gotoxy(55,8);printf("\xBA");

gotoxy(20,9);

printf("\xBA");gotoxy(55,9);printf("\xBA");

gotoxy(20,10);

printf("\xBA");gotoxy(55,10);printf("\xBA");

gotoxy(20,11);

printf("\xBA");gotoxy(55,11);printf("\xBA");

gotoxy(20,12);

printf("\xC8\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBC");

SetColorAndBackground(0,7);

gotoxy(22,5);

printf("Category: ");

printf("%s",catagories[choice-1]);

gotoxy(22,6);

printf("Book ID: ");

scanf("%d",&bookID);

if(checkID(bookID) == 0)

{

gotoxy(22,13);

SetColorAndBackground(12,7);

printf("The book id already exists");

getch();

addBooks();

return 0;

}

book.id = bookID;

gotoxy(22,7);

printf("Book Name: ");

scanf(" %[^\n]s", book.name);

gotoxy(22,8);

printf("Author: ");

scanf(" %[^\n]s", book.Author);

gotoxy(22,9);

printf("Quantity: ");

scanf("%d",&book.quantity);

gotoxy(22,10);

printf("Price: ");

scanf("%f",&book.Price);

gotoxy(22,11);

printf("Rack No: ");

scanf("%d",&book.rackno);

return 1;

}

int checkID(int t){ //check whether the book is exist in library or not

FILE \*temp;

temp = fopen("Record.txt","rb+");

while(fread(&book,sizeof(book),1,temp)==1)

if(book.id == t){

fclose(temp);

return 0;

}

fclose(temp);

return 1;

}

void searchByID(){

ClearConsoleToColors(0,7);

system("cls");

int id; FILE \*fp;

gotoxy(14,2);

SetColorAndBackground(4,7);

printf("\x0F--------------- Search Books By ID ---------------\x0F");

gotoxy(20,5);

SetColorAndBackground(0,7);

printf("Enter the book id: ");

scanf("%d",&id);

int findBook = 0;

fp = fopen("Record.txt","rb");

while(fread(&book,sizeof(book),1,fp)==1){

if(book.id==id){

Sleep(2);

gotoxy(20,7);

SetColorAndBackground(9,7);

printf("The Book is available");

gotoxy(20,8);

SetColorAndBackground(2,7);

printf("\xC9\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBB");

gotoxy(20,9);

printf("\xBA ID: %d",book.id); gotoxy(54,9);printf("\xBA");

gotoxy(20,10);

printf("\xBA Name: %s",book.name); gotoxy(54,10);printf("\xBA");

gotoxy(20,11);

printf("\xBA Author: %s",book.Author); gotoxy(54,11);printf("\xBA");

gotoxy(20,12);

printf("\xBA Qantity: %d",book.quantity); gotoxy(54,12);printf("\xBA");

gotoxy(20,13);

printf("\xBA Price: Rs.%.2f",book.Price); gotoxy(54,13);printf("\xBA");

gotoxy(20,14);

printf("\xBA Rack No: %d ",book.rackno); gotoxy(54,14);printf("\xBA");

gotoxy(20,15);

printf("\xC8\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBC");

findBook = 1;

}

}

if(findBook == 0){ //checks whether conditiion enters inside loop or not

gotoxy(20,8);

SetColorAndBackground(12,7);

printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");

gotoxy(20,9);printf("\xB2"); gotoxy(38,9);printf("\xB2");

gotoxy(20,10);

printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");

gotoxy(22,9);printf("\aNo Record Found");

}

fclose(fp);

gotoxy(20,17);

SetColorAndBackground(0,7);

printf("Try another search?(Y/N) ");

if(getch()=='y')

searchByID();

else

menuForAdmin();

}

void searchByName(){

ClearConsoleToColors(0,7);

system("cls");

char s[15];

int d=0;

FILE \*fp;

gotoxy(14,2);

SetColorAndBackground(4,7);

printf("\x0F------------- Search Books By Name -------------\x0F");

gotoxy(20,5);

SetColorAndBackground(0,7);

printf("Enter Book Name: ");

scanf(" %[^\n]s", s);

fp = fopen("Record.txt","rb");

while(fread(&book,sizeof(book),1,fp)==1){

if(strcmp(book.name,(s))==0){ //checks whether book.name is equal to s or not

gotoxy(20,7);

SetColorAndBackground(9,7);

printf("The Book is available");

gotoxy(20,8);

SetColorAndBackground(2,7);

printf("\xC9\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBB");

gotoxy(20,9);

printf("\xBA ID: %d",book.id); gotoxy(54,9);printf("\xBA");

gotoxy(20,10);

printf("\xBA Name: %s",book.name); gotoxy(54,10);printf("\xBA");

gotoxy(20,11);

printf("\xBA Author: %s",book.Author); gotoxy(54,11);printf("\xBA");

gotoxy(20,12);

printf("\xBA Qantity: %d",book.quantity); gotoxy(54,12);printf("\xBA");

gotoxy(20,13);

printf("\xBA Price: Rs.%.2f",book.Price); gotoxy(54,13);printf("\xBA");

gotoxy(20,14);

printf("\xBA Rack No: %d ",book.rackno); gotoxy(54,14);printf("\xBA");

gotoxy(20,15);

printf("\xC8\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBC");

d++;

}

}

if(d==0){

gotoxy(20,8);

SetColorAndBackground(12,7);

printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");

gotoxy(20,9);printf("\xB2"); gotoxy(38,9);printf("\xB2");

gotoxy(20,10);

printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");

gotoxy(22,9);printf("\aNo Record Found");

}

fclose(fp);

gotoxy(20,17);

SetColorAndBackground(0,7);

printf("Try another search?(Y/N) ");

if(getch()=='y')

searchByName();

else

menuForAdmin();

}

void add\_window(){

gotoxy(20,2);

SetColorAndBackground(4,8);

printf("\xDB\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE CATEGORIES \xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xDB");

gotoxy(20,4);

SetColorAndBackground(1,8);

printf("-----\x0F 1) Mathematics");

gotoxy(20,6);

printf("-----\x0F 2) Science");

gotoxy(20,8);

printf("-----\x0F 3) Social");

gotoxy(20,10);

printf("-----\x0F 4) English");

gotoxy(20,12);

printf("-----\x0F 5) Art");

gotoxy(20,14);

printf("-----\x0F 6) Computer");

gotoxy(20,16);

printf("-----\x0F 7) Back to menu");

gotoxy(20,18);

SetColorAndBackground(4,8);

printf("\xDB\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xCE\xDB");

}

void creditNclose(){

system("cls");

ClearConsoleToColors(9,15);

gotoxy(16,3);

printf("Name: Library Management Program");

gotoxy(16,6);

printf("Yodsawadee Sornda");

gotoxy(16,8);

printf("ID: 58090032");

gotoxy(16,10);

printf("E-mail: jan.yodsawadee@outlook.com");

gotoxy(16,12);

printf("Department of Software Enginnering");

gotoxy(16,13);

printf("King Mongkut's Institute of Technology Ladkrabang");

gotoxy(10,17);

printf("Exiting in 3 second---------->");

Sleep(3000);

SetColorAndBackground(15,15);

exit(0);

}

#endif // CORE\_FUNCTIONS\_H\_INCLUDED

**general\_functions.h**

#include "Variables.h"

#ifndef GENERAL\_FUNCTIONS\_H\_INCLUDED

#define GENERAL\_FUNCTIONS\_H\_INCLUDED

/\*Window\_functions\*/

COORD coord = {0, 0}; // sets coordinates to 0,0

//COORD max\_buffer\_size = GetLargestConsoleWindowSize(hOut);

COORD max\_res, cursor\_size;

void gotoxy (int x, int y)

{

coord.X = x; coord.Y = y; // X and Y coordinates

SetConsoleCursorPosition(GetStdHandle(STD\_OUTPUT\_HANDLE), coord/\*xy\*/);

}

void delay(unsigned int mseconds)

{

clock\_t goal = mseconds + clock();

while (goal > clock());

}

int t(void) //for time

{

time\_t t;

time(&t);

printf("Date and time: %s\n", ctime(&t));

return 0 ;

}

void check\_keyboard(int num){

if(num == 80){

main\_window++;

if(main\_window > 3){

main\_window = 3;

printf("\a");

}

}

else if(num == 72){

main\_window--;

if(main\_window < 1){

main\_window = 1;

printf("\a");

}

}

}

/\*Color\_function\*/

void ClearConsoleToColors(int ForgC, int BackC)

{

WORD wColor = ((BackC & 0x0F) << 4) + (ForgC & 0x0F);

//Get the handle to the current output buffer...

HANDLE hStdOut = GetStdHandle(STD\_OUTPUT\_HANDLE);

//This is used to reset the carat/cursor to the top left.

COORD coord = {0, 0};

//A return value... indicating how many chars were written

// not used but we need to capture this since it will be

// written anyway (passing NULL causes an access violation).

DWORD count;

//This is a structure containing all of the console info

// it is used here to find the size of the console.

CONSOLE\_SCREEN\_BUFFER\_INFO csbi;

//Here we will set the current color

SetConsoleTextAttribute(hStdOut, wColor);

if(GetConsoleScreenBufferInfo(hStdOut, &csbi))

{

//This fills the buffer with a given character (in this case 32=space).

FillConsoleOutputCharacter(hStdOut, (TCHAR) 32, csbi.dwSize.X \* csbi.dwSize.Y, coord, &count);

FillConsoleOutputAttribute(hStdOut, csbi.wAttributes, csbi.dwSize.X \* csbi.dwSize.Y, coord, &count );

//This will set our cursor position for the next print statement.

SetConsoleCursorPosition(hStdOut, coord);

}

return;

}

void SetColorAndBackground(int ForgC, int BackC)

{

WORD wColor = ((BackC & 0x0F) << 4) + (ForgC & 0x0F);;

SetConsoleTextAttribute(GetStdHandle(STD\_OUTPUT\_HANDLE), wColor);

return;

}

#endif // GENERAL\_FUNCTIONS\_H\_INCLUDED

**Admin\_functions.h**

#include "general\_functions.h"

#include "core\_functions.h"

#ifndef ADMIN\_FUNCTIONS\_H\_INCLUDED

#define ADMIN\_FUNCTIONS\_H\_INCLUDED

void menuForAdmin()

{

int k = 13;

ClearConsoleToColors(0,k);

while(1){

system("cls");

gotoxy(20,2);

SetColorAndBackground(2,k);

printf("\xDB\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1 MENU \xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xDB");

gotoxy(20,4);

SetColorAndBackground(4,k);

printf("\xDB\xDB\xDB\xDB\xB2 1. Add Books");

gotoxy(20,6);

printf("\xDB\xDB\xDB\xDB\xB2 2. Delete books");

gotoxy(20,8);

printf("\xDB\xDB\xDB\xDB\xB2 3. Search Books");

gotoxy(20,10);

printf("\xDB\xDB\xDB\xDB\xB2 4. View Book list");

gotoxy(20,12);

printf("\xDB\xDB\xDB\xDB\xB2 5. Edit Book's Record");

gotoxy(20,14);

printf("\xDB\xDB\xDB\xDB\xB2 6. Close Administrator Mode");

gotoxy(20,16);

SetColorAndBackground(2,k);

printf("\xDB\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xDB");

gotoxy(20,18);

t(); //show Date and time

gotoxy(20,21);

SetColorAndBackground(0,k);

printf("Enter your choice: ");

switch(getch()){

case '1': addBooks(); break;

case '2': deleteBooks(); break;

case '3': searchBooks(); break;

case '4': viewBooks(); break;

case '5': editBooks(); break;

case '6': SelectionMode();

default:

gotoxy(15,23);

SetColorAndBackground(12,k);

printf("\aWrong Entry!! Please re-entered correct option");

getch(); //holds the screen until a key is pressed

}

}

}

void addBooks(void) //funtion that add books to file Record.txt

{

system("cls");

FILE \*fp;

int i, choice;

ClearConsoleToColors(0,8);

add\_window();

gotoxy(20,21);

SetColorAndBackground(0,8);

printf("Enter your choice: ");

scanf("%d", &choice);

if(choice<1 || choice>7){

gotoxy(15,23);

SetColorAndBackground(12,8);

printf("\aWrong Entry!! Please re-entered correct option");

getch();

fflush(stdin); //for buffer

addBooks();

}

else if(choice==7)

menuForAdmin() ;

system("cls");

ClearConsoleToColors(0,7);

fp = fopen("Record.txt","ab+");

if(getdata(choice) == 1){

book.cat=catagories[choice-1];

fseek(fp,0,SEEK\_END);

fwrite(&book,sizeof(book),1,fp);

fclose(fp);

gotoxy(22,14);

SetColorAndBackground(9,7);

printf("The record is sucessfully saved");

gotoxy(22,16);

SetColorAndBackground(0,7);

printf("Save any more?(Y / N): ");

if(getch()=='n')

menuForAdmin();

else

addBooks();

}

fclose(fp);

}

void deleteBooks() //function that delete items from file Record.txt

{

FILE \*ft,\*fp;

int d, findBook = 0;

ClearConsoleToColors(0,7);

system("cls");

gotoxy(15,2);

SetColorAndBackground(4,7);

printf("\xCD\xCE\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD DELETE BOOK \xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCE\xCD");

gotoxy(10,6);

SetColorAndBackground(0,7);

printf("Enter the Book ID to delete: ");

scanf("%d",&d);

fp = fopen("Record.txt","rb+");

while(fread(&book,sizeof(book),1,fp)==1){

if(book.id==d){

gotoxy(10,8);

SetColorAndBackground(9,7);

printf("The book record is available");

gotoxy(12,9);

printf("Book name is %s",book.name);

gotoxy(12,10);

printf("Rack No. is %d",book.rackno);

findBook = 1;

gotoxy(10,11);

SetColorAndBackground(0,7);

printf("Do you want to delete it?(Y/N): ");

if(getch()=='y'){

ft=fopen("test.txt","wb"); //temporary file for delete

rewind(fp);

while(fread(&book,sizeof(book),1,fp)==1){

if(book.id!=d){

fwrite(&book,sizeof(book),1,ft); //write all in tempory file except that

} //we want to delete

}

fclose(fp);

fclose(ft);

remove("Record.txt");

rename("test.txt","Record.txt"); //copy all item from temporary file to fp except that

//we want to delete

gotoxy(10,12);

SetColorAndBackground(9,7);

printf("The record is sucessfully deleted");

}

}

}

if(findBook == 0){

gotoxy(10,9);

SetColorAndBackground(12,7);

printf("No record is found");

fflush(stdin);

}

gotoxy(10,14);

SetColorAndBackground(0,7);

printf("Delete another record?(Y/N): ");

if(getch()=='n')

menuForAdmin();

else

deleteBooks();

}

void searchBooks()

{

ClearConsoleToColors(0,8);

system("cls");

gotoxy(15,2);

SetColorAndBackground(4,8);

printf("\xCD\xCE\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD SEARCH BOOK \xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCE\xCD");

gotoxy(20,8);

SetColorAndBackground(1,8);

printf("-------\x0F 1) Search By ID");

gotoxy(20,12);

printf("-------\x0F 2) Search By Name");

gotoxy(15,18);

SetColorAndBackground(0,8);

printf("Enter Your Choice: ");

switch(getch())

{

case '1': searchByID(); break;

case '2': searchByName(); break;

default :

SetColorAndBackground(12,8);

gotoxy(17,20);

printf("\aWrong Entry!! Please re-entered correct option");

getch();

searchBooks();

}

}

void viewBooks(void) //show the list of book persists in library

{

int j;

FILE \*fp;

ClearConsoleToColors(0,7);

system("cls");

gotoxy(15,2);

SetColorAndBackground(4,7);

printf("\xCD\xCE\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD BOOK LIST \xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCE\xCD");

gotoxy(2,4);

SetColorAndBackground(1,7);

printf("CATEGORY ID BOOK NAME AUTHOR QTY PRICE RackNo ");

j=6;

fp=fopen("Record.txt","rb");

while(fread(&book,sizeof(book),1,fp)==1){

SetColorAndBackground(0,7);

gotoxy(2,j);

printf("%s",book.cat);

gotoxy(15,j);

printf("%d",book.id);

gotoxy(21,j);

printf("%s",book.name);

gotoxy(36,j);

printf("%s",book.Author);

gotoxy(55,j);

printf("%d",book.quantity);

gotoxy(62,j);

printf("%.2f",book.Price);

gotoxy(74,j);

printf("%d",book.rackno);

printf("\n\n");

j++;

}

fclose(fp);

gotoxy(45,25);

SetColorAndBackground(4,7);

printf(" Press ENTER to return to menu");

if(getch()==13) //allow only use of enter

menuForAdmin();

else

viewBooks();

}

void editBooks(void) //edit information about book

{

FILE \*fp;

int c = 0,d;

ClearConsoleToColors(0,7);

system("cls");

gotoxy(15,2);

SetColorAndBackground(4,7);

printf("\xCD\xCE\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD EDIT BOOK \xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCE\xCD");

gotoxy(15,6);

SetColorAndBackground(0,7);

printf("Enter Book Id to be edited: ");

scanf("%d",&d);

fp=fopen("Record.txt","rb+");

while(fread(&book,sizeof(book),1,fp)==1)

{

if(checkID(d)==0)

{

gotoxy(15,7);

SetColorAndBackground(9,7);

printf("The book is availble");

gotoxy(17,8);

printf("The Book ID: %d",book.id);

gotoxy(17,9);

printf("The Book Name: %s",book.name);

gotoxy(15,11);

SetColorAndBackground(0,7);

printf("Enter new name: ");

scanf(" %[^\n]s",book.name);

gotoxy(15,12);

printf("Enter new Author: ");

scanf(" %[^\n]s",book.Author);

gotoxy(15,13);

printf("Enter new quantity: ");

scanf("%d",&book.quantity);

gotoxy(15,14);

printf("Enter new price: ");

scanf("%f",&book.Price);

gotoxy(15,15);

printf("Enter new rackno: ");

scanf("%d",&book.rackno);

gotoxy(15,17);

SetColorAndBackground(9,7);

printf("The record is modified");

//fseek(fp,ftell(fp)-sizeof(book),0);

fseek(fp,ftell(fp)-sizeof(book),SEEK\_CUR);

//rewind(fp);

fwrite(&book,sizeof(book),1,fp);

fclose(fp);

c=1;

}

if(c==0)

{

gotoxy(15,9);

SetColorAndBackground(12,7);

printf("No record found");

}

}

gotoxy(15,19);

SetColorAndBackground(0,7);

printf("Modify another Record?(Y/N) ");

fflush(stdin);

if(getch()=='n')

menuForAdmin();

else

editBooks();

}

#endif // ADMIN\_FUNCTIONS\_H\_INCLUDED

**User\_functions.h**

#include "core\_functions.h"

#include "general\_functions.h"

#ifndef USER\_FUNCTIONS\_H\_INCLUDED

#define USER\_FUNCTIONS\_H\_INCLUDED

void menuForUser()

{

int k = 13;

ClearConsoleToColors(0,k);

while(1){

system("cls");

gotoxy(20,4);

SetColorAndBackground(2,k);

printf("\xDB\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1 MENU \xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xDB");

SetColorAndBackground(4,k);

gotoxy(20,6);

printf("\xDB\xDB\xDB\xDB\xB2 1. Search Books");

gotoxy(20,8);

printf("\xDB\xDB\xDB\xDB\xB2 2. View Books");

gotoxy(20,10);

printf("\xDB\xDB\xDB\xDB\xB2 3. Close User Mode");

gotoxy(20,12);

SetColorAndBackground(2,k);

printf("\xDB\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xB1\xDB");

gotoxy(20,14);

t(); //show Date and time

gotoxy(20,19);

SetColorAndBackground(0,k);

printf("Enter your choice: ");

switch(getch()){

case '1': search\_book(); break;

case '2': view\_book(); break;

case '3': SelectionMode();

default:

gotoxy(12,21);

SetColorAndBackground(12,k);

printf("\aWrong Entry!! Please re-entered correct option");

getch(); //holds the screen until a key is pressed

fflush(stdin);

}

}

}

void search\_book()

{

ClearConsoleToColors(0,8);

system("cls");

gotoxy(15,2);

SetColorAndBackground(4,8);

printf("\xCD\xCE\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD SEARCH BOOK \xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCE\xCD");

gotoxy(20,8);

SetColorAndBackground(1,8);

printf("-------\x0F 1) Search By ID");

gotoxy(20,12);

printf("-------\x0F 2) Search By Name");

gotoxy(15,18);

SetColorAndBackground(0,8);

printf("Enter Your Choice: ");

switch(getch())

{

case '1': searchByID\_User(); break;

case '2': searchByName\_User(); break;

default :

SetColorAndBackground(12,8);

gotoxy(17,20);

printf("\aWrong Entry!! Please re-entered correct option");

getch();

search\_book();

}

}

void view\_book(void) //show the list of book persists in library

{

int j;

FILE \*fp;

ClearConsoleToColors(0,7);

system("cls");

gotoxy(15,2);

SetColorAndBackground(4,7);

printf("\xCD\xCE\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD BOOK LIST \xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCE\xCD");

gotoxy(2,4);

SetColorAndBackground(1,7);

printf("CATEGORY ID BOOK NAME AUTHOR QTY PRICE RackNo ");

j=6;

fp=fopen("Record.txt","rb");

while(fread(&book,sizeof(book),1,fp)==1){

SetColorAndBackground(0,7);

gotoxy(2,j);

printf("%s",book.cat);

gotoxy(15,j);

printf("%d",book.id);

gotoxy(21,j);

printf("%s",book.name);

gotoxy(36,j);

printf("%s",book.Author);

gotoxy(55,j);

printf("%d",book.quantity);

gotoxy(62,j);

printf("%.2f",book.Price);

gotoxy(74,j);

printf("%d",book.rackno);

printf("\n\n");

j++;

}

fclose(fp);

gotoxy(45,25);

SetColorAndBackground(4,7);

printf(" Press ENTER to return to menu");

if(getch()==13) //allow only use of enter

User\_Mode();

else

view\_book();

}

void searchByID\_User(){

ClearConsoleToColors(0,7);

system("cls");

int id; FILE \*fp;

gotoxy(14,2);

SetColorAndBackground(4,7);

printf("\x0F--------------- Search Books By ID ---------------\x0F");

gotoxy(20,5);

SetColorAndBackground(0,7);

printf("Enter the book id: ");

scanf("%d",&id);

int findBook = 0;

fp = fopen("Record.txt","rb");

while(fread(&book,sizeof(book),1,fp)==1){

if(book.id==id){

Sleep(2);

gotoxy(20,7);

SetColorAndBackground(9,7);

printf("The Book is available");

gotoxy(20,8);

SetColorAndBackground(2,7);

printf("\xC9\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBB");

gotoxy(20,9);

printf("\xBA ID: %d",book.id); gotoxy(54,9);printf("\xBA");

gotoxy(20,10);

printf("\xBA Name: %s",book.name); gotoxy(54,10);printf("\xBA");

gotoxy(20,11);

printf("\xBA Author: %s",book.Author); gotoxy(54,11);printf("\xBA");

gotoxy(20,12);

printf("\xBA Qantity: %d",book.quantity); gotoxy(54,12);printf("\xBA");

gotoxy(20,13);

printf("\xBA Price: Rs.%.2f",book.Price); gotoxy(54,13);printf("\xBA");

gotoxy(20,14);

printf("\xBA Rack No: %d ",book.rackno); gotoxy(54,14);printf("\xBA");

gotoxy(20,15);

printf("\xC8\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBC");

findBook = 1;

}

}

if(findBook == 0){ //checks whether conditiion enters inside loop or not

gotoxy(20,8);

SetColorAndBackground(12,7);

printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");

gotoxy(20,9);printf("\xB2"); gotoxy(38,9);printf("\xB2");

gotoxy(20,10);

printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");

gotoxy(22,9);printf("\aNo Record Found");

}

fclose(fp);

gotoxy(20,17);

SetColorAndBackground(0,7);

printf("Try another search?(Y/N) ");

if(getch()=='y')

searchByID\_User();

else

User\_Mode();

}

void searchByName\_User(){

ClearConsoleToColors(0,7);

system("cls");

char s[15];

int d=0;

FILE \*fp;

gotoxy(14,2);

SetColorAndBackground(4,7);

printf("\x0F------------- Search Books By Name -------------\x0F");

gotoxy(20,5);

SetColorAndBackground(0,7);

printf("Enter Book Name: ");

scanf(" %[^\n]s", s);

fp = fopen("Record.txt","rb");

while(fread(&book,sizeof(book),1,fp)==1){

if(strcmp(book.name,(s))==0){ //checks whether book.name is equal to s or not

gotoxy(20,7);

SetColorAndBackground(9,7);

printf("The Book is available");

gotoxy(20,8);

SetColorAndBackground(2,7);

printf("\xC9\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBB");

gotoxy(20,9);

printf("\xBA ID: %d",book.id); gotoxy(54,9);printf("\xBA");

gotoxy(20,10);

printf("\xBA Name: %s",book.name); gotoxy(54,10);printf("\xBA");

gotoxy(20,11);

printf("\xBA Author: %s",book.Author); gotoxy(54,11);printf("\xBA");

gotoxy(20,12);

printf("\xBA Qantity: %d",book.quantity); gotoxy(54,12);printf("\xBA");

gotoxy(20,13);

printf("\xBA Price: Rs.%.2f",book.Price); gotoxy(54,13);printf("\xBA");

gotoxy(20,14);

printf("\xBA Rack No: %d ",book.rackno); gotoxy(54,14);printf("\xBA");

gotoxy(20,15);

printf("\xC8\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xBC");

d++;

}

}

if(d==0){

gotoxy(20,8);

SetColorAndBackground(12,7);

printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");

gotoxy(20,9);printf("\xB2"); gotoxy(38,9);printf("\xB2");

gotoxy(20,10);

printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");

gotoxy(22,9);printf("\aNo Record Found");

}

fclose(fp);

gotoxy(20,17);

SetColorAndBackground(0,7);

printf("Try another search?(Y/N) ");

if(getch()=='y')

searchByName\_User();

else

User\_Mode();

}

#endif // USER\_FUNCTIONS\_H\_INCLUDED

**Library.c**

#include "Admin\_functions.h"

#include "User\_functions.h"

int main()

{

SetConsoleTitle("Library Management"); //set the console title to "Library Management"

SelectionMode(); //invoke SelectionMode function

return 0;

}

void SelectionMode()

{

char ch;

char str[25] = " SELECTION MODE "; //declare array str with have the size 25

int j;

ClearConsoleToColors(0,15); //0=letterColor, 15=backgroundColor

while(1){

system("cls"); //clear screen

gotoxy(9,5); //move to the position x=9 and y=5

SetColorAndBackground(10,15);

for(j = 0; j < 11; j++){

delay(50); //

printf("\xC5 "); //printf("%c", 197); \x = hexa, C5 = hex of dec 197

}

SetColorAndBackground(4,15);

for(j = 0; j < 16; j++){

delay(50);

printf("%c",str[j]); //

}

SetColorAndBackground(10,15);

for(j = 0; j < 11; j++){

delay(50);

printf("\xC5 ");

}

while(1){

gotoxy(30,10);

if(main\_window == 1) //go to this condition directly because of global variable initialization

SetColorAndBackground(14,12);

else

SetColorAndBackground(21,15);

printf("\xB1 USER MODE ");

gotoxy(30,12);

if(main\_window == 2)

SetColorAndBackground(14,12);

else

SetColorAndBackground(21,15);

printf("\xB1 ADMINISTRATOR MODE ");

gotoxy(30, 14);

if(main\_window == 3)

SetColorAndBackground(14,12);

else

SetColorAndBackground(21,15);

printf("\xB1 QUIT ");

SetColorAndBackground(15,15);

ch = getch();

check\_keyboard((int)ch);

if((int)ch == 13){

switch(main\_window){

case 1: User\_Mode(); break;

case 2: Admin\_Mode(); break;

case 3: creditNclose();

}

}

}

}

}

void User\_Mode() //for password option

{

system("cls");

menuForUser();

}

void Admin\_Mode() //for password option

{

system("cls");

char str[25] = " ADMINISTRATOR MODE ";

char ch = 0, pass[10];

int i = 0, j;

int k = 11; //for bg color parameterint k = 9; //for bg color parameter

ClearConsoleToColors(0,k); // 0=letterColor, 15=backgroundColor

gotoxy(10,4);

SetColorAndBackground(5,k);

for(j = 0; j < 10; j++){

delay(50);

printf("\x0F ");//printf("%c", 197);

}

SetColorAndBackground(2,k);

for(j = 0; j < 20; j++){

delay(50);

printf("%c",str[j]);

}

SetColorAndBackground(5,k);

for(j = 0; j < 10; j++){

delay(50);

printf("\x0F ");//printf("%c", 197);

}

SetColorAndBackground(0,k);

gotoxy(15,10);

printf("Enter Administrator Password: ");

while(ch!=13){ //13 = Enter

ch = getch();

if(ch!=13 && ch!=8){

putch('\*');

pass[i] = ch;

i++;

}

}

pass[i] = '\0';

if(strcmp(pass,password)==0){

gotoxy(15,15);

SetColorAndBackground(9,k);

printf("Password Correct");

gotoxy(17,17);

printf("Press any key to countinue.....");

getch();

menuForAdmin();

}

else{

gotoxy(12,17);

SetColorAndBackground(12,k);

printf("\aWarning!! Incorrect Password");

getch();

Admin\_Mode();

}

}