LIBRARY MANAGEMENT SYSTEM

21CSS101J – PROGRAMMING FOR PROBLEM-SOLVING

Mini Project Report

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Problem Statement

A library management system is an initiative that digitally arranges and maintains book information for students' access. It is a comprehensive library management solution that is suitable for both large and small libraries. Its flexible design enables it to be installed in a range of public, academic, joint-use, and special libraries.

This Library Management System Software is capable of handling Books with equal ease and efficiency. This methodology enables both the students and the librarians to keep track of all the books that are presently available within the library and searching for the desired book is possible for both the administrator and the student. Through this, the administrator can actively monitor the books issued and returned. Here, you can perform functions such as adding, returning, issuing books, deleting the records of books issued, viewing the recorded books issued, searching books, and more. File handling has been extensively used in this project for almost all functions. Manually carrying out this procedure will take time, and there is a chance for error. Allowing the system to keep note of details like the issue date, the deadline for returning the book, and even fine information eliminates the need to manually keep track of this information, reducing the risk of errors.

Hence with the aid of this C application, librarians can manage the thousands of books that have been kept in the library. We utilize this C software to support them and save them time and effort. Thus, by reducing the risk of detail errors, this technique effectively minimizes manual work and allows the activities of the library to proceed without interruption.

Methodology / Procedure

We have programmed this code using the C Language.

The selection of the library management system software depends on the type of library that needs to be automated. Libraries can belong to a school or college, public libraries for the community, or specialized libraries for specific industries. Each type of library has different requirements to cater to its patrons.

a) The ability for members to browse for books by titles, author, or subject is indeed the system requirement for library administration. They should also be able to easily locate a book physically using its distinct identification number and rack number.

b) The duties of the librarian, members, and system illustrate how the librarian manages books, how students look for books, as well as how the system sends messages.

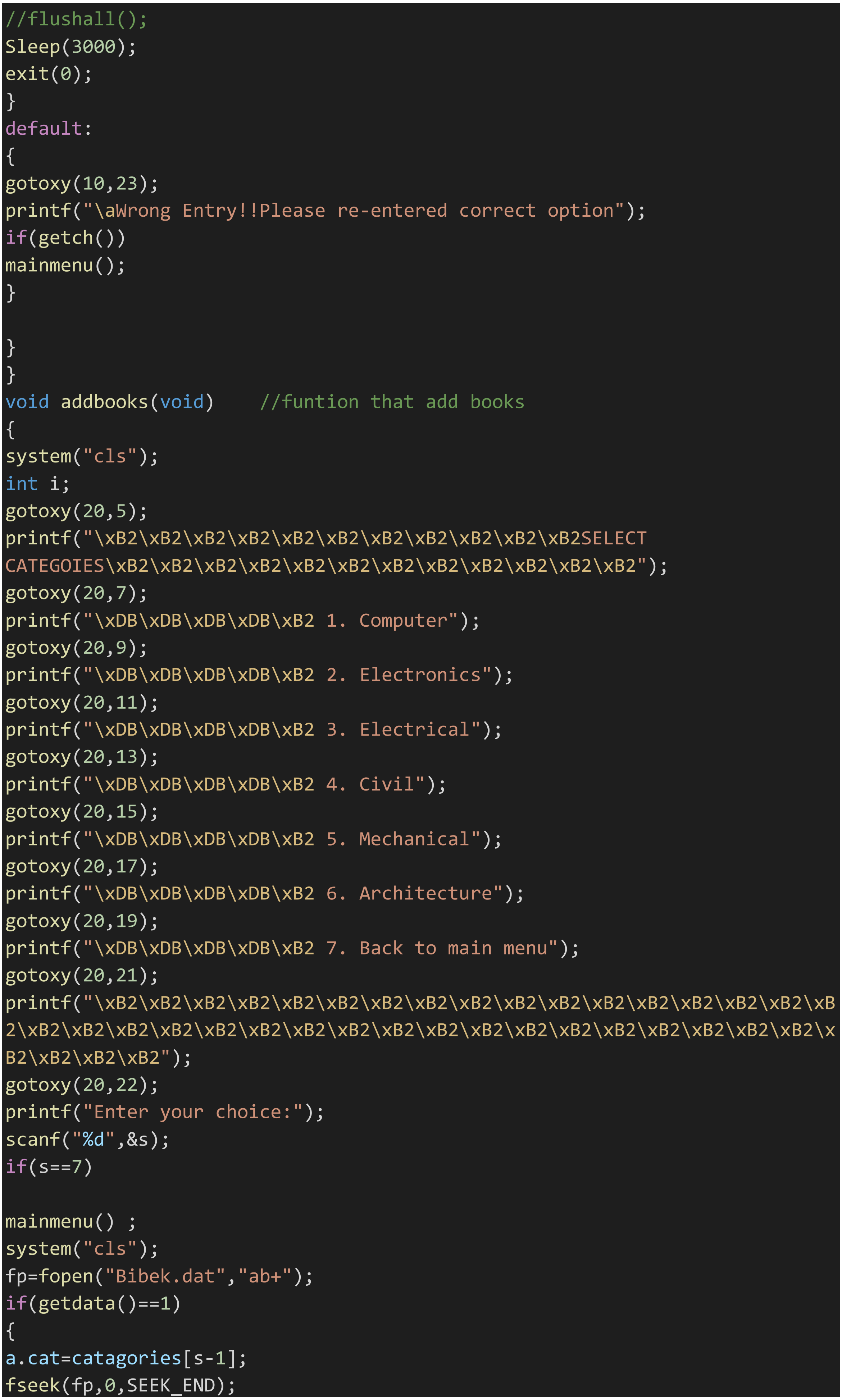
c) Based on the various features of a library, they are classified by grouping together the name of the library, the book information, member details, membership cards, book reservations, book lending, cataloging, fines, book racks, notifications, etc.

Coding (C)

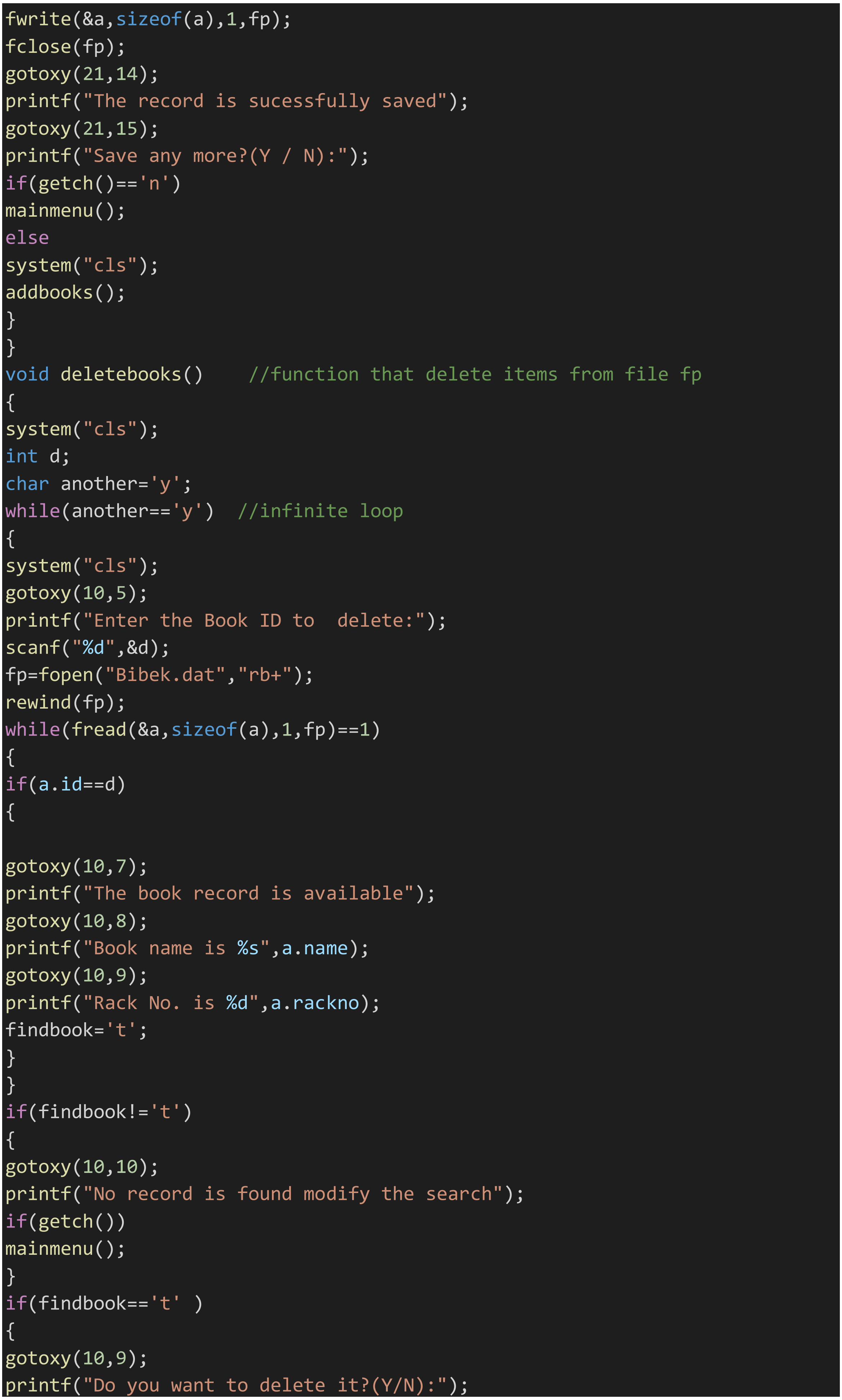
```
#include<windows.h>
#include<stdio.h>
#include<conio.h>
#include <stdlib.h>
#include<string.h>               //contains strcmp(),strcpy(),strlen(),etc
#include<ctype.h>                //contains toupper(), tolower(),etc
#include<dos.h>                  //contains _dos_getdate
#include<time.h>

//#include<bios.h>

#define RETURNTIME 15

char
catagories[][15]={"Computer","Electronics","Electrical","Civil","Mechnnical
","Architecture"};
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 show_mouse(void);
void Password();
void issuerecord();
void loaderanim();

//list of global files that can be acceed form anywhere in program
FILE *fp,*ft,*fs;


COORD coord = {0, 0};
//list of global variable
int s;
char findbook;
char password[10]={"codewithc"};

void gotoxy (int x, int y)
{
coord.X = x; coord.Y = y; // X and Y coordinates
```

```
SetConsoleCursorPosition(GetStdHandle(STD_OUTPUT_HANDLE), coord);
}

struct meroDate
{
int mm,dd,yy;
};
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()
{
Password();
getch();
return 0;

}
void mainmenu()
{
//loaderanim();
system("cls");
//    textbackground(13);
int i;
gotoxy(20,3);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2 MAIN MENU \xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");
//    show_mouse();
gotoxy(20,5);
printf("\xDB\xDB\xDB\xDB\xB2 1. Add Books   ");
gotoxy(20,7);
printf("\xDB\xDB\xDB\xDB\xB2 2. Delete books");
gotoxy(20,9);
printf("\xDB\xDB\xDB\xDB\xB2 3. Search Books");
gotoxy(20,11);
printf("\xDB\xDB\xDB\xDB\xB2 4. Issue Books");
gotoxy(20,13);
printf("\xDB\xDB\xDB\xDB\xB2 5. View Book list");
gotoxy(20,15);
printf("\xDB\xDB\xDB\xDB\xB2 6. Edit Book's Record");
```

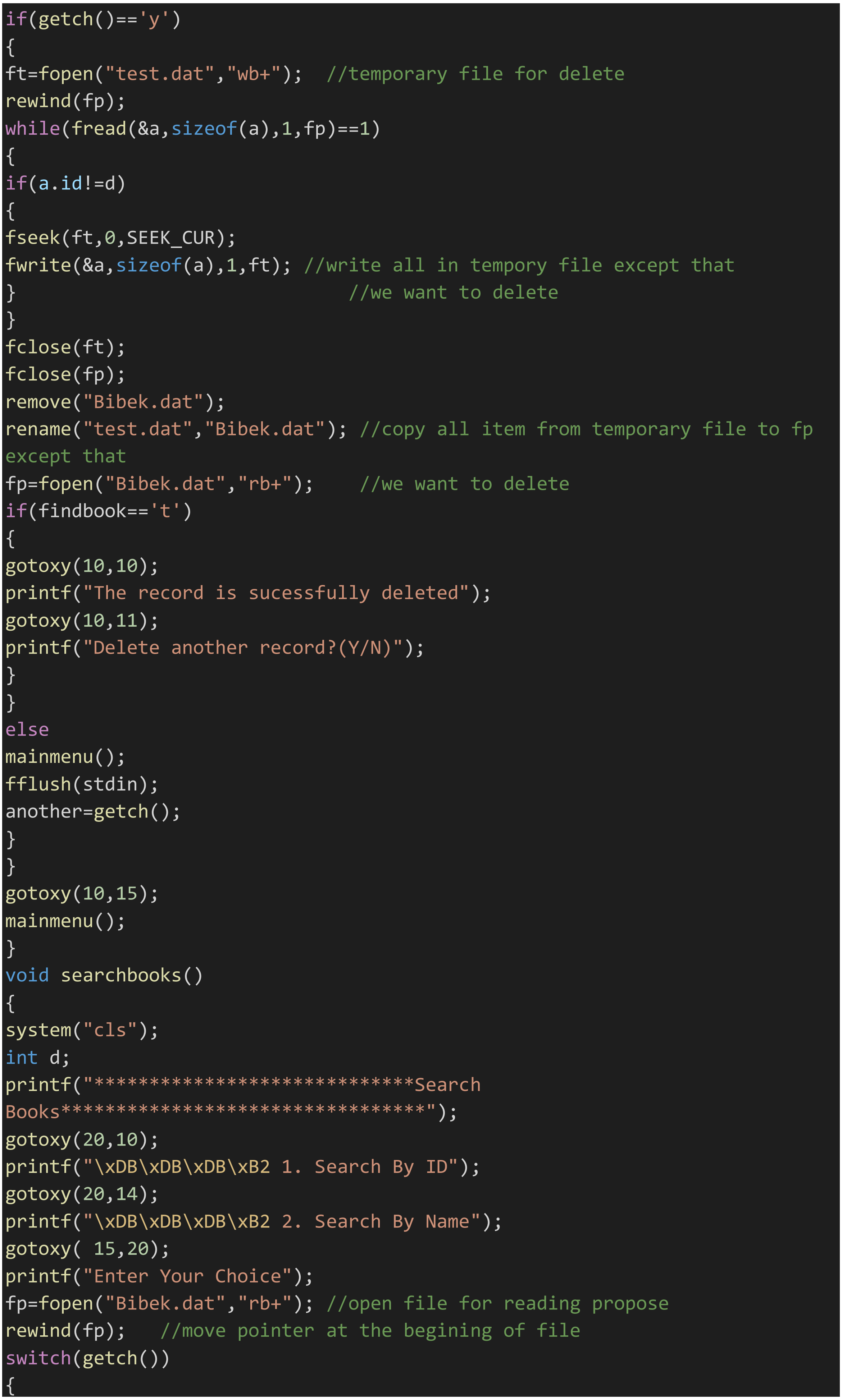
```c
gotoxy(20,17);
printf("\xDB\xDB\xDB\xDB\xB2 7. Close Application");
gotoxy(20,19);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB
2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\x
B2\xB2\xB2\xB2");
gotoxy(20,20);
t();
gotoxy(20,21);
printf("Enter your choice:");
switch(getch())
{
case '1':
addbooks();
break;
case '2':
deletebooks();
break;
case '3':
searchbooks();
break;
case '4':
issuebooks();
break;
case '5':
viewbooks();
break;
case '6':
editbooks();
break;
case '7':
{
system("cls");
gotoxy(16,3);
printf("\tLibrary Management System");
gotoxy(16,4);
printf("\tMini Project in C");
gotoxy(16,5);
printf("\tis brought to you by");
gotoxy(16,7);
printf("\tCode with C Team");
gotoxy(16,8);
printf("******************************************");
gotoxy(16,10);
printf("*******************************************");
gotoxy(16,11);
printf("*******************************************");
gotoxy(16,13);
printf("********************************************");
gotoxy(10,17);
printf("Exiting in 3 second...........>");
```



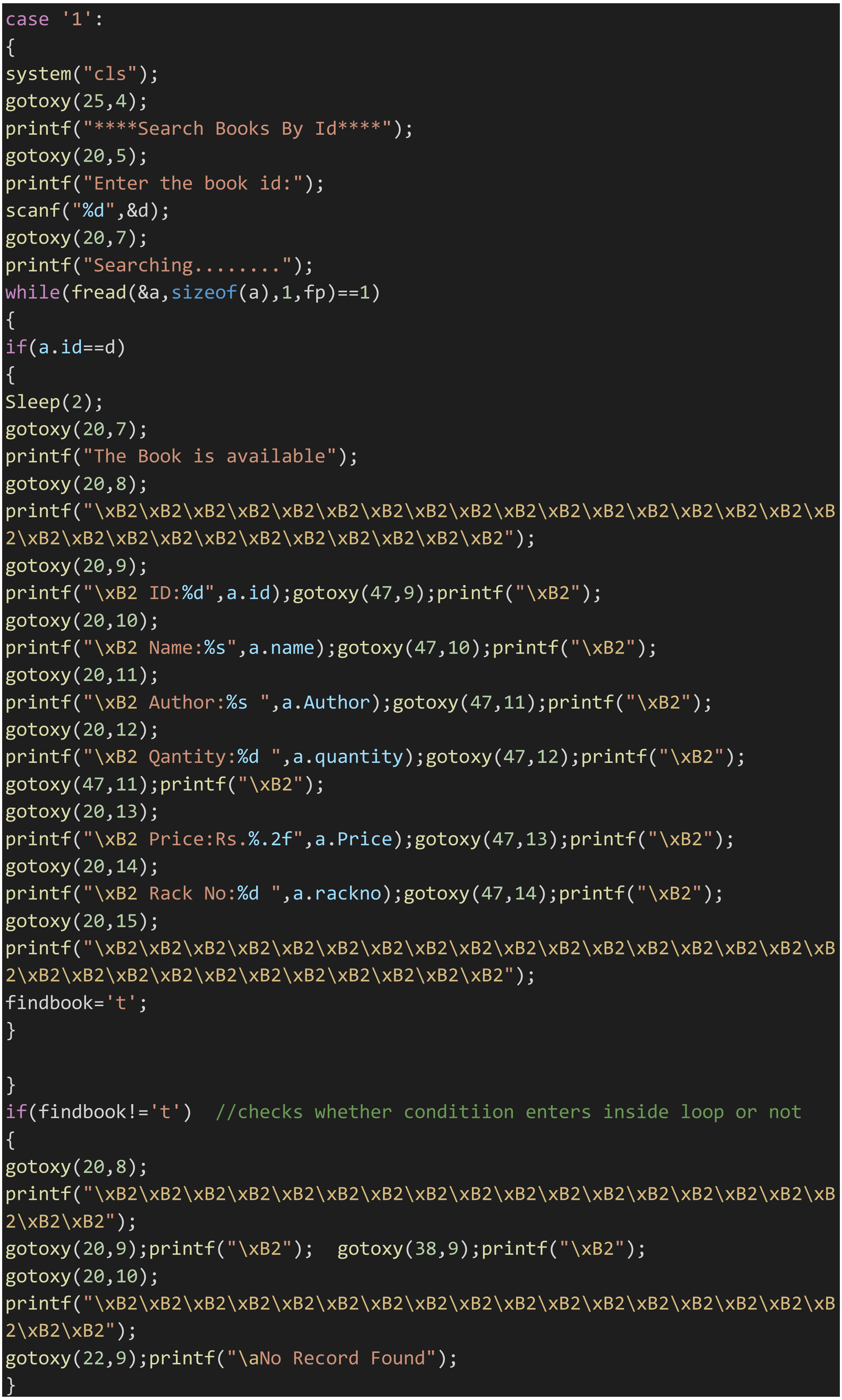
```
//flushall();
Sleep(3000);
exit(0);
}
default:
{
gotoxy(10,23);
printf("\aWrong Entry!!Please re-entered correct option");
if(getch())
mainmenu();
}

}
}
void addbooks(void)    //funtion that add books
{
system("cls");
int i;
gotoxy(20,5);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2SELECT
CATEGOIES\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");
gotoxy(20,7);
printf("\xDB\xDB\xDB\xDB\xB2 1. Computer");
gotoxy(20,9);
printf("\xDB\xDB\xDB\xDB\xB2 2. Electronics");
gotoxy(20,11);
printf("\xDB\xDB\xDB\xDB\xB2 3. Electrical");
gotoxy(20,13);
printf("\xDB\xDB\xDB\xDB\xB2 4. Civil");
gotoxy(20,15);
printf("\xDB\xDB\xDB\xDB\xB2 5. Mechanical");
gotoxy(20,17);
printf("\xDB\xDB\xDB\xDB\xB2 6. Architecture");
gotoxy(20,19);
printf("\xDB\xDB\xDB\xDB\xB2 7. Back to main menu");
gotoxy(20,21);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB
2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\x
B2\xB2\xB2\xB2");
gotoxy(20,22);
printf("Enter your choice:");
scanf("%d",&s);
if(s==7)

mainmenu() ;
system("cls");
fp=fopen("Bibek.dat","ab+");
if(getdata()==1)
{
a.cat=catagories[s-1];
fseek(fp,0,SEEK_END);
```



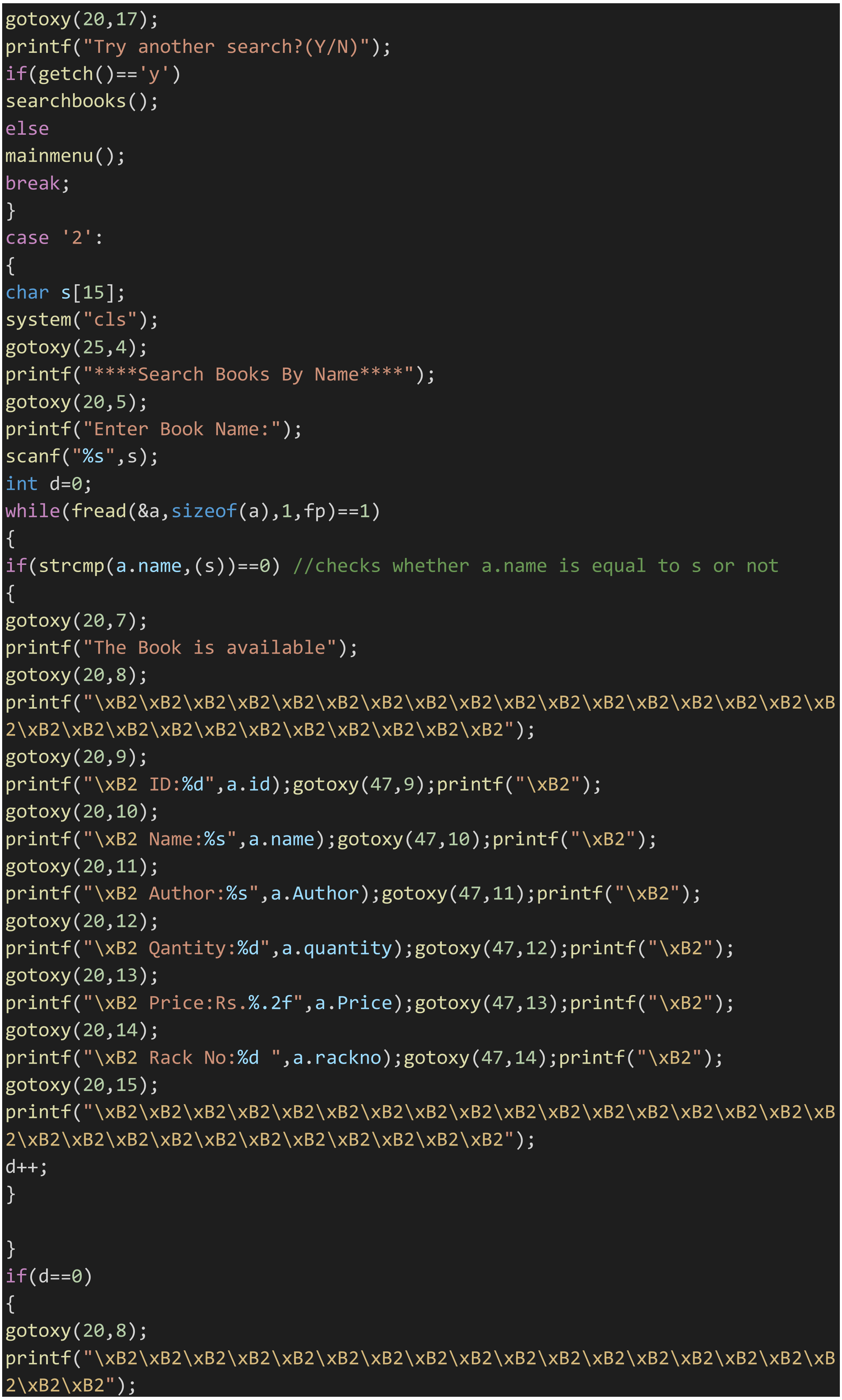
```
fwrite(&a,sizeof(a),1,fp);
fclose(fp);
gotoxy(21,14);
printf("The record is sucessfully saved");
gotoxy(21,15);
printf("Save any more?(Y / N):");
if(getch()=='n')
mainmenu();
else
system("cls");
addbooks();
}
}
void deletebooks()    //function that delete items from file fp
{
system("cls");
int d;
char another='y';
while(another=='y')  //infinite loop
{
system("cls");
gotoxy(10,5);
printf("Enter the Book ID to  delete:");
scanf("%d",&d);
fp=fopen("Bibek.dat","rb+");
rewind(fp);
while(fread(&a,sizeof(a),1,fp)==1)
{
if(a.id==d)
{

gotoxy(10,7);
printf("The book record is available");
gotoxy(10,8);
printf("Book name is %s",a.name);
gotoxy(10,9);
printf("Rack No. is %d",a.rackno);
findbook='t';
}
}
if(findbook!='t')
{
gotoxy(10,10);
printf("No record is found modify the search");
if(getch())
mainmenu();
}
if(findbook=='t' )
{
gotoxy(10,9);
printf("Do you want to delete it?(Y/N):");
```



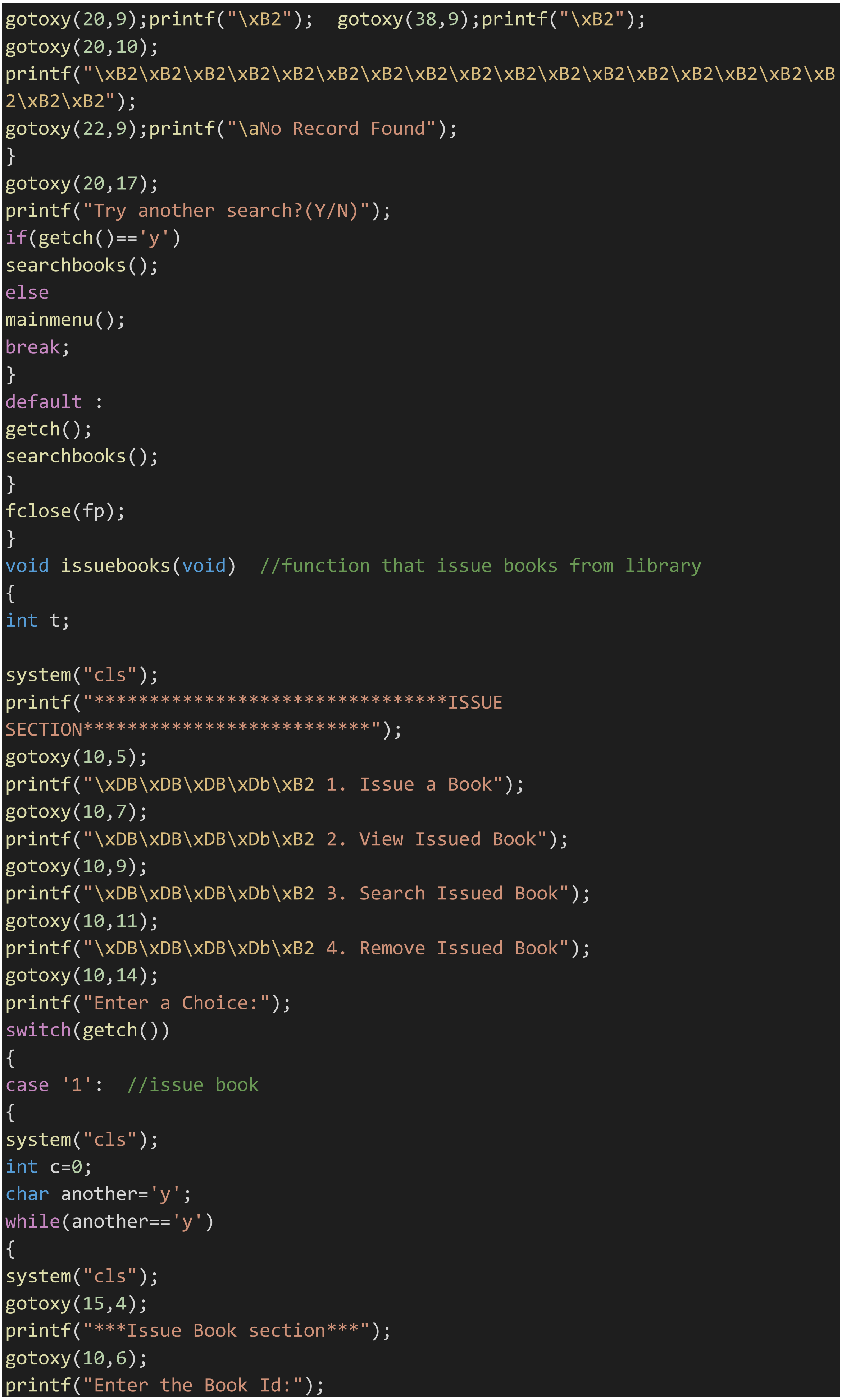
```
if(getch()=='y')
{
ft=fopen("test.dat","wb+");  //temporary file for delete
rewind(fp);
while(fread(&a,sizeof(a),1,fp)==1)
{
if(a.id!=d)
{
fseek(ft,0,SEEK_CUR);
fwrite(&a,sizeof(a),1,ft); //write all in tempory file except that
}                              //we want to delete
}
fclose(ft);
fclose(fp);
remove("Bibek.dat");
rename("test.dat","Bibek.dat"); //copy all item from temporary file to fp
except that
fp=fopen("Bibek.dat","rb+");    //we want to delete
if(findbook=='t')
{
gotoxy(10,10);
printf("The record is sucessfully deleted");
gotoxy(10,11);
printf("Delete another record?(Y/N)");
}
}
else
mainmenu();
fflush(stdin);
another=getch();
}
}
gotoxy(10,15);
mainmenu();
}
void searchbooks()
{
system("cls");
int d;
printf("*****************************Search
Books*********************************");
gotoxy(20,10);
printf("\xDB\xDB\xDB\xB2 1. Search By ID");
gotoxy(20,14);
printf("\xDB\xDB\xDB\xB2 2. Search By Name");
gotoxy( 15,20);
printf("Enter Your Choice");
fp=fopen("Bibek.dat","rb+"); //open file for reading propose
rewind(fp);   //move pointer at the begining of file
switch(getch())
{
```



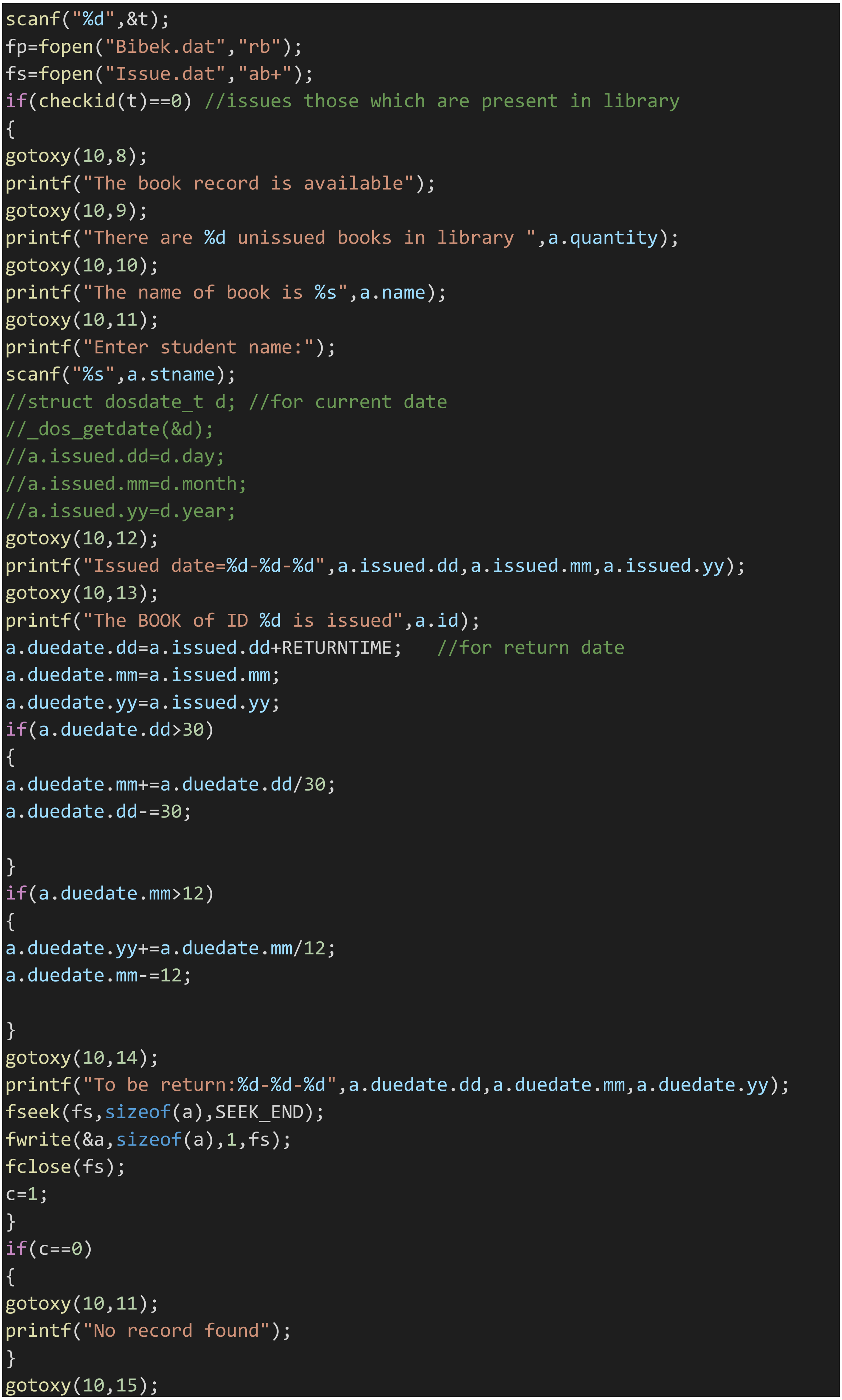
```
case '1':
{
system("cls");
gotoxy(25,4);
printf("****Search Books By Id****");
gotoxy(20,5);
printf("Enter the book id:");
scanf("%d",&d);
gotoxy(20,7);
printf("Searching........");
while(fread(&a,sizeof(a),1,fp)==1)
{
if(a.id==d)
{
Sleep(2);
gotoxy(20,7);
printf("The Book is available");
gotoxy(20,8);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");
gotoxy(20,9);
printf("\xB2 ID:%d",a.id);gotoxy(47,9);printf("\xB2");
gotoxy(20,10);
printf("\xB2 Name:%s",a.name);gotoxy(47,10);printf("\xB2");
gotoxy(20,11);
printf("\xB2 Author:%s ",a.Author);gotoxy(47,11);printf("\xB2");
gotoxy(20,12);
printf("\xB2 Qantity:%d ",a.quantity);gotoxy(47,12);printf("\xB2");
gotoxy(47,11);printf("\xB2");
gotoxy(20,13);
printf("\xB2 Price:Rs.%.2f",a.Price);gotoxy(47,13);printf("\xB2");
gotoxy(20,14);
printf("\xB2 Rack No:%d ",a.rackno);gotoxy(47,14);printf("\xB2");
gotoxy(20,15);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");
findbook='t';
}

}
if(findbook!='t')  //checks whether conditiion enters inside loop or not
{
gotoxy(20,8);
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");
}
```



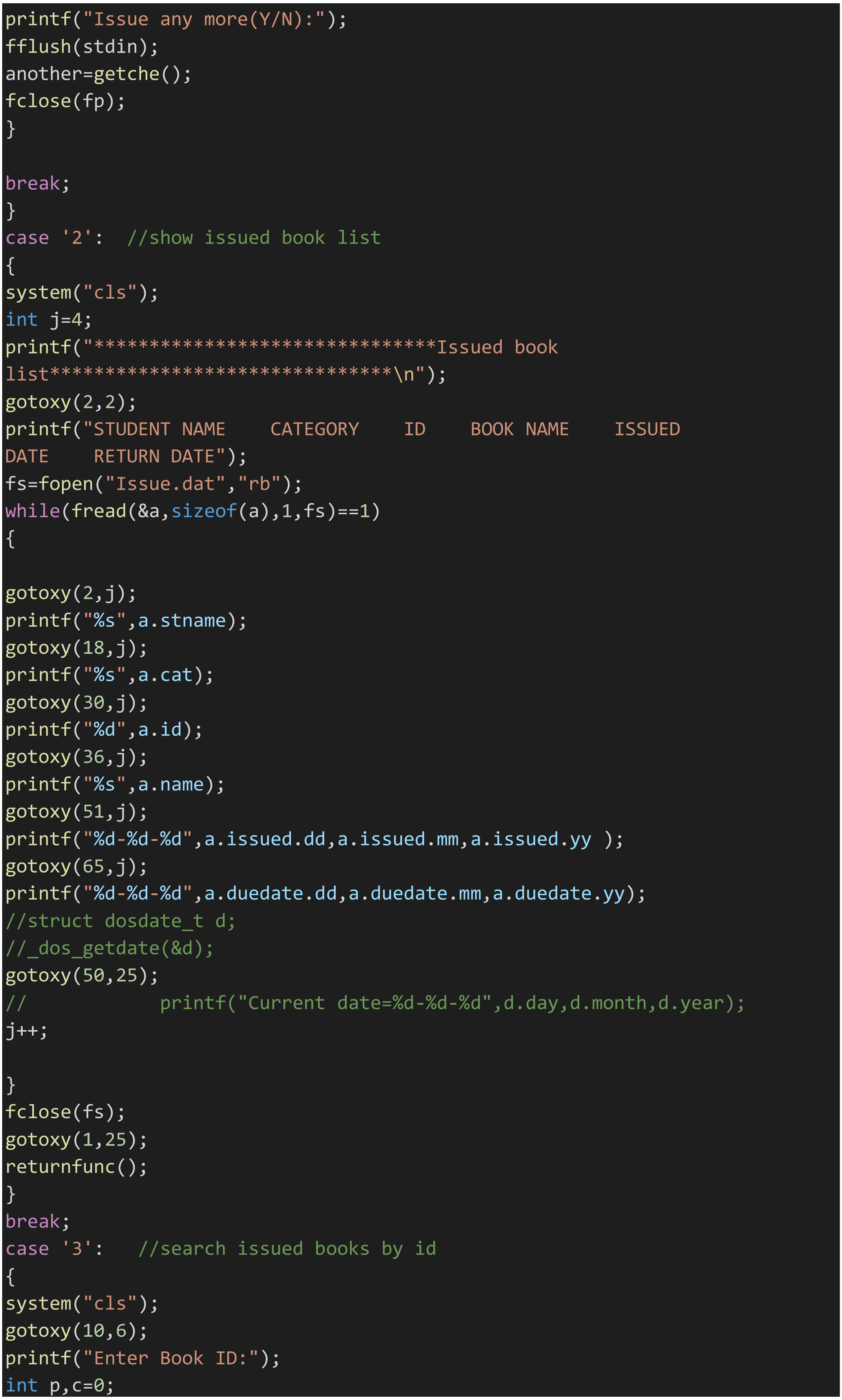
```
gotoxy(20,17);
printf("Try another search?(Y/N)");
if(getch()=='y')
searchbooks();
else
mainmenu();
break;
}
case '2':
{
char s[15];
system("cls");
gotoxy(25,4);
printf("****Search Books By Name****");
gotoxy(20,5);
printf("Enter Book Name:");
scanf("%s",s);
int d=0;
while(fread(&a,sizeof(a),1,fp)==1)
{
if(strcmp(a.name,(s))==0) //checks whether a.name is equal to s or not
{
gotoxy(20,7);
printf("The Book is available");
gotoxy(20,8);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB
2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");
gotoxy(20,9);
printf("\xB2 ID:%d",a.id);gotoxy(47,9);printf("\xB2");
gotoxy(20,10);
printf("\xB2 Name:%s",a.name);gotoxy(47,10);printf("\xB2");
gotoxy(20,11);
printf("\xB2 Author:%s",a.Author);gotoxy(47,11);printf("\xB2");
gotoxy(20,12);
printf("\xB2 Qantity:%d",a.quantity);gotoxy(47,12);printf("\xB2");
gotoxy(20,13);
printf("\xB2 Price:Rs.%.2f",a.Price);gotoxy(47,13);printf("\xB2");
gotoxy(20,14);
printf("\xB2 Rack No:%d ",a.rackno);gotoxy(47,14);printf("\xB2");
gotoxy(20,15);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB
2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");
d++;
}

}
if(d==0)
{
gotoxy(20,8);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB
2\xB2\xB2");
```



```c
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");
}
gotoxy(20,17);
printf("Try another search?(Y/N)");
if(getch()=='y')
searchbooks();
else
mainmenu();
break;
}
default :
getch();
searchbooks();
}
fclose(fp);
}
void issuebooks(void)  //function that issue books from library
{
int t;

system("cls");
printf("********************************ISSUE SECTION**************************");
gotoxy(10,5);
printf("\xDB\xDB\xDB\xDb\xB2 1. Issue a Book");
gotoxy(10,7);
printf("\xDB\xDB\xDB\xDb\xB2 2. View Issued Book");
gotoxy(10,9);
printf("\xDB\xDB\xDB\xDb\xB2 3. Search Issued Book");
gotoxy(10,11);
printf("\xDB\xDB\xDB\xDb\xB2 4. Remove Issued Book");
gotoxy(10,14);
printf("Enter a Choice:");
switch(getch())
{
case '1':  //issue book
{
system("cls");
int c=0;
char another='y';
while(another=='y')
{
system("cls");
gotoxy(15,4);
printf("***Issue Book section***");
gotoxy(10,6);
printf("Enter the Book Id:");
```

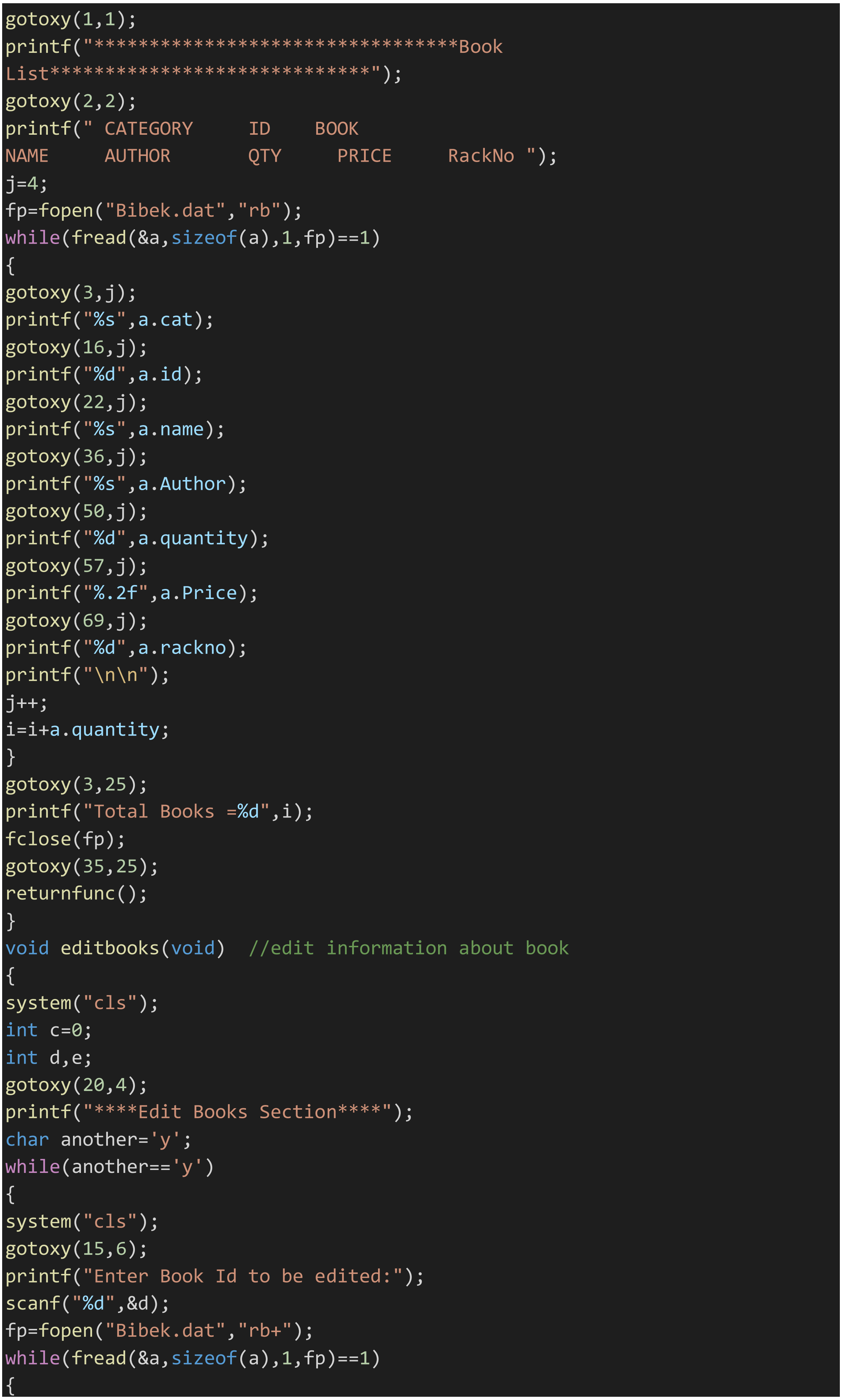


```
scanf("%d",&t);
fp=fopen("Bibek.dat","rb");
fs=fopen("Issue.dat","ab+");
if(checkid(t)==0) //issues those which are present in library
{
gotoxy(10,8);
printf("The book record is available");
gotoxy(10,9);
printf("There are %d unissued books in library ",a.quantity);
gotoxy(10,10);
printf("The name of book is %s",a.name);
gotoxy(10,11);
printf("Enter student name:");
scanf("%s",a.stname);
//struct dosdate_t d; //for current date
//_dos_getdate(&d);
//a.issued.dd=d.day;
//a.issued.mm=d.month;
//a.issued.yy=d.year;
gotoxy(10,12);
printf("Issued date=%d-%d-%d",a.issued.dd,a.issued.mm,a.issued.yy);
gotoxy(10,13);
printf("The BOOK of ID %d is issued",a.id);
a.duedate.dd=a.issued.dd+RETURNTIME;   //for return date
a.duedate.mm=a.issued.mm;
a.duedate.yy=a.issued.yy;
if(a.duedate.dd>30)
{
a.duedate.mm+=a.duedate.dd/30;
a.duedate.dd-=30;

}
if(a.duedate.mm>12)
{
a.duedate.yy+=a.duedate.mm/12;
a.duedate.mm-=12;

}
gotoxy(10,14);
printf("To be return:%d-%d-%d",a.duedate.dd,a.duedate.mm,a.duedate.yy);
fseek(fs,sizeof(a),SEEK_END);
fwrite(&a,sizeof(a),1,fs);
fclose(fs);
c=1;
}
if(c==0)
{
gotoxy(10,11);
printf("No record found");
}
gotoxy(10,15);
```

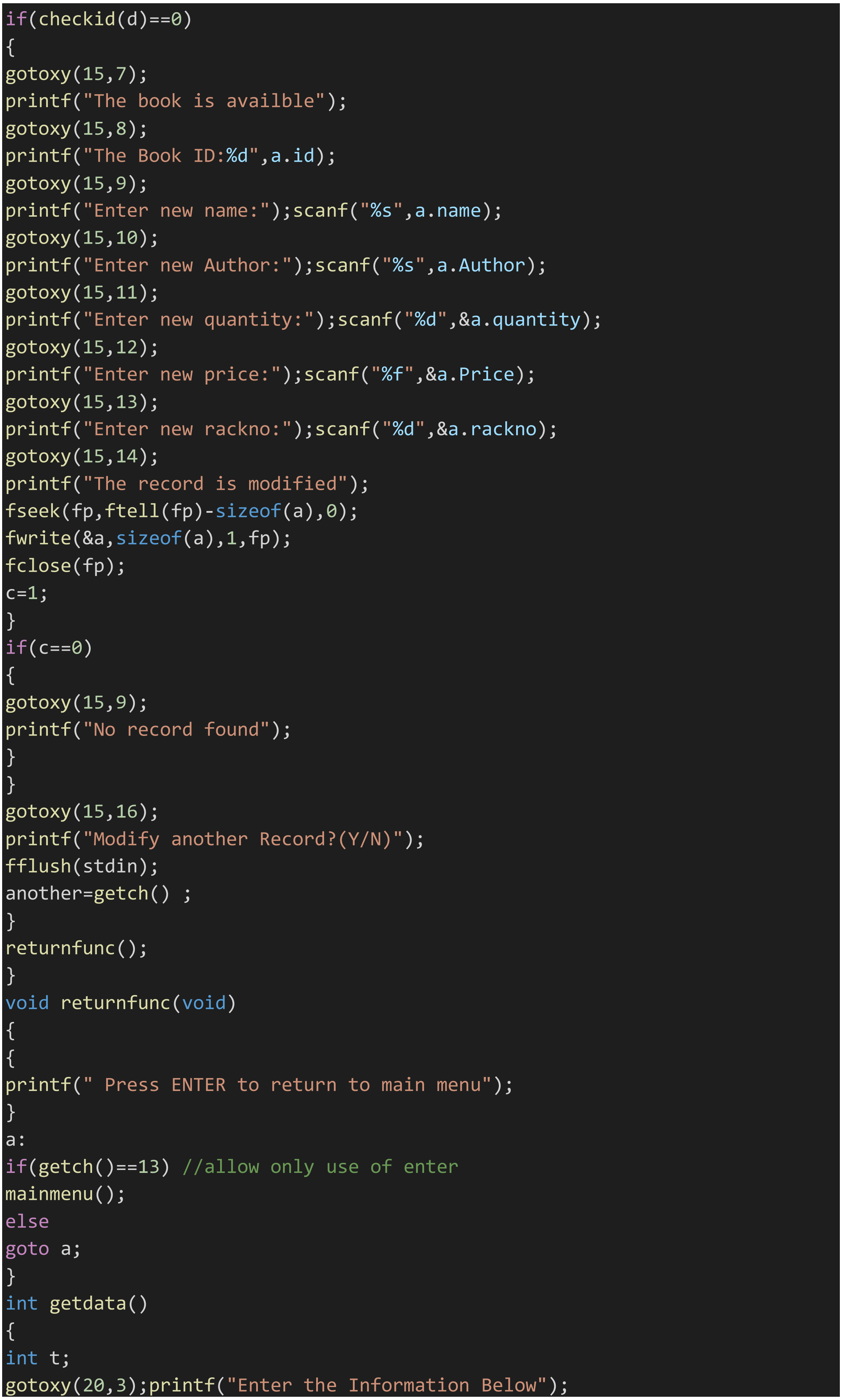


```
printf("Issue any more(Y/N):");
fflush(stdin);
another=getche();
fclose(fp);
}

break;
}
case '2':  //show issued book list
{
system("cls");
int j=4;
printf("*******************************Issued book
list*******************************\n");
gotoxy(2,2);
printf("STUDENT NAME    CATEGORY    ID    BOOK NAME    ISSUED
DATE    RETURN DATE");
fs=fopen("Issue.dat","rb");
while(fread(&a,sizeof(a),1,fs)==1)
{

gotoxy(2,j);
printf("%s",a.stname);
gotoxy(18,j);
printf("%s",a.cat);
gotoxy(30,j);
printf("%d",a.id);
gotoxy(36,j);
printf("%s",a.name);
gotoxy(51,j);
printf("%d-%d-%d",a.issued.dd,a.issued.mm,a.issued.yy );
gotoxy(65,j);
printf("%d-%d-%d",a.duedate.dd,a.duedate.mm,a.duedate.yy);
//struct dosdate_t d;
//_dos_getdate(&d);
gotoxy(50,25);
//            printf("Current date=%d-%d-%d",d.day,d.month,d.year);
j++;

}
fclose(fs);
gotoxy(1,25);
returnfunc();
}
break;
case '3':   //search issued books by id
{
system("cls");
gotoxy(10,6);
printf("Enter Book ID:");
int p,c=0;
```

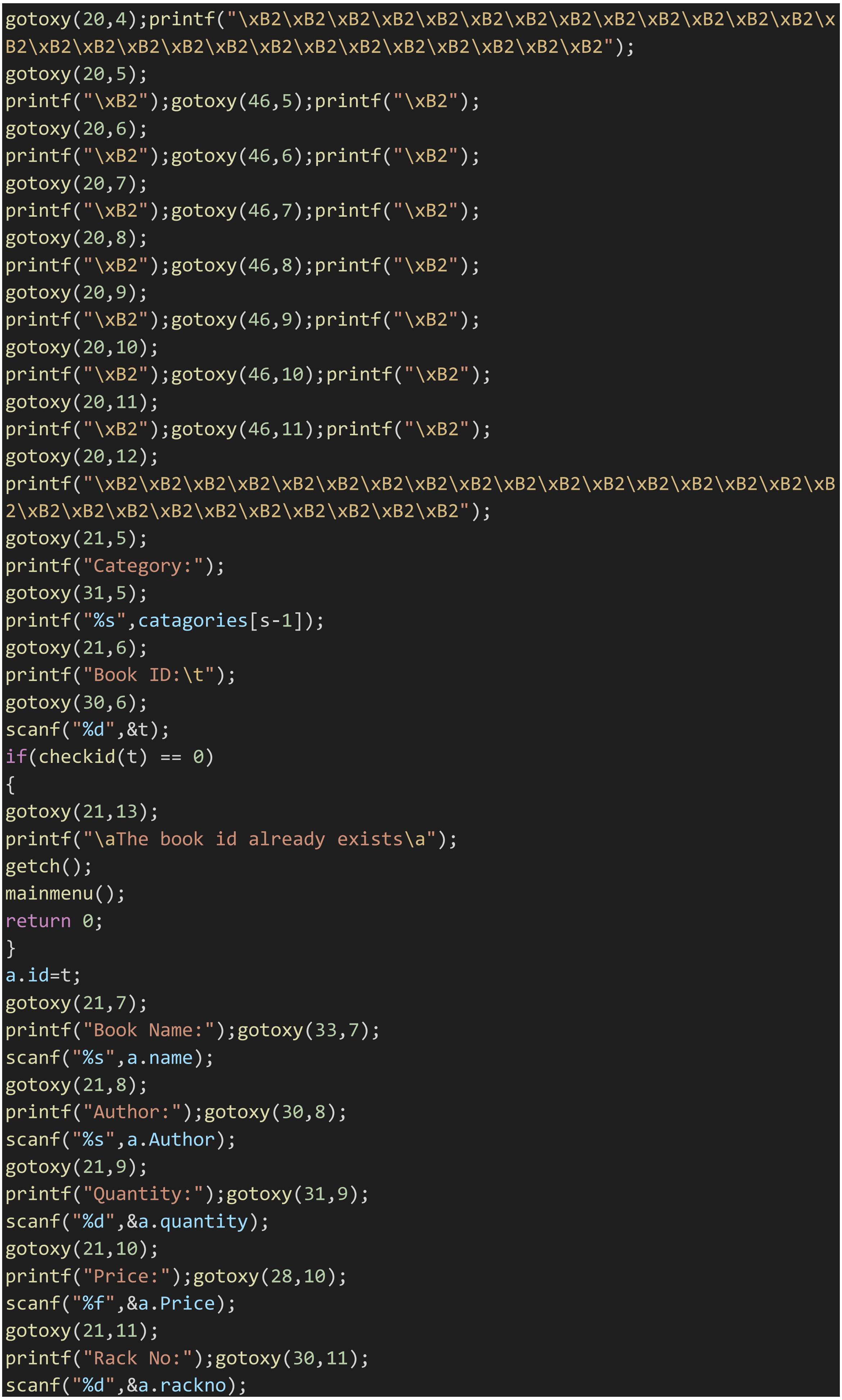
```
char another='y';
while(another=='y')
{

scanf("%d",&p);
fs=fopen("Issue.dat","rb");
while(fread(&a,sizeof(a),1,fs)==1)
{
if(a.id==p)
{
issuerecord();
gotoxy(10,12);
printf("Press any key.......");
getch();
issuerecord();
c=1;
}

}
fflush(stdin);
fclose(fs);
if(c==0)
{
gotoxy(10,8);
printf("No Record Found");
}
gotoxy(10,13);
printf("Try Another Search?(Y/N)");
another=getch();
}
}
break;
case '4':  //remove issued books from list
{
system("cls");
int b;
FILE *fg;  //declaration of temporary file for delete
char another='y';
while(another=='y')
{
gotoxy(10,5);
printf("Enter 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')
{
gotoxy(10,12);
printf("Do 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");
gotoxy(10,14);
printf("The issued book is removed from list");

}

}
if(findbook!='t')
{
gotoxy(10,15);
printf("No Record Found");
}
}
gotoxy(10,16);
printf("Delete any more?(Y/N)");
another=getch();
}
}
default:
gotoxy(10,18);
printf("\aWrong Entry!!");
getch();
issuebooks();
break;
}
gotoxy(1,30);
returnfunc();
}
void viewbooks(void)  //show the list of book persists in library
{
int i=0,j;
system("cls");
```



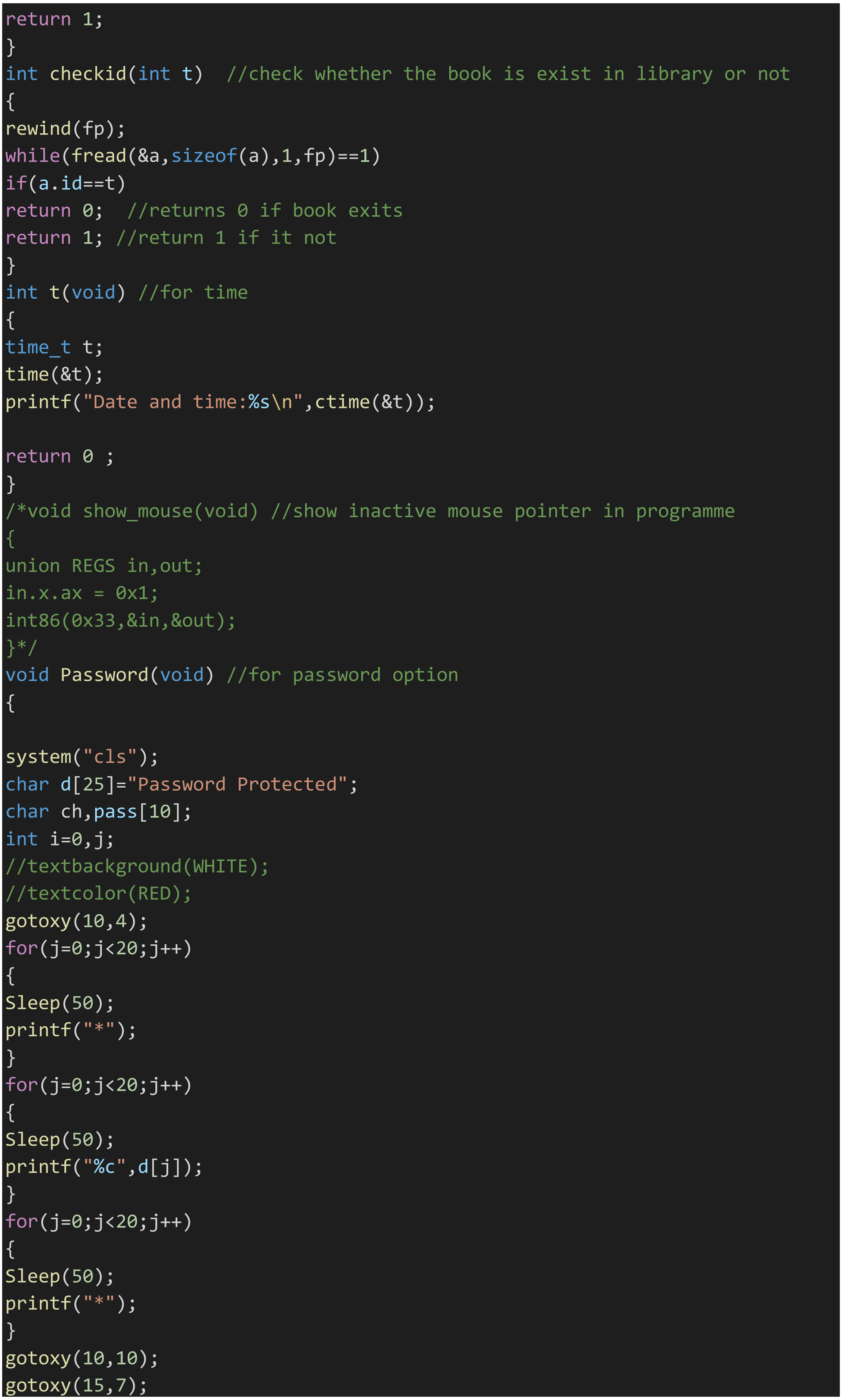
```
gotoxy(1,1);
printf("*********************************Book
List*****************************");
gotoxy(2,2);
printf(" CATEGORY     ID    BOOK
NAME     AUTHOR       QTY     PRICE     RackNo ");
j=4;
fp=fopen("Bibek.dat","rb");
while(fread(&a,sizeof(a),1,fp)==1)
{
gotoxy(3,j);
printf("%s",a.cat);
gotoxy(16,j);
printf("%d",a.id);
gotoxy(22,j);
printf("%s",a.name);
gotoxy(36,j);
printf("%s",a.Author);
gotoxy(50,j);
printf("%d",a.quantity);
gotoxy(57,j);
printf("%.2f",a.Price);
gotoxy(69,j);
printf("%d",a.rackno);
printf("\n\n");
j++;
i=i+a.quantity;
}
gotoxy(3,25);
printf("Total Books =%d",i);
fclose(fp);
gotoxy(35,25);
returnfunc();
}
void editbooks(void)  //edit information about book
{
system("cls");
int c=0;
int d,e;
gotoxy(20,4);
printf("****Edit Books Section****");
char another='y';
while(another=='y')
{
system("cls");
gotoxy(15,6);
printf("Enter Book Id to be edited:");
scanf("%d",&d);
fp=fopen("Bibek.dat","rb+");
while(fread(&a,sizeof(a),1,fp)==1)
{
```



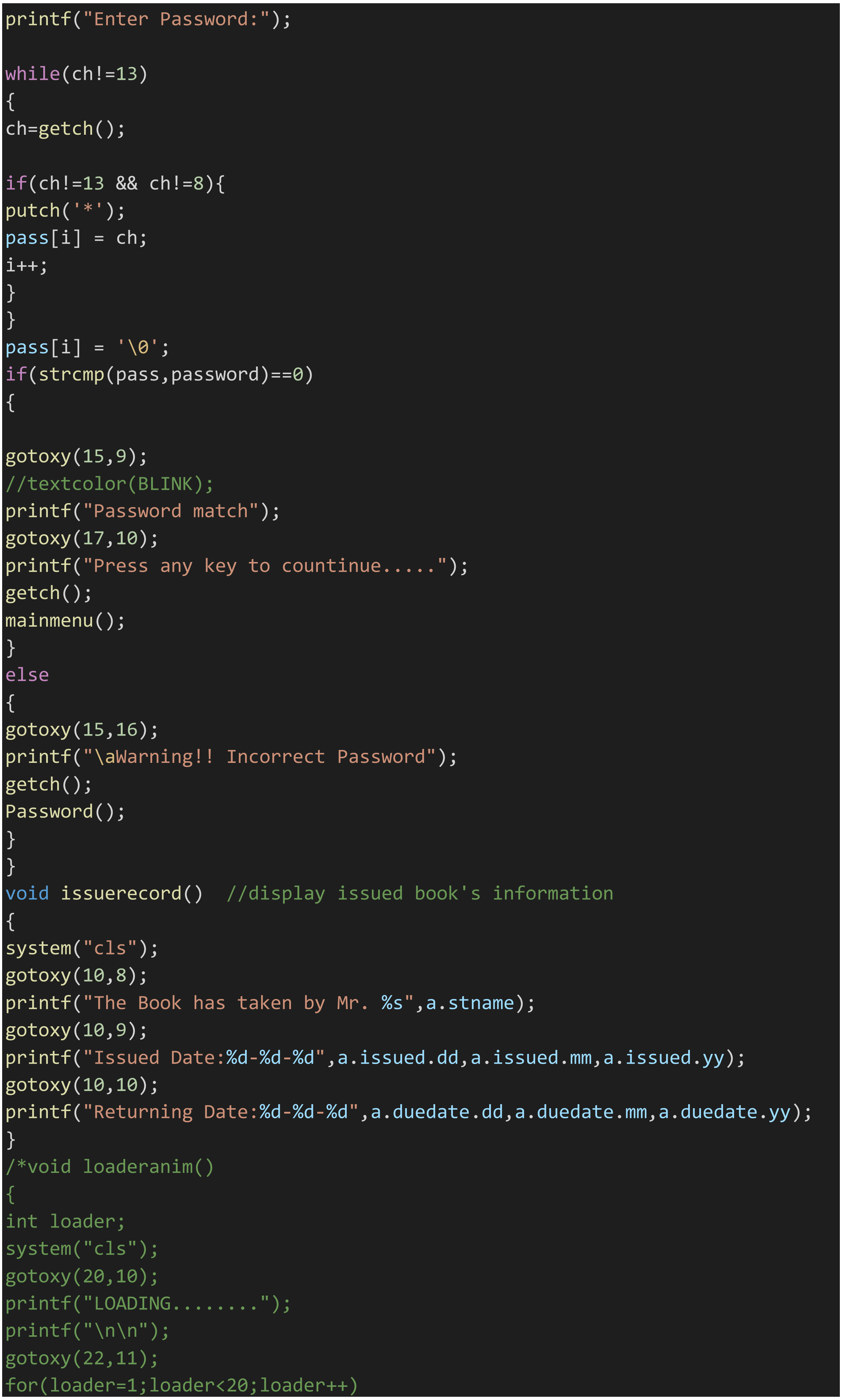
```
if(checkid(d)==0)
{
gotoxy(15,7);
printf("The book is availble");
gotoxy(15,8);
printf("The Book ID:%d",a.id);
gotoxy(15,9);
printf("Enter new name:");scanf("%s",a.name);
gotoxy(15,10);
printf("Enter new Author:");scanf("%s",a.Author);
gotoxy(15,11);
printf("Enter new quantity:");scanf("%d",&a.quantity);
gotoxy(15,12);
printf("Enter new price:");scanf("%f",&a.Price);
gotoxy(15,13);
printf("Enter new rackno:");scanf("%d",&a.rackno);
gotoxy(15,14);
printf("The record is modified");
fseek(fp,ftell(fp)-sizeof(a),0);
fwrite(&a,sizeof(a),1,fp);
fclose(fp);
c=1;
}
if(c==0)
{
gotoxy(15,9);
printf("No record found");
}
}
gotoxy(15,16);
printf("Modify another Record?(Y/N)");
fflush(stdin);
another=getch() ;
}
returnfunc();
}
void returnfunc(void)
{
{
printf(" Press ENTER to return to main menu");
}
a:
if(getch()==13) //allow only use of enter
mainmenu();
else
goto a;
}
int getdata()
{
int t;
gotoxy(20,3);printf("Enter the Information Below");
```



```c
gotoxy(20,4);printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");
gotoxy(20,5);
printf("\xB2");gotoxy(46,5);printf("\xB2");
gotoxy(20,6);
printf("\xB2");gotoxy(46,6);printf("\xB2");
gotoxy(20,7);
printf("\xB2");gotoxy(46,7);printf("\xB2");
gotoxy(20,8);
printf("\xB2");gotoxy(46,8);printf("\xB2");
gotoxy(20,9);
printf("\xB2");gotoxy(46,9);printf("\xB2");
gotoxy(20,10);
printf("\xB2");gotoxy(46,10);printf("\xB2");
gotoxy(20,11);
printf("\xB2");gotoxy(46,11);printf("\xB2");
gotoxy(20,12);
printf("\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2");
gotoxy(21,5);
printf("Category:");
gotoxy(31,5);
printf("%s",catagories[s-1]);
gotoxy(21,6);
printf("Book ID:\t");
gotoxy(30,6);
scanf("%d",&t);
if(checkid(t) == 0)
{
gotoxy(21,13);
printf("\aThe book id already exists\a");
getch();
mainmenu();
return 0;
}
a.id=t;
gotoxy(21,7);
printf("Book Name:");gotoxy(33,7);
scanf("%s",a.name);
gotoxy(21,8);
printf("Author:");gotoxy(30,8);
scanf("%s",a.Author);
gotoxy(21,9);
printf("Quantity:");gotoxy(31,9);
scanf("%d",&a.quantity);
gotoxy(21,10);
printf("Price:");gotoxy(28,10);
scanf("%f",&a.Price);
gotoxy(21,11);
printf("Rack No:");gotoxy(30,11);
scanf("%d",&a.rackno);
```



```
return 1;
}
int checkid(int t)  //check whether the book is exist in library or not
{
rewind(fp);
while(fread(&a,sizeof(a),1,fp)==1)
if(a.id==t)
return 0;  //returns 0 if book exits
return 1; //return 1 if it not
}
int t(void) //for time
{
time_t t;
time(&t);
printf("Date and time:%s\n",ctime(&t));

return 0 ;
}
/*void show_mouse(void) //show inactive mouse pointer in programme
{
union REGS in,out;
in.x.ax = 0x1;
int86(0x33,&in,&out);
}*/
void Password(void) //for password option
{

system("cls");
char d[25]="Password Protected";
char ch,pass[10];
int i=0,j;
//textbackground(WHITE);
//textcolor(RED);
gotoxy(10,4);
for(j=0;j<20;j++)
{
Sleep(50);
printf("*");
}
for(j=0;j<20;j++)
{
Sleep(50);
printf("%c",d[j]);
}
for(j=0;j<20;j++)
{
Sleep(50);
printf("*");
}
gotoxy(10,10);
gotoxy(15,7);
```



```
printf("Enter Password:");

while(ch!=13)
{
ch=getch();

if(ch!=13 && ch!=8){
putch('*');
pass[i] = ch;
i++;
}
}
pass[i] = '\0';
if(strcmp(pass,password)==0)
{

gotoxy(15,9);
//textcolor(BLINK);
printf("Password match");
gotoxy(17,10);
printf("Press any key to countinue.....");
getch();
mainmenu();
}
else
{
gotoxy(15,16);
printf("\aWarning!! Incorrect Password");
getch();
Password();
}
}
void issuerecord()  //display issued book's information
{
system("cls");
gotoxy(10,8);
printf("The Book has taken by Mr. %s",a.stname);
gotoxy(10,9);
printf("Issued Date:%d-%d-%d",a.issued.dd,a.issued.mm,a.issued.yy);
gotoxy(10,10);
printf("Returning Date:%d-%d-%d",a.duedate.dd,a.duedate.mm,a.duedate.yy);
}
/*void loaderanim()
{
int loader;
system("cls");
gotoxy(20,10);
printf("LOADING........");
printf("\n\n");
gotoxy(22,11);
for(loader=1;loader<20;loader++)
```

```
{
Sleep(100);printf("%c",219);}
}*/
//End of program
```

Results

The purpose of this project was to develop an application that will automate the whole procedure of a library.

From this C program, we will be able to:

- Add Books to the Library Shelves
- Eliminate Books from the Library
- Search for the Desired Book
- Issue Books to Customers
- Examine the Book List which will enable us to observe and identify the Number of Books Available

The application is user-friendly which leads to optimal utilization of the available resources, reducing duplication of effort, increasing efficiency, and minimizing time delays. It also helps to provide services to all the employees for the issue, return, search, etc. in one place. This helps in improving the co-ordination in staff thereby, reducing paper filling work and risk of fraud.

Conclusion

This project was successfully completed within the stipulated time.

And we learned a few things like:

- The system provides User-ID validation due to which unauthorized access is prevented
- There are two different users who will be able to access:
    a. Librarian who will be acting as the administrator
    b. Students who can also use the product for search operations
- Any update regarding the book from the library is to be recorded in the database and the data entered should be correct
- Here, the Staff needs to have a complete understanding of the functionalities and internal processing of the system though the students do not need to have a complete understanding of complex functionalities and internal processing of the system
- The feature of the software assists in the inventory and circulatory management of the books. Here, we can also track the missing books. Also, acquiring new assets becomes easier with the software.

While making this project, this C program has helped us understand the new terminologies but has also exposed us to a diverse variety of programming applications.