PROJECT CODE :

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#include<stdio.h>
#include<stdlib.h>
#include<string.h>
#define RETURNTIME 15
struct date
{
        int mm,dd,yy;
};
struct book
{
        int bookid;
        char title[19];
        float price;
        char stuname[19];
        char rollnumber[19];
        char author[19];
        int quantity;
        int count;
        int rackno;
        char *cat;
        struct date issued;
        struct date duedate;
};
struct book b1;
char
catagories[][15]={"computer","electronics","electrical","civil","mechanical","ar
chtecture"};
void getbookdata()
{
        int s,c;
        FILE *fp;
        fp=fopen("book.txt","a+");
        c=1;
        while(c==1)
        {

printf("1.computer\n2.electronics\n3.electrical\n4.civil\n5.mechanical\n6.archit
ecture\n");
                printf("enter the category number\n");
                scanf("%d",&s);
                b1.cat=catagories[s-1];
                printf("enter the book ID\n");
                scanf("%d",&b1.bookid);
                printf("enter the book name\n");
                fflush(stdin);
                scanf("%s",b1.title);
                printf("enter book price\n");
                scanf("%f",&b1.price);
                printf("enter the author name of the book\n");
                fflush(stdin);
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                scanf("%s",b1.author);
                printf("enter the quantity\n");
                fflush(stdin);
                scanf("%d",&b1.quantity);
                printf("enter the rack number\n");
                scanf("%d",&b1.rackno);
                fwrite(&b1,sizeof(b1),1,fp);
                printf("Do you want to enter any other record of a
book\n\t\t\t1.yes\t\t0.no");
                fflush(stdin);
                scanf("%d",&c);
        }
        fclose(fp);
}


void viewallbooks()
{
        FILE *fp;
        fp=fopen("book.txt","r");
        if(fp==NULL)
        {
                printf("error in opening the file may be it not exist\n");
                exit(1);
        }
        rewind(fp);
        while((fread(&b1,sizeof(b1),1,fp))>0)
        {
                printf("%s\t\t",b1.cat);
                printf("%d\t\%s\t\t%f\n",b1.bookid,b1.title,b1.price);
                printf("%s\t\t%d\t\t%d\n\n\n",b1.author,b1.quantity,b1.rackno);
        }
        fclose(fp);
}

void searchabookrecord(char *t)
{
        int counter=0;
        FILE *fp;
        fp=fopen("book.txt","r");
        if(fp==NULL)
        {
                printf("error in opening the file may be it not exist\n");
                exit(1);
        }
        rewind(fp);
        while((fread(&b1,sizeof(b1),1,fp))>0)
        {
                if(!strcmp(t,b1.title))
                {
                        printf("%s\t\t",b1.cat);
                        printf("%d\t\t%s\t\t%f\n",b1.bookid,b1.title,b1.price);
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printf("%s\t\t%d\t\t%d\n",b1.author,b1.quantity,b1.rackno);
                        counter++;
                }
        }
        if(counter==0)
        printf("the book you are searching for %s not found\n",t);
        fclose(fp);
}

void updateabookrecord(char *t)
{
        long c;
        FILE *fp;
        fp=fopen("book.txt","r+");
        if(fp==NULL)
        {
                printf("error in opening the file may be it not exist\n");
                exit(1);
        }
        rewind(fp);
        while((fread(&b1,sizeof(b1),1,fp))>0)
        {
                if(!strcmp(t,b1.title))
                {
                        printf("the book category is %s",b1.cat);
                        printf("enter the book ID\n");
                scanf("%d",&b1.bookid);
                printf("enter the book name\n");
                fflush(stdin);
                scanf("%s",b1.title);
                printf("enter book price\n");
                scanf("%f",&b1.price);
                printf("enter the author name of the book\n");
                fflush(stdin);
                scanf("%s",b1.author);
                printf("enter the quantity\n");
                fflush(stdin);
                scanf("%d",&b1.quantity);
                printf("enter the rack number\n");
                scanf("%d",&b1.rackno);
                c=ftell(fp) ;
                fseek(fp,c,0);
                fwrite(&b1,sizeof(b1),1,fp);
                break;
                }
        }
        fclose(fp);
}

void deleteabookrecord(char *t)
{
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        FILE *fp,*tem;
        tem=fopen("temp.txt","w+");
        if(tem==NULL)
        {
                printf("error in opening the file may be it not exist\n");
                exit(1);
        }
        fp=fopen("book.txt","r");
        if(fp==NULL)
        {
                printf("error in opening the file may be it not exist\n");
                exit(1);
        }
        rewind(fp);
        while((fread(&b1,sizeof(b1),1,fp))>0)
        {
                if(strcmp(t,b1.title))
                {
                        fwrite(&b1,sizeof(b1),1,tem);
                }
        }
        fclose(fp);
        fclose(tem);
        remove("book.txt");
        rename("temp.txt","book.txt");
}

void issueabook()
{
        int test,c=0;
        int ch;
        FILE *fp,*tem,*iss;
        while(1)
        {

printf("************************************************************");
                printf("1.issue a book\n 2.view issued book\n 3.search issued
books\n 4.remove issued book\n0.exit\n");
                printf("enter your choice\n");
                scanf("%d",&ch);
                switch(ch)
                {
                case1 :
                        printf("enter the book id to be issued \n");
                scanf("%d",&test);
                fp=fopen("book.txt","r");
                iss=fopen("issue.txt","a+");
                while((fread(&b1,sizeof(b1),1,fp))>0)
                {
                        if(b1.bookid==test)
                        {
                                if(b1.quantity==0)
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                                {
                                        printf("all books are sold out\n");
                                        break;
                                }
                                printf("book record available\n");
                                printf("there are %d books
available\n",b1.quantity);
                                b1.quantity=1;
                                printf("book name is %s\n",b1.title);
                                printf("enter student name and roll number\n");
                                scanf("%s %d",b1.stuname,b1.rollnumber);
                                printf("enter todays date month and year\n");

scanf("%d%d%d",&b1.issued.dd,&b1.issued.mm,&b1.issued.yy);
                                b1.duedate.dd=b1.issued.dd+RETURNTIME;
                                b1.duedate.mm=b1.duedate.mm;
                                b1.duedate.yy=b1.issued.yy;
                                if(b1.duedate.dd>30)
                                {
                                        b1.duedate.mm+=b1.duedate.dd/30;
                                        b1.duedate.dd-=30;
                                }
                                if(b1.duedate.mm>12)
                                {
                                 b1.duedate.yy+=b1.duedate.mm/12;
                                 b1.duedate.mm-=12;
                                }
                                printf("book to returned on
date:%d%d%d\n",b1.duedate.dd,b1.duedate.mm,b1.duedate.yy);
                                fwrite(&b1,sizeof(b1),1,iss);
                                c=1;
                                break;
                                }
                }
                fclose(fp);
                fclose(iss);
                if(c==0)
                printf("\nbook not found with the id number %d\n",test);
                break;
                case2:
                        iss=fopen("issue txt","r");
                        rewind(iss);
                        while((fread(&b1,sizeof(b1),1,iss))>0){
                        printf("student name:%s\n",b1.stuname);
                        printf("student roll number:%s\n",b1.rollnumber);
                        printf("boook category:%s\n",b1.cat);
                        printf("book id:%s\n",b1.bookid);
                        printf("book title:%s\n,b1.title");
                        printf("number of books available : %d\n",b1.quantity);
                        printf("book issued date : %d - %d - %d
\n\n\n",b1.issued.dd,b1.issued.mm,b1.issued.yy);
                        printf(" book return date : %d - %d - %d
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\n\n\n",b1.duedate.dd,b1.duedate.mm,b1.duedate.yy);
                        }
        fclose(iss);
        break;
        case 3 :
                iss=fopen("issue.txt","r");
                rewind(iss);
                printf("enter the book id\n");
                scanf("%d",&test);
                while((fread(&b1,size(b1),1,iss))>0)
                {
                        if(b1.bookid==test)
                        {
                                printf("book record available \n");
                                printf("student name : %s\n",b1.stuname);
                                printf("student roll num : %s\n",b1.rollnumber);
                                printf("book category : %s\n",b1.cat);
                                printf("book id : %d\n",b1.bookid);
                                printf("book title : %s\n",b1.title);
                                printf("number of books available :
%d\n",b1.quantity);
                        }
                }
                break;
        case 4:
                tem=fopen("temp.txt","w+");
                if(tem==NULL)
                {
                        printf(" error in opening a file\n");
                        exit(1);
                }
                iss=fopen("issue.txt","r");
                if(iss==NULL)
                {
                        printf("error in opening a file \n");
                        scanf("%d",&test);
                        rewind(iss);
                        while((fread(&b1,sizeof(b1),1,iss))>0)
                        {
                                if(b1.bookid!=test)
                                {
                                        fwrite(&b1,sizeof(b1),1,tem);
                                }
                        }
                        fclose(iss);
                        fclose(tem);
                        remove("issue.txt");
                        rename("temp.txt","issue.txt");
                        break;
                }
                if(ch==0)
                break;
```

```
        }
}
int main()
{
        char title[19];
        int ch;
        while(1)
        {
                printf("1.enter a record\n2.view all record\n3.search a book
record\n");
                printf("4.update a book record\n5.delete a book record\n6.issue
a book\n0.exit\n");
                printf("enter your choice : \n");
                scanf("%d",&ch);
                switch(ch)
                {
                        case 1 : getbookdata();
                                        break;
                        case 2:
                                viewallbooks();
                                break;
                        case 3:
                                printf("enter the book title to search\n");
                                scanf("%s",title);
                                searchabookrecord(title);
                                break;
                        case 4 :
                                printf("enter the book title to update\n");
                                scanf("%s",title);
                                updateabookrecord(title);
                                break;
                        case 5 :
                                printf("enter the book title to delete\n");
                                scanf("%s",title);
                                deleteabookrecord(title);
                                break;
                        case 6 : issueabook();
                        break;
                        case 0 :
                                exit(0);
                        default :
                                printf("invalid choice\n");
                                break;
                }
        }
}
```