PPS MINI PROJECT

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CSE – IT (Q1)

Library Management System

===== Description about the code =====

The code can be used as a System to manage a library. The code has 5 primary options. First option is to add a book record in library. Second option is to Show the list of books. Third option is to remove a book record. The fourth option is to issue a book by the student. Fifth option is to show the list of the books which are issued. Structure of the program is divided into two parts. The first structure explains the information about the book like its name, author, and date it was added in the system. The second is the structure is the information about the student who will issue the book like the name of the student, class, roll number and most importantly the name of the book issued. Information about the book is stored in the text file called book.txt. Information about the book which are issued is stored in the text file called issue.txt. The code also shows the date on which the book was added in the system as well the date on which the book was issued by the person. It is easy for the user to see the list of the books and the list of the books which are issued.

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Library Management System

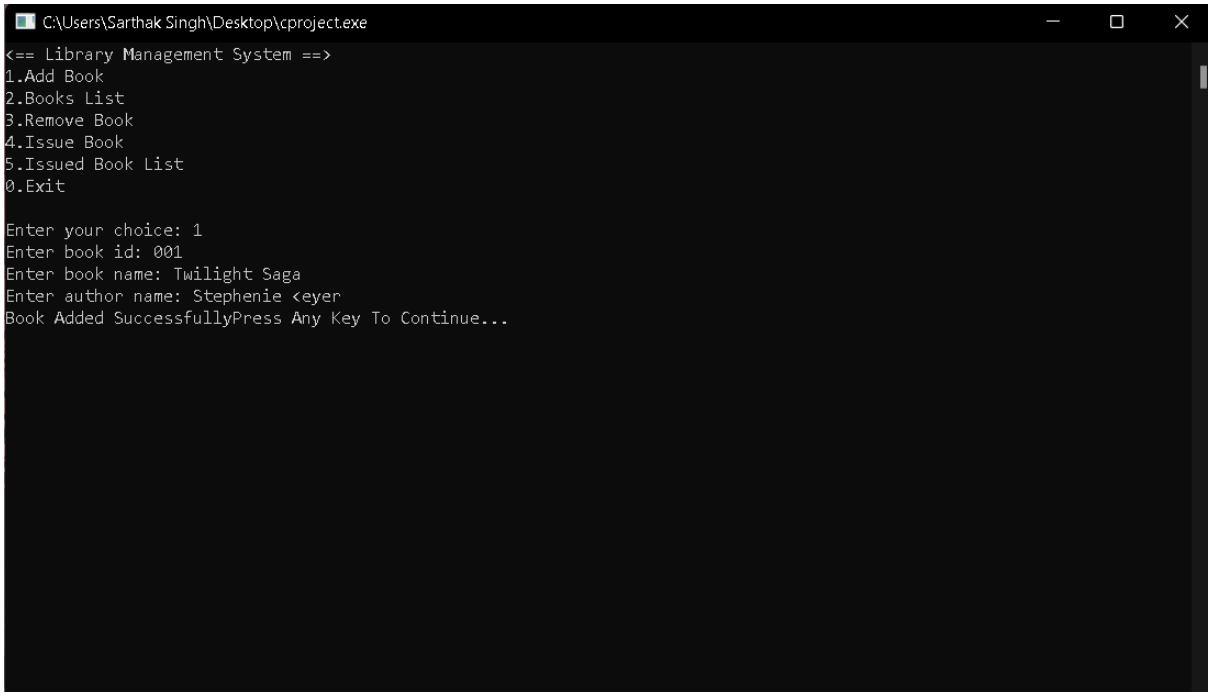
```
#include<stdio.h>
#include<stdlib.h>
#include<time.h>

struct books{
   int id;
   char bookName[50];
   char authorName[50];
   char date[12];
}b;

struct student{
   int id;
   char sName[50];
   char sClass[50];
   int sRoll;
   char bookName[50];
   char date[12];
}s;

FILE *fp;

int main(){

   int ch;

   while(1){
      system("cls");
      printf("<== Library Management System ==>\n");
      printf("1.Add Book\n");
      printf("2.Books List\n");
      printf("3.Remove Book\n");
      printf("4.Issue Book\n");
      printf("5.Issued Book List\n");
      printf("0.Exit\n\n");
      printf("Enter your choice: ");
      scanf("%d", &ch);

      switch(ch){
      case 0:
         exit(0);

      case 1:
         addBook();
```

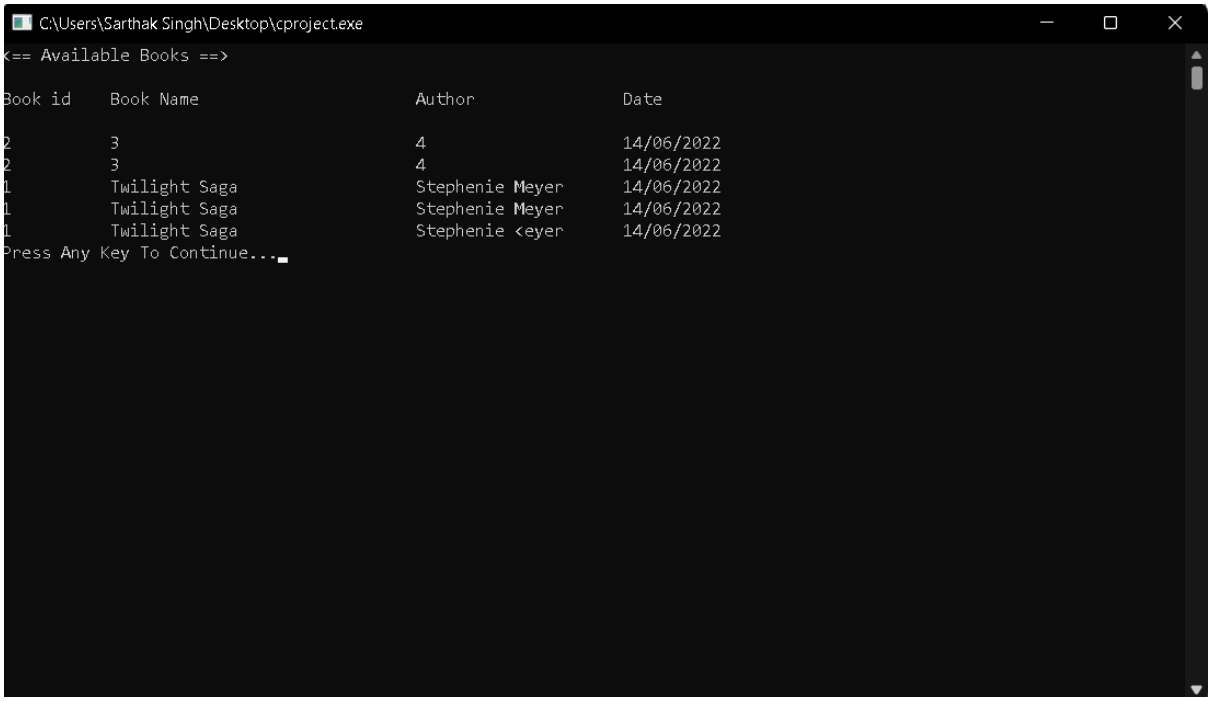
```
            break;

        case 2:
            booksList();
            break;

        case 3:
            del();
            break;

        case 4:
            issueBook();
            break;

        case 5:
            issueList();
            break;

        default:
            printf("Invalid Choice...\n\n");

        }
        printf("Press Any Key To Continue...");
        getch();
    }

    return 0;
}


void addBook(){
    char myDate[12];
    time_t t = time(NULL);
    struct tm tm = *localtime(&t);
    sprintf(myDate, "%02d/%02d/%d", tm.tm_mday, tm.tm_mon+1, tm.tm_year + 1900);
    strcpy(b.date, myDate);

    fp = fopen("books.txt", "ab");

    printf("Enter book id: ");
    scanf("%d", &b.id);

    printf("Enter book name: ");
    fflush(stdin);
    gets(b.bookName);

    printf("Enter author name: ");
    fflush(stdin);
    gets(b.authorName);

    printf("Book Added Successfully");
```

```
    fwrite(&b, sizeof(b), 1, fp);
    fclose(fp);
}


void booksList(){

    system("cls");
    printf("<== Available Books ==>\n\n");
    printf("%-10s %-30s %-20s %s\n\n", "Book id", "Book Name", "Author", "Date");

    fp = fopen("books.txt", "rb");
    while(fread(&b, sizeof(b), 1, fp) == 1){
        printf("%-10d %-30s %-20s %s\n", b.id, b.bookName, b.authorName, b.date);
    }

    fclose(fp);
}

void del(){
    int id, f=0;
    system("cls");
    printf("<== Remove Books ==>\n\n");
    printf("Enter Book id to remove: ");
    scanf("%d", &id);

    FILE *ft;

    fp = fopen("books.txt", "rb");
    ft = fopen("temp.txt", "wb");

    while(fread(&b, sizeof(b), 1, fp) == 1){
        if(id == b.id){
            f=1;
        }else{
            fwrite(&b, sizeof(b), 1, ft);
        }
    }

    if(f==1){
        printf("\n\nDeleted Successfully.");
    }else{
        printf("\n\nRecord Not Found !");
    }

    fclose(fp);
    fclose(ft);

    remove("books.txt");
    rename("temp.txt", "books.txt");
```

```
}


void issueBook(){

   char myDate[12];
   time_t t = time(NULL);
   struct tm tm = *localtime(&t);
   sprintf(myDate, "%02d/%02d/%d", tm.tm_mday, tm.tm_mon+1, tm.tm_year + 1900);
   strcpy(s.date, myDate);

   int f=0;

   system("cls");
   printf("<== Issue Books ==>\n\n");

   printf("Enter Book id to issue: ");
   scanf("%d", &s.id);

   //Check if we have book of given id
   fp = fopen("books.txt", "rb");

   while(fread(&b, sizeof(b), 1, fp) == 1){
      if(b.id == s.id){
         strcpy(s.bookName, b.bookName);
         f=1;
         break;
      }
   }

   if(f==0){
      printf("No book found with this id\n");
      printf("Please try again...\n\n");
      return;
   }

   fp = fopen("issue.txt", "ab");

   printf("Enter Student Name: ");
   fflush(stdin);
   gets(s.sName);

   printf("Enter Student Class: ");
   fflush(stdin);
   gets(s.sClass);

   printf("Enter Student Roll: ");
   scanf("%d", &s.sRoll);

   printf("Book Issued Successfully\n\n");
```

```
    fwrite(&s, sizeof(s), 1, fp);
    fclose(fp);
}

void issueList(){
    system("cls");
    printf("<== Book Issue List ==>\n\n");

    printf("%-10s %-30s %-20s %-10s %-30s %s\n\n", "S.id", "Name", "Class", "Roll", "Book Name",
"Date");

    fp = fopen("issue.txt", "rb");
    while(fread(&s, sizeof(s), 1, fp) == 1){
        printf("%-10d %-30s %-20s %-10d %-30s %s\n", s.id, s.sName, s.sClass, s.sRoll, s.bookName,
s.date);
    }

    fclose(fp);
}
```

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Book id Book Name Author Date
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2 3 4 14/06/2022
1 Twilight Saga Stephenie Meyer 14/06/2022
1 Twilight Saga Stephenie Meyer 14/06/2022
1 Twilight Saga Stephenie <eyer 14/06/2022
Press Any Key To Continue...