

# LIBRARY MANAGEMENT SYSTEM

```
#include <stdio.h>
#include <string.h>
struct checkout_date
{
    int date,month,year;
};

struct return_date
{
    int date,month,year;
};

struct student_details
{
    char name[20],address[50];
    long phone;
    struct checkout_date CHDATE[15];
    struct return_date REDATE[15];
};

struct book_details
{
    long book_no;
    char book_title[30],author[15];
    char publisher[30];
    int year_of_publication;
```

```

    char subject[15];
    struct student_details Studdet[100];
    int status;
}BOOK[2700];

int Choice,b,i=0,n=0;

int operation()
{
    printf("\t\t\t WELCOME TO ANSPRIN LIBRARY!");

    printf("\n-----
    ----\n\n");
        printf("\t\t\tMENU");

    printf("\n-----
    ---\n");
        printf("PRESS 1.TO ADD NEW BOOKS");
        printf("\nPRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER,
AUTHOR, TITLE, SUBJECT");
        printf("\nPRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS
OLDER THAN 15 YEARS)");
        printf("\nPRESS 4.TO CHECKOUT BOOKS");
        printf("\nPRESS 5.TO RETURN BOOKS");
        printf("\nPRESS 6.TO EXIT");

    printf("\n-----
    ---\n");
        printf("Enter Your Choice: ");
        scanf("%d",&Choice);
        return Choice;
}

int add_book()
{
    printf("Enter the following details:\n");
    printf("Book Number: ");
    scanf("%ld",&BOOK[i].book_no);
    printf("Book Title: ");
    scanf(" %[^\\n]*c",BOOK[i].book_title);
    printf("Author: ");
    scanf(" %[^\\n]*c",BOOK[i].author);

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printf("Publisher: ");
scanf(" %[^\\n]*c",BOOK[i].publisher);
printf("Year of Publication: ");
scanf("%d",&BOOK[i].year_of_publication);
printf("Subject: ");
scanf(" %[^\\n]*c",BOOK[i].subject);
printf("Available!!!\\n");
BOOK[i].status=1;
i++;
}

void search_book_number()
{
    long num;
    printf("Enter the book number: ");
    scanf("%ld",&num);
    for(int j=0;j<=i;j++)
    {
        if(num==BOOK[j].book_no)
        {
            printf("Deetails:\\n");
            printf("Book Number: %ld",BOOK[j].book_no);
            printf("\\nBook Title: %s",BOOK[j].book_title);
            printf("\\nAuthor: %s",BOOK[j].author);
            printf("\\nPublisher: %s",BOOK[j].publisher);
            printf("\\nYear of Publiaction: %d",BOOK[j].year_of_publication);
            printf("\\nSubject: %s\\n",BOOK[j].subject);
            if(BOOK[j].status==2)
            {
                printf("Unavailable(Issued by someone).\\n");
            }
            else if(BOOK[j].status==3)
            {
                printf("Unavailable(The book is outdated).\\n");
            }
            else if(BOOK[j].status==1)
            {
                printf("Available!!!\\n");
            }
            break;
        }
    }
}

```

```

}

void search_author()
{
    char auth[15];
    int r=-1;
    printf("Enter the name of author: ");
    scanf(" %[^\\n]*c",auth);
    for(int j=0;j<=i;j++)
    {
        r=strcmp(auth,BOOK[j].subject);
        if(r==0)
        {
            printf("Here are the details:\\n");
            printf("Book Number: %ld",BOOK[j].book_no);
            printf("\\nBook Title: %s",BOOK[j].book_title);
            printf("\\nAuthor: %s",BOOK[j].author);
            printf("\\nPublisher: %s",BOOK[j].publisher);
            printf("\\nYear of Publication: %d",BOOK[j].year_of_publication);
            printf("\\nSubject: %s",BOOK[j].subject);
            if(BOOK[j].status==2)
            {printf("\\nUnavailable(Issued by someone).");}
            else if(BOOK[j].status==3)
            {printf("\\nUnavailable(The book is outdated).\\n");}
            else if(BOOK[j].status==1)
            {printf("Available!!!\\n");}
            break;
        }
    }
}

```

```

void search_title()
{
    char title[20];
    int r=-1;
    printf("Please enter the Book Title: ");
    scanf(" %[^\\n]*c",title);
    for(int j=0;j<=i;j++)
    {
        r=strcmp(title,BOOK[j].subject);
        if(r==0)
        {

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```

        printf("Here are the details:\n");
        printf("Book Number: %ld",BOOK[j].book_no);
        printf("\nBook Title: %s",BOOK[j].book_title);
        printf("\nAuthor: %s",BOOK[j].author);
        printf("\nPublisher: %s",BOOK[j].publisher);
        printf("\nYear of Publiaction: %d",BOOK[j].year_of_publication);
        printf("\nSubject: %s\n",BOOK[j].subject);
        if(BOOK[j].status==2)
        {printf("Unavailable(Issued by someone0.\n");}
        else if(BOOK[j].status==3)
        {printf("Unavailable(The book is outdated)!\n");}
        else if(BOOK[j].status==1)
        {printf("Available!!!\n");}
        break;
    }
}
}

```

```

void search_subject()
{
    char sub[20];
    int r=-1;
    printf("Enter the subject: ");
    scanf(" %[^\\n]*c",sub);
    for(int j=0;j<=i;j++)
    {
        r=strcmp(sub,BOOK[j].subject);
        if(r==0)
        {
            printf("Here are the details:\n");
            printf("Book Number: %ld",BOOK[j].book_no);
            printf("\nBook Title: %s",BOOK[j].book_title);
            printf("\nAuthor: %s",BOOK[j].author);
            printf("\nPublisher: %s",BOOK[j].publisher);
            printf("\nYear of Publiaction: %d",BOOK[j].year_of_publication);
            printf("\nSubject: %s",BOOK[j].subject);
            if(BOOK[j].status==2)
            {printf("\nUnavailable(Issued by someone).\n");}
            else if(BOOK[j].status==3)
            {printf("Unavailable(The book is outdated)!\n");}
            else if(BOOK[j].status==1)
            {

```

```

        printf("Available!!!\n");}
        break;
    }
}
}

void search_keywords()
{
    char key[15];
    printf("Please enter the keyword: ");
    scanf("%s",key);
    int r=-1,t=-1,s=-1,p=-1;
    for(int j=0;j<=i;j++)
    {
        for (char *p1 = strtok(BOOK[j].book_title, " "); p1 != '\0'; p1 =
strtok(NULL, " "))
        {
            t=strcmp(p1,key);
            if(t==0)
            {
                printf("Here are the details:\n");
                printf("Book Number: %ld",BOOK[j].book_no);
                printf("\nBook Title: %s",BOOK[j].book_title);
                printf("\nAuthor: %s",BOOK[j].author);
                printf("\nPublisher: %s",BOOK[j].publisher);
                printf("\nYear of Publiaction: %d",BOOK[j].year_of_publication);
                printf("\nSubject: %s",BOOK[j].subject);
                if(BOOK[j].status==2)
                {printf("\nUnavailable(Issued by someone).\n");}
                else if(BOOK[j].status==3)
                {printf("Unavailable(The book is outdated)!\n");}
                else if(BOOK[j].status==1)
                {printf("Available!!!\n");}
            }
        }
    }

    for (char *p2 = strtok(BOOK[j].author, " "); p2 != '\0'; p2 =
strtok(NULL, " "))
    {
        r=strcmp(p2,key);
        if(r==0)
        {

```

```

        printf("Here are the details:\n");
        printf("Book Number: %ld",BOOK[j].book_no);
        printf("\nBook Title: %s",BOOK[j].book_title);
        printf("\nAuthor: %s",BOOK[j].author);
        printf("\nPublisher: %s",BOOK[j].publisher);
        printf("\nYear of Publiaction: %d",BOOK[j].year_of_publication);
        printf("\nSubject: %s",BOOK[j].subject);
        if(BOOK[j].status==2)
        {printf("\nUnavailable(Issued by someone).\n");}
        else if(BOOK[j].status==3)
        {printf("Unavailable(The book is outdated)!\n");}
        else if(BOOK[j].status==1)
        {printf("Available!!!\n");}
        }
    }

    for (char *p3 = strtok(BOOK[j].publisher," "); p3 != '\0'; p3 =
    strtok(NULL, " "))
    {
        p=strcmp(p3,key);
        if(p==0)
        {
            printf("Here are the details:\n");
            printf("Book Number: %ld",BOOK[j].book_no);
            printf("\nBook Title: %s",BOOK[j].book_title);
            printf("\nAuthor: %s",BOOK[j].author);
            printf("\nPublisher: %s",BOOK[j].publisher);
            printf("\nYear of Publiaction: %d",BOOK[j].year_of_publication);
            printf("\nSubject: %s",BOOK[j].subject);
            if(BOOK[j].status==2)
            {printf("\nUnavailable(Issued by someone).\n");}
            else if(BOOK[j].status==3)
            {printf("Unavailable(The book is outdated)!\n");}
            else if(BOOK[j].status==1)
            {printf("Available!!!\n");}
            }
        }

    for (char *p4 = strtok(BOOK[j].subject," "); p4 != '\0'; p4 =
    strtok(NULL, " "))
    {
        s=strcmp(p4,key);

```

```

        if(s==0)
        {
            printf("Details:\n");
            printf("Book Number: %ld",BOOK[j].book_no);
            printf("\nBook Title: %s",BOOK[j].book_title);
            printf("\nAuthor: %s",BOOK[j].author);
            printf("\nPublisher: %s",BOOK[j].publisher);
            printf("\nYear of Publiaction: %d",BOOK[j].year_of_publication);
            printf("\nSubject: %s",BOOK[j].subject);
            if(BOOK[j].status==2)
            {printf("\nUnavailable(Issued by someone).\n");}
            else if(BOOK[j].status==3)
            {printf("Unavailable(The book is outdated)!\n");}
            else if(BOOK[j].status==1)
            {printf("Available!!!\n");}
        }
    }
}

```

```

void search()
{
    printf("Search the library by :\n1 = Book number\n2 = Author\n3 = Title\n4 = Subject\n5 = Keywords\n");
    scanf("%d",&b);
    switch(b)
    {
        case 1:
            search_book_number();
            break;
        case 2:
            search_author();
            break;
        case 3:
            search_title();
            break;
        case 4:
            search_subject();
            break;
        case 5:
            search_keywords();
    }
}

```



```

        break;
    default:
        break;
    }
}

void remove_outdated_books()          //checked
{
    int z;
    printf("Current year: ");    scanf("%d",&z);
    z=z-15;
    int book_found=0;
    for(int j=0;j<i;j++)
    {
        if ((BOOK[j].year_of_publication!=0) &&
(BOOK[j].year_of_publication<z))
        {
            BOOK[j].status=3;
            book_found=1;
            printf("\nThe Book %s j= %d is outdated.\n",BOOK[j].book_title,j);
        }
    }
    if (book_found==0)
        printf("No book found\n");
}

void Checkout_books()
{
    long num;
    printf("Please enter the Book Number: ");    scanf("%ld",&num);
    for(int j=0;j<=i;j++)
    {
        if(num==BOOK[j].book_no)
        {
            if(BOOK[j].status==2 || BOOK[j].status==3)
            {
                printf("Sorry, This book is unavailable.\n");
            }
            else if(BOOK[j].status==1)
            {
                printf("Please enter the following: \n");
            }
        }
    }
}

```

```

        printf("Name: ");    scanf("
%[^\n]*c",BOOK[j].Studdet[n].name);
        printf("Address: "); scanf("
%[^\n]*c",BOOK[j].Studdet[n].address);
        printf("Phone: ");    scanf("%ld",&BOOK[j].Studdet[n].phone);
        printf("Checkout details: \n");
        printf("Date: ");
scanf("%d",&BOOK[j].Studdet[n].CHDATE[n].date);
        printf("Month: ");
scanf("%d",&BOOK[j].Studdet[n].CHDATE[n].month);
        printf("Year: ");
scanf("%d",&BOOK[j].Studdet[n].CHDATE[n].year);
        printf("Return details: \n");
        printf("Date: ");
scanf("%d",&BOOK[j].Studdet[n].REDATE[n].date);
        printf("Month: ");
scanf("%d",&BOOK[j].Studdet[n].REDATE[n].month);
        printf("Year: ");
scanf("%d",&BOOK[j].Studdet[n].REDATE[n].year);
        printf("Book issued successfully by:
%s\n",BOOK[j].Studdet[n].name);
        BOOK[j].status=2;
        n++;
    }
}
}
}
void return_books()
{
    char name[20];int r;
    printf("Please enter your name: ");
    scanf("%s",name);
    for(int j=0;j<=i;j++)
    {
        for(int k=0;k<=n;k++)
        {
            r=strcmp(name,BOOK[j].Studdet[k].name);
            if(r==0)
            {
                printf("Book details: \nBook Number: %ld",BOOK[j].book_no);
                printf("\nBook Title: %s",BOOK[j].book_title);
                printf("\nAuthor: %s",BOOK[j].author);
            }
        }
    }
}

```

```

        printf("\nPublished by: \nName: %s",BOOK[j].Studdet[k].name);
        printf("\nAddress: %s",BOOK[j].Studdet[k].address);
        printf("\nPhone: %ld",BOOK[j].Studdet[k].phone);
        printf("\nThis book is returned successfully!");
        BOOK[j].status=1;
        break;
    }
}
}
}

```

```

int main()
{
    start:
    Choice=operation();
    switch(Choice)
    {
        case 1:
            add_book();
            break;
        case 2:
            search();
            break;
        case 3:
            remove_outdated_books();
            break;
        case 4:
            Checkout_books();
            break;
        case 5:
            return_books();
            break;
        case 6:
            goto end;
            break;
        default;;
    }
    goto start;

    end:
    printf("THANKS FOR VISITING,!!");
    return 0;
}

```

}

# OUTPUT

WELCOME TO ANSPRIN LIBRARY!

---

## MENU

---

PRESS 1.TO ADD NEW BOOKS

PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT

PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)

PRESS 4.TO CHECKOUT BOOKS

PRESS 5.TO RETURN BOOKS

PRESS 6.TO EXIT

---

Enter Your Choice: 1

Enter the following details:

Book Number: 100

Book Title: PPS

Author: DIVYANSHU

Publisher: MR. BHASKAR

Year of Publication: 2020

Subject: PROGRAMMING  
Available!!!

WELCOME TO ANSPRIN LIBRARY!

---

### MENU

---

PRESS 1.TO ADD NEW BOOKS  
PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT  
PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)  
PRESS 4.TO CHECKOUT BOOKS  
PRESS 5.TO RETURN BOOKS  
PRESS 6.TO EXIT

---

Enter Your Choice: 1  
Enter the following details:  
Book Number: 101  
Book Title: PYTHON  
Author: DIVYANH SHU  
Publisher: MR.BHASKAR  
Year of Publication: 1900 2001  
Subject: PROGRAMMING  
Available!!!

WELCOME TO ANSPRIN LIBRARY!

---

### MENU

---

PRESS 1.TO ADD NEW BOOKS  
PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT  
PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)  
PRESS 4.TO CHECKOUT BOOKS  
PRESS 5.TO RETURN BOOKS  
PRESS 6.TO EXIT

---

Enter Your Choice: 2  
Search the library by :  
1 = Book number

2 = Author

3 = Title

4 = Subject

5 = Keywords

1

Enter the book number: 100

Deetails:

Book Number: 100

Book Title: PPS

Author: DIVYANSHU

Publisher: MR. BHASKAR

Year of Publiaction: 2020

Subject: PROGRAMMING

Available!!!

WELCOME TO ANSPRIN LIBRARY!

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## MENU

---

PRESS 1.TO ADD NEW BOOKS

PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT

PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)

PRESS 4.TO CHECKOUT BOOKS

PRESS 5.TO RETURN BOOKS

PRESS 6.TO EXIT

---

Enter Your Choice: 2

Search the library by :

1 = Book number

2 = Author

3 = Title

4 = Subject

5 = Keywords

3

Please enter the Book Title: PPS

WELCOME TO ANSPRIN LIBRARY!

---

## MENU

---

PRESS 1.TO ADD NEW BOOKS  
PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT  
PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)  
PRESS 4.TO CHECKOUT BOOKS  
PRESS 5.TO RETURN BOOKS  
PRESS 6.TO EXIT

---

Enter Your Choice: 3

Current year: 2020

The Book PYTHON j= 1 is outdated.

WELCOME TO ANSPRIN LIBRARY!

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## MENU

---

PRESS 1.TO ADD NEW BOOKS  
PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT  
PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)  
PRESS 4.TO CHECKOUT BOOKS  
PRESS 5.TO RETURN BOOKS  
PRESS 6.TO EXIT

---

Enter Your Choice: 4

Please enter the Book Number: 100

Please enter the following:

Name: DIVYANSHU BHASKAR

Address: SRM KTR

Phone: 1234567890

Checkout details:

Date: 3

Month: 5

Year: 2020

Return details:

Date: 3

Month: 6

Year: 2020

Book issued successfully by: DIVYANSHU BHASKAR

## WELCOME TO ANSPRIN LIBRARY!

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### MENU

---

PRESS 1.TO ADD NEW BOOKS  
PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT  
PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)  
PRESS 4.TO CHECKOUT BOOKS  
PRESS 5.TO RETURN BOOKS  
PRESS 6.TO EXIT

---

Enter Your Choice: 5

Please enter your name: DIVYANSHU BHASKAR

WELCOME TO ANSPRIN LIBRARY!

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### MENU

---

PRESS 1.TO ADD NEW BOOKS  
PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT  
PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)  
PRESS 4.TO CHECKOUT BOOKS  
PRESS 5.TO RETURN BOOKS  
PRESS 6.TO EXIT

---

Enter Your Choice: Please enter your name:

WELCOME TO

ANSPRIN LIBRARY!

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### MENU

---

PRESS 1.TO ADD NEW BOOKS  
PRESS 2.TO SEARCH THE LIBRARY BY BOOK NUMBER, AUTHOR, TITLE,  
SUBJECT  
PRESS 3.TO REMOVE OUTDATED BOOKS (ALL BOOKS OLDER THAN 15  
YEARS)  
PRESS 4.TO CHECKOUT BOOKS



PRESS 5.TO RETURN BOOKS

PRESS 6.TO EXIT

---

Enter Your Choice: 6

THANKS FOR VISITING,!!