TEAM-13

PROBLEM   SOLVING

WITH

PROGRAMMING

GUIDE:-DR.P.PRAVEEN

B.TECH 1 YEAR 2 SEMESTER

PROJECT TITLE:-BOOK DATA MANAGING SOFTWARE

TEAM NO.13 (SEC-A2)

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PROGRAM SUBMITTED ON:-

PROJECT REMARKS:-

FACULITY SIGNATURE:-

ABSTRACT:

As the number of books grows in one's book collection, it would be convenient to have a software utility to manage them. In this project, we propose a software system called eLibrary to manage personal book collections. eLibrary is a software application running on Microsoft® Windows platforms. It reduces the workload of management as most of the manual work done is reduced

PROBLEM STATEMENT:

Develop a C Application to store details of the book reservation in terms of (Number of pages, Cost ,Book Name ,Author name). Store the data in a structure. Allocate memory for the structure by using DYNAMIC MEMORY MANAGEMENT FUNCTIONS.

Provide the functionality for below mentioned:

1. Read 'n' books details dynamically.

2. Sort 'n' books' details according to:

- **Book names**
- **Number of pages**
- **Author name**
- **Prize of book**
- **Reviews**

3.Search 'n' books details according to:

4.print n books details.

❖ MODULES:

In this application all variables and structure are declared globally so that these variables and structure members can be accessed throughout the program at any function call. We can choose any function by using function calls which are declared in switch-case. In order to repeat the loop control statement (do-while) is used with condition. The memory allocation will be done in this program dynamically. The application asks the person who runs the program that how many books data he/she want to store.

In this application four modules are used.

1.Read/Input

In this module the application asks the person who runs the program to enter n books details. To give n books details for loop is used.

2. Sorting

In this module sorting of data is done according to the chosen wise. In this module there is a sub menu which asks to select the sorting wise by using switch case. The sorting sub menu will be like press 1 to sort by book name wise press 2 to sort by prize wise press 3 to sort author name wise press 4 to sort by reviews wise press

5 to sort by pages wise . In this module we used another control statement (do while) so that the application asks whether to continue sorting.

3.Searching

In this module searching of data is done according to the chosen wise. In this module there is a sub menu which asks to select the sorting wise by using switch case. The sorting sub menu will be like press 1 to search by book name wise press 2 to search by prize wise press 3 to search author name wise press 4 to search by reviews wise press 5 to search pages wise. In this module we used another control statement (do while) so that the application asks whether to continue searching.

4. Print

In this module all the stored details of n books will be displayed on to the screen. In this module printf function and for loop are used.

KNOWLEDGE REQUIRED TO DEVELOP THIS APPLICATION

- ➢ Control Statements (if, if-else, switch)
- ➢ Loop Statements(do while, for)

    Arrays (1-

    arrays)
- ➢ Strings (Strings and Table of strings) and its

    functions
- ➢ (strcpy, strcmp)
- ➢ Functions (Any type of user defined

    functions)
- ➢ Structure (structures and nested structures)
- ➢ Pointers (pointer to strings and pointers to

    structures)
- ➢ Dynamic Memory Allocation

    (malloc/calloc/realloc)

CODE:-

```c
#include<stdio.h>

#include<string.h>

#include<stdlib.h>

//structure definition

struct res_list

{

 char b_name[30];

 char price[5];

 char a_name[50];

 char reviews[50];

 char pages[50];

};

//function prototype

void read(void);

void sort(void);

void search(void);

void print(void);


+void sort_name();

void sort_price();
```

```c
void sort_aname();

void sort_reviews();

void sort_pages();

void search_name();

void search_price();

void search_aname();

void search_reviews();

void search_pages();

//global variables

char
temp[50],sn[50],sag[50],sa[30],sb[30],sd[30],st[30],sbs[50],sds[50];

int ch,i,j,p1,x,n;

struct res_list *pas,*ptr;

//function definitions

void read(void)

{

printf("\n enter details of books");

for(i=0;i<n;i++)

{

 printf("\n enter details of book %d",i+1);

 printf("\n enter the name:");

 scanf("%s",pas->b_name);
```

```c
printf("\n enter the price:");

scanf("%s",pas->price);

printf("\n enter the author name:");

scanf("%s",pas->a_name);

printf("\n enter the reviews :");

scanf("%s",pas->reviews);

printf("\n enter the no of pages :");

scanf("%s",pas->pages);

pas++;

}

}

void sort()

{

printf("\n MENU FOR SORTING:\n 1.name WISE\n 2.price WISE\n
3.author name WISE\n 4.reviews WISE\n 5.no of pages WISE\n");

printf("\n enter option:");

scanf("%d",&ch);

//switch Case

switch(ch)

{

case 1:sort_name();//function call

break;
```

```c
case 2:sort_price();//function call

break;

case 3:sort_aname();//function call

break;

case 4:sort_reviews();//function call

break;

case 5:sort_pages();//function call

break;

default: printf("\n sorry you entered wrong option try again");

}

}

void sort_name()

{

pas=ptr;

char str[10][50];

int y;

for(i=0;i<n;i++)

{

strcpy(str[i],pas->b_name);

pas++;

}

for(i=0;i<n;i++)
```

```c
{
for(j=i+1;j<n;j++)
{
y=strcmp(str[i],str[j]);
if(y==1)
{
strcpy(temp,str[i]);
strcpy(str[i],str[j]);
strcpy(str[j],temp);
}
}
}
printf("\n sorted list:\n");
for(i=0;i<n;i++)
{
puts(str[i]);
}
}
void sort_price()
{
pas=ptr;
char str[3][50];
```

```c
int y;
for(i=0;i<n;i++)
{
strcpy(str[i],pas->price);
pas++;
}
for(i=0;i<n;i++)
{
for(j=i+1;j<n;j++)
{
y=strcmp(str[i],str[j]);
if(y==1)
{
strcpy(temp,str[i]);
strcpy(str[i],str[j]);
strcpy(str[j],temp);
}
}
}
printf("\n sorted list:\n");
for(i=0;i<n;i++)
{
```

```c
 puts(str[i]);

 }

}

void sort_aname()

{

 pas=ptr;

 char str[10][50];

 int y;

 for(i=0;i<n;i++)

 {

 strcpy(str[i],pas->a_name);

 pas++;

 }

 for(i=0;i<n;i++)

 {

 for(j=i+1;j<=n;j++)

 {

 y=strcmp(str[i],str[j]);

 if(y==0)

 {

 strcpy(temp,str[i]);

 strcpy(str[i],str[j]);
```

```c
strcpy(str[j],temp);

}

}

}
printf("\n sorted list:\n");
for(i=0;i<n;i++)
{
puts(str[i]);
}
}
void sort_reviews()
{
pas=ptr;
char str[10][50];
int y;
for(i=0;i<n;i++)
{
strcpy(str[i],pas->reviews);
pas++;
}
for(i=0;i<n;i++)
{
```

```c
for(j=i+1;j<=n;j++)
{
y=strcmp(str[i],str[j]);
if(y==0)
{
strcpy(temp,str[i]);
strcpy(str[i],str[j]);
strcpy(str[j],temp);
}
}
}
printf("\n sorted list:\n");
for(i=0;i<n;i++)
{
puts(str[i]);
}

}
void sort_pages()
{
 pas=ptr;
 char str[10][50];
```

```c
int y;
for(i=0;i<=n;i++)
{
strcpy(str[i],pas->pages);
pas++;
}
for(i=0;i<=n;i++)
{
for(j=i+1;j<=n;j++)
{
y=strcmp(str[i],str[j]);
if(y==0)
{
strcpy(temp,str[i]);
strcpy(str[i],str[j]);
strcpy(str[j],temp);
}
}
}
printf("\n sorted list:\n");
for(i=0;i<n;i++)
{
```

```c
 puts(str[i]);

 }

}

void search()

{

 printf("\n MENU FOR SEARCHING:\n 1.name WISE\n 2.price WISE\n 3.author name WISE\n 4.reviews WISE\n 5.no of pages WISE");

 printf("\n enter option:");

 scanf("%d",&ch);

 //switch case

 switch(ch)

 {

case 1:search_name();//function call

 break;

case 2:search_price();//function call

 break;

case 3:search_aname;//function call

 break;

case 4:search_reviews();//function call

 break;

case 5:search_pages();//function call

 break;
```

```c
default:printf("\n sorry you entered wrong option try again");

}

}

void search_name()

{

int cv=0;

pas=ptr;

printf("\n enter book name:");

scanf("%s",sn);

for(i=0;i<n;i++)

{

x=strcmp(sn,pas->b_name);

if(x==0)

{

printf("\n name: %s",pas->b_name);

printf("\n price: %s",pas->price);

printf("\n author name: %s",pas->a_name);

printf("\n reviews : %s",pas->reviews);

printf("\n no of pages: %s",pas->pages);

cv++;

}

else
```

```c
{
printf("\n\n the book with above detais is not found \n ");
}
 pas++;
 }
}
void search_price()
{
 int cv=0;
 pas=ptr;
 printf("\n enter a price:");
 scanf("%s",sag);
 for(i=0;i<n;i++)
 {
 x=strcmp(sag,pas->price);
 if(x==0)
 {
 printf("\n name: %s",pas->b_name);
 printf("\n price: %s",pas->price);
 printf("\n author name: %s",pas->a_name);
 printf("\n reviews : %s",pas->reviews);
 printf("\n no of pages: %s",pas->pages);
```

```
cv++;

}

else

{

printf("\n\n the book with above detais is not found \n ");

}

pas++;

}

}
void search_aname()

{

int cv=0;

pas=ptr;

printf("\n enter the author name:");

scanf("%s",sa);

for(i=0;i<n;i++)

{

x=strcmp(sa,pas->a_name);

if(x==0)

{

printf("\n name: %s",pas->b_name);

printf("\n price: %s",pas->price);
```

```c
printf("\n author name: %s",pas->a_name);

printf("\n reviews : %s",pas->reviews);

printf("\n pages: %s",pas->pages);

cv++;

}

else

{

printf("\n\n the book with above detais is not found \n ");

}

pas++;

}

}

void search_reviews()

{

int cv=0;

pas=ptr;

printf("\n enter the reviews:");

scanf("%s",sb);

for(i=0;i<n;i++)

{

x=strcmp(sb,pas->reviews);

if(x==0)
```

```c
{
printf("\n name: %s",pas->b_name);

printf("\n price: %s",pas->price);

printf("\n author name: %s",pas->a_name);

printf("\n reviews : %s",pas->reviews);

printf("\n no of pages: %s",pas->pages);

cv++;

}

else

{

printf("\n\n the book with above detais is not found \n ");

}

pas++;

}

}

void search_pages()

{

int cv=0;

pas=ptr;

printf("\n enter the no of pages :");

scanf("%s",sd);

for(i=0;i<n;i++)
```

```
{
x=strcmp(sd,pas->pages);
if(x==0)
{
printf("\n name: %s",pas->b_name);
printf("\n price: %s",pas->price);
printf("\n author name: %s",pas->a_name);
printf("\n reviews : %s",pas->reviews);
printf("\n no of pages: %s",pas->pages);
cv++;
}
else
{
printf("\n\n the book with above detais is not found \n ");
}
pas++;
}
}
void print()
{
pas=ptr;
for(i=0;i<n;i++)
```

```c
{
printf("\n Details of books %d are:",i+1);

printf("\n name: %s",pas->b_name);

printf("\n price: %s",pas->price);

printf("\n author name: %s",pas->a_name);

printf("\n reviews: %s",pas->reviews);

printf("\n no of pages: %s",pas->pages);

 pas++;

}
}
#include<stdio.h>

#include<string.h>

#include<stdlib.h>

//#include "reservation.h"

//global variables

char a;

//main starts here

int main()

{
//menu repetition

printf("\n enter the no. of book detais you want to store:");

scanf("%d",&n);
```

```c
ptr=(struct res_list *)malloc(n*sizeof(struct res_list));

pas=ptr;

do

{

system("cls");

printf("\n MENU:\n 1.READ DATA\n 2.SORTING\n 3.SEARCHING\n 4.PRINT DATA");

printf("\n enter option:");

scanf("%d",&ch);

//switch case

switch(ch)

{

case 1:read();//function call

break;

case 2:sort();//function call

break;

case 3:search();//function call

break;

case 4:print();//function call

break;

}

printf("\n enter y or Y to continue,enter n or N to exit:");
```
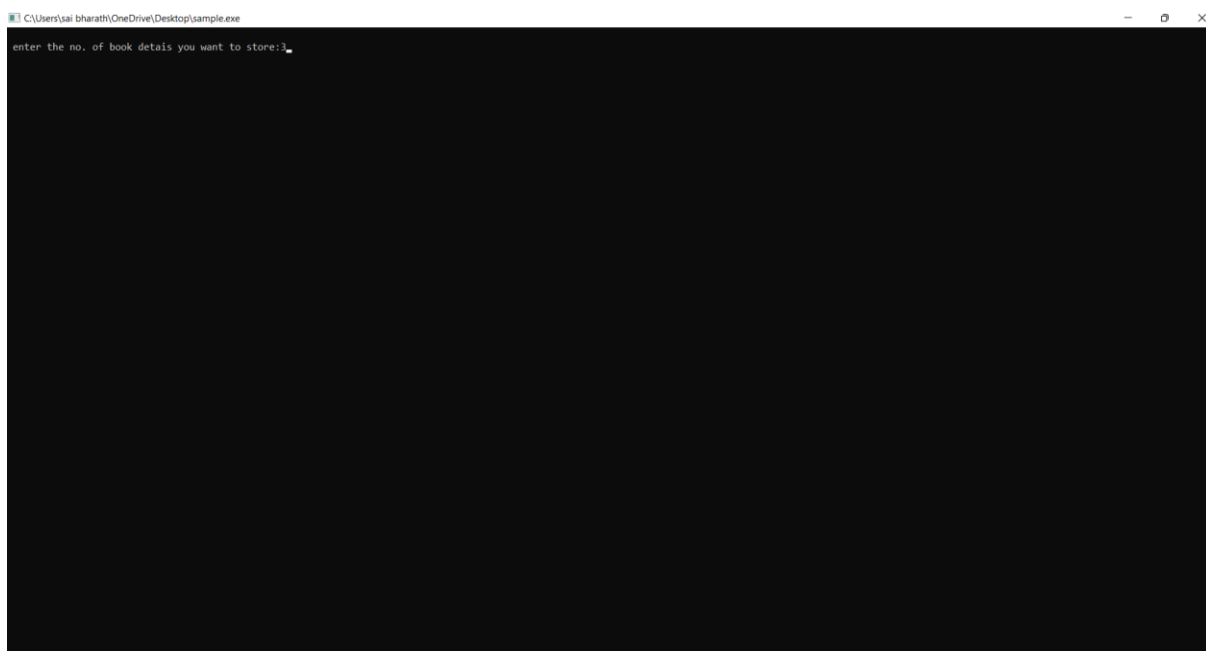
```
scanf(" %c",&a);

}

while(a=='y'||a=='Y');

}
```

TEST RESULTS:

C:\Users\sai bharath\OneDrive\Desktop\sample.exe

```
MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:1

enter details of books
enter details of book 1
enter the name:balaguruswamy

enter the price:250

enter the author name:balanandan

enter the reviews :4

enter the no of pages :370

enter details of book 2
enter the name:rothni

enter the price:320

enter the author name:alaxcermony

enter the reviews :4.5

enter the no of pages :357

enter details of book 3
enter the name:vimperop

enter the price:34

enter the author name:belgibith

enter the reviews :3

enter the no of pages :63

enter y or Y to continue,enter n or N to exit:
```

C:\Users\sai bharath\OneDrive\Desktop\sample.exe

```
MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:1

enter details of books
enter details of book 1
enter the name:balaguruswamy

enter the price:250

enter the author name:balanandan

enter the reviews :4

enter the no of pages :370

enter details of book 2
enter the name:rothni

enter the price:320

enter the author name:alaxcermony

enter the reviews :4.5

enter the no of pages :357

enter details of book 3
enter the name:vimperop

enter the price:34

enter the author name:belgibith

enter the reviews :3

enter the no of pages :63

enter y or Y to continue,enter n or N to exit:y
```

```
C:\Users\sai bharath\OneDrive\Desktop\sample.exe                                    —  □  ×

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:2

MENU FOR SORTING:
1.name WISE
2.price WISE
3.author name WISE
4.reviews WISE
5.no of pages WISE

enter option:3

sorted list:
balanandan
alaxcermony
belgibith

enter y or Y to continue,enter n or N to exit:y
```

```
C:\Users\sai bharath\OneDrive\Desktop\sample.exe                                    —  □  ×

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:2

MENU FOR SORTING:
1.name WISE
2.price WISE
3.author name WISE
4.reviews WISE
5.no of pages WISE

enter option:4

sorted list:
4
4.5
3

enter y or Y to continue,enter n or N to exit:
```

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:2

MENU FOR SORTING:
1.name WISE
2.price WISE
3.author name WISE
4.reviews WISE
5.no of pages WISE

enter option:5

sorted list:
370
357
63

enter y or Y to continue,enter n or N to exit:y

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:3

MENU FOR SEARCHING:
1.name WISE
2.price WISE
3.author name WISE
4.reviews WISE
5.no of pages WISE
enter option:1

enter book name:balaguruswamy

name: balaguruswamy
price: 250
author name: balanandan
reviews : 4
no of pages: 370

the book with above detais is not found

the book with above detais is not found

enter y or Y to continue,enter n or N to exit:y

```
C:\Users\sai bharath\OneDrive\Desktop\sample.exe

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:3

MENU FOR SEARCHING:
1.name WISE
2.price WISE
3.author name WISE
4.reviews WISE
5.no of pages WISE
enter option:2

enter a price:250

name: balaguruswamy
price: 250
author name: balanandan
reviews : 4
no of pages: 370

the book with above detais is not found


the book with above detais is not found

enter y or Y to continue,enter n or N to exit:y
```



```
C:\Users\sai bharath\OneDrive\Desktop\sample.exe

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:3

MENU FOR SEARCHING:
1.name WISE
2.price WISE
3.author name WISE
4.reviews WISE
5.no of pages WISE
enter option:4

enter the reviews:4.5

the book with above detais is not found

name: rothni
price: 320
author name: alaxcermony
reviews : 4.5
no of pages: 357

the book with above detais is not found

enter y or Y to continue,enter n or N to exit:y
```

```
C:\Users\sai bharath\OneDrive\Desktop\sample.exe

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:3

MENU FOR SEARCHING:
1.name WISE
2.price WISE
3.author name WISE
4.reviews WISE
5.no of pages WISE
enter option:5

enter the no of pages :357


the book with above detais is not found

name: rothni
price: 320
author name: alaxcermony
reviews : 4.5
no of pages: 357

the book with above detais is not found

enter y or Y to continue,enter n or N to exit:y
```

```
C:\Users\sai bharath\OneDrive\Desktop\sample.exe

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:4

Details of books 1 are:
name: balaguruswamy
price: 250
author name: balanandan
reviews: 4
no of pages: 370
Details of books 2 are:
name: rothni
price: 320
author name: alaxcermony
reviews: 4.5
no of pages: 357
Details of books 3 are:
name: vimperop
price: 34
author name: belgibith
reviews: 3
no of pages: 63
enter y or Y to continue,enter n or N to exit:
```

```
C:\Users\sai bharath\OneDrive\Desktop\sample.exe                                                    —   □   ×

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:4

Details of books 1 are:
name: balaguruswamy
price: 250
author name: balanandan
reviews: 4
no of pages: 370
Details of books 2 are:
name: rothni
price: 320
author name: alaxcermony
reviews: 4.5
no of pages: 357
Details of books 3 are:
name: vimperop
price: 34
author name: belgibith
reviews: 3
no of pages: 63
enter y or Y to continue,enter n or N to exit:n
```

```
C:\Users\sai bharath\OneDrive\Desktop\sample.exe                                                    —   □   ×

MENU:
1.READ DATA
2.SORTING
3.SEARCHING
4.PRINT DATA
enter option:4

Details of books 1 are:
name: balaguruswamy
price: 250
author name: balanandan
reviews: 4
no of pages: 370
Details of books 2 are:
name: rothni
price: 320
author name: alaxcermony
reviews: 4.5
no of pages: 357
Details of books 3 are:
name: vimperop
price: 34
author name: belgibith
reviews: 3
no of pages: 63
enter y or Y to continue,enter n or N to exit:n

--------------------------------
Process exited after 374.3 seconds with return value 110
Press any key to continue . . .
```

Conclusion:

The mini-project "Library management system project in C" is a console application using the C programming language. This software allows storing the details of all the data related to library. The implementation of the system will reduce data entry time and provide readily calculated reports.