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M.SC MATHEMATICS

Library Management System

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Library Management System

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1 INTRODUCTION

A Library management system is a software that uses to maintain the record of the library. It contains work like the number of available books in the library, the number of books are issued or returning or renewing a book, etc. Library Management Systems is software that helps to maintain a database that is useful to enter new books record books borrowed by the members, with the respective submission dates. Moreover, it also reduces the manual record burden of the librarian.

1.1 Importance

1. A library management system is the most proficient and easy to use system for managing all the processes involved in a Library in the most effective ways.
2. This system will reduce all the manual work and the whole process can be managed just through single clicks and edits.
3. There will be no headache and doubtfulness of storing the data securely and searching the records of any individual afterward.
4. Only, one person is required to take care of the whole system, without any chances of mistakes.

1.2 Advantage

1. It reduces the manual paperwork through it and gives proper information of books has been recorded automatically.
2. Librarian can update the information of books and manage availability and arrival record of the books.
3. It saves human efforts and time.

2 FUNCTIONS

1. Main Menu

- (a) All Books
- (b) Search all Books
- (c) Display all Books
- (d) Delete a Book
- (e) Update Book Information
- (f) Exit

2. Display Function

- (a) List the title of specified book
- (b) List all books of given author
- (c) List by Category
- (d) List by Publication Company
- (e) List by Publication Year

3. Search Function

- (a) Search by name
- (b) Search by Id
- (c) Search by author name
- (d) Search by Category
- (e) Search by Publication Company
- (f) Search by Publication Year

4. Modify Function

- (a) Modify by name
- (b) Modify by Id
- (c) Modify by author name
- (d) Modify by Category

- (e) Modify by Publication Company
- (f) Modify by Publication Year

5. Delete Function

- (a) Delete by name
- (b) Delete by Id
- (c) Delete by author name
- (d) Delete by Category
- (e) Delete by Publication Company
- (f) Delete by Publication Year

3 HEADER FILES

1	stdio.h Input/Output functions
2	conio.h Console Input/Output functions
3	fstream.h which means it can create files, write information to files, and read information from files
4	string.h String functions
5	iostream.h input/output library
6	omanip.h Input/output library of the C++ Standard Library.

4 CODE

```
1 #include<iostream.h>
2 #include<iomanip.h>
3 #include<fstream.h>
4 #include<conio.h>
5 #include<string.h>
6 #include<stdio.h>
7 using namespace std; //////////////////////////////////////
   //function prototypes////////////////////////////////
   ////////////////////////////////// void gotoxy(short ,
   short );
8 void display(); //display function void add(); //add function
9 void search(); //search function void sort(); //sort function
10 void del(); //delete function void modify(); //modify function
   void sbyname(); //search by name void sbyid(); //search by id
11 void sbycategory(); //search by category
12 void mbypubcom(); void mbypubyear(); void mbyauthor();
13 //modify by publication company //modify by publication year
14 //modify by author
15 //search by publication company //search by publishing year
16 void sbypubcom();
17 void sbypubyear();
18 void sbyauthor();
19 void dbyname();
20 void dbyid(); //delete by id
21 void dbycategory(); //delete by category
22 void dbypubcom(); void dbypubyear(); void dbyauthor(); void
   mbyname(); void mbyid();
23 //delete by publication company //delete by publication year
24 //delete by author //modify by name
25 //search by author //delete by name
26 //modify by id
27 void mbycategory(); //modify by cateory
28 struct book //structure of name book
29 {
30 int bookid; //////////////////////////////////
31 char bookname[60];
32 char authorname[40];
33 char bookcategory[20];
34 char bookpubcom[30];
35 char bookpubmonth[10];
36 int bookpubyear; //////////////////////////////////
37 };
```

```
38 ////////////////////////////////////////////////////////////////////main
39 ////////////////////////////////////////////////////////////////////
39 book books[1000]; //array of structures
40 int n=0; //global variable for number of records
41 ////////////////////////////////////////////////////////////////////
42 //Members of structure//
43 ////////////////////////////////////////////////////////////////////
44 int main()
45 {
46 char ch1;
47 while (1)
48 {
49 system("cls");
50 cout << setw( 25 ) << "_____ " << endl << setw( 25 ) << "
    | MAIN MENU | " << endl
51 << setw( 25 ) << "_____ " << endl << endl
52 << setw( 52 )
53 << "Please choose one of the options below: "
54 << endl << setw( 71 )
55 << "
    _____
    " << endl << endl
56 << setw( << setw( << setw(
57 << setw( << setw( << setw(
58 25 ) << "( A ) Add Book" << endl << endl
59 31 ) << "( O ) Sort all Books" << endl << endl 33 ) << "( S )
    Search all Books" << endl << endl
60 33 ) << "( D ) Diplay all Books" << endl << endl
61 30 ) << "( T ) Delete a Book" << endl << endl
62 40 ) << "( M ) Update Book Information" << endl << endl
63 << setw( 21 ) << "( Q ) Quit" << endl << endl
64 <<setw( 32 ) << "Enter Option gotoxy(30,21);
65 [ ]" << endl << endl;
66 switch(getche())
67 {
68 case 'a':
69 case 'A':add();break;
70 case 'd':
71 case 'D': display();break;
72 case 'S':
73 case 's':search();break;
74 case 't':
75 case 'T':del();break;
76 case 'O':
```

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```

99 }
100 cout<<"Press enter to goto main manu....."; getch();
101 }
102 ////////////////////////////////////////Add
103 //////////////////////////////////////// void
104 add(void)
105 {
106     char ch; char id1[6], year[4];
107     do {
108         system("cls");
109         cout<<endl;
110         cout<<"In ADD function\n"; cout<<"Enter Book Name: ";
111         gets(books[n].bookname); //cin.getline(emp[n].name,40); //cin.
112             ignore(40,'\n'); cout<<"Enter Book ID: "; gets(id1); books[n]
113             ].bookid=atoi(id1); //cin.ignore();
114         cout<<"Enter Author Name: "; gets(books[n].authorname);
115         cout<<"Enter Book Category: "; gets(books[n].bookcategory);
116         cout<<"Enter Publication Company Name: "; gets(books[n].
117             bookpubcom);
118         cout<<"Enter Publication Month: "; gets(books[n].bookpubmonth);
119         cout<<"Enter Publication Year: "; gets(year); books[n].
120             bookpubyear=atoi(year); n++;
121         cout<<"Do you want to add more books? [y/n]"; ch=getch();
122     }
123     while(ch!= 'n'&& ch!= 'N');
124 }
125 //////////////////////////////////Search//////////////////////////////// void search(void)
126 {
127     system("cls");
128     cout <<setw(30)<< "In Search Function"<<endl
129     << setw( 52 )<< "Please choose one of the options below: "
130     << endl << setw( 71 )
131     << "
132     " << endl << endl
133     << setw( << setw( << setw( << setw( << setw( << setw(
134     31 ) << "( N ) Search by name" << endl << endl
135     29 ) << "( I ) Search by Id" << endl << endl
136     38 ) << "( T ) Search by author name" << endl << endl
137     35 ) << "( C ) Search by Category" << endl << endl
138     46 ) << "( P ) Search by Publication Company" << endl << endl 43
139         ) << "( Y ) Search by Publication Year" << endl << endl
140     switch(getche())
141     {

```

```
134 case 'n':
135 <<setw( 32 ) << "Enter Option gotoxy(30,16);
136 [ ]" << endl << endl;
137 case 'N':sbyname();break; case 'i':
138
139 case 'I': sbyid();break;
140 case 't':
141 case 'T': sbyauthor();break;
142 case 'c':
143 case 'C':sbycategory();break;
144 case 'p':
145 case 'P':sbypubcom();break;
146 case 'y':
147 case 'Y':sbypubyear();break;
148 default:
149 again.....");
150 getch();
151 search();
152 getch(); }
153 }
154 //Search by name////////
155 void sbyname(void)
156 {
157 char name[60];
158 int loc,found=0;
159 system("cls");
160 cout<<endl;
161 cout<<"Searching by name of book\n";
162 cout<<"Enter the name of book you want to search: "; gets(name);
163 for(int i = 0;i<n;i++)
164 {
165 if(strcmp(books[i].bookname,name)==0)
166 {
167 loc=i;
168 found = 1;
169 cout<< "Record Found!"<<endl;
170 cout<<" ----- "<<
171
172     ----- "<<
173     ----- "<<
174     ----- "<<
175     ----- "<<
176     ----- "<<endl;
177 cout<<setw(10)<<"\Book ID\ "<<setw(50)<<"\Book Name\ "<<setw
(30)<<"\Author
```

```

172 Name\ " "<<setw(30)<<"\ "Category\ " "<<setw(30)<<"\ "Publication\ " "<<
    setw(30)<<"\ "Month of Publication\ " "<<setw(30)<<"\ "Year of
    Publication\ " "<<endl;
173 cout<<" ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<endl;
174 cout<<setw(10)<<books[loc].bookid<<setw(50)<<books[loc].bookname
    <<setw(30)<<books[loc].authorname<<setw(30)<<books[loc].
    bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
    books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
    endl;
175 cout<<" ----- "<<"
    ----- "<<"
    -----
176 puts("\n\n \t\tSelect only from the given menu.....\n\t\tPress
    enter to select
177
178 ----- "<<" ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<endl;
179 } }
180 if(found == 0)
181 cout<<"Record not Found"<<endl;
182 cout<<"Press enter to goto main menu.....";
183 getch(); }
184 //Search by author////////
185 void sbyauthor(void)
186 {
187 char author[60];
188 int loc,found=0;
189 system("cls");
190 cout<<endl;
191 cout<<"Searching by author of book\n";
192 cout<<"Enter the author of book you want to search: "; gets(
    author);
193 for(int i = 0;i<n;i++)
194 {
195 if(strcmp(books[i].authorname,author)==0)
196 {
197 loc=i;
198 found = 1;

```

```

199 cout<< "Record Found!"<<endl;
200 cout<<" ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<endl;
201 cout<<setw(10)<<"\"Book ID\" "<<setw(50)<<"\"Book Name\" "<<setw
    (30)<<"\" Author
202 Name\" "<<setw(30)<<"\" Category\" "<<setw(30)<<"\" Publication\" "<<
    setw(30)<<"\" Month of Publication\" "<<setw(30)<<"\" Year of
    Publication\" "<<endl;
203 cout<<" ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<endl;
204 cout<<setw(10)<<books[loc].bookid<<setw(50)<<books[loc].bookname
    <<setw(30)<<books[loc].authorname<<setw(30)<<books[loc].
    bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
    books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
    endl;
205 cout<<" ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<"
    ----- "<<endl;
206 } }
207 if(found == 0)
208 cout<<"Record not Found"<<endl;
209 cout<<"Press enter to goto main manu.....";
210 getch(); }
211 //Search by id
212 void sbyid(void) {
213
214 char ids[6];
215 int id, loc, found=0;
216 system("cls");
217 cout<<endl;
218 cout<<"Searching by Id of book\n";
219 cout<<"Enter the id of book you want to search: "; gets(ids);
220 id=atoi(ids);
221 for(int i = 0; i<n; i++)

```

```

222 {
223     if (books[i].bookid==id)
224     {
225         loc=i;
226         found = 1;
227         cout<< "Record Found!"<<endl;
228         cout<< "-----" << "
                -----" << "
                -----" << "
                -----" << "
                -----" <<endl;
229         cout<<setw(10)<<" \ Book ID\ " <<setw(50)<<" \ Book Name\ " <<setw
                (30)<<" \ Author
230 Name\ " <<setw(30)<<" \ Category\ " <<setw(30)<<" \ Publication\ " <<
                setw(30)<<" \ Month of Publication\ " <<setw(30)<<" \ Year of
                Publication\ " <<endl;
231         cout<< "-----" << "
                -----" << "
                -----" << "
                -----" << "
                -----" <<endl;
232         cout<<setw(10)<<books[loc].bookid<<setw(50)<<books[loc].bookname
                <<setw(30)<<books[loc].authorname<<setw(30)<<books[loc].
                bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
                books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
                endl;
233         cout<< "-----" << "
                -----" << "
                -----" << "
                -----" << "
                -----" <<endl;
234     } }
235     if(found == 0)
236         cout<<"Record not Found"<<endl;
237         cout<<"Press enter to goto main manu....";
238         getch(); }
239         //Search by category////////
240         void sbcategory(void)
241         {
242             char category[60];
243             int loc, found=0;
244             system("cls");

```

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```

        ----- "<<endl;
290 } }
291 if(found == 0)
292 cout<<"Record not Found"<<endl;
293 cout<<"Press enter to goto main manu.....";
294 getch(); }
295 //Search by Publication Year////////
296 void sbypubyear(void)
297 {
298     char year[4];
299     int yr, loc, found=0;
300     system("cls");
301     cout<<endl;
302     cout<<"Searching by year of publication of book\n";
303     cout<<"Enter the year of publication of book you want to search:
        "; gets(year);
304     yr=atoi(year); for(int i = 0;i<n;i++)
305     {
306         if(books[i].bookpubyear==yr)
307         {
308             loc=i;
309             found = 1;
310             cout<<"Record Found!"<<endl;
311             cout<<"-----"<<"
                ----- "<<"
                ----- "<<"
                ----- "<<"
                ----- "<<"
                ----- "<<endl;
312             cout<<setw(10)<<"\nBook ID\n"<<setw(50)<<"\nBook Name\n"<<setw
                (30)<<"\nAuthor
313             Name\n"<<setw(30)<<"\nCategory\n"<<setw(30)<<"\nPublication\n"<<
                setw(30)<<"\nMonth of Publication\n"<<setw(30)<<"\nYear of
                Publication\n"<<endl;
314             cout<<"-----"<<"
                ----- "<<"
                ----- "<<"
                ----- "<<"
                ----- "<<"
                ----- "<<endl;
315             cout<<setw(10)<<books[loc].bookid<<setw(50)<<books[loc].bookname
                <<setw(30)<<books[loc].authorname<<setw(30)<<books[loc].
                bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
                books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
                endl;

```



```
316 cout<<" _ _ _ _ _ "<<"
    _ _ _ _ _ "<<"
    _ _ _ _ _ "<<"
    _ _ _ _ _ "<<"
    _ _ _ _ _ "<<"
    _ _ _ _ _ "<<endl;
317 } }
318 if(found == 0)
319 cout<<"Record not Found"<<endl;
320 cout<<"Press enter to goto main manu....";
321
322 getch(); }
323 ///////////////sort////////////////////
324 void sort(void)
325 {
326 system("cls");
327 cout <<setw( 27 )<< "In Sort Function"<<endl
328 << setw( 52 )<< "Please choose one of the options below: "
329 << endl << setw( 71 )
330 << "
    "
331 << endl << endl
332 << setw( 40 ) << "( A ) Sort in Ascending Order" << endl << endl
    << setw( 41 ) << "( D ) Sort in Descending Order" << endl <<
    endl
333 <<setw( 32 ) << "Enter Option gotoxy(30,8);
334 // cin>>ch1;
335 switch(getche()) //switch(ch1)
336 {
337 case 'a':
338 default:
339 again....");
340 getch();
341 sort();
342 getch(); }
343 }
344 ///////////Sort in Ascending Order/////////
345 void sortas(void)
346 {
347 system("cls");
348 cout <<setw( 27 )<< "In Sort Function"<<endl
349 << setw( 52 )<< "Please choose one of the options below: "
350 << endl << setw( 71 )
```

```
351 << "
    "
352 case 'A':sortas();break;
353 case 'd':
354 case 'D': sortds();break;
355 [ ]" << endl << endl;
356 puts("\n\n \t\tSelect only from the given menu.....\n\t\tPress
    enter to select
357
358 << endl << endl
359 << setw( << setw( << setw( << setw( << setw( << setw(
360 29 ) << "( N ) Sort by name" << endl << endl
361 27 ) << "( I ) Sort by Id" << endl << endl
362 36 ) << "( T ) Sort by author name" << endl << endl
363 33 ) << "( C ) Sort by Category" << endl << endl
364 44 ) << "( P ) Sort by Publication Company" << endl << endl 41 )
    << "( Y ) Sort by Publication Year" << endl << endl
365 <<setw( 32 ) << "Enter Option gotoxy(30,16);
366 [ ]" << endl << endl;
367 // cin>>ch1;
368 switch(getche()) //switch(ch1)
369 {
370 case 'n':
371 case 'N':sortasname();break;
372 case 'i':
373 case 'I': sortasid();break;
374 case 't':
375 case 'T': sortasauthor();break;
376 case 'c':
377 case 'C':sortascategory();break;
378 case 'p':
379 case 'P':sortaspubcom();break;
380 case 'y':
381 case 'Y':sortaspubyear();break;
382 default:
383 again.....");
384 getch();
385 sortas();
386 getch(); }
387 }
388 //Sort in Desending Order////////
389 void sortds(void)
390 {
391 system("cls");
```

```
392 cout <<setw( 27 )<< "In Sort Function"<<endl
393 << setw( 52 )<< "Please choose one of the options below: "
394 puts("\n\n \t\tSelect only from the given menu.....\n\t\tPress
    enter to select
395
396 << endl << setw( 71 )
397 << "
    " << endl << endl
398 << setw( << setw( << setw( << setw( << setw( << setw(
399 29 ) << "( N ) Sort by name" << endl << endl
400 27 ) << "( I ) Sort by Id" << endl << endl
401 36 ) << "( T ) Sort by author name" << endl << endl
402 33 ) << "( C ) Sort by Category" << endl << endl
403 44 ) << "( P ) Sort by Publication Company" << endl << endl 41 )
    << "( Y ) Sort by Publication Year" << endl << endl
404 <<setw( 32 ) << "Enter Option gotoxy(30,16);
405 [ ]" << endl << endl;
406 // cin>>ch1;
407 switch(getche()) //switch(ch1)
408 {
409 case 'n':
410 case 'N':sortdsname();break;
411 case 'i':
412 case 'I': sortdsid();break;
413 case 't':
414 case 'T': sortdsauthor();break;
415 case 'c':
416 case 'C':sortdscategory();break;
417 case 'p':
418 case 'P':sortdspubcom();break;
419 case 'y':
420 case 'Y':sortdspubyear();break;
421 default:
422 again.....");
423 getch();
424 sortds();
425 getch(); }
426 }
427 //Delete by name////////
428 void dbyname(void)
429 {
430 char name[60];
431 puts("\n\n \t\tSelect only from the given menu.....\n\t\tPress
    enter to select
```

```
432 int loc , found=0;
433
434 system("cls");
435 cout<<endl;
436 cout<<"Deleting by name of book\n";
437 cout<<"Enter the name of book you want to delete: "; gets(name);
438 for(int i = 0;i<n;i++)
439 {
440 if(strcmp(books[i].bookname,name)==0)
441 {
442 loc=i;
443 found = 1;
444 for (i = loc;i<n-1;i++)
445 {
446 books[i]=books[i+1];
447 }
448 n--; }
449 }
450 if(found == 0)
451 cout<<"Record not Found"<<endl; cout<<"Press enter to goto main
    manu....."; getch();
452 }
453 //Delete by author////////
454 void dbyauthor(void)
455 {
456 char author[60];
457 int loc , found=0;
458 system("cls");
459 cout<<endl;
460 cout<<"Deleting by author of book\n";
461 cout<<"Enter the author of book you want to delete: "; gets(
    author);
462 for(int i = 0;i<n;i++)
463 {
464 if(strcmp(books[i].authorname,author)==0)
465 {
466 loc=i;
467 found = 1;
468 for (i = loc;i<n-1;i++)
469 {
470 books[i]=books[i+1];
471 }
472 n--; }
473 }
474 if(found == 0)
```

```
475 cout<<"Record not Found"<<endl; cout<<"Press enter to goto main
    manu....."; getch();
476 }
477 //Delete by id
478 void dbyid(void)
479 {
480     char ids[6];
481     int id, loc, found=0;
482
483     system("cls");
484     cout<<endl;
485     cout<<"Deleting by Id of book\n";
486     cout<<"Enter the id of book you want to delete: "; gets(ids);
487     id=atoi(ids);
488     for(int i = 0; i<n; i++)
489     {
490         if(books[i].bookid==id)
491         {
492             loc=i;
493             found = 1;
494             for (i = loc; i<n-1; i++)
495             {
496                 books[i]=books[i+1];
497             }
498             n--; }
499     }
500     if(found == 0)
501     cout<<"Record not Found"<<endl; cout<<"Press enter to goto main
        manu....."; getch();
502 }
503 //Delete by category
504 void dbycategory(void)
505 {
506     char category[60];
507     int loc, found=0;
508     system("cls");
509     cout<<endl;
510     cout<<"Deleting by category of book\n";
511     cout<<"Enter the category of book you want to delete: "; gets(
        category);
512     for(int i = 0; i<n; i++)
513     {
514         if(strcmp(books[i].bookcategory, category)==0)
515         {
516             loc=i;
```

```
517 found = 1;
518 for (i = loc; i < n-1; i++)
519 {
520 books[i] = books[i+1];
521 }
522 n--; }
523 }
524 if(found == 0)
525 cout<<"Record not Found"<<endl; cout<<"Press enter to goto main
    manu....."; getch();
526 }
527 //Delete by company////////
528 void dbypubcom(void)
529 {
530 char company[60];
531
532 int loc, found=0;
533 system("cls");
534 cout<<endl;
535 cout<<"Deleting by publication company of book\n";
536 cout<<"Enter the publication company of book you want to delete:
    "; gets(company);
537 for(int i = 0; i < n; i++)
538 {
539 if(strcmp(books[i].bookpubcom, company) == 0)
540 {
541 loc=i;
542 found = 1;
543 for (i = loc; i < n-1; i++)
544 {
545 books[i] = books[i+1];
546 }
547 n--; }
548 }
549 if(found == 0)
550 cout<<"Record not Found"<<endl; cout<<"Press enter to goto main
    manu....."; getch();
551 }
552 //Delete by year////////
553 void dbypubyear(void)
554 {
555 char year[4];
556 int yr, loc, found=0;
557 system("cls");
558 cout<<endl;
```

```
559 cout<<"Deleting by year of publication of book\n";
560 cout<<"Enter the year of publication of book you want to delete:
      "; gets(year);
561 yr=atoi(year); for(int i = 0;i<n;i++)
562 {
563     if(books[i].bookpubyear==yr)
564     {
565         loc=i;
566         found = 1;
567         for (i = loc;i<n-1;i++)
568         {
569             books[i]=books[i+1];
570         }
571         n--; }
572     }
573     if(found == 0)
574     cout<<"Record not Found"<<endl; cout<<"Press enter to goto main
          manu....."; getch();
575 } ///////////////Modify//////////////////// void modify(void)
576 {
577     system("cls");
578
579     cout <<setw( 29 )<< "In Modify Function"<<endl
580     << setw( 52 )<< "Please choose one of the options below: "
581     << endl << setw( 71 )
582     << "
          " << endl << endl
583     << setw( << setw( << setw( << setw( << setw( << setw(
584     31 ) << "( N ) Modify by name" << endl << endl
585     29 ) << "( I ) Modify by Id" << endl << endl
586     38 ) << "( T ) Modify by author name" << endl << endl
587     35 ) << "( C ) Modify by Category" << endl << endl
588     46 ) << "( P ) Modify by Publication Company" << endl << endl 43
          ) << "( Y ) Modify by Publication Year" << endl << endl
589     <<setw( 32 ) << "Enter Option gotoxy(30,16);
590     [ ]" << endl << endl;
591     // cin>>ch1;
592     switch(getche()) //switch(ch1)
593     {
594     case 'n':
595     case 'N':mbyname();break;
596     case 'i':
597     case 'I': mbyid();break;
598     case 't':
```

```

599 case 'T': mbyauthor(); break;
600 case 'c':
601 case 'C': mbycategory(); break;
602 case 'p':
603 case 'P': mbypubcom(); break;
604 case 'y':
605 case 'Y': mbypubyear(); break;
606 default:
607     again.....");
608     getch();
609     modify();
610     getch(); }
611 }
612 ///////Modify by name////////
613 puts("\n\n \t\tSelect only from the given menu.....\n\t\tPress
        enter to select
614
615 void mbyname(void)
616 {
617     char name[60];
618     int loc, found=0;
619     system("cls");
620     cout<<endl;
621     cout<<"Modifying by name of book\n";
622     cout<<"Enter the name of book you want to modify: "; gets(name);
623     for(int i = 0; i<n; i++)
624     {
625         if(strcmp(books[i].bookname, name)==0)
626         {
627             loc=i;
628             found = 1;
629             char ch; char id1[6], year[4]; system("cls");
630             cout<<"-----"<<"
                -----<<"
                -----<<"
                -----<<"
                -----<<"
                -----<<endl;
631             cout<<setw(10)<<"\tBook ID\t"<<setw(50)<<"\tBook Name\t"<<setw
                (30)<<"\tAuthor
632             Name\t"<<setw(30)<<"\tCategory\t"<<setw(30)<<"\tPublication\t"<<
                setw(30)<<"\tMonth of Publication\t"<<setw(30)<<"\tYear of
                Publication\t"<<endl;
633             cout<<"-----"<<"
                -----<<"

```



```

        -----" <<
        -----" <<
        -----" <<
        -----" <<
        -----" <<endl;
634 cout<<setw(10)<<books[loc].bookid<<setw(50)<<books[loc].bookname
    <<setw(30)<<books[loc].authorname<<setw(30)<<books[loc].
    bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
    books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
    endl;
635 cout<< "-----" <<
    -----" <<
    -----" <<
    -----" <<
    -----" <<endl;
636 }
637 if(found == 0)
638 cout<<endl;
639 cout<< "In Modify function\n"; cout<<"Enter new Book Name: ";
    gets(books[loc].bookname); //cin.getline(emp[n].name,40); //
    cin.ignore(40, '\n'); cout<<"MODIFIED!"<<endl;
640 cout<<"Record not Found"<<endl; cout<<"Press enter to goto main
    manu....."; getch();
641 }
642 }
643 ///////Modify by author////////
644 void mbyauthor(void)
645 {
646     char author[60];
647     int loc, found=0; system("cls"); cout<<endl;
648
649     cout<<"Modifying by author of book\n";
650     cout<<"Enter the author of book you want to modify: "; gets(
        author);
651     for(int i = 0; i<n; i++)
652     {
653         if(strcmp(books[i].authorname, author)==0)
654         {
655             loc=i;
656             found = 1;
657             char ch; char id1[6], year[4]; system("cls");
658             cout<< "-----" <<
                -----" <<
                -----" <<
                -----" <<

```

```

        ----- "<<"
        ----- "<<"
        ----- "<<endl;"
659 cout<<setw(10)<<"\ Book ID\ " "<<setw(50)<<"\ Book Name\ " "<<setw
    (30)<<"\ Author
660 Name\ " "<<setw(30)<<"\ Category\ " "<<setw(30)<<"\ Publication\ " "<<
    setw(30)<<"\ Month of Publication\ " "<<setw(30)<<"\ Year of
    Publication\ " "<<endl;
661 cout<<" ----- "<<"
        ----- "<<"
        ----- "<<"
        ----- "<<"
        ----- "<<endl;"
662 cout<<setw(10)<<books[loc].bookid<<setw(50)<<books[loc].bookname
    <<setw(30)<<books[loc].authorname<<setw(30)<<books[loc].
    bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
    books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
    endl;
663 cout<<" ----- "<<"
        ----- "<<"
        ----- "<<"
        ----- "<<"
        ----- "<<endl;"
664 } }
665 cout<<endl;
666 cout<<" In Modify function\n"; cout<<"Enter new Author Name: ";
    gets(books[loc].authorname); cout<<"MODIFIED!"<<endl;
667 if(found == 0)
668 cout<<"Record not Found"<<endl;
669 cout<<"Press enter to goto main manu....";
670 getch(); }
671 ///////////////Modify by id/////////
672 void mbyid(void)
673 {
674     char ids[6];
675     int id, loc, found=0;
676     system("cls");
677     cout<<endl;
678     cout<<"Modifying by Id of book\n";
679     cout<<"Enter the id of book you want to modify: "; gets(ids);
680     id=atoi(ids);
681     for(int i = 0; i<n; i++)
682     {
683         if(books[i].bookid==id)

```

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```

705 char category[60];
706 int loc, found=0;
707 system("cls");
708 cout<<endl;
709 cout<<"Modifying by category of book\n";
710 cout<<"Enter the category of book you want to modify: "; gets(
    category);
711 for(int i = 0; i<n; i++)
712 {
713     if(strcmp(books[i].bookcategory, category)==0)
714     {
715         loc=i;
716         found = 1;
717         char ch; char id1[6], year[4]; system("cls");
718         cout<<"-----" <<"
            -----" <<"
            -----"
719
720         -----" <<"-----" <<"
            -----" <<"
            -----" <<"
            -----" <<endl;
721         cout<<setw(10)<<"\ Book ID\ " <<setw(50)<<"\ Book Name\ " <<setw
            (30)<<"\ Author
722         Name\ " <<setw(30)<<"\ Category\ " <<setw(30)<<"\ Publication\ " <<
            setw(30)<<"\ Month of Publication\ " <<setw(30)<<"\ Year of
            Publication\ " <<endl;
723         cout<<"-----" <<"
            -----" <<"
            -----" <<"
            -----" <<"
            -----" <<endl;
724         cout<<setw(10)<<books[loc].bookid<<setw(50)<<books[loc].bookname
            <<setw(30)<<books[loc].authorname<<setw(30)<<books[loc].
            bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
            books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
            endl;
725         cout<<"-----" <<"
            -----" <<"
            -----" <<"
            -----" <<"
            -----" <<endl;
726     } }

```

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```

    bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
    books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
    endl;
756 cout<<"  _ _ _ _ _ " <<"
    _ _ _ _ _ " <<"
    _ _ _ _ _ " <<"
    _ _ _ _ _ " <<"
    _ _ _ _ _ " <<"
    _ _ _ _ _ " <<endl;
757 } }
758 cout<<endl;
759 cout<< "In Modify function\n";
760 cout<<"Enter new Publication Company Name: "; gets(books[loc].
    bookpubcom); cout<<"MODIFIED!"<<endl;
761 if(found == 0)
762 cout<<"Record not Found"<<endl;
763 cout<<"Press enter to goto main manu.... ";
764 getch(); }
765 ///////////////Modify by year////////////////
766 void mbypubyear(void)
767 {
768 char year[4];
769 int yr,loc,found=0;
770 system("cls");
771 cout<<endl;
772 cout<<"Modifying by year of publication of book\n";
773 cout<<"Enter the year of publication of book you want to modify:
    "; gets(year);
774 yr=atoi(year); for(int i = 0;i<n;i++)
775 {
776 if(books[i].bookpubyear==yr)
777 {
778 loc=i;
779 found = 1;
780 char ch;char id1[6],year[4]; system("cls");
781 cout<<"  _ _ _ _ _ " <<"
    _ _ _ _ _ " <<"
    _ _ _ _ _ " <<"
    _ _ _ _ _ " <<"
    _ _ _ _ _ " <<endl;
782 cout<<setw(10)<<"\" Book ID\" " <<setw(50)<<"\" Book Name\" " <<setw
    (30)<<"\" Author
783 Name\" " <<setw(30)<<"\" Category\" " <<setw(30)<<"\" Publication\" " <<
    setw(30)<<"\" Month of Publication\" " <<setw(30)<<"\" Year of

```

```

Publication\ " "<<endl;
784 cout<<" _ _ _ _ _ " <<"
      _ _ _ _ _ " <<"
      _ _ _ _ _ " <<"
      _ _ _ _ _ " <<"
      _ _ _ _ _ " <<"
      _ _ _ _ _ " <<endl;
785 cout<<setw(10)<<books[loc].bookid<<setw(50)<<books[loc].bookname
      <<setw(30)<<books[loc].authorname<<setw(30)<<books[loc].
      bookcategory<<setw(30)<<books[loc].bookpubcom<<setw(30)<<
      books[loc].bookpubmonth<<setw(30)<<books[loc].bookpubyear<<
      endl;
786
787 cout<<" _ _ _ _ _ " <<"
      _ _ _ _ _ " <<"
      _ _ _ _ _ " <<"
      _ _ _ _ _ " <<"
      _ _ _ _ _ " <<endl;
788 } }
789 cout<<endl;
790 cout<<"In Modify function\n"; cout<<"Enter new Publication Year
      : "; gets(year); books[loc].bookpubyear=atoi(year); cout<<"
      MODIFIED!"<<endl;
791 if(found == 0)
792 cout<<"Record not Found"<<endl;
793 cout<<"Press enter to goto main manu....";
794 getch(); }
795 ////////////////////////////////////////gotoxy
      ////////////////////////////////////////
796 void gotoxy(short x, short y)
797 {
798 COORD pos = {x, y}; SetConsoleCursorPosition(GetStdHandle(
      STD_OUTPUT_HANDLE), pos); }

```

5 OUTPUT

MAIN MENU

```
-----
! MAIN MENU !
-----
Please choose one of the options below:
-----
< A > Add Book
< O > Sort all Books
< S > Search all Books
< D > Display all Books
< I > Delete a Book
< M > Update Book Information
< Q > Quit
Enter Option      [ ]
```

ADD FUNCTION

```
In ADD function
Enter Book Name: ABSTRACT ALGEBRA
Enter Book ID: 12WW2
Enter Author Name: NS GOPALKRISHNAN
Enter Book Category: ALGEBRA
Enter Publication Company Name: MANKING
Enter Publication Month: FEB
Enter Publication Year: 1990
Do you want to add more books? [y/n]
```



```
In ADD function
Enter Book Name: STATS
Enter Book ID: 52443
Enter Author Name: UK KAPOOR
Enter Book Category: PROBABILITY
Enter Publication Company Name: LIONS
Enter Publication Month: MARCH
Enter Publication Year: 2000
Do you want to add more books? [y/n]_
```

```
In ADD function
Enter Book Name: LEARNING C
Enter Book ID: 734
Enter Author Name: SL ARORA
Enter Book Category: CODING
Enter Publication Company Name: TIGER
Enter Publication Month: APRIL
Enter Publication Year: 2009
Do you want to add more books? [y/n]
```

```
In Search Function
Please choose one of the options below:
```

```
-----
< N > Search by name
< I > Search by Id
< T > Search by author name
< C > Search by Category
< P > Search by Publication Company
< Y > Search by Publication Year
Enter Option      [_]
```

SEARCH FUNCTION

```
Searching by year of publication of book
Enter the year of publication of book you want to search: 2009
Record Found!

"Book ID"          "Book Name"
"Author Name"      "Publication"
"Month of Publication" "Category"
                    "Year of Publication"

734      LEARNING C
SL ARORA      TIGER
APRIL      CODING      2009

Press enter to goto main manu....._
```

MODIFY FUNCTION

```
In Modify Function
Please choose one of the options below:
-----

< N > Modify by name
< I > Modify by Id
< T > Modify by author name
< C > Modify by Category
< P > Modify by Publication Company
< Y > Modify by Publication Year
Enter Option      [_]
```

VIEW FUNCTION

```
In Search Function
Please choose one of the options below:
-----
```

```
< N > Search by name
< I > Search by Id
< T > Search by author name
< C > Search by Category
< P > Search by Publication Company
< Y > Search by Publication Year
Enter Option      [ ]
```

DELETE FUNCTION

```
In Delete Function
Please choose one of the options below:
-----
```

```
< N > Delete by name
< I > Delete by Id
< T > Delete by author name
< C > Delete by Category
< P > Delete by Publication Company
< Y > Delete by Publication Year
Enter Option      [ _ ]
```