

```
#include <iostream>
#include "structFile.h"
#include <fstream>
#include <string>
#include <iomanip>
#include <algorithm>
```

```
using namespace std;
```

```
void menu();
```

```
int main()
{
    menu();
    return 0;
}
```

```
void menu() ///define the menu function that will run within main()
```

```
{
    int book_array_num = 0;
    int auth_array_num = 0;
    book *bookArray = new book[11];
    author *authorArray = new author[7];
    date *dateArray = new date[7];
    library *library1 = new library; ///default constructors
    int user_input = 0; ///Declare the user_input variable that will indicate the user's action of choice
    initializeBookArray(bookArray, book_array_num);
    initializeAuthorArray(authorArray, dateArray, auth_array_num);
}
```

```

library1->initializeLibrary(library1, bookArray, authorArray, dateArray, book_array_num,
auth_array_num); ///store the information in the library struct

while (user_input != 4) ///Create a while loop that will run until the user chooses the "terminate"
option
{
    cout << "Welcome User. Please choose an option: " << endl; ///Prompt the user to enter their
action of choice

    cout << "1. Print Books" << endl;
    cout << "2. Print Authors" << endl;
    cout << "3. Print Matches" << endl;
    cout << "4. Terminate" << endl;
    cout << "Enter Option: ";
    cin >> user_input; ///Read the users input
    if(user_input == 1)
    {
        printBookArray(bookArray, book_array_num); ///Run the printBookArray function
    }

    else if(user_input == 2)
    {
        printAuthorArray(authorArray, dateArray, auth_array_num); ///Run the printAuthorArray
function
    }
    else if(user_input == 3)
    {
        matchAuthors(bookArray, authorArray); ///Run the matchAuthors function
    }
    else if(user_input == 4)
    {
        cout << "Goodbye!" << endl; ///Indicate that the menu function will stop running
    }
}

```

```
    }  
    else  
    {  
        cout << "Not a valid response. Try again." << endl; ///Indicate to the user that the given input is  
not a valid option  
    }  
}  
}
```