Object-Oriented Programming

Topics :

- Classes
- Constructors
- Destructors
- Static Variable & Friend Function
- Operator Overloading
- Aggregation

- Inheritance
- Polymorphism
- Virtual Function & Abstract class
- Templates
- Exception Handling
- Files

Tutorials :

1) **Lectures in FCAI – CU**   ((Very Good))
   https://www.youtube.com/playlist?list=PLLhe0ZInsJiW0lu8AHcWrZ8eyqvxcufea

2) **Adel Nasim**
   https://www.youtube.com/playlist?list=PLLhe0ZInsJiW0lu8AHcWrZ8eyqvxcufea

3) **Dr. Mohamed Eldesoky**
   https://www.youtube.com/playlist?list=PL1DUmTEdeA6KLEvIO0NyrkT91BVle8BOU

4) **Harmash**   ((Website Arabic))
   https://harmash.com/cplusplus/cplusplus-oop/

5) **Geeksforgeeks**   ((Website English))
   https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/

6) **Books**
   - Teach Yourself C++ in 21 Days.
   - Object Oriented Programming in C++.

     https://fac.ksu.edu.sa/sites/default/files/ObjectOrientedProgramminginC4thEdition.pdf

Project

((Online library system))

1) Class User

```cpp
class User{
private:
        string name;
        int age;
        int id;
        string password;
        string email;
public:
        static int count;
        User();
        User(string , int , string , string );
        User(const User& );
        bool operator==(const User& );
        void setName(string );
        string getName() const;
        void setPassword(string );
        string getPassword()const;
        void setEmail(string );
        string getEmail()const ;
        void setAge(int );
        int getAge();
        void setId(int );
        int getId();
        void Display ();
        friend ostream &operator<<(ostream &, const User &);
        friend istream &operator>>( istream & , User &);
};
```

1) id // Make sure that the id is incremental. First id is 1, second is 2 and so on.
2) Two users are considered equal if they have the same email, name, age and id.
3) Make sure to initialize the user name with empty string.

2) Class Book

```cpp
class Book
{
private:
 string title;
 string isbn;
 int id;
 string category;
 double averageRating;
 User author;
public:
static int count;
 Book();
 Book(string , string , string );
 Book(const Book&);
 void setTitle(string );
 string getTitle() const;
 void setISBN(string );
 string getISBN() const ;
 void setId(int );
 int getId() const;
 void setCategory(string );
 string getCategory() const;
 void setAuthor(User & );
 User getAuthor() const;
 void rateBook(int );
 bool operator==(const Book& );
 friend ostream &operator<<(ostream &, const Book &);
 friend istream &operator>>( istream & , Book &);
};
```

1) double averageRating

// this variable should contain the average rating for the book, rateBook function.

// should update this attribute with the new average rating for the book.

2) void rateBook(int)

// this function should update averageRating attribute as a new rating is introduced to the book so the average rating should be affected.

3) Two books are considered as equal if they have the same title, isbn, category, id and author.

3) Class UserList

```cpp
class UserList
{
 private:
 User* users;
 int capacity;
 int usersCount;
 public:
UserList();
 UserList(int capacity);
 void addUser(User &);
 User* searchUser(string );
 User* searchUser(int );
 void deleteUser(int );
 friend ostream &operator<<( ostream &, UserList & );
 ~UserList();
};
```
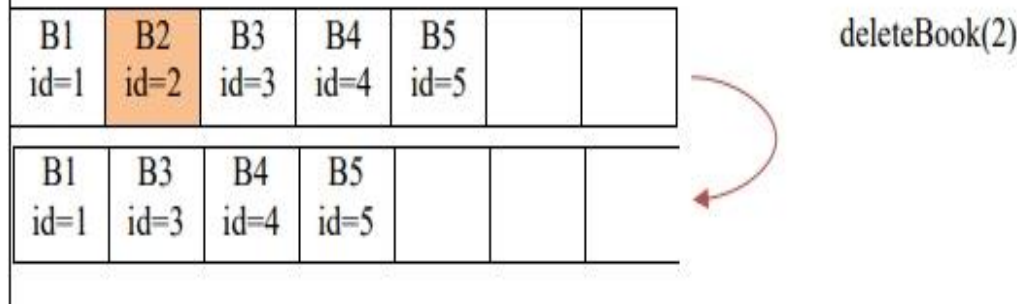
4) Class BookList

```cpp
class BookList {
private:
 Book* books;
 int capacity;
 int booksCount;
 public:
 BookList(const BookList& );
 BookList();
 BookList(int );
 void addBook(Book&);
 Book* searchBook(string name);
 Book* searchBook(int id);
 void deleteBook(int id);
 Book getTheHighestRatedBook();
 void getBooksForUser(User&);
 Book &operator [ ] (int position);
 friend ostream &operator<<( ostream &, BookList&);
 ~BookList();
};
```

1) Book* getBooksForUser(User &)
   // get all books of this author.

//**Note:** when you **delete a book**, the book could be in the middle of the array, which will leave a gap in your array of books. You should fill the gap by shifting all the books to the right of the deleted book one place to the left.
The same scenario should happen when **deleting a user**.

B1	B2	B3	B4	B5		
id=1	id=2	id=3	id=4	id=5		

deleteBook(2)

B1	B3	B4	B5			
id=1	id=3	id=4	id=5			

A Sample Run

```
Select one of the following choices :
1- Books Menu
2- Users Menu
3- Exit
2
How many users will be added?
5
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
1
Enter the user information in this order
Name Age Email Password   (Space separated )
Abdalla 20 abdalla.fadle2001@gmail.com 123456
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
1
Enter the user information in this order
Name Age Email Password   (Space separated )
Ali 25 ali_moh@gmail.com ali123
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
1
Enter the user information in this order
Name Age Email Password   (Space separated )
Mostafa 35 darsh503@gmail.com darsh503
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
```

```
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
2
SEARCH FOR A USER
1- Search by name
2- Search by id
3- Return to users Menu
1
Enter Name :
Ali
========User 2 info ========
Name : Ali | Age : 25 | Id : 2 | Email : ali_moh@gmail.com
===============================

1- Delete user
2- Return to users Menu
2
SEARCH FOR A USER
1- Search by name
2- Search by id
3- Return to users Menu
3
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
3
========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
===================================
========User 2 info ========
Name : Ali | Age : 25 | Id : 2 | Email : ali_moh@gmail.com
===================================
========User 3 info ========
Name : Mostafa | Age : 35 | Id : 3 | Email : darsh503@gmail.com
```

```
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
2
SEARCH FOR A USER
1- Search by name
2- Search by id
3- Return to users Menu
2
Enter ID :
2
========User 2 info ========
Name : Ali | Age : 25 | Id : 2 | Email : ali_moh@gmail.com
==============================
1- Delete user
2- Return to users Menu
1
SEARCH FOR A USER
1- Search by name
2- Search by id
3- Return to users Menu
3
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
3
========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
==============================
========User 2 info ========
Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com
==============================
```

```
 USERS MENU
1- Create a USER and add it to the list
2- Search for a user
3- Display all users
4- Back to the main
4
Select one of the following choices :
1- Books Menu
2- Users Menu
3- Exit
1
How many books will be added?
10
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
1
Enter the book information in this order
Title Isbn Category(Space separated)
oop CS213 computer_science
1- Assign Author
2- Continue
1
Enter author (user ) id :
5
No Author Found with id = 5
1- Assign Author
2- Continue
1
Enter author (user ) id :
1
```

```
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
1
Enter the book information in this order
Title Isbn Category(Space separated)
database is2 information_system
1- Assign Author
2- Continue
2
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
3
========Book 1 info ========
Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
==============================
==============================

========Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 0

==============================
```

```
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
2
SEARCH FOR A BOOK
1- Search by name
2- Search by id
3- Return to Books Menu
1
Enter Name :
database
========Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 0

==============================
1- Update author
2- Update name
3- Update Category
4- Delete Book
5- rate book
6- Get back to books menu
1
Enter author (user ) id :
2
1- Update author
2- Update name
3- Update Category
4- Delete Book
5- rate book
6- Get back to books menu
5
Enter Rating value:
5
1- Update author
2- Update name
```

```
1- Update author
2- Update name
3- Update Category
4- Delete Book
5- rate book
6- Get back to books menu
6
SEARCH FOR A BOOK
1- Search by name
2- Search by id
3- Return to Books Menu
3
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
3
=======Book 1 info ========
Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

=======User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
==============================
==============================

=======Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 5

=======User 2 info ========
Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com
==============================
==============================
```

```
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
4
=======Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 5

=======User 2 info ========
Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com
==============================
==============================
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
1
Enter the book information in this order
Title Isbn Category(Space separated)
software IS3 software_engineering
1- Assign Author
2- Continue
1
Enter author (user ) id :
1
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
5
```

```
Enter the book information in this order
Title Isbn Category(Space separated)
software IS3 software_engineering
1- Assign Author
2- Continue
1
Enter author (user ) id :
1
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
5
Enter ID
1
=======Book 1 info ========
Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

=======User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
==============================
=======Book 3 info ========
Title : software| Isbn : IS3| Id : 3| Category software_engineering| Avg Rating: 0

=======User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
==============================
==============================
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
```

```
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
3
=======Book 1 info ========
Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

=======User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
==============================
==============================

=======Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 5

=======User 2 info ========
Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com
==============================
==============================

=======Book 3 info ========
Title : software| Isbn : IS3| Id : 3| Category software_engineering| Avg Rating: 0

=======User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
==============================
==============================
```

```
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
2
SEARCH FOR A BOOK
1- Search by name
2- Search by id
3- Return to Books Menu
1
Enter Name :
database
========Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 5

========User 2 info ========
Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com
================================
================================
1- Update author
2- Update name
3- Update Category
4- Delete Book
5- rate book
6- Get back to books menu
4
1- Update author
2- Update name
3- Update Category
4- Delete Book
5- rate book
6- Get back to books menu
6
SEARCH FOR A BOOK
1- Search by name
2- Search by id
```

```
SEARCH FOR A BOOK
1- Search by name
2- Search by id
3- Return to Books Menu
3
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
3

========Book 1 info ========
Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
================================
================================

========Book 2 info ========
Title : software| Isbn : IS3| Id : 2| Category software_engineering| Avg Rating: 0

========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
================================
================================

BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
6
```

```
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
6
Select one of the following choices :
1- Books Menu
2- Users Menu
3- Exit
3

Process returned 0 (0x0)     execution time : 591.343 s
Press any key to continue.
```

Select one of the following choices :

1- Books Menu

2- Users Menu

3- Exit

2

How many users will be added?

5

 USERS MENU

1- Create a USER and add it to the list

2- Search for a user

3- Display all users

4- Back to the main

1

Enter the user information in this order

Name Age Email Password   (Space separated)

Abdalla 20 abdalla.fadle2001@gmail.com 123456

 USERS MENU

1- Create a USER and add it to the list

2- Search for a user

3- Display all users

4- Back to the main

1

Enter the user information in this order

Name Age Email Password   (Space separated)

Ali 25 ali_moh@gmail.com ali123

 USERS MENU

1- Create a USER and add it to the list

2- Search for a user

3- Display all users

4- Back to the main

1

Enter the user information in this order

Name Age Email Password   (Space separated)

Mostafa 35 darsh503@gmail.com darsh503

 USERS MENU

1- Create a USER and add it to the list

2- Search for a user

3- Display all users

4- Back to the main

2

SEARCH FOR A USER

1- Search by name

2- Search by id

3- Return to users Menu

1

Enter Name :

Ali

=======User 2 info ========

Name : Ali | Age : 25 | Id : 2 | Email : ali_moh@gmail.com

=============================

1- Delete user

2- Return to users Menu

2

SEARCH FOR A USER

1- Search by name

2- Search by id

3- Return to users Menu

3

 USERS MENU

1- Create a USER and add it to the list

2- Search for a user

3- Display all users

4- Back to the main

3

=======User 1 info ========

Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com

=============================

=======User 2 info ========

Name : Ali | Age : 25 | Id : 2 | Email : ali_moh@gmail.com

=============================

=======User 3 info ========

Name : Mostafa | Age : 35 | Id : 3 | Email : darsh503@gmail.com

=============================

 USERS MENU

1- Create a USER and add it to the list

2- Search for a user

3- Display all users

4- Back to the main

2

SEARCH FOR A USER

1- Search by name

2- Search by id

3- Return to users Menu

2

Enter ID :

2

========User 2 info ========

Name : Ali | Age : 25 | Id : 2 | Email : ali_moh@gmail.com

=============================

1- Delete user

2- Return to users Menu

1

SEARCH FOR A USER

1- Search by name

2- Search by id

3- Return to users Menu

3

 USERS MENU

1- Create a USER and add it to the list

2- Search for a user

3- Display all users

4- Back to the main

3

========User 1 info ========

Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com

=============================

========User 2 info ========

Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com

=============================

 USERS MENU

1- Create a USER and add it to the list

2- Search for a user

3- Display all users

4- Back to the main

4

Select one of the following choices :

1- Books Menu

2- Users Menu

3- Exit

1

How many books will be added?

10

BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

`1`

Enter the book information in this order

Title Isbn Category(Space separated)

`oop CS213 computer_science`

1- Assign Author

2- Continue

`1`

Enter author (user) id :

`5`

No Author Found with id = 5

1- Assign Author

2- Continue

`1`

Enter author (user) id :

`1`

BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

`1`

Enter the book information in this order

Title Isbn Category(Space separated)

`database is2 information_system`

1- Assign Author

2- Continue

`2`

BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

`3`

========Book 1 info ========

Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
=============================
=============================

========Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 0

=============================

BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
2
SEARCH FOR A BOOK
1- Search by name
2- Search by id
3- Return to Books Menu
1
Enter Name :
database
========Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 0

=============================
1- Update author
2- Update name
3- Update Category
4- Delete Book
5- rate book
6- Get back to books menu
1
Enter author (user) id :
2
1- Update author
2- Update name

3- Update Category

4- Delete Book

5- rate book

6- Get back to books menu

5

Enter Rating value:

5

1- Update author

2- Update name

3- Update Category

4- Delete Book

5- rate book

6- Get back to books menu

6

SEARCH FOR A BOOK

1- Search by name

2- Search by id

3- Return to Books Menu

3

BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

3

=======Book 1 info =======

Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

=======User 1 info =======

Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com

============================

============================

=======Book 2 info =======

Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 5

=======User 2 info =======

Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com

============================

============================

BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

4

========Book 2 info ========

Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 5

========User 2 info ========

Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com

=============================

=============================

BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

1

Enter the book information in this order

Title Isbn Category(Space separated)

software IS3 software_engineering

1- Assign Author

2- Continue

1

Enter author (user) id :

1

BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

5

Enter ID

1

========Book 1 info ========

Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
=============================
=============================
========Book 3 info ========
Title : software| Isbn : IS3| Id : 3| Category software_engineering| Avg Rating: 0

========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
=============================
=============================
BOOKS MENU
1- Create a book and add it to the list
2- Search for a book
3- Display all books (with book rating)
4- Get the highest rating
5- Get all books of a user
6- Back to the main menu
<mark>3</mark>
========Book 1 info ========
Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com
=============================
=============================

========Book 2 info ========
Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 5

========User 2 info ========
Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com
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========Book 3 info ========
Title : software| Isbn : IS3| Id : 3| Category software_engineering| Avg Rating: 0

========User 1 info ========
Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com

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BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

2

SEARCH FOR A BOOK

1- Search by name

2- Search by id

3- Return to Books Menu

1

Enter Name :

database

========Book 2 info ========

Title : database| Isbn : is2| Id : 2| Category information_system| Avg Rating: 5

========User 2 info ========

Name : Mostafa | Age : 35 | Id : 2 | Email : darsh503@gmail.com

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1- Update author

2- Update name

3- Update Category

4- Delete Book

5- rate book

6- Get back to books menu

4

1- Update author

2- Update name

3- Update Category

4- Delete Book

5- rate book

6- Get back to books menu

6

SEARCH FOR A BOOK

1- Search by name

2- Search by id

3- Return to Books Menu

`3`

BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

`3`

=======Book 1 info =======

Title : oop| Isbn : CS213| Id : 1| Category computer_science| Avg Rating: 0

=======User 1 info =======

Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com

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=======Book 2 info =======

Title : software| Isbn : IS3| Id : 2| Category software_engineering| Avg Rating: 0

=======User 1 info =======

Name : Abdalla | Age : 20 | Id : 1 | Email : abdalla.fadle2001@gmail.com

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BOOKS MENU

1- Create a book and add it to the list

2- Search for a book

3- Display all books (with book rating)

4- Get the highest rating

5- Get all books of a user

6- Back to the main menu

`6`

Select one of the following choices :

1- Books Menu

2- Users Menu

3- Exit

`3`

Process returned 0 (0x0)   execution time : 591.343 s

Press any key to continue.