

Umm Al-Qura University
Computer & Info. Systems College
Computer Science department

Object Oriented Programming 2nd Semester 2023 Course Project

BOOK LIBRARY

Project Team

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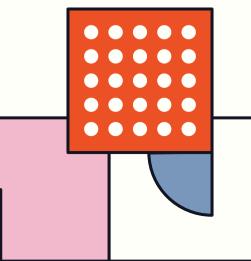
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Object Oriented Programming Course

Instructor: Bushra Algotiml

2023





Book library

PROJECT IDEA

This project helps any reader and researcher, because it organizes the process of managing libraries through some of the services it provides, such as searching for books, writing reviews, and some recommended books. These services contribute to reducing the time and effort spent

The Target Group

Readers, researchers

Aim of the project:

Solving the most common problems in library management, such as searching for books, searching for and writing reviews, and suggesting some books for those who want to read and do not know where to start





Project UML

AccountsMangements

-accountList : UserAccount[] -list : ArrayList -numberOfAccount: int -listClone : ArrayList -time : LocalDateTime

+AccountsMangements() +aetList():ArravList +setList(Arraylist<UserAccount>list) biov:

+signIn(user : UserAccount, check: boolean, check2 : boolean) : void +LogIn(user : UserAccount, check: boolean, Books : BookStorage) :

+profile(user : UserAccount, Books: BookStorage, check : boolean) :

+accountChecker (user : UserAccount) : Boolean +displaywishlist (user : UserAccount): void +displayCartList (user : UserAccount): void +accountChecker2 (user :

UserAccount) : Boolean +LogOut (user : UserAccount) : void

BookLibrary

Name : String email : String password : String title : String author : String option: int

NewAccount

+signIn(user:UserAccount, check:boolean , check2:boolean) : void

Date

-day : int -month: int -vear: int

+Date (day : int, month : int, year : int) +setDay(day:int):void

+setMonth(month:int):void +setYear(year:int):void

+aetMonth():int

+getYear():int

Name

-firrstName : String -lastName : String

+Name(firstName : String, lastName

String) +getFirstName():String +setFirstName(firstName:String):void

+getLastName():String +setLastName(lastName:String):void

ShoppingCart

PaymentMethod : pay -numberOfBooks: int -UserAccount: user

+ShoppingCart(title : String, language : String, pages : int, price : double, author : String, publisher: Publisher, genre : String)

Publisher

-name : String -dav : int -month: String -vear: int

+Publisher() +Publisher (name : String, day : int, month : String, year : int) +getName():String +setName(name:String):void

+getDay()int +setDay(day:int):void

+getMonth():String -setMonth(month:String):void

Wishlist

+Wishlist(title : String, language :

String, pages : int, price : double,

Reviews

+Reviews(review : String, rating :

-review : String

-rating : int

+Reviews()

+getReview():String

+setReview(review:String)

+getRating():int +setRating(rating:int):void

author : String, publisher:

Publisher, genre : String)

numberOfBooks : int

+aetYear():int +setYear(year:int):void

Book

-title : String -language : String -pages: int -price:double -author : String -publisher : Publisher -genre : String -sammary : String

+Book()

+Book(title : String)

+Book(title : String, language : String, pages : String, price : double, author :

String, publisher: Publisher, genre :

+getTitle():String +setTitle(title:String):void

+getLanguage():String

+setLanguage(language:String):void +getPages():int

+setPages(pages:int):

+aetPrice():double

+setPrice(price:double):void

+getAuthor():String + setAuthor(author:String):void

+getPublisher():Publisher

+setPublisher(publisher:Publisher):void

+getGenre():String

+ setGenre(genre:String):void

+getSammary():String

+setSammary(sammary:String):void

PaymentMethod

-cardNumber : long expirationDate : Date CVC : int

+getCardNumber():long

+setCardNumber(cardNumber:long):void +getExpirationDate():Date +setExpirationDate(expirationDate:Date)

hiov +getCvc():int

+setCvc(cvc:int):void

+ cardNumber (number:long) : void + expirationDate (date:Date) : void

+ CVC(number:int) : void

Visa

+ cardNumber (number : long): +expirationDate (date : Date): void

+CVC(number : int): void

MyAccount

+LogIn(username:UserAccount,check: boolean,books:BookStorage) : void +LogOut(user:UserAccount) : void +profile(user:UserAccount,books:Boo kStorage,check:boolean) : void

UserAccount

-Name : String -email : String password : String wishList: ArrayList -cartList :ArrayList

> +UserAccount() +UserAccount(name : String, email : String, password : String)

+getName():String +setName(name:String):void +getEmail():String

+setEmail(email:String):void

+getPassword():String +setPassword(password:String):void +netWishList():ArrayLis

+setWishList(ArrayList<Wishlist> wishList):void

+getCartList():ArravLis +setCartList(ArrayList<ShoppingCart > cartList):void

+addToWishList(wish:Wishlist):void

+addToShopCart(cart : ShoppingCart): void

BookStorage

numberOfReviews : int

+getBook1():Book +setBook1(book1:Book):void

+aetBook2():Book

+setBook2(book2:Book):void

+getPublisher3():Publisher +setPublisher3(publisher3:Publisher):void

+getPublisher4():Publisher

+setPublisher4(publisher4:Publisher):void +getPublisher5():Publisher

+setPublisher5(publisher5:Publisher):void

+aetPublisher6():Publisher +setPublisher6(publisher6:Publisher):void

+getPublisher7():Publisher

+setPublisher7(publisher7:Publisher):void +getPublisher8():Publisher

+setPublisher8(publisher8:Publisher):void +aetPublisher9():Publisher

+setPublisher9(publisher9:Publisher):void

+getPublisher10():Publisher

+setPublisher10(publisher10:Publisher):void

+getBook3():Book +setBook3(book3:Book):void

+aetBook4():Book

+setBook4(book4:Book):void

+ getBook5():Book +setBook5(book5:Book):void

+getBook6():Book

+setBook6(book6:Book):void

+aetBook7():Book

+setBook7(book7:Book):void

+getBook8():Book

+setBook8(book8:Book):void

+getBook9():Book

+setBook9(book9:Book):void

+ getBook10():Book

+setBook10(book10:Book):void

+getPublisher1():Publisher

+setPublisher1(publisher1:Publisher):void

+getPublisher2():Publisher

+setPublisher2(publisher2:Publisher):void +aetBookList():Book[]

+setBookList(bookList:Book[]): void

+displayRecommandedBooks(): void

+choseOption(book : Book, check :boolean, user : UserAccount) : void

+displayBooksByGeners1(): void +searchByTitle(title:String, check:boolean,

user :UserAccount) : void

+searchByAuthor (author : String, check : boolean, user : UserAccount) : void

PayPal

+ cardNumber (number : long) :

+ expirationDate (date : Date) :

+ CVC (number : int) : void







Project Functionalities

- 1 The ability to create an account in the library
- 2- The ability to search for books by the name of the author or the title of the book
- 3- Possibility to purchase books
- 4- Writing book reviews and presenting them
- 5- The possibility of placing books in the wish list





Project workflow - Create a new account

run:

- 1- Recommanded books
- 2- genres
- 3- search for a book
- 4- myAccount
- 5- Quite

When the user launches the application, this window will be displayed which displays the main list of services (In order to choose from these options, you must choose the required number, then press Enter)

Enter your name:
nour
Enter your email:
nnn@hotmail.com
Make a new password:
n14n15n16
You've made a new account
1- Recommanded books
2- genres
3- search for a book
4- myAccount
5- Quite

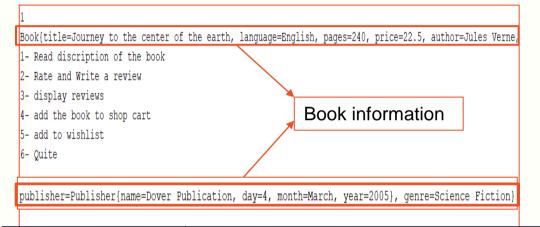
Choose myAccount to create a new account, and this window will appear telling us to write the name, then the email, then write a new password,Account created successfully



recommended book

1
1- Journey to the center of the earth
2- Coraline
3- Space Atlas
4- Grokking Algorithms
5- Deep Work
6- Emotional Intelligence
7- Atomic Habits
8- The Mountain Is You
9- Rich Dad Poor Dad
10- The Midnight Library
Enter the option number of book that you want:

After entering the Recommended Books service, we see this message asking us to choose one of the books



After selecting a book, we see the book's information in detail, from the title to the number of pages

Read discription of the book

Book{title=Journey to the center c
1- Read discription of the book
2- Rate and Write a review
3- display reviews
4- add the book to shop cart
5- add to wishlist
6- Quite
1
an adventure novel
1- Read discription of the book
2- Rate and Write a review
3- display reviews
4- add the book to shop cart
5- add to wishlist
6- Quite

Description of the book

After we chose the book and chose the book description reading service, the description appeared to us in a simplified form





Rate and Write a review

```
1- Read discription of the book
2- Rate and Write a review
3- display reviews
4- add the book to shop cart
5- add to wishlist
6- Quite
2
Review text:
lina
Rating from 5:
3
Your review is added
```

After we chose the review service, a window appeared asking us to write the review, and these are the results after we wrote it

display reviews

Your review is added

1- Read discription of the book

2- Rate and Write a review

3- display reviews

4- add the book to shop cart

5- add to wishlist

6- Quite

3

1 reviews

Reviews{review=lina, rating=3}

After we stored the review in the past, now we want to display it

add the book to shop cart

1- Read discription of the book
2- Rate and Write a review
3- display reviews
4- add the book to shop cart
5- add to wishlist
6- Quite
4
Added to your cart

You can put the books in the cart and buy them later



add to wishlist

Added to your wishlist

- 1- Read discription of the book
- 2- Rate and Write a review
- 3- display reviews
- 4- add the book to shop cart
- 5- add to wishlist
- 6- Quite

After we asked to add the book to the wishlist, this message appeared





search for a book

3

Search by:

- 1- Title
- 2- Author

After we entered the service, this window appeared to us, which gave us the option of whether we want to search for the book by the title of the book or the name of the author

1- Title 2- Author 1

Title of book:

Coraline

Search by:

Book{title=Coraline, language=English, pages=172, price=30.0

- 1- Read discription of the book
- 2- Rate and Write a review
- 3- display reviews
- 4- add the book to shop cart
- 5- add to wishlist
- 6- Quite

results of the search for the book





- 1- Read discription of the book
- 2- Rate and Write a review
- 3- display reviews
- 4- add the book to shop cart
- 5- add to wishlist
- 6- Quite
- 6
- 1- Recommanded books
- 2- genres
- 3- search for a book
- 4- myAccount
- 5- Quite

Quite

If you want to go back to the main menu



Project workflow

run: 1- Recommanded books 2- genres 3- search for a book 4- myAccount 5- Quite Enter your name: lina Enter your email: mohammed Make a new password: 309080 You've made a new account 1- Recommanded books 2- genres 3- search for a book 4- myAccount 5- Quite 1 1- Journey to the center of the earth 2- Coraline 3- Space Atlas 4- Grokking Algorithms 5- Deep Work 6- Emotional Intelligence 7- Atomic Habits 8- The Mountain Is You 9- Rich Dad Poor Dad 10- The Midnight Library

Enter the option number of book that you want:



5- add to wishlist

6- Quite



	Project	workflow				
Book(title=Emotional Intelligence, language=English, pages=368, price	=45.0, author= Daniel Goleman,	publisher=Publisher(name=Bloomsbury	Publishing PLC,	day=13, month=June	, year=1996},	genre=Psychiatry}
1- Read discription of the book						
2- Rate and Write a review						
3- display reviews						
4- add the book to shop cart						
5- add to wishlist						
6- Quite						
1						
Why It Can Matter More Than IQ						
1- Read discription of the book						
2- Rate and Write a review						
3- display reviews						
4- add the book to shop cart						
5- add to wishlist						
6- Quite						
2						
Review text:						
good						
Rating from 5:						
3						
Your review is added						
1- Read discription of the book						
2- Rate and Write a review						
8- display reviews						
4- add the book to shop cart						
5- add to wishlist						
6- Quite						
3						
l reviews						
Reviews{review=good, rating=3}						
1- Read discription of the book						
2- Rate and Write a review						
3- display reviews						
4- add the book to shop cart						





Project workflow

dded to your cart
- Read discription of the book
Rate and Write a review
display reviews
l- add the book to shop cart
in add to wishlist
- Quite
;
- Read discription of the book
Rate and Write a review
r display reviews
r add the book to shop cart
- add to wishlist
- Quite
- Recommanded books
r genres
r search for a book
l- myAccount
- Quite
- Science Fiction
- Horror
l ⁻ Space
1- Programming
Economics
F Psychiatry
- Motivational Self-Help
- Lifestyle
Dusiness
U- Literary Fiction
Inter the option number of book that you want:
neer one operon number or book ones you want.
. Nook(title=Emotional Intelligence, language=English, pages=368, price=45.0, author= Daniel Goleman, publisher=Publisher(name=Bloomsbury Publishing PLC, day=13, month=June , year=1996), genre=Psychiatry)
rock to the control of the book.
The Rate and Write a review
l- display reviews
l- add the book to shop cart
im add to wishlist
i- Quite
- Recommanded books
Grennes
- search for a book
I- myAccount
- Quite
learch by:
- Title
- Author
Title of book:
Coraline
Book(title=Coraline, language=English, pages=172, price=30.0, author=Neil Gaiman, publisher=Publisher(name=HarperCollinsPublishers, day=31, month=July, year=2002), genre=Horror)
Read discription of the book
- Rate and Write a review





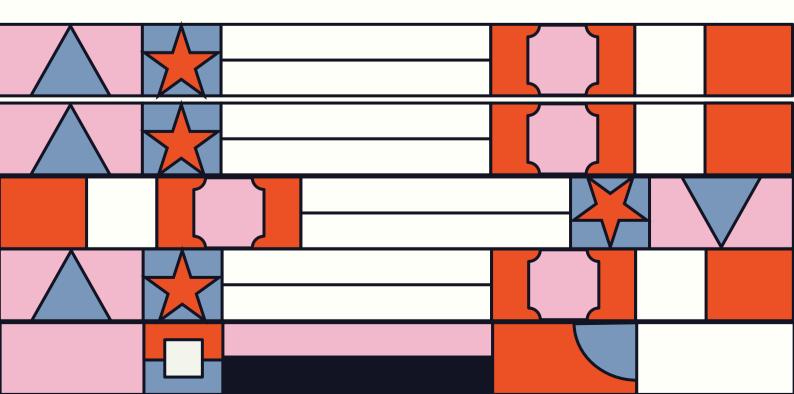
Project workflow

```
3- display reviews
4- add the book to shop cart
5- add to wishlist
6- Quite
1- Recommanded books
2- genres
3- search for a book
4- myAccount
5- Quite
Search by:
1- Title
2- Author
Author of book:
Neil
Choose book:
Coraline
```



Extra Work

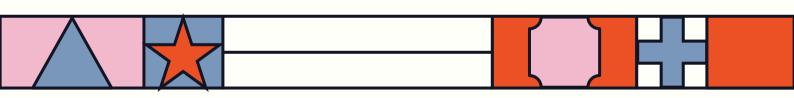
We implemented Exception Handling





The distribution of the work

Member	Task(s)	Time Spent (optional)
1-Dalia Zamzami	Coding and creating a uml diagram	
2 -wiaam shiba	Coding and creating a uml diagram	
3- janaa wala	Coding and creating a uml diagram	
4- linah mohammed	Coding and creating a uml diagram	



What we learnt

What you have learned from the project?

In this project we have learned how to apply the concepts of object-oriented programming in projects

We learned that we can learn programming to create an integrated system that serves a specific party and solves existing problems

We learned how to formulate our ideas, arrange them, and convert them into a UML diagram and then into a working code





What is the advantages you gained from designing this project?

Thinking about how to solve library management problems and how to implement these solutions, and trying to adjust to reach the best continuously

Did you feel that teamwork was very helpful in programming the project?

Yes, it was useful. The project needs a lot of effort and a lot of time to think and face mistakes and fix them. Sometimes we needed to change some ideas. With the short semester and the great pressure in all subjects, of course, this helped us to complete it in a good time and with a wonderful result.

Are you satisfied with your application?

Yes, because it is a big project for us now, it took us a lot of time, and we are satisfied with the result. Of course, this does not mean that we hope to do better in upcoming software projects.

Did you feel you will be able to work in a large scale project later?

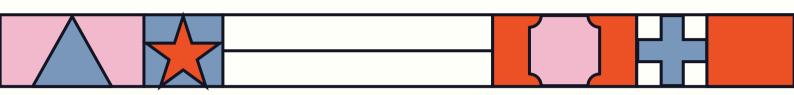
Yes, we will be able to do this because science has helped us a lot, it will help us in the future, and it will make us better





Project difficulties

We faced some problems in the implementation of the project at times in applying some new concepts to us, but in the end we overcame them



Project Declaration

We confirm that the work of this project was solely undertaken by ourselves and that no help was provided from other sources as those allowed. As well as we confirm that we completely aware of the violation consequences of the academic integrity.

Read and check the previous declaration.

Dalia Zamzami 443000867 wiaam shiba 443000013 janaa wala 440000870 linah mohammed 441010061