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SOEN 387 - A2
Fall 2019

Assignment 2

Task 3: JUnit Test Results

```
Testsuite: repository.core.BookRepositoryTest
Loading class `com.mysql.jdbc.Driver'. This is deprecated. The new driver
class is `com.mysql.cj.jdbc.Driver'. The driver is automatically
registered via the SPI and manual loading of the driver class is generally
unnecessary.
RepositoryDatabase - Instance is created!
Connection repository.core.RepositoryDatabase@8e0379d
BookRepository - Instance is Created!
Instance
[Book{id=1, title=Meditations, description=Written in Greek, without any
intention of publication, by the only Roman emperor, isbn=0140449337,
author=Author{name=Aurelius Marcus}, publisherCompany=Penguin Classic,
publisherAddress=England, cover=CoverImage{mimeType=image/jpeg,
image=com.mysql.cj.jdbc.Blob@f2f2cc1, imagePath=null}}, Book{id=2,
title=Discourses, Fragments, Handbook, description=About things that are
within our power and those that are not., isbn=0199595186,
author=Author{name=Epictetus Unknown}, publisherCompany=Oxford University
Press, publisherAddress=England, cover=CoverImage{mimeType=image/png,
image=com.mysql.cj.jdbc.Blob@3a079870, imagePath=null}}, Book{id=3,
title=Courage to be Happy, description=The Courage to be Happy is a
profound insight into the way we should live our lives that has already
sold more than one million copies in Japan., isbn=1911630210,
author=Author{name=Kishimi Ichiro}, publisherCompany=Allen & Unwin,
publisherAddress=London, England, cover=CoverImage{mimeType=image/png,
image=com.mysql.cj.jdbc.Blob@3b2cf7ab, imagePath=null}}]
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Book{id=2, title=Discourses, Fragments, Handbook, description=About things
that are within our power and those that are not., isbn=0199595186,
author=Author{name=Epictetus Unknown}, publisherCompany=Oxford University
Press, publisherAddress=England, cover=CoverImage{mimeType=image/png,
image=com.mysql.cj.jdbc.Blob@3a079870, imagePath=null}}
Testing getBookInfo by book id
Testing getBookInfo by book isbn
Testing addNewBook
```

```
Testing deleteBook
Testing setBookCoverImageTest
CoverImage{mimeType=image/png, image=com.mysql.cj.jdbc.Blob@3a079870,
imagePath=null}
Testing updateBookInfo
STATEMENT: UPDATE book SET title = 'New Title', description = 'New
Description', last_name = 'Name', first_name = 'New' WHERE id = '2';
Meditations
New Title
Testing listAllBooks
Testing deleteAllBooks
Tests run: 7, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 1,805 sec
```

----- Standard Output -----

```
RepositoryDatabase - Instance is created!
Connection repository.core.RepositoryDatabase@8e0379d
BookRepository - Instance is Created!
Instance
[Book{id=1, title=Meditations, description=Written in Greek, without any
intention of publication, by the only Roman emperor, isbn=0140449337,
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publisherAddress=England, cover=CoverImage{mimeType=image/jpeg,
image=com.mysql.cj.jdbc.Blob@f2f2cc1, imagePath=null}}, Book{id=2,
title=Discourses, Fragments, Handbook, description=About things that are
within our power and those that are not., isbn=0199595186,
author=Author{name=Epictetus Unknown}, publisherCompany=Oxford University
Press, publisherAddress=England, cover=CoverImage{mimeType=image/png,
image=com.mysql.cj.jdbc.Blob@3a079870, imagePath=null}}, Book{id=3,
title=Courage to be Happy, description=The Courage to be Happy is a
profound insight into the way we should live our lives that has already
sold more than one million copies in Japan., isbn=1911630210,
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publisherAddress=London, England, cover=CoverImage{mimeType=image/png,
image=com.mysql.cj.jdbc.Blob@3b2cf7ab, imagePath=null}}]
Book{id=1, title=Meditations, description=Written in Greek, without any
intention of publication, by the only Roman emperor, isbn=0140449337,
author=Author{name=Aurelius Marcus}, publisherCompany=Penguin Classic,
publisherAddress=England, cover=CoverImage{mimeType=image/jpeg,
image=com.mysql.cj.jdbc.Blob@f2f2cc1, imagePath=null}}
Book{id=2, title=Discourses, Fragments, Handbook, description=About things
that are within our power and those that are not., isbn=0199595186,
author=Author{name=Epictetus Unknown}, publisherCompany=Oxford University
Press, publisherAddress=England, cover=CoverImage{mimeType=image/png,
image=com.mysql.cj.jdbc.Blob@3a079870, imagePath=null}}
Testing getBookInfo by book id
```

Testing getBookInfo by book isbn

Testing addNewBook

Testing deleteBook

Testing setBookCoverImageTest

CoverImage{mimeType=image/png, image=com.mysql.cj.jdbc.Blob@3a079870,
imagePath=null}

Testing updateBookInfo

STATEMENT: UPDATE book SET title = 'New Title', description = 'New
Description', last_name = 'Name', first_name = 'New' WHERE id = '2';

Meditations

New Title

Testing listAllBooks

Testing deleteAllBooks

----- Standard Error -----

Loading class `com.mysql.jdbc.Driver'. This is deprecated. The new driver
class is `com.mysql.cj.jdbc.Driver'. The driver is automatically
registered via the SPI and manual loading of the driver class is generally
unnecessary.

test:

Deleting:

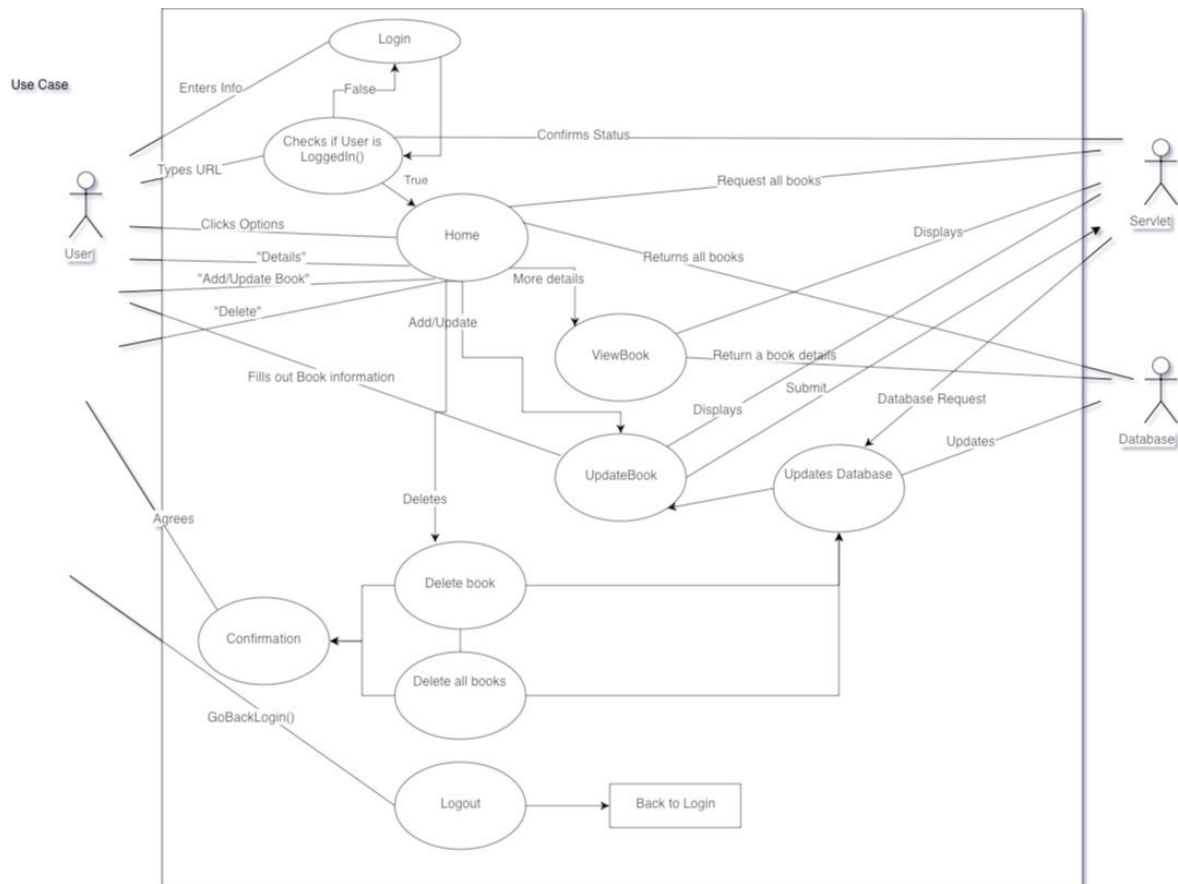
/var/folders/q9/r0kqgvws6mxcw59hj81l3z2w0000gn/T/TEST-repository.core.Book
RepositoryTest.xml

BUILD SUCCESSFUL (total time: 2 seconds)

Task 5: The System Model

Use Case Diagram

- Servlet corresponds to the controllers
- > AddBookController
- > BookViewController
- > DisplayAllController
- > DeleteBookController
- > LoginController
- > LogoutController
- > UpdateBookController



Add Book Scenario

This use case describes the addition of a book to the Repository.

Actors

User, AddBookController(Servlet), Database

Priority

High

Pre-Conditions

- URL is valid.
- User must be logged in.
- Home page must be displayed.

Flow of Events

1. User clicks "Add/Update book" link from the Home page on their browser.
2. AddBookController(Servlet) processes this GET request.
3. AddBookController(Servlet) returns updateBook page.

4. User fills out Book related information on UpdateBook page.
5. User submits this request.
6. AddBookController(Servlet) processes this POST request.
7. AddBookController(Servlet) runs AddBook() SQL command on the database. This command creates a new instance of Book which is added to the ArrayList and the database.
8. AddBookController(Servlet) receives book ID of added book and returns that ID to UpdateBook.
9. User can choose to update another book or return to Home.

Set Book Cover Scenario

This use case describes the setting of a book cover in the Repository.

Actors

User, AddBookController(Servlet), Database

Priority

High

Pre-Conditions

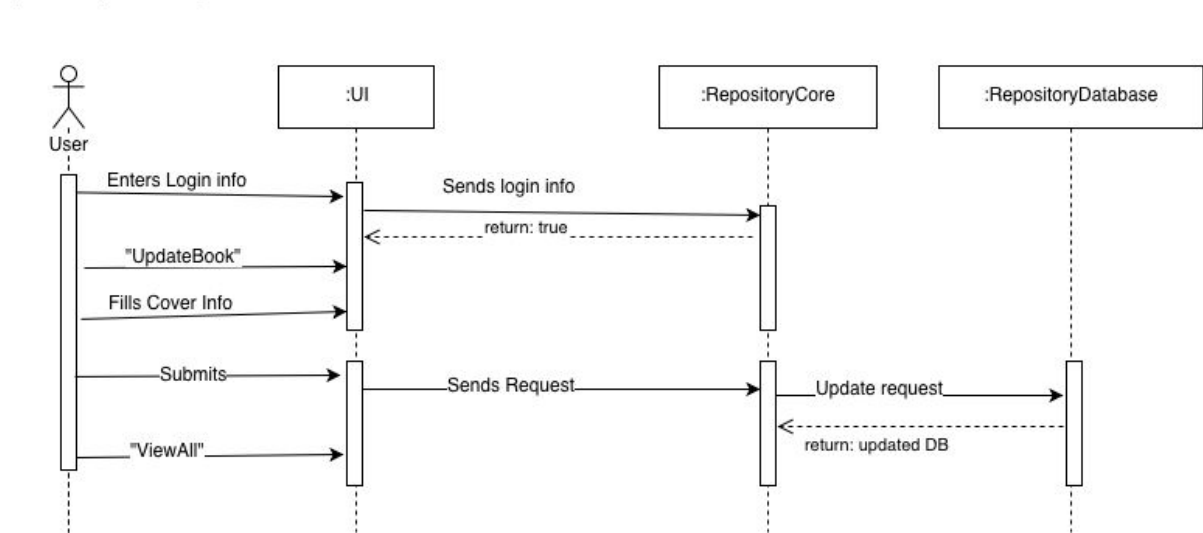
- URL must be valid.
- User must be logged in.
- Home page must be displayed.

Flow of Events

1. User clicks "Add/Update book" link from the Home page on their browser.
2. AddBookController(Servlet) processes this GET request.
3. AddBookController(Servlet) returns UpdateBook page.
4. User provides path of a photo (<64 KB) from their device and MIME-type.
5. User submits request.
6. AddBookController(Servlet) processes this POST request (SetBookCover() SQL command is called). This SQL command set MIME type and the photo.
7. AddBookController(Servlet) creates a new instance of Book with these details and the database is updated.

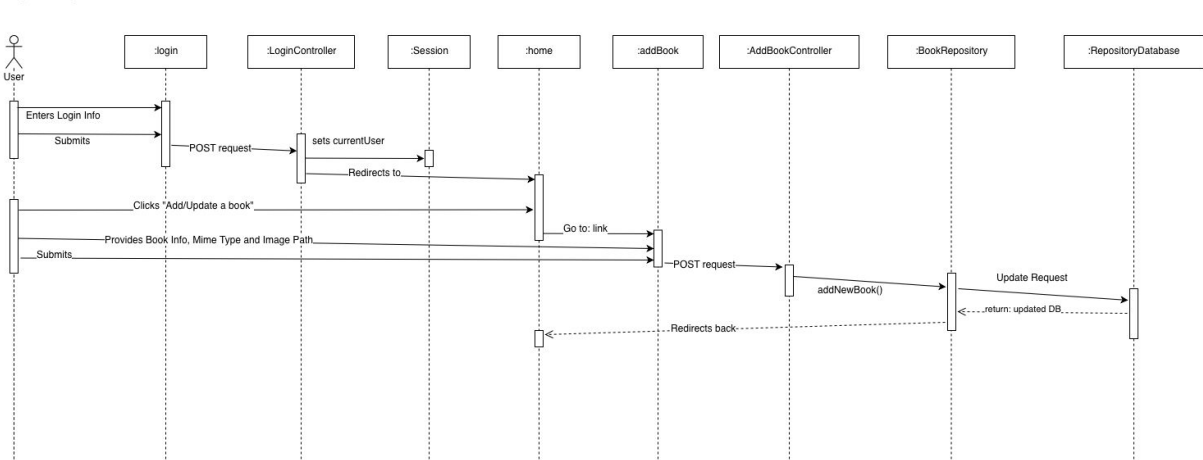
System Sequence Diagram "Set Book Cover Scenario"

System Sequence Diagram "Set Book Cover Scenario"



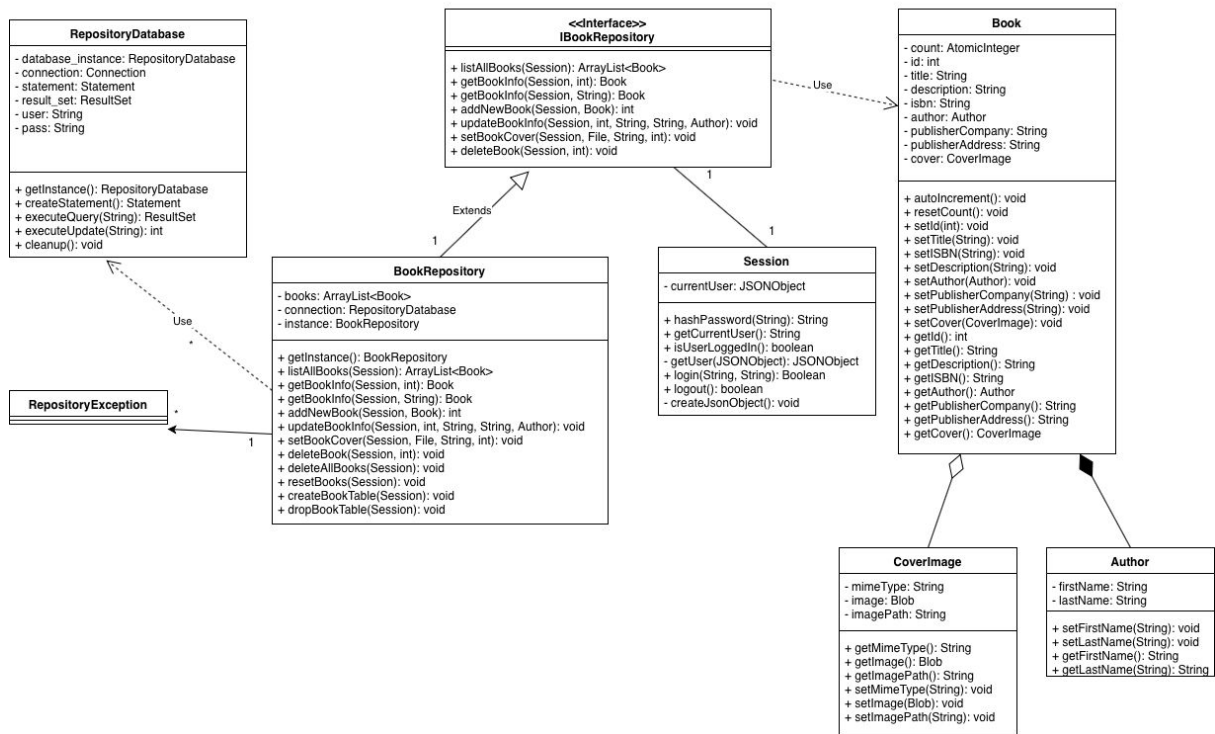
Sequence Diagram for "Set Book Cover Scenario"

Sequence Diagram "Set Book Cover Scenario"



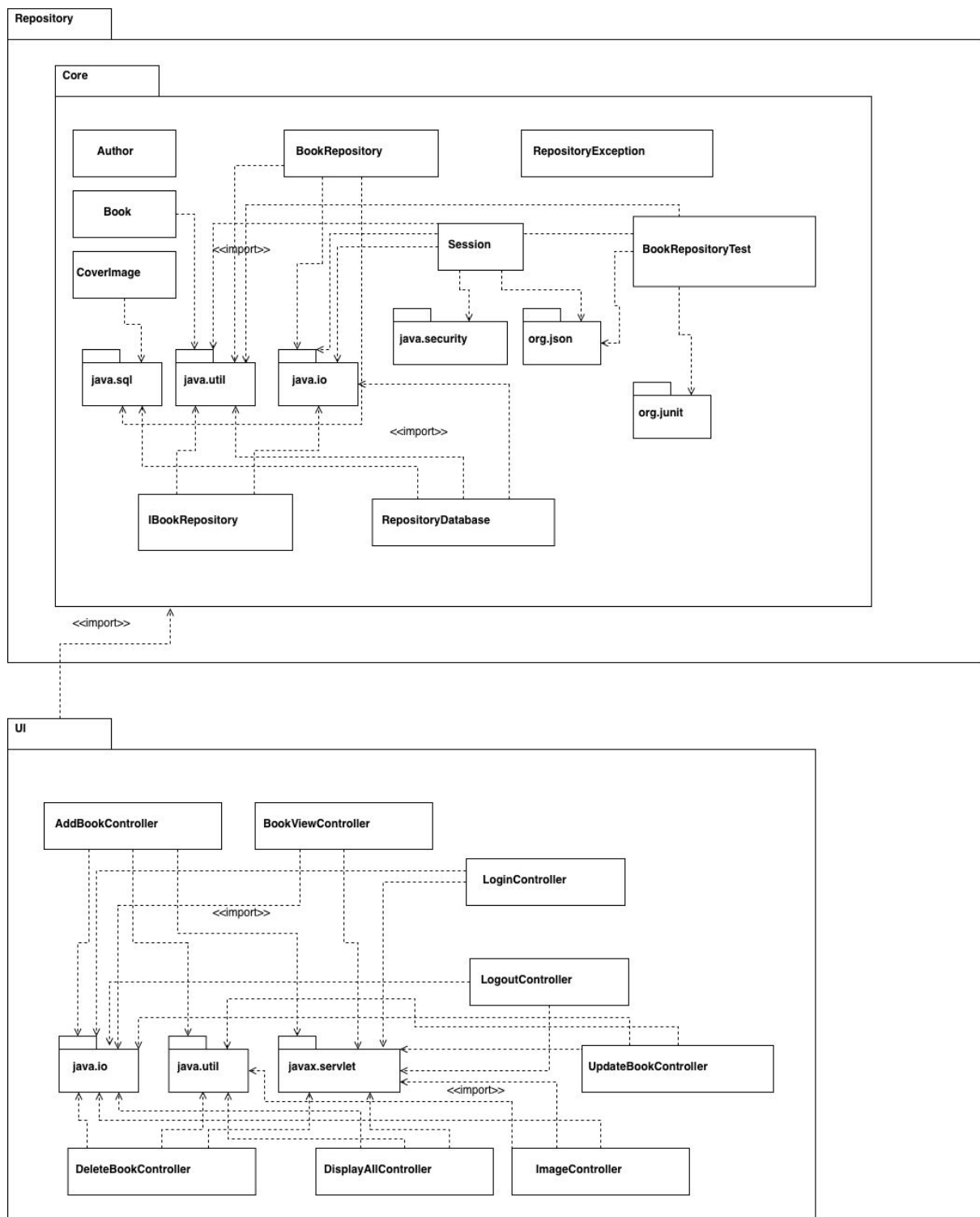
System Class Diagram (Business Core)

Business Core - System Class Diagram



Package Diagram

Package Diagram



Known Issues:

- Add and Update both have issues when returning the ID. There's a mismatch between the database ID and ID of the internal ArrayList.

--> The SQL methods do work. This can be seen by "displaying all the books".

- Updating will display an Array out of Bound due to this ID mismatch. But going back and "displaying all books" will show that the database has changed.

Features that haven't been implemented:

[Database]

- Auto-implement hasn't been implemented as Stored Procedure.
- The database does not check for unique ISBN at the moment.

[Business Core]

- Use IBookRepository to reference BookRepository --> Currently using BookRepository directly.
- Static method that returns the repository must receive the "context" as its argument. --> No Context or use of IBookRepository at the moment.
- Synchronisation of Repository Class --> Just Atomic Integer is implemented to assure that the same ID isn't used concurrently.
- Config file causes a bug in the Session so it has been commented out.

[UI]

- SetBookCover hasn't been implemented for UI.
- For delete: Confirmation(Javascript) hasn't been implemented.