

CMPS 312 – Mobile Application Development
Final Practical Exam – 18 November 2021 (duration 2.5h)

Student Name (Student ID)

Implement a Library app to allow users to add books for authors. For example, the user can add an Author and his books for that Author. The app data shown in Figure 1 should be managed in an SQLite database using **Room Library**.

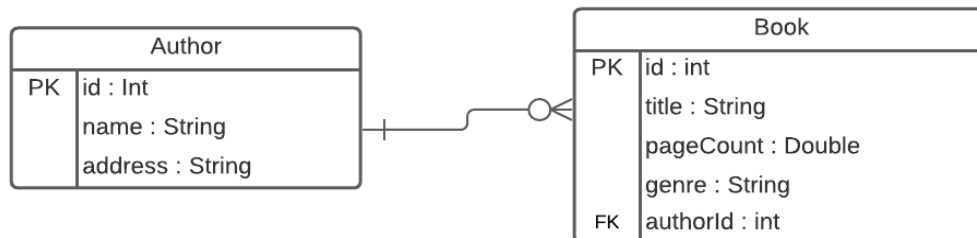
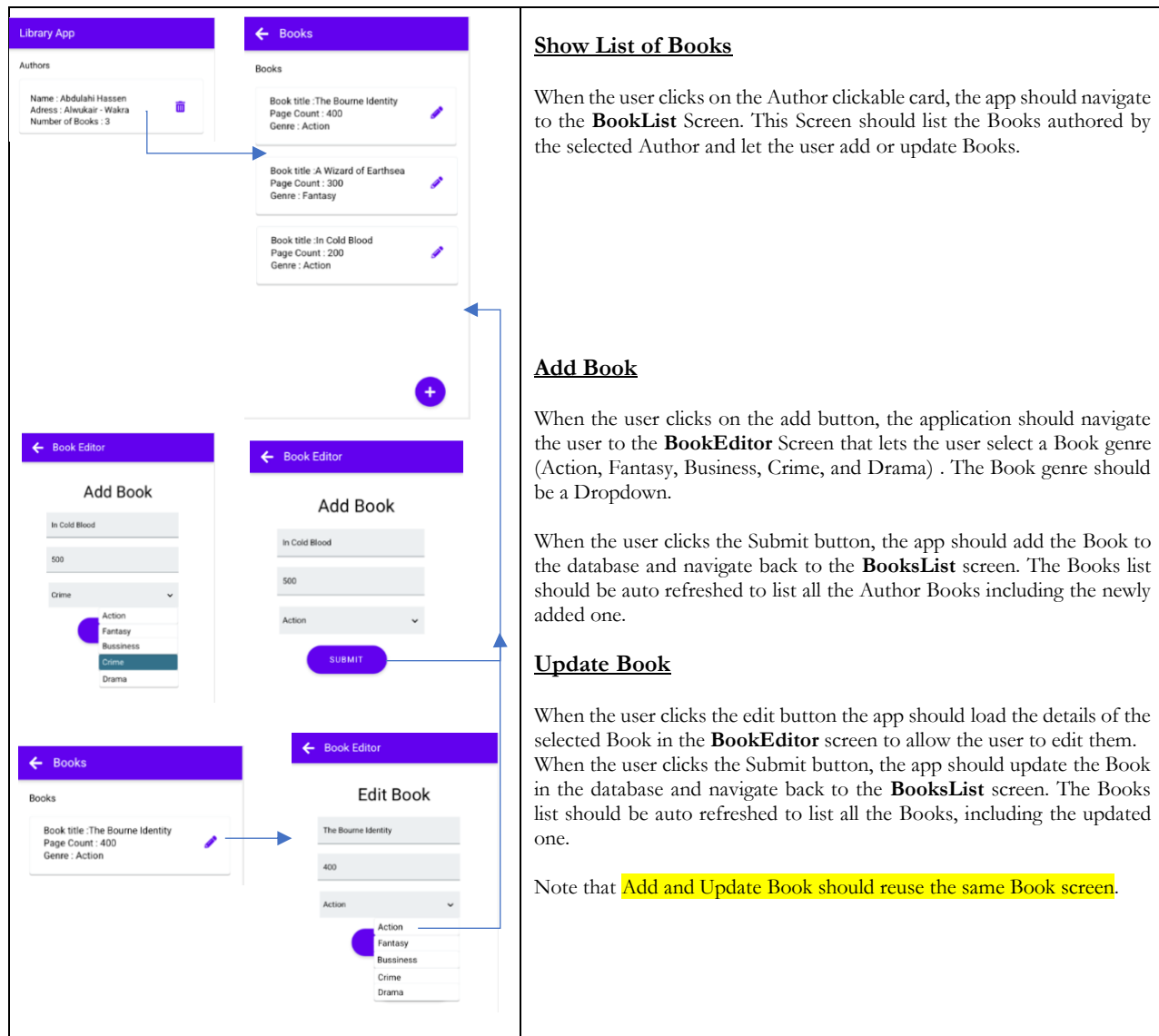


Figure 1. Author and Book Entity-Relations

- Create two Entity classes **Author** and **Book**, with proper annotations. The properties of each entity are shown in Figure 1. Note that ids should be auto-assigned by the database. Make sure you add foreign key annotation with cascade delete and update.
- Create a **LibraryDAO** Interface and add the necessary functions and annotations to allow the user to:
 - **Add** a new Author
 - **Get** all Authors
 - **Delete** an Author and all associated Books
 - **Add** a new Book for an Author
 - **Get** all Books for a specific Author given authorId
 - **Update** a Book
- Implement the **LibraryRepository** with all necessary methods listed above.

The app UI and the requirements for each screen are described in the table below.

	<p>List All Authors</p> <p>Create an AuthorList screen to display the list of Authors. When the screen loads, get the Authors from the database and display them in a LazyColumn.</p> <p>Note: the number of books is a calculated field. This means you need to count the number of books of that specific Author by querying his books from the database.</p> <p>Provide a delete icon next to each Author in the list to allow the user to delete it. When an Author is deleted, its associated Books should be deleted as well.</p>
	<p>Add Author</p> <p>The AuthorEditor screen allows the user to enter the Author details such as the Author name and address.</p> <p>When the submit button is clicked, the app should add the Author to the database and navigate back to the AuthorsList screen. The Authors list should be auto refreshed to list of all the Authors, including the newly added one.</p>



Grading Rubrics

Criteria	%	Functionality*	Quality of the implementation
1. Author List	20		
2. Add Author	20		
3. Delete Author	8		
4. Book List	20		
5. Add Book	16		
6. Update Book	16		
Provide screenshots in testing.docx	-		[-10pts if missing]

Possible grading for functionality:

- Complete and Working (get 70% of the assigned grade)
- Complete and Not working (lose 30% of assigned grade)
- Not done get 0
- The remaining grade is assigned to the quality of the implementation.
- Must submit screenshots in this **Testing-GradingSheet.docx** (otherwise - 10pts).