# CMPS 312 – Mobile Application Development Midterm Practical Exam – 17 October 2023 (2-hour duration)

**Objective:** Create a Book Explorer App on Android to demonstrate your mobile development skills.

### **Implementation Tasks:**

- 1. **Define Book Class:** Define a Book class that serves as a data structure to serialize and store the book.json data.
- 2. **Implement Book Repository** Within the repository, implement three functions:
  - **getBooks**: Retrieve all the books from the **books.json** file stored in the assets folder. This function should return a list of Book objects containing the **books.json** data.
  - **searchBooks**: Develop a search function enabling users to search for books based on a provided query. This function should return a list of books that match the query in either the book title, author, or isbn.
  - deleteBook: a function that allows the user to delete a book from the books list

#### 3. Create a Book List Screen:

- Create a screen that displays a grid of books using a Lazy Vertical Staggered Grid Layout as shown in Figure 1.
- Each book entry in the grid should include the book's image, title, author and Isbn.
- Add a delete button to each Book Card in the Book List Screen. When the user clicks the delete button, the respective book should be removed from the list.
- Implement a search bar for users to search for books based on the title, author, or description.



Figure 1 Main Screen

## 4. Book Details Screen:

- Create a Book Details Screen that allows users to view complete book information.
- When the user clicks on a book in the Book List Screen, they should be able to access the Book Details Screen.
- The Book Details Screen should display all available book details, such as the book's title, ISBN, page count, author, status, category, cover image, and a detailed description. See Figure 2.
- Include a button that allows the user to return to the Book List Screen.

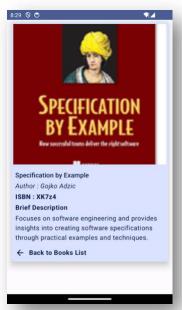


Figure 2 Details Screen

Grading Rubrics

Criteria	%	Functionality*	Quality of the implementation	Score
<ul> <li>Book List Screen (70%)</li> <li>Successfully displayed the list of books from the JSON file as per the design shown in Figure 1.</li> <li>Properly implemented search bar for the book list</li> <li>Implemented the delete Book button</li> </ul>	80			
<ul> <li>Details Screen (30%)</li> <li>Correctly designed and implemented the Details Screen</li> <li>Successfully added the return back button</li> </ul>	20			
Provide screenshots in <i>testing.docx</i>	_		[-10pts if missing]	

## Possible grading for functionality:

- Complete and Working (get 70% of the assigned grade),
- Complete and Not working (lose 40% of assigned grade)
- *Not done* get 0.
- The remaining grade is assigned to the quality of the implementation.
- Must submit screenshots in this **Midterm Testing-GradingSheet.docx** (otherwise 10pts).