

# 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
<b>Book List Screen (70%)</b> <ul style="list-style-type: none"><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			
<b>Details Screen (30%)</b> <ul style="list-style-type: none"><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>	-		<i>[-10pts if missing]</i>	

#### 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).