

Douglas College Bookstore App

Group 9

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Context

1. Douglas College Bookstore Application
2. Motivation
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1. Douglas College Bookstore Application



Figure 1 DC Bookstore app logo

Douglas College Bookstore Application is a waiting-free bookstore for Douglas College students. It lets students connect to college textbook resources anywhere, any time. Search textbooks by title, course name, and department and share reviews of each textbook. You can save your favorite books to your bookshelf. Make your own purchase list of textbooks in a much easier way!

2. Motivation

2.1 Existing Douglas College bookstore webpage is inconvenient to use.

- Despite that Douglas College bookstore webpage has search function by title, author, and ISBN, the first thing that catch the eyes is spinner. User has to input campus term, department, course number, and section to search by spinner. For user, to search multiple textbooks, it is inconvenient to use.

Also, Douglas College has ‘Douglas Students’ App’ and ‘Douglas College Mobile’ application but no bookstore application. If students want to get information about their textbook by mobile, they have to open web browser.

2.2 Make it easy to find the information of textbooks.

- When the new semester begin, students go to the bookstore to see textbooks. Students line up to enter the bookstore. However, even if students get in to the bookstore, they often do not buy anything. This application makes easy for students to get information without waiting in line up.

2.3 Students can share reviews of each textbook.

- The main purpose of sharing the reviews on the app is to let students know if the book is necessary for class or helpful before they pay a high price for books.

3. Features and Specification

User can view four fragments using bottom navigation.

3.1 Home

3.2 Search (BookInfo, BookReview)

- Searches books, using user inputs from a spinner and an editText, on the database. The data is passed to an adapter through Book class, then the user can see the results on a listView (with BookListAdapter).

When a checkBox in one item is clicked, an OnClickListener updates the value of a column in the database which shows whether the item is in the bookshelf or not.

When an item is clicked, BookInfoActivity is executed with an intent containing the id and the ISBN of the selected book.

- BookInfoActivity shows an image, rates and details of the book, the details displayed by a listView with BookInfoAdapter. The user can buy the book on Douglas Bookstore's site by clicking "BUY NOW" button, pass to the review page by clicking "add or see all reviews" textView
- BookReviewActivity lists all reviews corresponding to the bookID it received from BookInfoActivity. The user can add her/his reviews of the book in this activity.

3.3 Bookshelf

- Bookshelf allows the user to see the books saved from SearchFragment, drop the book by clicking the corresponding "heart" checkBox, see book details in BookInfoActivity by choosing one of the items.
- The result list is displayed by listview with the same adapter as SearchFragment (BookListAdapter).

3.4 Help (Google Map)

- Help Fragment has informations about douglas college bookstore.
- HelpImgAdapter is used to get selected image from the gridview and show it on the image view.
- Each text views linked to MapsActivity, email, phone, and web page. When user click address of Douglas College bookstore, Maps Activity is executed and show the location of Douglas College bookstore. Moreover, for email, phone number, and web page url, it goes to android original apps. From this feature, user can contact with Douglas College bookstore directly.

4. Novel

- 4.1 SQLiteOpenHelper is a useful tool to manage and handle database, read data and write changes; a convenient way to deal with data flow in the application.
- 4.2 Updating checkBox states constantly in recycled listView.
- 4.3 Remote image saves local storage space using Volley and Fresco libraries.
- 4.4 Navigation menu helps users navigate easily between four fragments.
- 4.5 Rating bar allows interactive action of users, which is adding rates for book.

5. Technical Extension

5.1 DatabaseHelper

"DatabaseHelper" class is added in the project to create and manage SQLite database, which is more convenient.

This class extends from SQLiteOpenHelper and helps

- Creating all tables such as BOOK, COURSE, DEPARTMENT, REVIEW.
- Reading data from database by running queries.

Generating data for tables in database is conducted in this class by reading data from booklist.txt file

5.2 Bookshelf

The app loads the status of add-to-the-bookshelf checkBox from the database, but by the nature of listView, the checkBox views were recycled when scrolled. This problem is solved by using ViewHolder.

5.3 Bottom Navigation

Navigation Activity has four fragments and each fragment is linked to bottom navigation. This feature allows user to shift and open each fragment.

5.4 Rating System

Retrieving users input by a ratingBar, it counts and get the average ratings.

5.5 Google maps

Google API key is used to show Douglas College bookstore location on google maps.

5.6 Google books api with Volley and Fresco libraries

Purpose: Sometimes, an image delivers more intuitive information than a string. However, the fact that adding all images of every single book in the database is not only exhausting but also practically impossible lead to a need of dynamic image loading.

Google books helps finding information of books in the local database with its superb search algorithm. Using Volley, the app connects to the Internet and sends requests to Google books. Then it receives a bunch of information formed by a JSON object from Google books server. The app extracts a link of an image, then finally, Fresco downloads and caches the remote image in a memory efficient manner.

6.Screenshots



Figure 2 Home Fragment

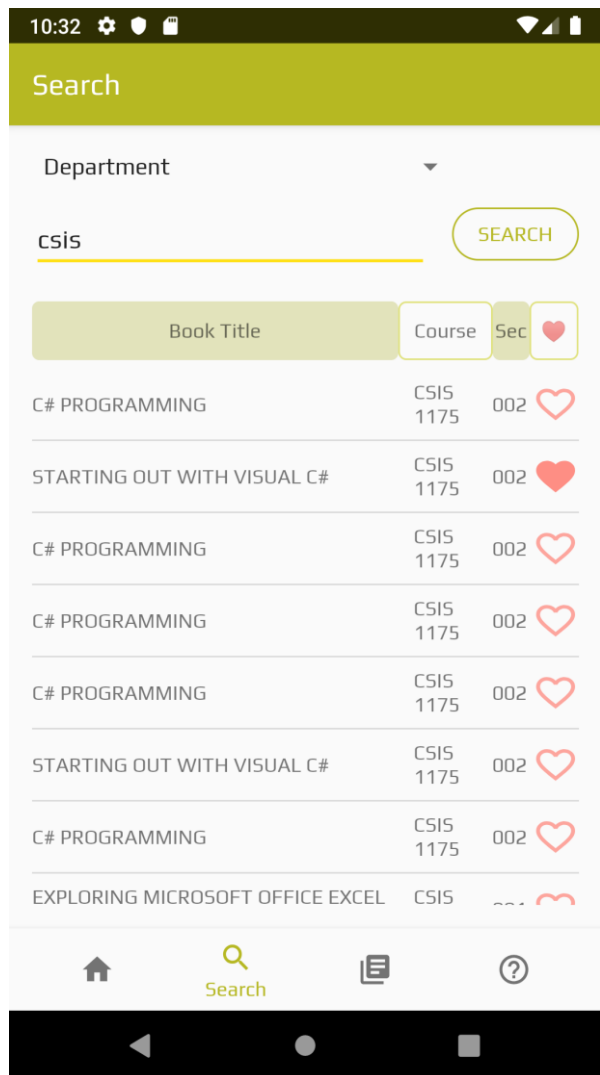


Figure 3 Search Fragment

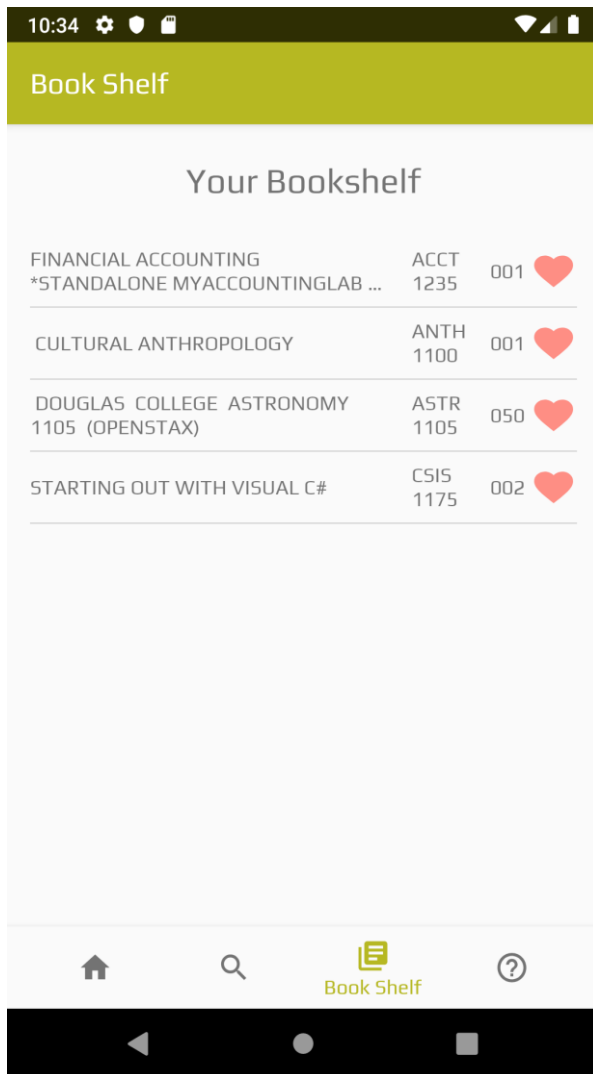


Figure 4 Book Shelf Fragment

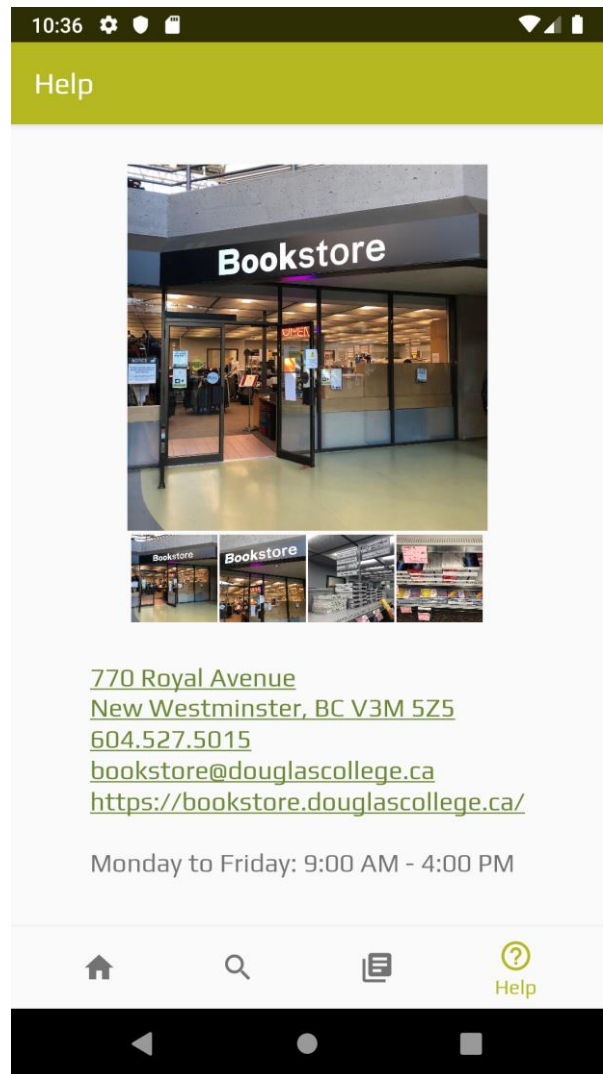


Figure 5 Help Fragment

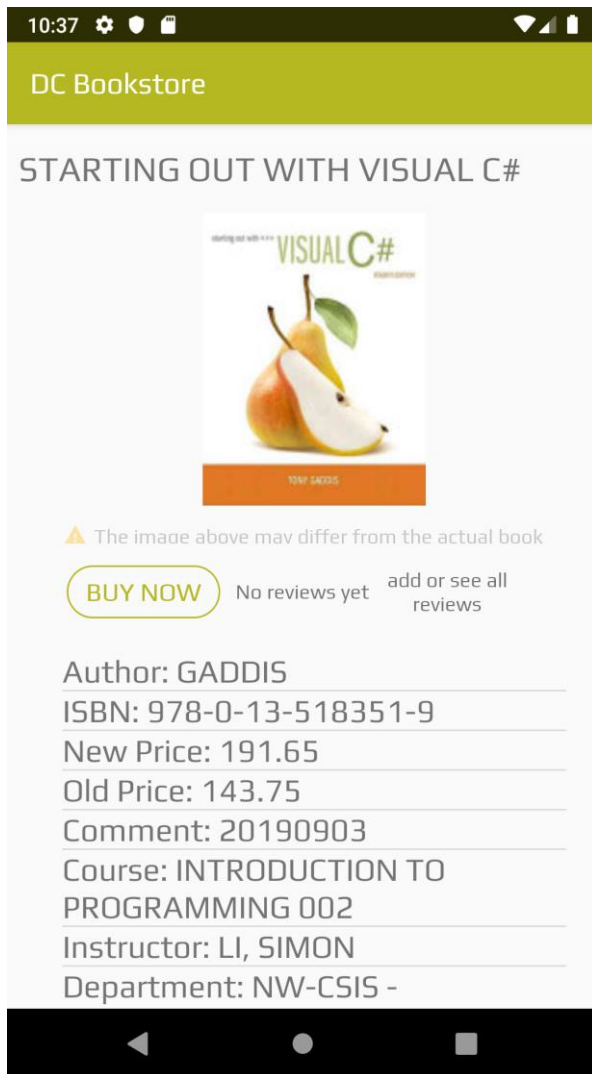


Figure 6 Book Info Activity

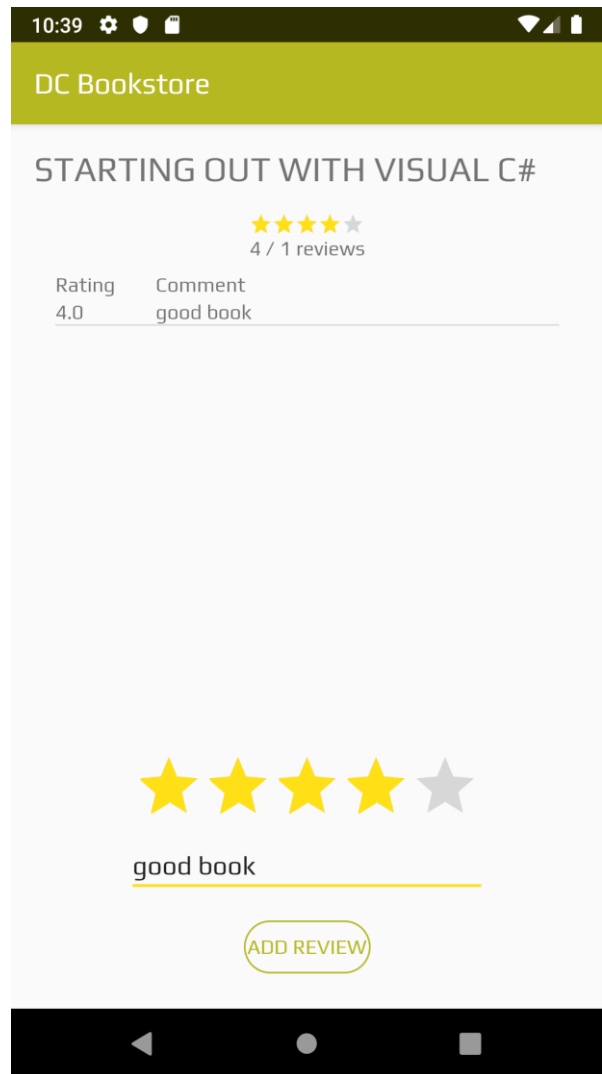


Figure 7 Book Review Activity