

CIS 3515 Assignment Worksheet 8

Instructions: Create a new **GitHub Branch** and update your **BookShelf** app with new features.

Your application will use a Web Service API (see Appendix below) to fetch book information, and display those books in the app's various modes (portrait, landscape, etc). Your application will allow a user to retrieve all available book titles via the API, as well as allow a user to search for a subset of titles that match a user-provided search term.

1. Start a new branch of your previous project
2. Remove the test books that were used in the previous assignment. We do not need them now that we have a new source for book information. Your application does not need to show any books (the list can be blank) when it starts.
3. Update your application's **Book** class and add the following fields:
 1. **id**: int – A system provided ID for the book
 2. **coverURL**: String – A URL to the image representing the book cover
4. Modify **BookDetailsFragment** to display the book cover image along with the book title, and author.
5. Add a second activity called **BookSearchActivity** that will contain an **EditText** and a **Button** in its layout. This activity will trigger a search function in your application. The **EditText** will allow the user to enter a search term, and the **Button** will perform the search. You may also add a second button to cancel the search and close the activity.
 1. Apply one of the SDK's prepackaged *Dialog* themes to your **BookSearchActivity** (<https://developer.android.com/guide/topics/ui/look-and-feel/themes>). This will allow the Search activity to show up as a Windowed dialog (instead of a full-screen activity) when launched
 2. When the user types in a search term and clicks the Search button, a search will be performed using a web service (see Appendix). The results of the search should be returned to the main activity.
 3. When a user performs a search, they will receive a subset of books which may include zero, some, or all available books.
 4. A user can search for books by title or author by providing any string as the search term
 5. When a search result is returned, the collection of books being displayed to the user in the **BookListFragment** should be updated to only show the books returned.
 6. When a user performs a search, the application must always display the **BookListFragment**

showing the results returned by the search. Therefore, if the application is in single-pane mode, and is not currently displaying the BookListFragment, it should remove the BookDetailsFragment and show the list of books in the BookListFragment. If it is already showing the BookListFragment, or it is in two-pane mode, it doesn't have to change the fragments; it should just update the BookListFragment that is already being displayed.

7. Once the list of books have been searched for and the display updated, that subset of books must always be maintained by the application until the user performs a new search, even if the activity is restarted.
 8. Add a button to your main activity to launch the search activity. This button should be visible regardless of the device configuration or which fragments are currently being displayed in the main activity.
6. When queried, the API (see Appendix) will return all available books that match the user's search string. The returned titles should be used to populate the collection of books (requirement 2), and allow the user to browse
1. As mentioned before, if the activity is reloaded after a search is performed (because of a configuration change, such as rotating the device), then the activity should not forget the books, nor should it perform another search. Instead, it should retain the list of books from the previous search.
7. **Push your project to GitHub and upload the link to the new repository branch to Canvas.**

CONSIDERATIONS

1) Whenever you update the data set (add or remove elements) that an Adapter uses to provide views to an AdapterView, you must call `notifyDataSetChanged()` on the adapter for the AdapterView to be updated and show the views matching the new data.

[https://developer.android.com/reference/android/widget/BaseAdapter#notifyDataSetChanged\(\)](https://developer.android.com/reference/android/widget/BaseAdapter#notifyDataSetChanged())

Here is a simple blog post describing the proper use of the method:

<https://androidadapternotifydatasetchanged.blogspot.com/2013/02/android-notifydatasetchanged.html>

2) Depending on your design, this note might be useful for you to remember: When an object is passed from one component to another, for example, A BookList object passed from an Activity to a Fragment, it's important to realize that there are not two copies of the object, but rather the same object is now being referenced by both the Activity and the Fragment. That means if the object is changed by the Activity, the Fragment would see the changes.

Appendix

BookCase API

Get a subset of books in JSON format based on a provided search term:

Structure: https://kamorris.com/lab/cis3515/search.php?term=search_term

Return value: JSON Array of JSON objects. Each object represents a book with the following string:value pairs:

1. id: number – the ID of the book
2. title: string – the name of the book
3. author: string – the author of the book
4. cover_url: string – the URL of an image of the book cover

Example:

Query URL: <https://kamorris.com/lab/cis3515/search.php?term=great>

Result: [{"id":"2","title":"The Island of Doctor Moreau","author":"H. G. Wells","cover_url":"https://kamorris.com/lab/abp/covers/IslandOfDrMoreau.jpeg"}, {"id":"5","title":"Through the Looking-Glass","author":"Lewis Carroll","cover_url":"https://kamorris.com/lab/abp/covers/through_the_looking_glass.jpeg"}]

Notes:

1. You can (and should) test your web service queries in a browser. Just copy and past the example query above to see the result.
2. Querying the web service with an empty search term will return all available books.

Rubric

Search button added to main activity to launch BookSeachActivity	5%
BookSearchActivity is shown as dialog using themes	10%
Allows user to perform a search to receive all or a subset of books	25%
App always shows the BookListFragment after a search is performed	15%
Properly updates display (ListView in BookListFragment) with new books after search is complete	20%
Once retrieved, a list of books is retained if the activity is restarted (device rotated from portrait to landscape or vice-versa), until the user performs another search – books returned from new search will always replace old books	25%