LIBRARY APP

Made By:- Siddharth Kothari
Roll No- IMT2021019
Technologies used- Android Studio, Kotlin and XML

- ## PURPOSE OF THE APP

The app has been designed with the objective of serving public educational institutes, to keep a record of the books in their library, and also to facilitate the issuing of books to various students, and keep records for the same. We can add books to the library, search books by name, author or genre, and also issue books to the students.

Every book in the library consists of the following info-
1. Book Id (auto generated when the book is first added to the library)
2. Book Name
3. Author Name
4. Genre
5. Publisher's name
6. Student Name (the student to whom it has been issued, it is blank if not issued to any student)
7. Roll No (the roll no of the student, again blank if not issued to any student)

- ## LAYOUT OF THE APP

The app has a simple and intuitive layout. It consists of a total of 9 screens described below.

\

1. Start Fragment - It is the first screen that opens when you open the app. It consists of 4 buttons, Add a book, Search a book, View Library, and Filter books.
   a. The add button takes the user to the Add Fragment, where the user enters data for a new book to be added.
   b. The search a book button takes us to the Search Fragment, where we can search a book based on the book id.
   c. The View Library takes us to the map fragment,which displays a list of all the books in the library.
   d. The Filter Books button allows us to filter books based on the name of the book, the author name or the genre.
   e. Screenshots of the various fragments given below
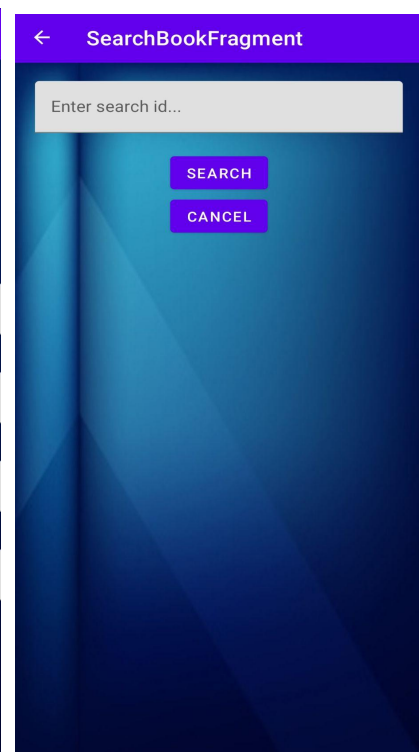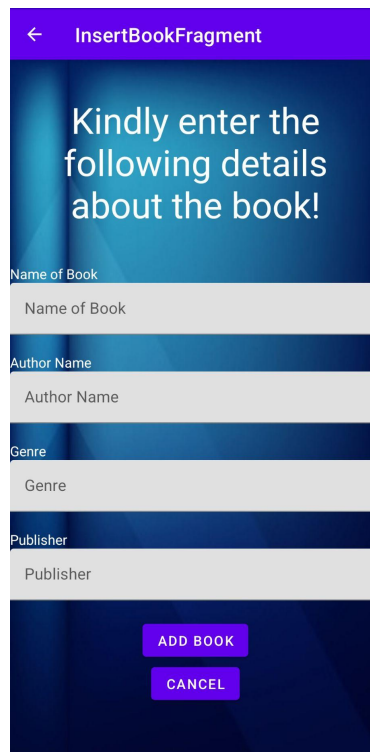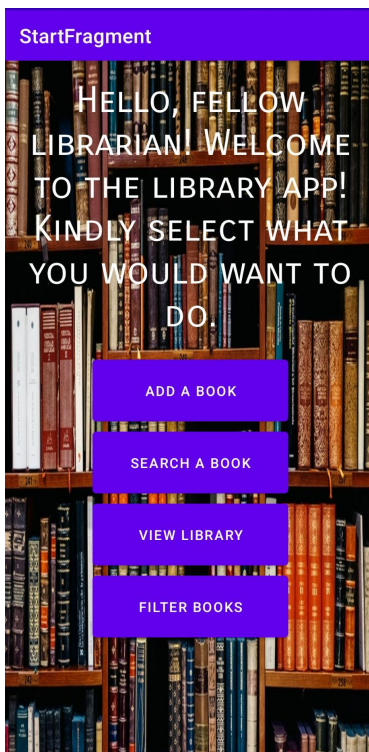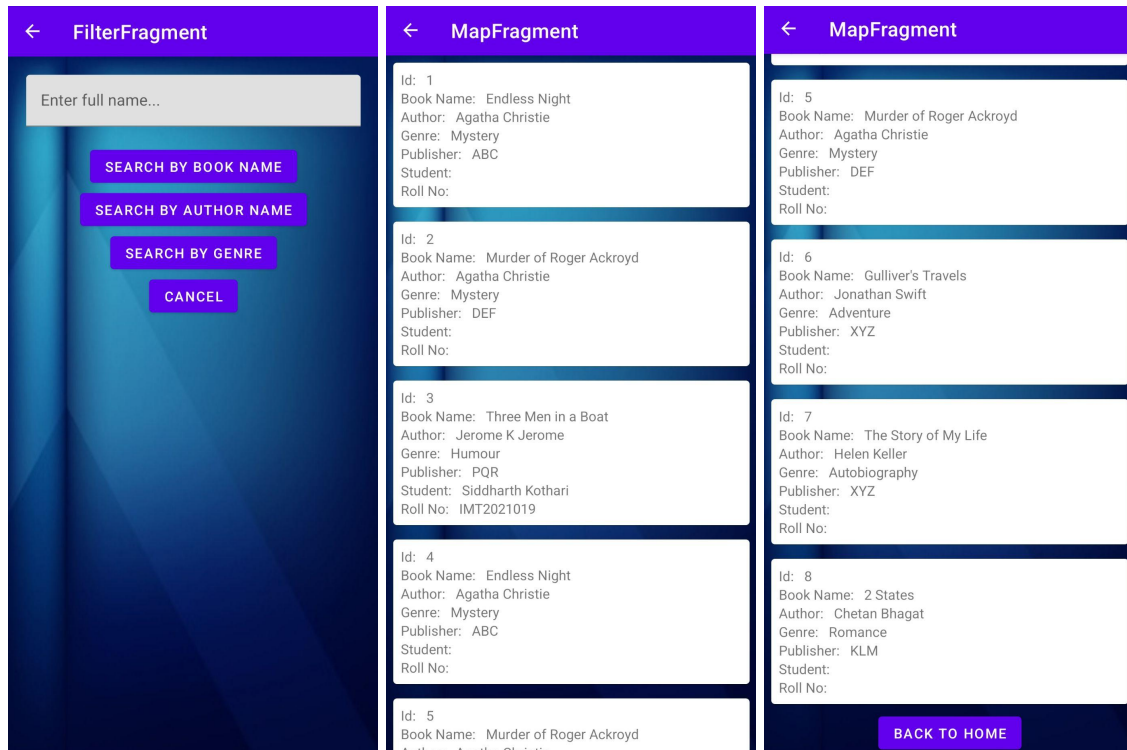
2. View Library Fragment

   a. Directly shows a list of all the books in the library.

   b. The Back To Home button takes the user back to the Start Fragment. The user can view the auto generated ids of the books here.

   c. Books with the same info are allowed, as there may be multiple copies of the same book. However, all the copies will have different ids.

   d. Screenshots have been attached above with the start fragment.

3. Add Fragment

   a. Here we enter the details of the book that we want to add. The following details are entered- Book name, author name, genre and publisher's name.

   b. The id is auto generated and can be seen in the map fragment.

c. The student name and roll no by default is empty.
d. If any field is left empty, a toast message saying the same pops up.
e. On successful addition, we navigate back to the start fragment. A toast message conveying the success pops up, and the added book can now be viewed in the library.
f. The cancel/ go back button on any screen takes the user back to the start fragment.
g. Screenshots for all the steps:

4. Search Fragment
   a. This screen allows the user to search a book based on the id of the book, which can be obtained from the map fragment or from the filtered list fragment. This id is then used to display the details of the book in the Details Fragment.
   b. Returns a toast message if the search field is left empty, and the search button is clicked. The cancel button has the same functionality as described above.
   c. Screenshots of the working:
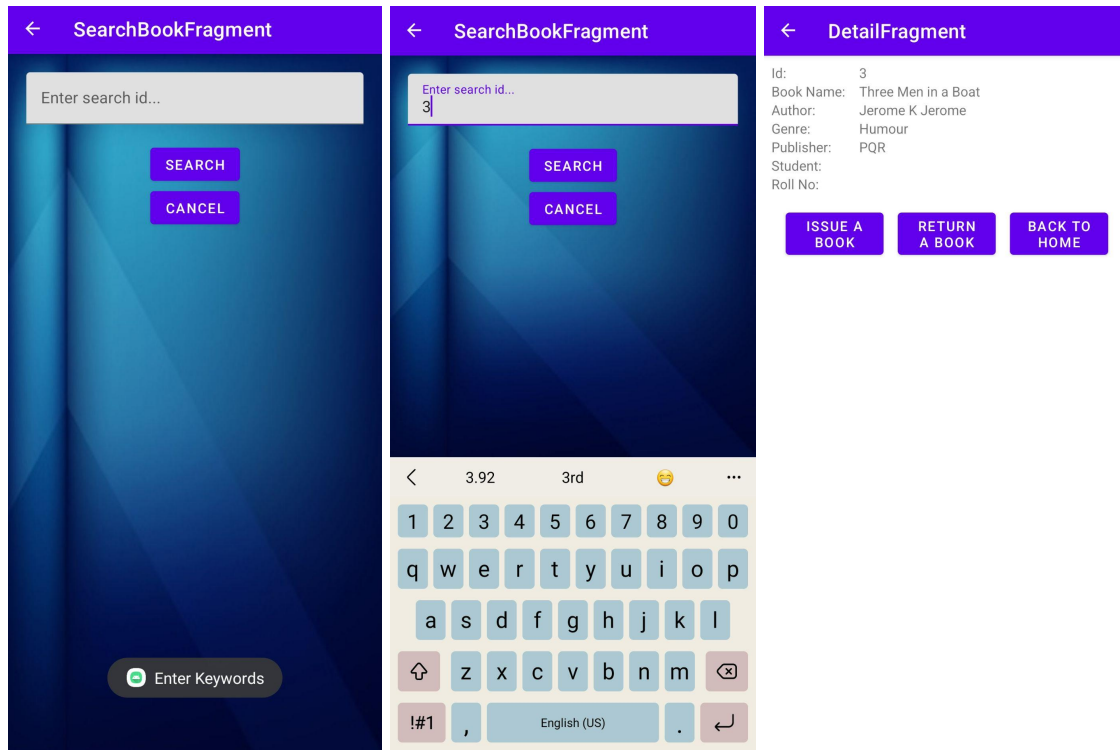
5. Details Fragment
   a. Displays the details of the book whose id we searched.
   b. The issue book button takes us to the issue fragment, where we enter the details of the student to whom we want to issue the book.
   c. Clicking the issue book button when the book is already issued to someone else will not work, and a message regarding the same will be displayed.
   d. Similarly, the return fragment will take the user to the return fragment, which will work only when the book has been issued to someone. Otherwise, a message regarding the same is displayed.
   e. The back to home button takes us back to the start fragment.
   f. The screenshot of the detail fragment button is displayed above.

6. Issue Book Fragment
   a. Here we enter the details of the student to whom we want to issue the book whose id we had searched.
   b. The name and roll no of the student is to be entered. If any field is left empty, a toast message is displayed, and the cancel button takes us back to the start fragment.
   c. On successful issuing, we again navigate to the start fragment, with a toast message notifying the user of the success being displayed. The change in the student name and roll no fields for the book can then also be viewed through the map fragment or the filtered list fragment.
   d. Screenshots of the working:
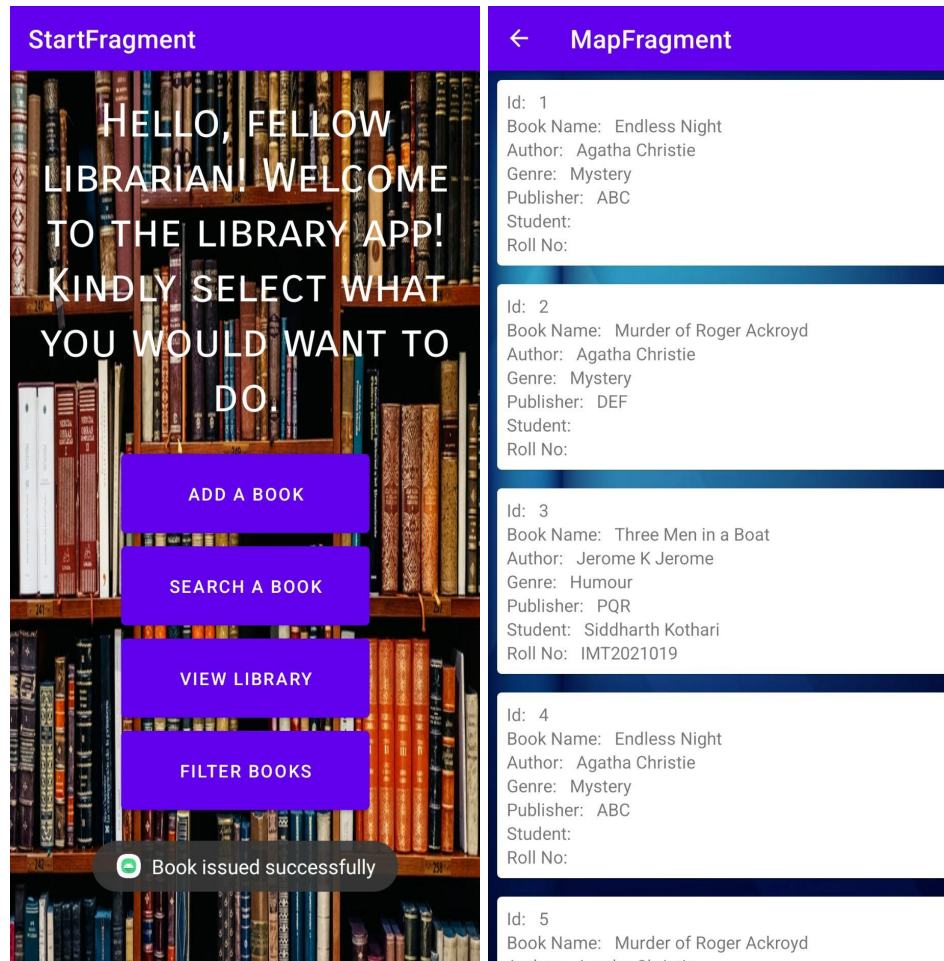
7. Return Fragment
   a. It looks and works similar to the issue book fragment. The only difference is that here if we do not type the correct info of the student to whom the book had been previously issued, a message telling us about the incorrect info is displayed.
   b. This serves as a check whether the correct student has brought back the book or not.
   c. The remaining functionality of the screen is pretty similar to the issue book fragment.
   d. Screenshots for the same:

MapFragment

Id: 4
Book Name: Endless Night
Author: Agatha Christie
Genre: Mystery
Publisher: ABC
Student:
Roll No:

Id: 5
Book Name: Murder of Roger Ackroyd
Author: Agatha Christie
Genre: Mystery
Publisher: DEF
Student: Siddharth Kothari
Roll No: IMT2021019

Id: 6
Book Name: Gulliver's Travels
Author: Jonathan Swift
Genre: Adventure
Publisher: XYZ
Student:
Roll No:

Id: 7
Book Name: The Story of My Life
Author: Helen Keller
Genre: Autobiography
Publisher: XYZ
Student:
Roll No:

Id: 8
Book Name: 2 States

ReturnFragment

Kindly enter the book name and verify the details of the student!

Book Id
3
Name of Student
Name of Student
Roll Number of Student
Roll Number of Student

RETURN BOOK
CANCEL

One or more fields incomplete

ReturnFragment

Kindly enter the book name and verify the details of the student!

Book Id
3
Name of Student
Name of Student
Siddharth
Roll Number of Student
Roll Number of Student
IMT2021019

RETURN BOOK
CANCEL

Incorrect Info

ReturnFragment

Kindly enter the book name and verify the details of the student!

Book Id
5
Name of Student
Name of Student
Siddharth Kothari
Roll Number of Student
Roll Number of Student
IMT2021019

RETURN BOOK
CANCEL

StartFragment

HELLO, FELLOW LIBRARIAN! WELCOME TO THE LIBRARY APP! KINDLY SELECT WHAT YOU WOULD WANT TO DO.

ADD A BOOK

SEARCH A BOOK

VIEW LIBRARY

FILTER BOOKS

Book returned successfully

MapFragment

Roll No:

Id: 4
Book Name: Endless Night
Author: Agatha Christie
Genre: Mystery
Publisher: ABC
Student:
Roll No:

Id: 5
Book Name: Murder of Roger Ackroyd
Author: Agatha Christie
Genre: Mystery
Publisher: DEF
Student:
Roll No:

Id: 6
Book Name: Gulliver's Travels
Author: Jonathan Swift
Genre: Adventure
Publisher: XYZ
Student:
Roll No:

Id: 7
Book Name: The Story of My Life
Author: Helen Keller
Genre: Autobiography
Publisher: XYZ
Student:
Roll No:

Id: 8

---

8. Filter Fragment

a. It allows us to search and return a list of books based on a specified search condition.

b. The full name of either the book, the author or the genre of the book is entered in the text input field, and the corresponding button is clicked, following which we navigate to the filtered list fragment, which will display the requested list.

c. As always, if the field is left empty, a message is displayed, and the cancel button takes us back to the start fragment.

9. Filtered List Fragment

a. It displays the requested list based on the conditions specified in the filter fragment.

b. Here we can view the id of the books, and use it to issue the book to a student.

c. The back to home button takes us back to the home screen.

d. Screenshots of the working of both the screens are given below.
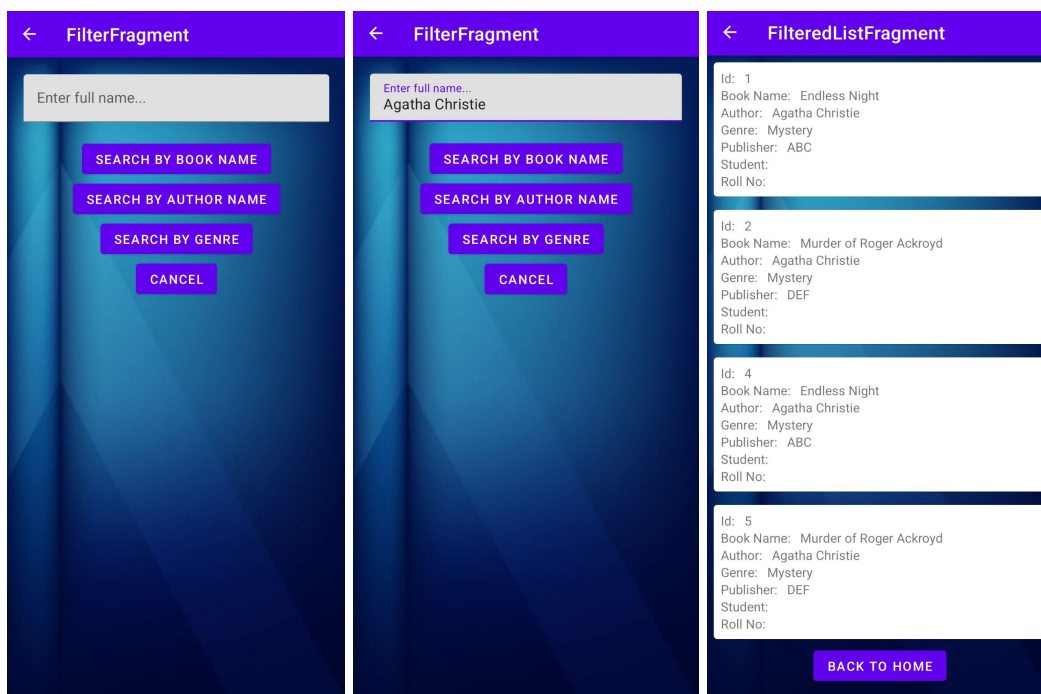
- MOTIVATION

The app is meant to provide a simple and intuitive interface for the library authorities of the institute to facilitate the management of the books in the library. The use of several buttons and toast messages helps to ensure this ease of usage. This app, although currently developed for educational institutions, can be expanded to encompass public libraries as well.

- FUTURE SCOPE OF THE PROJECT

1. The app can be expanded to include public libraries, where instead of the student details such as name and roll number being used to identify the students, we can use other details such as Name, Phone Number, library database details etc. to identify the person.
2. The search functionality currently requires the user to enter the complete name of anything they want to search. This can be modified to search with the help of small phrases or incomplete words as well.
3. The app can also be modified to have additional functionality such as using login details to allow people to login from multiple devices and access the same info.

THANK YOU !!