ATHENAEUM
LIBRARY MANAGEMENT ANDROID APPLICATION

Submitted in the partial fulfillment of the

Requirement for the Bachelor degree

In

Computer Application

By

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December 2020 – April 2021

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Bachelor degree

In

Computer Application
(Affiliated to University of Madras)

BONAFIDE CERTIFICATE
This is to certify that this is a bonafide record of the project done by

MARISA RAJ
ANGELINE SHRUTHI M

On

ANDROID APPLICATION DEVELOPMENT

At

Stella Maris College (Autonomous)
December 2020 – April 2021

This project was done by her in the partial fulfillment of the requirements for the Bachelor degree in Computer Application

Head of Department **Internal Guide** **External Examiner**

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We extend our heartfelt thanks to our parents and friends for providing their support in this endeavour of ours.

PLACE: CHENNAI **MARISA RAJ**

DATE: **ANGELINE SHRUTHI M**

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ABSTRACT

Athenaeum is a user-friendly mobile app designed to make library management much simpler with contact-free functionality. It was created with the current pandemic crisis in consideration. A time when people’s reliance on technology has grown exponentially over the past year. This application allows students to self-issue books, return them, view their issues, pay fines, and even access and download books from all years of the curriculum. The librarian, on the other hand, can scan or manually issue books to students, view student’s book issues, return them, and browse for books in the curriculum. This application is beneficial for the department, as it reduces students' reliance on the librarians and allows librarians to keep track of student orders and the defaulters without having to rely on book registers.

1. INTRODUCTION

With over 250 students in the department, our application could help make library management a lot less demanding. We implemented book issuing and returning via scanning and fine payments using no cash, inspired by our library's protocols. Students can even ask their friends to issue books for them without any hassle, and they can preview the books prescribed for their next semester ahead of time to familiarise themselves with them. This application is the need of the hour, as maintaining a contactless system is critical during these testing pandemic times. This application benefits the department because it decreases student dependence on librarians and helps librarians to keep track of student orders and defaulters without relying on book registers.

2. PROJECT REQUIREMENTS AND SPECIFICATION

2.1 Requirement Analysis – Proposed System

Existing System

Issuing and returning of books and making fine payment is only possible in the presence of a Librarian.

Proposed System

The proposed system provides a contactless solution for the Departments of Stella Maris College. Students can self issue books, make late return fine payments through UPI payment gateways and search for books prescribed in all the years syllabus and Librarians can view the student issues and also do the issuing and returning of books.

User Specifications

- Students and librarians register with their personal details in order to access their accounts.
- They can then login to access the app's various functionalities and functions after registering.

Student has the following features:

- **Issue book:** Helps students borrow books by scanning the barcode/QR of the book, similar to how the existing library management system works.
- **My Books:** It is an alternate method of manually issuing books if the scanning function on the student's phone does not operate, allowing students to issue books by manually entering the information.
- **Search Book:** Assists students in accessing or downloading e-books that are prescribed for all years of the curriculum.
- **Fine Payments:** Allows the student to make late return fine payments for books using the UPI payment gateways built into the student's phone.
- **Settings:** Assists the student with changing their password.

Librarian has the following features:

- **Issue Book (Scanning):** By scanning the book's barcode/QR code, it assists the librarian in issuing a book to the student.

- **Issue Book (Manually):** Assists the librarian in issuing a book to a student by manually entering the book's information.
- **View and Return Books:** Assists the librarian in viewing and deleting the student's book issue records in the event that the student has returned the book.
- **Search Book:** Assists librarians in accessing or downloading e-books for all years of the student programme.
- **Settings:** Assists the librarian with changing their password.

2.2 Feasibility Study

Technical Feasibility

This evaluation determines whether the technology needed for the proposed system is available or not. This is concerned with specifying and software that will successfully satisfy the user requirement. The technical needs of the system may include:

● Front-end Selection - Java and XML (Android Studio)

● Back-end Selection – SQLite

The technical requirements are fulfilled and are technically feasible

Operational Feasibility

This system can be used by the students of Stella Maris College with just a mobile phone. Hence the system is operationally feasible for the end user to operate.

Economic Feasibility

Economical justification is generally the “Bottom Line” consideration for most systems. This feasibility checks whether the system can be developed with the available funds. This project is developed with minimum funds and is economically feasible.

2.3 Hardware and Software Specifications

Software Specifications

Front End	Android Framework
Back End	SQLite
Operating System	Microsoft Windows 7/8/10 (64-bit)
Platform	Android SDK
IDE	Android Studio
Android Emulator	API Level 21/Higher
Technologies	Java, XML

Table 2.3.1: Software Specifications

Hardware Specifications

Processor	Core i5 or i3
Memory Space	8 GB
Disk Space	4 GB
CPU Speed	2.30 GHz

Table 2.3.2: Hardware Specifications

3. SYSTEM ANALYSIS

System analysis is a management exercise which helps us in diagnosing a new system or improving the existing system. The analysis includes system study and UML diagrams explaining the working of the system. The software and tools used in the system are as follows.

Android Framework

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. Android Studio supports all the same programming languages of IntelliJ (and CLion) e.g, Java, C++, and more with extensions, such as Go; and Android Studio 3.0 or later supports Kotlin.

Android Studio

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.

SQLite

SQLite is an open-source SQL database that stores data to a text file on a device. Android comes with built in SQLite database implementation. It is used to perform database operations on android devices such as storing, modifying, retrieving persistent data from databases.

3.1 System Study

The main goal of this Android application is enhancing the library management system in all departments of Stella Maris College. Making it easier for the department’s libraries by allowing students to self-issue and return books and make late fine payments without the involvement or dependence of the librarian. Librarians, on the other hand, can remotely track all of a student's book issues and can easily track the defaulters. And to prevent unauthorised access to student information, a special code must be entered in order to display the functionality available to the librarian, ensuring data protection.

3.2 UML Diagrams

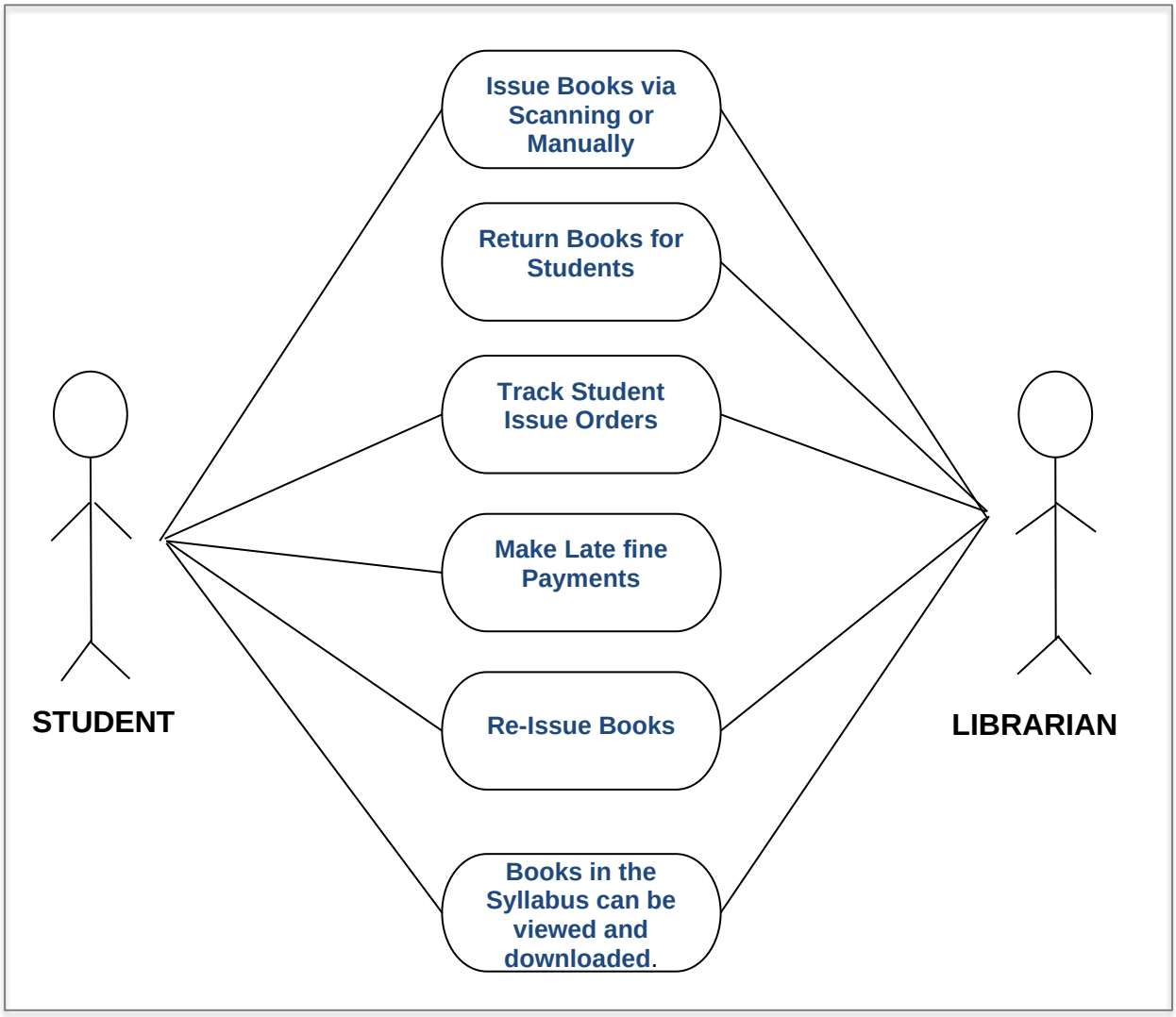


Fig 3.2.1: Use Case Diagram

Use case diagrams are usually referred to as diagrams used to describe a set of actions (use cases) performed by user.

This use case diagram is used to describe a set of actions (use cases) performed by the Student and Librarian onTouch of the specific images in the CATEGORIES pages.

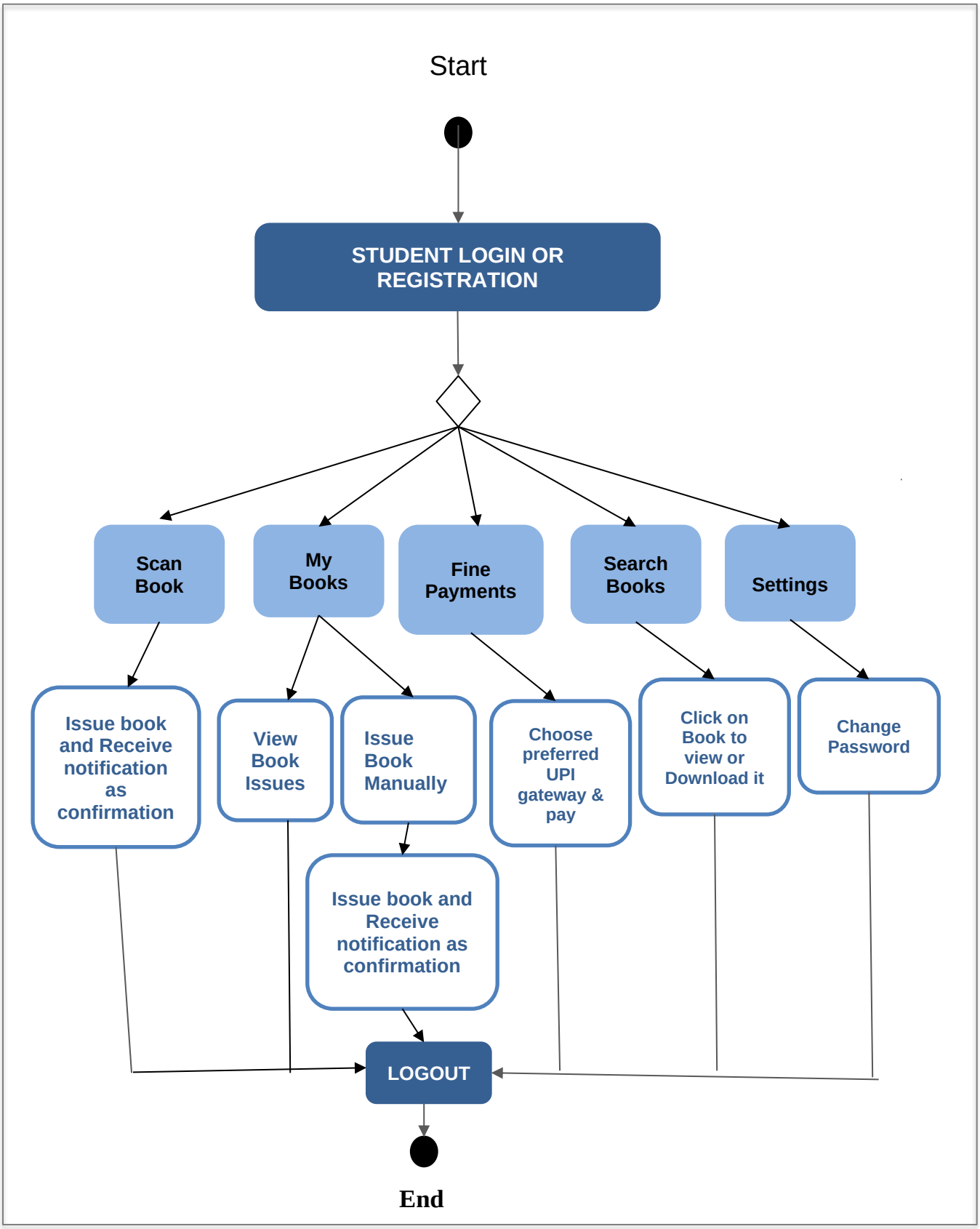


Fig 3.2.2: Activity Diagram-Student

This activity digram describes the actions that could be performed by the Student in a sequential manner.

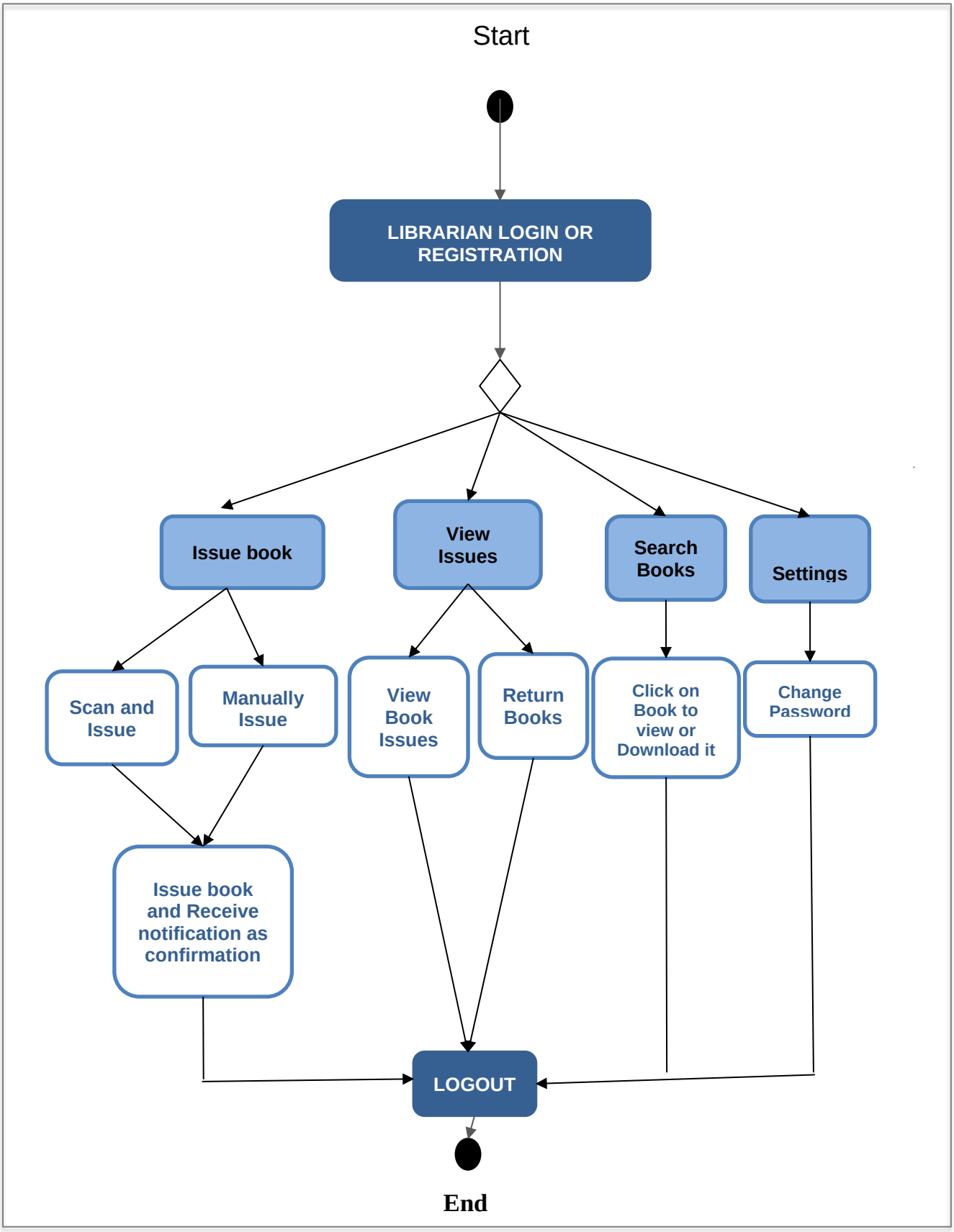


Fig 3.2.3: Activity Diagram-Librarian

This activity digram describes the actions that could be performed by the Librarian in a sequential manner.

3.3 Data Dictionary

BOOKDB			
Description	This table contains the Issued Book's Details.		
Attribute	**Description**	**Type**	**Example Values**
BKID	Book's Barcode or QR Code.	Integer (PK)	87638689012
BNAME	Name of the Book.	Varchar (NOT NULL)	Java: The Complete Reference
BDATE	Date of Book Issue.	Varchar (NOT NULL)	14 Apr 2021
RDATE	Date of Book Return.	Varchar (NOT NULL)	21 Apr 2021
bkSID	Student's Department number	Varchar (FK)	18/UCSA/201

STUDB			
Description	This table contains the Student Details.		
Attribute	**Description**	**Type**	**Example Values**
SID	Student's Department Number.	Varchar (PK)	18/UCSA/201
UNAME	Name of the Student.	Varchar (NOT NULL)	Furika Miki
PASSWORD	Student account's password.	Varchar (NOT NULL)	Helloworld@123

LIBDB			
Description	This table contains the Librarian's Details.		
Attribute	**Description**	**Type**	**Example Values**
LID	Librarian's email id.	Varchar (PK)	maris12@gmail.com
LNAME	Name of the Librarian.	Varchar (NOT NULL)	Maris Paris
LPASS	Librarian account's password.	Varchar (NOT NULL)	marisa@456

SearchDB			
Description	This table contains the Book' Details of the Search function.		
Attribute	**Description**	**Type**	**Example Values**
bookName	Name of Book.	Varchar (PK)	C Programming
authorName	Name of the Author.	Varchar (NOT NULL)	By Balagurusamy
imageUrl	Image of the book.	Integer	R.drawable.img

4. SYSTEM DESIGN

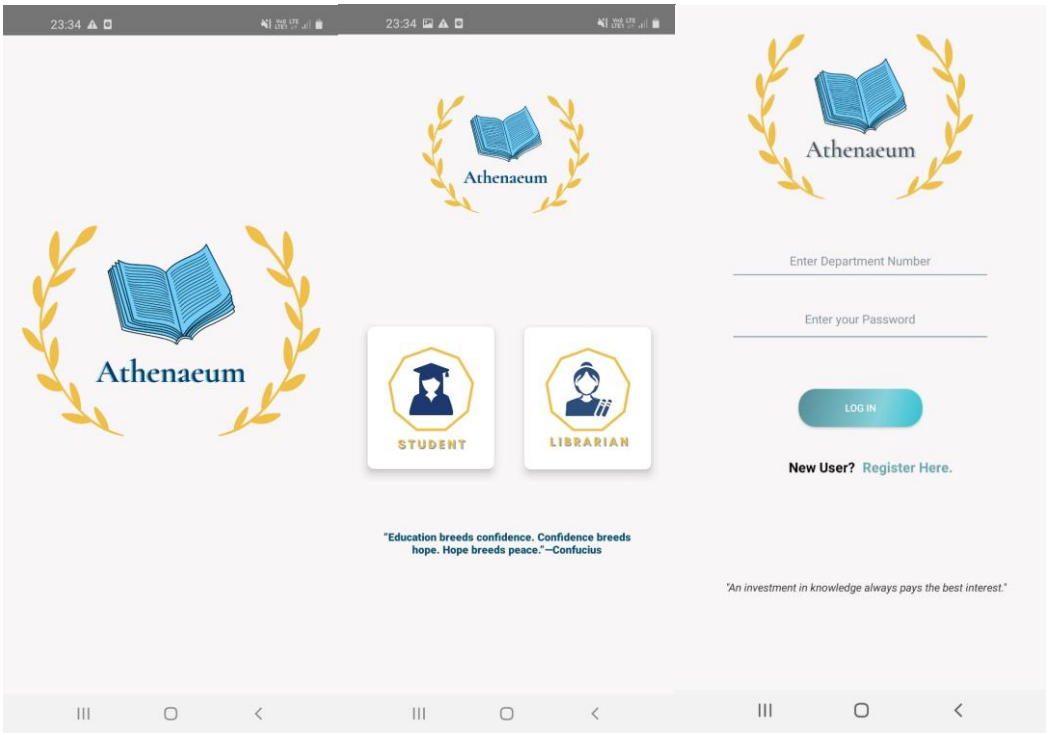
4.1 Introduction

System design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. The design of our system consists of the following:

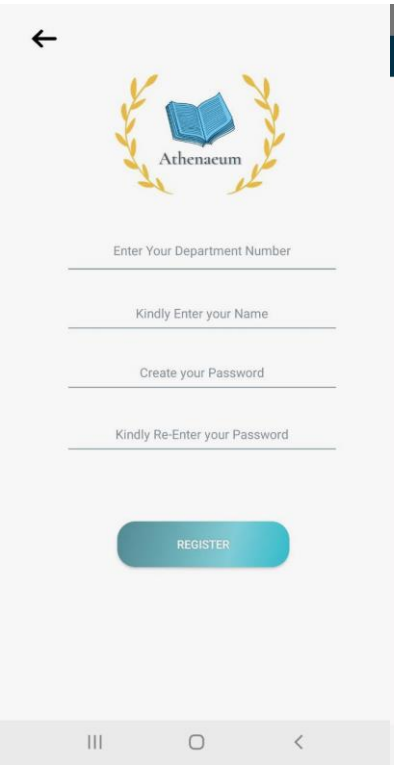
- Screen design - screenshots of the application
- Database design - description of the tables

4.2 Screen Design

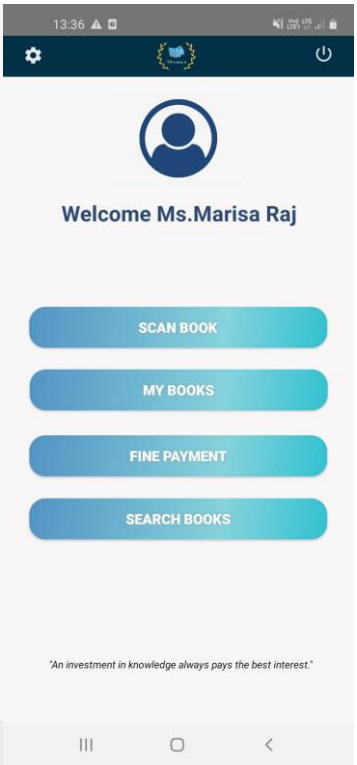
Splash Screen **Categories** **Student Login**



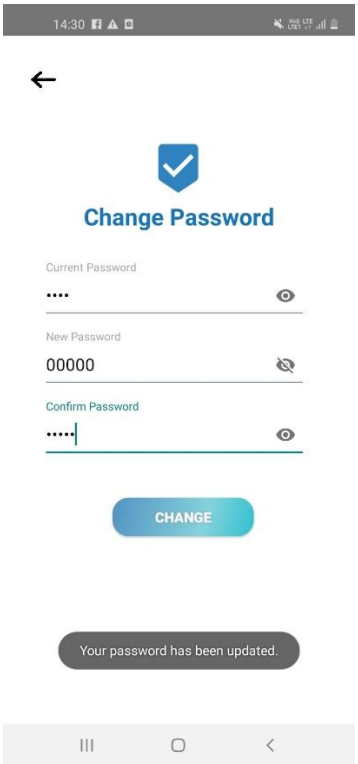
Student Registration



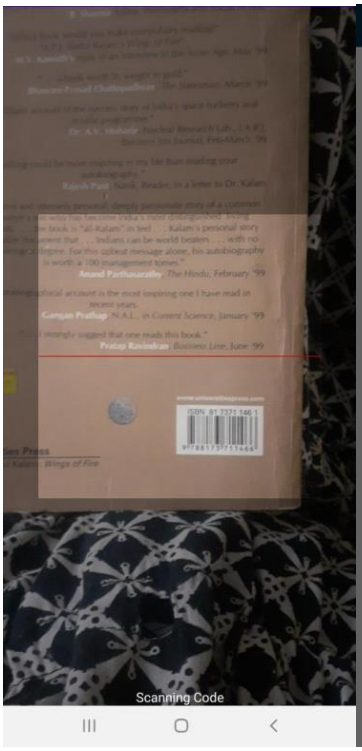
Student Landing Page



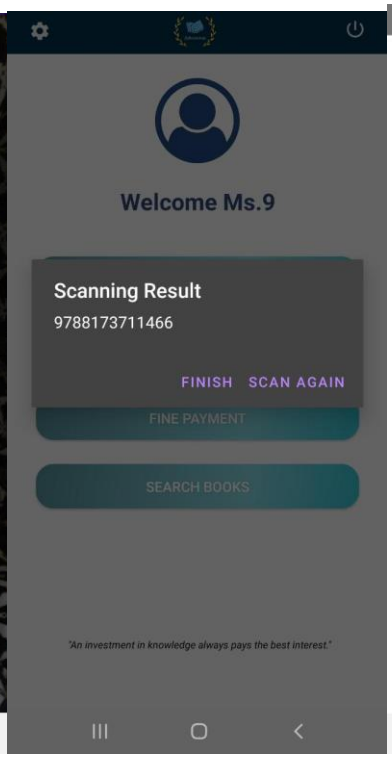
Settings



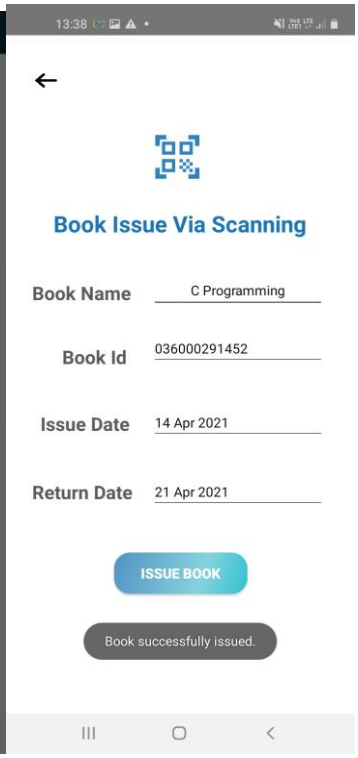
Scanning Books



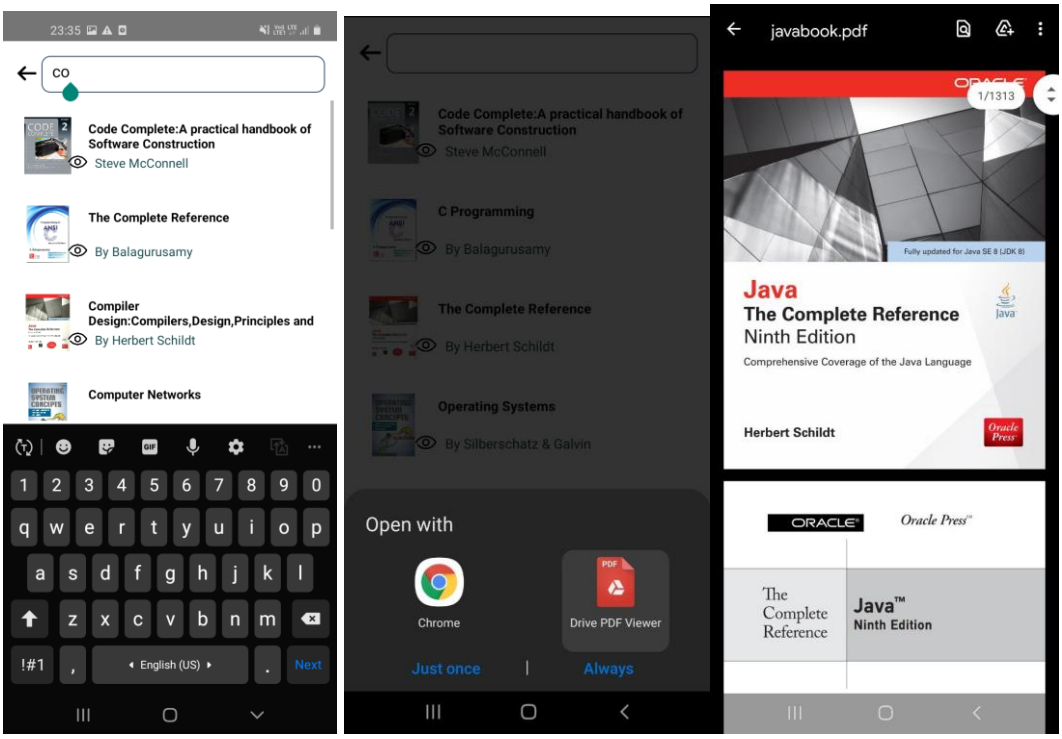
Scanned Result



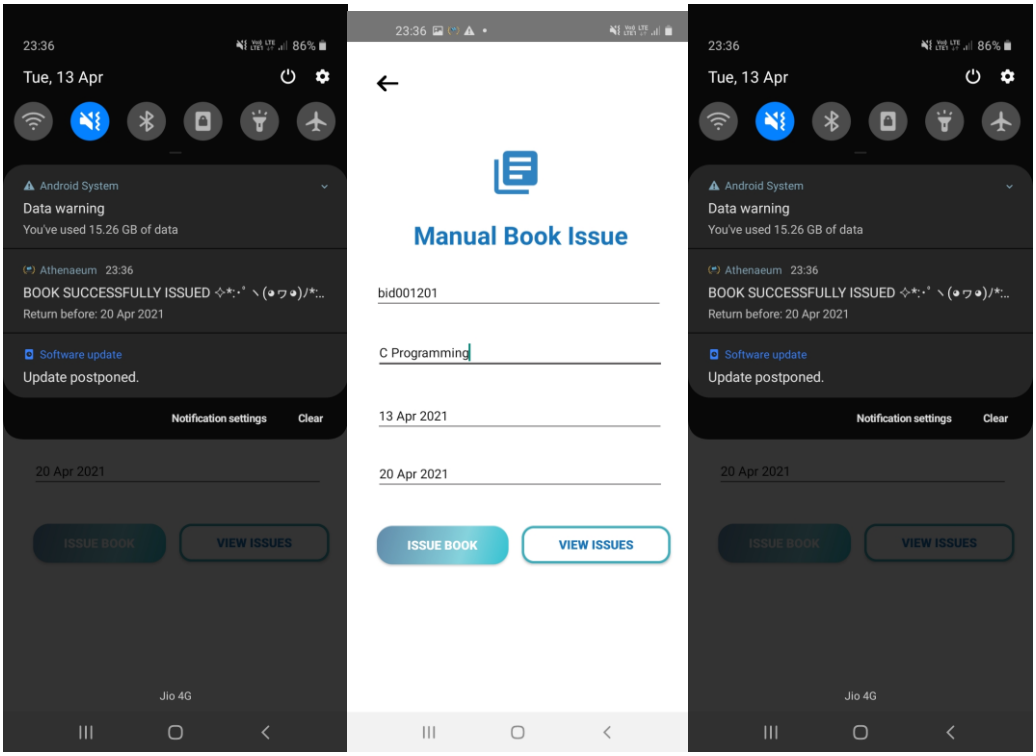
Scan Book Issue



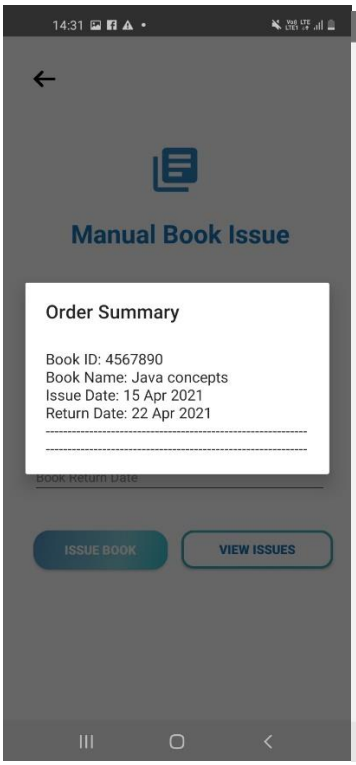
Search Books **Select Book** **PDF Version Selected**



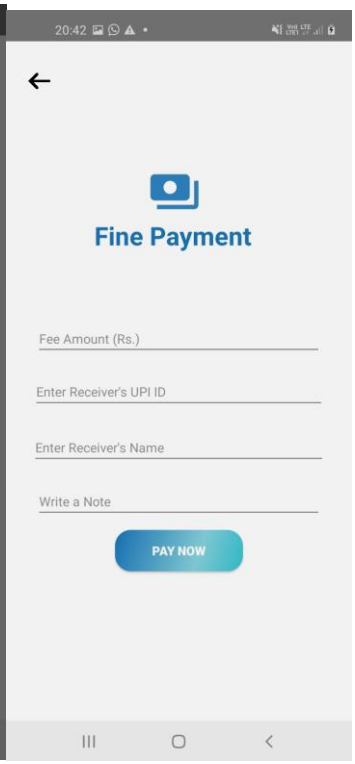
Booked Confirmation **My Books: Manual Issue** **Booked Confirmation**



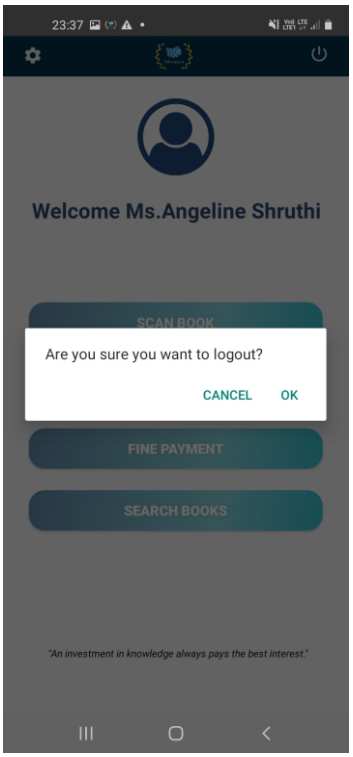
My Books: View Books



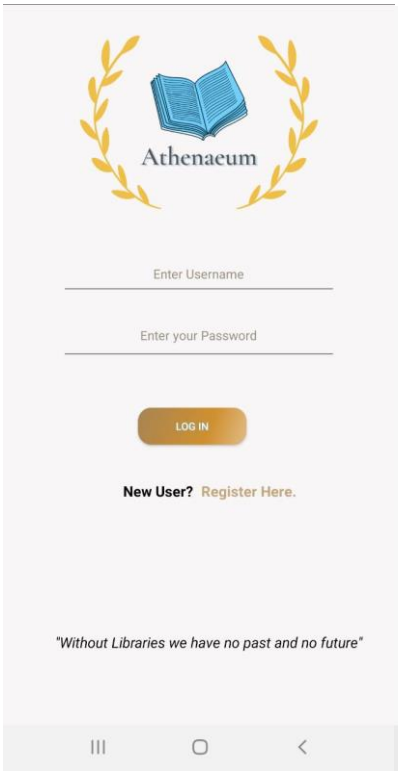
Fine Payment



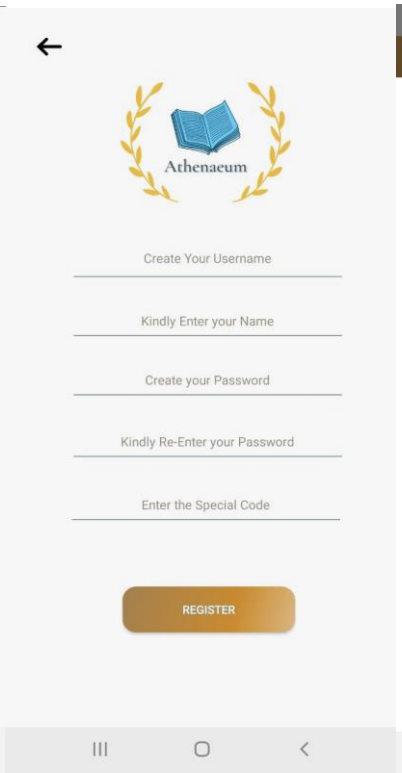
Logout



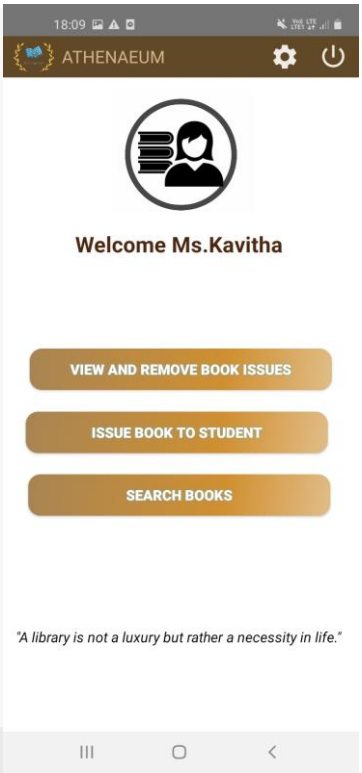
Librarian Login



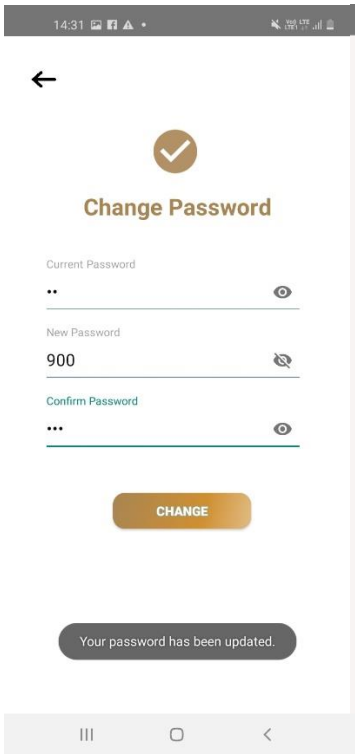
Librarian Sign Up



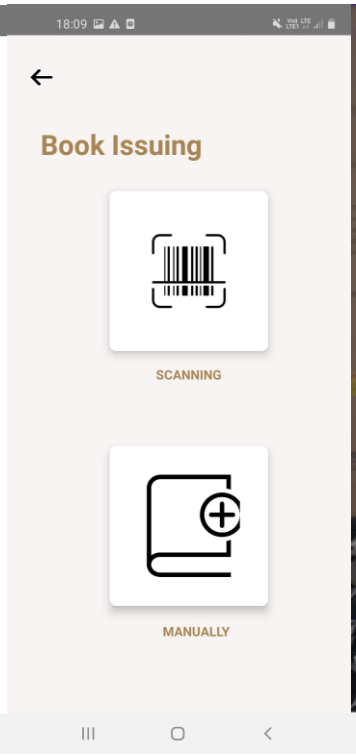
Landing Page



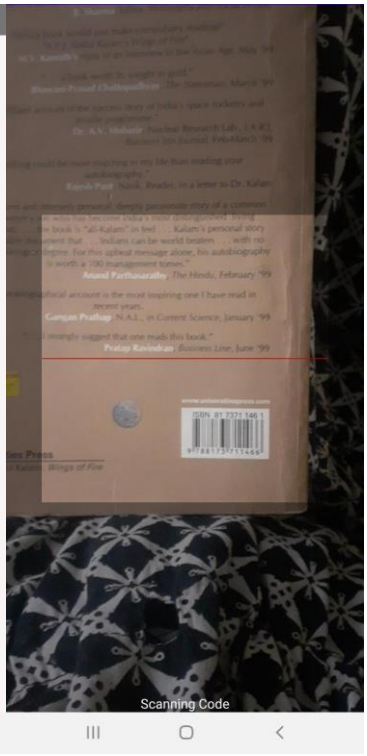
Settings



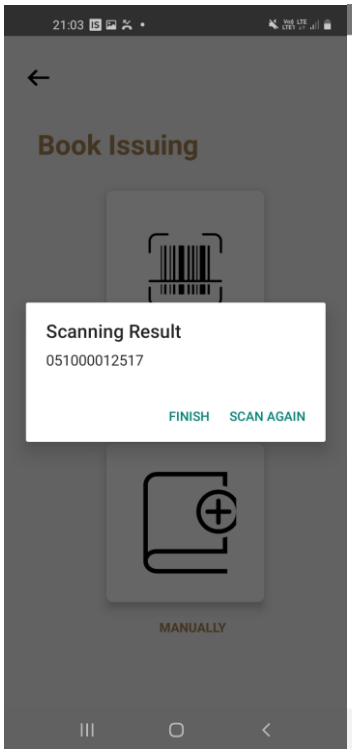
Issue Book



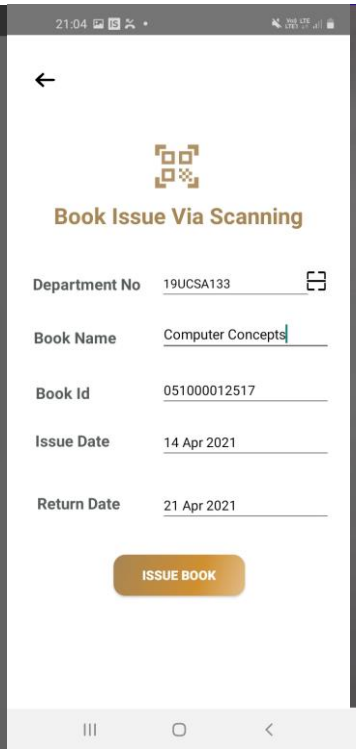
Scanning



Scan Result

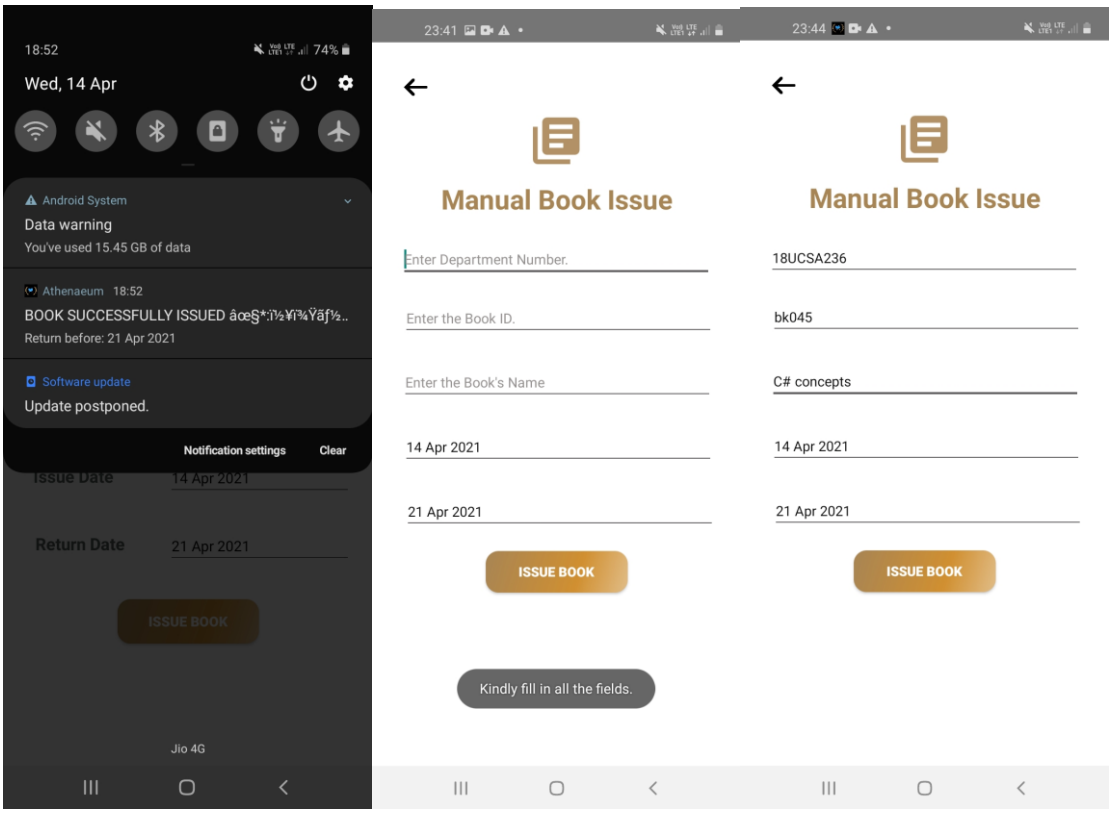


Book Issue

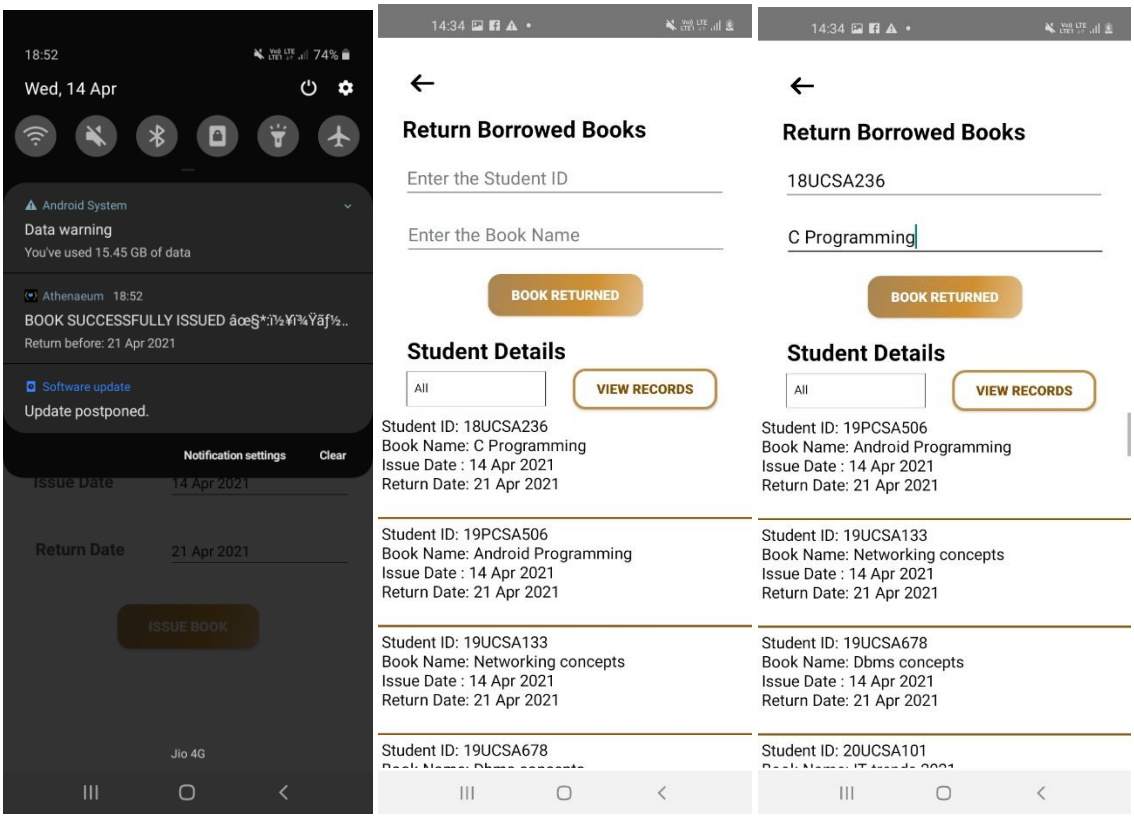


Scanning Student Card

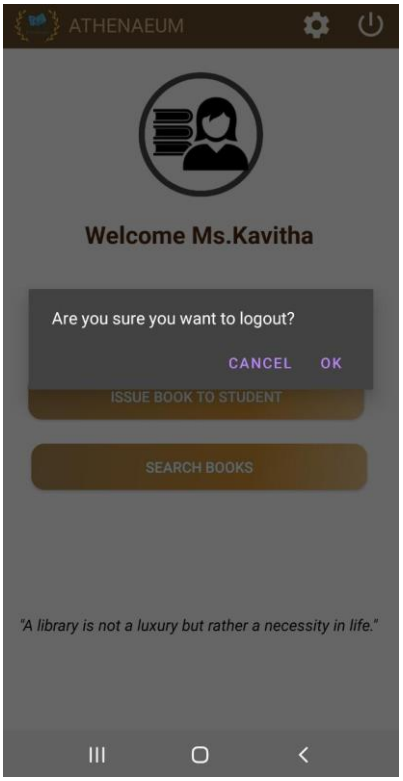
Booked Confirmation **Book Issue: Manually** **Book Issued**



Booked Confirmation **View Book Issues** **Remove Book Issues**



Logout


ATHENAEUM
Welcome Ms.Kavitha
Are you sure you want to logout?
CANCEL
OK
ISSUE BOOK TO STUDENT
SEARCH BOOKS
"A library is not a luxury but rather a necessity in life."

4.3 Database Design

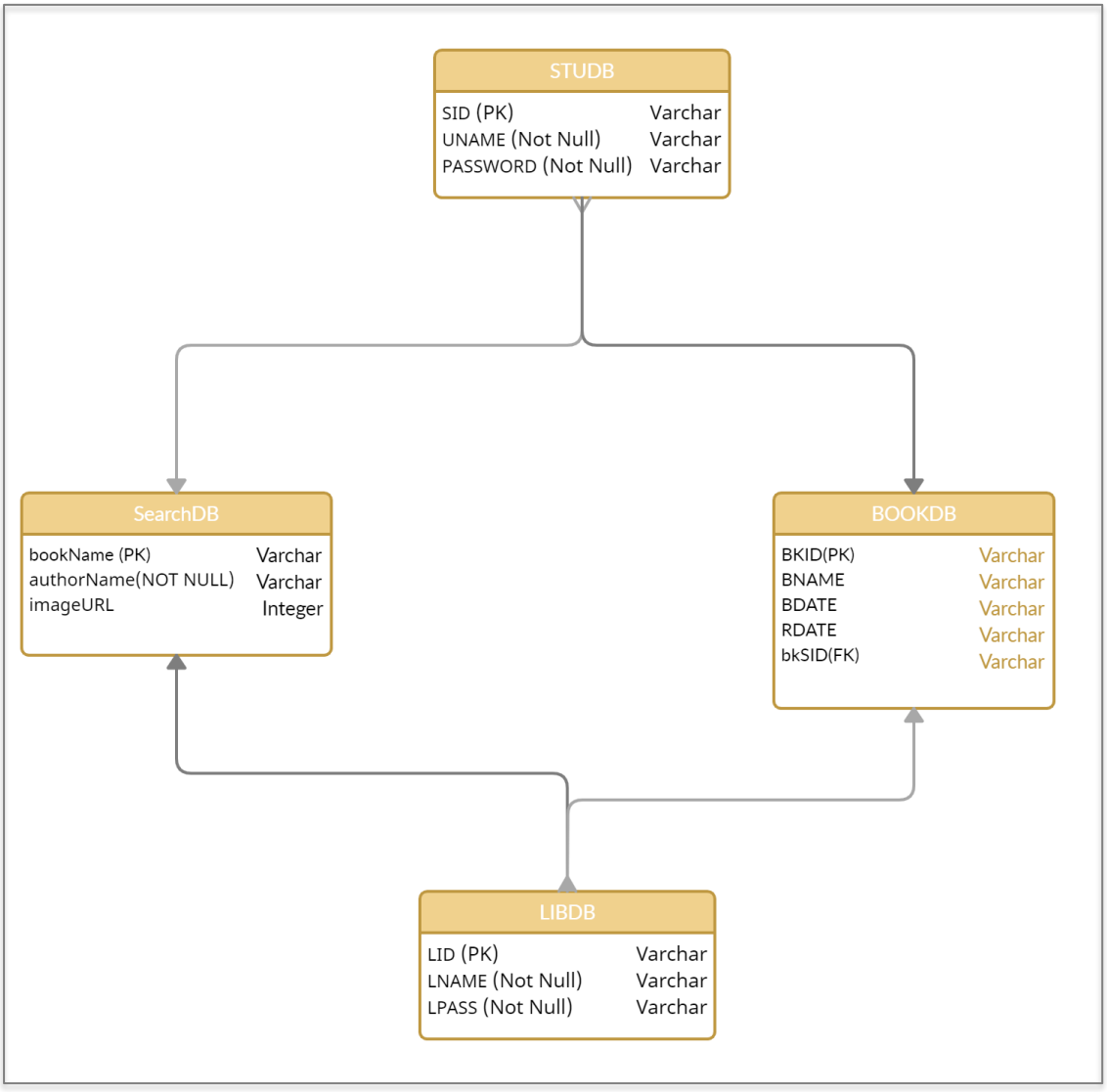


Fig 4.3.1: Database Design Diagram

5. CODING

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="#F8F6F6"
  tools:context=".MainActivity">

  <ImageView
    android:id="@+id/imageView2"
    android:layout_width="273dp"
    android: layout_height="261dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.404"
    app:srcCompat="@drawable/b" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.athenaeum;
import android.content.Intent;
import android.os.Bundle;
import android.os.Handler;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
  private static int SPLASH_SCREEN_TIME_OUT = 2000;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    new Handler().postDelayed(new Runnable() {
      @Override
      public void run() {
        Intent i = new Intent(MainActivity.this,CardViewAth.class);
        startActivity(i);
        finish();
      }
```

```
        }, SPLASH_SCREEN_TIME_OUT);
    }
}
```

activity_login.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/athenbg"
    android:padding="10dp"
    tools:context=".Login">

    <TextView
        android:id="@+id/textView"
        android:layout_width="388dp"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="12dp"
        android:layout_marginBottom="95dp"
        android:text="'An investment in knowledge always pays the best interest.'"
        android:textAlignment="center"
        android:textColor="#2D2F30"
        android:textSize="11sp"
        android:textStyle="italic" />

    <EditText
        android:id="@+id/uid"
        android:layout_width="289dp"
        android:layout_height="47dp"
        android:layout_centerHorizontal="true"
        android:layout_gravity="center_horizontal"
        android:layout_marginTop="250dp"
        android:backgroundTint="#6E8894"
        android:hint="Enter Department Number"
        android:inputType="textPersonName"
        android:textAlignment="center"
        android:textColor="@color/black"
        android:textColorHint="#87919E"
        android:textSize="12sp" />
```

```
<EditText
    android:id="@+id/pass"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="318dp"
    android:backgroundTint="#6E8894"
    android:gravity="center_horizontal"
    android:hint="Enter your Password"
    android:inputType="textPassword"
    android:textAlignment="center"
    android:textColor="#090909"
    android:textColorHint="#87919E"
    android:textSize="12sp" />

  <TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_alignParentRight="true"
    android:layout_marginStart="116dp"
    android:layout_marginTop="490dp"
    android:layout_marginRight="218dp"
    android:text="New User?"
    android:textStyle="bold"
    android:textColor="#000000"
    android:textSize="14sp" />

  <TextView
    android:id="@+id/signup"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_alignParentRight="true"
    android:layout_marginStart="198dp"
    android:layout_marginTop="490dp"
    android:layout_marginRight="113dp"
    android:text="Register Here."
    android:textStyle="bold"
    android:textColor="#6BA8AF"
```

```
        android:textSize="14sp" />

    <androidx.appcompat.widget.AppCompatButton
        android:id="@+id/login"
        android:layout_width="137dp"
        android:layout_height="42dp"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="280dp"
        android:background="@drawable/btn4"
        android:text="Log in"
        android:textColor="#ffff"
        android:textSize="10sp" />
</RelativeLayout>
```

LoginActivity.java

```
package com.example.athenaeum;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;

public class Login extends AppCompatActivity {
    AppCompatButton login;
    TextView signup;
    EditText n,p;
    STUDB db;
    public static String stuname="";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
        login=(AppCompatButton) findViewById(R.id.login);
        signup=(TextView) findViewById(R.id.signup);
        n=(EditText) findViewById(R.id.uid);
        p=(EditText) findViewById(R.id.pass);
        db=new STUDB(this);
        login.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```
            String name=n.getText().toString();
            String pass=p.getText().toString();
            if(name.equals("")||pass.equals("")){
               Toast.makeText(Login.this, "Kindly fill all the
fields!",Toast.LENGTH_LONG).show();
            }
            else {
               Boolean res=db.onLogin(name,pass);
               if (res == true) {
                  stuname = n.getText().toString();
                  Intent intent = new Intent(getApplicationContext(), LandingPage.class);
                  startActivity(intent);
               }
               else{
                  Toast.makeText(Login.this,"Invalid Credentials, Kindly Sign Up.",
Toast.LENGTH_LONG).show();
               }
            }

         }
      });
 signup.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent i=new Intent(Login.this, Signup.class);
            startActivity(i);
         }
      });
   }
   @Override
   public void onBackPressed() {
      finish();
      Intent intent = new Intent(Login.this, CardViewAth.class);
      startActivity(intent);
   }
}
```

activity_signup.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
```

```
android:background="#FFFFFF"
android:padding="10dp"
tools:context=".Signup">

<ImageView
    android:id="@+id/imageView2"
    android:layout_width="306dp"
    android:layout_height="196dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="33dp"
    android:layout_marginEnd="38dp"
    android:layout_marginRight="38dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:srcCompat="@drawable/projectlogo" />

<EditText
    android:id="@+id/userid"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="234dp"
    android:layout_marginEnd="44dp"
    android:autofillHints=""
    android:backgroundTint="#6E8894"
    android:ems="10"
    android:gravity="center_horizontal"
    android:hint="Enter Your Department Number"
    android:inputType="textPersonName"
    android:textAlignment="center"
    android:textColor="@color/black"
    android:textColorHint="#87919E"
    android:textSize="12sp" />

<EditText
    android:id="@+id/name"
    android:layout_width="289dp"
    android:layout_height="47dp"
```

```
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_centerInParent="true"
    android:layout_marginTop="296dp"
    android:layout_marginEnd="44dp"
    android:autofillHints=""
    android:backgroundTint="#6E8894"
    android:ems="10"
    android:gravity="center"
    android:hint="Kindly Enter your Name"
    android:inputType="textPersonName"
    android:textAlignment="center"
    android:textColor="@color/black"
    android:textColorHint="#87919E"
    android:textSize="12sp" />

<EditText
    android:id="@+id/pass"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_marginTop="358dp"
    android:layout_marginEnd="44dp"
    android:backgroundTint="#6E8894"
    android:ems="6"
    android:hint="Create your Password"
    android:inputType="textPassword"
    android:textColor="#090909"
    android:textAlignment="center"
    android:gravity="center"
    android:textColorHint="#87919E"
    android:textSize="12sp" />

<EditText
    android:id="@+id/cpass"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_marginTop="423dp"
    android:layout_marginEnd="44dp"
    android:backgroundTint="#6E8894"
    android:ems="6"
```

```
        android:hint="Kindly Re-Enter your Password"
        android:inputType="textPassword"
        android:textColor="#090909"
        android:textAlignment="center"
        android:gravity="center"
        android:textColorHint="#87919E"
        android:textSize="12sp" />

    <androidx.appcompat.widget.AppCompatButton
        android:id="@+id/sign"
        android:layout_width="181dp"
        android:layout_height="48dp"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginEnd="97dp"
        android:layout_marginBottom="151dp"
        android:background="@drawable/btn4"
        android:shadowColor="#7CA7A8"
        android:shadowDx="0"
        android:shadowDy="0"
        android:shadowRadius="5"
        android:text="Register"
        android:textColor="#FFFF"
        android:textSize="11sp" />

    <ImageView
        android:id="@+id/back"
        android:layout_width="39dp"
        android:layout_height="37dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="17dp"
        android:layout_marginLeft="17dp"
        android:layout_marginTop="12dp"
        android:background="@drawable/back" />
</RelativeLayout>
```

Signup.java

```
package com.example.athenaeum;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
```

```
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;

public class Signup extends AppCompatActivity {
    EditText n,uid,pass,cpass;
    AppCompatButton btnsignup;
    ImageView b;
    STUDB db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_signup);
        n=(EditText) findViewById(R.id.name);
        uid=(EditText) findViewById(R.id.userid);
        b=(ImageView) findViewById(R.id.back);
        pass=(EditText) findViewById(R.id.pass);
        cpass=(EditText) findViewById(R.id.cpass);
        btnsignup=(AppCompatButton) findViewById(R.id.sign);
        db=new STUDB(this);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i=new Intent(Signup.this, Login.class);
                startActivity(i);
            }
        });
        btnsignup.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name=n.getText().toString();
                String user=uid.getText().toString();
                String p=pass.getText().toString();
                String cp=cpass.getText().toString();
                if(name.equals("")||user.equals("")||p.equals("")||cp.equals("")){
                    Toast.makeText(Signup.this, "Kindly fill all the
fields!",Toast.LENGTH_LONG).show();
                }
                else{
                    if(p.equals(cp)){
                        Boolean res=db.onIns(user,name,p);
                        if(res==true){
```

```
                    Toast.makeText(Signup.this, "Registration
Successful.",Toast.LENGTH_LONG).show();
                    Intent i=new Intent(Signup.this, Login.class);
                    startActivity(i);
                }
                else{
                    Toast.makeText(Signup.this, "User already exists! Please Login in.",
Toast.LENGTH_SHORT).show();
                }
            }
            else{
                Toast.makeText(Signup.this, "Passwords do not
match!",Toast.LENGTH_LONG).show();
            }
        }
    }
  });
 }
}
```

activity_landing_page.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="#F8F6F6"
  tools:context=".LandingPage">

  <ImageView
    android:layout_width="155dp"
    android:layout_height="114dp"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="63dp"
    android:src="@drawable/foto" />

  <include
    layout="@layout/toolbarstew"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
```

```
    android:layout_alignParentLeft="true" />

<TextView
    android:id="@+id/nameStudent"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_marginStart="1dp"
    android:layout_marginTop="190dp"
    android:layout_marginEnd="0dp"
    android:gravity="center_horizontal"
    android:text="Welcome User!"
    android:textAlignment="center"
    android:textColor="#2D4770"
    android:textSize="25dp"
    android:textStyle="bold" />

<TextView
    android:id="@+id/textView"
    android:layout_width="388dp"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginEnd="9dp"
    android:layout_marginBottom="63dp"
    android:text="'An investment in knowledge always pays the best interest.'"
    android:textAlignment="center"
    android:textColor="#000000"
    android:textSize="10sp"
    android:textStyle="italic" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/issuesStudent"
    android:layout_width="349dp"
    android:layout_height="48dp"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_centerInParent="true"
    android:layout_marginEnd="31dp"
    android:layout_marginBottom="368dp"
    android:background="@drawable/btn4"
```

```
    android:shadowColor="#7CA7A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"
    android:text="MY BOOKS"
    android:textColor="#FFFF"
    android:textSize="14sp" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/scanStudent"
    android:layout_width="349dp"
    android:layout_height="48dp"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginBottom="441dp"
    android:background="@drawable/btn4"
    android:shadowColor="#7CA7A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"
    android:text="SCAN BOOK"
    android:textColor="#FFFF"
    android:textSize="14sp" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/finePayment"
    android:layout_width="349dp"
    android:layout_height="48dp"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginBottom="291dp"
    android:background="@drawable/btn4"
    android:shadowColor="#7CA7A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"
    android:text="Fine Payment"
    android:textColor="#FFFF"
    android:textSize="14sp" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/searchStudent"
    android:layout_width="349dp"
    android:layout_height="48dp"
```

```
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="217dp"
        android:background="@drawable/btn4"
        android:shadowColor="#7CA7A8"
        android:shadowDx="0"
        android:shadowDy="0"
        android:shadowRadius="5"
        android:text="Search Books"
        android:textColor="#FFFF"
        android:textSize="14sp" />
</RelativeLayout>
```

LandingPage.java

```
package com.example.athenaeum;
import android.content.DialogInterface;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;
import com.google.zxing.integration.android.IntentIntegrator;
import com.google.zxing.integration.android.IntentResult;

public class LandingPage extends AppCompatActivity implements View.OnClickListener {
   public static String bkid;
   public static String studentName = "";
   public static String studentId = "";
   AppCompatButton search, issues, scan, fine;
   ImageView settings, logout;
   TextView user;
   STUDB stu;
   boolean doubleBackToExitPressedOnce = false;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_landing_page);
      issues = (AppCompatButton) findViewById(R.id.issuesStudent);
      scan = findViewById(R.id.scanStudent);
      search = (AppCompatButton) findViewById(R.id.searchStudent);
```

```
        fine = (AppCompatButton) findViewById(R.id.finePayment);
        settings = (ImageView) findViewById(R.id.studentSettings);
        logout = (ImageView) findViewById(R.id.studentLogout);
        user = (TextView) findViewById(R.id.nameStudent);
        scan.setOnClickListener(this);
        stu = new STUDB(this);
        studentName = Login.stuname;
        String stuname = stu.getStuName(studentName);
        user.setText("Welcome Ms." + stuname);
        logout.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                new AlertDialog.Builder(LandingPage.this)
                        .setTitle("")
                        .setMessage("Are you sure you want to logout?")
                        .setNegativeButton(android.R.string.no, null)
                        .setPositiveButton(android.R.string.yes, new
DialogInterface.OnClickListener() {
                            public void onClick(DialogInterface arg0, int arg1) {
                                Intent i = new Intent(LandingPage.this, Login.class);
                                startActivity(i);
                            }
                        }).create().show();

            }
        });
        fine.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                studentName = Login.stuname;
                Intent intent = new Intent(getApplicationContext(), FeePayment.class);
                startActivity(intent);
            }
        });
        search.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(getApplicationContext(), SearchBook.class);
                startActivity(intent);
            }
        });
        issues.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
```

```
            studentName = Login.stuname;
            Intent intent = new Intent(getApplicationContext(), MyBooks.class);
            startActivity(intent);
        }
    });
    settings.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            studentName = Login.stuname;
            Intent intent = new Intent(getApplicationContext(), StudentChangePassword.class);
            startActivity(intent);
        }
    });
}
@Override
public void onClick(View v) {
    scanCode();
}
private void scanCode() {
    IntentIntegrator integrator = new IntentIntegrator(this);
    integrator.setCaptureActivity(CaptureAct.class);
    integrator.setOrientationLocked(false);
    integrator.setDesiredBarcodeFormats(IntentIntegrator.ALL_CODE_TYPES);
    integrator.setPrompt("Scanning Code");
    integrator.initiateScan();
}

@Override
protected void onActivityResult(int requestCode, int resultCode, Intent data) {
    IntentResult result = IntentIntegrator.parseActivityResult(requestCode, resultCode, data);
    if (result != null) {
        if (result.getContents() != null) {
            AlertDialog.Builder builder = new AlertDialog.Builder(this);
            builder.setMessage(result.getContents());
            builder.setTitle("Scanning Result");
            builder.setPositiveButton("Scan Again", new DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialog, int which) {
                    scanCode();
                }
            }).setNegativeButton("Finish", new DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialog, int which) {
                    studentId = Login.stuname;
```

```
                bkid = result.getContents();
                Intent i = new Intent(getApplicationContext(), StudentScanningIssue.class);
                startActivity(i);
            }
        });
        AlertDialog dialog = builder.create();
        dialog.show();
      } else {
        Toast.makeText(this, "No Results", Toast.LENGTH_LONG).show();
      }
    } else {
      super.onActivityResult(requestCode, resultCode, data);
    }
  }
  @Override
  public void onBackPressed() {
    new AlertDialog.Builder(this)
        .setTitle("")
        .setMessage("Are you sure you want to logout?")
        .setNegativeButton(android.R.string.no, null)
        .setPositiveButton(android.R.string.yes, new DialogInterface.OnClickListener() {
          public void onClick(DialogInterface arg0, int arg1) {
            Intent i = new Intent(LandingPage.this, Login.class);
            startActivity(i);
    }
        }).create().show();
  }
}
```

acitvity_change_password.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:background="@color/white"
   tools:context=".StudentChangePassword">

   <ImageView
      android:id="@+id/imageView4"
      android:layout_width="62dp"
      android:layout_height="64dp"
      android:src="@drawable/ic_baseline_beenhere_24"
      app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.166" />

<ImageView
    android:id="@+id/settingsBack"
    android:layout_width="43dp"
    android:layout_height="39dp"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="32dp"
    android:layout_marginEnd="306dp"
    android:layout_marginRight="306dp"
    android:background="@drawable/back"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.214"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<TextView
    android:id="@+id/textView6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentTop="true"
    android:layout_centerVertical="true"
    android:text="Change Password"
    android:textColor="#1975BA"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.251" />

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout"
    android:layout_width="319dp"
    android:layout_height="73dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.36"
    app:passwordToggleEnabled="true"
```

```
    tools:ignore="MissingConstraints">

    <EditText
        android:id="@+id/currentPassword"
        android:layout_width="308dp"
        android:layout_height="57dp"
        android:backgroundTint="#6E8894"
        android:ems="5"
        android:hint="Current Password"
        android:inputType="textPassword"
        android:textColor="#090909"
        android:textColorHint="#979292"
        android:textSize="18sp" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout1"
    android:layout_width="319dp"
    android:layout_height="73dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.471"
    app:passwordToggleEnabled="true"
    tools:ignore="MissingConstraints">

    <EditText
        android:id="@+id/newPassword"
        android:layout_width="308dp"
        android:layout_height="57dp"
        android:backgroundTint="#6E8894"
        android:ems="5"
        android:hint="New Password"
        android:inputType="textPassword"
        android:textColor="#090909"
        android:textColorHint="#979292"
        android:textSize="18sp" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout2"
    android:layout_width="319dp"
    android:layout_height="73dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.582"
    app:passwordToggleEnabled="true"
```

```
        tools:ignore="MissingConstraints">

        <EditText
            android:id="@+id/confirmPassword"
            android:layout_width="308dp"
            android:layout_height="57dp"
            android:backgroundTint="#6E8894"
            android:ems="5"
            android:hint="Confirm Password"
            android:inputType="textPassword"
            android:textColor="#090909"
            android:textColorHint="#979292"
            android:textSize="18sp" />
    </com.google.android.material.textfield.TextInputLayout>

    <androidx.appcompat.widget.AppCompatButton
        android:id="@+id/changePassword"
        android:layout_width="165dp"
        android:layout_height="45dp"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="130dp"
        android:layout_marginLeft="130dp"
        android:layout_marginTop="94dp"
        android:layout_marginEnd="119dp"
        android:layout_marginRight="119dp"
        android:layout_marginBottom="220dp"
        android:background="@drawable/btn4"
        android:shadowColor="#7CA7A8"
        android:shadowDx="0"
        android:shadowDy="0"
        android:shadowRadius="5"
        android:text="Change"
        android:textColor="#FFFF"
        android:textSize="15sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/password" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ChangePassword.java

```
package com.example.athenaeum;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
```

```
import android.widget.ImageView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;

public class StudentChangePassword extends AppCompatActivity {
  AppCompatButton change;
  ImageView back;
  STUDB DB;
  EditText currentPass, newPass, confirmPass;
  String p1;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_change_pass);
    back = (ImageView) findViewById(R.id.settingsBack);
    change = (AppCompatButton) findViewById(R.id.changePassword);
    currentPass = (EditText) findViewById(R.id.currentPassword);
    newPass = (EditText) findViewById(R.id.newPassword);
    confirmPass = (EditText) findViewById(R.id.confirmPassword);
    DB = new STUDB(this);
    back.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        Intent i = new Intent(getApplicationContext(), LandingPage.class);
        startActivity(i);
      }
    });
    change.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        String curent = currentPass.getText().toString();
        String userName = LandingPage.studentName;
        String newP = newPass.getText().toString();
        String confirm = confirmPass.getText().toString();
        if (curent.isEmpty() || confirm.isEmpty() || newP.isEmpty()) {
          Toast.makeText(StudentChangePassword.this, "Kindly fill in all the fields!",
Toast.LENGTH_SHORT).show();
        }
        else if(confirm.equals(newP)){
          int changed = DB.changePassword(userName, curent, newP);
          if (changed == 0) {
            Toast.makeText(StudentChangePassword.this, "Kindly make sure to be
connected to the database.", Toast.LENGTH_SHORT).show();
```

```
                } else if (changed == -1) {
                    Toast.makeText(StudentChangePassword.this, "Current Password entered is
invalid.", Toast.LENGTH_SHORT).show();
                } else {
                    Toast.makeText(StudentChangePassword.this, "Your password has been
updated.", Toast.LENGTH_SHORT).show();
                }
            }
            else {
                Toast.makeText(StudentChangePassword.this, "Newly entered passwords don't
match.", Toast.LENGTH_SHORT).show();
            }
        }
    });
  }
}
```

activity_student_scanning_issue.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="#F8F6F6"
  tools:context=".StudentScanningIssue">

  <EditText
    android:id="@+id/bookScanReturnDate"
    android:layout_width="204dp"
    android:layout_height="wrap_content"
    android:backgroundTint="#716F6F"
    android:ems="10"
    android:inputType="textPersonName"
    android:textColor="@color/black"
    android:textSize="16dp"
    android:enabled="false"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.825"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.54" />
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Return Date:"
    android:textColor="#565B5C"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.112"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.553" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Issue Date:"
    android:textColor="#565B5C"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.144"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.451" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Book Issue Via Scanning"
    android:textColor="#000000"
    android:textSize="27dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.298"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.129" />

<TextView
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:text="Book Name"
    android:textColor="#565B5C"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.11"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.248" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Book Id:"
    android:textColor="#565B5C"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.194"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.342" />

<EditText
    android:id="@+id/bookScanId"
    android:layout_width="204dp"
    android:layout_height="wrap_content"
    android:backgroundTint="#716F6F"
    android:ems="10"
    android:inputType="textPersonName"
    android:textSize="16dp"
    android:enabled="false"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.825"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.325" />

<EditText
    android:id="@+id/bookScannedName"
    android:layout_width="204dp"
```

```
    android:layout_height="43dp"
    android:backgroundTint="#716F6F"
    android:ems="10"
    android:gravity="center_horizontal"
    android:hint="Enter here."
    android:inputType="textPersonName"
    android:textAlignment="center"
    android:textColor="@color/black"
    android:textColorHint="#6E6969"
    android:textSize="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.825"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.228" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/scanIssue"
    android:layout_width="157dp"
    android:layout_height="49dp"
    android:background="@drawable/btn4"
    android:text="ISSUE BOOK"
    android:textColor="@color/white"
    android:textSize="15sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.711"
    tools:ignore="OnClick" />

<ImageView
    android:id="@+id/returnBack"
    android:layout_width="38dp"
    android:layout_height="33dp"
    android:background="@drawable/back"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.075"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.048"/>
```

```
  <EditText
     android:id="@+id/bookScanIssueDate"
     android:layout_width="204dp"
     android:layout_height="wrap_content"
     android:backgroundTint="#716F6F"
     android:ems="10"
     android:inputType="textPersonName"
     android:textColor="@color/black"
     android:textSize="16dp"
     android:enabled="false"
     app:layout_constraintBottom_toBottomOf="parent"
     app:layout_constraintEnd_toEndOf="parent"
     app:layout_constraintHorizontal_bias="0.825"
     app:layout_constraintStart_toStartOf="parent"
     app:layout_constraintTop_toTopOf="parent"
     app:layout_constraintVertical_bias="0.437" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

StudentScanningIssue.java

```
package com.example.athenaeum;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.content.Intent;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;
import androidx.core.app.NotificationCompat;
import androidx.core.app.NotificationManagerCompat;
import java.text.DateFormat;
import java.util.Calendar;

public class StudentScanningIssue extends AppCompatActivity implements
View.OnClickListener {
  AppCompatButton issue;
  ImageView back;
  TextView bkReturn, bkID, bkIssue;
  EditText bkName;
```

```
  BOOKDB book;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_barcodedetails);
     back=(ImageView) findViewById(R.id.returnBack);
     issue=(AppCompatButton) findViewById(R.id.scanIssue);
     bkName=(EditText) findViewById(R.id.bookScannedName);
     bkReturn=(TextView) findViewById(R.id.bookScanReturnDate);
     bkIssue=(TextView) findViewById(R.id.bookScanIssueDate);
     bkID=(TextView) findViewById(R.id.bookScanId);
     String s = LandingPage.bkid;
     book = new BOOKDB(this);
     bkID.setText(s);
     back.setOnClickListener(this);
     if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
        NotificationChannel channel = new NotificationChannel("My Notification", "My
Notification", NotificationManager.IMPORTANCE_DEFAULT);
        NotificationManager manager = getSystemService(NotificationManager.class);
        manager.createNotificationChannel(channel);
     }
    //Calculating Return date
     Calendar c1 = Calendar.getInstance();
     String currentDate = DateFormat.getDateInstance().format(c1.getTime());
     c1.add(Calendar.DATE, 7);
     c1.add(Calendar.MONTH, 0);
     c1.add(Calendar.YEAR, 0);
     String returnDate = DateFormat.getDateInstance().format(c1.getTime());
     //Setting Issue and Return Date
     bkIssue.setText(currentDate);
     bkReturn.setText(returnDate);
     issue.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
           String sid = LandingPage.studentId;
           if(bkName.getText().toString().isEmpty()){
              Toast.makeText(StudentScanningIssue.this, "Kindly enter the Name of the
Book.", Toast.LENGTH_SHORT).show();
           }
           else{
           Boolean res = book.ins(s, bkName.getText().toString() ,currentDate , returnDate,
sid);
           if (res == true) {
```

```
            Toast.makeText(StudentScanningIssue.this, "Book successfully issued.",
Toast.LENGTH_LONG).show();
            NotificationCompat.Builder builder = new
NotificationCompat.Builder(StudentScanningIssue.this, "My Notification");
            builder.setContentTitle("BOOK SUCCESSFULLY ISSUED ✧*:･ﾟヽ(◕ワ◕)ﾉ*:
･ﾟ✧");
            builder.setContentText("Return before: " + returnDate);
            builder.setSmallIcon(R.drawable.finallogo);
            builder.setAutoCancel(true);
            NotificationManagerCompat managerCompat =
NotificationManagerCompat.from(StudentScanningIssue.this);
            managerCompat.notify(1, builder.build());

          } else
            Toast.makeText(StudentScanningIssue.this, "Book Already Issued.",
Toast.LENGTH_SHORT).show();
        }
        }
    });
  }
  public void onClick(View view) {
    Intent i = new Intent(StudentScanningIssue.this, LandingPage.class);
    startActivity(i);
  }
}
```

acitvity_my_books.xml

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  android:id="@+id/rea"
  android:layout_width="match_parent"
  android:layout_height="fill_parent"
  android:orientation="vertical"
  android:background="#F8F6F6"
  tools:context=".MyBooks">

  <TextView
    android:id="@+id/gfhhg"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
```

```
    android:layout_alignParentTop="true"
    android:layout_marginStart="27dp"
    android:layout_marginLeft="27dp"
    android:layout_marginTop="88dp"
    android:text="Manual Book Issue"
    android:textColor="#000000"
    android:textSize="30dp" />

<EditText
    android:id="@+id/bookid"
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:inputType="text"
    android:layout_marginStart="30dp"
    android:layout_marginTop="149dp"
    android:hint="Enter the Book ID."
    android:backgroundTint="#514F4F"
    android:gravity="bottom"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/bookName2"
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="30dp"
    android:layout_marginTop="222dp"
    android:inputType="text"
    android:backgroundTint="#514F4F"
    android:gravity="bottom"
    android:hint="Enter the Book's Name"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/bkissue"
```

```
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="33dp"
    android:layout_marginTop="301dp"
    android:backgroundTint="#514F4F"
    android:enabled="false"
    android:hint="Book Issue Date"
    android:textColor="#090909"
    android:gravity="bottom"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/bkreturn"
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="32dp"
    android:layout_marginTop="379dp"
    android:backgroundTint="#514F4F"
    android:enabled="false"
    android:hint="Book Return Date"
    android:textColor="#090909"
    android:gravity="bottom"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<ImageView
    android:id="@+id/issueBack"
    android:layout_width="45dp"
    android:layout_height="38dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="26dp"
    android:layout_marginTop="31dp"
    android:src="@drawable/back" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/viewOrder"
```

```
        android:layout_width="178dp"
        android:layout_height="45dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_centerInParent="true"
        android:layout_marginStart="210dp"
        android:layout_marginTop="457dp"
        android:layout_marginEnd="23dp"
        android:background="@drawable/btn3"
        android:text="VIEW ISSUES"
        android:textColor="#2B8B97"
        android:textSize="15dp" />

    <androidx.appcompat.widget.AppCompatButton
        android:id="@+id/studentSelfIssue"
        android:layout_width="158dp"
        android:layout_height="46dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_centerInParent="true"
        android:layout_marginStart="35dp"
        android:layout_marginTop="457dp"
        android:layout_marginEnd="218dp"
        android:background="@drawable/btn4"
        android:text="ISSUE BOOK"
        android:textColor="@color/white"
        android:textSize="14dp" />
</RelativeLayout>
```

MyBooks.java

```
package com.example.athenaeum;

import android.app.AlertDialog;
import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.content.Intent;
import android.database.Cursor;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
```

```
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;
import androidx.core.app.NotificationCompat;
import androidx.core.app.NotificationManagerCompat;
import java.text.DateFormat;
import java.util.Calendar;

public class MyBooks extends AppCompatActivity {
  EditText bkid, bkName, borrow, returnD;
  AppCompatButton issue;
  ImageView back;
  TextView displayOrder;
  String sid;
  BOOKDB book;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_my_books);
    sid = LandingPage.studentName;
    bkid = (EditText) findViewById(R.id.bookid);
    borrow = (EditText) findViewById(R.id.bkissue);
    returnD = (EditText) findViewById(R.id.bkreturn);
    bkName = (EditText) findViewById(R.id.bookName2);
    back = (ImageView) findViewById(R.id.issueBack);
    displayOrder = (TextView) findViewById(R.id.viewOrder);
    issue = (AppCompatButton) findViewById(R.id.studentSelfIssue);
    //  display=(AppCompatButton) findViewById(R.id.order);
    book = new BOOKDB(this);
    back.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        Intent i = new Intent(MyBooks.this, LandingPage.class);
        startActivity(i);
      }
    });

    if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
      NotificationChannel channel = new NotificationChannel("My Notification", "My
Notification", NotificationManager.IMPORTANCE_DEFAULT);
      NotificationManager manager = getSystemService(NotificationManager.class);
      manager.createNotificationChannel(channel);
    }
```

```
        issue.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Calendar c1 = Calendar.getInstance();
                String currentDate = DateFormat.getDateInstance().format(c1.getTime());
                c1.add(Calendar.DATE, 7);
                c1.add(Calendar.MONTH, 0);
                c1.add(Calendar.YEAR, 0);
                String returnDate = DateFormat.getDateInstance().format(c1.getTime());
                borrow.setText(currentDate);
                returnD.setText(returnDate);
                String id = bkid.getText().toString();
                if (id.isEmpty()||bkName.getText().toString().isEmpty()) {
                    Toast.makeText(MyBooks.this, "Kindly fill in all the fields.",
Toast.LENGTH_LONG).show();
                } else {
                    Boolean res = book.ins(id,bkName.getText().toString(), currentDate,
returnDate,sid);
                    if (res == true) {
                        Toast.makeText(MyBooks.this, "Book successfully issued.",
Toast.LENGTH_LONG).show();
                        NotificationCompat.Builder builder = new
NotificationCompat.Builder(MyBooks.this, "My Notification");
                        builder.setContentTitle("BOOK SUCCESSFULLY ISSUED ✧*:･ﾟヽ(◕ワ◕)
ﾉ*:･ﾟ✧");
                        builder.setContentText("Return before: " + returnDate);
                        builder.setSmallIcon(R.drawable.finallogo);
                        builder.setAutoCancel(true);
                        NotificationManagerCompat managerCompat =
NotificationManagerCompat.from(MyBooks.this);
                        managerCompat.notify(1, builder.build());
                    } else {
                        Toast.makeText(MyBooks.this, "Book has been issued already.",
Toast.LENGTH_LONG).show();
                    }
                }
            }
        });
        displayOrder.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Cursor c = book.display(sid);
                if (c.getCount() == 0) {
```

```
            Toast.makeText(MyBooks.this, "No Entries made.",
Toast.LENGTH_LONG).show();
            return;
          }
          StringBuffer buffer = new StringBuffer();
          while (c.moveToNext()) {
            buffer.append("\nBook ID: " + c.getString(0) + "\n");
            buffer.append("Book Name: " + c.getString(1) + "\n");
            buffer.append("Issue Date: " + c.getString(2) + "\n");
            buffer.append("Return Date: " + c.getString(3) + "\n");
            buffer.append("-----------------------------------------------------------------");
          }
          AlertDialog.Builder builder = new AlertDialog.Builder(MyBooks.this);
          builder.setCancelable(true);
          builder.setTitle("Order Summary");
          builder.setMessage(buffer.toString());
          builder.show();
        }
      });
  }
}
```

activity_fine_payments.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="@color/white"
  tools:context=".FeePayment">

  <TextView
    android:id="@+id/feep"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="24dp"
    android:layout_marginLeft="24dp"
    android:layout_marginTop="85dp"
    android:text="Fine Payment"
    android:textColor="#2E2E2E"
    android:textSize="30dp" />
```

```
<ImageView
    android:id="@+id/paymentBack"
    android:layout_width="45dp"
    android:layout_height="38dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="17dp"
    android:layout_marginTop="28dp"
    android:shadowColor="#A8A8A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"
    android:src="@drawable/back"
    android:text=" Back"
    android:textColor="#FFFFFF"
    android:textSize="12sp" />

<EditText
    android:id="@+id/amount_et"
    android:layout_width="340dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="152dp"
    android:layout_marginRight="20dp"
    android:layout_marginBottom="532dp"
    android:backgroundTint="#616060"
    android:gravity="bottom"
    android:hint="Fee Amount (Rs.)"
    android:inputType="number"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/upi_id"
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentTop="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
```

```
    android:layout_marginLeft="20dp"
    android:layout_marginTop="234dp"
    android:layout_marginRight="20dp"
    android:layout_marginBottom="453dp"
    android:backgroundTint="#616060"
    android:gravity="bottom"
    android:hint="Enter Receiver's UPI ID"
    android:inputType="text"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/name"
    android:layout_width="349dp"
    android:layout_height="46dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="315dp"
    android:layout_marginRight="20dp"
    android:layout_marginBottom="371dp"
    android:backgroundTint="#616060"
    android:gravity="bottom"
    android:hint="Enter Receiver's Name"
    android:inputType="text"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/note"
    android:layout_width="340dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="400dp"
    android:layout_marginRight="20dp"
    android:layout_marginBottom="285dp"
    android:backgroundTint="#616060"
    android:gravity="bottom"
```

```
        android:hint="Write a Note"
        android:inputType="text"
        android:textColor="#090909"
        android:textColorHint="#979292"
        android:textSize="14sp" />

    <androidx.appcompat.widget.AppCompatButton
        android:id="@+id/send"
        android:layout_width="152dp"
        android:layout_height="49dp"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="177dp"
        android:background="@drawable/btn4"
        android:text="PAY NOW"
        android:textColor="#fff" />
</RelativeLayout>
```

FinePayment.java

```
package com.example.athenaeum;

import android.content.Context;
import android.content.Intent;
import android.net.ConnectivityManager;
import android.net.NetworkInfo;
import android.net.Uri;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;
import java.util.ArrayList;

public class FeePayment extends AppCompatActivity {
    EditText amountEt, noteEt, nameEt, upiIdEt;
    AppCompatButton send;
    ImageView back;
    final int UPI_PAYMENT = 0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_fee_paymen);
        initializeViews();
        back.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i=new Intent(FeePayment.this, LandingPage.class);
                startActivity(i);
            }
        });
        send.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String amount = amountEt.getText().toString();
                String note = noteEt.getText().toString();
                String name = nameEt.getText().toString();
                String upiId = upiIdEt.getText().toString();
                if(amount.isEmpty()||note.isEmpty()||name.isEmpty()||upiId.isEmpty())
                {
                    Toast.makeText(FeePayment.this,"Kindly fill in all the
fields.",Toast.LENGTH_SHORT).show();
                }
                else{
                    payUsingUpi(amount, upiId, name, note);
                }
            }
        });
    }
    void initializeViews() {
        send = findViewById(R.id.send);
        amountEt = findViewById(R.id.amount_et);
        noteEt = findViewById(R.id.note);
        nameEt = findViewById(R.id.name);
        upiIdEt = findViewById(R.id.upi_id);
        back= findViewById(R.id.paymentBack);
    }

    void payUsingUpi(String amount, String upiId, String name, String note) {
        Uri uri = Uri.parse("upi://pay").buildUpon()
                .appendQueryParameter("pa", upiId)
                .appendQueryParameter("pn", name)
                .appendQueryParameter("tn", note)
                .appendQueryParameter("am", amount)
                .appendQueryParameter("cu", "INR")
                .build();
```

```
    Intent upiPayIntent = new Intent(Intent.ACTION_VIEW);
    upiPayIntent.setData(uri);
    // will always show a dialog to user to choose an app
    Intent chooser = Intent.createChooser(upiPayIntent, "Pay with");
    // check if intent resolves
    if(null != chooser.resolveActivity(getPackageManager())) {
      startActivityForResult(chooser, UPI_PAYMENT);
    } else {
      Toast.makeText(FeePayment.this,"No UPI app found, please install one to
continue",Toast.LENGTH_SHORT).show();
    }
  }
  @Override
  protected void onActivityResult(int requestCode, int resultCode, Intent data) {
    super.onActivityResult(requestCode, resultCode, data);
    switch (requestCode) {
      case UPI_PAYMENT:
        if ((RESULT_OK == resultCode) || (resultCode == 11)) {
          if (data != null) {
            String trxt = data.getStringExtra("response");
            Log.d("UPI", "onActivityResult: " + trxt);
            ArrayList<String> dataList = new ArrayList<>();
            dataList.add(trxt);
            upiPaymentDataOperation(dataList);
          } else {
            Log.d("UPI", "onActivityResult: " + "Return data is null");
            ArrayList<String> dataList = new ArrayList<>();
            dataList.add("nothing");
            upiPaymentDataOperation(dataList);
          }
        } else {
          Log.d("UPI", "onActivityResult: " + "Return data is null"); //when user simply
back without payment
          ArrayList<String> dataList = new ArrayList<>();
          dataList.add("nothing");
          upiPaymentDataOperation(dataList);
        }
        break;
    }
  }
  private void upiPaymentDataOperation(ArrayList<String> data) {
    if (isConnectionAvailable(FeePayment.this)) {
      String str = data.get(0);
      Log.d("UPIPAY", "upiPaymentDataOperation: "+str);
```

```
        String paymentCancel = "";
        if(str == null) str = "discard";
        String status = "";
        String approvalRefNo = "";
        String response[] = str.split("&");
        for (int i = 0; i < response.length; i++) {
            String equalStr[] = response[i].split("=");
            if(equalStr.length >= 2) {
                if (equalStr[0].toLowerCase().equals("Status".toLowerCase())) {
                    status = equalStr[1].toLowerCase();
                }
                else if (equalStr[0].toLowerCase().equals("ApprovalRefNo".toLowerCase()) ||
equalStr[0].toLowerCase().equals("txnRef".toLowerCase())) {
                    approvalRefNo = equalStr[1];
                }
            }
            else {
                paymentCancel = "Payment cancelled by user.";
            }
        }
        if (status.equals("success")) {
            //Code to handle successful transaction here.
            Toast.makeText(FeePayment.this, "Transaction successful.",
Toast.LENGTH_SHORT).show();
            Log.d("UPI", "responseStr: "+approvalRefNo);
        }
        else if("Payment cancelled by user.".equals(paymentCancel)) {
            Toast.makeText(FeePayment.this, "Payment cancelled by user.",
Toast.LENGTH_SHORT).show();
        }
        else {
            Toast.makeText(FeePayment.this, "Transaction failed.Please try again",
Toast.LENGTH_SHORT).show();
        }
    } else {
        Toast.makeText(FeePayment.this, "Internet connection is not available. Please check
and try again", Toast.LENGTH_SHORT).show();
    }
  }
  public static boolean isConnectionAvailable(Context context) {
    ConnectivityManager connectivityManager = (ConnectivityManager)
context.getSystemService(Context.CONNECTIVITY_SERVICE);
    if (connectivityManager != null) {
        NetworkInfo netInfo = connectivityManager.getActiveNetworkInfo();
```

```
        if (netInfo != null && netInfo.isConnected()
                && netInfo.isConnectedOrConnecting()
                && netInfo.isAvailable()) {
            return true;
        }
    }
    return false;
  }
}
```

acitvity_search.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:background="@color/white"
  tools:context=".SearchBook">

  <ImageView
    android:id="@+id/searchBack"
    android:layout_width="37dp"
    android:layout_height="35dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="11dp"
    android:layout_marginTop="22dp"
    android:src="@drawable/back"
    android:shadowColor="#A8A8A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"/>

  <EditText
    android:id="@+id/search_bar"
    android:layout_width="349dp"
    android:layout_height="45dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
```

```
        android:layout_marginTop="18dp"
        android:layout_marginEnd="15dp"
        android:layout_marginRight="16dp"
        android:layout_marginBottom="16dp"
        android:background="@drawable/s_bg"
        android:hint="Search"
        android:inputType="textPersonName"
        android:padding="13dp"
        android:textColor="@color/black"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/userRecycler"
        android:layout_width="wrap_content"
        android:layout_height="662dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="1dp"
        android:layout_marginTop="69dp"
        android:layout_marginEnd="0dp"
        android:layout_marginRight="0dp"
        android:layout_marginBottom="0dp"
        android:background="@color/white"
        android:padding="4dp"
        android:scrollbars="vertical" />
</RelativeLayout>
```

SearchBooks.java

```
package com.example.athenaeum;

import android.content.Intent;
import android.os.Bundle;
import android.text.Editable;
import android.text.TextWatcher;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
```

```
import androidx.recyclerview.widget.RecyclerView;
import java.util.ArrayList;
import java.util.List;

public class SearchBooks extends AppCompatActivity {
  RecyclerView userRecycler;
  RecyclerviewAdapter recyclerviewAdapter;
  EditText searchView;
  ImageView back;
  CharSequence search="";
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_search_book);
     searchView=findViewById(R.id.search_bar);
     back=(ImageView) findViewById(R.id.searchBack);
     List<SearchDB> searchDBList =new ArrayList<>();
     searchDBList.add(new SearchDB("Code Complete:A practical handbook of Software
Construction","Steve McConnell",R.drawable.img1));
     searchDBList.add(new SearchDB("C Programming","By
Balagurusamy",R.drawable.img2));
     searchDBList.add(new SearchDB("The Complete Reference","By Herbert
Schildt",R.drawable.img3));
     searchDBList.add(new SearchDB("Operating Systems","By Silberschatz &
Galvin",R.drawable.img4));
     searchDBList.add(new SearchDB("Compiler Design:Compilers,Design,Principles and
Tools","By Aho & Ullman",R.drawable.img5));
     searchDBList.add(new SearchDB("Computer Networks","By Andrew
Tanenbaum",R.drawable.img6));
     searchDBList.add(new SearchDB("Discrete mathematics for computer science","By
Haggard, Gary, John Schlipf, and Sue Whitesides",R.drawable.img7));
     searchDBList.add(new SearchDB("Software Engineering: A Practitioner's
Approach","By Pressman, Roger S., and Bruce R. Maxim",R.drawable.img8));
     searchDBList.add(new SearchDB("UNIX – Concepts and Applications: 3rd ed","By
Sumithabha Das",R.drawable.img9));
     searchDBList.add(new SearchDB("Modern Operating Systems","By Tanenbaum S.,
Andrew, Herbert Bos",R.drawable.img10));
     searchDBList.add(new SearchDB("Database System Concepts","By Silberschatz, A.,
Henry F.Korth and Sudarshan S",R.drawable.img11));
     searchDBList.add(new SearchDB("The Design and Analysis of Computer
Algorithms","By Aho, Hopcroft and Ullman",R.drawable.img12));
     searchDBList.add(new SearchDB("Digital Image Processing: 3rd ed.","By Rafael C.
Gonzalez and Richard E. Woods",R.drawable.img13));
```

```
    searchDBList.add(new SearchDB("Frontiers of E-COMMERCE","By Kalakota ,Ravi
and Andrew B Whinston",R.drawable.img14));
    searchDBList.add(new SearchDB("Deep Learning: A Practitioner's Approach","By
Patterson, Josh, and Adam Gibson",R.drawable.img15));
    setUserRecycler(searchDBList);
    back.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        Intent i=new Intent(LibrarySearch.this, LibraryLandingPage.class);
        startActivity(i);
      }
    });
    searchView.addTextChangedListener(new TextWatcher() {
      @Override
      public void beforeTextChanged(CharSequence s, int start, int count, int after) {
      }
      @Override
      public void onTextChanged(CharSequence s, int start, int before, int count) {
        recyclerviewAdapter.getFilter().filter(s);
        search=s;
      }
      @Override
      public void afterTextChanged(Editable s) {
      }
    });
  }
  private void setUserRecycler(List<SearchDB> searchDBList){
    userRecycler=findViewById(R.id.userRecycler);
    RecyclerView.LayoutManager layoutManager= new
LinearLayoutManager(this,RecyclerView.VERTICAL,false);
    userRecycler.setLayoutManager(layoutManager);
    recyclerviewAdapter=new RecyclerviewAdapter(this, searchDBList);
    userRecycler.setAdapter(recyclerviewAdapter);
  }
}
```

activity_recyclerview_adapter.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="wrap_content" >
```

```
<ImageView
    android:id="@+id/bookImage"
    android:layout_width="68dp"
    android:layout_height="70dp"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.205"
    app:srcCompat="@drawable/ic_launcher_background"
    tools:ignore="VectorDrawableCompat" />

<TextView
    android:id="@+id/bookname"
    android:layout_width="292dp"
    android:layout_height="38dp"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="24dp"
    android:layout_marginEnd="16dp"
    android:layout_marginRight="16dp"
    android:text="TextView"
    android:textColor="@color/black"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toEndOf="@+id/bookImage"
    app:layout_constraintTop_toTopOf="parent" />

<TextView
    android:id="@+id/authorname"
    android:layout_width="282dp"
    android:layout_height="27dp"
    android:layout_marginStart="24dp"
    android:layout_marginLeft="24dp"
    android:layout_marginTop="4dp"
    android:text="TextView"
    android:textColor="#1A4B51"
    app:layout_constraintStart_toEndOf="@+id/bookImage"
    app:layout_constraintTop_toBottomOf="@+id/bookname" />

<ImageView
```

```
      android:layout_width="41dp"
      android:layout_height="27dp"
      android:src="@drawable/viewww"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.183"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.755" />

  <View
      android:layout_width="0dp"
      android:layout_height="0dp"
      android:layout_marginTop="16dp"
      android:layout_marginEnd="16dp"
      android:layout_marginRight="16dp"
      android:background="@android:color/darker_gray"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="@+id/authorname"
      app:layout_constraintTop_toBottomOf="@+id/authorname" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

RecyclerviewAdapter.java

```
package com.example.athenaeum;

import android.content.Context;
import android.content.Intent;
import android.net.Uri;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Filter;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.ArrayList;
import java.util.List;

public class RecyclerviewAdapter extends
RecyclerView.Adapter<RecyclerviewAdapter.RecyclerviewHolder> {
  Context context;
  List<SearchDB> searchDBList;
```

```
  List<SearchDB> filteredSearchDBList;
  public RecyclerviewAdapter(Context context, List<SearchDB> searchDBList) {
     this.context = context;
     this.searchDBList = searchDBList;
     this.filteredSearchDBList = searchDBList;
  }
  @NonNull
  @Override
  public RecyclerviewHolder onCreateViewHolder(@NonNull ViewGroup parent, int
viewType) {
     View view=
LayoutInflater.from(context).inflate(R.layout.activity_recyclerview_adapter, parent, false);
     return new RecyclerviewHolder(view);
  }
  @Override
  public void onBindViewHolder(@NonNull RecyclerviewHolder holder, int position) {
     holder.bookname.setText(filteredSearchDBList.get(position).getBookName());
     holder.authorname.setText(searchDBList.get(position).getAuthorName());
     holder.bookImage.setImageResource(searchDBList.get(position).getImageUrl());
     ItemAnimation.animateBottomUp(holder.itemView,position);
     holder.itemView.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
          String author= searchDBList.get(position).getAuthorName();
           switch(author){
              case "Steve McConnell":
                 Intent viewIntent =new Intent("android.intent.action.VIEW",
Uri.parse("http://aroma.vn/web/wp-content/uploads/2016/11/code-complete-2nd-edition-
v413hav.pdf"));
                 context.startActivity(viewIntent);
                 break;
             case "By Aho & Ullman":Intent viewIntent2 =new
Intent("android.intent.action.VIEW", Uri.parse("http://ce.sharif.edu/courses/94-95/1/ce414-
2/resources/root/Text%20Books/Compiler%20Design/Alfred%20V.%20Aho,%20Monica%2
0S.%20Lam,%20Ravi%20Sethi,%20Jeffrey%20D.%20Ullman-Compilers%20-
%20Principles,%20Techniques,%20and%20Tools-
Pearson_Addison%20Wesley%20(2006).pdf"));
                 context.startActivity(viewIntent2);
                 break;
            case "By Herbert Schildt":Intent viewIntent3 =new
Intent("android.intent.action.VIEW",
Uri.parse("http://www.sietk.org/downloads/javabook.pdf"));
                context.startActivity(viewIntent3);
                 break;
```

```
            case "By Balagurusamy":Intent viewIntent4 =new
Intent("android.intent.action.VIEW",
Uri.parse("http://www.mktechnocratcampuspatan.com/uploads/development/facility_560099
.pdf"));
                context.startActivity(viewIntent4);
                break;
            case "By Andrew Tanenbaum":Intent viewIntent5 =new
Intent("android.intent.action.VIEW", Uri.parse("http://index-of.es/Varios-
2/Computer%20Networks%205th%20Edition.pdf"));
                context.startActivity(viewIntent5);
                break;
            case "By Silberschatz & Galvin":Intent viewIntent6 =new
Intent("android.intent.action.VIEW",
Uri.parse("http://www.uobabylon.edu.iq/download/M.S%202013-
2014/Operating_System_Concepts,_8th_Edition%5BA4%5D.pdf"));
                context.startActivity(viewIntent6);
                break;
            case "By Haggard, Gary, John Schlipf, and Sue Whitesides":Intent viewIntent7
=new Intent("android.intent.action.VIEW",
Uri.parse("http://www2.cs.uh.edu/~arjun/courses/ds/DiscMaths4CompSc.pdf"));
                context.startActivity(viewIntent7);
                break;
            case "By Pressman, Roger S., and Bruce R. Maxim":Intent viewIntent8 =new
Intent("android.intent.action.VIEW", Uri.parse("http://ce.sharif.edu/courses/98-99/2/ce474-
2/resources/root/Roger%20S.%20Pressman_%20Bruce%20R.%20Maxin%20-
%20Software%20Engineering_%20A%20Practitioner%E2%80%99s%20Approach-
McGraw-Hill%20Education%20(2014).pdf"));
                context.startActivity(viewIntent8);
                break;
            case "By Sumithabha Das":Intent viewIntent9 =new
Intent("android.intent.action.VIEW",
Uri.parse("https://books.google.co.in/books?id=qX3CCAnjSPwC&printsec=copyright#v=on
epage&q&f=false"));
                context.startActivity(viewIntent9);
                break;
            case "By Tanenbaum S., Andrew, Herbert Bos":Intent viewIntent10 =new
Intent("android.intent.action.VIEW", Uri.parse("https://csc-knu.github.io/sys-
prog/books/Andrew%20S.%20Tanenbaum%20-
%20Modern%20Operating%20Systems.pdf"));
                context.startActivity(viewIntent10);
                break;
            case "By Silberschatz, A., Henry F.Korth and Sudarshan S":Intent viewIntent11
=new Intent("android.intent.action.VIEW",
```

```
Uri.parse("http://deccancollege.ac.in/CSESTDMAT/DR.P.VISHVAPATHI/KORTH6THED.
pdf"));
                    context.startActivity(viewIntent11);
                    break;
                case "By Aho, Hopcroft and Ullman":Intent viewIntent12 =new
Intent("android.intent.action.VIEW",
Uri.parse("https://doc.lagout.org/science/0_Computer%20Science/2_Algorithms/The%20Des
ign%20and%20Analysis%20of%20Computer%20Algorithms%20%5BAho,%20Hopcroft%2
0&%20Ullman%201974-01-11%5D.pdf"));
                    context.startActivity(viewIntent12);
                    break;
                case "By Rafael C. Gonzalez and Richard E. Woods":Intent viewIntent13 =new
Intent("android.intent.action.VIEW",
Uri.parse("http://sdeuoc.ac.in/sites/default/files/sde_videos/Digital%20Image%20Processing
%203rd%20ed.%20-%20R.%20Gonzalez%2C%20R.%20Woods-ilovepdf-
compressed.pdf"));
                    context.startActivity(viewIntent13);
                    break;
                case "By Kalakota ,Ravi and Andrew B Whinston":Intent viewIntent14 =new
Intent("android.intent.action.VIEW",
Uri.parse("http://www.ddegjust.ac.in/studymaterial/mcom/mc-201.pdf"));
                    context.startActivity(viewIntent14);
                    break;
                case "By Patterson, Josh, and Adam Gibson":Intent viewIntent15 =new
Intent("android.intent.action.VIEW", Uri.parse("http://csis.pace.edu/~ctappert/cs855-
18fall/DeepLearningPractitionersApproach.pdf"));
                    context.startActivity(viewIntent15);
                    break;
                default:
                    throw new IllegalStateException("Unexpected value: " + author);
            }
        }
    });
    holder.bookImage.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Toast.makeText(context,"Username Clicked",Toast.LENGTH_SHORT).show();
        }
    });
}
@Override
public int getItemCount() {
    return filteredSearchDBList.size();
}
```

```
  public static final class RecyclerviewHolder extends  RecyclerView.ViewHolder{
    ImageView bookImage;
    TextView bookname,authorname;
    public RecyclerviewHolder(@NonNull View itemView) {
      super(itemView);
      bookImage=itemView.findViewById(R.id.bookImage);
      bookname=itemView.findViewById(R.id.bookname);
      authorname=itemView.findViewById(R.id.authorname);
    }
  }
  public Filter getFilter(){
    return new Filter() {
      @Override
      protected FilterResults performFiltering(CharSequence charSequence) {
        String Key = charSequence.toString();
        if (Key.isEmpty()){
          filteredSearchDBList = searchDBList;
        }
        else{
          List<SearchDB> listFiltered = new ArrayList<>();
          for (SearchDB row: searchDBList){
            if (row.getBookName().toLowerCase().contains(Key.toLowerCase())){
              listFiltered.add(row);
            }
          }
          filteredSearchDBList =listFiltered;
        }
        FilterResults filterResults=new FilterResults();
        filterResults.values= filteredSearchDBList;
        return filterResults;
      }
      @Override
      protected void publishResults(CharSequence charSequence, FilterResults
filterResults) {
        filteredSearchDBList =(List<SearchDB>)filterResults.values;
        notifyDataSetChanged();
      }
    };
  }
}
```

STUDB.java

```
package com.example.athenaeum;
```

```
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import androidx.annotation.Nullable;

public class STUDB extends SQLiteOpenHelper {
  public static final String DB = "Athenaeum";
  public static final String TBNAME = "STU";
  public static final int TBV = 1;
  public static final String COL1 = "SID";
  public static final String COL2 = "UNAME";
  public static final String COL3 = "PASSWORD";
  public STUDB(@Nullable Context context, @Nullable String name, @Nullable
SQLiteDatabase.CursorFactory factory, int version) {
    super(context, name, factory, version);
  }
  public STUDB(Context context) {
    super(context, DB, null, TBV);
  }
  @Override
  public void onCreate(SQLiteDatabase db) {
    db.execSQL("Create table STU(SID TEXT PRIMARY KEY, UNAME TEXT,
PASSWORD TEXT)");
  }
  @Override
  public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    db.execSQL("DROP TABLE IF EXISTS " + TBNAME);
    onCreate(db);
  }
  public boolean onIns(String s, String n, String p) {
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues cv = new ContentValues();
    cv.put(COL1, s);
    cv.put(COL2, n);
    cv.put(COL3, p);
    long res = db.insert(TBNAME, null, cv);
    if (res == -1) {
      return false;
    } else {
      return true;
    }
```

```
  }
  public int changePassword(String user, String currentPassword, String newPassword) {
     SQLiteDatabase db = this.getWritableDatabase();
     ContentValues cv = new ContentValues();
     cv.put(COL3, newPassword);
     Cursor cursor = db.rawQuery("Select * from STU where SID=? AND PASSWORD=?",
new String[]{user, currentPassword});
     if (cursor.getCount() > 0) {
        long result = db.update(TBNAME, cv, "SID=? AND PASSWORD=?", new
String[]{user,currentPassword});
        if (result == -1) {
           return 0;
        } else {
           return 1;
        }
     } else {
        return -1;
     }
  }
  public String getStuName(String s) {
     SQLiteDatabase db = this.getWritableDatabase();
     Cursor cursor = db.rawQuery("Select UNAME from STU where SID =?", new
String[]{s});
     cursor.moveToFirst();
     String name = cursor.getString(0);
     return name;
  }
  public boolean onLogin(String s, String p) {
     SQLiteDatabase db = this.getWritableDatabase();
     Cursor cursor = db.rawQuery("Select * from STU where SID =? AND PASSWORD=?",
new String[]{s, p});
     if (cursor.getCount() > 0) {
        return true;
     } else {
        return false;
     }
  }
}
```

activity_librarian_login.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
```

```
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="@drawable/athenbg"
android:padding="10dp"
tools:context=".LibrarianLogin">

<TextView
    android:id="@+id/textView"
    android:layout_width="388dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="21dp"
    android:layout_marginBottom="67dp"
    android:gravity="center_horizontal"
    android:text="'Without Libraries we have no past and no future'"
    android:textAlignment="center"
    android:textColor="#000000"
    android:textSize="14sp"
    android:textStyle="italic" />

<EditText
    android:id="@+id/lid"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_centerHorizontal="true"
    android:layout_gravity="center_horizontal"
    android:layout_marginTop="250dp"
    android:backgroundTint="#676766"
    android:hint="Enter Username"
    android:inputType="textPersonName"
    android:textAlignment="center"
    android:textColor="@color/black"
    android:textColorHint="#9A8F7F"
    android:textSize="12sp" />

<EditText
    android:id="@+id/lpass"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="318dp"
```

```
    android:backgroundTint="#676766"
    android:gravity="center_horizontal"
    android:hint="Enter your Password"
    android:inputType="textPassword"
    android:textAlignment="center"
    android:textColor="#090909"
    android:textColorHint="#9A8F7F"
    android:textSize="12sp" />

<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="116dp"
    android:layout_marginTop="490dp"
    android:layout_marginRight="218dp"
    android:layout_marginBottom="212dp"
    android:text="New User?"
    android:textColor="#000000"
    android:textSize="14sp"
    android:textStyle="bold" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/liblogin"
    android:layout_width="114dp"
    android:layout_height="39dp"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginEnd="146dp"
    android:layout_marginBottom="284dp"
    android:background="@drawable/libbtn3"
    android:shadowColor="#7CA7A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"
    android:text="Log in"
    android:textColor="#ffff"
    android:textSize="10sp" />
```

```
  <TextView
     android:id="@+id/libsignup"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_alignParentStart="true"
     android:layout_alignParentTop="true"
     android:layout_alignParentRight="true"
     android:layout_alignParentBottom="true"
     android:layout_marginStart="198dp"
     android:layout_marginTop="490dp"
     android:layout_marginRight="113dp"
     android:layout_marginBottom="212dp"
     android:text="Register Here."
     android:textColor="#C3A87F"
     android:textSize="14sp"
     android:textStyle="bold" />
</RelativeLayout>
```

LibrarianLogin.java

```
package com.example.athenaeum;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;

public class LibrarianLogin extends AppCompatActivity {
  AppCompatButton login;
  TextView signup;
  EditText n,p;
  LIBDB db;
  public static String libname="";
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_librarian_login);
     login=(AppCompatButton) findViewById(R.id.liblogin);
     signup=(TextView) findViewById(R.id.libsignup);
     n=(EditText) findViewById(R.id.lid);
     p=(EditText) findViewById(R.id.lpass);
```

```
        db=new LIBDB(this);
        login.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name=n.getText().toString();
                String pass=p.getText().toString();
                if(name.equals("")||pass.equals("")){
                    Toast.makeText(LibrarianLogin.this, "Kindly fill all the
fields!",Toast.LENGTH_LONG).show();
                }
                else {
                    Boolean res=db.onLogin(name,pass);
                    if (res == true) {
                        libname = n.getText().toString();
                        Intent intent = new Intent(getApplicationContext(),
LibraryLandingPage.class);
                        startActivity(intent);
                    }
                    else{
                        Toast.makeText(LibrarianLogin.this,"Invalid Credentials, Kindly Sign Up.",
Toast.LENGTH_LONG).show();
                    }
                }
            }
        });
        signup.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i=new Intent(LibrarianLogin.this, LibrarianSignup.class);
                startActivity(i);
            }
        });
    }
    @Override
    public void onBackPressed() {
        finish();
        Intent intent = new Intent(LibrarianLogin.this, CardViewAth.class);
        startActivity(intent);
    }
```

activtiy_librarian_signup.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="#FFFFFF"
android:padding="10dp"
tools:context=".LibrarianSignup">

<ImageView
    android:id="@+id/imageView2"
    android:layout_width="306dp"
    android:layout_height="196dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="33dp"
    android:layout_marginEnd="38dp"
    android:layout_marginRight="38dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:srcCompat="@drawable/projectlogo" />

 <EditText
    android:id="@+id/lid2"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="234dp"
    android:layout_marginEnd="44dp"
    android:autofillHints=""
    android:backgroundTint="#6E8894"
    android:ems="10"
    android:gravity="center_horizontal"
    android:hint="Create Your Username"
    android:inputType="textPersonName"
    android:textAlignment="center"
     android:maxLength="10"
    android:textColor="@color/black"
    android:textColorHint="#9E9589"
    android:textSize="12sp" />
```

```
<EditText
    android:id="@+id/lname2"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_centerInParent="true"
    android:layout_marginTop="296dp"
    android:layout_marginEnd="44dp"
    android:autofillHints=""
    android:backgroundTint="#6E8894"
    android:ems="10"
    android:gravity="center"
    android:hint="Kindly Enter your Name"
    android:inputType="textPersonName"
    android:textAlignment="center"
    android:textColor="@color/black"
    android:textColorHint="#9E9589"
    android:textSize="12sp" />

<EditText
    android:id="@+id/lpass2"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_marginTop="358dp"
    android:layout_marginEnd="44dp"
    android:backgroundTint="#6E8894"
    android:ems="6"
    android:hint="Create your Password"
    android:inputType="textPassword"
    android:textColor="#090909"
    android:textAlignment="center"
    android:gravity="center"
    android:textColorHint="#9E9589"
    android:textSize="12sp" />

<EditText
    android:id="@+id/code"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
```

```
    android:layout_centerHorizontal="true"
    android:layout_marginTop="489dp"
    android:layout_marginEnd="46dp"
    android:backgroundTint="#6E8894"
    android:ems="6"
    android:gravity="center"
    android:hint="Enter the Special Code"
    android:inputType="textPassword"
    android:textAlignment="center"
    android:textColor="#090909"
    android:textColorHint="#9E9589"
    android:textSize="12sp" />

<EditText
    android:id="@+id/lcpass2"
    android:layout_width="289dp"
    android:layout_height="47dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_marginTop="423dp"
    android:layout_marginEnd="44dp"
    android:backgroundTint="#6E8894"
    android:ems="6"
    android:hint="Kindly Re-Enter your Password"
    android:inputType="textPassword"
    android:textColor="#090909"
    android:textAlignment="center"
    android:gravity="center"
    android:textColorHint="#9E9589"
    android:textSize="12sp" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/lsign2"
    android:layout_width="181dp"
    android:layout_height="48dp"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginEnd="97dp"
    android:layout_marginBottom="90dp"
    android:background="@drawable/libbtn3"
    android:shadowColor="#7CA7A8"
    android:shadowDx="0"
    android:shadowDy="0"
```

```
        android:shadowRadius="5"
        android:text="Register"
        android:textColor="#FFFF"
        android:textSize="11sp" />

    <ImageView
        android:id="@+id/lback2"
        android:layout_width="39dp"
        android:layout_height="37dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="17dp"
        android:layout_marginLeft="17dp"
        android:layout_marginTop="12dp"
        android:background="@drawable/back" />
```

LibrarianSignup.java

```
package com.example.athenaeum;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;

public class LibrarianSignup extends AppCompatActivity {
    EditText n,lid,pass,cpass,code;
    AppCompatButton btnsignup;
    ImageView back;
    LIBDB db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_librarian_signup);
        n=(EditText) findViewById(R.id.lname2);
        lid=(EditText) findViewById(R.id.lid2);
        code=(EditText) findViewById(R.id.code);
        back=(ImageView) findViewById(R.id.lback2);
        pass=(EditText) findViewById(R.id.lpass2);
```

```
        cpass=(EditText) findViewById(R.id.lcpass2);
        btnsignup=(AppCompatButton) findViewById(R.id.lsign2);
        db=new LIBDB(this);
        back.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i=new Intent(LibrarianSignup.this, LibrarianLogin.class);
                startActivity(i);
            }
        });
        btnsignup.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name=n.getText().toString();
                String user=lid.getText().toString();
                String p=pass.getText().toString();
                String cp=cpass.getText().toString();
                if(name.equals("")||user.equals("")||p.equals("")||cp.equals("")||code.equals("")){
                    Toast.makeText(LibrarianSignup.this, "Kindly fill all the
fields!",Toast.LENGTH_LONG).show();
                }
                else{
                    if(p.equals(cp)){
                        if(code.getText().toString().equals("BCA2021")) {
                            Boolean res = db.onIns(user, name, p);
                            if (res == true) {
                                Toast.makeText(LibrarianSignup.this, "Registration Successful, Kindly
login.", Toast.LENGTH_LONG).show();
                                Intent i = new Intent(LibrarianSignup.this, LibrarianLogin.class);
                                startActivity(i);
                            }
                            else{
                                Toast.makeText(LibrarianSignup.this, "User already exists! Please Login
in.", Toast.LENGTH_SHORT).show();
                            }
                        }
                        else{
                            Toast.makeText(LibrarianSignup.this, "Invalid Code! Kindly check and try
again!", Toast.LENGTH_SHORT).show();
                        }
                    }
                    else{
                        Toast.makeText(LibrarianSignup.this, "Passwords do not
match!",Toast.LENGTH_LONG).show();
```

```
            }
        }
    }
  });
 }
}
```

activity_library_landing_page.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="#FFFFFF"
  tools:context=".LibraryLandingPage">

  <include
    layout="@layout/toolbar2"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:layout_alignParentLeft="true" />

  <ImageView
    android:layout_width="184dp"
    android:layout_height="141dp"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="63dp"
    android:src="@drawable/circle" />

  <ImageView
    android:layout_width="133dp"
    android:layout_height="111dp"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="81dp"
    android:src="@drawable/libicon" />

  <TextView
    android:id="@+id/nameoflib"
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="-2dp"
    android:layout_marginLeft="-2dp"
    android:layout_marginTop="224dp"
    android:layout_marginEnd="2dp"
    android:layout_marginRight="2dp"
    android:layout_marginBottom="469dp"
    android:gravity="center_horizontal"
    android:text="Welcome User!"
    android:textAlignment="center"
    android:textColor="#4E2711"
    android:textSize="25dp"
    android:textStyle="bold" />

<TextView
    android:id="@+id/textVie2w"
    android:layout_width="388dp"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginEnd="14dp"
    android:layout_marginBottom="99dp"
    android:text="'A library is not a luxury but rather a necessity in life.'"
    android:textAlignment="center"
    android:textColor="#000000"
    android:textSize="15sp"
    android:textStyle="italic" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/libsea"
    android:layout_width="349dp"
    android:layout_height="48dp"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_centerInParent="true"
    android:layout_marginEnd="33dp"
```

```
    android:layout_marginBottom="250dp"
    android:background="@drawable/libbtn3"
    android:shadowColor="#7CA7A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"
    android:text="SEARCH BOOKS"
    android:textColor="#FFFF"
    android:textSize="14sp" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/libadd"
    android:layout_width="349dp"
    android:layout_height="48dp"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_centerInParent="true"
    android:layout_marginEnd="36dp"
    android:layout_marginBottom="323dp"
    android:background="@drawable/libbtn3"
    android:shadowColor="#7CA7A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"
    android:text="ISSUE BOOK to student"
    android:textColor="#FFFF"
    android:textSize="14sp" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/libview"
    android:layout_width="349dp"
    android:layout_height="48dp"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginBottom="396dp"
    android:background="@drawable/libbtn3"
    android:shadowColor="#7CA7A8"
    android:shadowDx="0"
    android:shadowDy="0"
    android:shadowRadius="5"
    android:text="VIEW and remove book issues"
    android:textColor="#FFFF"
    android:textSize="14sp" />
```

</RelativeLayout>

LibraryLandingPage.java

```
package com.example.athenaeum;

import android.content.DialogInterface;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.TextView;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;

public class LibraryLandingPage extends AppCompatActivity {
  AppCompatButton view, issue, search;
  ImageView settings,logout;
  TextView name;
  LIBDB lib;
  public static String temp="";
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_library_landing_page);
     name=(TextView)findViewById(R.id.nameoflib);
     view=(AppCompatButton) findViewById(R.id.libview);
     issue=(AppCompatButton) findViewById(R.id.libadd);
     search=(AppCompatButton) findViewById(R.id.libsea);
     settings=(ImageView) findViewById(R.id.librarianSettings);
     logout=(ImageView) findViewById(R.id.librarianLogout);
     temp=LibrarianLogin.libname;
     lib=new LIBDB(this);
     String n=lib.getName(temp);
     name.setText("Welcome Ms."+n);
    search.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
           Intent intent = new Intent(LibraryLandingPage.this, LibrarySearch.class);
           startActivity(intent);
        }
     });
```

```
        issue.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(LibraryLandingPage.this, IssueBooks.class);
                startActivity(intent);
            }
        });
        settings.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                temp=LibrarianLogin.libname;
                Intent intent = new Intent(getApplicationContext(), LibChangePass.class);
                startActivity(intent);
            }
        });
        view.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                temp=LibrarianLogin.libname;
                Intent intent = new Intent(getApplicationContext(), VIEWW.class);
                startActivity(intent);
            }
        });
        logout.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                new AlertDialog.Builder(LibraryLandingPage.this)
                        .setTitle("")
                        .setMessage("Are you sure you want to logout?")
                        .setNegativeButton(android.R.string.no, null)
                        .setPositiveButton(android.R.string.yes, new
DialogInterface.OnClickListener() {
                            public void onClick(DialogInterface arg0, int arg1) {
                                Intent i = new Intent(LibraryLandingPage.this, LibrarianLogin.class);
                                startActivity(i);
                            }
                        }).create().show();
            }
        });
    }
    boolean doubleBackToExitPressedOnce = false;
    @Override
    public void onBackPressed() {
        new AlertDialog.Builder(this)
```

```
            .setTitle("")
            .setMessage("Are you sure you want to logout?")
            .setNegativeButton(android.R.string.no, null)
            .setPositiveButton(android.R.string.yes, new DialogInterface.OnClickListener() {
               public void onClick(DialogInterface arg0, int arg1) {
                  Intent i = new Intent(LibraryLandingPage.this, LibrarianLogin.class);
                  startActivity(i);
               }
            }).create().show();
   }
}
```

activity_lib_change_password.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:background="@color/white"
   tools:context=".LibChangePass">

   <ImageView
      android:id="@+id/imageView4"
      android:layout_width="62dp"
      android:layout_height="64dp"
      android:layout_alignParentStart="true"
      android:layout_alignParentLeft="true"
      android:layout_alignParentEnd="true"
      android:layout_alignParentRight="true"
      android:layout_alignParentBottom="true"
      android:layout_marginStart="172dp"
      android:layout_marginLeft="172dp"
      android:layout_marginEnd="177dp"
      android:layout_marginRight="177dp"
      android:layout_marginBottom="617dp"
      android:src="@drawable/ic_baseline_check_circle_24_lib"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="1.0"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.84" />

   <ImageView
      android:id="@+id/bb"
      android:layout_width="43dp"
      android:layout_height="39dp"
```

```
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="32dp"
    android:layout_marginEnd="306dp"
    android:layout_marginRight="306dp"
    android:background="@drawable/back"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.214"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentTop="true"
    android:layout_centerVertical="true"
    android:text="Change Password"
    android:textColor="#A88554"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.239" />

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout"
    android:layout_width="319dp"
    android:layout_height="73dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.36"
    app:passwordToggleEnabled="true"
    tools:ignore="MissingConstraints">

    <EditText
        android:id="@+id/currentPasswordLib"
        android:layout_width="308dp"
        android:layout_height="57dp"
        android:backgroundTint="#6E8894"
        android:ems="5"
        android:hint="Current Password"
        android:inputType="textPassword"
        android:textColor="#090909"
```

```
        android:textColorHint="#979292"
        android:textSize="18sp" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout1"
    android:layout_width="319dp"
    android:layout_height="73dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.471"
    app:passwordToggleEnabled="true"
    tools:ignore="MissingConstraints">

    <EditText
        android:id="@+id/newPasswordLib"
        android:layout_width="308dp"
        android:layout_height="57dp"
        android:backgroundTint="#6E8894"
        android:ems="5"
        android:hint="New Password"
        android:inputType="textPassword"
        android:textColor="#090909"
        android:textColorHint="#979292"
        android:textSize="18sp" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout2"
    android:layout_width="319dp"
    android:layout_height="73dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.582"
    app:passwordToggleEnabled="true"
    tools:ignore="MissingConstraints">

    <EditText
        android:id="@+id/confirmPasswordLib"
        android:layout_width="308dp"
        android:layout_height="57dp"
        android:backgroundTint="#6E8894"
        android:ems="5"
        android:hint="Confirm Password"
        android:inputType="textPassword"
        android:textColor="#090909"
```

```
        android:textColorHint="#979292"
        android:textSize="18sp" />
    </com.google.android.material.textfield.TextInputLayout>

    <androidx.appcompat.widget.AppCompatButton
        android:id="@+id/chng"
        android:layout_width="164dp"
        android:layout_height="43dp"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="130dp"
        android:layout_marginLeft="130dp"
        android:layout_marginTop="94dp"
        android:layout_marginEnd="119dp"
        android:layout_marginRight="119dp"
        android:layout_marginBottom="232dp"
        android:background="@drawable/libbtn3"
        android:shadowColor="#7CA7A8"
        android:shadowDx="0"
        android:shadowDy="0"
        android:shadowRadius="5"
        android:text="Change"
        android:textColor="#FFFF"
        android:textSize="14sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/password" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

LibChangePass.java

```
package com.example.athenaeum;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;

public class LibChangePass extends AppCompatActivity {
    AppCompatButton change;
    ImageView back;
    LIBDB DB;
    EditText currentPass, newPass, confirmPass;
    String p1;
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_lib_change_pass);
        back = (ImageView) findViewById(R.id.bb);
        change = (AppCompatButton) findViewById(R.id.chng);
        currentPass = (EditText) findViewById(R.id.currentPasswordLib);
        newPass = (EditText) findViewById(R.id.newPasswordLib);
        confirmPass = (EditText) findViewById(R.id.confirmPasswordLib);
        DB = new LIBDB(this);
        change.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String curent = currentPass.getText().toString();
                String userName = LibraryLandingPage.temp;
                String newP = newPass.getText().toString();
                String confirm = confirmPass.getText().toString();
                if (curent.isEmpty() || confirm.isEmpty() || newP.isEmpty()) {
                    Toast.makeText(LibChangePass.this, "Kindly fill in all the fields!",
Toast.LENGTH_SHORT).show();
                }
                else if(confirm.equals(newP)){
                    int changed = DB.changePassword(userName, curent, newP);
                    if (changed == 0) {
                        Toast.makeText(LibChangePass.this, "Kindly make sure to be connected to
the database.", Toast.LENGTH_SHORT).show();
                    } else if (changed == -1) {
                        Toast.makeText(LibChangePass.this, "Current Password entered is invalid.",
Toast.LENGTH_SHORT).show();
                    } else {
                        Toast.makeText(LibChangePass.this, "Your password has been updated.",
Toast.LENGTH_SHORT).show();
                    }
                }
                else {
                    Toast.makeText(LibChangePass.this, "Newly entered passwords don't match.",
Toast.LENGTH_SHORT).show();
                }
            }
        });
        back.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i=new Intent(getApplicationContext(),LibraryLandingPage.class);
                startActivity(i);
            }
        });
    }
}
```

acitvity_manual_issue.xml

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  android:id="@+id/rea"
  android:layout_width="match_parent"
  android:layout_height="fill_parent"
  android:orientation="vertical"
  android:background="@color/white"
  tools:context=".ManualIssue">

  <TextView
    android:id="@+id/gfhhg"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="27dp"
    android:layout_marginLeft="27dp"
    android:layout_marginTop="88dp"
    android:text="Manual Book Issue"
    android:textColor="#000000"
    android:textSize="30dp" />

  <EditText
    android:id="@+id/bookid2"
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="34dp"
    android:layout_marginTop="223dp"
    android:backgroundTint="#514F4F"
    android:gravity="bottom"
    android:hint="Enter the Book ID."
    android:inputType="text"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

  <EditText
    android:id="@+id/studentId2"
```

```
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="32dp"
    android:layout_marginTop="161dp"
    android:backgroundTint="#514F4F"
    android:gravity="bottom"
    android:hint="Enter Department Number."
    android:inputType="text"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/bookName3"
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="34dp"
    android:layout_marginTop="290dp"
    android:backgroundTint="#514F4F"
    android:gravity="bottom"
    android:hint="Enter the Book's Name"
    android:inputType="text"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/bkissue2"
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="34dp"
    android:layout_marginTop="357dp"
    android:backgroundTint="#514F4F"
    android:enabled="false"
    android:gravity="bottom"
```

```
    android:hint="Book Issue Date"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<EditText
    android:id="@+id/bkreturn2"
    android:layout_width="347dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="36dp"
    android:layout_marginTop="423dp"
    android:backgroundTint="#514F4F"
    android:enabled="false"
    android:gravity="bottom"
    android:hint="Book Return Date"
    android:textColor="#090909"
    android:textColorHint="#979292"
    android:textSize="14sp" />

<ImageView
    android:id="@+id/issueBack2"
    android:layout_width="45dp"
    android:layout_height="38dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="26dp"
    android:layout_marginTop="31dp"
    android:src="@drawable/back" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/manualIssueBtn"
    android:layout_width="158dp"
    android:layout_height="46dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_centerInParent="true"
    android:layout_marginStart="129dp"
    android:layout_marginTop="540dp"
    android:layout_marginEnd="124dp"
    android:background="@drawable/libbtn3"
```

```
    android:text="ISSUE BOOK"
    android:textColor="@color/white"
    android:textSize="14dp" />
</RelativeLayout>
```

LibDB.java

```
package com.example.athenaeum;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import androidx.annotation.Nullable;

public class LIBDB extends SQLiteOpenHelper {
  public LIBDB(@Nullable Context context, @Nullable String name, @Nullable
SQLiteDatabase.CursorFactory factory, int version) {
    super(context, name, factory, version);
  }
  public static final String DB="Library";
  public static final String TBNAME="LIB";
  public static final int TBV=1;
  public static final String COL1="LID";
  public static final String COL2="LNAME";
  public static final String COL3="LPASS";
  @Override
  public void onCreate(SQLiteDatabase db) {
    db.execSQL("Create table LIB(LID TEXT PRIMARY KEY, LNAME TEXT, LPASS
TEXT)");
  }

  public LIBDB(Context context) {
    super(context, DB,null,TBV);
  }
  @Override
  public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    db.execSQL("DROP TABLE IF EXISTS " + TBNAME);
    onCreate(db);
  }
  public boolean onIns(String s, String n, String p){
    SQLiteDatabase db=this.getWritableDatabase();
    ContentValues cv=new ContentValues();
    cv.put(COL1,s);
```

```
        cv.put(COL2,n);
        cv.put(COL3,p);
        long res=db.insert(TBNAME, null,cv);
        if(res==-1){
            return false;
        }
        else{
            return true;
        }
    }
    public int changePassword(String user, String currentPassword, String newPassword) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues cv = new ContentValues();
        cv.put(COL3, newPassword);
        Cursor cursor = db.rawQuery("Select * from LIB where LID=? AND LPASS=?", new
String[]{user, currentPassword});
        if (cursor.getCount() > 0) {
            long result = db.update(TBNAME, cv, "LID=? AND LPASS=?", new
String[]{user,currentPassword});
            if (result == -1) {
                return 0;
            } else {
                return 1;
            }
        } else {
            return -1;
        }
    }
    public String getName(String s){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor cursor = db.rawQuery("Select LNAME from LIB where LID =?", new String[]
{s});
        cursor.moveToFirst();
        String name = cursor.getString(0);
        return name;
    }
    public boolean onLogin(String s, String p){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor cursor = db.rawQuery("Select * from LIB where LID =? AND LPASS=?", new
String[] {s,p});
        if(cursor.getCount()>0) {
            return true;
        }
        else{
```

```
        return false;
      }
    }
}
```

ManualIssue.java

```
package com.example.athenaeum;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.content.Intent;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;
import androidx.core.app.NotificationCompat;
import androidx.core.app.NotificationManagerCompat;
import java.text.DateFormat;
import java.util.Calendar;

public class ManualIssue extends AppCompatActivity {
  EditText bkid, stuid, issue, returnDate, bkName;
  ImageView back;
  AppCompatButton issueBook;
  String pre, fut;
  BOOKDB bk;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_manual_issue);
    bkid = (EditText) findViewById(R.id.bookid2);
    returnDate = (EditText) findViewById(R.id.bkreturn2);
    stuid = (EditText) findViewById(R.id.studentId2);
    bkName = (EditText) findViewById(R.id.bookName3);
    back = (ImageView) findViewById(R.id.issueBack2);
    issue = (EditText) findViewById(R.id.bkissue2);
    issueBook = (AppCompatButton) findViewById(R.id.manualIssueBtn);
    bk = new BOOKDB(this);
    if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
```

```
        NotificationChannel channel = new NotificationChannel("My Notification", "My
Notification", NotificationManager.IMPORTANCE_DEFAULT);
        NotificationManager manager = getSystemService(NotificationManager.class);
        manager.createNotificationChannel(channel);
    }
    back.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent i = new Intent(ManualIssue.this, LibraryLandingPage.class);
            startActivity(i);
        }
    });
    //ADDITON OF RECORDS IN DB
    issueBook.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Calendar c1 = Calendar.getInstance();
            String currentDate = DateFormat.getDateInstance().format(c1.getTime());
            c1.add(Calendar.DATE, 7);
            c1.add(Calendar.MONTH, 0);
            c1.add(Calendar.YEAR, 0);
            String returnDate2 = DateFormat.getDateInstance().format(c1.getTime());
            issue.setText(currentDate);
            returnDate.setText(returnDate2);
            String id = bkid.getText().toString();
            if
(id.isEmpty()||bkName.getText().toString().isEmpty()||stuid.getText().toString().isEmpty()) {
                Toast.makeText(ManualIssue.this, "Kindly fill in all the fields.",
Toast.LENGTH_LONG).show();
            } else {
                Boolean res = bk.onIns(id, bkName.getText().toString() ,currentDate,
returnDate2,stuid.getText().toString() );
                if (res == true) {
                    NotificationCompat.Builder builder = new
NotificationCompat.Builder(ManualIssue.this, "My Notification");
                    builder.setContentTitle("BOOK SUCCESSFULLY ISSUED ✧*:･ﾟヽ(◕ワ◕)
ﾉ*:･ﾟ✧");
                    builder.setContentText("Return before: " + fut);
                    builder.setSmallIcon(R.drawable.l);
                    builder.setAutoCancel(true);
                    NotificationManagerCompat managerCompat =
NotificationManagerCompat.from(ManualIssue.this);
                    managerCompat.notify(1, builder.build());
```

```
                } else {
                    Toast.makeText(ManualIssue.this, "Book Already Issued OR User does not
exist.", Toast.LENGTH_LONG).show();
                }
            }
        }
    });
  }
}
```

acitvity_scan_issue.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="@color/white"
  tools:context=".ScanIssue">

  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Book Issue Via Scanning"
    android:textColor="#000000"
    android:textSize="27dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.245"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.126" />
  <ImageView
    android:layout_width="78dp"
    android:id="@+id/scanStudentCard"
    android:layout_height="33dp"
    android:layout_marginStart="340dp"
    android:layout_marginLeft="340dp"
    android:src="@drawable/scanicon"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.227" />
```

```
<EditText
    android:id="@+id/bookScanReturnDate2"
    android:layout_width="204dp"
    android:layout_height="wrap_content"
    android:backgroundTint="#716F6F"
    android:ems="10"
    android:enabled="false"
    android:inputType="textPersonName"
    android:textColor="@color/black"
    android:textSize="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.884"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.622" />

<EditText
    android:id="@+id/bookScanIssueDate2"
    android:layout_width="204dp"
    android:layout_height="wrap_content"
    android:backgroundTint="#716F6F"
    android:ems="10"
    android:enabled="false"
    android:inputType="textPersonName"
    android:textColor="@color/black"
    android:textSize="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.884"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.523" />

<EditText
    android:id="@+id/bookScannedName2"
    android:layout_width="204dp"
    android:layout_height="43dp"
    android:backgroundTint="#716F6F"
    android:ems="10"
    android:hint="Enter"
    android:inputType="textPersonName"
    android:textColor="@color/black"
```

```
    android:textColorHint="#838181"
    android:textSize="15sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.884"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.334" />

<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Return Date:"
    android:textColor="#565B5C"
    android:textSize="17sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.099"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.63" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Issue Date:"
    android:textColor="#565B5C"
    android:textSize="17sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.108"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.534" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Book Id:"
    android:textColor="#565B5C"
    android:textSize="17sp"
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.1"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.446" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Department No:"
    android:textColor="#565B5C"
    android:textSize="17sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.11"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.248" />

<EditText
    android:id="@+id/bookScanId2"
    android:layout_width="204dp"
    android:layout_height="wrap_content"
    android:backgroundTint="#716F6F"
    android:ems="10"
    android:enabled="false"
    android:inputType="textPersonName"
    android:textColor="@color/black"
    android:textSize="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.884"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.433" />

<EditText
    android:id="@+id/studentId"
    android:layout_width="181dp"
    android:layout_height="40dp"
    android:backgroundTint="#716F6F"
    android:ems="10"
    android:hint="Enter or Scan ID ->."
    android:inputType="textPersonName"
```

```
    android:textColor="@color/black"
    android:textColorHint="#535252"
    android:textSize="15dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.795"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.23" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Book Name"
    android:textColor="#565B5C"
    android:textSize="17sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.097"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.349" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/scanIssue2"
    android:layout_width="157dp"
    android:layout_height="49dp"
    android:background="@drawable/libbtn3"
    android:text="ISSUE BOOK"
    android:textColor="@color/white"
    android:textSize="15sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.79"
    tools:ignore="OnClick" />

<ImageView
    android:id="@+id/scanBack"
    android:layout_width="35dp"
    android:layout_height="33dp"
    android:background="@drawable/back"
    app:layout_constraintBottom_toBottomOf="parent"
```

```
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.075"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.048" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

SearchDB.java

```
package com.example.athenaeum;

public class SearchDB {
    String bookName;
    String authorName;
    Integer imageUrl;
    public SearchDB(String userName, String desco, Integer imageUrl) {
        this.bookName = userName;
        this.authorName = desco;
        this.imageUrl = imageUrl;
    }
    public String getBookName() {
        return bookName;
    }
    public void setBookName(String bookName) {
        this.bookName = bookName;
    }
    public String getAuthorName() {
        return authorName;
    }
    public void setAuthorName(String authorName) {
        this.authorName = authorName;
    }
    public Integer getImageUrl() {
        return imageUrl;
    }
    public void setImageUrl(Integer imageUrl) {
        this.imageUrl = imageUrl;
    }
}
```

ScanIssue.java

```
package com.example.athenaeum;

import android.app.NotificationChannel;
import android.app.NotificationManager;
```

```
import android.content.Intent;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;
import androidx.core.app.NotificationCompat;
import androidx.core.app.NotificationManagerCompat;
import com.google.zxing.integration.android.IntentIntegrator;
import com.google.zxing.integration.android.IntentResult;
import java.text.DateFormat;
import java.util.Calendar;

public class ScanIssue extends AppCompatActivity implements View.OnClickListener {
    AppCompatButton issue;
    ImageView back,scan;
    EditText name, issuebk, returnbk, bkid,bkName;
    BOOKDB bk;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_scan_issue);
        back = (ImageView) findViewById(R.id.scanBack);
        issue = (AppCompatButton) findViewById(R.id.scanIssue2);
        name=(EditText) findViewById(R.id.studentId);
        scan=(ImageView) findViewById(R.id.scanStudentCard);
        issuebk=(EditText) findViewById(R.id.bookScanIssueDate2);
        returnbk=(EditText) findViewById(R.id.bookScanReturnDate2);
        bkid=(EditText) findViewById(R.id.bookScanId2);
        bkName=(EditText) findViewById(R.id.bookScannedName2);
        String s = IssueBooks.bkid2;
        bkid.setText(s);
        bk = new BOOKDB(this);
        scan.setOnClickListener(this);
        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
            NotificationChannel channel = new NotificationChannel("My Notification",
"My Notification", NotificationManager.IMPORTANCE_DEFAULT);
            NotificationManager manager = getSystemService(NotificationManager.class);
            manager.createNotificationChannel(channel);
        }
        //Calculating Return date
```

```
        Calendar c1 = Calendar.getInstance();
        String cdate = DateFormat.getDateInstance().format(c1.getTime());
        c1.add(Calendar.DATE, 7);
        c1.add(Calendar.MONTH, 0);
        c1.add(Calendar.YEAR, 0);
        String future = DateFormat.getDateInstance().format(c1.getTime());
        //Setting Issue and Return Date
        issuebk.setText(cdate);
        returnbk.setText(future);
        issue.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Boolean res = bk.onIns(s, bkName.getText().toString(), cdate, future,
name.getText().toString());
                if (s.equals("")|| bkName.getText().toString().equals("")||cdate.equals("") ||
future.equals("") || name.getText().toString().equals("")) {
                    Toast.makeText(ScanIssue.this, "Kindly fill in all the fields.",
Toast.LENGTH_SHORT).show();
                } else {
                    if (res == true) {
                        NotificationCompat.Builder builder = new
NotificationCompat.Builder(ScanIssue.this, "My Notification");
                        builder.setContentTitle("BOOK SUCCESSFULLY ISSUED
✧*:･ﾟヽ(◕ワ◕)ﾉ*:･ﾟ✧");
                        builder.setContentText("Return before: " + future);
                        builder.setSmallIcon(R.drawable.l);
                        builder.setAutoCancel(true);
                        NotificationManagerCompat managerCompat =
NotificationManagerCompat.from(ScanIssue.this);
                        managerCompat.notify(1, builder.build());
                    } else

                        Toast.makeText(ScanIssue.this, "User doesn't exist OR Book
Already Issued.", Toast.LENGTH_SHORT).show();
                    }
                }
            });
        back.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i = new Intent(ScanIssue.this, IssueBooks.class);
                startActivity(i);
            }
```

```
        });
    }
    public void onClick(View view) {
        scanCode();
    }
    private void scanCode() {
        IntentIntegrator i = new IntentIntegrator(this);
        i.setCaptureActivity(CaptureAct2.class);
        i.setOrientationLocked(false);
        i.setDesiredBarcodeFormats(IntentIntegrator.ALL_CODE_TYPES);
        i.setPrompt("Scanning Code");
        i.initiateScan();
    }
    @Override
    protected void onActivityResult(int requestCode, int resultCode, Intent data) {
        IntentResult ir= IntentIntegrator.parseActivityResult(requestCode, resultCode, data);
        if (ir != null) {
            if (ir.getContents() != null) {
                name.setText(ir.getContents());
            } else {
                Toast.makeText(this, "No Results", Toast.LENGTH_LONG).show();
            }
        }
        else{
            super.onActivityResult(requestCode, resultCode, data);
        }
    }
}
```

activtiy_v_i_e_w_w.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="fill_parent"
  android:layout_height="fill_parent"
  xmlns:tools="http://schemas.android.com/tools"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  android:orientation="vertical"
  android:background="@color/white"
  tools:context=".VIEWW">

  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
```

```
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="27dp"
    android:layout_marginLeft="27dp"
    android:layout_marginTop="83dp"
    android:text="Return Borrowed Books"
    android:textColor="@color/black"
    android:textSize="25dp" />

<ImageView
    android:layout_width="223dp"
    android:layout_height="63dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="-1dp"
    android:layout_marginTop="356dp"
    android:src="@drawable/og" />

<ImageView
    android:id="@+id/libbackk"
    android:layout_width="45dp"
    android:layout_height="38dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="26dp"
    android:layout_marginTop="31dp"
    android:src="@drawable/back" />

<EditText
    android:id="@+id/txtItemm"
    android:layout_width="355dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="28dp"
    android:layout_marginTop="131dp"
    android:backgroundTint="#605F5F"
    android:hint="Enter the Student ID"
    android:inputType="text"
    android:textColor="@color/black"
    android:textColorHint="#797C7C" />

<EditText
```

```
    android:id="@+id/txtItemm2"
    android:layout_width="355dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="29dp"
    android:layout_marginTop="193dp"
    android:hint="Enter the Book Name"
    android:backgroundTint="#605F5F"
    android:inputType="text"
    android:textColor="@color/black"
    android:textColorHint="#797C7C" />

<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/btnDel1"
    android:layout_width="170dp"
    android:layout_height="46dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_centerInParent="true"
    android:layout_marginStart="121dp"
    android:layout_marginTop="260dp"
    android:layout_marginEnd="120dp"
    android:background="@drawable/libbtn3"
    android:text="Book Returned"
    android:textColor="@color/white"
    android:textSize="13dp" />

 <ListView
    android:id="@android:id/list"
    android:layout_width="412dp"
    android:layout_height="317dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentBottom="true"
    android:layout_marginTop="411dp"
    android:layout_marginBottom="3dp"
    android:divider="#8E590B"
    android:dividerHeight="4px" />

 <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="32dp"
        android:layout_marginLeft="32dp"
        android:layout_marginTop="327dp"
        android:text="Student Details"
        android:textColor="@color/black"
        android:textSize="25dp" />

<Spinner
        android:id="@+id/spinnerr"
        android:layout_width="134dp"
        android:layout_height="28dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_centerVertical="true"
        android:layout_marginStart="35dp"
        android:layout_marginTop="371dp"
        android:background="#B7FFFFFF"
        android:popupBackground="#3C3A3A" />

    <androidx.appcompat.widget.AppCompatButton
        android:id="@+id/btnAdd1"
        android:layout_width="159dp"
        android:layout_height="45dp"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_centerInParent="true"
        android:layout_marginLeft="-227dp"
        android:layout_marginTop="364dp"
        android:layout_marginEnd="38dp"
        android:background="@drawable/libbtn2"
        android:text="View RECORDS"
        android:textColor="#855001"
        android:textSize="12dp" />
</RelativeLayout>
```

VIEWW.java

```
package com.example.athenaeum;

import android.app.ListActivity;
import android.content.Intent;
```

```
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ImageView;
import android.widget.Spinner;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.widget.AppCompatButton;
import java.util.ArrayList;
public class VIEWW extends ListActivity implements AdapterView.OnItemSelectedListener
{
  String[] years = {"Select Year","All", "I UG", "II UG", "III UG", "I PG", "II PG"};
  TextView stuid, bkName;
  ImageView back;
  AppCompatButton view, delete;
  ArrayList<String> list = new ArrayList<String>();
  ArrayAdapter<String> adapter;
  BOOKDB book;
  String deptNo;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_v_i_e_w_w);
     book = new BOOKDB(this);
     stuid = (TextView) findViewById(R.id.txtItemm);
     bkName = (TextView) findViewById(R.id.txtItemm2);
     back = (ImageView) findViewById(R.id.libbackk);
     view = (AppCompatButton) findViewById(R.id.btnAdd1);
     delete = (AppCompatButton) findViewById(R.id.btnDel1);
     //Spinner
     Spinner spin = (Spinner) findViewById(R.id.spinnerr);
     spin.setOnItemSelectedListener(this);
     adapter = new ArrayAdapter<String>(this,R.layout.list_black_text, R.id.list_content,
list);
     ArrayAdapter aa = new ArrayAdapter(this, R.layout.spinner_text, years);
     aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
     //Setting the ArrayAdapter data on the Spinner
     spin.setAdapter(aa);
     back.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
           Intent i = new Intent(VIEWW.this, LibraryLandingPage.class);
```

```
            startActivity(i);
        }
    });
    //DELETION OF RECORDS
    delete.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String student=stuid.getText().toString();
            String nameOfBook=bkName.getText().toString();
            boolean insertData = book.onDel(student, nameOfBook);
            if (insertData == true) {
                Toast.makeText(VIEWW.this, "Book Returned.",
Toast.LENGTH_LONG).show();
            } else {
                Toast.makeText(VIEWW.this, "Something went wrong, Try again later. :(",
Toast.LENGTH_LONG).show();
            }
        }
    });
    //View Student Book Records
    view.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if(deptNo.equals("All")){
                list.clear();
                Cursor res = book.getAllData();
                if(res.getCount()==0){
                    Toast.makeText(VIEWW.this,"No Entry Exists",
Toast.LENGTH_LONG).show();
                    return;
                }
                StringBuffer buffer = new StringBuffer();
                int n=res.getCount();
                list.clear();
                for(int i=0; n>i;++i){
                    while(res.moveToNext()){
                        buffer.append("Student ID: "+res.getString(4)+"\n");
                        buffer.append("Book Name: "+res.getString(1)+"\n");
                        buffer.append("Issue Date : "+res.getString(2)+"\n");
                        buffer.append("Return Date: "+res.getString(3)+"\n");
                        list.add(buffer.toString());
                        buffer.delete(0, buffer.length());
                    }
                }
```

```
            adapter.notifyDataSetChanged();
        }
        else if(deptNo.equals("20UCSA")){
            list.clear();
            Cursor res = book.getdata();
            if(res.getCount()==0){
                Toast.makeText(VIEWW.this,"No Entry Exists",
Toast.LENGTH_LONG).show();
                return;
            }
            StringBuffer buffer = new StringBuffer();
            int n=res.getCount();
            list.clear();
            for(int i=0; n>i;++i){
                while(res.moveToNext()){
                    buffer.append("Student ID: "+res.getString(4)+"\n");
                    buffer.append("Book Name: "+res.getString(1)+"\n");
                    buffer.append("Issue Date : "+res.getString(2)+"\n");
                    buffer.append("Return Date: "+res.getString(3)+"\n");
                    list.add(buffer.toString());
                    buffer.delete(0, buffer.length());
                }
            }
            adapter.notifyDataSetChanged();
        }
        else if(deptNo.equals("19UCSA")){
            list.clear();
            Cursor res = book.getdata1();
            if(res.getCount()==0){
                Toast.makeText(VIEWW.this,"No Entry Exists",
Toast.LENGTH_LONG).show();
                return;
            }
            StringBuffer buffer = new StringBuffer();
            int n=res.getCount();
            list.clear();
            for(int i=0; n>i;++i){
                while(res.moveToNext()){
                    buffer.append("Student ID: "+res.getString(4)+"\n");
                    buffer.append("Book Name: "+res.getString(1)+"\n");
                    buffer.append("Issue Date : "+res.getString(2)+"\n");
                    buffer.append("Return Date: "+res.getString(3)+"\n");
                    list.add(buffer.toString());
                    buffer.delete(0, buffer.length());
```

```
                }
            }
            adapter.notifyDataSetChanged();
        }
        else if(deptNo.equals("18UCSA")){
            list.clear();
            Cursor res = book.getdata2();
            if(res.getCount()==0){
                Toast.makeText(VIEWW.this,"No Entry Exists",
Toast.LENGTH_LONG).show();
                return;
            }
            StringBuffer buffer = new StringBuffer();
            int n=res.getCount();
            list.clear();
            for(int i=0; n>i;++i){
                while(res.moveToNext()){
                    buffer.append("Student ID: "+res.getString(4)+"\n");
                    buffer.append("Book Name: "+res.getString(1)+"\n");
                    buffer.append("Issue Date : "+res.getString(2)+"\n");
                    buffer.append("Return Date: "+res.getString(3)+"\n");
                    list.add(buffer.toString());
                    buffer.delete(0, buffer.length());
                }
            }
            adapter.notifyDataSetChanged();
        }
        else if(deptNo.equals("20PCSA")){
            list.clear();
            Cursor res = book.getdata3();
            if(res.getCount()==0){
                Toast.makeText(VIEWW.this,"No Entry Exists",
Toast.LENGTH_LONG).show();
                return;
            }
            StringBuffer buffer = new StringBuffer();
            int n=res.getCount();
            list.clear();
            for(int i=0; n>i;++i){
                while(res.moveToNext()){
                    buffer.append("Student ID: "+res.getString(4)+"\n");
                    buffer.append("Book Name: "+res.getString(1)+"\n");
                    buffer.append("Issue Date : "+res.getString(2)+"\n");
                    buffer.append("Return Date: "+res.getString(3)+"\n");
```

```
                list.add(buffer.toString());
                buffer.delete(0, buffer.length());
            }
          }
          adapter.notifyDataSetChanged();
        }
        else if(deptNo.equals("19PCSA")){
          list.clear();
          Cursor res = book.getdata4();
          if(res.getCount()==0){
            Toast.makeText(VIEWW.this,"No Entry Exists",
Toast.LENGTH_LONG).show();
            return;
          }
          StringBuffer buffer = new StringBuffer();
          int n=res.getCount();
          list.clear();
          for(int i=0; n>i;++i){
            while(res.moveToNext()){
              buffer.append("Student ID: "+res.getString(4)+"\n");
              buffer.append("Book Name: "+res.getString(1)+"\n");
              buffer.append("Issue Date : "+res.getString(2)+"\n");
              buffer.append("Return Date: "+res.getString(3)+"\n");
              list.add(buffer.toString());
              buffer.delete(0, buffer.length());
            }
          }
          adapter.notifyDataSetChanged();
        }
      }
    });
    setListAdapter(adapter);
  }
  @Override
  public void onItemSelected(AdapterView<?> parent, View view, int position, long id) {
    String y=years[position];
    switch(y){
      case "Select Year":
        break;
      case "All":deptNo="All";
        break;
      case "I UG":deptNo="20UCSA";
        break;
      case "II UG":deptNo="19UCSA";
```

```
            break;
        case "III UG":deptNo="18UCSA";
            break;
        case "I PG":deptNo="20PCSA";
            break;
        case "II PG":deptNo="19PCSA";
            break;
      }
  }
  @Override
  public void onNothingSelected(AdapterView<?> parent) {
  }
}
```

6. TESTING

After generating the code, we started on with program testing. The testing process generally focuses on the logic (internal) of the software ensuring that all the statements have been tested, and on the functional externals, that is we conducted tests to uncover errors and ensure that defined input will procedure actual results that agree with the required results.

Sample Test Cases

Screen name: Categories (Student/Librarian)

Test case id: 1

Test name: Verify identity

Purpose: Ensure that either student/librarian can use the app

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	Click on Student Image Button	Goes to Student Login Page	Goes to Student Login Page	**SUCCESS**
2	Click on Librarian Image Button	Goes to Librarian Login Page	Goes to Librarian Login Page	**SUCCESS**
3	Click of Back Button on Phone	Exits the App.	Exits the App.	**SUCCESS**

Post-Condition: Student/Librarian login will appear

Valid test data: None

STUDENT TEST CASES

Screen name: User Login

Test case id: 2

Test name: Verify identity

Purpose: Ensure that only students can login

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	Valid username and password entered & click on LOGIN button.	Goes to LANDING PAGE with "Welcome"+username.	Goes to LANDING PAGE with "Welcome"+username.	**SUCCESS**

2	Invalid username and password entered & click on LOGIN button.	Display a Toast message as "INVALID CREDENTIALS".	Display a Toast message as "INVALID CREDENTIALS".	**SUCCESS**
3	Username and/or password not entered.	Display a Toast message as "PLEASE ENTER ALL FIELDS".	Display a Toast message as "PLEASE ENTER ALL FIELDS".	**SUCCESS**

Post-Condition: View Homepage

Valid Test Data: Valid Department number

Screen name: User Registration

Test case id: 3

Test name: Register identity

Purpose: Ensure that only students can register

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	All fields are entered and the REGISTER button is clicked.	Toast displays "Successfully Registered." and lands on LOGIN Page.	Toast displays "Successfully Registered." and lands on LOGIN Page	**SUCCESS**
2	All or One of the fields are not entered and the REGISTER button is clicked.	Display a Toast message as "Kindly Enter all the fields."	Display a Toast message as "Kindly Enter all the fields."	**SUCCESS**
3	Passwords and Confirm Passwords don't match and the REGISTER button is clicked.	Display a Toast message as "Passwords don't match.".	Display a Toast message as "Passwords don't match.".	**SUCCESS**
4	An already existing user Registers again.	Display a Toast message as "User already exists, Kindly Log in.".	Display a Toast message as "User already exists, Kindly Log in.".	**SUCCESS**

Post-Condition: Valid Values(all)

Valid Test Data: Valid Department number

Screen name: Homepage

Test case id: 4

Test name: Different features

Purpose: Navigate to a particular feature on button click.

Pre-Condition: Login with valid credentials.

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	On-click of SCAN BOOK button	Opens Scanner	Opens Scanner	**SUCCESS**
2	On-click of MY BOOKS button	Go to MY BOOKS page	Go to MY BOOKS page	**SUCCESS**
3	On-click of SEARCH BOOK button	Go to SEARCH BOOK page	Go to SEARCH BOOK page	**SUCCESS**
4	On-click of FINE PAYMENT button	GO to FINE PAYMENT page	GO to FINE PAYMENT page	**SUCCESS**
5	On-click of SETTINGS button	Go to SETTINGS page	Go to CHANGE PASSWORD page	**SUCCESS**
6	On-click of LOGOUT button	Goes to the LOGIN Page of Student Account and Logs out of the account.	Goes to the LOGIN Page of Student Account and Logs out of the account.	**SUCCESS**
7	On-Click of BACK Button in phone	Goes to the LOGIN Page of Student Account and Logs out of the account.	Goes to the LOGIN Page of Student Account and Logs out of the account.	**SUCCESS**

Post-Condition: Particular feature page opens on button click

Valid test data: None

Screen name: Scan Book

Test case id: 5

Test name: Scanning book barcode/QR

Purpose: Scan and store in database

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	After Scanning, Displays Book ID number and SCAN AGAIN is pressed.	Scanner Opens to Scan the Book's QR or Barcode Again.	Scanner Opens to Scan the Book's QR or Barcode Again	**SUCCESS**
2	After Scanning, Displays Book ID number and FINISH is pressed.	Scan QR or Barcode of any book, the QR/barcode number (Book ID), Borrowed date (automatically generated) and Return date (automatically generated) will appear on the next activity.	Scan QR or Barcode of any book, the QR/barcode number (Book ID), Borrowed date (automatically generated) and Return date (automatically generated) will appear on the next activity.	**SUCCESS**
	On-click of ISSUE BOOK in the next activity.	Notification is displayed along with the Book's Return date.	Notification is displayed along with the Book's Return date.	**SUCCESS**
3	On-click of BACK button.	Goes to the LANDING PAGE.	Goes to the LANDING PAGE.	**SUCCESS**

Post-Condition: Book Id, Borrowdate, Issue date automatically appears.

Valid test data: Book ID, Book name, Borrowdate, Return date, Department number

Screen name: My Books

Test case id: 6

Test name: Manually issuing of books.

Purpose: Manually enter all values and store them in the database.

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	All or one of the fields are empty and ISSUE is clicked.	Toast message displays "Kindly fill in all the fields"	Toast message displays "Kindly fill in all the fields"	**SUCCESS**
2	After all fields are entered and ISSUE is clicked.	Toast message displays "Book Issued Successfully.".	Toast message displays "Book Issued Successfully.".	**SUCCESS**
3	On-click of the VIEW ORDER button when the user has issued any books in the past.	Alert Dialog box displays the Book ID, Issue date and Return date in a list.	Alert Dialog box displays the Book ID, Issue date and Return date in a list.	**SUCCESS**

	On-click of the VIEW ORDER button when the user hasn't issued any books in the past.	Toast message displays "No entry has been made."	Toast message displays "No entry has been made."	**SUCCESS**
4	On-click of BACK button.	Goes to LANDING PAGE.	Goes to LANDING PAGE.	**SUCCESS**

Post-Condition: Book Id, book name and department number to be entered manually. Borrow date, Issue date automatically appears.

Valid test data: Book ID, Book name, Borrowdate, Return date, Department number

Screen name: Search Books

Test case id: 7

Test name: Search books

Purpose: Choose and download books on to your device

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	Searching a Book by its name or even alphabets in the Search Bar at top	Displays the books in a list matching the words inputted in the Search Bar	Displays the books in a list matching the words inputted in the Search Bar	**SUCCESS**
2	On choosing a Book from the list.	Choice between the pdf and website version is displayed.	Choice between the pdf and website version is displayed.	**SUCCESS**
3	On choosing either PDF or Website version of the book.	Book is displayed in the version chosen which can also be downloaded.	Book is displayed in the version chosen which can also be downloaded.	**SUCCESS**
4	On-click of BACK button	Goes to LANDING PAGE	Goes to LANDING PAGE	**SUCCESS**

Post-Condition: On-click a book name to view it and download it later.

Valid test data: None.

Screen name: Fine Payment

Test case id: 8

Test name: Fine payment for books.

Purpose: Penalty for not returning books before due date.

Pre-Condition: Ensure that the student has a bank account linked with Google pay.

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	When all or one of the fields is empty and the PAY button is clicked.	Toast message displays "Kindly fill in all the fields."	Toast message displays "Kindly fill in all the fields."	**SUCCESS**
2	When an invalid UPI ID is filled.	Toast message displays "Transaction failed."	Toast message displays "Transaction failed."	**SUCCESS**
3	When all fields are filled and the PAY button is clicked.	It gives the user to choose between the Net banking apps they have.	It gives the user to choose between the Net banking apps they have.	**SUCCESS**
4	When all fields are filled and the PAY button is clicked.	If a user has no App installed for payment, a Toast message displays "Kindly install a payment app to proceed."	If a user has no App installed for payment, a Toast message displays "Kindly install a payment app to proceed."	**SUCCESS**
5	When the back button is pressed.	Redirects to the Landing Page.	Redirects to the Landing Page.	**SUCCESS**

Post-Condition: Amount will be debited from the account given.

Valid test data: Valid bank credentials

Screen name: Settings

Test case id: 9

Test name: Change Password

Purpose: Setting a strong password

Pre-Condition: Ensure to give the correct current password.

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	On Click of CHANGE PASSWORD button when the fields are empty	Displays a Toast "Kindly enter a valid password."	Displays a Toast "Kindly enter a valid password."	**SUCCESS**
2	If the old password is wrongly entered.	Displays a Toast "Please enter correct current password"	Displays a Toast "Please enter correct current password"	**SUCCESS**

3	If new password and confirm not matching	Displays a Toast "Password and confirm password are not matching"	Displays a Toast "Password and confirm password are not matching"	**SUCCESS**
4	If all fields are properly entered.	Password changed successfully.	Password changed successfully.	**SUCCESS**
5	On-click of BACK button	Goes to LANDING PAGE	Goes to LANDING PAGE	**SUCCESS**

Post-Condition: New Password updated in the database.

Valid test data: Valid current password

LIBRARIAN TEST CASES

Screen name: Librarian Login

Test case id: 10

Test name: Verify identity

Purpose: Ensure that only librarian can login

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	Valid username and password & click on LOGIN button	Should go to LANDING PAGE with "Welcome"+username	Should go to LANDING PAGE with "Welcome"+username	**SUCCESS**
2	Invalid username and password entered & click on LOGIN button.	Display a Toast message as "INVALID CREDENTIALS"	Display a Toast message as "INVALID CREDENTIALS"	**SUCCESS**
3	Username and password not entered click on LOGIN button.	Display a Toast message as "PLEASE ENTER ALL FIELDS"	Display a Toast message as "PLEASE ENTER ALL FIELDS"	**SUCCESS**
4	Click of Back Button on Phone	Redirects to Cardview	Redirects to Cardview	**SUCCESS**

Post-Condition: View Homepage

Valid Test Data: Valid Department ID and Special Code.

Screen name: Librarian Registration

Test case id: 11

Test name: Register identity

Purpose: Ensure that only librarian can register

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	User ID, Name of User, Password, Confirm Password and special code are entered & click on REGISTER button.	Should go to Librarian's LOGIN page	Should go to Librarian's LOGIN page	**SUCCESS**
2	Password and confirm password do not match & click on REGISTER button.	Display a Toast message as "PASSWORDS NOT MATCHING"	Display a Toast message as "PASSWORDS NOT MATCHING"	**SUCCESS**
3	Either Username, User ID, Password, Confirm Password or special code not are entered & click on LOGIN button.	Display a Toast message as "PLEASE ENTER ALL FIELDS"	Display a Toast message as "PLEASE ENTER ALL FIELDS"	**SUCCESS**
4	Special Code entered doesn't match with the one given by the admin.	Display a Toast message as "Kindly enter a valid Code."	Display a Toast message as "Kindly enter a valid Code."	**SUCCESS**
5	Already existing users are trying to Register again.	Display a Toast message as "User already exists, Kindly Log in."	Display a Toast message as "User already exists, Kindly Log in."	**SUCCESS**

Post-Condition: Valid Values(all)

Valid Test Data: Valid Department ID.

Screen name: Homepage

Test case id: 12

Test name: Different features

Purpose: Navigate to a particular feature on button click.

Pre-Condition: Login with valid credentials.

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	On-click of VIEW ISSUES button	Go to the VIEW ISSUES page.	Go to the VIEW ISSUES page.	**SUCCESS**
2	On-click of ISSUE BOOKS button	Go to ISSUE BOOKS page.	Go to ISSUE BOOKS page.	**SUCCESS**
3	On-click of SEARCH BOOKS button	Go to SEARCH BOOKS page.	Go to SEARCH BOOKS page.	**SUCCESS**
4	On-click of SETTINGS button	Go to CHANGE PASSWORD page.	Go to CHANGE PASSWORD page.	**SUCCESS**
5	On-click of LOGOUT button	Goes to the LOGIN Page of Librarian Account and Logs out of the account.	Goes to the LOGIN Page of Librarian Account and Logs out of the account.	**SUCCESS**
6	On-Click of BACK Button in phone	Goes to the LOGIN Page of Librarian Account and Logs out of the account.	Goes to the LOGIN Page of Librarian Account and Logs out of the account.	**SUCCESS**

Post-Condition: Particular feature page opens on button click

Valid test data: None

Screen name: Return Borrowed Books

Test case id: 13

Test name: View and Delete Issues

Purpose: Viewing and deleting student book issues

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	Choosing the YEAR OF STUDY from the Spinner Control and on-click of VIEW button.	The Students with their ID, Book borrowed, when they borrowed and the return date will be displayed in a Listview.	The Students with their ID, Book borrowed, when they borrowed and the return date will be displayed in a Listview.	**SUCCESS**
2	If STUID is not entered and DELETE button is pressed.	Toast message is displayed saying "Kindly fill in all the fields."	Toast message is displayed saying "Kindly fill in all the fields."	**SUCCESS**

3	When DELETE button is pressed when STUID entered is invalid	Toast message is displayed saying "User doesn't exist."	Toast message is displayed saying "User doesn't exist."	**SUCCESS**
4	When the BACK button is pressed.	Lands on the Landing Page.	Lands on the Landing Page.	**SUCCESS**

Post-Condition: Books issued by student record will be deleted from Database.

Valid test data: Department number and Book name.

Screen name: Issue Book

Test case id: 14

Test name: Book Issuing (Scanning/Manually)

Purpose: Alternative method if student cannot issue books

Pre-Condition: None.

Sl.No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	On-click of SCANNING button	Scan QR or Barcode of any book, the QR/barcode number (Book ID), Borrowed date (automatically generated) and Return date (automatically generated) will appear on the next activity.	Scan QR or Barcode of any book, the QR/barcode number (Book ID), Borrowed date (automatically generated) and Return date (automatically generated) will appear on the next activity.	**SUCCESS**
	On-click of ISSUE BOOK in next activity, if Student ID is not entered.	Toast message displays "Kindly enter all the fields."	Toast message displays "Kindly enter all the fields."	
	On-click of ISSUE BOOK in next activity, if Student ID is not valid.	Toast message displays "User doesn't exist!"	Toast message displays "User doesn't exist!"	
	On-click of ISSUE BOOK in next activity (Student ID entered manually)	Notification with the Return date is displayed.	Notification with the Return date is displayed.	
2	On-click of MANUALLY button	Redirects to another activity.	Redirects to another activity.	**SUCCESS**

	On-Click of MANUALLY button when all or either of the fields are not filled in.	Toast message displays "Kindly enter in all the fields!"	Toast message displays "Kindly enter in all the fields!"	
	On-Click of MANUALLY button when an invalid Student ID is entered.	Toast message displays "User doesn't exist!"	Toast message displays "User doesn't exist!"	
	On-Click of MANUALLY button when all fields are entered.	Notification with the return date is displayed.	Notification with the return date is displayed.	
3	When Student Id is scanned.	Scans and recognises the Department Number correctly.	Scans and recognises the Department Number correctly.	**SUCCESS**
4	On-click of BACK button	Lands on the Landing Page.	Lands on the Landing Page.	**SUCCESS**

Post-Condition: Book added to Student Book issue database.

Valid test data: Department number, book name and book ID.

Screen name: Search Books

Test case id: 15

Test name: Search books

Purpose: View and download books on to your device

Pre-Condition: None

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	Searching a Book by its name or even alphabets in the Search Bar at top	Displays the books in a list matching the words inputted in the Search Bar	Displays the books in a list matching the words inputted in the Search Bar	**SUCCESS**
2	On choosing a Book from the list.	Choice between the pdf and website version is displayed.	Choice between the pdf and website version is displayed.	**SUCCESS**

3	On choosing either PDF or Website version of the book.	Book is displayed in the version chosen which can also be downloaded.	Book is displayed in the version chosen which can also be downloaded.	**SUCCESS**
4	On-click of BACK button	Goes to LANDING PAGE	Goes to LANDING PAGE	**SUCCESS**

Post-Condition: On-click a book name to view it and download it later.

Valid test data: None.

Screen name: Settings

Test case id: 16

Test name: Change Password

Purpose: Setting a strong password

Pre-Condition: Ensure to give the correct current password.

Sl. No	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	On Click of CHANGE PASSWORD button when the fields are empty	Displays a Toast "Kindly enter a valid password."	Displays a Toast "Kindly enter a valid password."	**SUCCESS**
2	If the old password is wrongly entered.	Displays a Toast "Please enter correct current password"	Displays a Toast "Please enter correct current password"	**SUCCESS**
3	If new password and confirm not matching	Displays a Toast "Password and confirm password are not matching"	Displays a Toast "Password and confirm password are not matching"	**SUCCESS**
4	If all fields are properly entered.	Password changed successfully.	Password changed successfully.	**SUCCESS**
5	On-click of BACK button	Goes to LANDING PAGE	Goes to LANDING PAGE	**SUCCESS**

Post-Condition: New Password updated in the database.

Valid test data: Valid current password

7. SYSTEM IMPLEMENTATION

The purpose of system implementation are as follows: The implementation stage involves careful planning, investigation of the existing system and its constraint on implementation, designing of the methods to achieve change over and evaluation of change over methods. The application is designed to be used by a student of Stella Maris College. The user logs into their account which is created through their department numbers. The user can issue books either through scanning method or by manual method. They can also search for books present in the app and download a copy into their device. They will be receiving notifications to return their books on the correct dates. The same process works for the librarian too but they need to register themselves with a special code. In addition, the librarian can delete the student record from the database if she has returned the book. If the book has been returned after the due date a fine amount has to be paid based on the number of days after the due date. Both the student and librarian have the feature to update their passwords in their account.

8. FUTURE ENHANCEMENTS

The project's future potential is enormous. The following is the project's potential reach:

- The project should be extended to provide a scanning system for returning books so that the librarian can use them.
- Searching functionality by author name may also be added to make it easier for students and librarians to find books if they forget the title.
- SQLite is the database that was used. Since the database used was SQLite, the functionalities were limited; however, had we used Firebase, the possibilities would have been endless. For example, dynamically changing the special code periodically which is essential for a librarian to sign up or even dynamically add new books to the search bar.
- The project can be hosted on Google Play Store and be commercialised.
- And most importantly, this project can be made available for all departments of Stella Maris College.

9. CONCLUSION

The main aim of our project is to make it easier for students to use the library's resources without having to rely on the librarian. Since the whole cumbersome process is made simple with the android application. This will help departments that depend on registers, a designated student librarian and computers manage their libraries better. It's a win-win situation for both students and librarians especially during the pandemic where development of contactless systems has become a necessity.

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