Mobile Application Development

Practical 10: Library Management App

CODE:

Andriod_manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    package="com.example.library_managment">

    <application
        android:allowBackup="true"
        android:icon="@drawable/download"
        android:label="@string/app_name"
        android:roundIcon="@drawable/download"
        android:supportsRtl="true"
        android:theme="@style/Theme.LibraryManagment">
        <activity android:name=".insertActivity"></activity>
        <activity android:name=".displayActivity" />
        <activity android:name=".deleteActivity" />
        <activity android:name=".updateActivity" />

        <activity android:name=".MainActivity"

            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

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"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="395dp"
        android:layout_height="68dp"
        android:fontFamily="cursive"
        android:gravity="center"
        android:text="Welcome in Library management system"
        android:textColor="@color/design_default_color_secondary_variant"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.099" />

    <ImageView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:src="@drawable/download"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Activity_insert.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    tools:context=".insertActivity">

    <EditText
        android:id="@+id/bid"
        android:layout_width="307dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginTop="30sp"
        android:ems="10"
        android:hint="Book id"
        android:inputType="number"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/bname"
        android:layout_width="309dp"
        android:layout_height="wrap_content"
        android:layout_marginBottom="10sp"
        android:ems="10"
```

```
    android:hint="Book Name"
    android:layout_marginLeft="40sp"
    android:inputType="textPersonName"
    android:textSize="20sp" />

<EditText
    android:id="@+id/author"
    android:layout_width="311dp"
    android:layout_height="wrap_content"
    android:layout_marginBottom="10sp"
    android:ems="10"
    android:layout_marginLeft="40sp"
    android:hint="Author Name"
    android:inputType="textPersonName"
    android:textSize="20sp" />

<EditText
    android:id="@+id/pyear"
    android:layout_width="311dp"
    android:layout_height="wrap_content"
    android:layout_marginBottom="10sp"
    android:ems="10"
    android:layout_marginLeft="40sp"
    android:hint="Publication Year"
    android:inputType="number"
    android:textSize="20sp" />

<EditText
    android:id="@+id/phouse"
    android:layout_width="312dp"
    android:layout_height="wrap_content"
    android:layout_marginBottom="10sp"
    android:layout_marginLeft="40sp"
    android:ems="10"
    android:hint="Publishing House"
    android:inputType="textPersonName"
    android:textSize="20sp" />

<EditText
    android:id="@+id/dept"
    android:layout_width="315dp"
    android:layout_height="wrap_content"
    android:layout_marginBottom="10sp"
    android:layout_marginLeft="40sp"
    android:ems="10"
    android:hint="Department"
    android:inputType="textPersonName"
    android:textSize="20sp" />

<EditText
    android:id="@+id/isbn"
    android:layout_width="315dp"
    android:layout_height="wrap_content"
    android:layout_marginBottom="10sp"
    android:ems="10"
    android:layout_marginLeft="40sp"
    android:hint="Book ISBN Number"
```

```
        android:inputType="number"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/copies"
        android:layout_width="317dp"
        android:layout_height="wrap_content"
        android:layout_marginBottom="10sp"
        android:layout_marginLeft="40sp"
        android:ems="10"
        android:hint="Number of Copies"
        android:inputType="number"
        android:textSize="20sp" />

    <Button
        android:id="@+id/insertbtn"
        android:layout_width="320dp"
        android:layout_marginLeft="40sp"
        android:layout_height="wrap_content"
        android:layout_marginBottom="10sp"
        android:text="Insert"
        android:textSize="20sp"
        android:backgroundTint="@color/teal_200"/>
</LinearLayout>
```

Activity_update.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    tools:context=".updateActivity"
    android:orientation="vertical">

    <EditText
        android:id="@+id/bid2"
        android:layout_width="258dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginBottom="10sp"
        android:ems="10"
        android:hint="Book id"
        android:inputType="number"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/bname2"
        android:layout_width="259dp"
```

```
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginBottom="10sp"
        android:ems="10"
        android:hint="Book Name"
        android:inputType="textPersonName"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/author2"
        android:layout_width="258dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginBottom="10sp"
        android:ems="10"
        android:hint="Author Name"
        android:inputType="textPersonName"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/pyear2"
        android:layout_width="262dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginBottom="10sp"
        android:ems="10"
        android:hint="Publication Year"
        android:inputType="number"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/phouse2"
        android:layout_width="265dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginBottom="10sp"
        android:ems="10"
        android:hint="Publishing House"
        android:inputType="textPersonName"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/dept2"
        android:layout_width="271dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginBottom="10sp"
        android:ems="10"
        android:hint="Department"
        android:inputType="textPersonName"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/isbn2"
        android:layout_width="271dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
```

```
        android:layout_marginBottom="10sp"
        android:ems="10"
        android:hint="Book ISBN Number"
        android:inputType="number"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/copies2"
        android:layout_width="271dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginBottom="10sp"
        android:ems="10"
        android:hint="Number of Copies"
        android:inputType="number"
        android:textSize="20sp" />

    <Button
        android:id="@+id/updatebtn"
        android:layout_width="272dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginBottom="10sp"
        android:backgroundTint="@color/teal_200"
        android:text="Update"
        android:textSize="20sp" />
</LinearLayout>
```

Activity_delet.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    tools:context=".deleteActivity">

    <EditText
        android:id="@+id/Bid"
        android:layout_width="309dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginTop="50sp"
        android:ems="10"
        android:hint="Enter the Book Id"
        android:inputType="number"
        android:textSize="20sp"
        tools:layout_editor_absoluteX="47dp"
        tools:layout_editor_absoluteY="110dp" />
```

```
    <Button
        android:id="@+id/deletebtn"
        android:layout_width="310dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40sp"
        android:layout_marginTop="100sp"
        android:backgroundTint="@color/teal_200"
        android:text="Delete"
        android:textSize="20sp" />
</LinearLayout>
```

Activity_dispaly.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"
    tools:context=".displayActivity"
   >
</androidx.constraintlayout.widget.ConstraintLayout>
```

Menu/menu.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <item app:showAsAction="never"
        android:id="@+id/insert"
        android:title="Insert Data"></item>
    <item app:showAsAction="never"
        android:id="@+id/Upadate"
        android:title="Update Data"></item>
    <item app:showAsAction="never"
        android:id="@+id/delete"
        android:title="Delete Data"></item>
    <item app:showAsAction="never"
        android:id="@+id/display"
        android:title="Display Data"></item>
</menu>
```

MainActivity.java

```
package com.example.library_managment;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        switch (item.getItemId()){
            case R.id.insert:
                Intent intent=new
Intent(MainActivity.this,insertActivity.class);
                startActivity(intent);
                break;
            case R.id.Upadate:
                Intent intent1=new
Intent(MainActivity.this,updateActivity.class);
                startActivity(intent1);
                break;
            case R.id.delete:
                Intent intent2=new
Intent(MainActivity.this,deleteActivity.class);
                startActivity(intent2);
                break;
            case R.id.display:
                Intent intent3 = new
Intent(MainActivity.this,displayActivity.class);
                startActivity(intent3);
                break;
        }
        return super.onOptionsItemSelected(item);
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater inflater=getMenuInflater();
        inflater.inflate(R.menu.menu, menu);
        return true;
    }
}
```

inserActivity.java

```
package com.example.library_managment;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class insertActivity extends AppCompatActivity {
    EditText bid,bname,author,pyear,phouse,dept,isbn,copies;
    Button insert;
    DBHelper DB;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_insert);

        bid=findViewById(R.id.bid);
        bname=findViewById(R.id.bname);
        author=findViewById(R.id.author);
        pyear=findViewById(R.id.pyear);
        phouse=findViewById(R.id.phouse);
        dept=findViewById(R.id.dept);
        isbn=findViewById(R.id.isbn);
        copies=findViewById(R.id.copies);
        insert=findViewById(R.id.insertbtn);
        DB=new DBHelper(insertActivity.this);
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String Bookid=bid.getText().toString();
                String BName=bname.getText().toString();
                String Author=author.getText().toString();
                String Pyear=pyear.getText().toString();
                String Phouse=phouse.getText().toString();
                String Dept=dept.getText().toString();
                String ISBN=isbn.getText().toString();
                String Copies=copies.getText().toString();

                Boolean checkinsertdata =
DB.insertdata(Bookid,BName,Author,Pyear,Phouse,Dept,ISBN,Copies);
                if(checkinsertdata==true){
                    Toast.makeText(insertActivity.this,"New Data
Inserted",Toast.LENGTH_LONG).show();
                }
                else {
                    Toast.makeText(insertActivity.this,"New Data Not
Inserted",Toast.LENGTH_LONG).show();
                }
```

```
                Intent intent=new
Intent(insertActivity.this,MainActivity.class);
                startActivity(intent);
            }
        });
    }
}
```

updateActivity.java

```
package com.example.library_managment;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class updateActivity extends AppCompatActivity {

    EditText bid,bname,author,pyear,phouse,dept,isbn,copies;
    Button update;
    DBHelper DB;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_update);

        bid=findViewById(R.id.bid2);
        bname=findViewById(R.id.bname2);
        author=findViewById(R.id.author2);
        pyear=findViewById(R.id.pyear2);
        phouse=findViewById(R.id.phouse2);
        dept=findViewById(R.id.dept2);
        isbn=findViewById(R.id.isbn2);
        copies=findViewById(R.id.copies2);
        update=findViewById(R.id.updatebtn);
        DB=new DBHelper(updateActivity.this);

        update.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String Bookid=bid.getText().toString();
                String BName=bname.getText().toString();
                String Author=author.getText().toString();
                String Pyear=pyear.getText().toString();
                String Phouse=phouse.getText().toString();
                String Dept=dept.getText().toString();
                String ISBN=isbn.getText().toString();
```

```
                String Copies=copies.getText().toString();

                Boolean
checkupdatedata=DB.updatedata(Bookid,BName,Author,Pyear,Phouse,Dept,ISBN,Copi
es);
                if(checkupdatedata==true){
                    Toast.makeText(updateActivity.this,"Data
Updated",Toast.LENGTH_LONG).show();
                }
                else {
                    Toast.makeText(updateActivity.this," Data Not
Exists",Toast.LENGTH_LONG).show();
                }
                Intent intent=new
                        Intent(updateActivity.this,MainActivity.class);
                startActivity(intent);
            }
        });
    }
}
```

deleteActivity.java

```
package com.example.library_managment;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class deleteActivity extends AppCompatActivity {

    EditText Bid;
    Button delete;
    DBHelper DB;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_delet_acivity);
        Bid=findViewById(R.id.Bid);
        delete=findViewById(R.id.deletebtn);
        DB=new DBHelper(this);

        delete.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String bid = Bid.getText().toString();
                Boolean deleteData = DB.deletedata(bid);
                if (deleteData == true) {
                    Toast.makeText(deleteActivity.this, "Data Deleted
```

```
Successfully", Toast.LENGTH_LONG).show();
                } else {
                    Toast.makeText(deleteActivity.this, "Data Deleted
failed", Toast.LENGTH_LONG).show();


                    Intent intent = new Intent(deleteActivity.this,
MainActivity.class);
                    startActivity(intent);
                }
            }
        });
    }
}
```

displayActivity.java

```
package com.example.library_managment;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.DialogInterface;
import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.widget.Toast;

public class displayActivity extends AppCompatActivity {

    DBHelper DB;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_display);

        DB = new DBHelper(this);
        Cursor res = DB.displaydata();

        if (res.getCount() == 0) {
            Toast.makeText(displayActivity.this, "No Entry Exists",
Toast.LENGTH_LONG).show();
            return;
        }
        StringBuffer buffer = new StringBuffer();
        while (res.moveToNext()) {
            buffer.append("Book Id : " + res.getString(0) + "\n\n");
            buffer.append("Book Name : " + res.getString(1) + "\n\n");
            buffer.append("AuthorName : " + res.getString(2) + "\n\n");
            buffer.append("publicationY : " + res.getString(3) + "\n\n");
            buffer.append("publishingH : " + res.getString(4) + "\n\n");
            buffer.append("Department : " + res.getString(5) + "\n\n");
            buffer.append("ISBN : " + res.getString(6) + "\n\n");
            buffer.append("Copies : " + res.getString(7) + "\n\n");
```

```
            buffer.append("--------------------- " +"\n\n");

        }
        AlertDialog.Builder builder = new
AlertDialog.Builder(displayActivity.this);
        builder.setCancelable(true);
        builder.setTitle("Book Info. \n \n");

        builder.setMessage(buffer.toString());
        builder.setPositiveButton("Ok", new
                DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int which) {
                        Intent intent = new Intent(displayActivity.this,
MainActivity.class);
                        startActivity(intent);
                    }
                });
        builder.show();
    }
}
```

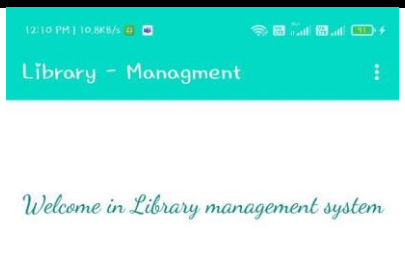
DBHelper.java

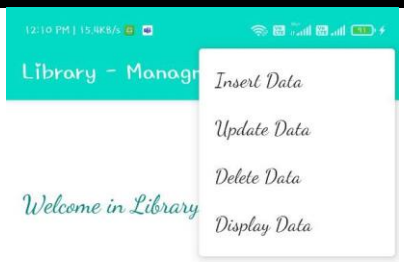
```
package com.example.library_managment;

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;
import org.w3c.dom.Text;
public class DBHelper extends SQLiteOpenHelper {
    public DBHelper(Context context) {
        super(context, "Book.db", null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create Table Bookdetails(Bid Text primary key,Bname
Text,AuthorName Text,publicationY Text,publishingH Text,Department Text,ISBN
Text,copies Text)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int
            newVersion) {
        db.execSQL("Drop Table if exists Bookdetails");
    }

    public Boolean insertdata(String Bid, String Bname, String
            AuthorName, String publicationY, String publishingH, String
Department, String ISBN, String copies) {
        SQLiteDatabase DB = this.getWritableDatabase();
```

```
        ContentValues contentValues = new ContentValues();
        contentValues.put("Bid", Bid);
        contentValues.put("Bname", Bname);
        contentValues.put("AuthorName", AuthorName);
        contentValues.put("publicationY", publicationY);
        contentValues.put("publishingH", publishingH);
        contentValues.put("Department", Department);
        contentValues.put("ISBN", ISBN);
        contentValues.put("copies", copies);
        long result = DB.insert("Bookdetails", null, contentValues);
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    }

    public Boolean updatedata(String Bid, String Bname, String
            AuthorName, String publicationY, String publishingH, String
Department, String
                                      ISBN, String copies) {
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("Bid", Bid);
        contentValues.put("Bname", Bname);
        contentValues.put("AuthorName", AuthorName);
        contentValues.put("publicationY", publicationY);
        contentValues.put("publishingH", publishingH);
        contentValues.put("Department", Department);
        contentValues.put("ISBN", ISBN);
        contentValues.put("copies", copies);
        Cursor cursor = DB.rawQuery("Select * from Bookdetails where Bid=?",
new String[]{String.valueOf(Bid)});
        if (cursor.getCount() > 0) {
            long result = DB.update("Bookdetails", contentValues, "Bid=?",
                    new String[]{String.valueOf(Bid)});
            if (result == -1) {
                return false;
            } else {
                return true;
            }
        } else {
            return false;
        }
    }

    public Boolean deletedata(String Bid) {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from Bookdetails where Bid=?",
new String[]{String.valueOf(Bid)});
        if (cursor.getCount() > 0) {
            long result = DB.delete("Bookdetails", "Bid=?", new
                    String[]{String.valueOf(Bid)});
            if (result == -1) {
                return false;
            } else {
                return true;
```

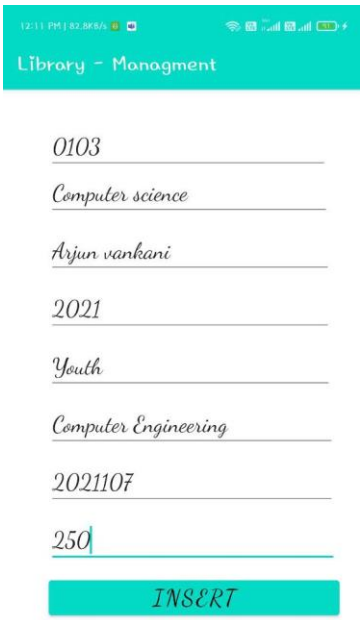
```
            }
        } else {
            return false;
        }
    }

    public Cursor displaydata() {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from Bookdetails ", null);
        return cursor;
    }
}
```

Output

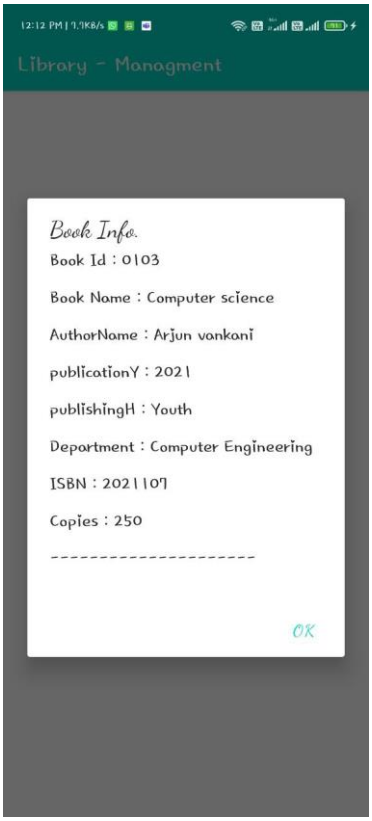




Android APP


Library - Managment
0103
Computer science
Arjun vankani
2021
Youth
Computer Engineering
2021107
250
INSERT

Library - Managment
123
DELETE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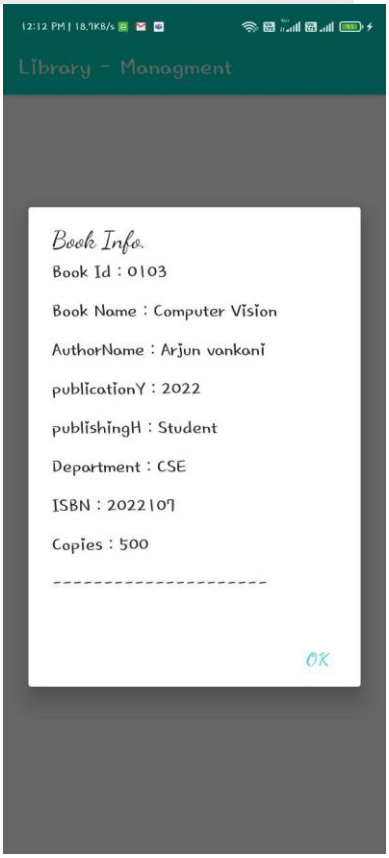
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