**Login and Register Activity**

For creating a login screen, we have to perform following changes-

1) Create a new **LoginActivity** by selecting new empty activity. This activity will be successor of **SplashScreenActivity**. For this in corresponding layout file **activity\_login.xml** make following changes-

<?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=".LoginActivity">  
  
 <Button  
 android:id="@+id/loginButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="32dp"  
 android:background="#FFFFFF"  
 android:onClick="checkCredentials"  
 android:text="LOGIN"  
 android:textColor="#009688"  
 android:textSize="20dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.17"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/passwordText"  
 app:layout\_constraintVertical\_bias="0.082" />  
  
 <Button  
 android:id="@+id/registerButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="32dp"  
 android:background="#FFFFFF"  
 android:gravity="center"  
 android:onClick="registration"  
 android:text="SIGNUP"  
 android:textColor="#009688"  
 android:textSize="20dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.688"  
 app:layout\_constraintStart\_toEndOf="@+id/loginButton"  
 app:layout\_constraintTop\_toBottomOf="@+id/passwordText"  
 app:layout\_constraintVertical\_bias="0.082" />  
  
 <EditText  
 android:id="@+id/emailText"  
 android:layout\_width="300dp"  
 android:layout\_height="50dp"  
 android:ems="10"  
 android:focusable="auto"  
 android:hint="Email"  
 android:inputType="textEmailAddress"  
 android:selectAllOnFocus="true"  
 app:layout\_constraintBottom\_toBottomOf=”parent”  
 app:layout\_constraintEnd\_toEndOf=”parent”  
 app:layout\_constraintHorizontal\_bias=”0.495”  
 app:layout\_constraintStart\_toStartOf=”parent”  
 app:layout\_constraintTop\_toTopOf=”parent”  
 app:layout\_constraintVertical\_bias=”0.132” />  
  
 <EditText  
 android:id=”@+id/passwordText”  
 android:layout\_width=”300dp”  
 android:layout\_height=”50dp”  
 android:ems=”10”  
 android:hint=”Password (at least 8 characters)”  
 android:inputType=”textPassword”  
 app:layout\_constraintBottom\_toBottomOf=”parent”  
 app:layout\_constraintEnd\_toEndOf=”parent”  
 app:layout\_constraintHorizontal\_bias=”0.495”  
 app:layout\_constraintStart\_toStartOf=”parent”  
 app:layout\_constraintTop\_toBottomOf=”@+id/emailText”  
 app:layout\_constraintVertical\_bias=”0.111” />  
</oolean.constraintlayout.widget.ConstraintLayout>

2) For handling the user input make following changes in **LoginActivity.java-**

package com.professionaljk.cgpisgpicalculator;  
  
import android.content.Intent;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
import android.widget.Toast;  
  
import oolean.appcompat.app.AppCompatActivity;  
  
public class LoginActivity extends AppCompatActivity {  
 EditText email, password;  
 Registration rd;  
 SQLiteDatabase sqLiteDatabase;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_login*);  
 email = findViewById(R.id.*emailText*);  
 password = findViewById(R.id.*passwordText*);  
 }  
  
 public void checkCredentials(View view) {  
 rd = new Registration(this);  
 sqLiteDatabase = rd.getReadableDatabase();  
 String emailRequired = email.getText().toString();  
 String passwordRequired = password.getText().toString();  
 Cursor c = rd.studentDetails(sqLiteDatabase);  
 //String info=””;  
 oolean flag;  
 flag = false;  
 while (c.moveToNext()) {  
 String emailDB = c.getString(c.getColumnIndex(“email”));  
 String passwordDB = c.getString(c.getColumnIndex(“password”));  
 if (emailDB.equals(emailRequired)) {  
 if (passwordDB.equals(passwordRequired)) {  
 flag = true;  
 break;  
 }  
 }  
 }  
 if (flag) {  
 rd.close();  
 Toast.*makeText*(LoginActivity.this, “Successful”, Toast.*LENGTH\_SHORT*).show();  
 Intent intent = new Intent(LoginActivity.this, MainActivity.class);  
 startActivity(intent);  
 this.finish();  
 } else {  
 rd.close();  
 Toast.*makeText*(LoginActivity.this, “Unsuccessful”, Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
  
 public void registration(View view) {  
 Intent intent = new Intent(LoginActivity.this, RegisterActivity.class);  
 startActivity(intent);  
 }  
}

3) If user is not already registered in the application. Then, for that create a **RegisterActivity** where user will make him/herself register in the application.

4) Make following changes in **activity\_register.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=".RegisterActivity">  
  
 <EditText  
 android:id="@+id/firstNameText"  
 android:layout\_width="300dp"  
 android:layout\_height="50dp"  
 android:ems="10"  
 android:focusable="auto"  
 android:hint="First Name"  
 android:inputType="text"  
 android:selectAllOnFocus="true"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.084" />  
  
 <EditText  
 android:id="@+id/lastNameText"  
 android:layout\_width="300dp"  
 android:layout\_height="50dp"  
 android:layout\_marginTop="20dp"  
 android:ems="10"  
 android:focusable="auto"  
 android:hint="Last Name"  
 android:inputType="text"  
 android:selectAllOnFocus="true"  
 app:layout\_constraintBottom\_toTopOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.504"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/firstNameText"  
 app:layout\_constraintVertical\_bias="0.0" />  
  
 <RadioGroup  
 android:id="@+id/genderValue"  
 android:layout\_width="300dp"  
 android:layout\_height="50dp"  
 android:layout\_marginTop="20dp"  
 android:gravity="center"  
 android:orientation="horizontal"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/lastNameText"  
 app:layout\_constraintVertical\_bias="0.01">  
  
 <RadioButton  
 android:id="@+id/genderMale"  
 android:layout\_width="76dp"  
 android:layout\_height="50dp"  
 android:layout\_weight="1"  
 android:text="Male" />  
  
 <RadioButton  
 android:id="@+id/genderFemale"  
 android:layout\_width="76dp"  
 android:layout\_height="50dp"  
 android:layout\_weight="1"  
 android:text="Female" />  
 </RadioGroup>  
 <EditText  
 android:id="@+id/emailText"  
 android:layout\_width="300dp"  
 android:layout\_height="50dp"  
 android:ems="10"  
 android:focusable="auto"  
 android:hint="Email"  
 android:inputType="textEmailAddress"  
 android:selectAllOnFocus="true"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.495"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/genderValue"  
 app:layout\_constraintVertical\_bias="0.044" />  
  
 <EditText  
 android:id="@+id/passwordText"  
 android:layout\_width="300dp"  
 android:layout\_height="50dp"  
 android:ems="10"  
 android:hint="Password (at least 8 characters)"  
 android:inputType="textPassword"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.504"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/emailText"  
 app:layout\_constraintVertical\_bias="0.072" />  
  
 <Button  
 android:id="@+id/registerButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:background="#FFFFFF"  
 android:onClick="add"  
 android:text="SIGNUP"  
 android:textColor="#009688"  
 android:textSize="20dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.498"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/passwordText"  
 app:layout\_constraintVertical\_bias="0.158" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

5) In **RegisterActivity.java** make following changes-

package com.professionaljk.cgpisgpicalculator;  
  
import android.content.Intent;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
import android.widget.RadioButton;  
import android.widget.RadioGroup;  
import android.widget.Toast;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class RegisterActivity extends AppCompatActivity {  
 Registration rd;  
 SQLiteDatabase sqLiteDatabase;  
 EditText firstName,lastName,email, password;  
 RadioGroup gender;  
 int gend\_id;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_register*);  
 firstName=findViewById(R.id.*firstNameText*);  
 lastName=findViewById(R.id.*lastNameText*);  
 gender=findViewById(R.id.*genderValue*);  
 email = findViewById(R.id.*emailText*);  
 password = findViewById(R.id.*passwordText*);  
  
 }  
  
 public void add(View view) {  
 rd = new Registration(this);  
 sqLiteDatabase = rd.getWritableDatabase();  
 String fName=firstName.getText().toString();  
 String lName=lastName.getText().toString();  
 gend\_id=gender.getCheckedRadioButtonId();  
 RadioButton selectedGender=(RadioButton)findViewById(gend\_id);  
 String gend=selectedGender.getText().toString();  
 String emailText = email.getText().toString();  
 String passwordText = password.getText().toString();  
 if (emailText.contains("@")) {  
 if (emailText.endsWith(".com") || emailText.endsWith(".in") || emailText.endsWith(".co.in") || emailText.endsWith(".org") || emailText.endsWith(".edu") || emailText.endsWith(".gov") || emailText.endsWith(".gov.in") || emailText.endsWith(".ac.in")) {  
 if (passwordText.length() >= 8) {  
 rd.addStudent(emailText, passwordText, sqLiteDatabase);  
 rd.close();  
 Intent = new Intent(RegisterActivity.this, LoginActivity.class);  
 startActivity(intent);  
 this.finish();  
 } else {  
 Toast.*makeText*(this, "Password should be of at least 8 characters", Toast.*LENGTH\_SHORT*).show();  
 }  
 } else {  
 Toast.*makeText*(this, "Unsupported e-mail domain", Toast.*LENGTH\_SHORT*).show();  
 }  
 } else {  
 Toast.*makeText*(this, "Please provide correct email address", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 }  
}

6) To store data collected from the user we have to implement **SQLite database** operations. For that we have to create a class which will extend **SQLiteOpenHelper** library class.

7) Create a new java class named as **Registration.java** and make following changes in it-

package com.professionaljk.cgpisgpicalculator;  
  
import android.content.ContentValues;  
import android.content.Context;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.database.sqlite.SQLiteOpenHelper;  
import android.widget.Toast;  
  
public class Registration extends SQLiteOpenHelper {  
 public static final String *DATABASE\_NAME* = "students";  
 public static final int *DATABASE\_VERSION* = 1;  
 public static final String *CREATE\_TABLE* = "create table student\_info(\_id INTEGER PRIMARY KEY,email text,password text);"; //One must be primary key and that's too \_id  
 public static final String *DROP\_TABLE* = "drop table if exists student\_info";  
 Context cont;  
 public Registration(Context context) {  
 super(context, *DATABASE\_NAME*, null, *DATABASE\_VERSION*);  
 cont=context;  
 }  
  
 public void onCreate(SQLiteDatabase sqLiteDatabase) {  
 sqLiteDatabase.execSQL(*CREATE\_TABLE*);  
 }  
  
 public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {  
 sqLiteDatabase.execSQL(*DROP\_TABLE*);  
 onCreate(sqLiteDatabase);  
 }  
  
 public void addStudent(String email, String password, SQLiteDatabase sqLiteDatabase) //IMP.. see no \_id is provided  
 {  
 ContentValues contentValues = new ContentValues();  
 contentValues.put("email", email);  
 contentValues.put("password", password);  
 long requestCode=sqLiteDatabase.insert("student\_info", null, contentValues);  
 if(requestCode!=-1){  
 Toast.*makeText*(cont, "Registration Successful", Toast.*LENGTH\_SHORT*).show();  
 }  
 else{  
 Toast.*makeText*(cont, "Registration Failed", Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
  
 public Cursor studentDetails(SQLiteDatabase sqLiteDatabase) //V V IMP.. another way to do it  
 {  
 String selectQuery = "select \* from student\_info";  
 Cursor cursor = sqLiteDatabase.rawQuery(selectQuery, null);  
 return cursor;  
 }  
}

8) After successfully storing user’s data in database, the flow will be transfer back to **LoginActivity**, where user will use email and password used while registration to login in the system.

**OUTPUT:**

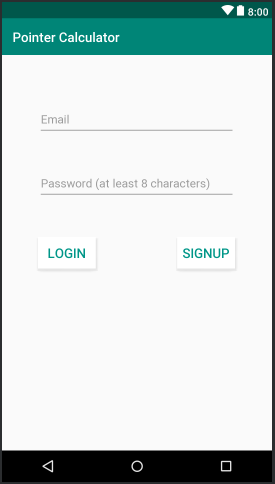
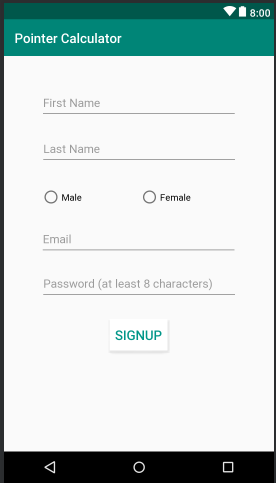
 

Fig. LoginActivity Fig. RegisterActivity