

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.cgpgisgpicalculator;

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.cgpgisgpcalculator;

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.cgpsgpcalculator;

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 il) {
        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();
        }
    }

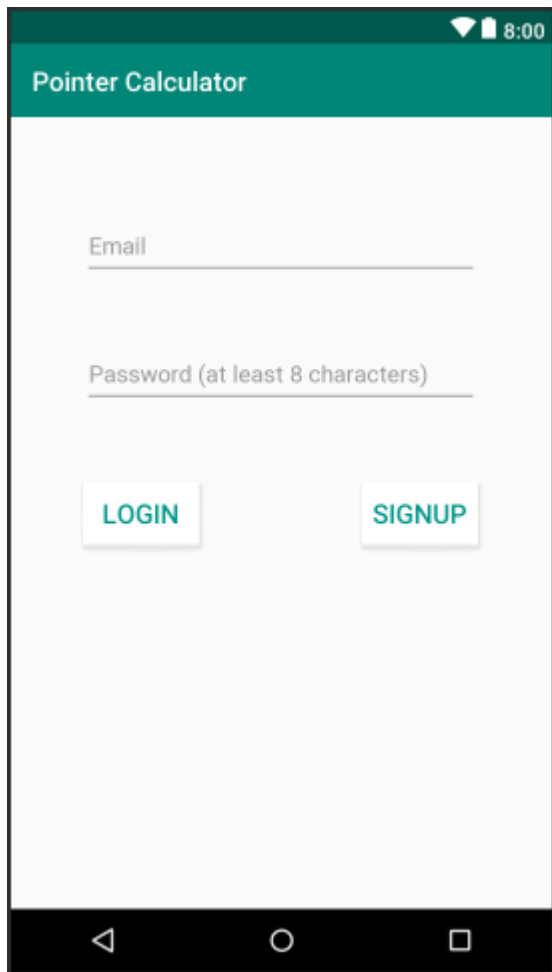
    public Cursor studentDetails(SQLiteDatabase sqLiteDatabase) //V V IMP..
another way to do it
    {
        String selectQuery = "select * from student_info";
    }
}

```

```
Cursor cursor = sqLiteDatabase.rawQuery(selectQuery, null);  
return cursor;  
}  
}
```

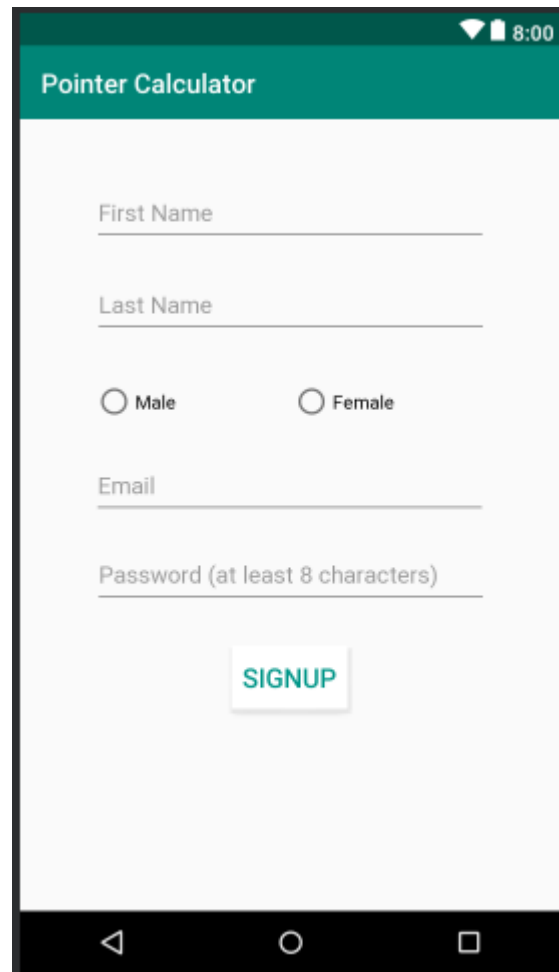
8) After successfully storing user's data in database, the flow will be transfer back to **LoginActivity**, where user will use email and password used while registration to login in the system.

OUTPUT:



The screenshot shows the LoginActivity interface for an application titled "Pointer Calculator". The interface has a teal header bar with the title. Below the header, there are two input fields: "Email" and "Password (at least 8 characters)". At the bottom of the form, there are two buttons: "LOGIN" and "SIGNUP". The status bar at the top shows a Wi-Fi icon, a battery icon, and the time 8:00. The Android navigation bar is visible at the bottom.

Fig. LoginActivity



The screenshot shows the RegisterActivity interface for an application titled "Pointer Calculator". The interface has a teal header bar with the title. Below the header, there are four input fields: "First Name", "Last Name", "Email", and "Password (at least 8 characters)". Between the "Last Name" and "Email" fields, there are two radio buttons labeled "Male" and "Female". At the bottom of the form, there is a single "SIGNUP" button. The status bar at the top shows a Wi-Fi icon, a battery icon, and the time 8:00. The Android navigation bar is visible at the bottom.

Fig. RegisterActivity