Q-3. Create a small android application that will be able to provide following functionalities:

* Enter username and password for Login.
* Checking the username and password from SQLite database
* Show the welcome username screen if the user login successfully
* Allow user to change password by entering old and new password.
* Allow user to edit and update username from database.

<https://github.com/18mca8021/LoginApp>

Code:

Login Activity

Activity\_main.xml

*<?***xml version="1.0" encoding="utf-8"***?>*<**android.support.v4.widget.NestedScrollView xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/nestedScrollView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:background="@color/colorBackground"  
 android:paddingBottom="20dp"  
 android:paddingLeft="20dp"  
 android:paddingRight="20dp"  
 android:paddingTop="20dp"  
 tools:context=".MainActivity"**>  
  
 <**android.support.v7.widget.LinearLayoutCompat  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"**>  
  
 <**android.support.v7.widget.AppCompatImageView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center\_horizontal"  
 android:layout\_marginTop="40dp"  
 android:src="@drawable/logo"** />  
  
 <**android.support.design.widget.TextInputLayout  
 android:id="@+id/textInputLayoutEmail"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="40dp"**>  
  
 <**android.support.design.widget.TextInputEditText  
 android:id="@+id/textInputEditTextEmail"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="@string/hint\_email"  
 android:inputType="text"  
 android:maxLines="1"  
 android:textColor="@android:color/white"** />  
 </**android.support.design.widget.TextInputLayout**>  
  
 <**android.support.design.widget.TextInputLayout  
 android:id="@+id/textInputLayoutPassword"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"**>  
  
 <**android.support.design.widget.TextInputEditText  
 android:id="@+id/textInputEditTextPassword"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="@string/hint\_password"  
 android:inputType="textPassword"  
 android:maxLines="1"  
 android:textColor="@android:color/white"** />  
 </**android.support.design.widget.TextInputLayout**>  
  
 <**android.support.v7.widget.AppCompatButton  
 android:id="@+id/appCompatButtonLogin"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="40dp"  
 android:background="@color/colorTextHint"  
 android:text="@string/text\_login"** />  
  
 <**android.support.v7.widget.AppCompatTextView  
 android:id="@+id/textViewLinkRegister"  
 android:layout\_width="fill\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="30dp"  
 android:gravity="center"  
 android:text="@string/text\_not\_member"  
 android:textSize="16dp"** />  
 </**android.support.v7.widget.LinearLayoutCompat**>  
  
</**android.support.v4.widget.NestedScrollView**>

MainActivity.java

**package** com.example.loginapp;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** androidx.appcompat.widget.AppCompatButton;  
**import** androidx.appcompat.widget.AppCompatTextView;  
**import** androidx.core.widget.NestedScrollView;  
  
**import** android.content.Intent;  
**import** android.os.Bundle;  
**import** android.view.View;  
  
**import** com.google.android.material.snackbar.Snackbar;  
**import** com.google.android.material.textfield.TextInputEditText;  
**import** com.google.android.material.textfield.TextInputLayout;  
  
**public class** MainActivity **extends** AppCompatActivity {  
 **private final** AppCompatActivity **activity** = MainActivity.**this**;  
  
 **private** NestedScrollView **nestedScrollView**;  
  
 **private** TextInputLayout **textInputLayoutEmail**;  
 **private** TextInputLayout **textInputLayoutPassword**;  
  
 **private** TextInputEditText **textInputEditTextEmail**;  
 **private** TextInputEditText **textInputEditTextPassword**;  
  
 **private** AppCompatButton **appCompatButtonLogin**;  
  
 **private** AppCompatTextView **textViewLinkRegister**;  
  
 **private** InputValidation **inputValidation**;  
 **private** DatabaseHelper **databaseHelper**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate( savedInstanceState );  
 setContentView( R.layout.***activity\_main*** );  
  
 getSupportActionBar().hide();  
  
 initViews();  
 initListeners();  
 initObjects();  
 }  
  
  
 **private void** initViews() {  
  
 **nestedScrollView** = (NestedScrollView) findViewById(R.id.***nestedScrollView***);  
  
 **textInputLayoutEmail** = (TextInputLayout) findViewById(R.id.***textInputLayoutEmail***);  
 **textInputLayoutPassword** = (TextInputLayout) findViewById(R.id.***textInputLayoutPassword***);  
  
 **textInputEditTextEmail** = (TextInputEditText) findViewById(R.id.***textInputEditTextEmail***);  
 **textInputEditTextPassword** = (TextInputEditText) findViewById(R.id.***textInputEditTextPassword***);  
  
 **appCompatButtonLogin** = (AppCompatButton) findViewById(R.id.***appCompatButtonLogin***);  
  
 **textViewLinkRegister** = (AppCompatTextView) findViewById(R.id.***textViewLinkRegister***);  
  
 }  
  
**private void** initListeners() {  
 **appCompatButtonLogin**.setOnClickListener( (View.OnClickListener) **this** );  
 **textViewLinkRegister**.setOnClickListener( (View.OnClickListener) **this** );  
 }  
**private void** initObjects() {  
 **databaseHelper** = **new** DatabaseHelper(**activity**);  
 **inputValidation** = **new** InputValidation(**activity**);  
  
 }  
  
  
 **public void** onClick(View v) {  
 **switch** (v.getId()) {  
 **case** R.id.***appCompatButtonLogin***:  
 verifyFromSQLite();  
 **break**;  
 **case** R.id.***textViewLinkRegister***:  
Intent intentRegister = **new** Intent(getApplicationContext(), Main2Activity.**class**);  
 startActivity(intentRegister);  
 **break**;  
 }  
 }  
  
 **private void** verifyFromSQLite() {  
 **if** (!**inputValidation**.isInputEditTextFilled(**textInputEditTextEmail**, **textInputLayoutEmail**, getString(R.string.***error\_message\_email***))) {  
 **return**;  
 }  
 **if** (!**inputValidation**.isInputEditTextEmail(**textInputEditTextEmail**, **textInputLayoutEmail**, getString(R.string.***error\_message\_email***))) {  
 **return**;  
 }  
 **if** (!**inputValidation**.isInputEditTextFilled(**textInputEditTextPassword**, **textInputLayoutPassword**, getString(R.string.***error\_message\_email***))) {  
 **return**;  
 }  
  
 **if** (**databaseHelper**.checkUser(**textInputEditTextEmail**.getText().toString().trim()  
 , **textInputEditTextPassword**.getText().toString().trim())) {  
  
  
 Intent accountsIntent = **new** Intent(**activity**, Main4Activity.**class**);  
 accountsIntent.putExtra(**"EMAIL"**, **textInputEditTextEmail**.getText().toString().trim());  
 emptyInputEditText();  
 startActivity(accountsIntent);  
  
  
 } **else** {  
 Snackbar.*make*(**nestedScrollView**, getString(R.string.***error\_valid\_email\_password***), Snackbar.***LENGTH\_LONG***).show();  
 }  
 }  
  
**private void** emptyInputEditText() {  
 **textInputEditTextEmail**.setText(**null**);  
 **textInputEditTextPassword**.setText(**null**);  
 }  
}

Registeration Activity

Activity\_main.xml

*<?***xml version="1.0" encoding="utf-8"***?>*<**android.support.v4.widget.NestedScrollView xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/nestedScrollView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:background="@color/colorBackground"  
 android:paddingBottom="20dp"  
 android:paddingLeft="20dp"  
 android:paddingRight="20dp"  
 android:paddingTop="20dp"  
 tools:context=".Main2Activity"**>  
  
 <**android.support.v7.widget.LinearLayoutCompat  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"**>  
  
 <**android.support.v7.widget.AppCompatImageView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center\_horizontal"  
 android:layout\_marginTop="40dp"  
 android:src="@drawable/logo"** />  
  
 <**android.support.design.widget.TextInputLayout  
 android:id="@+id/textInputLayoutName"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="40dp"**>  
  
 <**android.support.design.widget.TextInputEditText  
 android:id="@+id/textInputEditTextName"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="@string/hint\_name"  
 android:inputType="text"  
 android:maxLines="1"  
 android:textColor="@android:color/white"** />  
 </**android.support.design.widget.TextInputLayout**>  
  
 <**android.support.design.widget.TextInputLayout  
 android:id="@+id/textInputLayoutEmail"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"**>  
  
 <**android.support.design.widget.TextInputEditText  
 android:id="@+id/textInputEditTextEmail"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="@string/hint\_email"  
 android:inputType="text"  
 android:maxLines="1"  
 android:textColor="@android:color/white"** />  
 </**android.support.design.widget.TextInputLayout**>  
  
 <**android.support.design.widget.TextInputLayout  
 android:id="@+id/textInputLayoutPassword"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"**>  
  
 <**android.support.design.widget.TextInputEditText  
 android:id="@+id/textInputEditTextPassword"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="@string/hint\_password"  
 android:inputType="textPassword"  
 android:maxLines="1"  
 android:textColor="@android:color/white"** />  
 </**android.support.design.widget.TextInputLayout**>  
  
 <**android.support.design.widget.TextInputLayout  
 android:id="@+id/textInputLayoutConfirmPassword"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"**>  
  
 <**android.support.design.widget.TextInputEditText  
 android:id="@+id/textInputEditTextConfirmPassword"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="@string/hint\_confirm\_password"  
 android:inputType="textPassword"  
 android:maxLines="1"  
 android:textColor="@android:color/white"** />  
 </**android.support.design.widget.TextInputLayout**>  
  
 <**android.support.v7.widget.AppCompatButton  
 android:id="@+id/appCompatButtonRegister"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="40dp"  
 android:background="@color/colorTextHint"  
 android:text="@string/text\_register"** />  
  
 <**android.support.v7.widget.AppCompatTextView  
 android:id="@+id/appCompatTextViewLoginLink"  
 android:layout\_width="fill\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="30dp"  
 android:gravity="center"  
 android:text="Already a member? Login"  
 android:textSize="16dp"** />  
  
 </**android.support.v7.widget.LinearLayoutCompat**>  
</**android.support.v4.widget.NestedScrollView**>

MainActivity.java

**package** com.example.loginapp;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** androidx.appcompat.widget.AppCompatButton;  
**import** androidx.appcompat.widget.AppCompatTextView;  
**import** androidx.core.widget.NestedScrollView;  
  
**import** android.os.Bundle;  
**import** android.view.View;  
  
**import** com.google.android.material.snackbar.Snackbar;  
**import** com.google.android.material.textfield.TextInputEditText;  
**import** com.google.android.material.textfield.TextInputLayout;  
  
**public class** Main2Activity **extends** AppCompatActivity {  
 **private final** AppCompatActivity **activity** = Main2Activity.**this**;  
  
 **private** NestedScrollView **nestedScrollView**;  
  
 **private** TextInputLayout **textInputLayoutName**;  
 **private** TextInputLayout **textInputLayoutEmail**;  
 **private** TextInputLayout **textInputLayoutPassword**;  
 **private** TextInputLayout **textInputLayoutConfirmPassword**;  
  
 **private** TextInputEditText **textInputEditTextName**;  
 **private** TextInputEditText **textInputEditTextEmail**;  
 **private** TextInputEditText **textInputEditTextPassword**;  
 **private** TextInputEditText **textInputEditTextConfirmPassword**;  
  
 **private** AppCompatButton **appCompatButtonRegister**;  
 **private** AppCompatTextView **appCompatTextViewLoginLink**;  
  
 **private** InputValidation **inputValidation**;  
 **private** DatabaseHelper **databaseHelper**;  
 **private** User **user**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate( savedInstanceState );  
 setContentView( R.layout.***activity\_main2*** );  
  
 getSupportActionBar().hide();  
  
 initViews();  
 initListeners();  
 initObjects();  
 }  
  
  
 **private void** initViews() {  
 **nestedScrollView** = (NestedScrollView) findViewById(R.id.***nestedScrollView***);  
  
 **textInputLayoutName** = (TextInputLayout) findViewById(R.id.***textInputLayoutName***);  
 **textInputLayoutEmail** = (TextInputLayout) findViewById(R.id.***textInputLayoutEmail***);  
 **textInputLayoutPassword** = (TextInputLayout) findViewById(R.id.***textInputLayoutPassword***);  
 **textInputLayoutConfirmPassword** = (TextInputLayout) findViewById(R.id.***textInputLayoutConfirmPassword***);  
  
 **textInputEditTextName** = (TextInputEditText) findViewById(R.id.***textInputEditTextName***);  
 **textInputEditTextEmail** = (TextInputEditText) findViewById(R.id.***textInputEditTextEmail***);  
 **textInputEditTextPassword** = (TextInputEditText) findViewById(R.id.***textInputEditTextPassword***);  
 **textInputEditTextConfirmPassword** = (TextInputEditText) findViewById(R.id.***textInputEditTextConfirmPassword***);  
  
 **appCompatButtonRegister** = (AppCompatButton) findViewById(R.id.***appCompatButtonRegister***);  
  
 **appCompatTextViewLoginLink** = (AppCompatTextView) findViewById(R.id.***appCompatTextViewLoginLink***);  
  
 }  
  
 **private void** initListeners() {  
 **appCompatButtonRegister**.setOnClickListener( (View.OnClickListener) **this** );  
 **appCompatTextViewLoginLink**.setOnClickListener( (View.OnClickListener) **this** );  
  
 }  
  
**private void** initObjects() {  
 **inputValidation** = **new** InputValidation(**activity**);  
 **databaseHelper** = **new** DatabaseHelper(**activity**);  
 **user** = **new** User();  
  
 }  
  
  
 **public void** onClick(View v) {  
 **switch** (v.getId()) {  
  
 **case** R.id.***appCompatButtonRegister***:  
 postDataToSQLite();  
 **break**;  
  
 **case** R.id.***appCompatTextViewLoginLink***:  
 finish();  
 **break**;  
 }  
 }  
  
 **private void** postDataToSQLite() {  
 **if** (!**inputValidation**.isInputEditTextFilled(**textInputEditTextName**, **textInputLayoutName**, getString(R.string.***error\_message\_name***))) {  
 **return**;  
 }  
 **if** (!**inputValidation**.isInputEditTextFilled(**textInputEditTextEmail**, **textInputLayoutEmail**, getString(R.string.***error\_message\_email***))) {  
 **return**;  
 }  
 **if** (!**inputValidation**.isInputEditTextEmail(**textInputEditTextEmail**, **textInputLayoutEmail**, getString(R.string.***error\_message\_email***))) {  
 **return**;  
 }  
 **if** (!**inputValidation**.isInputEditTextFilled(**textInputEditTextPassword**, **textInputLayoutPassword**, getString(R.string.***error\_message\_password***))) {  
 **return**;  
 }  
 **if** (!**inputValidation**.isInputEditTextMatches(**textInputEditTextPassword**, **textInputEditTextConfirmPassword**,  
 **textInputLayoutConfirmPassword**, getString(R.string.***error\_password\_match***))) {  
 **return**;  
 }  
  
 **if** (!**databaseHelper**.checkUser(**textInputEditTextEmail**.getText().toString().trim())) {  
  
 **user**.setName(**textInputEditTextName**.getText().toString().trim());  
 **user**.setEmail(**textInputEditTextEmail**.getText().toString().trim());  
 **user**.setPassword(**textInputEditTextPassword**.getText().toString().trim());  
  
 **databaseHelper**.addUser(**user**);  
  
 Snackbar.*make*(**nestedScrollView**, getString(R.string.***success\_message***), Snackbar.***LENGTH\_LONG***).show();  
 emptyInputEditText();  
  
  
 } **else** {  
Snackbar.*make*(**nestedScrollView**, getString(R.string.***error\_email\_exists***), Snackbar.***LENGTH\_LONG***).show();  
 }  
  
  
 }  
  
 **private void** emptyInputEditText() {  
 **textInputEditTextName**.setText(**null**);  
 **textInputEditTextEmail**.setText(**null**);  
 **textInputEditTextPassword**.setText(**null**);  
 **textInputEditTextConfirmPassword**.setText(**null**);  
 }  
}

HomeScreen

Activity\_main.xml

*<?***xml version="1.0" encoding="utf-8"***?>*<**LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"**>  
  
 <**android.support.v7.widget.LinearLayoutCompat  
 android:layout\_width="match\_parent"  
 android:layout\_height="150dp"  
 android:background="@color/colorPrimary"  
 android:gravity="center"  
 android:orientation="vertical"**>  
  
 <**android.support.v7.widget.AppCompatTextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="@string/text\_title"  
 android:textSize="20sp"** />  
  
 <**android.support.v7.widget.AppCompatTextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="10dp"  
 android:text="@string/text\_hello"** />  
  
 <**android.support.v7.widget.AppCompatTextView  
 android:id="@+id/textViewName"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"** />  
  
 </**android.support.v7.widget.LinearLayoutCompat**>  
  
 <**android.support.v7.widget.AppCompatTextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:paddingBottom="5dp"  
 android:paddingLeft="16dp"  
 android:paddingTop="5dp"  
 android:text="@string/text\_accounts"  
 android:textColor="@android:color/black"** />  
  
 <**android.support.v7.widget.RecyclerView  
 android:id="@+id/recyclerViewUsers"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"** />  
  
</**LinearLayout**>

MainActivity.java

**package** com.example.loginapp;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** androidx.appcompat.widget.AppCompatTextView;  
**import** androidx.recyclerview.widget.DefaultItemAnimator;  
**import** androidx.recyclerview.widget.LinearLayoutManager;  
**import** androidx.recyclerview.widget.RecyclerView;  
  
**import** android.os.AsyncTask;  
**import** android.os.Bundle;  
  
**import** java.util.ArrayList;  
**import** java.util.List;  
  
**public class** Main3Activity **extends** AppCompatActivity {  
 **private** AppCompatActivity **activity** = Main3Activity.**this**;  
 **private** AppCompatTextView **textViewName**;  
 **private** RecyclerView **recyclerViewUsers**;  
 **private** List<User> **listUsers**;  
 **private** UsersRecyclerAdapter **usersRecyclerAdapter**;  
 **private** DatabaseHelper **databaseHelper**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate( savedInstanceState );  
 setContentView( R.layout.***activity\_main3*** );  
  
 getSupportActionBar().setTitle(**""**);  
 initViews();  
 initObjects();  
  
 }  
  
  
 **private void** initViews() {  
 **textViewName** = (AppCompatTextView) findViewById(R.id.***textViewName***);  
 **recyclerViewUsers** = (RecyclerView) findViewById(R.id.***recyclerViewUsers***);  
 }  
  
 **private void** initObjects() {  
 **listUsers** = **new** ArrayList<>();  
 **usersRecyclerAdapter** = **new** UsersRecyclerAdapter(**listUsers**);  
  
 RecyclerView.LayoutManager mLayoutManager = **new** LinearLayoutManager(getApplicationContext());  
 **recyclerViewUsers**.setLayoutManager(mLayoutManager);  
 **recyclerViewUsers**.setItemAnimator(**new** DefaultItemAnimator());  
 **recyclerViewUsers**.setHasFixedSize(**true**);  
 **recyclerViewUsers**.setAdapter(**usersRecyclerAdapter**);  
 **databaseHelper** = **new** DatabaseHelper(**activity**);  
  
 String emailFromIntent = getIntent().getStringExtra(**"EMAIL"**);  
 **textViewName**.setText(emailFromIntent);  
  
 getDataFromSQLite();  
 }  
  
**private void** getDataFromSQLite() {  
**new** AsyncTask<Void, Void, Void>() {  
 @Override  
 **protected** Void doInBackground(Void... params) {  
 **listUsers**.clear();  
 **listUsers**.addAll(**databaseHelper**.getAllUser());  
  
 **return null**;  
 }  
  
 @Override  
 **protected void** onPostExecute(Void aVoid) {  
 **super**.onPostExecute(aVoid);  
 **usersRecyclerAdapter**.notifyDataSetChanged();  
 }  
 }.execute();  
 }  
}