Layout.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:padding="16dp">
   <!-- Registration Section -->
   <TextView
android:layout width="wrap content"
android:layout height="wrap content"
android:text="Register" android:textSize="18sp"
android:layout marginBottom="16dp"/>
                      android:id="@+id/registerUsername"
   <EditText
android:layout width="match parent"
android:layout_height="wrap content"
                                          android:hint="Enter
             android:inputType="text"/>
username"
                      android:id="@+id/registerPassword"
   <EditText
android:layout width="match parent"
android:layout_height="wrap_content"
                                          android:hint="Enter
password"
                android:inputType="textPassword"/>
   <Button
android:id="@+id/registerButton"
android:layout width="wrap content"
android:layout height="wrap content"
android:text="Register"
android:layout marginTop="16dp"/>
   <!-- Login Section -->
   <TextView
android:layout width="wrap content"
android:layout height="wrap content"
android:text="Login" android:textSize="18sp"
android:layout marginTop="32dp"
android:layout marginBottom="16dp"/>
   <EditText
               android:id="@+id/loginUsername"
android:layout_width="match_parent"
android:layout height="wrap content"
                                          android:hint="Enter
              android:inputType="text"/>
username"
                               android:id="@+id/loginPassword"
android:layout width="match parent"
android:layout height="wrap content"
                                          android:hint="Enter
password"
                 android:id="@+id/loginButton"
android:layout width="wrap content"
android:layout_height="wrap content"
                                         android:text="Login"
android:layout marginTop="16dp"/>
                                                    <TextView
android:id="@+id/result"
android:layout width="wrap content"
android:layout height="wrap content"
android:layout gravity="center horizontal"
android:layout marginTop="16dp"/>
```

Main.java

```
com.example.myapplication;
package
android.os.Bundle; import android.text.TextUtils;
import android.util.Log; import android.widget.Button;
             android.widget.EditText;
import
                                              import
android.widget.TextView;
                                              import
androidx.appcompat.app.AppCompatActivity;
java.util.regex.Pattern; public class MainActivity
extends AppCompatActivity {
                                   private EditText
                                  private EditText
registerUsernameEditText;
registerPasswordEditText;
                                  private
                                             Button
                                  private EditText
registerButton;
loginUsernameEditText;
                                 private
                                            EditText
loginPasswordEditText; private Button loginButton;
private TextView resultTextView; private String
registeredUsername; private
String registeredPassword;
    @Override
                   protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity main);
       // Initialize registration views
registerUsernameEditText = findViewById(R.id.registerUsername);
registerPasswordEditText = findViewById(R.id.registerPassword);
registerButton = findViewById(R.id.registerButton);
       // Initialize login views
                                         loginUsernameEditText =
findViewById(R.id.loginUsername);
                                        loginPasswordEditText =
findViewById(R.id.loginPassword);
                                      loginButton =
findViewById(R.id.loginButton);
                                     resultTextView
= findViewById(R.id.result);
       // Set up button click listeners
registerButton.setOnClickListener(v -> registerUser());
loginButton.setOnClickListener(v -> loginUser());
         private void registerUser() {
   }
String username =
registerUsernameEditText.getText().toString().trim();
String password =
registerPasswordEditText.getText().toString().trim();
if (TextUtils.isEmpty(username)) {
resultTextView.setText("Username cannot be empty.");
return; } if (TextUtils.isEmpty(password)) {
resultTextView.setText("Password cannot be empty.");
               }
                            if
(!isPasswordValid(password)) {
           // Provide detailed feedback for debugging
resultTextView.setText("Password must contain at least one number, one
```

```
special character, and be at least 8 characters long.");
return;
       // Save registration details
registeredUsername = username; registeredPassword
= password;
resultTextView.setText("Registration
successful!");
      private void loginUser() {
                                  String username =
loginUsernameEditText.getText().toString().trim(); String
password =
loginPasswordEditText.getText().toString().trim();
if (TextUtils.isEmpty(username)) {
resultTextView.setText("Username cannot be empty.");
                           if (TextUtils.isEmpty(password)) {
               }
resultTextView.setText("Password cannot be empty.");
return;
            if (username.equals(registeredUsername) &&
}
password.equals(registeredPassword)) {
resultTextView.setText("Login successful!");
} else {
          resultTextView.setText("Login failed. Invalid username or
password.");
}
       private boolean isPasswordValid(String
password) {
       // Check for at least one digit and one special character, and a
minimum length of 8 characters
       Pattern pattern =
Pattern.compile("^(?=.*[09])(?=.*[@#$%^&+=!])[AZa-z0-
9@#$%^&+=!]{8,}$");
pattern.matcher(password).matches();
  }
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
xmlns:tools="http://schemas.android.com/tools">
   <application android:allowBackup="true"</pre>
android:dataExtractionRules="@xml/data extraction rules"
android:fullBackupContent="@xml/backup rules"
android:icon="@mipmap/ic launcher"
android:label="@string/app name"
android:roundIcon="@mipmap/ic launcher round"
android:supportsRtl="true"
android:theme="@style/Theme.Database"
tools:targetApi="31">
                              <activity
android:name=".MainActivity"
android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
```



