华南师范大学

本科学生实验（实践）报告

院　　系：计算机学院

实验课程：移动应用开发

实验项目：实验一登陆界面

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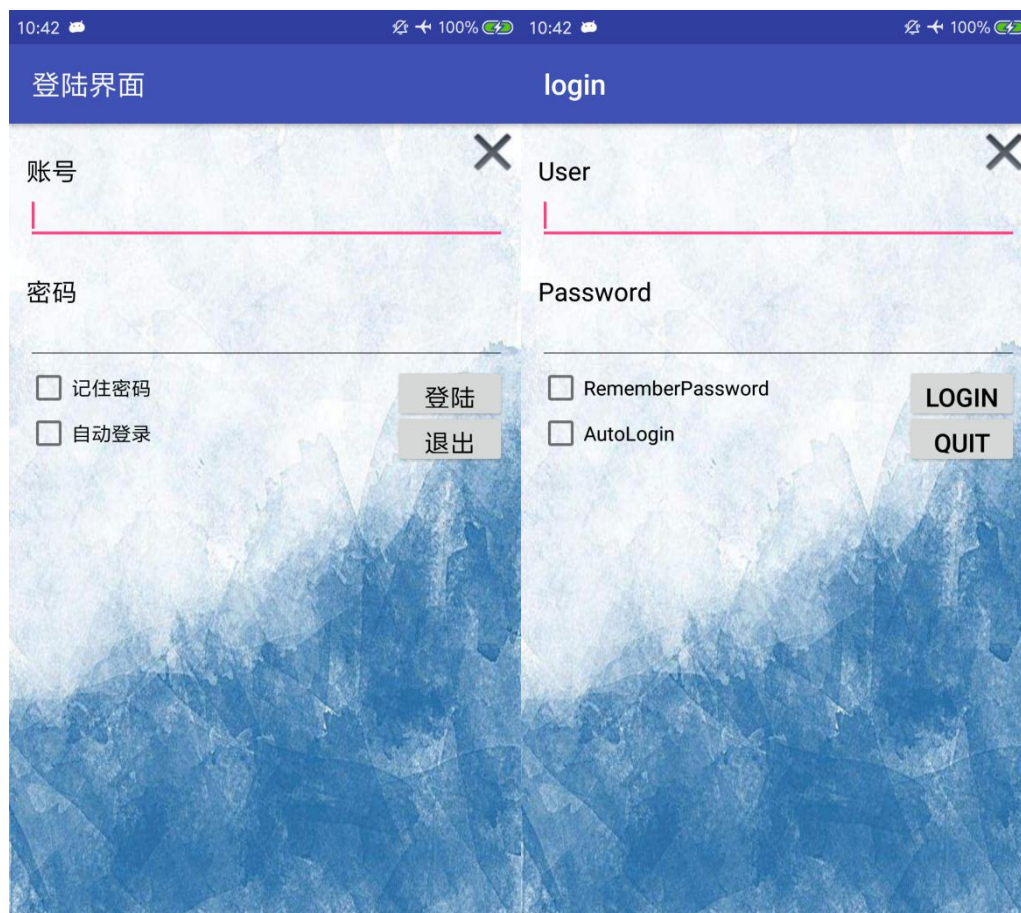
目录

一、软件内容介绍

实现了一个支持双语（中文和英文）的登录界面，管理安全问题和错误尝试，同时了记住密码，自动登录，跳转以及 UI 测试。

二、界面设计

双语（中文和英文）的登录界面

登陆成功与登陆失败

三、代码设计

```java
package cn.ticktock.login1;

import android.content.Context;
import android.content.Intent;
import android.content.SharedPreferences;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.CompoundButton;
import android.widget.EditText;
import android.widget.ImageButton;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
```

```java
    private static int counter=3;
    private EditText userName, password;
    private CheckBox rem_pw, auto_login;
    private Button btn_login;
    private ImageButton btnQuit;
    private String userNameValue,passwordValue;
    private SharedPreferences sp;
    private Button btn_quit;

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

        //获得实例对象
        sp = this.getSharedPreferences("userInfo",
Context.MODE_PRIVATE);
        userName = (EditText) findViewById(R.id.et_zh);
        password = (EditText) findViewById(R.id.et_mima);
        rem_pw = (CheckBox) findViewById(R.id.cb_mima);
        auto_login = (CheckBox) findViewById(R.id.cb_auto);
        btn_login = (Button) findViewById(R.id.btn_login);
        btnQuit = (ImageButton)findViewById(R.id.img_btn);
        btn_quit=(Button) findViewById(R.id.btn_quit);
        //判断记住密码多选框的状态
        if(sp.getBoolean("ISCHECK", false))
        {
            //设置默认是记录密码状态
            rem_pw.setChecked(true);
            userName.setText(sp.getString("USER_NAME", ""));
            password.setText(sp.getString("PASSWORD", ""));
            //判断自动登陆多选框状态
            if(sp.getBoolean("AUTO_ISCHECK", false))
            {
                //设置默认是自动登录状态
                auto_login.setChecked(true);
                //跳转界面
                Intent intent = new
Intent(MainActivity.this,WelcomeAvtivity.class);
                MainActivity.this.startActivity(intent);

            }
        }
```

```java
            // 登录监听事件   现在默认为用户名为：scnu 密码：123
        btn_login.setOnClickListener(new View.OnClickListener() {

            public void onClick(View v) {
                userNameValue = userName.getText().toString();
                passwordValue = password.getText().toString();


if(userNameValue.equals("scnu")&&passwordValue.equals("123")&&(counter>0))
                {
                        Toast.makeText(MainActivity.this,"登录成功",
Toast.LENGTH_SHORT).show();

                        counter=3;
                        //登录成功和记住密码框为选中状态才保存用户信息
                        if(rem_pw.isChecked())
                        {
                            //记住用户名、密码、
                            SharedPreferences.Editor editor = sp.edit();
                            editor.putString("USER_NAME", userNameValue);
                            editor.putString("PASSWORD",passwordValue);
                            editor.commit();
                        }

                        //跳转界面
                        Intent intent = new
Intent(MainActivity.this,WelcomeAvtivity.class);
                        startActivity(intent);
                        //finish();

                }else if((counter>0)){
                        counter--;
                        Toast.makeText(MainActivity.this,"用户名或密码错
误，你还有"+counter+"次机会", Toast.LENGTH_LONG).show();
                    }else{
                        Toast.makeText(MainActivity.this,"输入错误次数超
过3次，应用被锁定", Toast.LENGTH_LONG).show();
                        btn_login.setEnabled(false);
                    }


                }
        });
```

```java
        //监听记住密码多选框按钮事件
        rem_pw.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
            public void onCheckedChanged(CompoundButton
buttonView,boolean isChecked) {
                if (rem_pw.isChecked()) {

                    System.out.println("记住密码已选中");
                    sp.edit().putBoolean("ISCHECK", true).commit();

                }else {

                    System.out.println("记住密码没有选中");
                    sp.edit().putBoolean("ISCHECK", false).commit();

                }

            }
        });

        //监听自动登录多选框事件
        auto_login.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
            public void onCheckedChanged(CompoundButton buttonView,
boolean isChecked) {
                if (auto_login.isChecked()) {
                    System.out.println("自动登录已选中");
                    sp.edit().putBoolean("AUTO_ISCHECK",
true).commit();

                } else {
                    System.out.println("自动登录没有选中");
                    sp.edit().putBoolean("AUTO_ISCHECK",
false).commit();
                }
            }
        });

        //点击叉号触发关闭事件
        btnQuit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                System.exit(0);
```

```java
                }
        });

        //点击退出触发退出登陆事件
        btn_quit.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View v) {
                Toast.makeText(MainActivity.this,"退出登陆",
Toast.LENGTH_LONG).show();
                if(!rem_pw.isChecked()){
                    userName.setText("");
                    password.setText("");
                    SharedPreferences.Editor editor = sp.edit();
                    editor.remove("USER_NAME");
                    editor.remove("PASSWORD");
                }
            }
        });
    }
}
```

```java
package cn.ticktock.login1;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class WelcomeAvtivity extends Activity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.welcome);
    }
}
```

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:background="@drawable/timg"
    android:orientation="vertical" >

    <RelativeLayout
        android:layout_width="fill_parent"
        android:layout_height="wrap_content">

        <ImageButton
            android:id="@+id/img_btn"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_alignParentRight="true"
            android:background="@drawable/quit" />

        <TextView
            android:id="@+id/tv_zh"
            android:layout_width="wrap_content"
            android:layout_height="35dip"
            android:layout_marginLeft="12dip"
            android:layout_marginTop="10dip"
            android:gravity="bottom"
            android:text="@string/zh"
            android:textColor="#000000"
            android:textSize="18sp" />

        <EditText
            android:id="@+id/et_zh"
            android:layout_width="fill_parent"
            android:layout_height="40dip"
            android:layout_below="@id/tv_zh"
            android:layout_marginLeft="12dip"
            android:layout_marginRight="10dip" />

        <TextView
            android:id="@+id/tv_mima"
            android:layout_width="wrap_content"
            android:layout_height="35dip"
            android:layout_below="@id/et_zh"
            android:layout_marginLeft="12dip"
```

```xml
        android:layout_marginTop="10dip"
        android:gravity="bottom"
        android:text="@string/mima"
        android:textColor="#000000"
        android:textSize="18sp" />

    <EditText
        android:id="@+id/et_mima"
        android:layout_width="fill_parent"
        android:layout_height="40dip"
        android:layout_below="@id/tv_mima"
        android:layout_marginLeft="12dip"
        android:layout_marginRight="10dip"
        android:inputType="textPassword"
        android:maxLines="200"
        android:scrollHorizontally="true" />

    <CheckBox
        android:id="@+id/cb_mima"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/et_mima"
        android:layout_marginLeft="12dip"
        android:text="@string/jizhumima"
        android:textColor="#000000" />

    <CheckBox
        android:id="@+id/cb_auto"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/cb_mima"
        android:layout_marginLeft="12dip"
        android:text="@string/auto"
        android:textColor="#000000" />

    <Button
        android:id="@+id/btn_login"
        android:layout_width="80dip"
        android:layout_height="40dip"
        android:layout_alignParentRight="true"
        android:layout_alignTop="@id/cb_mima"
        android:layout_below="@id/et_mima"
        android:layout_marginRight="10dip"
        android:gravity="center"
```

```xml
            android:text="@string/login"
            android:textColor="#000000"
            android:textSize="18sp" />

        <Button
            android:id="@+id/btn_quit"
            android:layout_width="80dip"
            android:layout_height="40dip"
            android:layout_alignParentRight="true"
            android:layout_alignTop="@id/cb_auto"
            android:layout_below="@id/et_mima"
            android:layout_marginRight="10dip"
            android:gravity="center"
            android:text="@string/quit"
            android:textColor="#000000"
            android:textSize="18sp" />



    </RelativeLayout>



</LinearLayout>
```

welcome.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:layout_gravity="center"
    android:background="@drawable/timg"
    android:orientation="vertical" >

    <TextView
        android:id="@+id/welcome"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="@string/success"
        android:textColor="#000000"
        android:textSize="20sp" />
```

```
</LinearLayout>
```

UI 测试代码

```java
package cn.ticktock.login1;

import android.support.test.rule.ActivityTestRule;

import org.junit.Rule;
import org.junit.Test;

import static android.support.test.espresso.Espresso.onView;
import static
android.support.test.espresso.action.ViewActions.clearText;
import static android.support.test.espresso.action.ViewActions.click;
import static
android.support.test.espresso.action.ViewActions.closeSoftKeyboard;
import static
android.support.test.espresso.action.ViewActions.typeText;
import static
android.support.test.espresso.assertion.ViewAssertions.matches;
import static
android.support.test.espresso.matcher.RootMatchers.withDecorView;
import static
android.support.test.espresso.matcher.ViewMatchers.isDisplayed;
import static
android.support.test.espresso.matcher.ViewMatchers.withId;
import static
android.support.test.espresso.matcher.ViewMatchers.withText;
import static org.hamcrest.Matchers.not;


public class MainActivityInstrumentationTest {

    @Rule
    public ActivityTestRule<MainActivity> mActivityRule = new
ActivityTestRule<>(MainActivity.class);

//    @Test
    public void testLoginSuccess() {
        onView(withId(R.id.et_zh)).perform(typeText("scnu"),
closeSoftKeyboard());
        onView(withId(R.id.et_mima)).perform(typeText("123"),
```

```java
closeSoftKeyboard());
        onView(withId(R.id.btn_login)).perform(click());
        onView(withId(R.id.welcome)).check(matches(withText("登陆成功
")));
    }

//    @Test
    public void testLoginFail() throws Exception {
        onView(withId(R.id.et_zh)).perform(typeText("scnu"),
closeSoftKeyboard());
        onView(withId(R.id.et_mima)).perform(typeText("1234"),
closeSoftKeyboard());
        onView(withId(R.id.btn_login)).perform(click());

        //会弹出一个文本为 clicked 的 Toast
        Thread.sleep(1000);
        onView(withText("登陆界面：用户名或密码错误，你还有 2 次机会"))
                .inRoot(withDecorView(not(mActivityRule.getActivity().
getWindow().getDecorView())))
                .check(matches(isDisplayed()));
    }
//    @Test
    public void testLoginFailMoreTimes() throws Exception {
        onView(withId(R.id.et_zh)).perform(clearText());
        onView(withId(R.id.et_mima)).perform(clearText());
        onView(withId(R.id.et_zh)).perform(typeText("scnu"),
closeSoftKeyboard());
        onView(withId(R.id.et_mima)).perform(typeText("1234"),
closeSoftKeyboard());
        onView(withId(R.id.btn_login)).perform(click());

        onView(withId(R.id.et_zh)).perform(clearText());
        onView(withId(R.id.et_mima)).perform(clearText());

onView(withId(R.id.et_zh)).perform(clearText()).perform(typeText("scn
u"), closeSoftKeyboard());
        onView(withId(R.id.et_mima)).perform(typeText("1234"),
closeSoftKeyboard());
        onView(withId(R.id.btn_login)).perform(click());

        onView(withId(R.id.et_zh)).perform(clearText());
        onView(withId(R.id.et_mima)).perform(clearText());

onView(withId(R.id.et_zh)).perform(clearText()).perform(typeText("scn
```

```java
u"), closeSoftKeyboard());
        onView(withId(R.id.et_mima)).perform(typeText("1234"),
closeSoftKeyboard());
        onView(withId(R.id.btn_login)).perform(click());

        onView(withId(R.id.et_zh)).perform(clearText());
        onView(withId(R.id.et_mima)).perform(clearText());

onView(withId(R.id.et_zh)).perform(clearText()).perform(typeText("scn
u"), closeSoftKeyboard());
        onView(withId(R.id.et_mima)).perform(typeText("1234"),
closeSoftKeyboard());
        onView(withId(R.id.btn_login)).perform(click());

        //会弹出一个文本为clicked的Toast     检测Toast是否显示正确
        Thread.sleep(1000);
        onView(withText("登陆界面：输入错误次数超过3次，应用被锁定"))
                .inRoot(withDecorView(not(mActivityRule.getActivity().
getWindow().getDecorView())))
                .check(matches(isDisplayed()));
    }

    @Test
    public void testLoginRememberPassword() throws Exception {
        onView(withId(R.id.et_zh)).perform(clearText());
        onView(withId(R.id.et_mima)).perform(clearText());
        onView(withId(R.id.et_zh)).perform(typeText("scnu"),
closeSoftKeyboard());
        onView(withId(R.id.et_mima)).perform(typeText("1234"),
closeSoftKeyboard());
        onView(withId(R.id.btn_login)).perform(click());
        onView(withId(R.id.cb_mima)).perform(click());

        //会弹出一个文本为clicked的Toast     检测Toast是否显示正确
        Thread.sleep(1000);
        onView(withText("登陆界面：用户名或密码错误，你还有2次机会"))
                .inRoot(withDecorView(not(mActivityRule.getActivity().
getWindow().getDecorView())))
                .check(matches(isDisplayed()));


        Thread.sleep(1000);
        onView(withId(R.id.btn_login)).perform(click());
        Thread.sleep(1000);
```
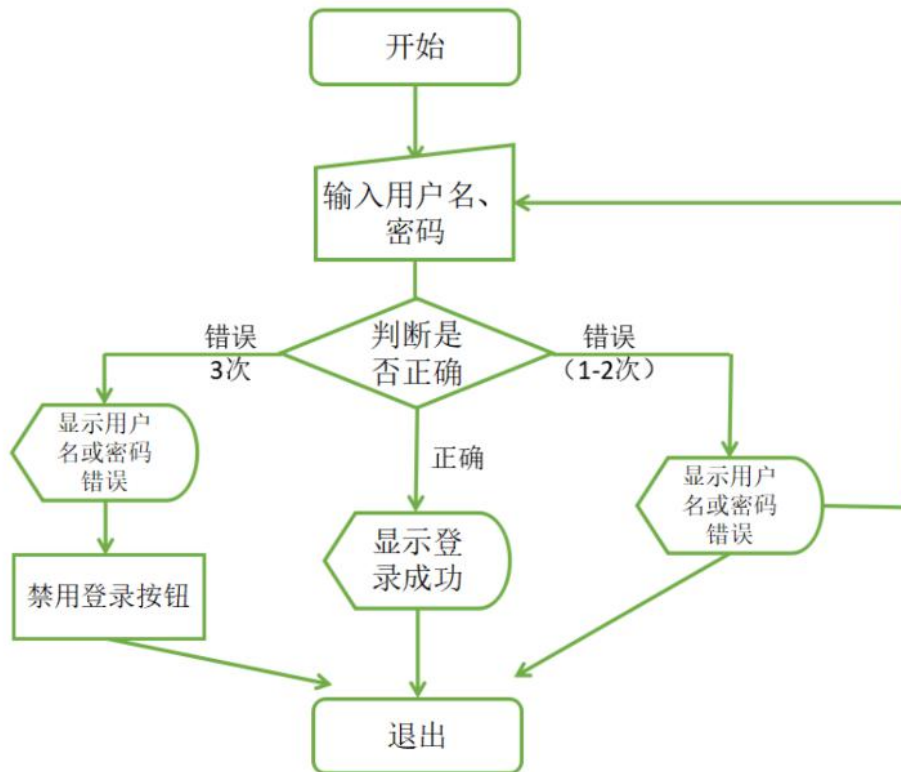
```
        onView(withText("登陆界面：用户名或密码错误，你还有 1 次机会"))
            .inRoot(withDecorView(not(mActivityRule.getActivity().
getWindow().getDecorView())))
            .check(matches(isDisplayed()));

        onView(withId(R.id.et_mima)).perform(clearText());
        onView(withId(R.id.et_mima)).perform(typeText("123"),
closeSoftKeyboard());
        onView(withId(R.id.btn_login)).perform(click());
        onView(withId(R.id.welcome)).check(matches(withText("登陆成功
")));
    }
}
```

四、流程图

五、难点及解决方案

1.如何实现自动 UI 测试

解决方案：参考简书上的教程使用 Espresso 类进行 UI 测试，总体来说 UI 测试的过程就是：找到某个元素，做一些操作，检查结果。

2.如何实现双语国际化

解决方案：新建一个 values 文件夹，AS 会根据你选择的语言自动命名文件的，然后再该文件夹下新建一个 string.xml，对每一处需要显示文字的地方，用@string/进行引用，不要进行硬编码，最后将原 string.xml 复制到英语版本的 string.xml 上，修改对应的要显示的文字成英文即可，其他语言的操作跟这个也一样，最后 app 会根据系统语言选择对应的语言来显示的，从而实现国际化。

六、不足之处及今后设想

虽然实现的功能比较齐全，但是没有对界面进行较好的优化，今后使用登陆界面的时候，可以直接使用这份源码，然后对 UI 进行适当的优化设计，提高代码利用率以及编程的效率。