登陆界面的设计与实现说明文档

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一、软件名称

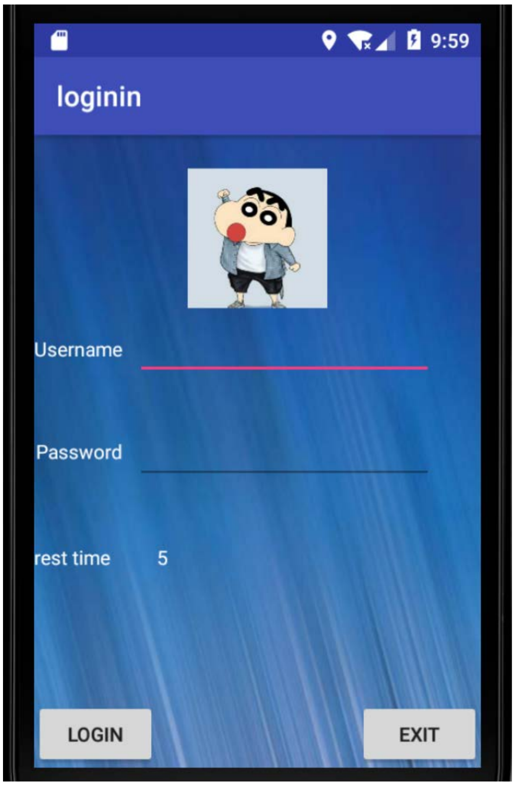
登录界面的实现

二、软件内容简介

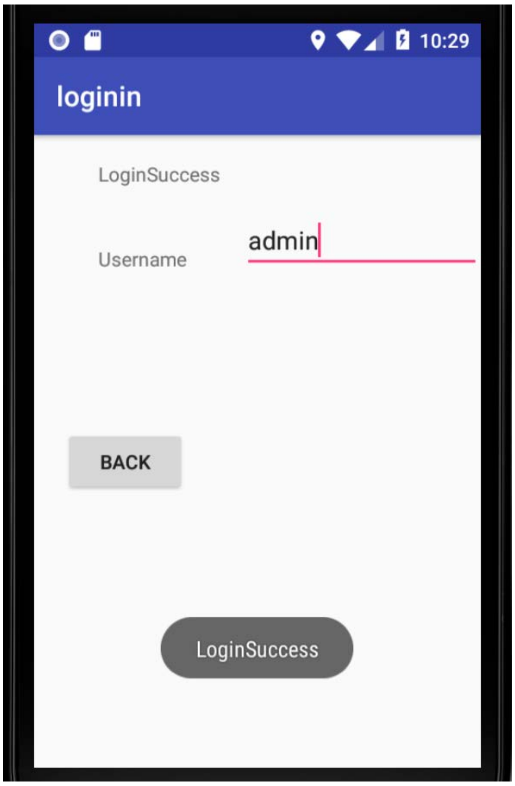
支持双语（中文和英文）的登录界面，管理安全问题和错误尝试，实现 UI 测试

三、界面设计

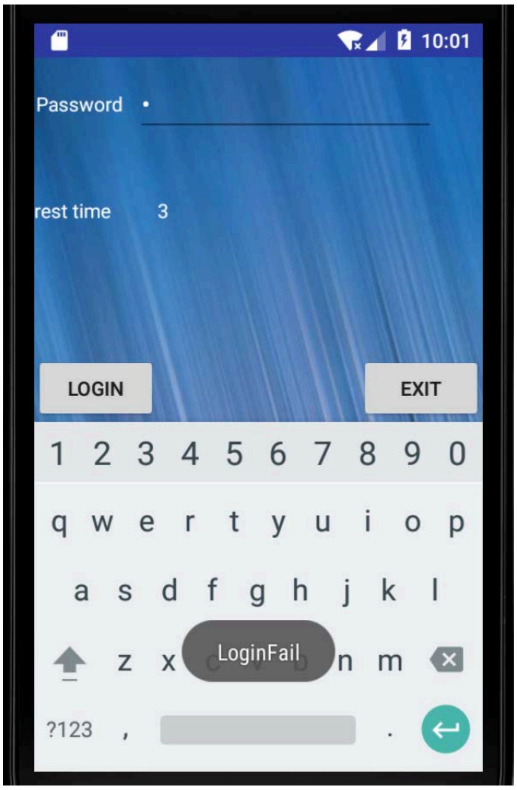
(一)主界面-英文:



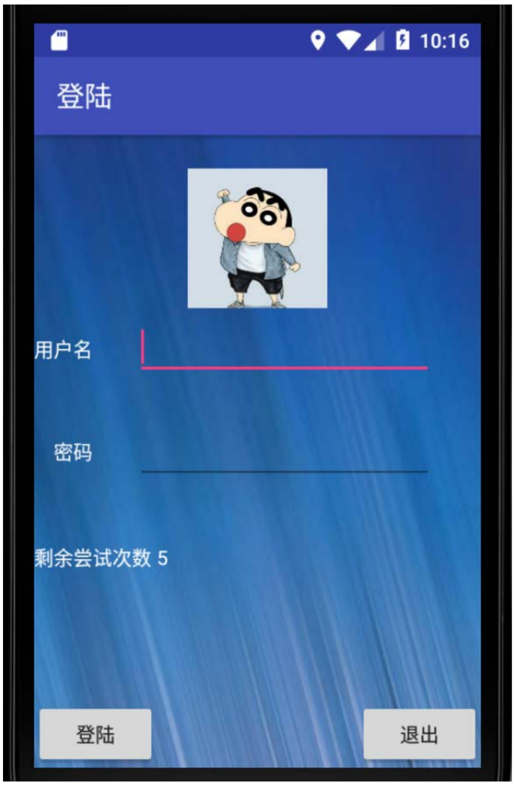
(二)登陆成功界面-英文



（三）登陆失败界面-英文



（四）主界面–中文

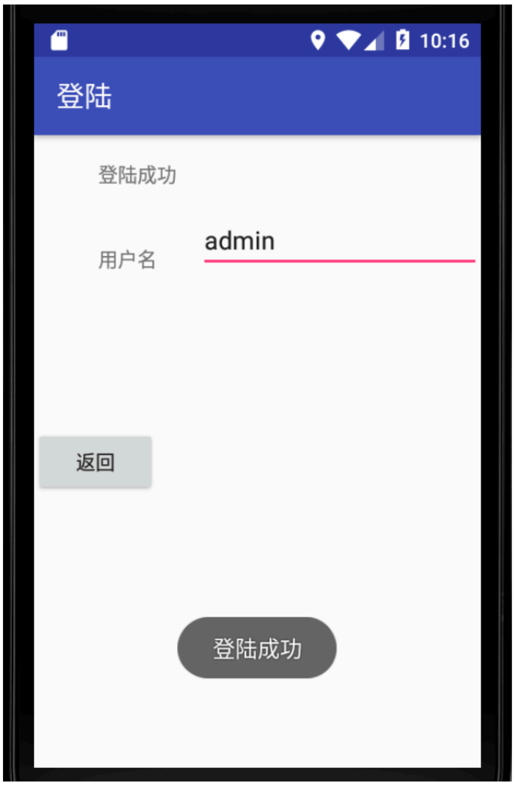


用户名

密码

剩余尝试次数 5

（五）登陆成功界面–中文

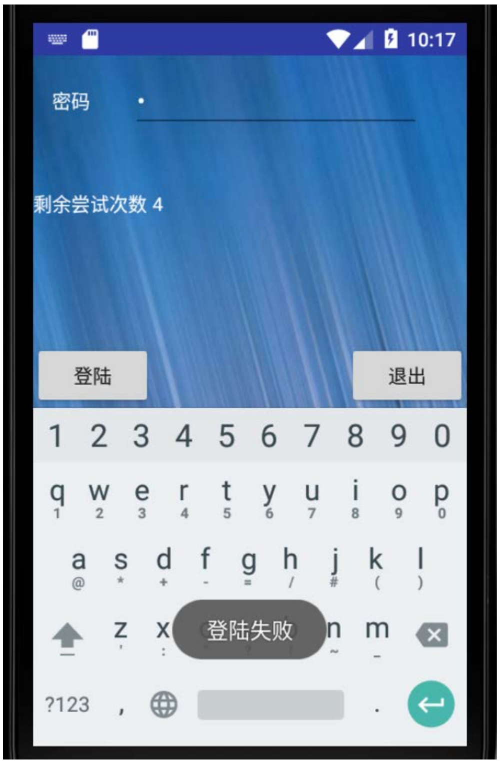


登陆成功

用户名 admin

登陆成功

（六）登陆失败界面-中文



剩余尝试次数 4

登陆失败

四、代码设计

(一)主界面布局代码 activity_main.xml：

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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="com.example.ma.loginin.MainActivity">

    <LinearLayout

        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="horizontal">

        <RelativeLayout

            android:layout_width="match_parent"
            android:layout_height="match_parent"
            tools:layout_editor_absoluteX="8dp"
```

```
tools:layout_editor_absoluteY="8dp">

<TextView
    android:id="@+id/NameTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/PasswordEditText"
    android:layout_alignParentStart="true"
    android:layout_marginBottom="41dp"
    android:text="@string/name_text"
    android:textColor="@android:color/background_light" />

<TextView
    android:id="@+id/PasswordTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/NameTextView"
    android:layout_centerVertical="true"
    android:text="@string/password_text"
    android:textColor="@android:color/background_light" />

<EditText
    android:id="@+id/NameEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/NameTextView"
    android:layout_alignBottom="@+id/NameTextView"
    android:layout_alignParentEnd="true"
    android:layout_marginEnd="34dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:textColor="@android:color/background_light" />

<EditText
    android:id="@+id/PasswordEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignStart="@+id/NameEditText"
    android:layout_centerVertical="true"
    android:ems="10"
    android:inputType="textPassword"
    android:textColor="@android:color/background_light" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentBottom="true"
    android:layout_alignParentStart="true"
    android:text="@string/button" />

<ImageView
    android:id="@+id/imageView"
    android:layout_width="100dp"
    android:layout_height="100dp"
    android:layout_alignParentTop="true"


    android:layout_centerHorizontal="true"
    android:layout_marginTop="24dp"
    android:src="@drawable/image1" />

<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_below="@+id/PasswordEditText"
    android:layout_marginTop="43dp"
    android:text="@string/try_count"
```

```
                android:textColor="@android:color/background_light" />

            <TextView
                android:id="@+id/RestTimes"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_alignBaseline="@+id/textView4"
                android:layout_alignBottom="@+id/textView4"
                android:layout_toEndOf="@+id/button"
                android:textColor="@android:color/background_light" />

            <Button
                android:id="@+id/ExitButton"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_alignParentBottom="true"
                android:layout_alignParentEnd="true"
                android:text="@string/exit_button" />

        </RelativeLayout>
    </LinearLayout>

</android.support.constraint.ConstraintLayout>
```

(二)MainActivity:

```
package com.example.ma.loginin;

import android.content.Context;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        findViewById(R.id.button).setOnClickListener(this);
        findViewById(R.id.ExitButton).setOnClickListener(this);
        NameEdit = findViewById(R.id.NameEditText);
        PasswordEdit = findViewById(R.id.PasswordEditText);
        RestTryTimes = findViewById(R.id.RestTimes);

        RestTryTimes.setText(Integer.toString(times));
        getWindow().setBackgroundDrawableResource(R.drawable.background);
    }


    @Override
    public void onClick(View v) {
        switch (v.getId()) {
            case R.id.button:
                if (times > 0) {
                    String name = NameEdit.getText().toString();
                    String password = PasswordEdit.getText().toString();
                    if (name.equals("admin") && password.equals("admin")) {

                        Toast ss = Toast.makeText(MainActivity.this, getString(R.string.login_success_text),
Toast.LENGTH_LONG);
                        ss.show();
                        passData();
                    } else {
                        Toast ss = Toast.makeText(MainActivity.this, getString(R.string.login_fail_text), Toast.LENGTH_LONG);
                        ss.show();
                        times--;
                        RestTryTimes.setText(Integer.toString(times));
                    }

                }
                break;
            case R.id.ExitButton:
                finish();
                System.exit(0);
                break;
            default:
                break;

        }
    }

    public void passData() {

        Intent intent = new Intent(this, ShowActivity.class);
        intent.putExtra("username", NameEdit.getText().toString());
        intent.putExtra("password", PasswordEdit.getText().toString());
        startActivity(intent);


    }


    TextView NameEdit;
    TextView PasswordEdit;
    TextView RestTryTimes;
    int times = 5;
    Toast a;
}
```

（三）activity_show.xml

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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="com.example.ma.loginin.ShowActivity">

    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <TextView
            android:id="@+id/LoginSuccess"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"

            android:layout_alignParentStart="true"
            android:layout_alignParentTop="true"
            android:layout_marginStart="46dp"
            android:layout_marginTop="18dp"
            android:text="@string/login_success_text"
            tools:layout_editor_absoluteX="16dp"
            tools:layout_editor_absoluteY="16dp" />

        <TextView
```

```
            android:id="@+id/Username"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"

            android:layout_alignStart="@+id/LoginSuccess"
            android:layout_below="@+id/LoginSuccess"
            android:layout_marginTop="41dp"
            android:text="@string/Username"
            tools:layout_editor_absoluteX="16dp"
            tools:layout_editor_absoluteY="68dp" />

        <EditText
            android:id="@+id/user"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_alignBottom="@+id/Username"
            android:layout_marginStart="16dp"
            android:layout_toEndOf="@+id/LoginSuccess"
            android:ems="10"
            android:inputType="textPersonName"
            android:text="Name" />

        <Button
            android:id="@+id/button2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_alignEnd="@+id/Username"
            android:layout_below="@+id/Username"
            android:layout_marginTop="112dp"
            android:text="@string/back_button" />
    </RelativeLayout>

</android.support.constraint.ConstraintLayout>
```

(四)ShowActivity.xml

```
package com.example.ma.loginin;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;

public class ShowActivity extends AppCompatActivity implements View.OnClickListener {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_show);
        Intent intent = getIntent();
        String name = intent.getStringExtra("username");
        TextView viewById = findViewById(R.id.user);
        viewById.setText(name);
        findViewById(R.id.button2).setOnClickListener(this);

    }


    @Override
    public void onClick(View v) {
        switch (v.getId()) {
            case R.id.button2: {

                Intent intent = new Intent(this, MainActivity.class);
                startActivity(intent);
```

```
                    finish();
                }


            }
        }
}
```

(五)strings.xml

```
<resources>
    <string name="app_name">loginin</string>
    <string name="name_text">Username</string>
    <string name="password_text">Password</string>
    <string name="login_success_text">LoginSuccess</string>
    <string name="login_fail_text">LoginFail</string>
    <string name="Username">Username</string>
    <string name="button">login</string>
    <string name="try_count">rest time</string>
    <string name="exit_button">Exit</string>
    <string name="back_button">Back</string>
</resources>
```

(六)strings.xml(zh-rCN)

```
<resources>
    <string name="app_name">登陆</string>

    <string name="name_text">用户名</string>

    <string name="password_text">密码</string>

    <string name="login_success_text">登陆成功</string>

    <string name="login_fail_text">登陆失败</string>

    <string name="Username">用户名</string>

    <string name="button">登陆</string>

    <string name="try_count">剩余尝试次数</string>

    <string name="exit_button">退出</string>

    <string name="back_button">返回</string>
</resources>
```

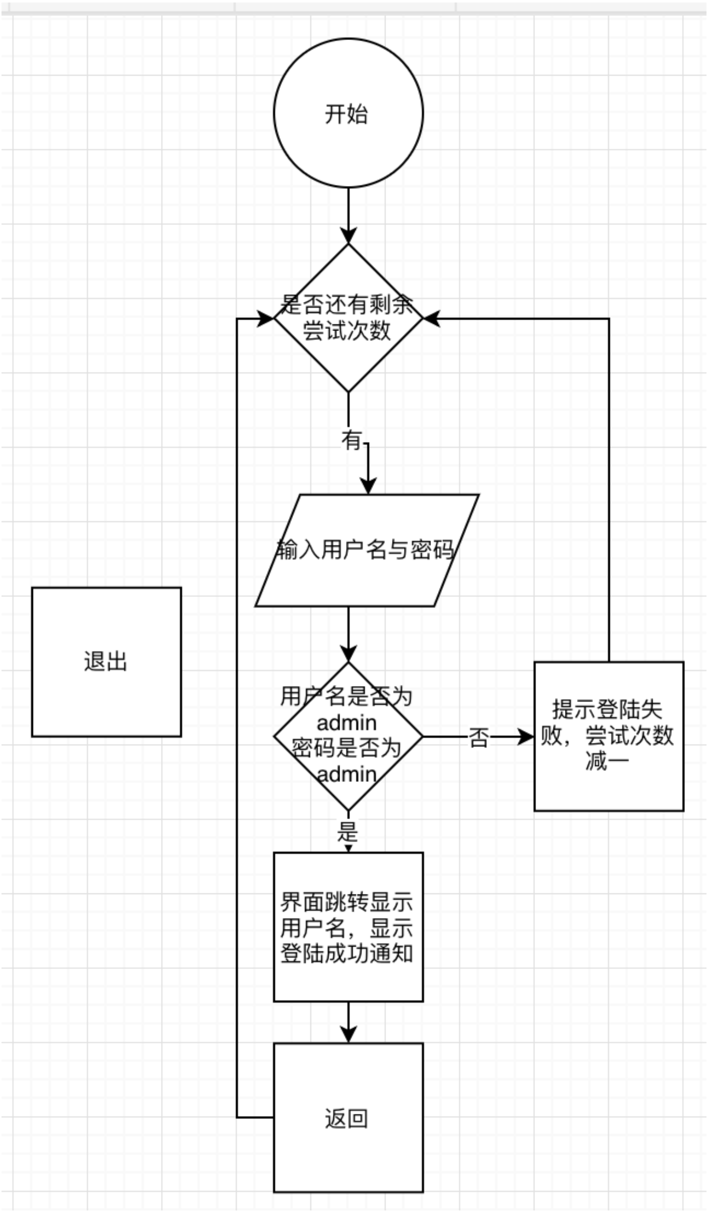
(七)UI 测试

```
package com.example.ma.loginin;


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

import static android.support.test.espresso.Espresso.onView;
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;
```

```java
import static android.support.test.espresso.matcher.ViewMatchers.withId;
import static android.support.test.espresso.matcher.ViewMatchers.withText;
import static org.hamcrest.core.IsNot.not;

import android.support.test.*;
import android.support.test.rule.ActivityTestRule;

/**
 * Created by MA on 2018/11/15.
 */

public class MainActivityInstrumentationTest {

    private static final String username = "admin";
    private static final String password = "admin";
    @Rule
    public ActivityTestRule<MainActivity> mActivityRule = new ActivityTestRule<>(
            MainActivity.class);

    @Test
    public void loginSuccessTest() {
        onView(withId(R.id.NameEditText)).perform(typeText("admin"), closeSoftKeyboard());
        onView(withId(R.id.PasswordEditText)).perform(typeText("admin"), closeSoftKeyboard());

        onView(withId(R.id.button)).perform(click()); //line 2

        String expectedText = "admin";
//        onView(withText(R.string.login_success_text))
//                .inRoot(withDecorView(not(mActivityRule.getActivity().getWindow().getDecorView())))
//                .check(matches(isDisplayed()));
        onView(withId(R.id.user)).check(matches(withText(expectedText)));

    }

    @Test
    public void loginSuccessToastTest() throws InterruptedException {
        onView(withId(R.id.NameEditText)).perform(typeText("admin"), closeSoftKeyboard());
        onView(withId(R.id.PasswordEditText)).perform(typeText("admin"), closeSoftKeyboard());

        onView(withId(R.id.button)).perform(click()); //line 2


        Thread.sleep(1000);
        onView(withText(R.string.login_success_text))
                .inRoot(withDecorView(not(mActivityRule.getActivity().getWindow().getDecorView())))
                .check(matches(isDisplayed()));

    }

    @Test
    public void loginFailToastTest() throws InterruptedException {
        onView(withId(R.id.NameEditText)).perform(typeText("admin"), closeSoftKeyboard());
        onView(withId(R.id.PasswordEditText)).perform(typeText("adminadmin"), closeSoftKeyboard());

        onView(withId(R.id.button)).perform(click()); //line 2


        Thread.sleep(1000);
        onView(withText(R.string.login_fail_text))
                .inRoot(withDecorView(not(mActivityRule.getActivity().getWindow().getDecorView())))
                .check(matches(isDisplayed()));

    }

    @Test
    public void loginFailTest() {
        onView(withId(R.id.NameEditText)).perform(typeText("admin"), closeSoftKeyboard());
        onView(withId(R.id.PasswordEditText)).perform(typeText("adminadmin"), closeSoftKeyboard());

        onView(withId(R.id.button)).perform(click()); //line 2
```

```
            String expectedText = "4";
            onView(withId(R.id.RestTimes)).check(matches(withText(expectedText)));
        }
}
```

五、软件操作流程


开始
是否还有剩余尝试次数
有
输入用户名与密码
退出
用户名是否为admin密码是否为admin
否
提示登陆失败，尝试次数减一
是
界面跳转显示用户名，显示登陆成功通知
返回

六、难点（或遇到的问题）和解决方案

1.跳转的信息传递和多语言的设计。

通过看老师 ppt 和书解决了

2.toast 的测试

通过百度解决了，不过测试方法有点取巧，碰到含有相同 text 的部件容易造成混乱

七、不足之处

软件功能比较简单，要不断学习和完善。

八、今后的设想

多看书和老师的 ppt。