

# ANDROID DATABASE

login application is the screen asking your credentials to login to some particular application. You might have seen it when logging into facebook, twitter e.t.c

This chapter explains, how to create a login screen and how to manage security when false attempts are made.

First you have to define two `TextView` asking username and password of the user. The password `TextView` must have **inputType** set to password. Its syntax is given below –

```
<EditText
    android:id = "@+id/editText2"
    android:layout_width = "wrap_content"
    android:layout_height = "wrap_content"
    android:inputType = "textPassword" />

<EditText
    android:id = "@+id/editText1"
    android:layout_width = "wrap_content"
    android:layout_height = "wrap_content"
/>
```

Define a button with login text and set its **onClick** Property. After that define the function mentioned in the `onClick` property in the java file.

```
<Button
    android:id = "@+id/button1"
    android:layout_width = "wrap_content"
    android:layout_height = "wrap_content"
    android:onClick = "login"
    android:text = "@string/Login"
/>
```

In the java file, inside the method of `onClick` get the username and passwords text using **getText()** and **toString()** method and match it with the text using **equals()** function.

```
EditText username = (EditText) findViewById(R.id.editText1);
EditText password = (EditText) findViewById(R.id.editText2);

public void login(View view) {
    if (username.getText().toString().equals("admin") &&
        password.getText().toString().equals("admin")) {

        //correct password
    } else {
        //wrong password
    }
}
```

The last thing you need to do is to provide a security mechanism, so that unwanted attempts should be avoided. For this initialize a variable and on each false attempt, decrement it. And when it reaches to 0, disable the login button.

```
int counter = 3;
counter--;

if(counter==0){
    //disble the button, close the application e.t.c
}
```

## Example

Here is an example demonstrating a login application. It creates a basic application that gives you only three attempts to login to an application.

To experiment with this example, you can run this on an actual device or in an emulator.

Steps	Description
1	You will use Android studio to create an Android application under a package com.example.sairamkrishna.myapplication.
3	Modify src/MainActivity.java file to add necessary code.
4	Modify the res/layout/activity_main to add respective XML components
5	Run the application and choose a running android device and install the application on it and verify the results

Following is the content of the modified main activity file **src/MainActivity.java**.

```
package com.example.sairamkrishna.myapplication;

import android.app.Activity;
import android.graphics.Color;
import android.os.Bundle;
import android.view.View;

import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends Activity {
```

```

Button b1,b2;
EditText ed1,ed2;

TextView tx1;
int counter = 3;

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

    b1 = (Button) findViewById(R.id.button);
    ed1 = (EditText) findViewById(R.id.editText);
    ed2 = (EditText) findViewById(R.id.editText2);

    b2 = (Button) findViewById(R.id.button2);
    tx1 = (TextView) findViewById(R.id.textView3);
    tx1.setVisibility(View.GONE);

    b1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if(ed1.getText().toString().equals("admin") &&
                ed2.getText().toString().equals("admin")) {
                Toast.makeText(getApplicationContext(),
                    "Redirecting...",Toast.LENGTH_SHORT).show();
            }else{
                Toast.makeText(getApplicationContext(), "Wrong
                    Credentials",Toast.LENGTH_SHORT).show();

                tx1.setVisibility(View.VISIBLE);
                tx1.setBackgroundColor(Color.RED);
                counter--;
                tx1.setText(Integer.toString(counter));

                if (counter == 0) {
                    b1.setEnabled(false);
                }
            }
        }
    });

    b2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            finish();
        }
    });
}
}

```

Following is the modified content of the xml **res/layout/activity\_main.xml**.

In the following code **abc** indicates about logo of tutorialspoint.com

```

<?xml version = "1.0" encoding = "utf-8"?>
<RelativeLayout xmlns:android =
"http://schemas.android.com/apk/res/android"
    xmlns:tools = "http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height = "match_parent" android:paddingLeft=
"@dimen/activity_horizontal_margin"
    android:paddingRight = "@dimen/activity_horizontal_margin"
    android:paddingTop = "@dimen/activity_vertical_margin"
    android:paddingBottom = "@dimen/activity_vertical_margin"
    tools:context = ".MainActivity">

    <TextView android:text = "Login"
    android:layout_width="wrap_content"
        android:layout_height = "wrap_content"
        android:id = "@+id/textview"
        android:textSize = "35dp"
        android:layout_alignParentTop = "true"
        android:layout_centerHorizontal = "true" />

    <TextView
        android:layout_width = "wrap_content"
        android:layout_height = "wrap_content"
        android:text = "Tutorials point"
        android:id = "@+id/textView"
        android:layout_below = "@+id/textview"
        android:layout_centerHorizontal = "true"
        android:textColor = "#ff7aff24"
        android:textSize = "35dp" />

    <EditText
        android:layout_width = "wrap_content"
        android:layout_height = "wrap_content"
        android:id = "@+id/editText"
        android:hint = "Enter Name"
        android:focusable = "true"
        android:textColorHighlight = "#ff7eff15"
        android:textColorHint = "#ffff25e6"
        android:layout_marginTop = "46dp"
        android:layout_below = "@+id/imageView"
        android:layout_alignParentLeft = "true"
        android:layout_alignParentStart = "true"
        android:layout_alignParentRight = "true"
        android:layout_alignParentEnd = "true" />

    <ImageView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/imageView"
        android:src="@drawable/abc"
        android:layout_below="@+id/textView"
        android:layout_centerHorizontal="true" />

```

```
<EditText
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:inputType="textPassword"
    android:ems="10"
    android:id="@+id/editText2"
    android:layout_below="@+id/editText"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
    android:layout_alignRight="@+id/editText"
    android:layout_alignEnd="@+id/editText"
    android:textColorHint="#ffff299f"
    android:hint="Password" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Attempts Left:"
    android:id="@+id/textView2"
    android:layout_below="@+id/editText2"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
    android:textSize="25dp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="New Text"
    android:id="@+id/textView3"
    android:layout_alignTop="@+id/textView2"
    android:layout_alignParentRight="true"
    android:layout_alignParentEnd="true"
    android:layout_alignBottom="@+id/textView2"
    android:layout_toEndOf="@+id/textview"
    android:textSize="25dp"
    android:layout_toRightOf="@+id/textview" />

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="login"
    android:id="@+id/button"
    android:layout_alignParentBottom="true"
    android:layout_toLeftOf="@+id/textview"
    android:layout_toStartOf="@+id/textview" />

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Cancel"
    android:id="@+id/button2"
    android:layout_alignParentBottom="true"
    android:layout_toRightOf="@+id/textview"
```

```
        android:layout_toEndOf="@+id/textview" />
</RelativeLayout>
```

Following is the content of the **res/values/string.xml**.

```
<resources>
    <string name="app_name">My Application</string>
</resources>
```

Following is the content of **AndroidManifest.xml** file.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest
xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.sairamkrishna.myapplication" >


    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >

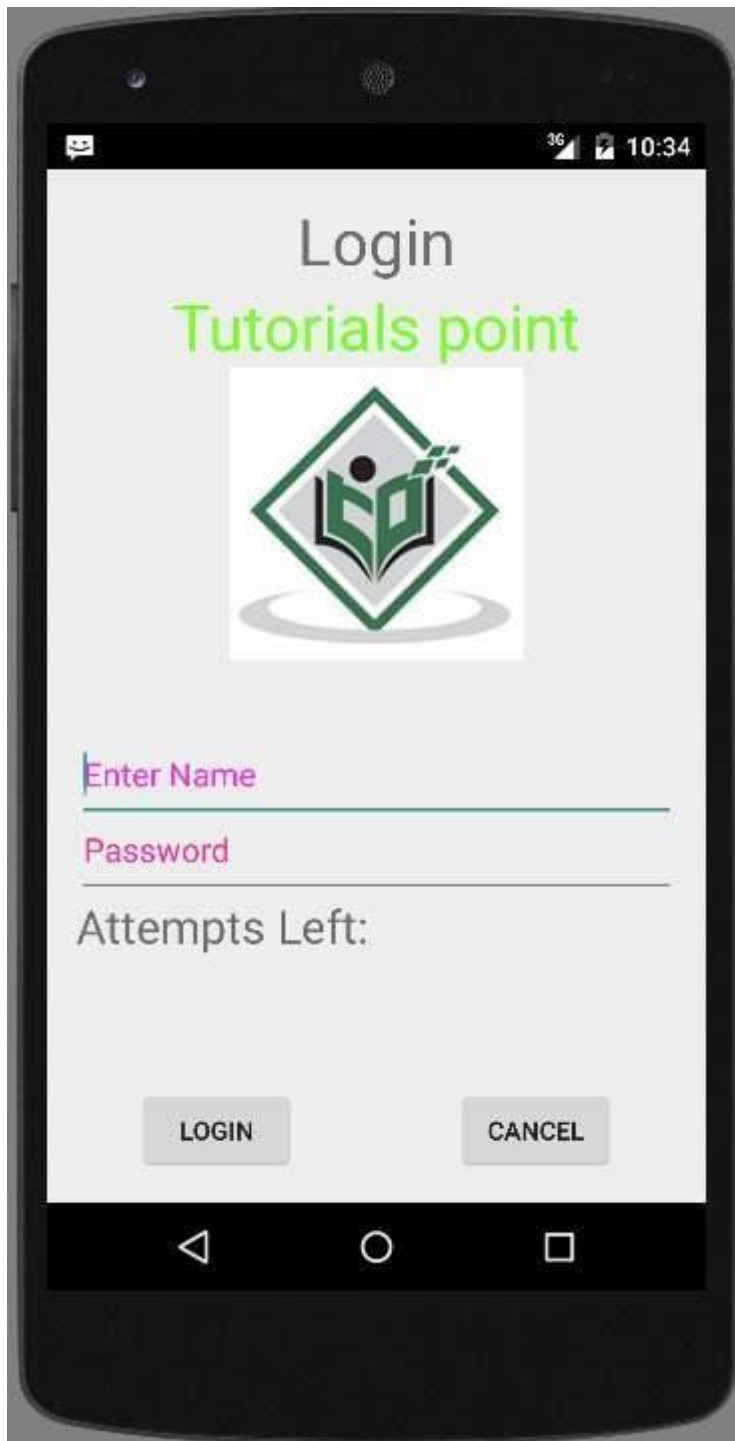
        <activity
            android:name=".MainActivity"
            android:label="@string/app_name" >

            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category
android:name="android.intent.category.LAUNCHER" />
            </intent-filter>

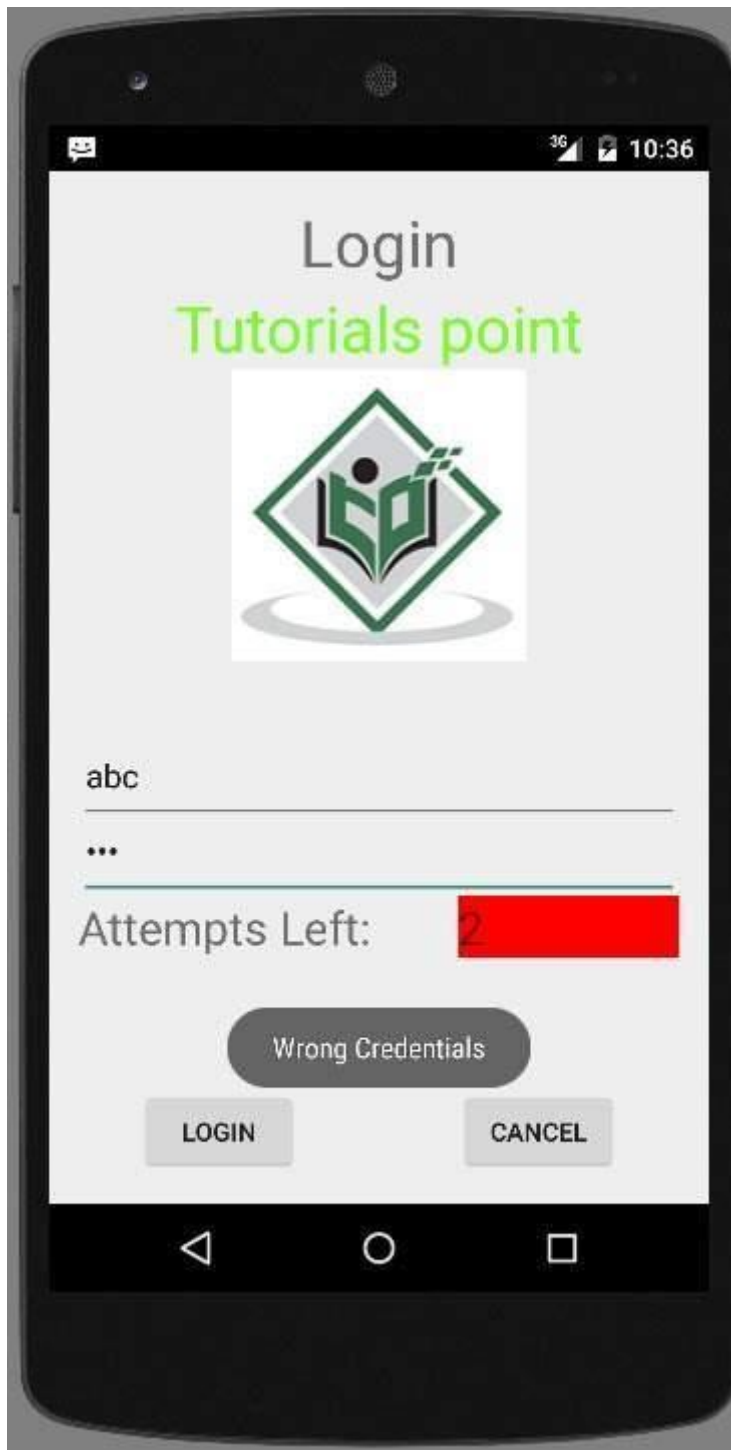
        </activity>

    </application>
</manifest>
```

Let's try to run our application we just modified. I assume you had created your **AVD** while doing environment setup. To run the app from Android studio, open one of your project's activity files and click Run  icon from the toolbar. Android studio installs the app on your AVD and starts it and if everything is fine with your setup and application, it will display following Emulator window –



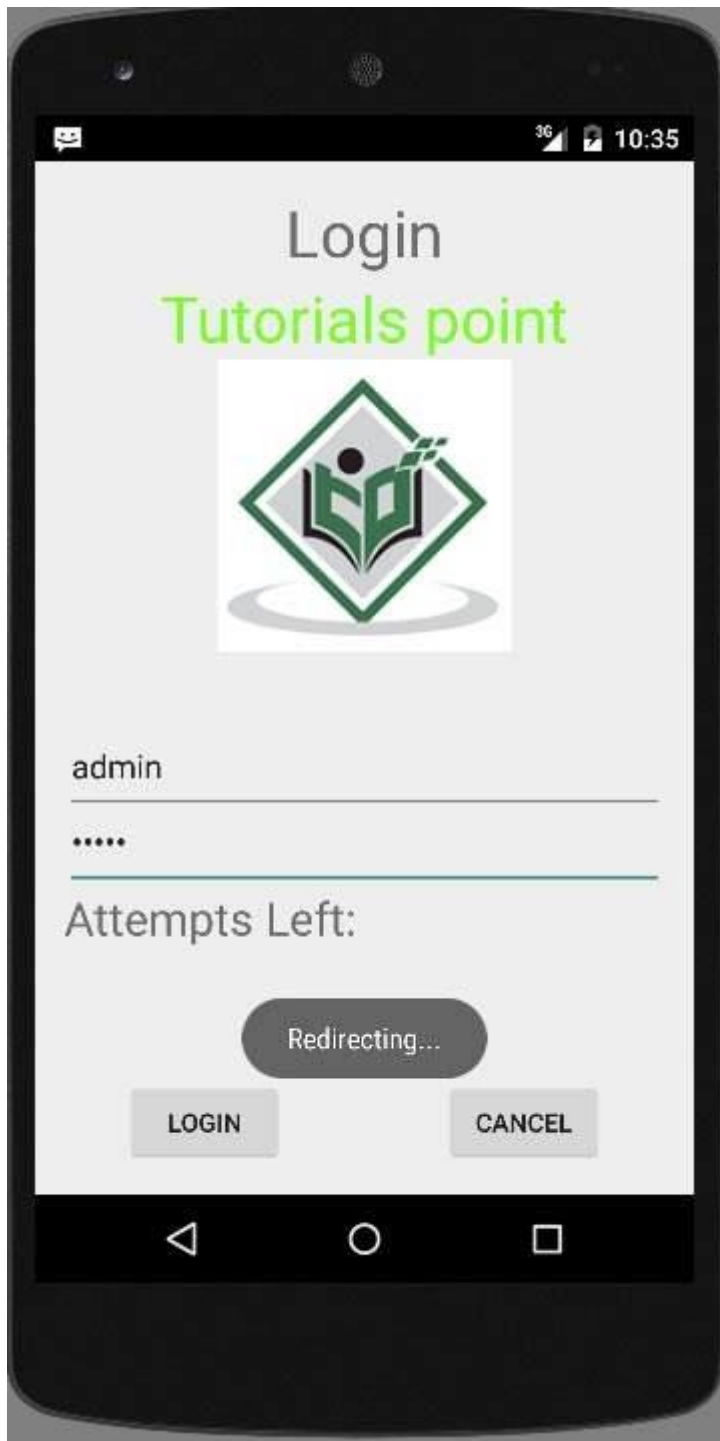
Type anything in the username and password field, and then press the login button. I put abc in the username field and abc in the password field. I got failed attempt. This is shown below –



Do this two more time, and you will see that you have 0 login attempts left and your login button is disabled.

Now open the application again, and this time enter correct username as admin and password as admin and click on login. You will be successfully login.





If user press on cancel button, it will close an application of login screen.