

Practical No 28

Q1. Explain Validation of user input?

In any app input validation is a very important thing to do. Input Validation eliminates the errors that can be done by user while giving inputs to our app. For example if we want to get the user's email we can check the entered email is a valid email or not before storing it inside the database.

Q2. List and Explain Various GUI components used to design the login form with validation.

EditText

Buttons

Q3. Difference between TextView and EditText

EditText is used for user input.

TextView is used to display text and is not editable by the user.

Q4. Write a program to create the login form with necessary validations like length of username and password, empty text fields, count of unsuccessful login attempts. Display the login successful / unsuccessful toast message.

Activity_main.xml

```
<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:paddingBottom="@dimen/activity_vertical_margin"
android:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin"
tools:context="com.javacodegeeks.android.loginapp.MainActivity" >

<TextView
    android:id="@+id/textView1"
```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentTop="true"
android:layout_centerHorizontal="true"
android:layout_marginTop="20dp"
android:text="Authentication Required"
android:textAppearance="?android:attr/textAppearanceLarge" />
```

<TextView

```
android:id="@+id/textView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentLeft="true"
android:layout_below="@+id/textView1"
android:layout_marginTop="75dp"
android:layout_marginLeft="10dp"
android:text="Username:"
android:textAppearance="?android:attr/textAppearanceMedium" />
```

<EditText

```
android:id="@+id/usernameET"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignBottom="@+id/textView2"
android:layout_marginLeft="35dp"
android:layout_toRightOf="@+id/textView2"
android:hint="supermode75" >
<requestFocus />
```

</EditText>

<TextView

```
android:id="@+id/textView3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignLeft="@+id/textView2"
android:layout_below="@+id/textView2"
android:layout_marginTop="40dp"
android:text="Password:"
android:textAppearance="?android:attr/textAppearanceMedium" />
```

```
<EditText
    android:id="@+id/passwordET"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/textView3"
    android:layout_alignLeft="@+id/usernameET"
    android:layout_alignRight="@+id/usernameET"
    android:hint="testpass"
    android:inputType="textPassword" />
```

```
<TextView
    android:id="@+id/attemptsLeftTV"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/textView3"
    android:layout_below="@+id/textView3"
    android:layout_marginLeft="30dp"
    android:layout_marginTop="48dp"
    android:text="Attempts Left:"
    android:visibility="invisible"
    android:textAppearance="?android:attr/textAppearanceMedium" />
```

```
<Button
    android:id="@+id/loginBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/passwordET"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="94dp"
    android:onClick="authenticateLogin"
    android:text="Login" />
```

```
<TextView
    android:id="@+id/numberOfRemainingLoginAttemptsTV"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignRight="@+id/textView1"
    android:layout_alignTop="@+id/attemptsLeftTV"
    android:visibility="invisible" />
```

```
<TextView
    android:id="@+id/loginLockedTV"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/loginBtn"
    android:layout_marginTop="35dp"
    android:layout_centerHorizontal="true"
    android:textAppearance="?android:attr/textAppearanceMedium"
    android:visibility="invisible" />
```

```
</RelativeLayout>
```

MainActivity.java

```
package com.javacodegeeks.android.loginapp;
import android.graphics.Color;
import android.os.Bundle;
import android.support.v7.app.ActionBarActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends ActionBarActivity {

    private EditText username;
    private EditText password;
    private Button login;
    private TextView loginLockedTV;
    private TextView attemptsLeftTV;
    private TextView numberOfRemainingLoginAttemptsTV;
    int numberOfRemainingLoginAttempts = 3;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```

        setContentView(R.layout.activity_main);
        setupVariables();
    }

    public void authenticateLogin(View view) {
        if (username.getText().toString().equals("admin") &&
            password.getText().toString().equals("admin")) {
            Toast.makeText(getApplicationContext(), "Hello admin!",
                Toast.LENGTH_SHORT).show();
        } else {
            Toast.makeText(getApplicationContext(), "Seems like you 're not
admin!",
                Toast.LENGTH_SHORT).show();
            numberOfRemainingLoginAttempts--;
            attemptsLeftTV.setVisibility(View.VISIBLE);
            numberOfRemainingLoginAttemptsTV.setVisibility(View.VISIBLE);
            numberOfRemainingLoginAttemptsTV.setText(Integer.toString(numberOf
RemainingLoginAttempts));

            if (numberOfRemainingLoginAttempts == 0) {
                login.setEnabled(false);
                loginLockedTV.setVisibility(View.VISIBLE);
                loginLockedTV.setBackgroundColor(Color.RED);
                loginLockedTV.setText("LOGIN LOCKED!!!");
            }
        }
    }

    private void setupVariables() {
        username = (EditText) findViewById(R.id.usernameET);
        password = (EditText) findViewById(R.id.passwordET);
        login = (Button) findViewById(R.id.loginBtn);
        loginLockedTV = (TextView) findViewById(R.id.loginLockedTV);
        attemptsLeftTV = (TextView) findViewById(R.id.attemptsLeftTV);
    }

```

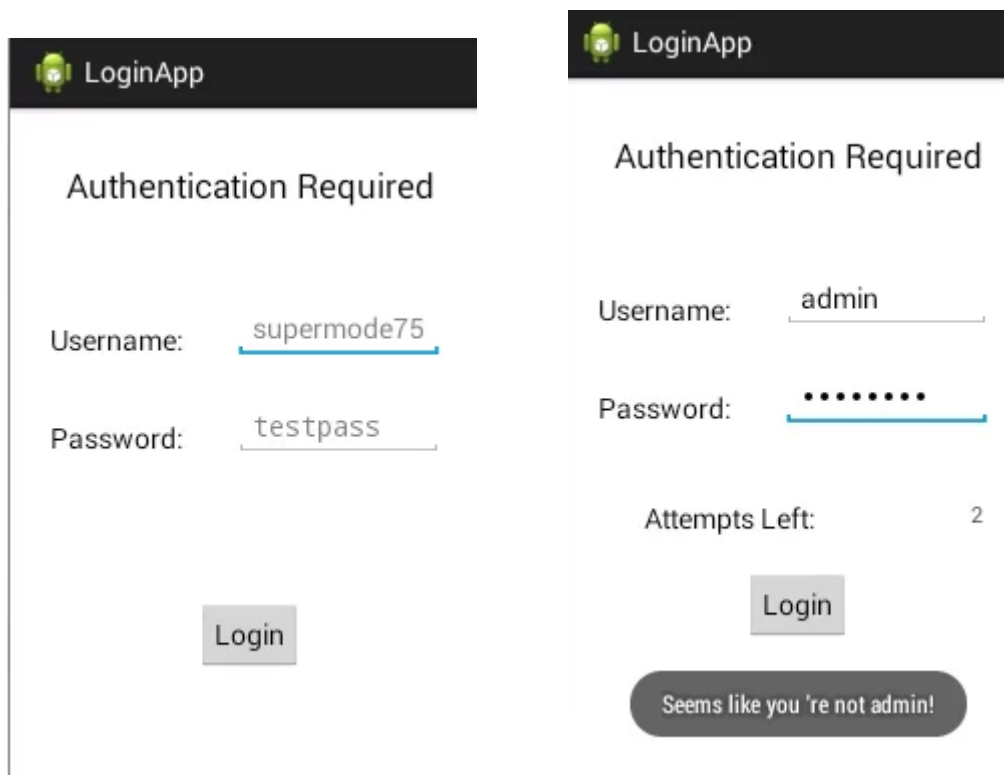
```

        numberOfRemainingLoginAttemptsTV = (TextView)
findViewById(R.id.numberOfRemainingLoginAttemptsTV);
        numberOfRemainingLoginAttemptsTV.setText(Integer.toString(numberOfR
emainingLoginAttempts));
    }

}

```

Output





Authentication Required

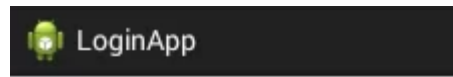
Username:

Password:

Attempts Left: 0

Login

LOGIN LOCKED!!!



Authentication Required

Username:

Password:

Login

Hello admin!