**Name: Merlin Moncy**

**Roll No: 21**

**Batch: B**

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ANDROID LAB

**Experiment No.: 21**

**Aim**

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

**Procedure**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.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=".MainActivity">  
<androidx.constraintlayout.widget.Guideline  
android:id="@+id/guideline"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:orientation="horizontal"  
app:layout\_constraintGuide\_percent=".15" />  
<com.google.android.material.textview.MaterialTextView  
android:id="@+id/textView\_loginTitle"  
style="@style/TextAppearance.MaterialComponents.Headline4"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:fontFamily="@font/dancing\_script\_bold"  
android:text="@string/text\_login"  
app:fontFamily="@font/dancing\_script\_bold"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="@+id/guideline" />  
<com.google.android.material.textfield.TextInputLayout  
android:id="@+id/inputLayout\_username"  
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="32dp"  
app:endIconMode="clear\_text"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toBottomOf="@+id/textView\_loginTitle"  
app:startIconDrawable="@drawable/ic\_baseline\_supervised\_user\_circle\_24">  
<com.google.android.material.textfield.TextInputEditText  
android:id="@+id/inputEditText\_username"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:inputType="text"  
android:hint="@string/text\_username"  
android:nextFocusForward="@id/inputEditText\_mobile"  
android:singleLine="true" />  
</com.google.android.material.textfield.TextInputLayout>  
<com.google.android.material.textfield.TextInputLayout  
android:id="@+id/inputLayout\_mobile"  
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="32dp"  
app:endIconMode="clear\_text"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toBottomOf="@+id/inputLayout\_username"  
app:startIconDrawable="@drawable/ic\_baseline\_phone\_android\_24">  
<com.google.android.material.textfield.TextInputEditText  
android:id="@+id/inputEditText\_mobile"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:inputType="number"  
android:hint="@string/text\_Contact"  
android:nextFocusForward="@id/inputLayout\_email"  
android:singleLine="true" />  
</com.google.android.material.textfield.TextInputLayout>  
<com.google.android.material.textfield.TextInputLayout  
android:id="@+id/inputLayout\_email"  
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="32dp"  
app:endIconMode="clear\_text"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toBottomOf="@+id/inputLayout\_mobile"  
app:startIconDrawable="@drawable/ic\_baseline\_email\_24">  
<com.google.android.material.textfield.TextInputEditText  
android:id="@+id/inputEditText\_email"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:hint="@string/text\_email"  
android:inputType="textEmailAddress"  
android:nextFocusForward="@id/inputLayout\_password"  
android:singleLine="true" />  
</com.google.android.material.textfield.TextInputLayout>  
<com.google.android.material.textfield.TextInputLayout  
android:id="@+id/inputLayout\_password"  
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="32dp"  
app:endIconMode="password\_toggle"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toBottomOf="@+id/inputLayout\_email"  
app:startIconDrawable="@drawable/ic\_baseline\_lock\_24">  
<com.google.android.material.textfield.TextInputEditText  
android:id="@+id/inputEditText\_password"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:hint="@string/text\_password"  
android:imeOptions="actionDone"  
android:inputType="textPassword"  
android:singleLine="true" />  
</com.google.android.material.textfield.TextInputLayout>  
<com.google.android.material.button.MaterialButton  
android:id="@+id/button\_login"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="32dp"  
android:insetTop="0dp"  
android:insetBottom="0dp"  
android:text="@string/text\_button\_login"  
android:textAllCaps="false"  
android:onClick="Validate"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toBottomOf="@+id/inputLayout\_password" />  
</androidx.constraintlayout.widget.ConstraintLayout>  
MainAcitvity.java  
package com.example.registration;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import com.google.android.material.textfield.TextInputLayout;  
import java.util.regex.Pattern;  
public class MainActivity extends AppCompatActivity {  
TextInputLayout Username,Email,Mobile,Password;  
private static final Pattern *PASSWORD\_PATTERN* =  
Pattern.*compile*("^" +

"(?=.\*[0-9])" + //at least 1 digit   
"(?=.\*[a-z])" + //at least 1 lower case letter  
"(?=.\*[A-Z])" +   
"(?=.\*[a-zA-Z])" +   
"(?=.\*[@#$%^&+=])" +   
"(?=S+$)" + //no white spaces  
".{4,}" +   
"$"); // at least 4 characters

@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
setContentView(R.layout.*activity\_main*);  
Username=findViewById(R.id.*inputLayout\_username*);  
Email=findViewById(R.id.*inputLayout\_email*);  
Mobile=findViewById(R.id.*inputLayout\_mobile*);  
Password=findViewById(R.id.*inputLayout\_password*);  
}  
public void Validate(View view){  
if (!validatePhoneNumber() | !validateUsername() | !validateEmail()  
| !validatePassword()) {  
return;  
}  
}  
private boolean validateUsername() {  
String val = Username.getEditText().getText().toString().trim();  
String checkspaces = "^[A-Za-z][A-Za-z0-9\_]{1,20}$";  
if (val.isEmpty()) {  
Username.setError("Field can not be empty");  
return false;  
} else if (val.length() > 20) {  
Username.setError("Username is too large!");  
return false;  
} else if (!val.matches(checkspaces)) {  
Username.setError("No White spaces are allowed!");  
return false;  
} else {  
Username.setError(null);  
Username.setErrorEnabled(false);  
return true;  
}  
}  
private boolean validateEmail() {  
String val = Email.getEditText().getText().toString().trim();  
String checkEmail = "[a-zA-Z0-9.\_-]+@[a-z]+.+[a-z]+";  
if (val.isEmpty()) {  
Email.setError("Field can not be empty");  
return false;  
} else if (!val.matches(checkEmail)) {  
Email.setError("Invalid Email!");  
return false;  
} else {  
Email.setError(null);  
Email.setErrorEnabled(false);  
return true;  
}  
}  
private boolean validatePhoneNumber() {  
String val = Mobile.getEditText().getText().toString().trim();  
String MobilePattern = "[0-9]{10}";  
if (val.isEmpty()) {  
Mobile.setError("Enter valid phone number");  
return false;  
} else if (!val.matches(MobilePattern)) {  
Mobile.setError("No White spaces are allowed!");  
return false;  
} else {  
Mobile.setError(null);  
Mobile.setErrorEnabled(false);  
return true;  
}  
}  
private boolean validatePassword() {  
String passwordInput =  
Password.getEditText().getText().toString().trim();  
// if password field is empty  
// it will display error message "Field can not be empty"  
if (passwordInput.isEmpty()) {  
Password.setError("Field can not be empty");  
return false;  
}  
// if password does not matches to the pattern  
// it will display an error message "Password is too weak"  
else if (!*PASSWORD\_PATTERN*.matcher(passwordInput).matches()) {  
Password.setError("Password is too weak");  
return false;  
} else {  
Password.setError(null);  
return true;  
}  
}  
}