Program

Aim: Program to implement validations on various UI controls

XML Code:

```xml
<?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">
<TextView

        android:id="@+id/txt1"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Validation on UI Components"

        app:layout_constraintLeft_toLeftOf="parent"

        android:textSize="25sp"

        app:layout_constraintRight_toRightOf="parent"

        android:layout_marginTop="30dp"

        app:layout_constraintTop_toTopOf="parent" />
<EditText

        android:id="@+id/edt1"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/txt1"
```

```xml
        android:padding="20dp"

        android:layout_marginTop="100dp"

        android:hint="Text 1"

        android:layout_marginHorizontal="10dp"/>

    <EditText

        android:id="@+id/edt2"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/edt1"

        android:padding="20dp"

        android:layout_marginTop="20dp"

        android:hint="Text 2"

        android:layout_marginHorizontal="10dp"/>

    <EditText

        android:id="@+id/edt3"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/edt2"

        android:padding="20dp"

        android:layout_marginTop="20dp"

        android:hint="Text 3"

        android:layout_marginHorizontal="10dp"/>


    <Button

        android:id="@+id/btn1"
```

```xml
        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/edt3"

        android:layout_marginTop="50dp"

        android:text="Submit"/>

</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```java
package com.example.validation;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    EditText e1, e2, e3;

    Button b1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        e1 = findViewById(R.id.edt1);

        e2 = findViewById(R.id.edt2);

        e3 = findViewById(R.id.edt3);

        b1 = findViewById(R.id.btn1);
```

```java
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String a, b, c;
                a = e1.getText().toString();
                b = e2.getText().toString();
                c = e3.getText().toString();

                if(a.isEmpty()){
                    e1.setError("First field is required");
                }else if(b.isEmpty()){
                    e2.setError("Second field is required");
                }else if(c.isEmpty()){
                    e3.setError("Third field is required");
                }
            }
        });
    }
}
```

Output:

validation

Validation on UI Components

ff

vhy

Text 3

Third field is required

SUBMIT