

Program No:	12
Roll No :	1545
Title of Program :	Progress Bar
Objective :	Implement Horizontal and Circular progress bar

What is ProgressBar?

Progress Bar are used as loading indicators in android applications. These are generally used when the application is loading the data from the server or database. There are different types of progress bars used within the android application as loading indicators. In this article, we will take a look at How to use the ProgressBar in android. A sample video is given below to get an idea about what we are going to do in this article. This Android article covered in both Java and Kotlin languages.

Types of Progress Bar:

Horizontal Progress Bar (Determinate) - A linear progress indicator that moves from left to right. Suitable when the progress of a task can be measured (e.g., file download or data processing). Requires setting a maximum value and updating the progress accordingly.

Circular Progress Bar (Indeterminate) - A spinning circular indicator used when the duration or progress of a task is unknown. Ideal for operations where you cannot predict the completion time (e.g., loading content from the network).

Source Code:

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@drawable/bg1"
    android:padding="16dp"

    tools:context=".MainActivity">

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

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="16dp"
android:layout_marginBottom="24dp"
android:text="Some Form"
android:textAlignment="center"
android:textAppearance="?attr/textAppearanceHeadline5"
android:textColor="@android:color/white" />
```

```
<EditText
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="16dp"
    android:autofillHints="Name"
    android:hint="Name"
    android:inputType="text" />
```

```
<EditText
    android:id="@+id/email"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="16dp"
    android:autofillHints="Email"
    android:hint="Email"
    android:inputType="textEmailAddress" />
```

```
<Button
    android:id="@+id/submitButton"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    android:layout_marginBottom="16dp"
    android:text="Submit"
    android:backgroundTint="?attr/colorPrimary"
    android:textColor="@android:color/white"/>
```

```
<ProgressBar
    android:id="@+id/progressBarHorizontal"
    style="?android:attr/progressBarStyleHorizontal"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="8dp" />
```

```
<ProgressBar
    android:id="@+id/progressBarCircular"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    />
```

```
</LinearLayout>
```

MainActivity.java

```
package com.example.spinnercomp;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Handler;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ProgressBar;
import android.widget.Toast;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity {

    EditText name, email;
    Button btnSubmit;
    ProgressBar progressBarHorizontal, progressBarCircular;
    Handler handler = new Handler();
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name = findViewById(R.id.name);
        email = findViewById(R.id.email);
        btnSubmit = findViewById(R.id.submitButton);
        progressBarHorizontal = findViewById(R.id.progressBarHorizontal);
        progressBarCircular = findViewById(R.id.progressBarCircular);
        btnSubmit.setOnClickListener(v -> {
            String nameStr = name.getText().toString().trim();
            String emailStr = email.getText().toString().trim();

            if (nameStr.isEmpty() || emailStr.isEmpty()) {
                Toast.makeText(this, "Please enter all fields",
                    Toast.LENGTH_SHORT).show();
                return;
            }
        });
        // Show progress bars
        progressBarHorizontal.setVisibility(View.VISIBLE);
        progressBarCircular.setVisibility(View.VISIBLE);
        progressBarHorizontal.setProgress(0);
        // Simulate loading process
        new Thread(() -> {
            for (int i = 0; i <= 100; i += 10) {
                int progress = i;
                handler.post(() -> progressBarHorizontal.setProgress(progress));
                try {
                    Thread.sleep(200); // Simulate work
                } catch (InterruptedException e) {
                    e.printStackTrace();
                }
            }
        }).start();
    }
}
```

```
    }  
    }  
    handler.post(() -> {  
// Hide progress bars  
        progressHorizontal.setVisibility(View.GONE);  
        progressCircular.setVisibility(View.GONE);  
        Toast.makeText(MainActivity.this,  
            "Submitted: " + nameStr + " from " + emailStr,  
            Toast.LENGTH_LONG).show();  
    });  
    }).start();  
});  
}  
}
```

Output:

