Q.1] Java Android Program to Demonstrate ProgressBar

```java
import android.app.Activity;

import android.os.Bundle;

import android.os.Handler;

import android.widget.ProgressBar;


public class MainActivity extends Activity {


    private ProgressBar progressBar;

    private int progressStatus = 0;

    private Handler handler = new Handler();


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        progressBar = findViewById(R.id.progressBar);


        // Start lengthy operation in a background thread

        new Thread(new Runnable() {

            public void run() {

                while (progressStatus < 100) {

                    progressStatus += 1;


                    // Update the progress bar and display the current value in the text view

                    handler.post(new Runnable() {
```

```java
            public void run() {

                progressBar.setProgress(progressStatus);

            }

        });


        try {

            // Sleep for 50 milliseconds to simulate a progress update delay

            Thread.sleep(50);

        } catch (InterruptedException e) {

            e.printStackTrace();

        }

    }

}

}).start();

}

}
```

Make sure to include a `ProgressBar` with the id `progressBar` in your `activity_main.xml` layout file:

```xml
<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:tools="http://schemas.android.com/tools"
```

```xml
        android:layout_width="match_parent"

        android:layout_height="match_parent"

        tools:context=".MainActivity">


        <ProgressBar

            android:id="@+id/progressBar"

            style="?android:attr/progressBarStyleHorizontal"

            android:layout_width="match_parent"

            android:layout_height="wrap_content"

            android:layout_centerVertical="true"

            android:layout_marginLeft="30dp"

            android:layout_marginRight="30dp"

            android:progress="0"

            android:max="100" />


</RelativeLayout>
```