

SSN College of Engineering, Kalavakkam
Department of Computer Science and Engineering
UCS1711-Mobile Application Development Lab
Exercise 6:Android Application using Multi-threading

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AIM:

To develop an android application using Multi-threading.

CODE:

MainActivity.java:

```
package com.example.movingbanner;

import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Color;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

import java.util.Random;


public class MainActivity extends AppCompatActivity {
```

```
private TextView banner, coord, counter_text;
```

```
private Button counter;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
    banner = (TextView) findViewById(R.id.banner);
```

```
    counter_text = (TextView) findViewById(R.id.counter);
```

```
    coord = (TextView) findViewById(R.id.coord);
```

```
    counter = (Button) findViewById(R.id.button);
```

```
    counter.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
```

```
        public void onClick(View v) {
```

```
            int current =  
Integer.parseInt(counter_text.getText().toString());
```

```
            current++;
```

```
            counter_text.setText(String.valueOf(current));
```

```
        }));
```

```
        new Thread(new Runnable() {
```

```
            public void run() {
```

```
                int i = 0;
```

```
                while (i < 100) {
```

```
        try {  
            Thread.sleep(100);  
        } catch (InterruptedException e) {  
            e.printStackTrace();  
        }  
  
        runOnUiThread(new Runnable() {  
            @Override  
            public void run() {  
                banner.animate().translationXBy(20f);  
                coord.animate().translationXBy(20f);  
                int[] location = new int[2];  
                banner.getLocationOnScreen(location);  
                coord.setText("Location: (" + location[0]  
+ ", " + location[1] + ")");  
  
                Random random = new Random();  
                int color = Color.argb(255,  
random.nextInt(256), random.nextInt(256), random.nextInt(256));  
                banner.setTextColor(color);  
            }  
        });  
    }  
}  
  
}).start();  
}  
}
```

Activity_main.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/banner"

        android:layout_width="133dp"

        android:layout_height="45dp"

        android:layout_marginStart="16dp"

        android:layout_marginTop="204dp"

        android:background="#6F1A7E"

        android:backgroundTint="#5FDACE"

        android:text="Hello World !!!"

        android:textSize="20sp"

        android:textStyle="bold"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />

    <TextView
```

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

```
android:layout_width="133dp"
```

```
android:layout_height="45dp"
```

```
android:layout_marginStart="16dp"
```

```
android:layout_marginTop="260dp"
```

```
android:text="TextView"
```

```
android:textColor="#144C47"
```

```
app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent" />
```

```
<Button
```

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

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:layout_marginStart="156dp"
```

```
android:layout_marginTop="552dp"
```

```
android:backgroundTint="#1A857B"
```

```
android:text="Click me"
```

```
app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent" />
```

```
<TextView
```

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

```
android:layout_width="105dp"
```

```
android:layout_height="35dp"
```

```
        android:layout_marginStart="194dp"

        android:layout_marginTop="502dp"

        android:text="1"

        android:textColor="#264744"

        android:textSize="20sp"

        android:textStyle="bold"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />

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

colors.xml:

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

<resources>

    <color name="purple_200">#FFBB86FC</color>

    <color name="purple_500">#41B5AA</color>

    <color name="purple_700">#318A82</color>

    <color name="teal_200">#FF03DAC5</color>

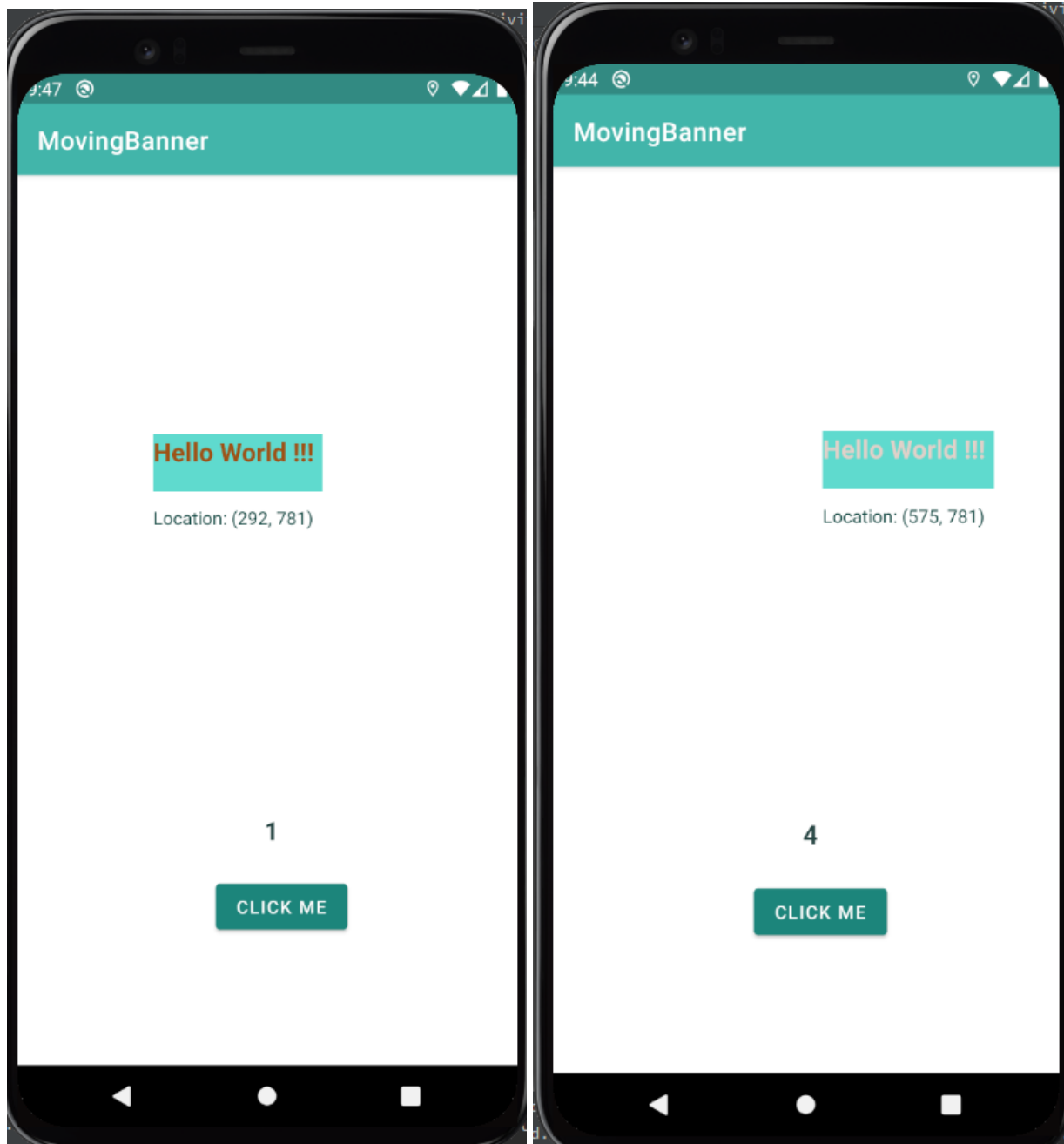
    <color name="teal_700">#FF018786</color>

    <color name="black">#FF000000</color>

    <color name="white">#FFFFFFFF</color>

</resources>
```

OUTPUT:



RESULT:

An android application using Multi-threading has been successfully developed.