❖ **Course Module : MIT3206 - Mobile Computing**

❖ **Course Lecturer : Senior Lecturer Gihan P. Seneviratne Sir**

❖ **Assignment 3 : Get the Given User Interface**

❖ **Assignment 3 Google Drive Uploaded Link :**

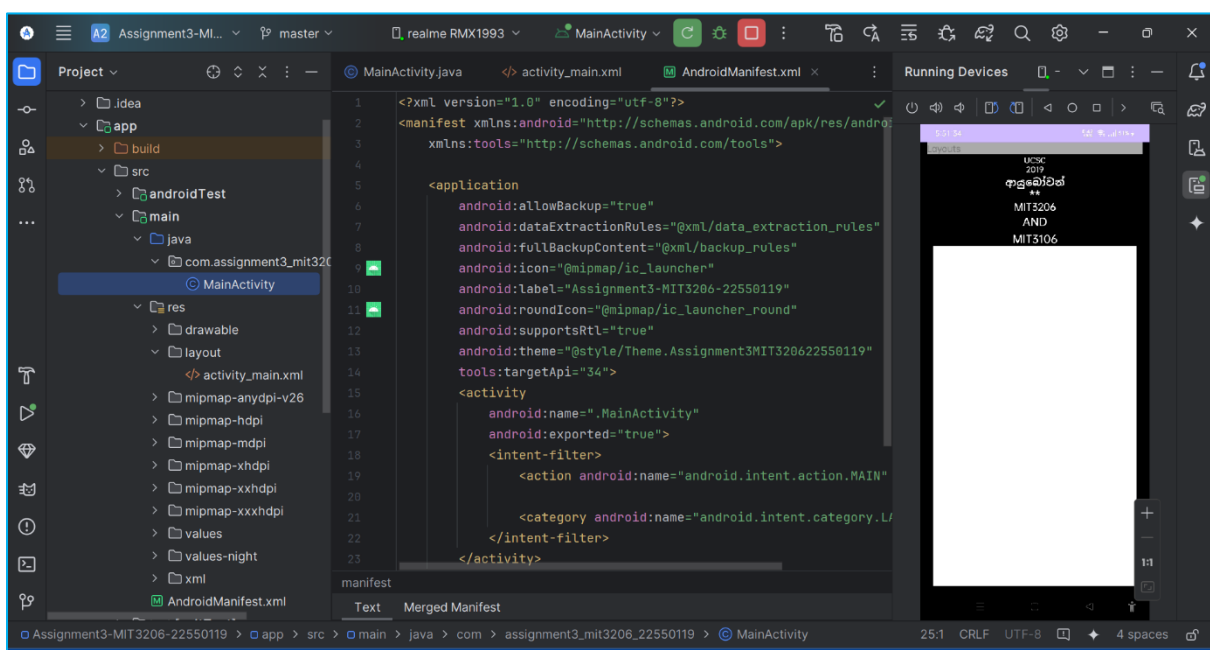https://drive.google.com/drive/folders/1ygHNCFOU8V3P9llxgAI7F4W4fd2Znu5s?usp=sharing

❖ **GitHub Private Repository Link :**

https://github.com/NavinduMadusanka/Assignment3-MIT3206-22550119.git

❖ **Student Name : K.N.M. Dias**

❖ **Student Index No : 22550119**

❖ **Student Registration No : 2022/MIT/011**

Assignment3-MIT3206-22550119

Assignment 3 : Get the Given User Interface

Below is a summary of what I have learned and focused on in this assignment.

1. **Android Components**
   - **API level**

Android Version	API Level	Version Name
Android 7.0	24	Nougat

   - **Classes**

     The AppCompatActivity class is used in this assignment.

     This is a compatibility library that back ports some features of recent versions of Android to older devices.

   - **Methods**

     The onCreate() methods is used in this assignment.

     It is functioned when an activity is loaded.

   - **Permissions**

     No special permissions have been granted for this project.

   - **Newly learned key points in this assignment**
     - TextView new line (multiline)

       Simply we can put an '\n' on text where we want to create a new line as.

       Example : setText("Line1 \n Line 2"),

       android:text="UCSC\n2019"

   - **tools:targetApi="34" in AndroidMainfest.xml**

2. Outline of approach to develop the application

- **Design Issues**

  I couldn't find how to use different text sizes in same textview with multiline.

- **Tips**

  I have included the Sinhala Unicode software (Sinhala / Tamil Kit provided by ICTA) to make it easier to enter Sinhala text.

- **Warnings**

  The following warnings appeared.

  - Hardcoded string "UCSCn2019", should use @string resource
  - Hardcoded string "ආයුබෝවන්n**", should use @string resource
  - Hardcoded string "MIT3206", should use @string resource
  - Hardcoded string "ANDnMIT3106", should use @string resource

  These are few warnings. But the function is working as properly.
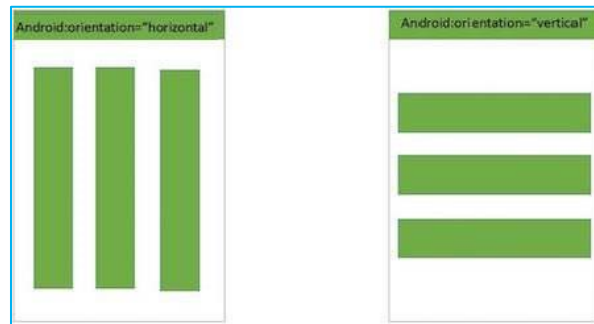
3. Layout & Attributes

- **LinearLayout**

  LinearLayout is a view group that aligns all children in a single direction, vertically or horizontally.

  We can specify the layout direction with the android:orientation attribute.

  Android LinearLayout is a view group that aligns all children in either vertically or horizontally.

  In this assignment I used vertical orientation layout.

Android Orientation Layout

- **Layout Attributes & Other Attributes**

  In this assignment I will mention only the special items that I have just learned.

  Following are special attributes and applied to the layout in this assignment.

No	Attribute	Description
1	android:textAlignment="textStart"	The text aligns to the start of the paragraph.
3	android:lineSpacingMultiplier="1.25"	Spacing between lines of text of TextView.
4	android:layout_height="wrap_content"	View should have a height which corresponds to the height of the content it contains.
5	android:textAllCaps="false"	Disable all caps programmatically.
6	android:baselineAligned="false"	App's layout has to do in order to Align its children's baselines.

4. Running the Application on my android mobile device

I was running the android app for testing in my android mobile device.

My android mobile device is Realme X2 RMX1993.

Below is a Screenshot of my android mobile device (Realme X2 RMX1993) while the app was running.
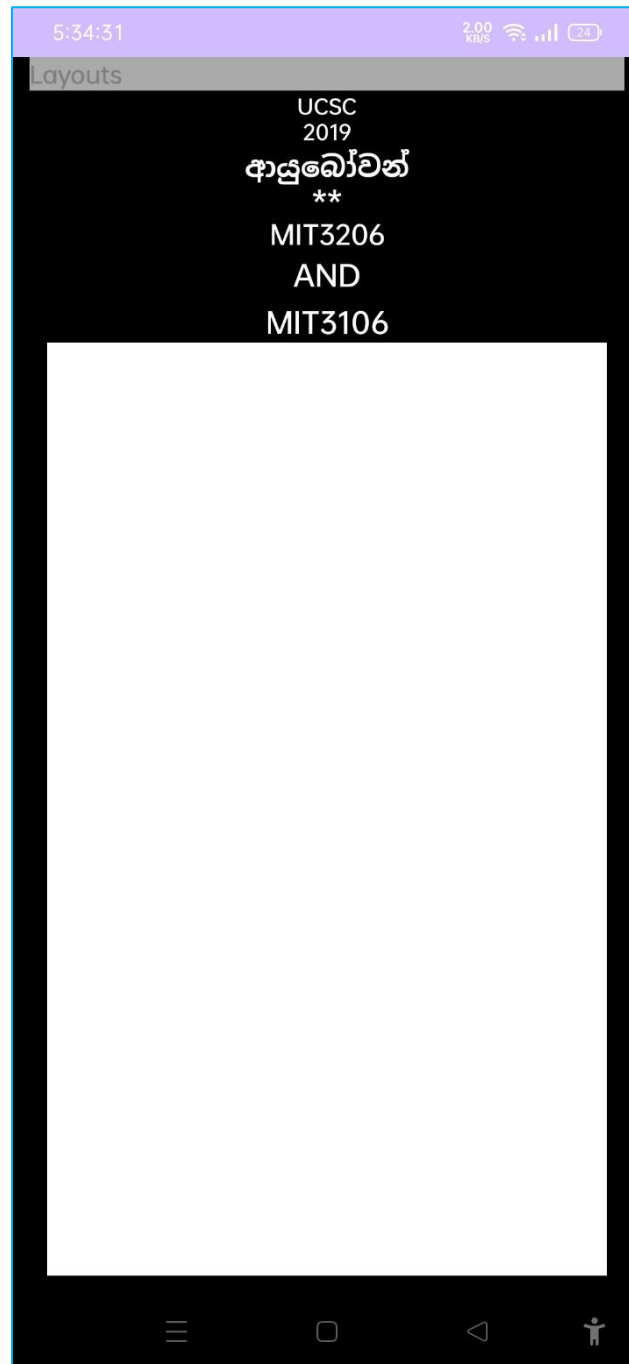

Photo : Assignment3-MIT3206-22550119 in Realme X2 RMX1993

5. Main Coding files

- **MainActivity.java**

```java
package com.assignment3_mit3206_22550119;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

- **activity_main.xml**

```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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@android:color/black"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textLayout"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="10dp"
        android:layout_marginRight="10dp"
        android:background="@android:color/darker_gray"
        android:text="Layouts"
        android:textStyle="bold"
        android:textAlignment="textStart"
        android:textAllCaps="false"
        android:textColor="@android:color/tertiary_text_light"
        android:textSize="16sp"
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.489"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.022" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="UCSC\n2019"
        android:textAlignment="center"
        android:textStyle="bold"
        android:textColor="@android:color/background_light"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="@+id/textLayout"
        app:layout_constraintVertical_bias="0.062" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="match_parent"
        android:layout_height="39dp"
        android:text="ආයුබෝවන්\n**"
        android:textStyle="bold"
        android:textAlignment="center"
        android:textColor="@android:color/background_light"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="@+id/textLayout"
        app:layout_constraintVertical_bias="0.15" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="MIT3206"
        android:textStyle="bold"
        android:textAlignment="center"
        android:textColor="@android:color/background_light"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintTop_toTopOf="@+id/textLayout"
        app:layout_constraintVertical_bias="0.257" />

    <TextView
        android:id="@+id/textView5"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:lineSpacingMultiplier="1.25"
        android:text="AND\nMIT3106"
        android:textStyle="bold"
        android:textAlignment="center"
        android:textColor="@android:color/background_light"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.502"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="@+id/textLayout"
        app:layout_constraintVertical_bias="0.346" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:textStyle="bold"
        android:layout_marginLeft="20dp"
        android:layout_marginRight="20dp"
        android:layout_marginBottom="10dp"
        android:background="#FFFFFF"
        android:baselineAligned="false"
        android:textAlignment="center"
        app:srcCompat="@android:drawable/screen_background_light" />

</LinearLayout>
```

- **AndroidMainfest.xml**

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
```

```xml
            android:label="Assignment3-MIT3206-22550119"
            android:roundIcon="@mipmap/ic_launcher_round"
            android:supportsRtl="true"
            android:theme="@style/Theme.Assignment3MIT320622550119"
            tools:targetApi="34">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```