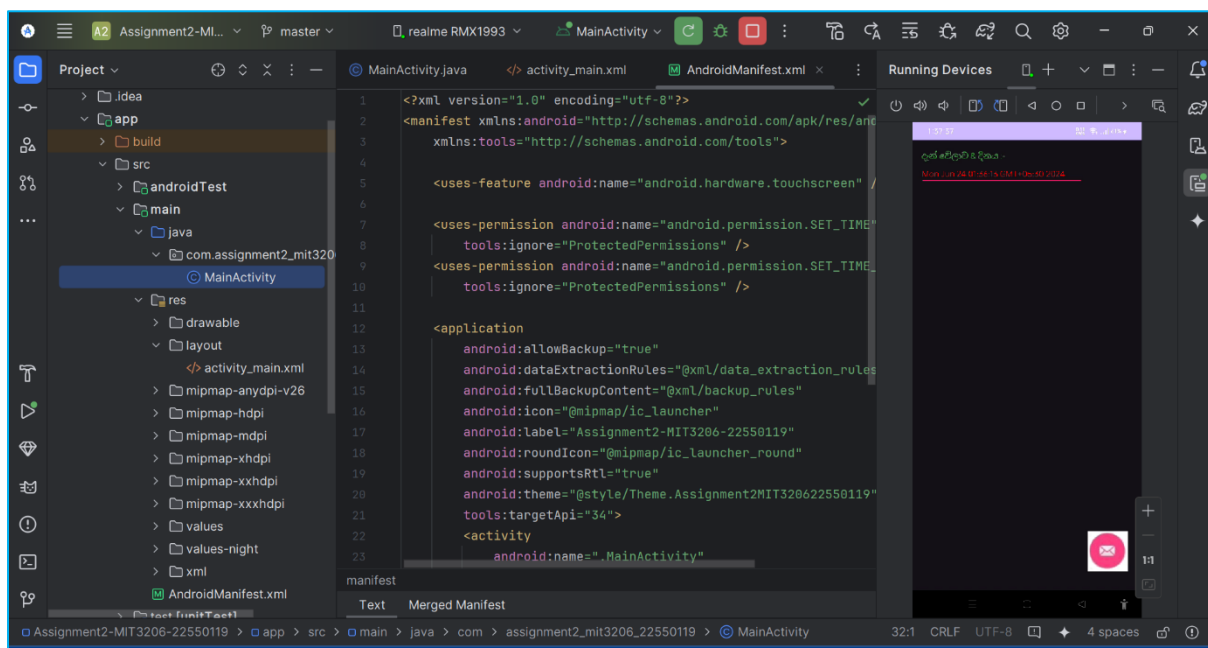


- ❖ **Course Module : MIT3206 – Mobile Computing**
- ❖ **Course Lecturer : Senior Lecturer Gihan P. Seneviratne Sir**

- ❖ **Assignment 2 : Current Date and Time - Updated When Ever You Click on the Screen**
- ❖ **Used Android Studio : Android Studio Koala | 2024.1.1**
- ❖ **GitHub Private Repository Link :**
<https://github.com/NavinduMadusanka/Assignment2-MIT3206-22550119.git>

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Assignment2-MIT3206-22550119

Assignment 2 : Current Date and Time - Updated When Ever You Click on the Screen

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() & onClick() methods are used in this assignment.

It is functioned when an activity is loaded & click on screen.

- **Permissions**

uses-permission - SET_TIME

uses-permission - SET_TIME_ZONE

- **Newly learned key points in this assignment**

- Inserting sub layout within the main layout
LinearLayout within ConstraintLayout

- Creating a variable
TextView dateView;

- Concatenate the text.
android:text="දැන් වේලාව & දිනය :-"

- Text colour
`android:textColor="#4CAF50"`
- Background Colour
`android:background="#E91E63"`
- Insert an Image
`<ImageView`
- Drawable folder
`app:srcCompat="@drawable/img_env" />`

2. Outline of approach to develop the application

- **Design Issues**

At first it was difficult to find onClick action.

- **Tips**

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

- **Warning**

- Hardcoded string "දැන් වේලාව & දිනය :-", should use @string resource

This is an only warning. But the function is working as properly.

- `tools:targetApi="34"` in `AndroidManifest.xml`
- `uses-feature android:name="android.hardware.touchscreen"`

3. Layout & Attributes

- **ConstraintLayout**

ConstraintLayout is a layout on Android that gives adaptable and flexible ways to create views for apps.

ConstraintLayout, which is now the default layout in Android Studio, gives you many ways to place objects.

We can constrain them to their container, to each other.

- **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.

I builded LinearLayout with ConstraintLayout in this assignment.

- **Layout 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	Attribute & Description
1	android:textColor="#4CAF50"	Defines text color .
3	<ImageView	Displays image resources, for example Bitmap or Drawable resources.
4	android:background="#E91E63"	Defines background color.
5	android:text="දැන් වේලාව & දිනය :-"	Concatenate the text using "&".
6	android:orientation="vertical"	It means that whatever view take inside the LinearLayout will be shown in screen by vertical.

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 photo of my android mobile device (Realme X2 RMX1993) while the app was running.

My android mobile device display setting is set as dark mode option.

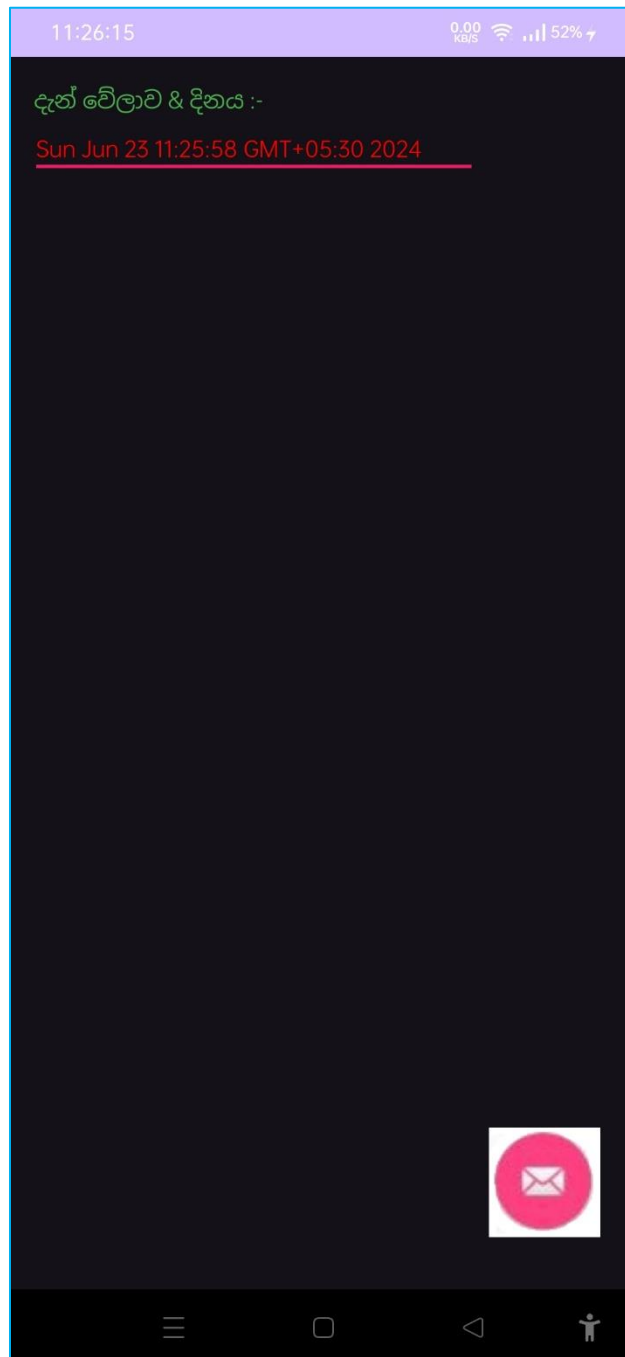


Photo : Assignment2-MIT3206-22550119 in Realme X2 RMX1993

5. Main Coding files

- MainActivity.java

```
package com.assignment2_mit3206_22550119;

import android.os.Bundle;
import android.view.View;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

import java.text.SimpleDateFormat;
import java.util.Calendar;
import java.util.Date;

public class MainActivity extends AppCompatActivity {

    TextView dateView;
    Calendar calendar;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        dateView = findViewById(R.id.dateView);
        updateTime();

        dateView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                updateTime();
            }
        });
    }

    private void updateTime() {
        Calendar calendar = Calendar.getInstance();
        SimpleDateFormat sdf = new SimpleDateFormat("EEE MMM dd HH:mm:ss z
YYYY");
        String currentDateandTime = sdf.format(new Date());
        dateView.setText(currentDateandTime);
    }
}
```

- 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:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
```

```

<TextView
    android:id="@+id/datelabel"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="දින දින & amp; දිනය :-"
    android:textAlignment="viewStart"
    android:textColor="#4CAF50"
    android:textSize="15sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.06"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.022" />

<TextView
    android:id="@+id/dateView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text=""
    android:textColor="#F00"
    android:textSize="15sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintHorizontal_bias="0.107"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.063" />

<LinearLayout
    android:id="@+id/linearLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="1.0">

    <View
        android:layout_width="250dp"
        android:layout_height="2dp"
        android:layout_marginStart="15dp"
        android:layout_marginTop="62dp"
        android:background="#E91E63" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="64dp"
        android:layout_height="65dp"
        android:layout_marginStart="275dp"
        android:layout_marginTop="550dp"
        app:srcCompat="@drawable/img_env" />

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

```

- **AndroidManifest.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">

    <uses-feature android:name="android.hardware.touchscreen" />

    <uses-permission android:name="android.permission.SET_TIME"
        tools:ignore="ProtectedPermissions" />
    <uses-permission android:name="android.permission.SET_TIME_ZONE"
        tools:ignore="ProtectedPermissions" />

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Assignment2MIT320622550119"
        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>
```

- **drawable**



img_env