

MOBILE COMPUTING LAB

Exercise 1

Create an Android app Converter for the given below screen design using linear layout.

Display the answer in textview and toast message.

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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter temperature in fahrenheit"
        android:textSize="16sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.205"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.26" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter temperature in celcius"
        android:textSize="16sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.192"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.138" />

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

```
<EditText
    android:id="@+id/editTextText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.203"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    android:hint="Celcius"
    app:layout_constraintVertical_bias="0.192" />
```

```
<EditText
    android:id="@+id/editTextText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.203"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    android:hint="Fahrenheit"
    app:layout_constraintVertical_bias="0.32" />
```

```
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:fontFamily="sans-serif-black"
    android:text="My Temperature converter"
    android:textSize="16sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.207"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.09" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:backgroundTint="@color/material_dynamic_neutral30"
    android:text="Convert temp"
    app:iconTint="@color/material_dynamic_neutral50"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.148"
```

```

        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.411"
        app:rippleColor="@color/white"
        app:strokeColor="@color/material_dynamic_neutral30" />

```

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

MainActivity.kt

```

package com.example.temperature_converter
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.Toast
import androidx.activity.enableEdgeToEdge
import androidx.appcompat.app.AppCompatActivity
import androidx.core.view.ViewCompat
import androidx.core.view.WindowInsetsCompat

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        enableEdgeToEdge()
        setContentView(R.layout.activity_main)
        val button1 = findViewById<Button>(R.id.button)
        val tv1 = findViewById<EditText>(R.id.editTextText)
        val tv2 = findViewById<EditText>(R.id.editTextText2)

        button1.setOnClickListener {
            val c = tv1.text.toString()
            val f = tv2.text.toString()
            if (c.isNotEmpty()) {
                val celsius = c.toDouble()
                val fahrenheit = (celsius * 9 / 5) + 32
                Toast.makeText(this, "Fahrenheit: %.2f".format(fahrenheit),
                    Toast.LENGTH_SHORT).show()
                tv2.setText(fahrenheit.toString())
            } else if (f.isNotEmpty()) {
                val fahrenheit = f.toDouble()
                val celsius = (fahrenheit - 32) * 5 / 9
                Toast.makeText(this, "Celsius: %.2f".format(celsius),
                    Toast.LENGTH_SHORT).show()
                tv1.setText(celsius.toString())
            } else {
                Toast.makeText(this, "Please enter a value",
                    Toast.LENGTH_SHORT).show()
            }
        }

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main)) { v, insets ->

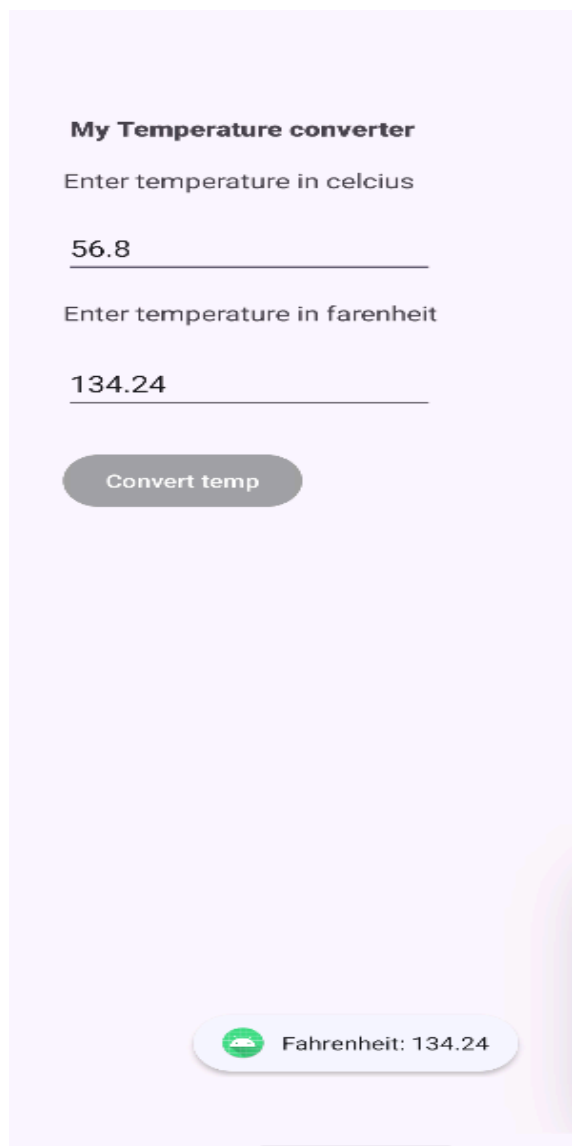
```

```

        val systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars())
        v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom)
        insets
    }
}
}

```

Output :



Exercise 2:

Create the app shown below. Users are initially presented with an "unhappy" character with the corresponding text "I'm so hungry". After hitting the button

"EAT COOKIE", the character becomes "happy" with corresponding text "I'm so full".

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"
    android:background="#8873AF"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textview"
        android:layout_width="118dp"
        android:layout_height="19dp"
        android:text="@string/name1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.542"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.615" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="366dp"
        android:layout_height="289dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.478"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.256"
        app:srcCompat="@drawable/before" />

    <Button
        android:id="@+id/button"
        android:layout_width="161dp"
        android:layout_height="71dp"
        android:text="Button"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.556"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.722" />

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

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

Strings.xml :

```
<resources>
    <string name="app_name">Cookiemonster_app</string>
    <string name="button1">Eat Cookie</string>
    <string name="button2">Done</string>
    <string name="name1">IM HUNGRY !!!!!</string>
    <string name="name2">IM FULL !!!!!</string>
</resources>
```

Colors.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>
</resources>
```

MainActivity.kt :

```
package com.example.cookiemonster_app

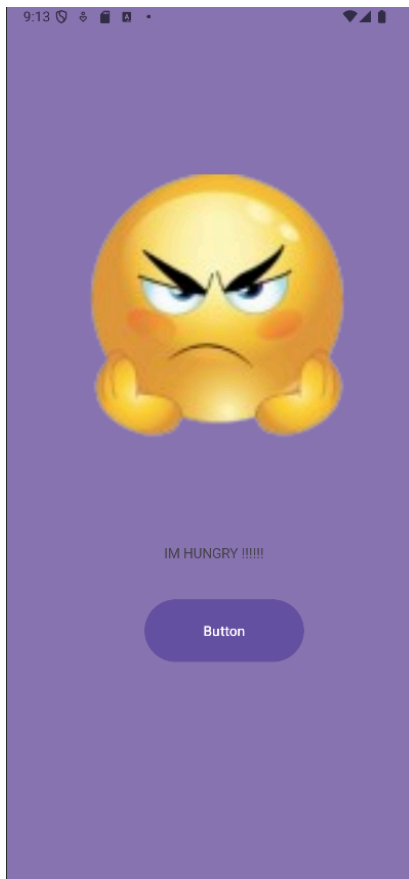
import android.os.Bundle
import android.widget.Button
import android.widget.ImageView
import android.widget.TextView
import androidx.activity.enableEdgeToEdge
import androidx.appcompat.app.AppCompatActivity
import androidx.core.view.ViewCompat
import androidx.core.view.WindowInsetsCompat

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        enableEdgeToEdge()
        setContentView(R.layout.activity_main)
        val button1 = findViewById<Button>(R.id.button) as Button
        val tv1 = findViewById<TextView>(R.id.textview) as TextView
        val img1 = findViewById<ImageView>(R.id.imageView) as ImageView
        val button2 = findViewById<Button>(R.id.button) as Button
        button1.setOnClickListener()
        {
            tv1.text = getString(R.string.name2)
            img1.setImageResource(R.drawable.after)
            button1.text=getString(R.string.button2)
        }
    }
}
```

```
    }

    ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main)) {
v, insets ->
        val systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars())
        v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom)
        insets
    }
}
}
```

Output :





IM FULL !!!!!

Done