

# MOBILE COMPUTING LAB

## Exercise 5:

Create an Android app for the given below screen design using any of the layouts.



Captcha should be auto generated randomly and should match. Mobile number should be validated. When submit button is clicked, show the welcome message (with mobile number) in next screen using indent.

(Note: captcha refresh, mobile icon are not necessary. But each time when run, captcha should be randomly generated using random functions)

## 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">

<ImageView
    android:id="@+id/imageView6"
    android:layout_width="1200dp"
    android:layout_height="1400dp"
    android:alpha="0.2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.886"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.502"
    app:srcCompat="@drawable/_557967" />

<ImageView
    android:id="@+id/imageView7"
    android:layout_width="107dp"
    android:layout_height="106dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.049"
    app:srcCompat="@drawable/tamilnadu_logo_svg" />

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:fontFamily="@font/anton"
    android:text="PUBLIC DISTRIBUTION SYSTEM"
    android:textAppearance="@style/TextAppearance.AppCompat.Display1"
    android:textColor="#BF5D06"
    android:textSize="28sp"
    android:typeface="monospace"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.495"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.199" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
android:text="Enter the Captcha you see below"
android:textColor="#D1700A"
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.537"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.465" />
```

#### <EditText

```
android:id="@+id/editTextBox"
android:layout_width="379dp"
android:layout_height="61dp"
android:layout_margin="16dp"
android:background="@drawable/input_box"
android:hint="Mobile Number"
android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.331" />
```

#### <ImageView

```
android:id="@+id/imageView10"
android:layout_width="49dp"
android:layout_height="54dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.044"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.341"
app:srcCompat="@drawable/images" />
```

#### <TextView

```
android:id="@+id/editTextBox2"
android:layout_width="379dp"
android:layout_height="61dp"
android:layout_margin="16dp"
android:background="@drawable/input_box"
android:backgroundTint="#FFFFFF9"
android:drawableTint="#CEB5B5"
android:fontFamily="sans-serif"
android:foregroundTint="#998B8B"
android:hint=""
android:shadowColor="#8A8484"
android:text="hygy"
android:textAlignment="center"
```

```
android:textAppearance="@style/TextAppearance.AppCompat.Display1"
android:textColorHighlight="#B8B6B6"
android:textColorHint="#7A1515"
android:textSize="24sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.812"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.564" />
```

<EditText

```
android:id="@+id/editTextBox3"
android:layout_width="379dp"
android:layout_height="61dp"
android:layout_margin="16dp"
android:background="@drawable/input_box"
android:hint="    Enter the Captcha"
android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.781"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.689" />
```

<Button

```
android:id="@+id/button5"
android:layout_width="374dp"
android:layout_height="63dp"
android:backgroundTint="#FD7E0E"
android:text="Submit"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.792" />
```

<TextView

```
android:id="@+id/textView3"
android:layout_width="240dp"
android:layout_height="58dp"
android:text="CS & CP Department, Government of Tamil Nadu"
android:textAlignment="center"
android:textAllCaps="true"
android:textColor="#817D7D"
android:textSize="14sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
```

```

        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.956" />

<ImageView
    android:id="@+id/imageView11"
    android:layout_width="47dp"
    android:layout_height="41dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.931"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.556"
    app:srcCompat="@drawable/refresh" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

## Input\_box.xml :

```

<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android">
    <solid android:color="@android:color/white" />
    <corners android:radius="4dp" />
    <padding android:left="10dp" android:top="10dp" android:right="10dp"
android:bottom="10dp" />
</shape>

```

## MainActivity.kt :

```

package com.example.myapplication

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

class MainActivity : AppCompatActivity() {
    private lateinit var captchaTextView: TextView
    private lateinit var captchaInput: EditText
    private lateinit var mobileNumberInput: EditText

```

```

private lateinit var submitButton: Button
private var generatedCaptcha: String = ""
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    enableEdgeToEdge()
    setContentView(R.layout.activity_main)
    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

    }

    captchaTextView = findViewById(R.id.editTextBox2)
    captchaInput = findViewById(R.id.editTextBox3)
    mobileNumberInput = findViewById(R.id.editTextBox)
    submitButton = findViewById(R.id.button5)
    generateCaptcha()
    submitButton.setOnClickListener {
        validateAndSubmit()

    }

}

private fun generateCaptcha() {
    val characters =
"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789"
    generatedCaptcha = (1..6).map { characters.random()
}.joinToString("")
    captchaTextView.text = "$generatedCaptcha"
}

private fun validateAndSubmit() {
    val mobileNumber = mobileNumberInput.text.toString()
    val captcha = captchaInput.text.toString()
    if (mobileNumber.length != 10 || !mobileNumber.all { it.isDigit() })
{
        mobileNumberInput.error = "Invalid mobile number"
        return
    }
    if (captcha != generatedCaptcha) {
        captchaInput.error = "Captcha does not match"
        return
    }
    val intent = Intent(this, MainActivity2::class.java).apply {
        putExtra("MOBILE_NUMBER", mobileNumber)
    }
    startActivity(intent)
}
}

```

## MainActivity2.kt :

```
package com.example.myapplication

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

class MainActivity2 : AppCompatActivity() {
    @SuppressLint("MissingInflatedId")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        enableEdgeToEdge()
        setContentView(R.layout.activity_main2)
        val mobileNumber = intent.getStringExtra("MOBILE_NUMBER")
        val welcomeTextView = findViewById<TextView>(R.id.welcomeTextView)
        welcomeTextView.text = "Welcome!" +
            "\n Your mobile number is \n$mobileNumber"
        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
        }
    }
}
```


## Activity\_main2.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=".MainActivity2">


    <TextView
        android:id="@+id/welcomeTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="@font/alfa_slab_one"
        android:text="Welcome!"
        android:textAlignment="center"
```

```
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.54"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.475" />
    </androidx.constraintlayout.widget.ConstraintLayout>
```


**Output :**



**PUBLIC DISTRIBUTION SYSTEM**

 9448940423

Enter the Captcha you see below

ffLHmV 

ffLHmV

**Submit**

CS & CP DEPARTMENT,  
GOVERNMENT OF TAMIL NADU



**Welcome!**  
**Your mobile number is**  
**9448940423**