

Ex. No. : 01B

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Check In & Check Out

Aim

Develop an application for Tech Lounge Check in / Check out App. to count number of students inside the block.

Procedure:

1. **Create a new Android project** in Android Studio:
 - Open Android Studio → Select “New Project” → Choose “Empty Activity” → Set Project Name and Package Name → Finish.
2. **Design the layout:**
 - Open activity_main.xml.
 - Use a LinearLayout with vertical orientation and center gravity.
 - Add a TextView to display the count, set textSize to 48sp, and initial text to “0”.
 - Add two Button elements:
 - Check In (to increase the count)
 - Check Out (to decrease the count)
3. **Configure AndroidManifest.xml:**
 - Ensure MainActivity is declared with MAIN action and LAUNCHER category.
 - Set the app theme and other attributes.
4. **Write the MainActivity code:**
 - Get references to the TextView and the two Buttons using findViewById.
 - Initialize a counter variable to 0.
 - Implement click listeners for the buttons:
 - **Check In** → increment the counter and update TextView.
 - **Check Out** → decrement the counter and update TextView.
5. **Run the application:**
 - Connect an Android device or start an emulator.

- Press **Check In** to increase the count and **Check Out** to decrease the count.

6. Verify the result:

- Ensure the counter updates correctly in real time when buttons are pressed.

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">

    <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.Counter">
        <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>
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="24dp">

    <TextView
        android:id="@+id/tvCounter"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="0"
        android:textSize="48sp"
        android:layout_marginBottom="32dp" />

    <Button
        android:id="@+id/btnIncrement"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Check In" />

    <Button
        android:id="@+id/btnDecrement"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Check Out"
        android:layout_marginTop="16dp" />

</LinearLayout>
```

MainActivity.kt

```
package com.example.counter

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

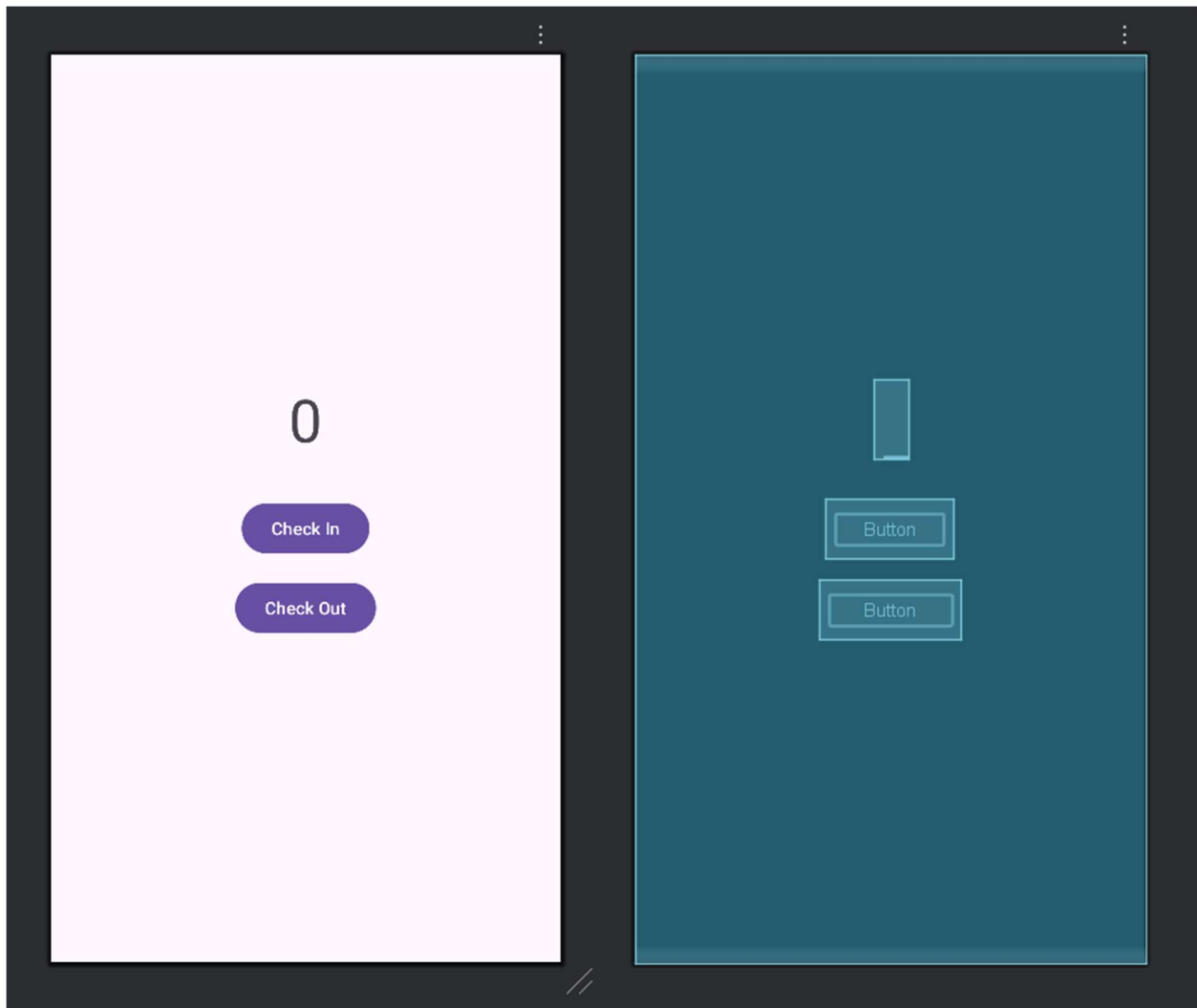
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        enableEdgeToEdge()
        setContentView(R.layout.activity_main)

        var counter = 0
        val tvCounter = findViewById<TextView>(R.id.tvCounter)
        val btnIncrement = findViewById<Button>(R.id.btnIncrement)
        val btnDecrement = findViewById<Button>(R.id.btnDecrement)

        btnIncrement.setOnClickListener {
            counter++
            tvCounter.text = counter.toString()
        }

        btnDecrement.setOnClickListener {
            counter--
            tvCounter.text = counter.toString()
        }
    }
}
```

Output



Result:

The application successfully counts the number of students inside the block. Pressing Check In increases the count, and Check Out decreases it, with the updated count displayed immediately.