Ex. No. : 01B **Date: 4.01.2026**

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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
   - Open Android Studio.
   - Select New Project → Empty Activity.
   - Enter the application name as Experiment2_MADD_46.
   - Choose Kotlin as the programming language.
   - Click Finish.
2) Configure AndroidManifest.xml
   - Open AndroidManifest.xml.
   - Declare MainActivity.
   - Add the MAIN action and LAUNCHER category so that the app starts from MainActivity.
   - Set the application theme.
3) Design the User Interface
   - Open activity_main.xml.
   - Use a LinearLayout with vertical orientation.
   - Set gravity to center and add padding.
   - Add a TextView to display the counter value.
   - Add two Buttons:
     - Check In (Increment)
     - Check Out (Decrement)

- Assign proper IDs to all UI components.

4) Write the Kotlin Code
   - Open MainActivity.kt.
   - Call setContentView() to load the layout.
   - Declare an integer variable counter and initialize it to 0.
   - Access UI components using findViewById().
   - Implement setOnClickListener():
     - Check In button increments the counter value.
     - Check Out button decrements the counter value.
   - Update the TextView with the current counter value.
5) Run the Application
   - Connect an emulator or Android device.
   - Click Run ▶ in Android Studio.
   - Launch the application.
6) Verify the Output
   - Clicking Check In increases the counter value.
   - Clicking Check Out decreases the counter value.
   - The updated value is displayed dynamically on the screen.

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.Experiment2_MADD_46">
        <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="175dp"
        android:layout_height="wrap_content"
        android:text="Check In" />

    <Button
```

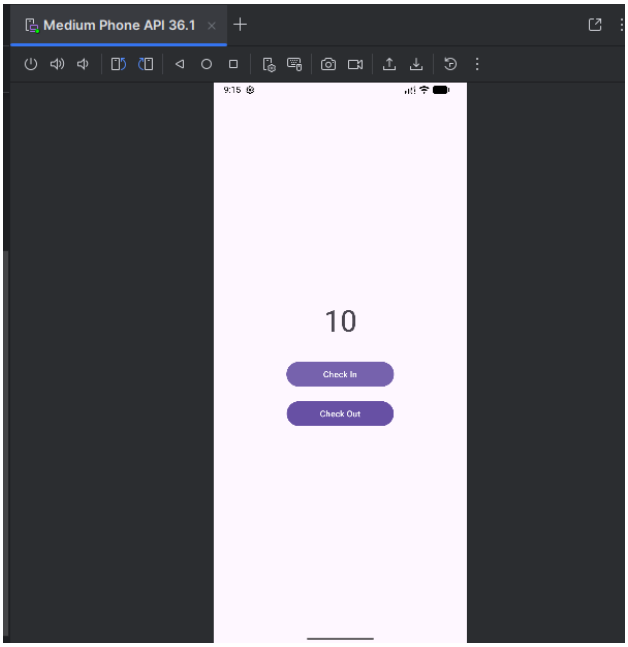
```
        android:id="@+id/btnDecrement"
        android:layout_width="174dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Check Out" />

</LinearLayout>
```

MainActivity.kt

```
package com.example.experiment_2_madd_46

import android.os.Bundle
import android.widget.Button
import android.widget.TextView
import androidx.activity.enableEdgeToEdge
import androidx.appcompat.app.AppCompatActivity

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 Android application was successfully developed to implement a counter system using buttons for increment (Check In) and decrement (Check Out) operations.