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## Telephony Services

### Aim

Implement an application to get Telephony services.

### *Procedure:*

#### **Step 1: Setting Up Your Environment**

1. Install Android Studio: Download and install Android Studio from the official Android Developer website if not already installed.
2. Create a New Project: Open Android Studio, start a new project by selecting "New Project" > "Empty Activity". Name your project (e.g., "TelephonyInfoApp"), select Kotlin as the language, and choose an API level.

#### **Step 2: Requesting Permissions**

Modify AndroidManifest.xml: To access telephony information, you'll need to request permissions in your AndroidManifest.xml. Open this file and add the following permissions

#### **Step 3: Designing the User Interface**

1. Open activity\_main.xml: Navigate to app > res > layout > activity\_main.xml.
2. Design the UI: Create a layout that includes TextViews to display telephony information such as the device's IMEI, SIM Serial Number, Network Country ISO, etc.

#### **Step 4: Accessing Telephony Information**

1. Update MainActivity.kt: You'll need to use TelephonyManager to get telephony information. Update your MainActivity.kt with logic to access and display this information.

#### **Step 5: Handling Permissions**

1. Implement onRequestPermissionsResult: Override this method in MainActivity.kt to handle the permission request's result.



## **Step 6: Running Your Application**

1. Select a Device: Choose an Android device or an emulator to run your application. Keep in mind that emulators may not provide all telephony information.
2. Run the App: Click the "Run" button in Android Studio to build and run your application.
3. Test the Functionality



## *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" package="com.example.exp_7" >

    <uses-permission android:name="android.permission.READ_PHONE_STATE" />
    <uses-permission
android:name="android.permission.READ_PHONE_NUMBERS" />
    <uses-permission android:name="android.permission.READ_SMS" />

    <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.Exp7"
        tools:targetApi="31">
        <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:orientation="vertical"
    android:padding="16dp"
    android:gravity="center"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <Button
        android:id="@+id/btnGetInfo"
        android:text="Get Telephony Info"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

    <TextView
        android:id="@+id/txtInfo"
        android:layout_marginTop="20dp"
        android:textSize="16sp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />

</LinearLayout>
```



## ***MainActivity.kt***

```
package com.example.exp_7

import android.Manifest
import android.content.pm.PackageManager
import android.os.Build
import android.os.Bundle
import android.telephony.TelephonyManager
import android.widget.Button
import android.widget.TextView
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import androidx.core.app.ActivityCompat
import androidx.core.content.ContextCompat

class MainActivity : AppCompatActivity() {

    private lateinit var btnGetInfo: Button
    private lateinit var txtInfo: TextView

    private val REQUEST_PHONE_STATE = 100

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

        btnGetInfo = findViewById(R.id.btnGetInfo)
        txtInfo = findViewById(R.id.txtInfo)

        btnGetInfo.setOnClickListener {
```



```

        if (ContextCompat.checkSelfPermission(this,
Manifest.permission.READ_PHONE_STATE) !=
PackageManager.PERMISSION_GRANTED) {

            ActivityCompat.requestPermissions(this,
arrayOf(Manifest.permission.READ_PHONE_STATE),
REQUEST_PHONE_STATE)

        }
    else {

        displayTelephonyInfo()

    }

}

}

private fun displayTelephonyInfo() {

    val telephonyManager = getSystemService(TELEPHONY_SERVICE) as
TelephonyManager

    val builder = StringBuilder()

    builder.append("Network Operator Name:
${telephonyManager.networkOperatorName}\n")

    builder.append("SIM Operator Name:
${telephonyManager.simOperatorName}\n")

    builder.append("SIM Country ISO: ${telephonyManager.simCountryIso}\n")

    if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.READ_PHONE_STATE) ==
PackageManager.PERMISSION_GRANTED) {

        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {

            builder.append("IMEI: ${telephonyManager.imei}\n")

        } else {

            builder.append("Device ID: ${telephonyManager.deviceId}\n")

        }

        builder.append("Phone Number: ${telephonyManager.line1Number}\n")

```



```

    }

    txtInfo.text = builder.toString()
}

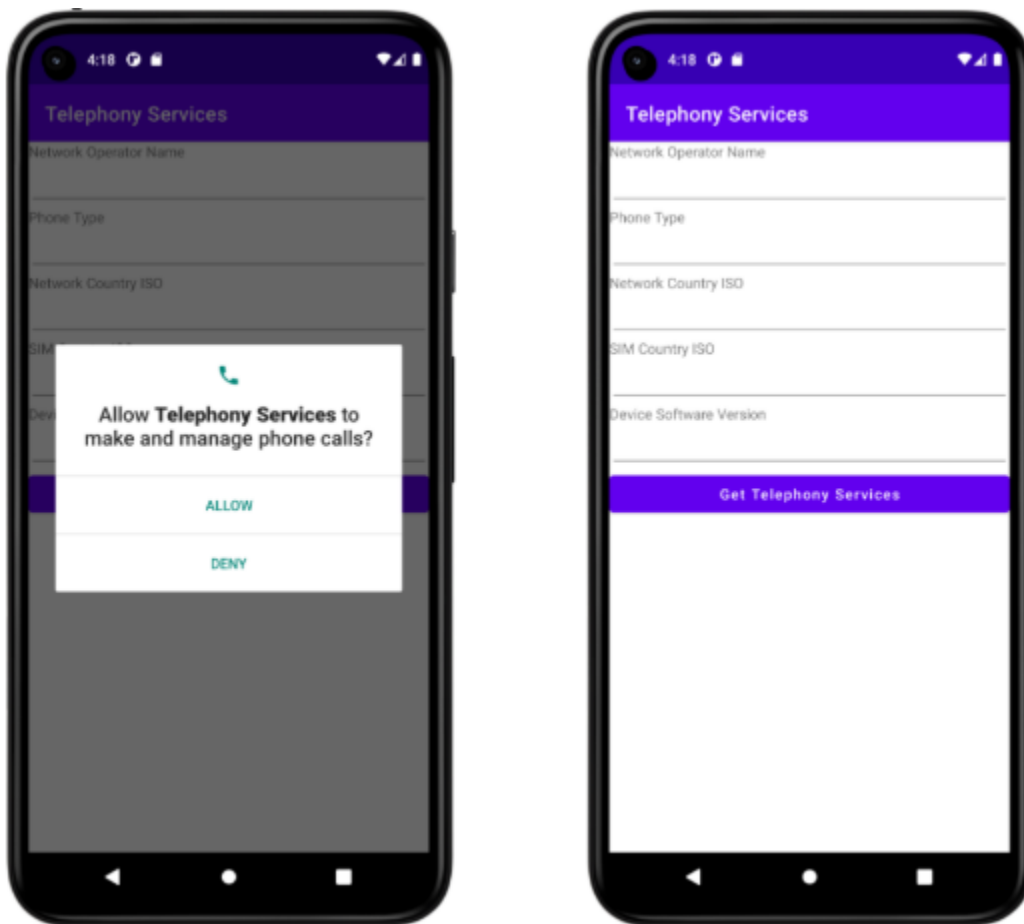
override fun onRequestPermissionsResult(requestCode: Int, permissions:
Array<out String>, grantResults: IntArray) {
    super.onRequestPermissionsResult(requestCode, permissions, grantResults)

    if (requestCode == REQUEST_PHONE_STATE) {
        if (grantResults.isNotEmpty() && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
            displayTelephonyInfo()
        } else {
            Toast.makeText(this, "Permission Denied",
Toast.LENGTH_SHORT).show()
        }
    }
}
}

```



## Output



## Result:

The app retrieves and displays telephony services information, such as phone number, network type, and SIM operator, by using the Telephony Manager and it is verified successfully.

