AIM:-

   Develop an android application to display the information of the telephony services.

PROCEDURE:-

Step 1: Create a new Android Project.

Step 2: Design the user Interface.

Step 3: Implement button click listener.

Step 4: Fetch Telephony Information.

Step 5: Update UI with telephony information.

Step 6: Test the application.

Step 7: Handle edge cases.

Step 8: Optimize and refine.

PRGRAM CODE:-

AndroidManifest.xml:

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"

   package="com.example.telephonyinfo">

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

   <application

      android:allowBackup="true"
```

```xml
            android:icon="@mipmap/ic_launcher"

            android:label="@string/app_name"

            android:roundIcon="@mipmap/ic_launcher_round"

            android:supportsRtl="true"

            android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">

            <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
<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:tools="http://schemas.android.com/tools"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".MainActivity">

    <Button

        android:id="@+id/buttonDisplayTelephonyInfo"

        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"

        android:text="Display Telephony Info"

        android:layout_centerInParent="true"

        android:onClick="displayTelephonyInfo" />

</RelativeLayout>
```

MainActivity.kt:

```kotlin
package com.example.telephonyinfo

import android.Manifest

import android.content.Context

import android.content.pm.PackageManager

import android.os.Build

import android.os.Bundle

import android.telephony.TelephonyManager

import android.widget.Toast

import androidx.appcompat.app.AppCompatActivity

class MainActivity : AppCompatActivity() {

    override fun onCreate(savedInstanceState: Bundle?) {

        super.onCreate(savedInstanceState)

        setContentView(R.layout.activity_main)

    }

    fun displayTelephonyInfo(view: android.view.View) {

        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M &&
```
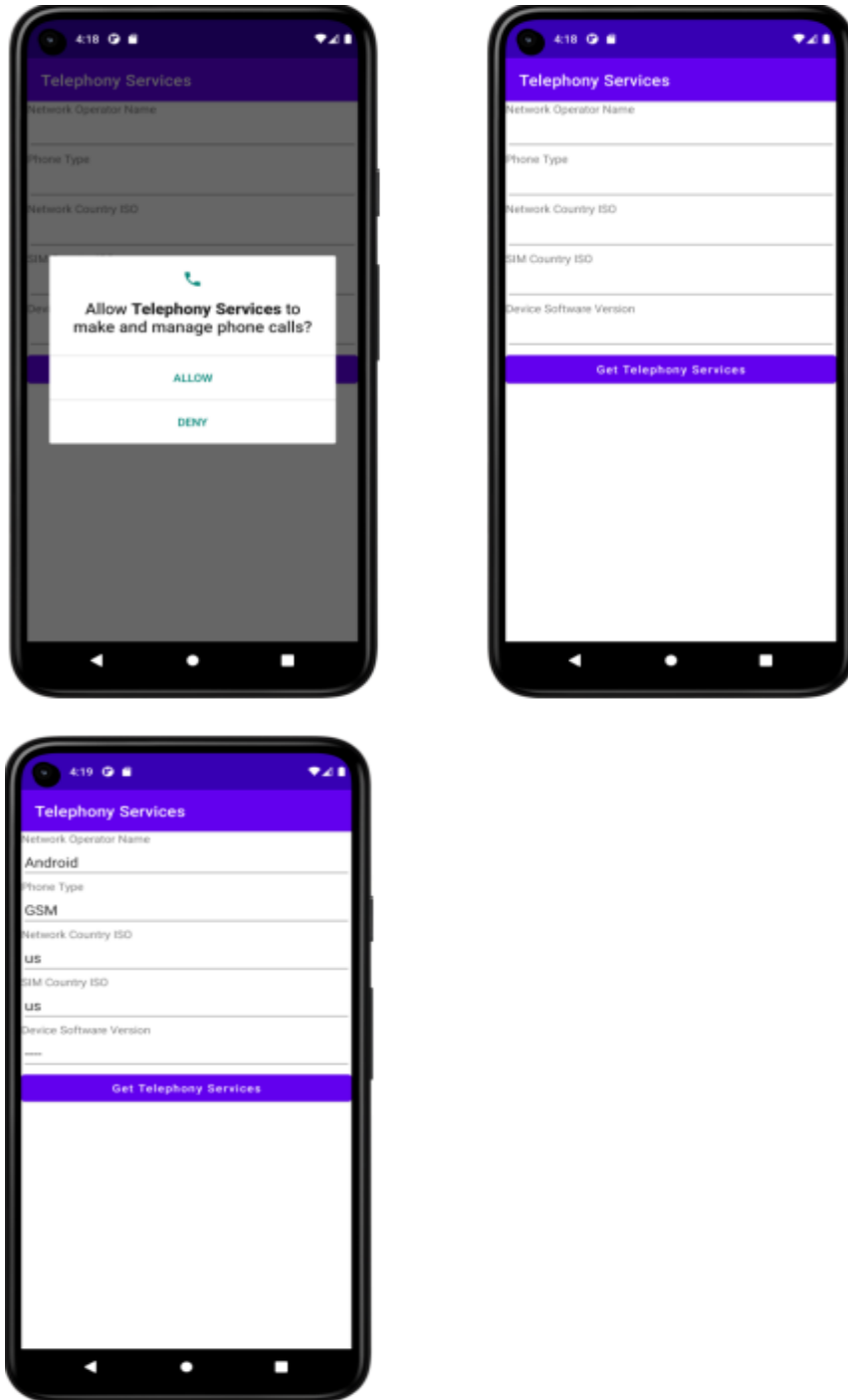
```kotlin
            checkSelfPermission(Manifest.permission.READ_PHONE_STATE) !=
PackageManager.PERMISSION_GRANTED

        ) {

requestPermissions(arrayOf(Manifest.permission.READ_PHONE_STATE), 1)

        } else {

            Thread {

                Thread.sleep(30000) // Delay of 30 seconds

                runOnUiThread {

                    val telephonyManager =

                        getSystemService(Context.TELEPHONY_SERVICE) as
TelephonyManager

                    val networkOperator = telephonyManager.networkOperatorName

                    val phoneType = when (telephonyManager.phoneType) {

                        TelephonyManager.PHONE_TYPE_GSM -> "GSM"

                        TelephonyManager.PHONE_TYPE_CDMA -> "CDMA"

                        else -> "Unknown" }

                    val info =

                        "Network Operator: $networkOperator\nPhone Type: $phoneType"

                    Toast.makeText(this, info, Toast.LENGTH_LONG).show()

                }

            }.start()

        }}

}
```

OUTPUT:-

RESULT:-

Thus to develop an android application to display the information of the telephony services is implemented and executed successfully.