

Ex. No. : 07

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TELEPHONY SERVICES

Aim

Implement an application to get Telephony services.

Procedure:

Step 1 : File -> NewProject

Provide the application name and Click "Next"

Step 2 : Select the target android devices

Select the minimum SDK to run the application. Click "Next".

Step 3 : Choose the activity for the application (By default choose "Blank Activity").

Click "Next".

Step 4 : Enter activity name and click "Finish".

Step 5 : Edit the program.

Step 6 : Run the application, 2-ways to run the application.

1. Running through emulator
2. Running through mobile device

AndroidManifest.xml

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.ex8">

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

    <application
        android:allowBackup="true"
        android:label="Telephony Info"
        android:theme="@style/Theme.EX8">
        <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>
```

MainActivity.kt

```
package com.example.ex8

import android.Manifest
import
android.content.pm.Package
eManager
import
android.location.Geocoder
import
android.location.Location
import
android.location.LocationM
```

```

anager
import android.os.Bundle
import
android.telephony.Telepho
nyManager
import
android.widget.Button
import
android.widget.TextView
import
androidx.appcompat.app.A
ppCompatActivity
import
androidx.core.app.Activity
Compat
import java.util.*

```

```

class MainActivity :
AppCompatActivity() {

    private lateinit var
tvTelephonyInfo: TextView
    private lateinit var
tvLocation: TextView
    private lateinit var
tvAddress: TextView
    private lateinit var
btnFetch: Button
    private val
LOCATION_PERMISSION
= 101
    private lateinit var
locationManager:

```

LocationManager

```
    override fun  
    onCreate(savedInstanceState:  
    Bundle?) {  
  
        super.onCreate(savedInsta  
        nceState)  
  
        setContentView(R.layout.a  
        ctivity_main)  
  
        tvTelephonyInfo =  
        findViewById(R.id.tvTelep  
        honyInfo)  
        tvLocation =  
        findViewById(R.id.tvLocati  
        on)  
        tvAddress =  
        findViewById(R.id.tvAddre  
        ss)  
        btnFetch =  
        findViewById(R.id.btnFetc  
        h)  
  
        btnFetch.setOnClickListener {  
            if  
            (checkPermissions()) {  
  
                displayTelephonyInfo()  
                fetchLocation()
```

```

        } else {

requestPermissions()
        }
    }
}

private fun
checkPermissions():
Boolean {
    return
    ActivityCompat.checkSelfPermission(
        this,
        Manifest.permission.ACCESS_FINE_LOCATION) ==
        PackageManager.PERMISSION_GRANTED &&

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

private fun
requestPermissions() {

    ActivityCompat.requestPermissions(
        this,

        arrayOf(Manifest.permission

```

```
on.ACCESS_FINE_LOCATION,  
Manifest.permission.READ  
_PHONE_STATE),
```

```
LOCATION_PERMISSION  
)  
}
```

```
override fun  
onRequestPermissionsResult(  
requestCode: Int,  
permissions: Array<out  
String>, grantResults:  
IntArray) {  
    if (requestCode ==  
LOCATION_PERMISSION  
&&  
grantResults.isNotEmpty()  
&& grantResults[0] ==  
PackageManager.PERMISSION_GRANTED) {
```

```
displayTelephonyInfo()  
    fetchLocation()  
    } else {
```

```
tvTelephonyInfo.text =  
"Permission Denied"  
    tvLocation.text =  
"Permission Denied"  
    }  
}
```

```

private fun
displayTelephonyInfo() {
    val telephonyManager
=
    getSystemService(TELEP
HONY_SERVICE) as
    TelephonyManager

```

```

    val info = ""
        Network Operator:
        ${telephonyManager.netwo
rkOperatorName}

```

```

        SIM Country:
        ${telephonyManager.simCo
untryIso}

```

```

        SIM Operator:
        ${telephonyManager.simO
peratorName}

```

```

        Phone Type: ${when
(telephonyManager.phoneT
ype) {

```

```

        TelephonyManager.PHON
E_TYPE_GSM -> "GSM"

```

```

        TelephonyManager.PHON
E_TYPE_CDMA ->
        "CDMA"

```

```

            else -> "Unknown"
        }}
        """.trimIndent()

```

```
        tvTelephonyInfo.text =  
info  
    }
```

```
    private fun  
    fetchLocation() {  
        locationManager =  
        getSystemService(LOCATI  
ON_SERVICE) as  
        LocationManager
```

```
        if  
(ActivityCompat.checkSelfPermission  
Permission(this,  
Manifest.permission.ACCE  
SS_FINE_LOCATION) !=  
PackageManager.PERMIS  
SION_GRANTED) return
```

```
        val location: Location?  
=  
locationManager.getLastK  
nownLocation(LocationMa  
nager.GPS_PROVIDER)  
        ?:  
locationManager.getLastK  
nownLocation(LocationMa  
nager.NETWORK_PROVI  
DER)
```

```
        if (location != null) {  
            val lat =  
location.latitude
```



```

        val lon =
location.longitude
        tvLocation.text =
"Latitude:
$lat\nLongitude: $lon"
        getAddress(lat, lon)
    } else {
        tvLocation.text =
"Unable to get location."
    }
}

```

```

private fun
getAddress(lat: Double,
lon: Double) {
    val geocoder =
Geocoder(this,
Locale.getDefault())
    try {
        val addressList =
geocoder.getFromLocation(
lat, lon, 1)
        if
(!addressList.isNullOrEmp
ty()) {
            val address =
addressList[0]
            val fullAddress =
address.getAddressLine(0)
            tvAddress.text =
"Address:\n$fullAddress"
        } else {
            tvAddress.text =

```

```

"Unable to get address."
    }
    } catch (e: Exception) {
        e.printStackTrace()
        tvAddress.text =
"Geocoder error:
${e.localizedMessage}"
    }
}
}

```

Activivty_main.xml

```

<?xml version="1.0"
encoding="utf-8"?>
<ScrollView
xmlns:android="http://sche
mas.android.com/apk/res/a
ndroid"

android:layout_width="mat
ch_parent"

android:layout_height="ma
tch_parent">

    <LinearLayout

android:orientation="vertic
al"

android:padding="16dp"

```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content">
```

```
<TextView
```

```
android:id="@+id/tvTelephonyInfo"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:text="Telephony Info"
```

```
android:textStyle="bold"
```

```
android:textSize="16sp" />
```

```
<TextView
```

```
android:id="@+id/tvLocation"
```

```
android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"

    android:text="Location"

    android:textStyle="bold"

    android:layout_marginTop
    ="20dp"

    android:textSize="16sp" />

    <TextView

    android:id="@+id/tvAddresses"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:text="Address"

    android:textStyle="bold"

    android:layout_marginTop
    ="20dp"

    android:textSize="16sp" />

    <Button
```

```

android:id="@+id/btnFetch
"

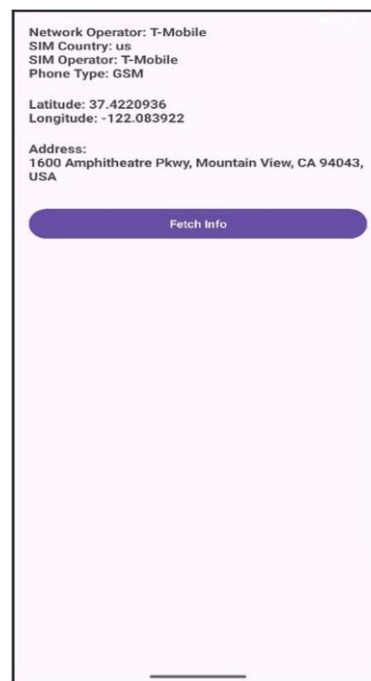
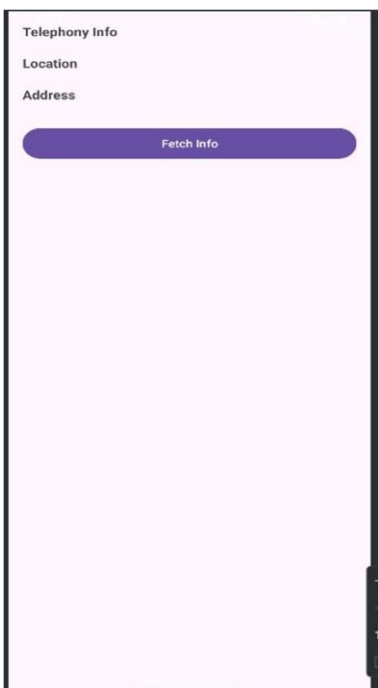
android:layout_width="match_parent"

android:layout_height="wrap_content"
    android:text="Fetch
Info"

android:layout_marginTop
="30dp"/>
</LinearLayout>
</ScrollView>

```

Output :



Result:

The Application developed using Android Studio was done.