Ganpat University

U.V. Patel College of Engineering

|| विद्यया समाजोत्कर्षः ||

Department of Computer

Engineering/Information Technology

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:orientation="vertical"
    >

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/form_section"
        android:padding="13dp"
        android:orientation="vertical"
        android:elevation="20dp"
        android:layout_alignParentTop="true"
        >

        <com.google.android.material.textfield.TextInputLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Phone Number"
            app:startIconDrawable="@drawable/ic_baseline_local_phone_24"
            android:layout_marginTop="13dp"
            >

            <com.google.android.material.textfield.TextInputEditText
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:id="@+id/phone_number"
                />

        </com.google.android.material.textfield.TextInputLayout>

        <com.google.android.material.textfield.TextInputLayout
            android:id="@+id/message_box"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Meesage..."
```

```xml
        app:startIconDrawable="@drawable/ic_baseline_message_24"
        android:layout_marginTop="13dp"
        >

        <com.google.android.material.textfield.TextInputEditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:id="@+id/message_box_input"
            android:inputType="textMultiLine"
            />

    </com.google.android.material.textfield.TextInputLayout>

    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="13dp"
        >

        <Button
            android:id="@+id/send_btn"
            android:layout_width="130dp"
            android:layout_height="wrap_content"
            android:layout_alignParentStart="true"
            android:text="Send SMS" />

        <Button
            android:id="@+id/inbox_btn"
            android:layout_width="130dp"
            android:layout_height="wrap_content"
            android:layout_alignParentEnd="true"
            android:text="Inbox" />
    </RelativeLayout>

</LinearLayout>

    <ListView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/listView"
        android:layout_marginTop="225dp"
        android:padding="13dp"
        android:scrollbarSize="0dp"
        android:dividerHeight="1dp"
        android:divider="@color/black"
        android:layout_alignTop="@id/form_section"
        android:layout_alignParentBottom="true"
```

```
    />

</RelativeLayout>
```

MainActivity.kt:

```kotlin
package com.example.practical_13_20012532001

import android.content.BroadcastReceiver
import android.content.IntentFilter
import android.content.pm.PackageManager
import android.net.Uri
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.provider.Telephony
import android.telephony.SmsManager
import android.widget.ArrayAdapter
import android.widget.Button
import android.widget.LinearLayout
import android.widget.ListView
import androidx.appcompat.app.AlertDialog
import androidx.core.app.ActivityCompat
import androidx.core.content.ContextCompat
import com.google.android.material.textfield.TextInputEditText

class MainActivity : AppCompatActivity() {

    private lateinit var listViewInbox : ListView
    private lateinit var sendBtn : Button
    private lateinit var readBtn : Button
    private lateinit var phoneNumberEdit : TextInputEditText
    private lateinit var messageEdit : TextInputEditText
    private lateinit var formSection : LinearLayout

    companion object{
        private const val SMS_PERMISSION_CODE = 100
    }

    private val isSMSReadPermission : Boolean
        get() =
            ContextCompat.checkSelfPermission(this,android.Manifest.permission.READ_SMS) ==
                PackageManager.PERMISSION_GRANTED

    private val isSMSWritePermission : Boolean
        get() =
            ContextCompat.checkSelfPermission(this,android.Manifest.permission.SEND_SMS) ==
```

```kotlin
            PackageManager.PERMISSION_GRANTED

private val smsList : ArrayList<String> = ArrayList()
private lateinit var smsBroadcastReceiver : BroadcastReceiver

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

    listViewInbox = findViewById(R.id.listView)
    phoneNumberEdit = findViewById(R.id.phone_number)
    messageEdit = findViewById(R.id.message_box_input)
    sendBtn = findViewById(R.id.send_btn)
    readBtn = findViewById(R.id.inbox_btn)
    formSection = findViewById(R.id.form_section)

    if(checkRequestPermission()){
        loadSMSInbox()
    }

    readBtn.setOnClickListener {
        loadSMSInbox()
    }


    sendBtn.setOnClickListener {
        if(!checkRequestPermission()) return@setOnClickListener

        val phoneno = phoneNumberEdit.text.toString()
        val sMessage = messageEdit.text.toString()
        val smsManager = SmsManager.getDefault()
        smsManager.sendTextMessage(phoneno,null,sMessage,null,null)
    }


    smsBroadcastReceiver = SMSBroadcastReceiver()
    registerReceiver(smsBroadcastReceiver, IntentFilter(Telephony.Sms.Intents.SMS_RECEIVED_ACTION))
    (smsBroadcastReceiver as SMSBroadcastReceiver).setListener{ sPhone, sMsg ->
        val builder = AlertDialog.Builder(this@MainActivity)
        builder.setTitle("New SMS : $sPhone")
        builder.setMessage(sMsg)
        builder.setPositiveButton("Ok"){ dialog, which -> dialog.dismiss() }
        builder.setCancelable(false)
        builder.show()
    }
}


private fun requestSMSPermission(){
```

```kotlin
if(ActivityCompat.shouldShowRequestPermissionRationale(this,android.Manifest.permission.READ_SMS)){

    }
    ActivityCompat.requestPermissions(this,
        arrayOf(
        android.Manifest.permission.READ_SMS,
        android.Manifest.permission.SEND_SMS,
        android.Manifest.permission.RECEIVE_SMS
        ), SMS_PERMISSION_CODE)
}

private fun checkRequestPermission() : Boolean{
    return if(!isSMSReadPermission || !isSMSWritePermission){
        requestSMSPermission()
        false
    }else true
}

private fun loadSMSInbox(){
    if(!checkRequestPermission()) return

    val uriSMS = Uri.parse("content://sms/inbox")
    val cursor = contentResolver.query(uriSMS,null,null,null,null)
    while(cursor!!.moveToNext()){
        var sms = ""
        sms += "From: ${cursor.getString(2)}\n ${cursor.getString(12)}"
        smsList.add(sms)
    }
    listViewInbox.adapter = ArrayAdapter(this,android.R.layout.simple_list_item_1,smsList)
}

override fun onDestroy() {
    unregisterReceiver(smsBroadcastReceiver)
    super.onDestroy()
}

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

```kotlin
        else{

        }
    }
}
```

SMSBroadcastReceiver.kt:

```kotlin
package com.example.practical_13_20012532001

import android.content.BroadcastReceiver
import android.content.Context
import android.content.Intent
import android.os.Build
import android.provider.Telephony

class SMSBroadcastReceiver : BroadcastReceiver() {
    var listener : ((sPhoneNo : String, sMsg : String)->Unit)? = null
    @JvmName("setListener1")
    fun setListener(list : ((sPhoneNo : String, sMsg : String)->Unit)?) {
        listener = list
    }

    override fun onReceive(context: Context?, intent: Intent?) {

        if(intent?.action == Telephony.Sms.Intents.SMS_RECEIVED_ACTION){
            var sPhoneNo = ""
            var sSMSBody = ""
            if(Build.VERSION.SDK_INT >= Build.VERSION_CODES.M){
                for(smsMessage in Telephony.Sms.Intents.getMessagesFromIntent(intent)){
                    sPhoneNo = smsMessage.displayOriginatingAddress
                    sSMSBody += smsMessage.messageBody
                }
            }

            if(listener!=null){
                listener!!.invoke(sPhoneNo,sSMSBody)
            }
        }
    }
}
```

AndroidManifest.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.practical_13_20012532001">

    <uses-permission android:name="android.permission.READ_SMS" />
    <uses-permission android:name="android.permission.SEND_SMS" />
    <uses-permission android:name="android.permission.RECEIVE_SMS" />

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical_13_20012532001">
        <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>
```

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