Ex. No.   :   08 - A   Date   :

Register No. :   221701032   Name : LINGESH VK

Send SMS

Aim:

Develop an application to send SMS.

Procedure:

Step 1 : File → New Project

Provide the application name (e.g.,"SMS") 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

Add SMS permissions (SEND_SMS) in the manifest file.

Use SMSMANAGER in MainActivity.kt to send messages from the app to a .
provided phone number

Step 6 : Run the application

Two ways to run the application:

1. Running through emulator (with Sim Card Configured)

2. Running through mobile device

AndroidManifest.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.sms">
  <!-- Required permission for sending SMS -->
  <uses-permission android:name="android.permission.SEND_SMS" />
  <!-- Declare that the app uses telephony features but doesn't require them -->
  <uses-feature
    android:name="android.hardware.telephony"
    android:required="false" />
  <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.SMS">
    <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
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout 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"
```

```xml
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/white"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/titleTextView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="@color/purple_500"
        android:padding="16dp"
        android:text="Send SMS"
        android:textColor="@color/white"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/phoneNumberEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:background="@drawable/edit_text_background"
        android:hint="Enter the phone number...!"
        android:inputType="phone"
        android:padding="12dp"
        android:textSize="16sp"
        app:layout_constraintTop_toBottomOf="@id/titleTextView" />
    <EditText
        android:id="@+id/messageEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:background="@drawable/edit_text_background"
```

```xml
    android:hint="Enter the message...!"

    android:inputType="textMultiLine"

    android:minLines="3"

    android:padding="12dp"

    android:textSize="16sp"

    app:layout_constraintTop_toBottomOf="@id/phoneNumberEditText" />

  <Button

    android:id="@+id/sendButton"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_marginStart="16dp"

    android:layout_marginTop="16dp"

    android:layout_marginEnd="16dp"

    android:background="@drawable/button_background"

    android:padding="12dp"

    android:text="Send"

    android:textColor="@color/white"

    android:textSize="16sp"

    app:layout_constraintTop_toBottomOf="@id/messageEditText" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.kt:

```kotlin
package com.example.sms

import android.Manifest

import android.content.pm.PackageManager

import android.os.Build

import android.os.Bundle

import android.telephony.SmsManager

import android.widget.Button

import android.widget.EditText

import android.widget.Toast

import androidx.appcompat.app.AlertDialog

import android.appcompat.app.AppCompatActivity
```

```
import android.core.app.ActivityCompat

import androidx.core.content.ContextCompat

class MainActivity : AppCompatActivity() {

  private lateinit var phoneNumberEditText: EditText

  private lateinit var messageEditText: EditText

  private lateinit var sendButton: Button

  private val SMS_PERMISSION_CODE = 100

  override fun onCreate(savedInstanceState: Bundle?) {

    super.onCreate(savedInstanceState)

    setContentView(R.layout.activity_main)

    phoneNumberEditText = findViewById(R.id.phoneNumberEditText)

    messageEditText = findViewById(R.id.messageEditText)

    sendButton = findViewById(R.id.sendButton)

    sendButton.setOnClickListener {

      if (checkSmsPermission()) {

        sendSMS()

      } else {

        requestSmsPermission()

      }

    }

  }

  private fun checkSmsPermission(): Boolean {

    return ContextCompat.checkSelfPermission(

      this,

      Manifest.permission.SEND_SMS

    ) == PackageManager.PERMISSION_GRANTED

  }

  private fun requestSmsPermission() {

    if (ActivityCompat.shouldShowRequestPermissionRationale(

        this,

        Manifest.permission.SEND_SMS
```

```kotlin
            )
        ) {
            AlertDialog.Builder(this)
                .setTitle("Permission needed")
                .setMessage("Allow Send SMS to send and view SMS messages?")
                .setPositiveButton("ALLOW") { _, _ ->
                    ActivityCompat.requestPermissions(
                        this,
                        arrayOf(Manifest.permission.SEND_SMS),
                        SMS_PERMISSION_CODE
                    )
                }
                .setNegativeButton("DENY") { dialog, _ ->
                    dialog.dismiss()
                }
                .create()
                .show()
        } else {
            ActivityCompat.requestPermissions(
                this,
                arrayOf(Manifest.permission.SEND_SMS),
                SMS_PERMISSION_CODE
            )
        }
    }
    override fun onRequestPermissionsResult(
        requestCode: Int,
        permissions: Array<out String>,
        grantResults: IntArray
    ) {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults)
```

```kotlin
        if (requestCode == SMS_PERMISSION_CODE) {

            if (grantResults.isNotEmpty() && grantResults[0] == PackageManager.PERMISSION_GRANTED) {

                sendSMS()

            } else {

                Toast.makeText(

                    this,

                    "SMS permission denied. Cannot send messages.",

                    Toast.LENGTH_SHORT

                ).show()

            }

        }

    }

    private fun sendSMS() {

        val phoneNumber = phoneNumberEditText.text.toString().trim()

        val message = messageEditText.text.toString().trim()

        if (phoneNumber.isEmpty() || message.isEmpty()) {

            Toast.makeText(this, "Please enter both phone number and message", Toast.LENGTH_SHORT).show()

            return

        }

        try {

            val smsManager = if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.S) {

                this.getSystemService(SmsManager::class.java)

            } else {

                @Suppress("DEPRECATION")

                SmsManager.getDefault()

            }

            smsManager.sendTextMessage(phoneNumber, null, message, null, null)

            Toast.makeText(this, "Message Sent", Toast.LENGTH_SHORT).show()

            messageEditText.text.clear()

        } catch (e: Exception) {

            Toast.makeText(this, "Failed to send SMS: ${e.message}", Toast.LENGTH_SHORT).show()
```
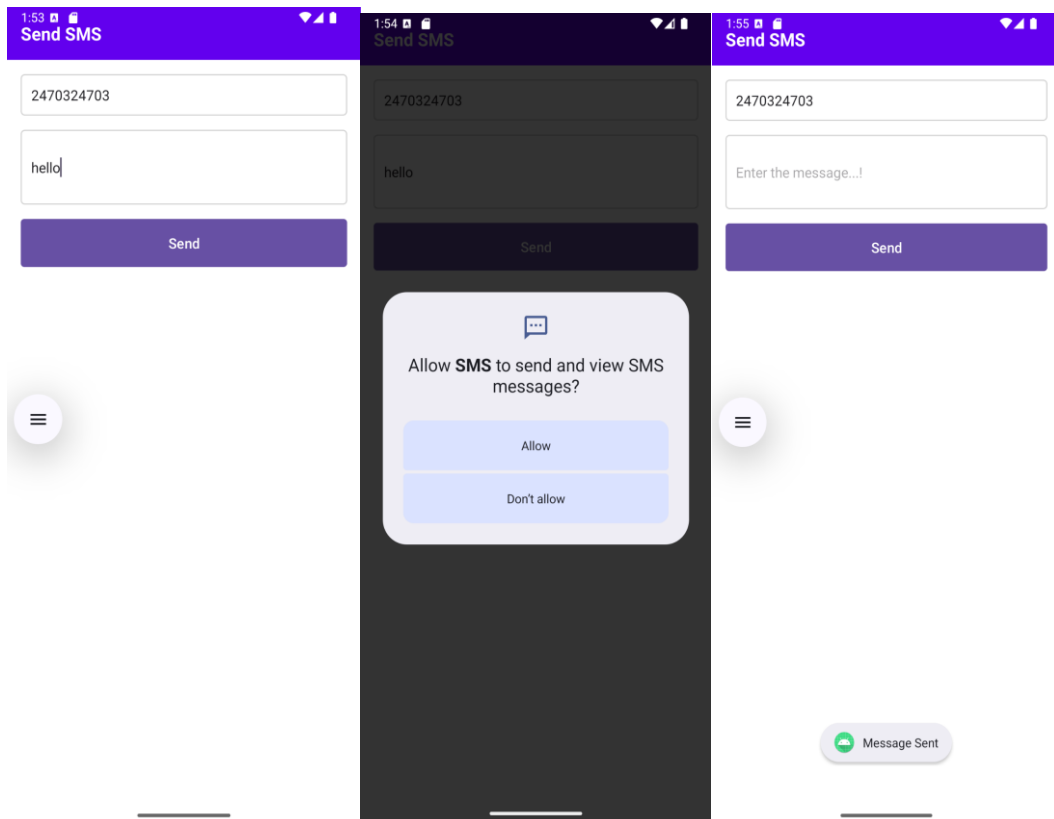
```
        e.printStackTrace()

    }

  }

}
```

Output:

Result:

The SMS application successfully sends text messages to specified phone numbers using Kotlin code on a mobile device with SMS permission granted.