MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-8A SEND SMS

AIM:

To send an SMS.

PROCEDURE:

Step 1: Create a New Project

- Open Android Studio → Click New Project → Enter project name (e.g., *SMSApp*).
- Select minimum SDK (for example, API 21 or higher) → Click Next → Choose Empty Activity → Click Finish.

Step 2: Select your target device compatibility

- Choose the minimum SDK version that supports SMS features (API 21 or above is recommended). Click Next.

Step 3: Design the User Interface

- Select Empty Activity and proceed by clicking Next.

Step 4: Configure the activity

- Provide the Activity Name (e.g., MainActivity) and layout name (e.g., activity_main). Then click Finish.

Step 5: Handle Runtime Permissions

- Add EditTexts for phone number and message input
- Add a Button to send SMS
- Use SmsManager in the backend code
- Don't forget to request SEND_SMS permission in the manifest and at runtime.

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Step 6: Run the Application

- Using a physical Android device with SMS capabilities
- Using an emulator (note: emulators typically don’t support SMS sending, so prefer a real device for full testing)

CODE:

AndroidManifest.xml :

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

    <!-- Permissions -->
    <uses-permission android:name="android.permission.SEND_SMS" />
    <uses-permission android:name="android.permission.READ_PHONE_STATE" />
    <uses-feature android:name="android.hardware.telephony" android:required="false" />

    <application
        android:allowBackup="true"
        android:label="Simple SMS Sender"
        android:icon="@mipmap/ic_launcher"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.AppCompat.Light">
        <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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="24dp">

    <EditText
        android:id="@+id/editTextPhone"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Phone Number"
        android:inputType="phone"
        android:padding="12dp" />
```

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```
    <EditText
        android:id="@+id/editTextMessage"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Type your message"
        android:inputType="textMultiLine"
        android:minLines="3"
        android:gravity="top"
        android:padding="12dp"
        android:layout_marginTop="12dp"/>

    <Button
        android:id="@+id/buttonSend"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Send SMS"
        android:layout_marginTop="20dp"/>
</LinearLayout>
```

MainActivity.kt :

```
package com.example.smsapp

import android.Manifest
import android.content.pm.PackageManager
import android.os.Bundle
```

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```
import android.telephony.SmsManager
import android.widget.Button
import android.widget.EditText
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 editTextPhone: EditText
    private lateinit var editTextMessage: EditText
    private lateinit var buttonSend: Button

    private val SMS_PERMISSION_CODE = 123

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

        editTextPhone = findViewById(R.id.editTextPhone)
        editTextMessage = findViewById(R.id.editTextMessage)
        buttonSend = findViewById(R.id.buttonSend)

        buttonSend.setOnClickListener {
            checkPermissionAndSend()
        }
    }

    private fun checkPermissionAndSend() {
        val phone = editTextPhone.text.toString().trim()
        val message = editTextMessage.text.toString().trim()

        if (phone.isEmpty() || message.isEmpty()) {
            Toast.makeText(this, "Phone number and message cannot be empty",
Toast.LENGTH_SHORT).show()
            return
        }

        if (ContextCompat.checkSelfPermission(this,
Manifest.permission.SEND_SMS)
            != PackageManager.PERMISSION_GRANTED) {
            ActivityCompat.requestPermissions(
                this,
                arrayOf(Manifest.permission.SEND_SMS),
                SMS_PERMISSION_CODE
            )
        } else {
            sendSMS(phone, message)
        }
    }

    private fun sendSMS(phone: String, message: String) {
        try {
            val smsManager = SmsManager.getDefault()
            smsManager.sendTextMessage(phone, null, message, null, null)
            Toast.makeText(this, "SMS sent successfully", Toast.LENGTH_SHORT).show()
            editTextPhone.text.clear()
            editTextMessage.text.clear()
        } catch (e: Exception) {
            Toast.makeText(this, "Failed to send SMS: ${e.message}", Toast.LENGTH_LONG).show()
            e.printStackTrace()
        }
    }

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

        if (requestCode == SMS_PERMISSION_CODE && grantResults.isNotEmpty()
            && grantResults[0] == PackageManager.PERMISSION_GRANTED
        ) {
            val phone = editTextPhone.text.toString().trim()
```

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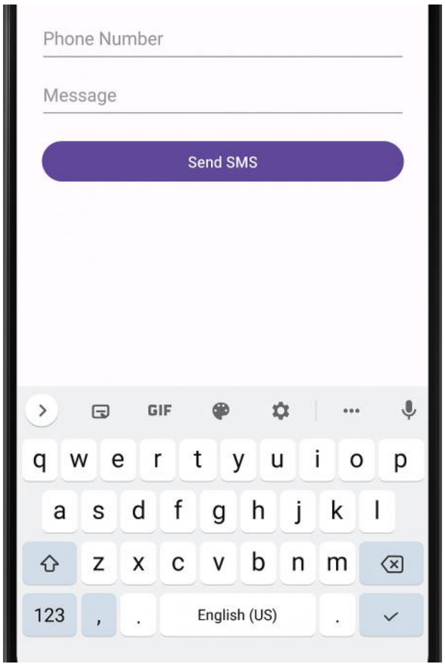
```
            val message = editTextMessage.text.toString().trim()
            sendSMS(phone, message)
        } else {
            Toast.makeText(this, "SMS permission denied",
Toast.LENGTH_SHORT).show()
        }
    }
}
```

OUTPUT IMAGE:



RESULT:

The application has been successfully developed using Kotlin and android studio.