

## **Exercise 8 – SMS Sending and Notification**

### **Aim:**

Develop an android app that sends SMS and creates an alert upon receiving the SMS with text in the notification.

### **Code:**

```
//activity_main.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"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="SMS App"
        android:textAppearance="@style/TextAppearance.AppCompat.Display1"
        android:textColor="#067A6A"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.096" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="28dp"
        android:layout_marginEnd="140dp"
        android:text="Send an SMS"
        android:textAppearance="@style/TextAppearance.AppCompat.Large"
        android:textColor="#0C675A"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView2" />
    <TextView
        android:id="@+id/phno"
```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="44dp"
android:layout_marginTop="44dp"
android:text="Phone Number:"
android:textAppearance="@style/TextAppearance.AppCompat.Medium"
android:textColor="#304FFE"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView" />
<TextView
android:id="@+id/smsstv"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="44dp"
android:layout_marginTop="104dp"
android:text="SMS Content:"
android:textAppearance="@style/TextAppearance.AppCompat.Medium"
android:textColor="#304FFE"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView" />
<EditText
android:id="@+id/etPhone"
android:layout_width="199dp"
android:layout_height="39dp"
android:layout_marginStart="12dp"
android:layout_marginTop="36dp"
android:ems="10"
android:inputType="phone"
android:textAppearance="@style/TextAppearance.AppCompat.Body1"
app:layout_constraintStart_toEndOf="@+id/phno"
app:layout_constraintTop_toBottomOf="@+id/textView" />
<EditText
android:id="@+id/content"
android:layout_width="341dp"
android:layout_height="123dp"
android:layout_marginTop="68dp"
android:layout_marginEnd="32dp"
android:ems="10"
android:gravity="start|top"
android:hint="Type here"
android:inputType="textMultiLine"
android:textAppearance="@style/TextAppearance.AppCompat.Body1"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/etPhone" />
<Button
android:id="@+id/sendbtn"
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
android:layout_marginTop="48dp"
android:layout_marginEnd="160dp"
android:backgroundTint="#00BFA5"
android:text="SEND"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/content" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

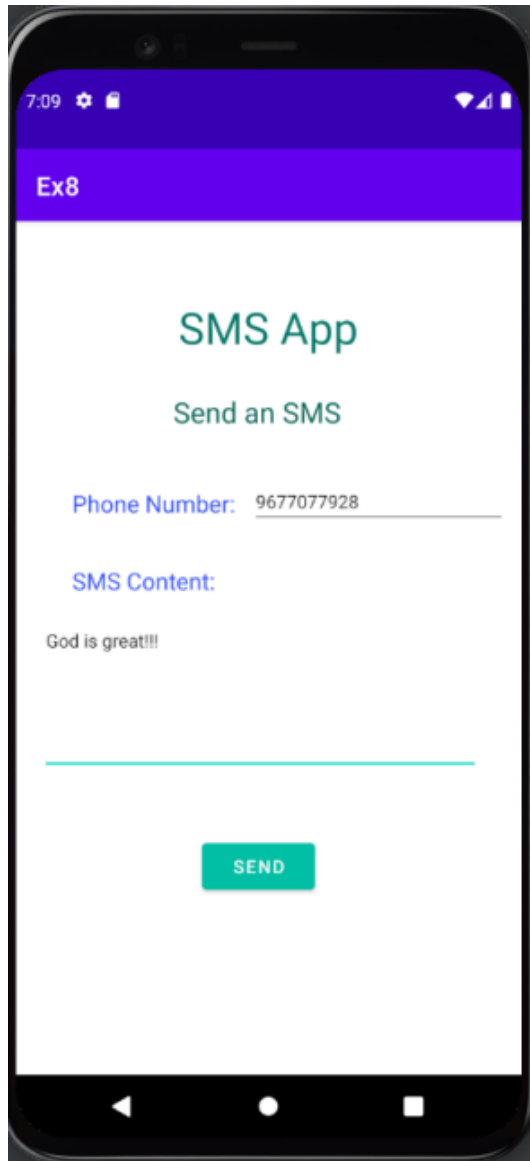
```
//MainActivity.java
```

```
package com.example.ex8;
import android.Manifest;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
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;

public class MainActivity extends AppCompatActivity {
    private static final int MY_PERMISSIONS_REQUEST_SEND_SMS = 0;
    Button sendBtn;
    EditText txtphoneNo;
    EditText txtMessage;
    String phoneNo;
    String message;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        sendBtn = (Button) findViewById(R.id.sendbtn);
        txtphoneNo = (EditText) findViewById(R.id.etPhone);
        txtMessage = (EditText) findViewById(R.id.content);
        sendBtn.setOnClickListener(new View.OnClickListener() {
            public void onClick(View view) {
                sendSMSMessage();
            }
        });
    }
    protected void sendSMSMessage() {
```

```
phoneNo = txtphoneNo.getText().toString();
message = txtMessage.getText().toString();
if (ContextCompat.checkSelfPermission(this, Manifest.permission.SEND_SMS)
    != PackageManager.PERMISSION_GRANTED) {
    if (ActivityCompat.shouldShowRequestPermissionRationale(
        this, Manifest.permission.SEND_SMS)) {
    } else {
        ActivityCompat.requestPermissions(this,
            new String[] {Manifest.permission.SEND_SMS},
            MY_PERMISSIONS_REQUEST_SEND_SMS);
    }
}
}
@Override
public void onRequestPermissionsResult(int requestCode, String permissions[],
int[] grantResults) {
    switch (requestCode) {
        case MY_PERMISSIONS_REQUEST_SEND_SMS: {
            if (grantResults.length > 0
                && grantResults[0] == PackageManager.PERMISSION_GRANTED) {
                SmsManager smsManager = SmsManager.getDefault();
                smsManager.sendTextMessage(phoneNo, null, message, null, null);
                Toast.makeText(getApplicationContext(), "SMS sent.",
                    Toast.LENGTH_LONG).show();
            }
            else {
                Toast.makeText(getApplicationContext(), "SMS failed, please try
                    again.", Toast.LENGTH_LONG).show();
                return;
            }
        }
    }
}
}
}
```

**Output:**



**Learning outcomes:**

- An android application to send an SMS was implemented.
  - A notification for the SMS was also implemented.
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