Practical No 29

X.1

- **Program**
- **Send SMS:**
- **XML File:**

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
 xmlns:tools="http://schemas.android.com/tools"
 android:layout_width="match_parent"
 android:layout_height="match_parent"
 tools:context="MainActivity">
 <TextView
 android:id="@+id/textView1"
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:layout_alignParentTop="true"
 android:layout_centerHorizontal="true"
 android:layout_marginTop="118dp"
 android:text="Sending SMS "
 android:textColor="#0E0B0B"
 android:textSize="30dp" />
 <EditText
 android:id="@+id/editText"
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:layout_below="@+id/textView1"
 android:layout_alignParentStart="true"
 android:layout_centerHorizontal="true"
 android:layout_marginStart="118dp"
 android:layout_marginTop="109dp"
 android:hint="Enter Phone Number"
 android:minHeight="48dp"
```

```xml
        android:phoneNumber="true"
        android:textColorHint="@color/black" />
    <EditText
        android:id="@+id/editText2"
        android:layout_width="145dp"
        android:layout_height="wrap_content"
        android:layout_below="@+id/editText"
        android:layout_alignStart="@+id/editText"
        android:layout_alignLeft="@+id/editText"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="3dp"
        android:layout_marginLeft="3dp"
        android:layout_marginTop="24dp"
        android:hint="Enter SMS"
        android:minHeight="48dp"
        android:textColorHint="@color/black" />
    <Button
        android:id="@+id/btnSendSMS"
        android:layout_width="137dp"
        android:layout_height="wrap_content"
        android:layout_below="@+id/editText2"
        android:layout_alignParentStart="true"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="125dp"
        android:layout_marginTop="42dp"
        android:minHeight="48dp"
        android:text="Send Sms"
        tools:ignore="TouchTargetSizeCheck" />
</RelativeLayout>
```

- **JAVA File:**

```java
package com.example.pr_29_1;
import android.Manifest;
```

```java
import android.app.Activity;

import android.content.Intent;

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.core.app.ActivityCompat;

import androidx.core.content.ContextCompat;
public class MainActivity extends Activity {
 private static final int MY_PERMISSIONS_REQUEST_SEND_SMS =0 ;
 Button sendBtn,inbox;
 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.btnSendSMS);
 txtphoneNo = (EditText) findViewById(R.id.editText);
 txtMessage = (EditText) findViewById(R.id.editText2);
 sendBtn.setOnClickListener(new View.OnClickListener() {
 public void onClick(View view) {
 phoneNo = txtphoneNo.getText().toString();
 message = txtMessage.getText().toString();
 sendSMSMessage();
 try {
 SmsManager smManager = SmsManager.getDefault();
smManager.sendTextMessage(phoneNo, null, message, null,
null);
```

```java
 Toast.makeText(getApplicationContext(), "Message Sent
to Patient", Toast.LENGTH_LONG).show();
 } catch (Exception e) {
 Toast.makeText(getApplicationContext(), "Some Error
occurred", Toast.LENGTH_LONG).show();
 }
 }
 });
 }
 protected void sendSMSMessage() {
 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);
 }
 }
 }
 }
```
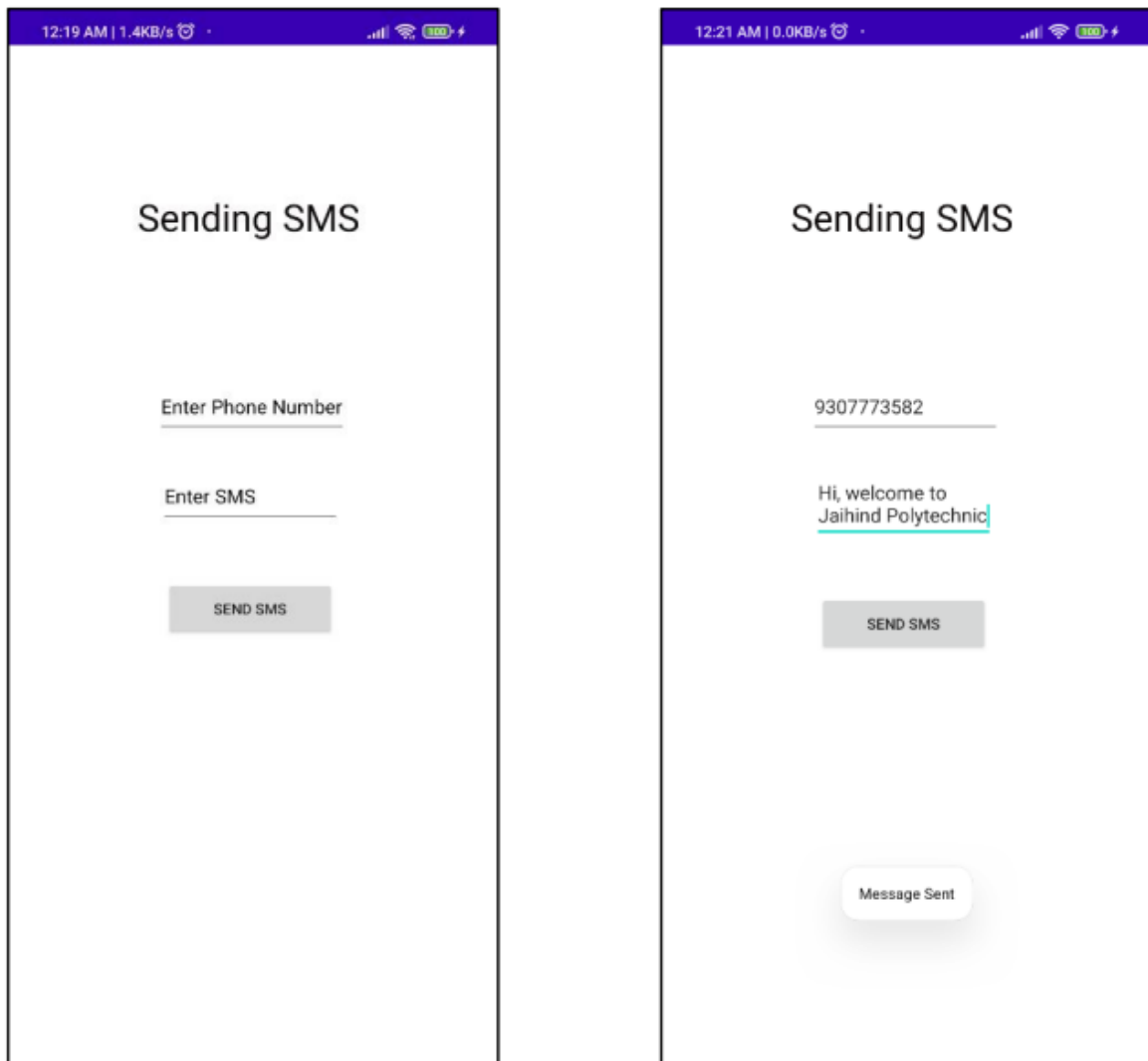
- **Manifest File:**
  ```xml
  <uses-permission android:name="android.permission.SEND_SMS" />
  ```

- **Output:**

- **Receive SMS:**

- **XML File:**

```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=".SmsActivity"
```

```xml
        android:padding="10dp">
        <!-- ListVivew -->
        <ListView
        android:id="@+id/SMSList"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="57dp"
        android:layout_marginEnd="9dp"
        android:layout_marginBottom="-8dp"
        tools:layout_editor_absoluteX="8dp"
        tools:layout_editor_absoluteY="8dp" />
        <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="28dp"
        android:text="SMS Inbox"
        android:textColor="#110E0E"
        android:textSize="24sp" />
        </RelativeLayout>
```

- **JAVA File:**

```java
import android.content.ContentResolver;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.database.Cursor;
import android.net.Uri;
```

```java
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import java.util.ArrayList;
public class SmsActivity extends AppCompatActivity {
 private static SmsActivity inst;
 ArrayList<String> smsMessagesList = new ArrayList<String>();
 ListView smsListView;
 ArrayAdapter arrayAdapter;
 public static SmsActivity instance() {
 return inst;
 }
 @Override
 public void onStart() {
 super.onStart();
 inst = this;
 }
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_sms);
 smsListView = (ListView) findViewById(R.id.SMSList);
 arrayAdapter = new ArrayAdapter<String>(this,
 android.R.layout.simple_list_item_1, smsMessagesList);
 smsListView.setAdapter(arrayAdapter);
 if(ContextCompat.checkSelfPermission(getBaseContext(),
 "android.permission.READ_SMS") == PackageManager.PERMISSION_GRANTED) {
```

```java
refreshSmsInbox();
} else {

final int REQUEST_CODE_ASK_PERMISSIONS = 123;
ActivityCompat.requestPermissions(SmsActivity.this, new
String[]{"android.permission.READ_SMS"},
REQUEST_CODE_ASK_PERMISSIONS);
}
}
public void refreshSmsInbox() {
ContentResolver contentResolver = getContentResolver();
Cursor smsInboxCursor =
contentResolver.query(Uri.parse("content://sms/inbox"), null, null, null,
null);
int indexBody = smsInboxCursor.getColumnIndex("body");
int indexAddress = smsInboxCursor.getColumnIndex("address");
if (indexBody < 0 || !smsInboxCursor.moveToFirst()) return;
arrayAdapter.clear();
do {
String str = "SMS From: " +
smsInboxCursor.getString(indexAddress) +
"\n" + smsInboxCursor.getString(indexBody) + "\n";
arrayAdapter.add(str);
} while (smsInboxCursor.moveToNext());
}
public void updateList(final String smsMessage) {
arrayAdapter.insert(smsMessage, 0);
arrayAdapter.notifyDataSetChanged();
}
public void onItemClick(AdapterView<?> parent, View view, int pos, long
id) {
try {
String[] smsMessages = smsMessagesList.get(pos).split("\n");
String address = smsMessages[0];
```

```java
String smsMessage = "";
for (int i = 1; i < smsMessages.length; ++i) {
smsMessage += smsMessages[i];
}
String smsMessageStr = address + "\n";
smsMessageStr += smsMessage;
Toast.makeText(this, smsMessageStr, Toast.LENGTH_SHORT).show();
} catch (Exception e) {
e.printStackTrace();
}
}
}
```

- **JAVA File 2:**

```java
package com.example.pr_29_2;
import android.content.BroadcastReceiver;
import android.content.ContentResolver;
import android.content.Context;
import android.content.Intent;
import android.database.Cursor;
import android.net.Uri;
import android.os.Bundle;
import android.telephony.SmsMessage;
import android.widget.Toast;
// Todo : BroadcastReceiver Class To Receive And Read SMS
public class SmsBroadcastReceiver extends BroadcastReceiver{
public static final String SMS_BUNDLE = "pdus";
public void onReceive(Context context, Intent intent) {
Bundle intentExtras = intent.getExtras();
if (intentExtras != null) {
Object[] sms = (Object[]) intentExtras.get(SMS_BUNDLE);
String smsMessageStr = "";
for (int i = 0; i < sms.length; ++i) {
SmsMessage smsMessage = SmsMessage.createFromPdu((byte[])
```

```
    sms[i]);
     String smsBody = smsMessage.getMessageBody().toString();
     String address = smsMessage.getOriginatingAddress();
     smsMessageStr += "SMS From: " + address + "\n";
     smsMessageStr += smsBody + "\n";
     }
     Toast.makeText(context, smsMessageStr,
    Toast.LENGTH_SHORT).show();
     //this will update the UI with message
     SmsActivity inst = SmsActivity.instance();
     inst.updateList(smsMessageStr);
     }
     }
     }
```

- **Manifest File:**

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

- **Output:**