Experiment – 2.3

Student Name: Abhinav Verma
UID: 20BCS9258
Branch: CSE
Section/Group: 20BCS_KRG_DM-G1
Semester: 06
Date of Performance: 07/03/2023
Subject Name: Mobile Application Development Lab
Subject Code: 20CSP-356

1. Aim/Overview of the practical:

Create an Android-based application and use intent to send SMS.

2. Task to be done:

To create an Android-based application and use intent to send SMS and understand the specific requirements, possibilities and challenges when developing a mobile context.

3. System Requirements:

The required tools to develop Android applications are open source and can be downloaded from the Web. Following is the list of software's you will need before you start your Android application programming.

- Android Studio .exe file
- Java JDK5 or later version
- Java Runtime Environment (JRE) 6 Android Studio

4. Steps of Experiment:

In this experiment, we are sending a SMS (message) to a contact number by the help of intents. On pressing the send button, it will send the message and a toast is used to display message delivery report.

Step 01: Now, start Android Studio app and start new project as “SendSMS” and select activity as “Empty Activity” as shown below and enter activity details such as activity name, package name, save location, language as Java, minimum SDK and then select Finish.

Step 02: New window will open with MyActivity.java file, our new project is started as shown below:

Code:

MainActivity.java:

```
package com.example.sendsms;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import android.Manifest;
import android.app.PendingIntent;
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;

public class MainActivity extends AppCompatActivity {
    EditText contact, message;
    Button send;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        contact=findViewById(R.id.etContact);
        message=findViewById(R.id.etMessage);
        send=findViewById(R.id.btnSend);

//        for user permission
        ActivityCompat.requestPermissions(MainActivity.this,new
String[]

{Manifest.permission.SEND_SMS,Manifest.permission.RECEIVE_SMS,Manifest.
permission.READ_SMS},
                PackageManager.PERMISSION_GRANTED);
        send.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String n=contact.getText().toString().trim();
                String msg=message.getText().toString();
                Intent i = new
Intent(getApplicationContext(),MainActivity.class);
                PendingIntent pi =
PendingIntent.getActivity(getApplicationContext(),0,i,0);

                SmsManager manager = SmsManager.getDefault();
                manager.sendTextMessage(n,null,msg,pi,null);
                Toast.makeText(MainActivity.this, "Message has been
sent to : " + n, Toast.LENGTH_SHORT).show();

            }
```

```
        });
    }
}
```

activity_main.xml:

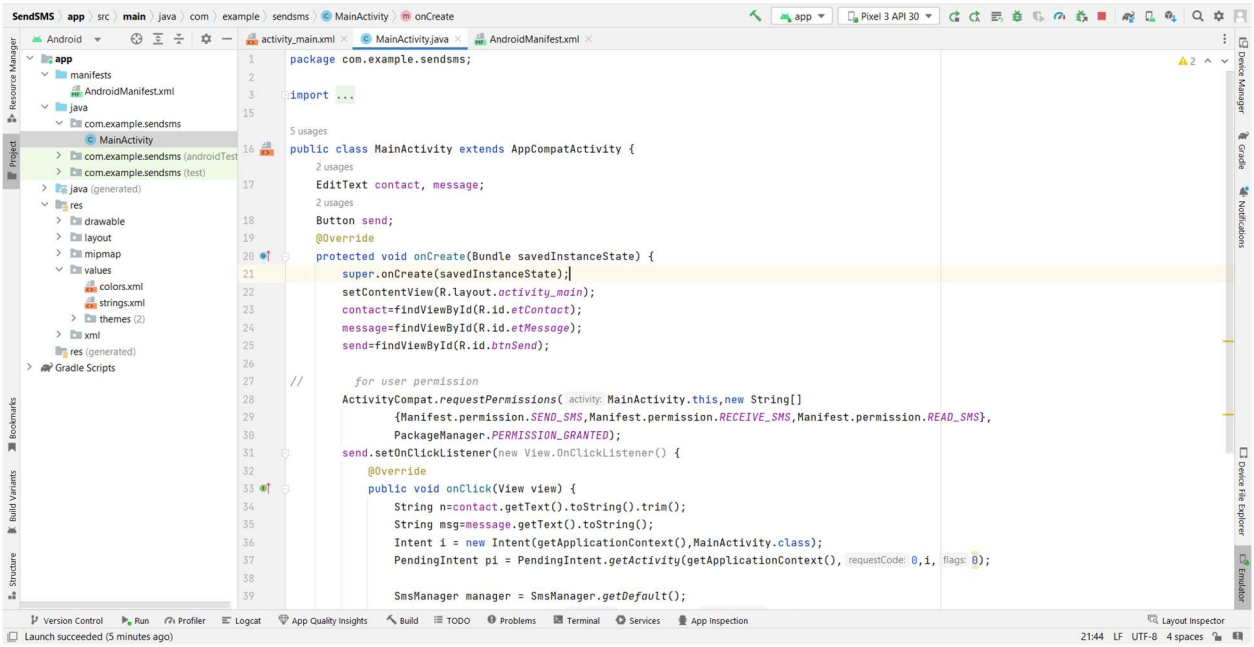
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
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

    <LinearLayout
        android:id="@+id/linearLayout1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        tools:ignore="MissingConstraints">
        <TextView
            android:id="@+id/textView1"
            android:layout_width="wrap_content"
            android:layout_height="50dp"
            android:layout_gravity="center"
            android:layout_marginTop="10dp"
            android:paddingTop="10dp"
            android:text=" Message Box "
            android:textSize="18sp"
            android:textStyle="bold|italic" />
        <EditText
            android:id="@+id/etContact"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:hint="Enter The Contact Number"
            android:inputType="number"
            android:paddingTop="10dp" />
        <EditText
            android:id="@+id/etMessage"
            android:layout_width="match_parent"
            android:layout_height="150dp"
            android:layout_marginTop="10dp"
            android:hint="Enter Message"
            android:paddingTop="10dp"/>
        <Button
            android:id="@+id/btnSend"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:layout_marginTop="10dp"
            android:layout_marginBottom="10dp"
```

```
            android:paddingTop="10dp"
            android:paddingBottom="10dp"
            android:text="Send" />
    </LinearLayout>

    <LinearLayout
        android:id="@+id/linearLayout2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        app:layout_constraintBottom_toBottomOf="parent"
        tools:ignore="MissingConstraints">
        <TextView
            android:id="@+id/textView"
            android:layout_width="wrap_content"
            android:layout_height="50dp"
            android:layout_gravity="center"
            android:layout_marginTop="10dp"
            android:paddingTop="10dp"
            android:text="Abhinav Verma 20BCS9258"
            android:textSize="20sp"
            android:textStyle="bold" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

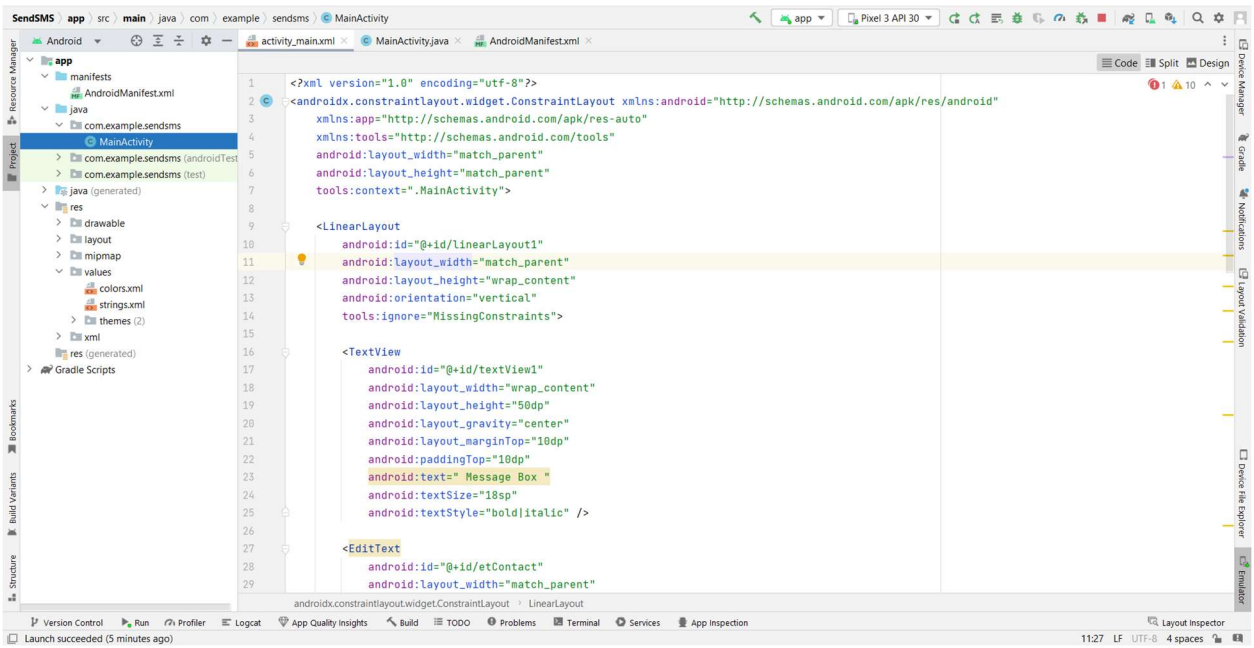
AndroidManifest.xml:

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

    <!--  declaring which app is asking for permission and what type of
permission  -->
    <uses-permission android:name="android.permission.SEND_SMS"/>
    <uses-permission android:name="android.permission.RECEIVE_SMS"/>
    <uses-permission android:name="android.permission.READ_SMS"/>

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.SendSMS"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category
android:name="android.intent.category.LAUNCHER" />
```

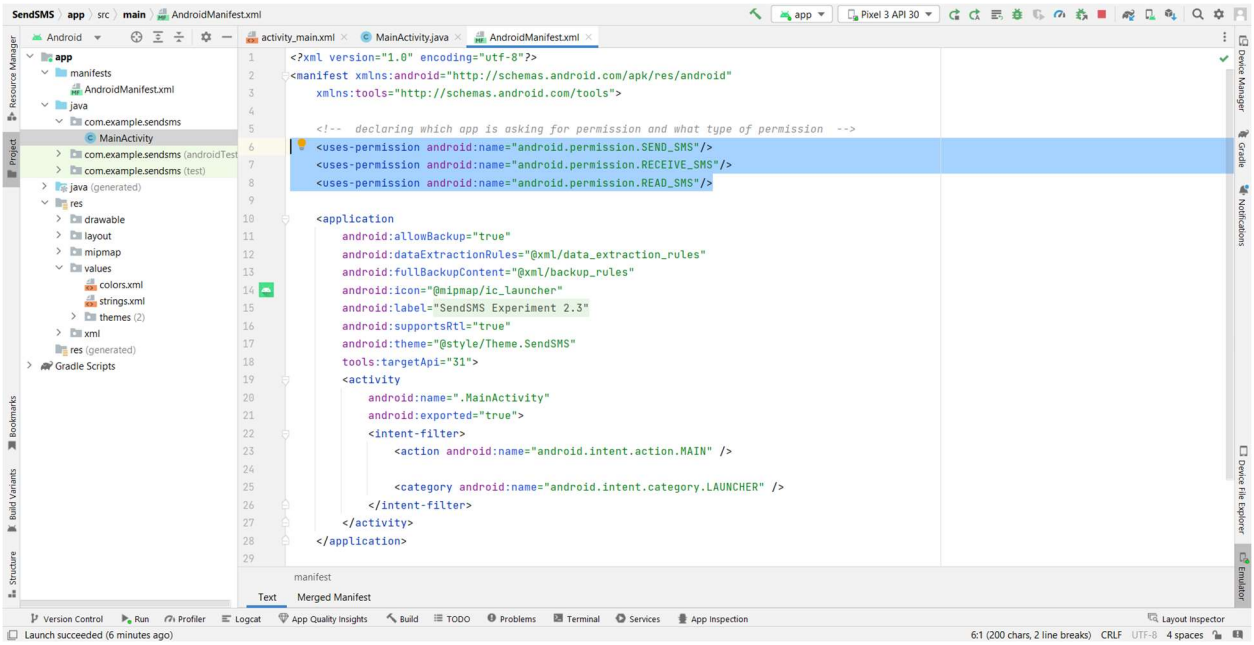
```
            </intent-filter>
        </activity>
    </application>

</manifest>
```



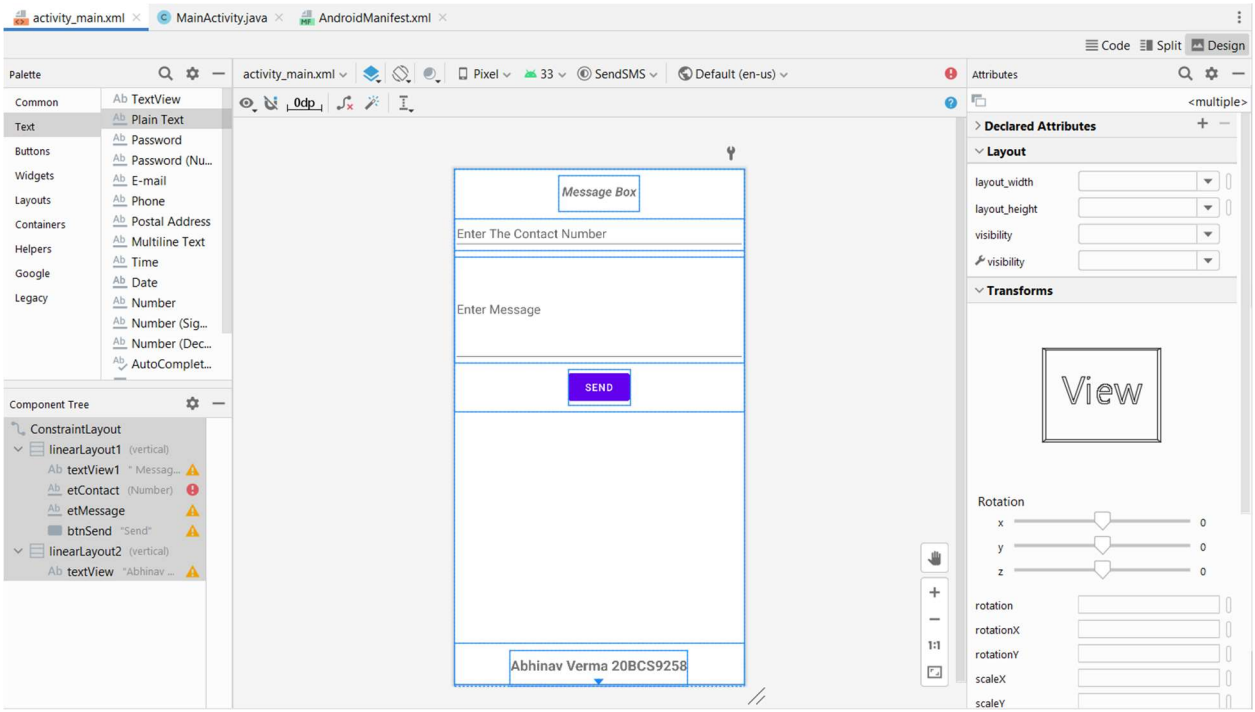
MainActivity.java file screenshot



activity_main.xml file screenshot

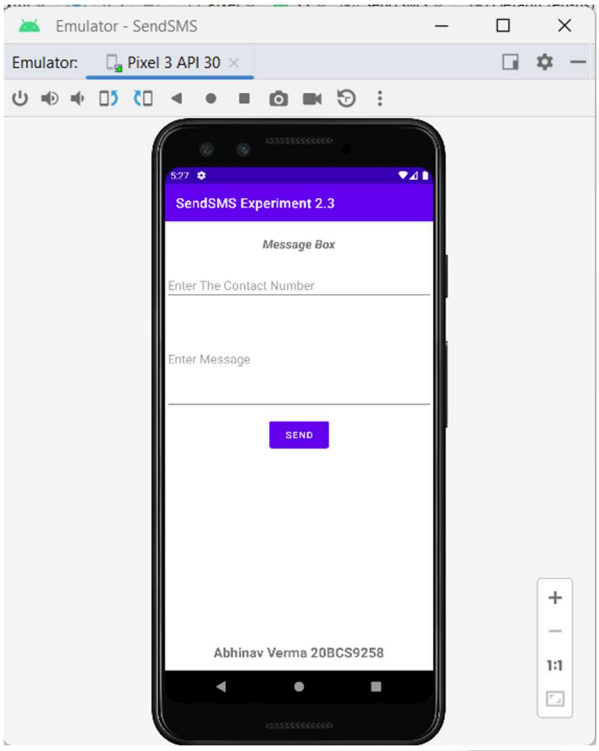


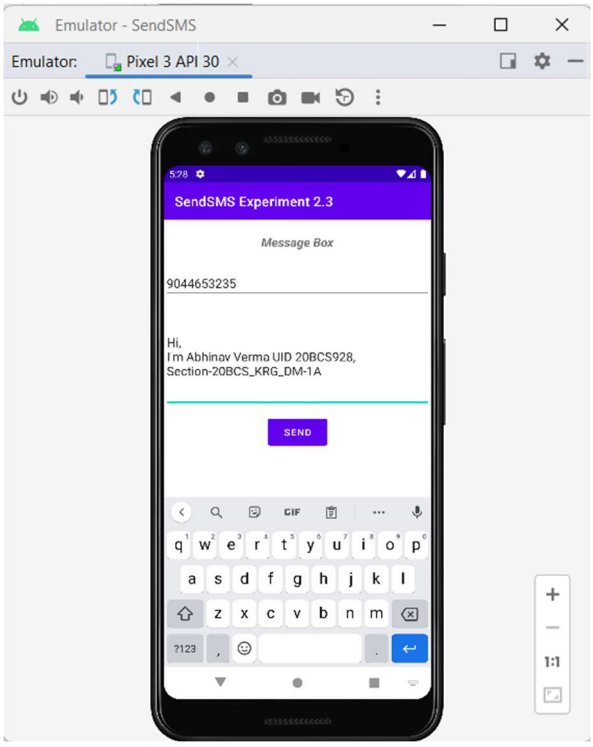
AndroidManifest.xml file screenshot

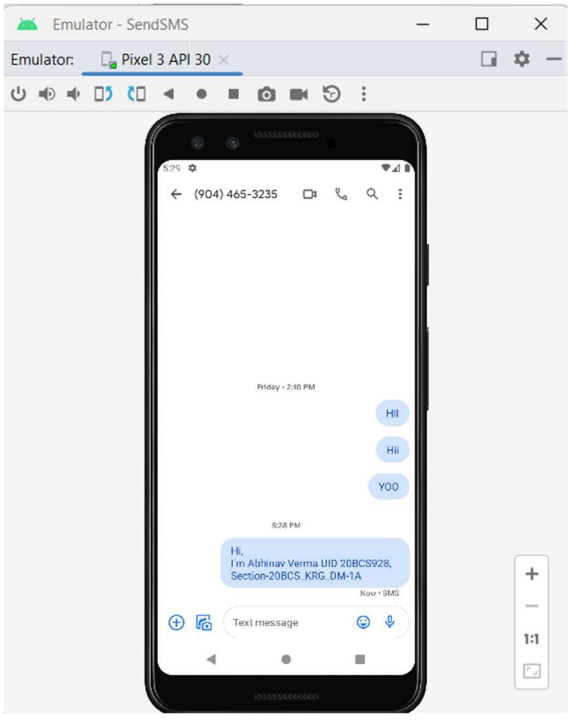


activity_main.xml file (design format) screenshot

Step 3: Now, if we run the application, it will show as below and on filling up the entry and on clicking send button, it will send our SMS (message) to the contact as filled by the user. as shown in third screenshot, message has been sent by Google Message app:







As we can see from above screenshots, the SMS (message), send from our app, has also been send from Google Message App.

Learning Outcomes:

1. Learned how to add toast, passing values via intent, textView, editText, etc. in our application.
2. Learned to add buttons and textview, edittext.
3. Learned how to send SMS (messages) via use of intents.
4. Learned more about Android Studio and its components.