CIT 4404 **Mobile App Development**

Topic5: Android Messaging

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Messaging with SMS and Email

- SMS
- Emails

SMS

- Create an app called MySMS. Modify activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.wenbing.myemails.MainActivity">

    <Button
        android:text="Send SMS"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/btnSendSMS"
        app:layout_constraintLeft_toLeftOf="@+id/activity_main"
        app:layout_constraintTop_toTopOf="@+id/activity_main"
        app:layout_constraintRight_toRightOf="@+id/activity_main"
        app:layout_constraintBottom_toBottomOf="@+id/activity_main"
        android:onClick="onClick" />
</android.support.constraint.ConstraintLayout>
```

SMS

- Add permission to Manifest (**at the right place**!):

```xml
<?xml version="1.0" encoding="utf-8" ?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.wenbing.mysms">
  <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/AppTheme">
    <activity android:name=".MainActivity">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />

        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
  </application>

  <uses-permission android:name="android.permission.SEND_SMS"/>
  <uses-permission android:name="android.permission.RECEIVE_SMS"/>
</manifest>
```

SMS

- Add code to
MainActivity.java

```java
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.Manifest;
import android.content.pm.PackageManager;
import android.support.v4.app.ActivityCompat;
import android.support.v4.content.ContextCompat;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Toast;
import android.content.Intent;
import android.util.Log;

public class MainActivity extends AppCompatActivity {
    final private int REQUEST_SEND_SMS = 123;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        if (android.os.Build.VERSION.SDK_INT >= android.os.Build.VERSION_CODES.M) {

            if (checkSelfPermission(Manifest.permission.SEND_SMS)
                    == PackageManager.PERMISSION_DENIED) {

                Log.d("permission", "permission denied to SEND_SMS - requesting it");
                String[] permissions = {Manifest.permission.SEND_SMS};

                requestPermissions(permissions, REQUEST_SEND_SMS);

            }
        }
    }
```
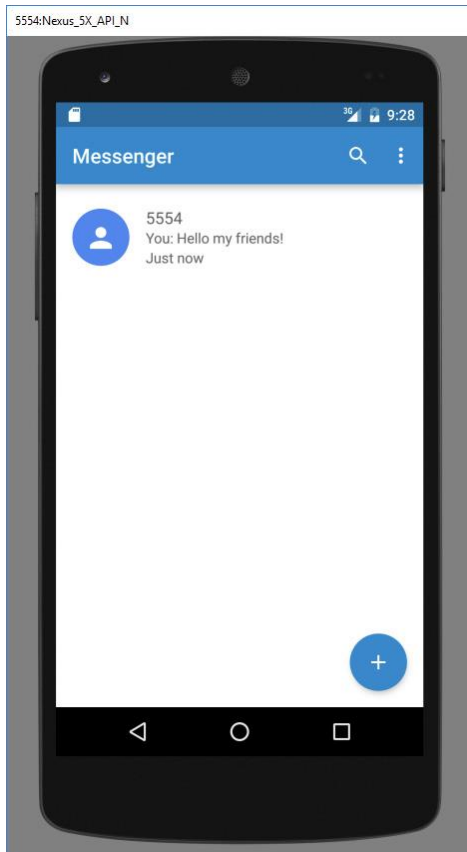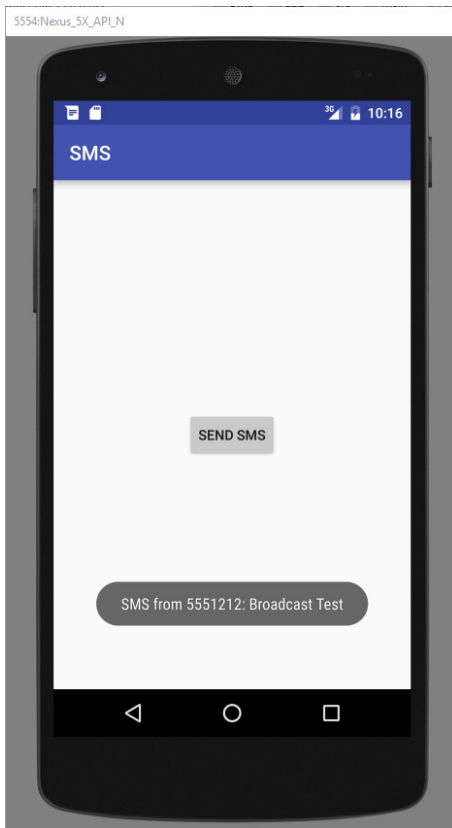
SMS

- Add code to MainActivity.java


```java
@Override
public void onRequestPermissionsResult(int requestCode,
                                String[] permissions, int[] grantResults) {
    switch (requestCode) {
        case REQUEST_SEND_SMS:
            if (grantResults[0] == PackageManager.PERMISSION_GRANTED) {
                Toast.makeText(MainActivity.this,
                        "Permission Granted", Toast.LENGTH_SHORT).show();
                System.out.println("permission granted");
            } else {
                Toast.makeText(MainActivity.this,
                        "Permission Denied", Toast.LENGTH_SHORT).show();
            }
            break;
        default:
            super.onRequestPermissionsResult(requestCode,
                    permissions, grantResults);
    }
}

public void onClick(View v) {
//---the "phone number" of your emulator should be 5554---
    sendSMS("5554", "Hello my friends!");
}
//---sends an SMS message---
private void sendSMS(String phoneNumber, String message)
{
    SmsManager sms = SmsManager.getDefault();
    sms.sendTextMessage(phoneNumber, null, message, null, null);
}
}
```

SMS

■ Create a new java class named SMSReceiver


```java
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.os.Bundle;
import android.telephony.SmsMessage;
import android.util.Log;
import android.widget.Toast;
import android.provider.Telephony;

public class SMSReceiver extends BroadcastReceiver {
    @Override
    public void onReceive(Context context, Intent intent) {
//---get the SMS message passed in---
        Bundle bundle = intent.getExtras();
        SmsMessage[] msgs = null;
        String str = "SMS from ";
        if (bundle != null) {
//---retrieve the SMS message received---
            msgs = Telephony.Sms.Intents.getMessagesFromIntent(intent);
            for (int i = 0; i < msgs.length; i++) {
                str += msgs[i].getMessageBody().toString();
//---get the message body---
                str += msgs[i].getMessageBody().toString();
            }
//---display the new SMS message---
            Toast.makeText(context, str, Toast.LENGTH_SHORT).show();
            Log.d("SMSReceiver", str);
        }
    }
}
```

Emails

- Make sure you figure at least one email account on your phone/emulator

- Create an app called MyEmails. Modify activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.wenbing.myemails.MainActivity">

    <Button
        android:text="Send Email"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/btnSendEmail"
        app:layout_constraintLeft_toLeftOf="@+id/activity_main"
        app:layout_constraintTop_toTopOf="@+id/activity_main"
        app:layout_constraintRight_toRightOf="@+id/activity_main"
        app:layout_constraintBottom_toBottomOf="@+id/activity_main"
        android:onClick="onClick" />
</android.support.constraint.ConstraintLayout>
```

Emails

- Make sure you figure at least one email account on your phone/emulator
- Create an app called MyEmails. Modify activity_main.xml:

```java
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Intent;
import android.net.Uri;
import android.view.View;
```

If you configured the Email service on your emulator, you should see the Email application launched in your emulator/device

```java
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void onClick(View v) {
    //---replace the following email addresses with real ones---
        String[] to =
            {"someguy@example.com",
                "anotherguy@example.com"};
        String[] cc = {"busybody@example.com"};
        sendEmail(to, cc, "Hello", "Hello my friends!");
    }

    private void sendEmail(String[] emailAddresses, String[] carbonCopies,
                    String subject, String message) {
        Intent emailIntent = new Intent(Intent.ACTION_SEND);
        emailIntent.setData(Uri.parse("mailto:"));
        String[] to = emailAddresses;
        String[] cc = carbonCopies;
        emailIntent.putExtra(Intent.EXTRA_EMAIL, to);
        emailIntent.putExtra(Intent.EXTRA_CC, cc);
        emailIntent.putExtra(Intent.EXTRA_SUBJECT, subject);
        emailIntent.putExtra(Intent.EXTRA_TEXT, message);
        emailIntent.setType("message/rfc822");
        startActivity(Intent.createChooser(emailIntent, "Email"));
    }
}
```

Sending Emails Programmatically

- Homework#16: learn how to send emails directly from your app without opening the default email app based on the following discussion (or equivalent ones):

- https://stackoverflow.com/questions/2020088/sending-email-in-android-using-javamail-api-without-using-the-default-built-in-a/2033124#2033124

- Build an app to demonstrate the functionality