

# Android Telephony

## Android Smartphone Programming

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13. Januar 2015



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## 1 Telephony

## 2 SMS

## 3 Summary



- Package *android.telephony* provides classes to monitor basic phone information, tools to manipulate phone numbers and to work with SMS<sup>[1]</sup>.
- Most important class is *TelephonyManager*<sup>[4]</sup>.
- Provides access to information about telephony services of the device.
  - For example network type or call state, which indicates idle or ringing.

```
1 Context.getSystemService(Context.  
TELEPHONY_SERVICE).
```



- Very limited access to work with calls for security reasons.
- Possibility to place a call from activity if permissions are set.
- Extend Android manifest:

```
1 <uses-permission android:name="android.  
    permission.CALL_PHONE"></uses-permission>
```

- There are ways to interfere a bit more: Listen to phone state change to ringing and then mute phone.





- How? Create *Intent* with predefined action.

```
1 try {
2     Intent callIntent = new Intent(Intent.
        ACTION_CALL);
3     callIntent.setData(Uri.parse("tel:1234567"));
4     startActivity(callIntent);
5 } catch (ActivityNotFoundException e) { ... }
```





- Extend Android manifest:

```
1 <uses-permission android:name="android.  
  permission.VIBRATE" />
```

- Use *AudioManager*<sup>[2]</sup> to manipulate ringer mode.
- Get instance of *AudioManager*:

```
1 AudioManager Context.getSystemService(Context.  
  AUDIO_SERVICE)
```





- Method to change the ringer mode used with parameters *RINGER\_MODE\_NORMAL*, *RINGER\_MODE\_SILENT* or *RINGER\_MODE\_VIBRATE*:

```
1 void AudioManager.setRingerMode(int ringerMode)
```



- Class *SmsManager* can be used to send and receive SMS from an application<sup>[3]</sup>.
- Extend Android manifest with needed permissions:
  - `android.permission.SEND_SMS`
  - `android.permission.RECEIVE_SMS`
  - `android.permission.READ_SMS`
  - `android.permission.WRITE_SMS`

```
1 <uses-permission
2 xmlns:android="http://schemas.android.com/apk/
   res/android"
3 android:name="enter_permission_name_here">
4 </uses-permission>
```





### ■ Receive reference to SmsManager

```
1 static SmsManager SmsManager.getDefault();
```

### ■ Send message

```
1 void SmsManager.sendTextMessage(  
2 String destinationAddress,  
3 String srcAddress,  
4 String text,  
5 PendingIntent sentIntent,  
6 PendingIntent deliveryIntent);
```





- How to check if a phone number is present in the Contact List?
- Use ContactsContract.PhoneLookup

```
1 <uses-permission android:name="android.  
    permission.READ_CONTACTS" />
```

```
1 Uri uri = Uri.withAppendedPath(PhoneLookup.  
    CONTENT_FILTER_URI, Uri.encode(  
    phoneNumber));
```

```
2 Cursor cur = context.getContentResolver().  
    query(uri, new String[]{PhoneLookup.  
    DISPLAY_NAME, ...});
```






- Functionality to monitor phone information included in class *TelephonyManager*.
- Application can place calls, but not much more for security reasons.
- Muting phone when phone state changes to ringing allows more interference.
- *SmsManager* allows sending of SMS.




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