

Android Telephony

Android Smartphone Programming

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11. Januar 2016



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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^[1].
- Most important class is *TelephonyManager*^[4].
- 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*^[2] 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^[3].
- 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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