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Outline University of Freiburg		ONI BREBIRG
1 Telephony		
2 SMS		
3 Calendar		
4 Summary		_
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		SE.
■ Package android.telephony provides classes to monitor basic phone information, tools to manipulate phone numbers and to work with SMS <sub>[1]</sub> .	:	
<ul> <li>Most important class is <i>TelephonyManager</i><sub>[4]</sub>.</li> <li>Provides access to information about telephony services of the device.</li> </ul>		
For example network type or call state, which indicates idle or ringing.		

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 ${\tt 1}\,{\tt Context.getSystemService}\,({\tt Context.}\\ {\tt TELEPHONY\_SERVICE})\,.$ 



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

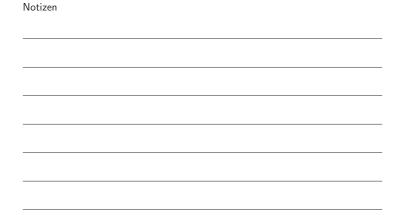
```
1 <uses-permission android:name="android.
permission.CALL_PHONE"></uses-permission>
```

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



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 Android Telephony
 31. Januar 2013
 4 / 12



# Telephony Example place a call University of Freiburg



 $\blacksquare$  How? Create  $\mathit{Intent}$  with predefined action.

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



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# Telephony Example mute phone University of Freiburg



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■ Extend Android manifest:

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

- $\blacksquare$  Use  $\textit{AudioManager}_{[2]}$  to manipulate ringer mode.
- Get instance of AudioManager:

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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:

void AudioManager.setRingerMode(int ringerMode)



31. Januar 2013 7 / 12



### SMS



- 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"</pre> 3 android:name="enter\_permission\_name\_here">
4 </uses-permission>



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### SMS How to use SmsManager



■ 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);
```



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■ To access the built-in calendar the Android manifest has to be extended:

1 <uses-permission android:name="android.
 permission.READ\_CALENDAR">
2 </uses-permission>

- Data can be accessed through a Content Provider and a Cursor.
- The Content Provider for the calender has the following URI:

1 content://calendar/calendars



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#### Summary University of Freiburg

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- 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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