

Android Hardware

Chapter 10

Hardware APIs

- telephony package provides access to calls and phone status
- multimedia playback/recording
- camera picture taking and video previewing
- sensor hardware support
- accelerometer/compass to monitor orientation/movement
- communications for managing Bluetooth, network, Wi-Fi

Multimedia File Types Supported

- Audio
 - 3GPP (.3gp)
 - MP3 (.mp3)
 - Ogg (.ogg)
 - WAVE (.wav)
 - several MIDI formats

Multimedia Continued

- Image
 - JPEG (.jpg)
 - GIF (.gif)
 - PNG (.png)
 - BMP (.bmp)
- Video
 - 3GPP (.3gp)
 - MPEG-4 (.mp4)

Where to get media clips?

- packaged in res/raw
 - advantage: you know clip is there
 - disadvantage: replaced via application upgrade
- packaged on SD card
 - advantage: more storage & replaceable
 - disadvantage: other apps can access SD card
- stream media off Internet
 - advantage: flexible
 - disadvantage: not reliable

Ringtone

- `android.media.Ringtone` – quick method for playing ringtone, notification, similar sounds
- `android.media.RingtoneManager` – queries different media providers and combines results in a single `Cursor`

Playing Ringtones

```
RingtoneManager ringtoneManager;
```

```
Ringtone ringtone;
```

```
ringtoneManager = new RingtoneManager (this);
```

```
ringtone = ringtoneManager.getRingtone(2);
```

```
ringtone.play ();
```

```
ringtone.stop ();
```

MediaPlayer

- MediaPlayer class
 1. create an Media Player instance
 2. use setDataSource () to assign a media source
 3. call prepare () and start () methods

Sample MediaPlayer Code

```
MediaPlayer mpFile = new MediaPlayer ();

try
{

    mpFile.setDataSource(RingtoneManager.getValidRingt
oneUri(this).toString());

    mpFile.prepare ();
    mpFile.start ();
}
catch (IllegalArgumentException e) {}
catch (IllegalStateException e) {}
catch (IOException e) {}
```

Simple Media Player

- [17.Code/AudioDemo](#)

Simple Video Player

- 17.Code/VideoDemo

Problem:

- Import the VideoDemo project
- Download Documentaries and You from <http://www.law.duke.edu/cspd/contest/finalists/>
- Place the mp4 on the sdcard of the emulator
- Play the video (you will most likely hear sound but not see video as the emulator does not have graphics acceleration)

SoundPool

- SoundPool class
- allows overlay of multiple sounds in a prioritized fashion
- deals with starting, stopping, blending sounds while playing
- manages the number of audio streams being rendered at once
- .ogg files are recommended as some have found SoundPool somewhat unstable for other file types

Sound Tutorial

- [17.Code/SoundTutorial](#)