SCIENCES SORBONNE UNIVERSITÉ

AVAudioPlayer

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LIP6

As an introduction…

Handles sounds

- Implemented in AVFoundation
- It may play several sounds simultaneously
  - **One player per sound, careful with synchronisation**

Provided functions

- Start/stop/pause
- Control of various elements
  - **Volume, loops, etc**

Associated protocol

- AVAudioPlayerDelegate
  - **Handling termination**

```
func audioPlayerDidFinishPlaying(_ player: AVAudioPlayer,
                                 successfully flag: Bool)

func audioPlayerDecodeErrorDidOccur(_ player: AVAudioPlayer,
                                    error: Error?)
```

Principles

Creation

- À la Swift or à la Objective-C
  - **Caution, the Player must be a global variable**
  - **Init with brute data (Data/NSData) or with local/distant URL**

Main methods

- play(), pause(), stop()
- prepareToPlay()
  - **Useful for distant URL (prefetch buffers)**
  - **Returns a boolean (false means fail)**

Configuration via properties

- volume
- rate (from -1 = left to 1 = right)
- numberOfLoops (0 = no loop)
- etc.

Error management

In Objective-C

- Returned error (side effect on a parameter)

```
- (instancetype)initWithContentsOfURL:(NSURL *)url
                                error:(NSError * _Nullable *)outError;
```

Swift

- Exception raised (to be caught)

```
init(contentsOf url: URL) throws
```

Monitoring & information

Attributes

- isPlaying
- numberOfChannels
- duration
- currentTime
- etc.

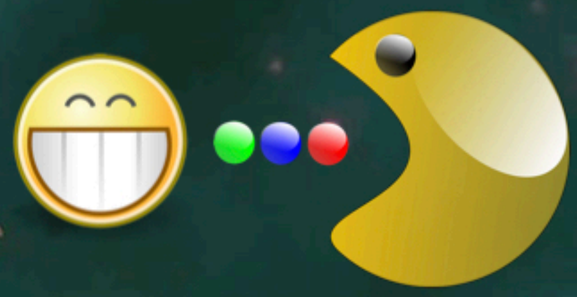
More methods

- play(atTime:)
  - **Returns false in case of failure**
- setVolume(_:fadeDuration:)
  - **Update the volume over a given duration**

As a conclusion…

Easy is’n’t it?

- Now you can have sound in your Applications
- Nice for games at least
  - **Explosion sound in «Asteroid» ?**



What about recording?

- AVAudioRecorder / AVAudioRecorderDelegate
- More complex
  - **Handling access to the microphone (info.plist)**
  - **Handling file creation**
- Notion of session (AVAudioSession)
  - **All is in the FM**