

Music 3SI: Introduction to Audio/Multimedia App. Programming

Week #3 - 4/21/2006
CCRMA, Department of Music
Stanford University

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Last Week...

- Digital audio basics
- Audio API: Stk (RtAudio)
- Stk programming examples
 - signal generator, file I/O, & realtime I/O
 - Online tutorial
- Other APIs
 - PortAudio / ALSA / Core Audio

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Other APIs

- PortAudio
 - <http://www.portaudio.com>
- ALSA: Advanced Linux Sound Architecture
 - <http://www.alsa-project.org>
- Core Audio
 - <http://www.apple.com/macosx/features/coreaudio>
 - <http://developer.apple.com/documentation/MusicAudio/CoreAudio-date.html>

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Today...

- Callback function
- Stk instruments / effects
- Error handling
- FFTW
- Assignment #1

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Callback: ex7

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Duplex: ex8

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Stk Effect Classes

- <http://ccrma/software/stk/classEffect.htm>
 - setEffectMix
 - tick(input_sample)
- Delay-based
 - Chorus, Echo, JCRV, NRev, PitShift, PRCRev
- ex9 & ex10
- See **Filter** classes, too!

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Stk Instrument Classes

- <http://ccrma/software/stk/classInstrmnt.htm>
 - noteOn / noteOff
 - setFrequency
- Mostly physical modeling
 - BlowBotl, Bowed, Brass, Clarinet, FM, Plucked, ...
- ex11

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Error Handling

- Exception handling
- ```
try { }
catch { }
```
- RtError
  - <http://ccrma/software/stk/classRtError.htm>
- ex12

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## Assignment #1 Due 5/5/06

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## Truth About A1

- See ex9, ex10 (and ex11)
- Have fun with optional features!
- Don't panic!
  - ask me any questions you have!
  - prove that you understand what's going on!
- Office hours
  - Mon 1 - 3 pm, Tue 11 am - 1 pm (email)
  - or by appointment

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## Next Week On Music 3SI

- Recap
- IDE
- VST Plug-ins
- Max/MSP or Pd externs

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