Chapter 11. Meeting 11, Practices: Touch Interfaces and OpenSoundControl

11.1. Announcements

- Due Wednesday, 16 March: Controller/Interface/Instrument Design 1 Report

  Will accept as late as midnight Friday, 18 March

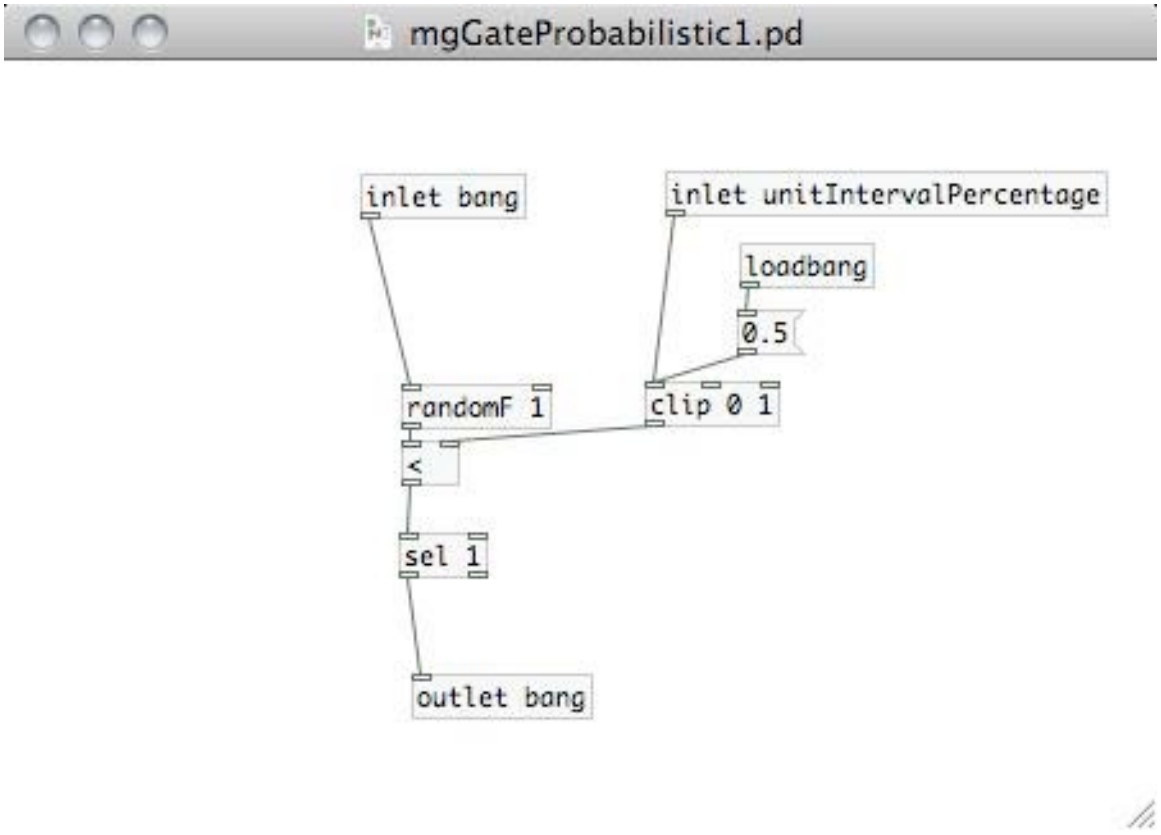
  Must submit code and report

  See syllabus for report details

- Begin exploring instruments in Martingale poly/performance-d

11.2. Using Probabilistic and Random Control

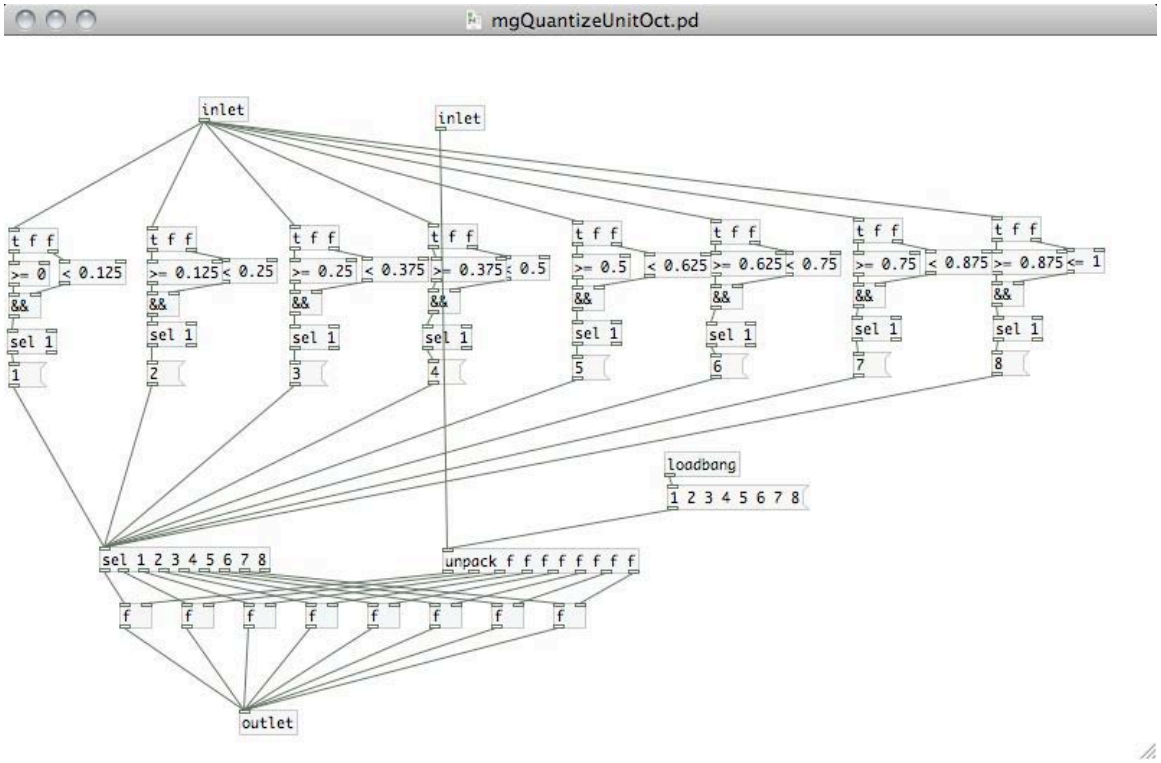
- Can use randomness to select items
- Can use randomness to limit or filter items
- Varying the intensity of random influence becomes an expressive parameter
- [mgGateProbabilistic1]



- What would mgGateProbabilistic3.pd do?

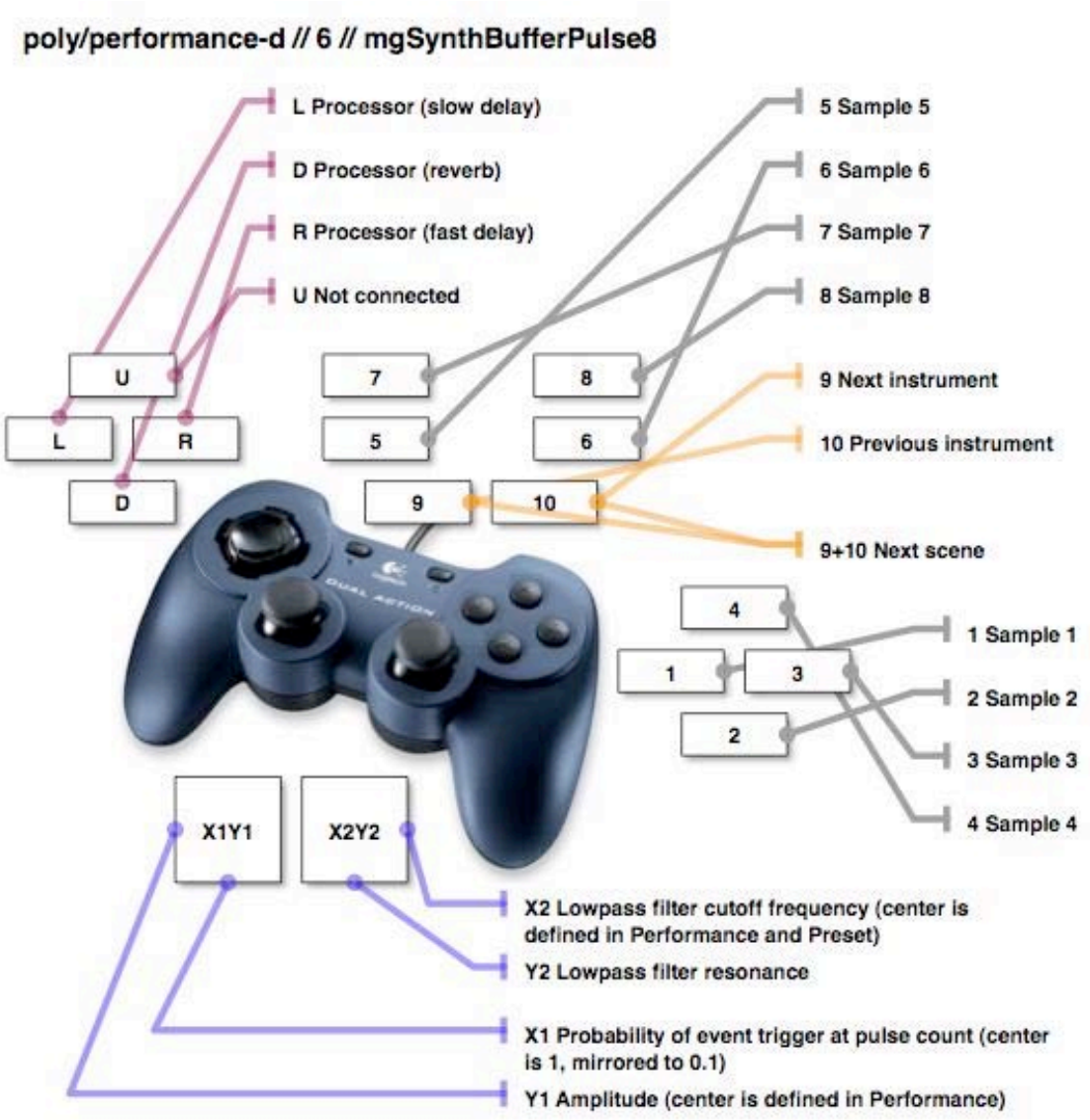
11.3. Making Continuous Values Discrete

- [mgQuantizeUnitOct]



11.4. Poly Performance D: Pulse Driven with Probabilistic Events

- Instrument 6: mgSynthBufferPulse8



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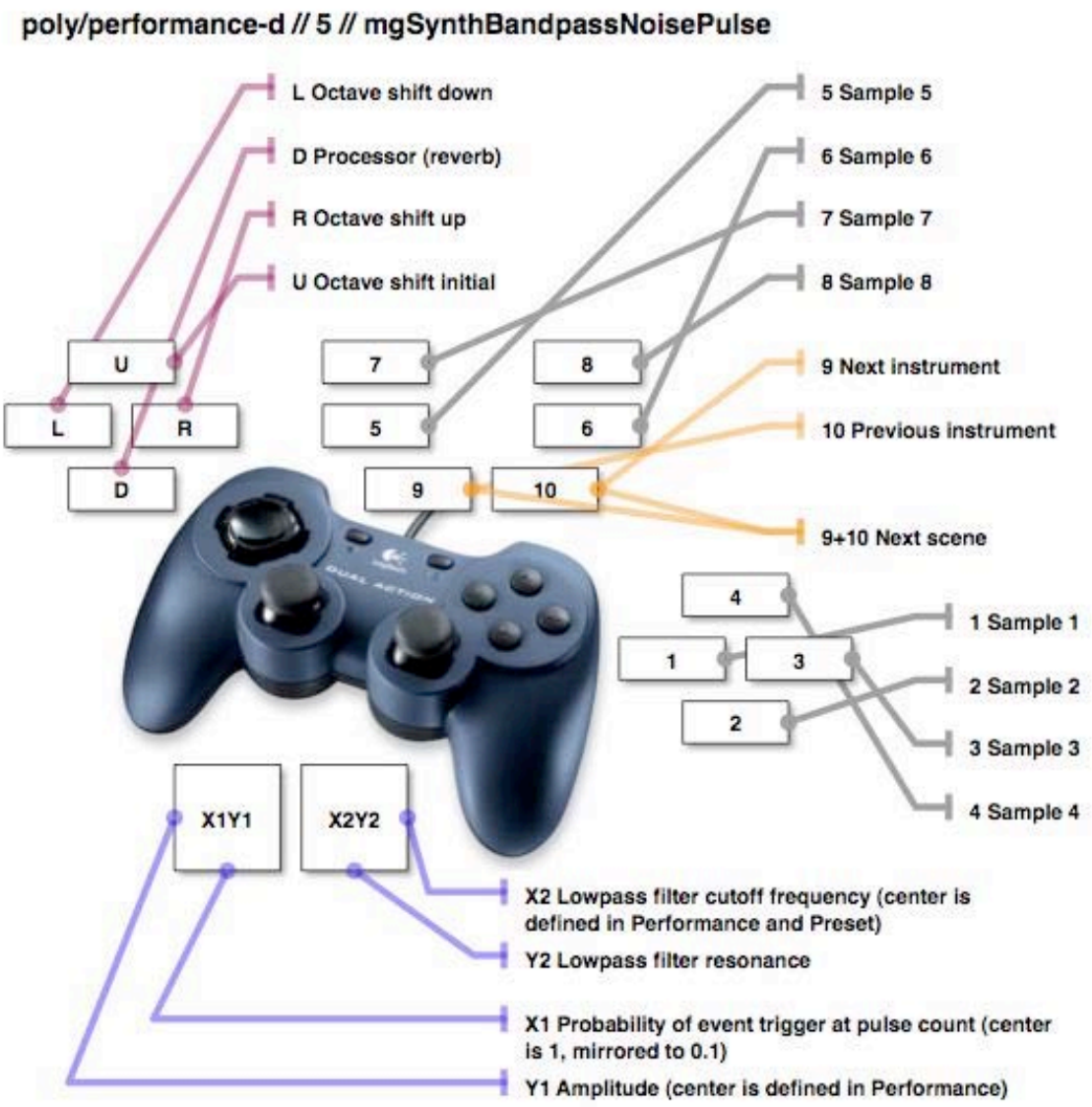
- Instrument 5: mgSynthBufferPulse8



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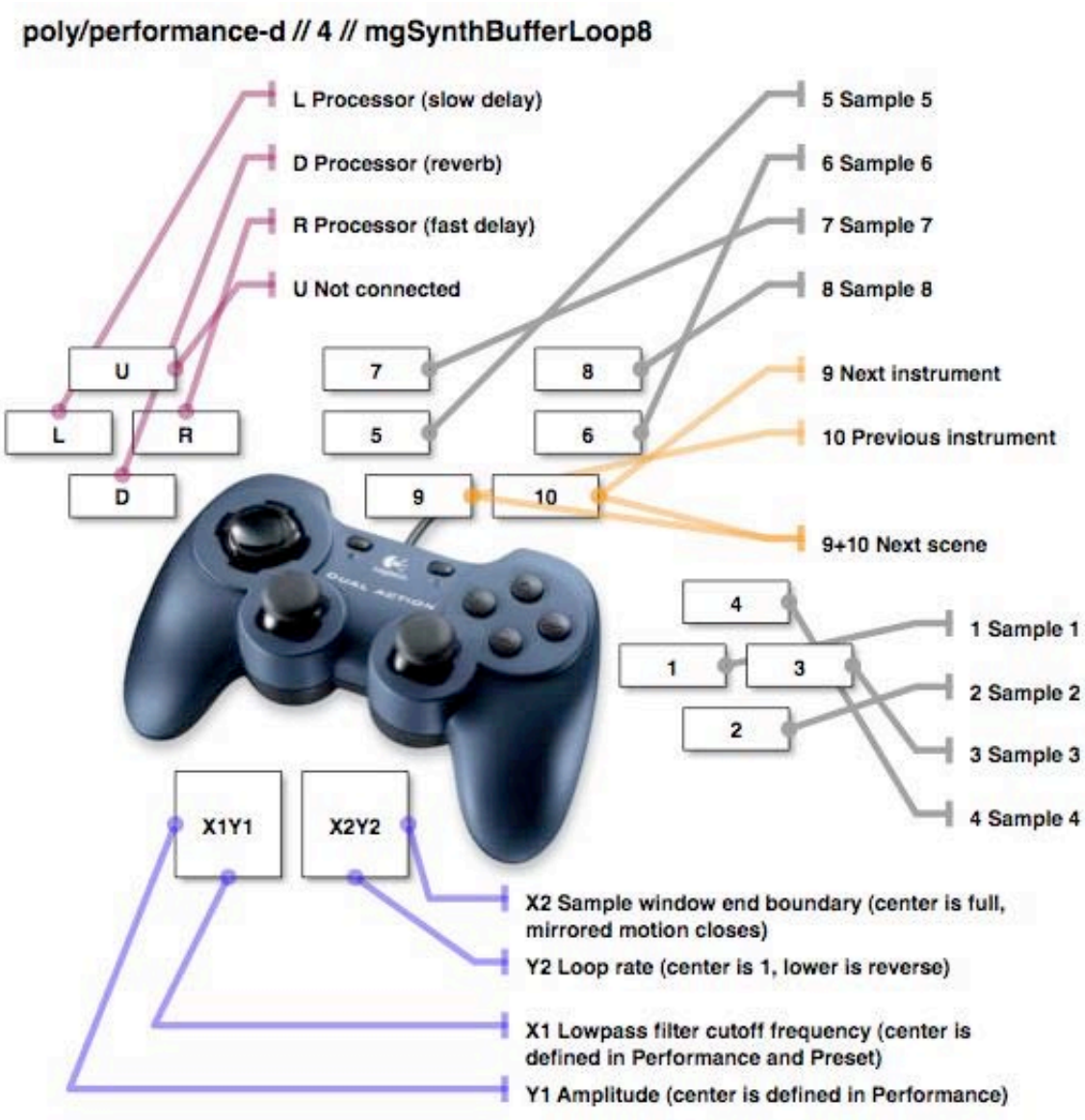
11.5. Poly Performance D: Looping Buffer with Dynamic Playback Rate and Window Size

- Instrument 4: mgSynthBufferLoop8



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11.6. MIDI Devices

- Review Meeting 9

11.7. Reading: Wright, Open Sound Control

- Wright, M. 2005. "Open Sound Control: an enabling technology for musical networking." *Organised Sound* 10(3): pp. 193-200.
- The author criticizes many existing roles of network technology in music: what are his criticisms?
- What are some of the design goals of OSC?

- What advantages does OSC have over MIDI?
- What are the benefits and disadvantages of symbolic parameter names
- What are some shortcomings of OSC?
- What is the difference between jitter and latency? Which is acceptable for musical controllers and why?

11.8. OSC Devices

- Numerous hardware and software devices send and receive OSC
- TouchOSC

  http://hexler.net/software/touchosc
- MRMR

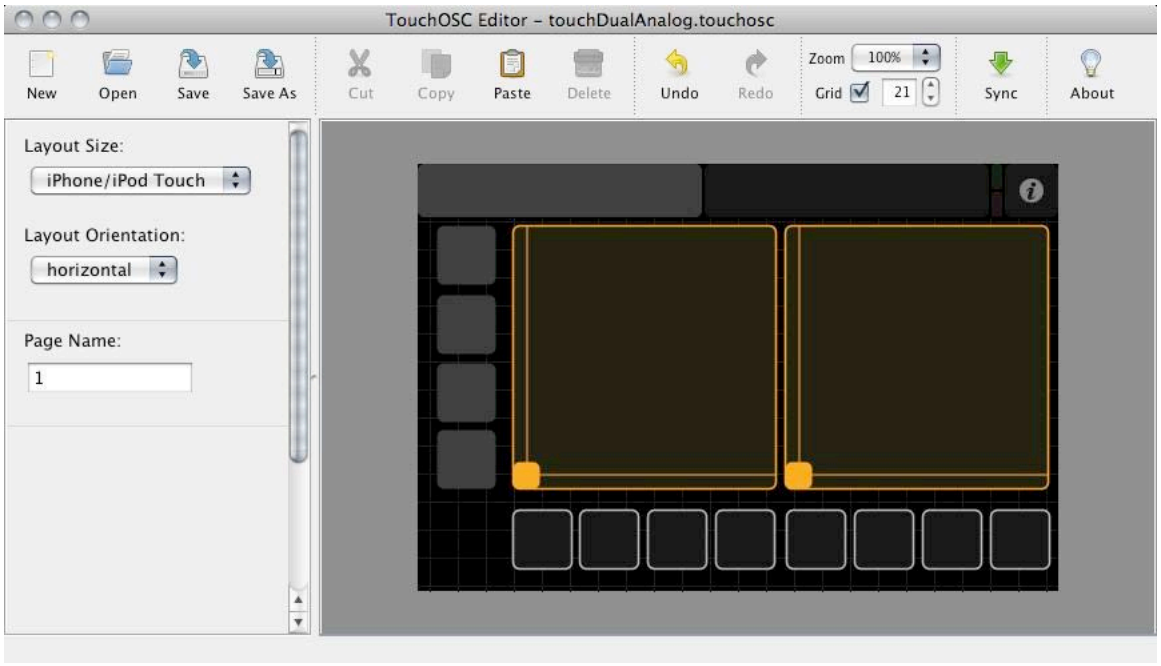
  http://mrmr.noisepages.com

11.9. TouchOSC

- Available for Android and iPhone/iPad

  http://hexler.net/software/touchosc

  http://hexler.net/software/touchosc-android
- Desktop editor permits designing custom interfaces



Courtesy of Hexler. Used with permission.

- Basic interfaces controls:
  - Buttons: push, toggle, multi-toggle
  - Faders: linear, multi-linear, and rotary
  - XY pad
- Basic OSC encoding
  - Each pane defines a top-level OSC division: /1, /2
  - Each control is named and defines a second level: /toggle2, /push3
  - Some controls define a third level: /multifader1/4, /multifader1/6
  - Following the message name is value (unit interval ranges are the best)

11.10. Setting Up TouchOSC

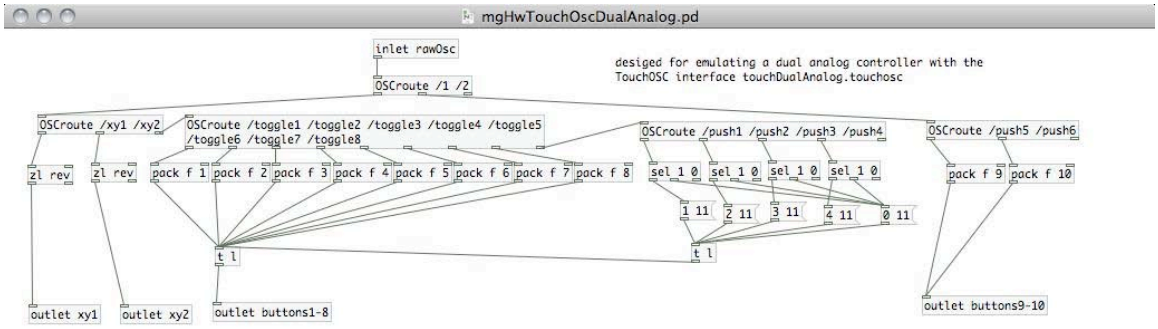
- Create wifi/Airport network with a manual IP address: 192.168.2.1 (alternatives are fine)
- Subnet mask: 255.255.255.0
- Join network with mobile device
- With touchOSC on mobile device, enter IP address as host

- Set outgoing port to 8000 and incoming port to 9000 (alternatives are fine)

11.11. Getting and Processing OSC Values

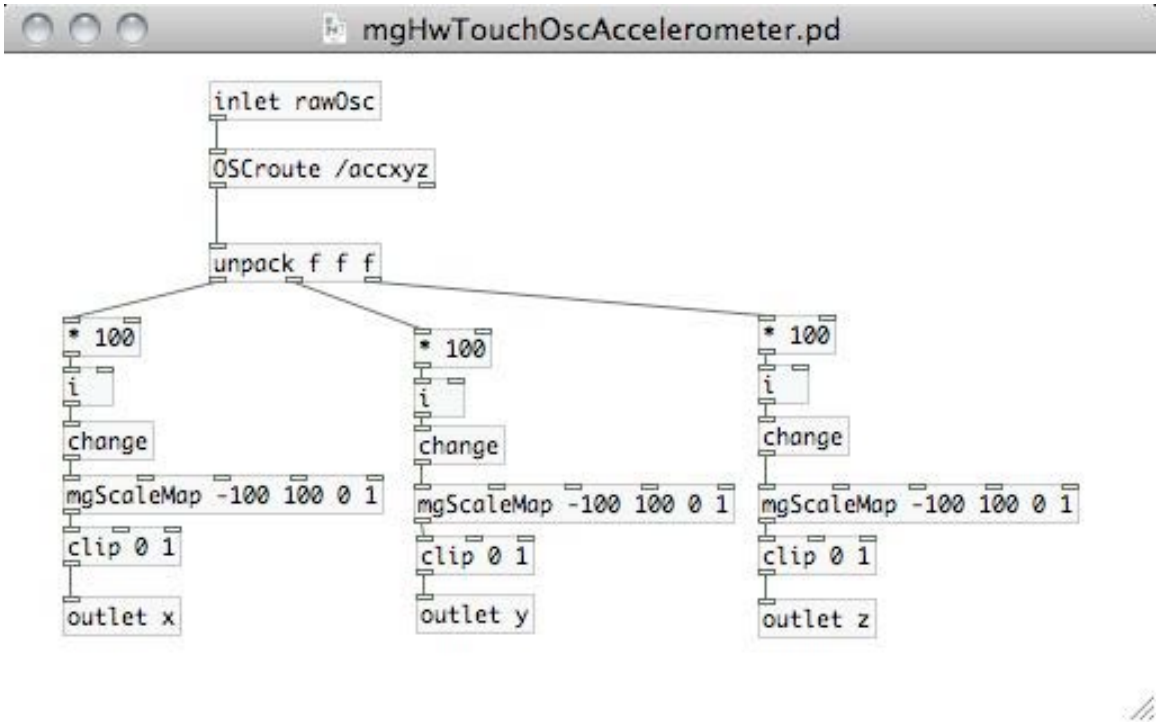
- [dumpOSC 8000]: receives raw OSC values on port 8000
- Can only have one instance of [dumpOSC 8000]; must have argument for port number
- Use [OSCroute] to parse hierarchical structure
- Example: [mgHwTouchOscDualAnalg]

  Emulate dual-analog style control with TouchOSC



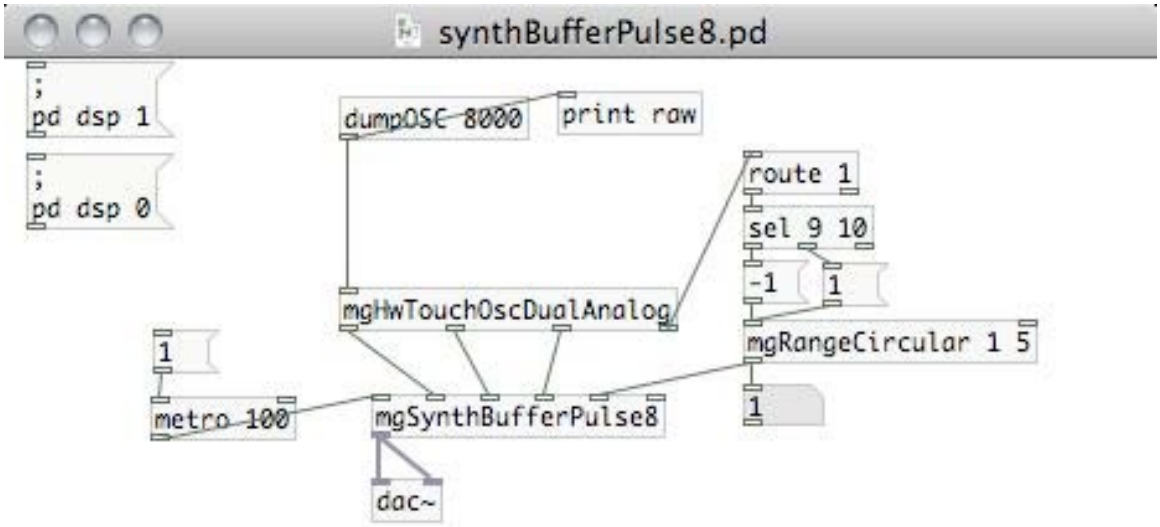
- Example: [mgHwTouchOscAccelerometer]

  Unpack round, filter, scale, and limit accelerometer data



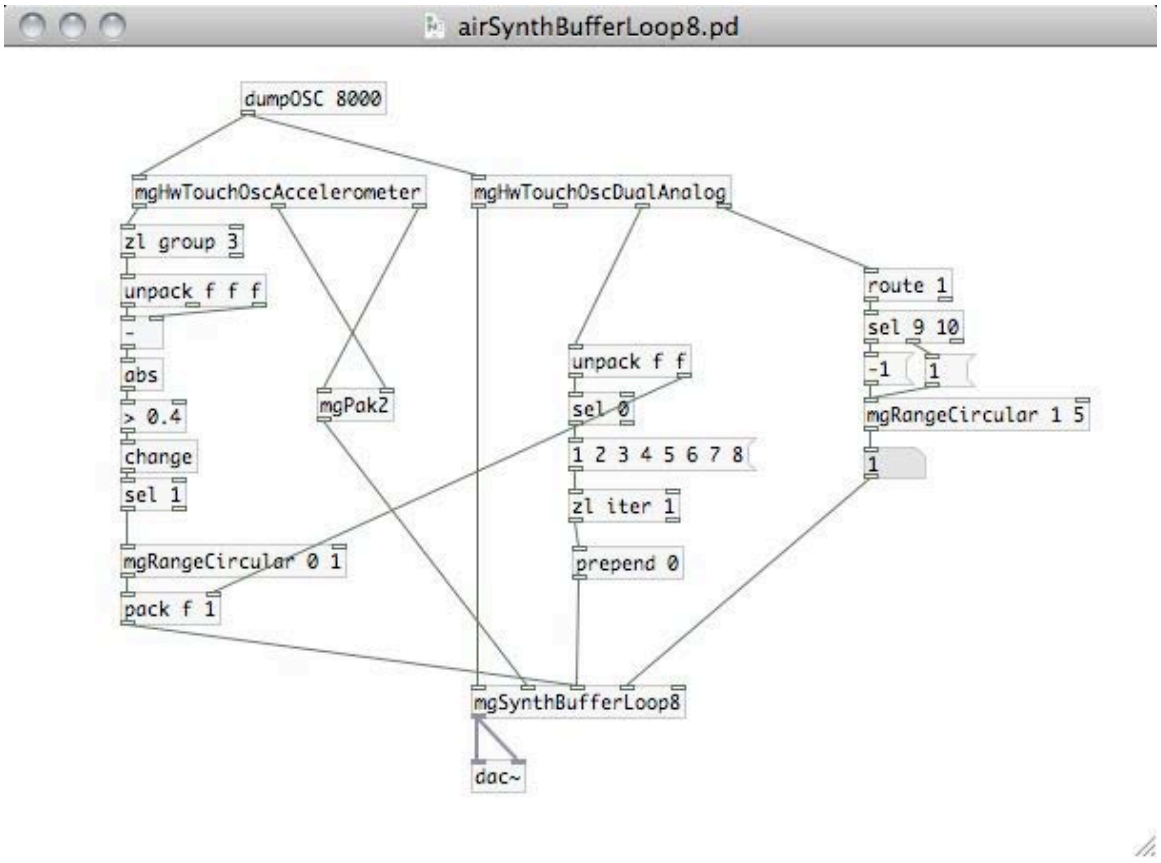
11.12. TouchOSC Instruments Emulating Dual Analog Instruments

- instruments/touchosc/mono/synthNoiseFilter.pd
- instruments/touchosc/mono/synthSaw.pd
- instruments/touchosc/mono/synthBufferPulse8.pd



11.13. TouchOSC Instruments Employing Accelerometer Data

- instruments/touchosc/mono/airSynthBufferLoop8.pd



11.14. Listening: Ryoji Ikeda

- Listening: Ryoji Ikeda, "data.syntax," Dataplex, 2006

- Listening: Ryoji Ikeda, "data.reflex," Dataplex, 2006

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