Lab 5 - Two-Value Instrument

Music 250a - CCRMA 2003

DUE WEDNESDAY Nov 5, 2003

1. Two-Value Instrument:

Using any of the sensors available in the lab (or any you can find for yourself) capture at least two motions of the object you brought to class (or any other dynamic objects). Control at least two continuous parameters of a PD composition. Compare the results as you vary:

a. Resolution – 6 bits, 8 bits and 10 bit resolution (64, 256, 1024 levels).

b. Smoothing – use a first-order filter in the AVR and/or line~ or another filter in PD. (.01, 0.1, 1.0 sec time constants).

c. Sampling Rate – slow down your program with timerPause or adjust the ADC prescaler with a2dSetPrescaler(0); 0 - fastest, 7 - slowest. Measure the rate by timing some large number of conversions. (100 Hz, 10 Hz, 1 Hz)

d. Mappings – non-linear (log or square), derivative and integral.

Demonstrate to the TA your favorite setting and show what happens as you vary one or more of the parameters, a, b, c or d.