Harmonic Generator Write-up
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My Harmonic Generator patch can be played either by attaching a midi keyboard ur using the k slider object. Once a note is inputted by the user, it is converted to frequency and activates a metronome. The metronome goes into a random 16 object, and 1 is added to get the integer number of the harmonic. The speed of the harmonics can be changed by adjusting the tempo of the metronome.

My patch calculates the frequencies generated by the harmonic series, and compares them to the frequencies generated by midi. Those frequency values are fed into a expr object where the cents needed to pitch bend the midi frequency are calculated. Then pitch bend is performed by xbendout and the note is played.

I learned a lot from doing this assignment, including how frequencies generated from the harmonic series and those from midi are not quite the same. I learned how xbendout and trigger work, and the math behind comparing frequencies in cents. It was interesting to hear the patch play notes of a harmonic series randomly.