all final projects need to be handed in on CD-R and zipped and emailed to tre@music.ucsd.edu

option A - create a polyphonic FM synthesizer

1 - the synthesizer should have at least 6 voice polyphony
2 - it should be playable by a MIDI keyboard and should respond to
   a - MIDI key down and key up with note and velocity
   b - MIDI pitch shift - shifts pitch one octave up and down
   c - MIDI controller 7 - controls overall volume
   d - MIDI controller 1 - controls FM 2 index
3 - each voice should consist of
   a - a pair of 2 oscillator FM generators
   b - 3 envelopes, for FM index, filter frequency and amplitude
   c - a filter section - your choice of filters
4 - the following parameters should be available - global to all voices
   a - FM-1: ratio, octave, envelope amount for index, volume
   b - FM-2: ratio, octave, index, detune, volume
   c - Filter: frequency, envelope amount, resonance
   d - Envelopes 1-3: attack, decay, sustain, release

5 - all of the workings of the synth should be in subpatches. the patch should open to a
   control panel with inner workings hidden

6 - you should create 4 presets in your synth, each preset should be loadable from a
   control on the front panel
final project - music 171 - 25 points

7 - present in front of class (1 point)

**option B - propose your own project**

the project should contain 3 of the following:

looping, FM, AM, waveshaping, delay, filtering.

it should also use either some form of sequencing or MIDI control.

your proposal should contain a detailed description of project and a diagram. proposals will be due on tuesday february 26th, and will be accepted if they demonstrate a good knowledge of the above techniques and are complex enough to make interesting sound.

requirement 5 from option A applies

**class presentation is required for option B.**