DM1595 Program Development for Interactive Media
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SuperCollider, Mandatory Lab instructions

Mandatory Lab

You can find the `mandatory_lab.scd` template on the relative SuperCollider Assignment page on Canvas. In alternative, you can also open this pdf in Adobe Acrobat Reader and you should be able to see an interactive marker which will directly open the corresponding source file in SuperCollider:

To pass the lab, you have to submit in Canvas the SC patch with the four solved tasks and a video recording of your screen (with sound) of Task 4. Before submitting, make sure that everything works without errors in the post window.

Don't forget to comment your code and always pay attention to the overall amplitude checking the `s.meter` !

1. Write a Synth using additive synthesis, no matter the method you want to implement, with the following properties: given a fundamental frequency `\freq`, it generates a sound based on its odd harmonics (at least 5), with decreasing amplitudes for each partial.

2. Write a Synth using `Klank.ar` with PinkNoise as its input source. Fill the frequency array with 10 harmonic partials randomly detuned by $\pm 10\%$. (Hint: a value generated by `rrand(0.9, 1.1)` represents a 10% deviation). Pay attention to the amplitudes!

3. Rework both previous synths so the first one is shaped by a `perc` envelope with `attackTime = 0.01s` and `releaseTime = 0.5s`, and the second one by a `triangle` envelope with `duration = 5s` and `level = 0.7`.

4. The `GrainIn.ar` UGen is a granulator: it granulates an input signal, meaning it basically chunks the signal in microportions (grains) triggered by a given function. Give also a look at the help file for `GrainIn.ar`. This said, take the Task 1 (additive synthesis without the envelope) and set a fundamental frequency of 440Hz. Use that sound as input signal for the granulator. Also use the X cursor position to control the impulse frequency between 10 and 100 Hz and the Y position to control the grain size between 0.001 and 0.01 s. Run this new synth and make a video recording of your screen (with audio) while exploring the sound-space with the mouse. It will be useful having the `FreqScope.new` in foreground to visualize what is going on.