

21M.370 Digital Instrument Design

Lab 1 - Feb 3

Deliverable:

A functional Automatonism patch with at least 10 modules. Have your patch ready to show to the class on Monday, and be prepared to talk informally about how your patch works.

Assignment description:

This week we are just going to get familiar with Github and Automatonism. The materials include two videos which will give you all you need to complete the lab, and the other materials will give you a deeper understanding of modular synthesis and working with automatonism.

The list of resources for this lab:

1. A link to an introduction to modular systems
2. A link to the autoMITonism github repo
<https://github.com/collaborative-music-lab/autoMITonism>
3. Two intro to automatonism videos (description below, will give you everything you need to complete the lab).
4. One video by the creator of automatonism Johan Ericksson with more advanced techniques, as inspiration:
<https://youtu.be/pcMXOuBf7yM>
5. Several pictures of automatonism patches, for inspiration.

MODULAR SYNTHESIZERS – A SIMPLE EXPLANATION

<https://www.thomann.de/blog/en/modular-synthesizers-explained-simply/>

(published by Thomann Music, a European music store)

This article gives a brief overview of the history of modular synths, paralleling what we talked about in class. It follows with a discussion of the most important components of a modular synth.

Read the article and look for and be able to describe the following terms:

- Patch
- Control Voltage (CV)
- Gate & Trigger signals
- Oscillator (VCO)
- Filter (VCF)
- Envelope
- Modulator / LFO
- Mixer
- Sequencer

INSTALLING the autoMITonism repo

1. Create a github account if you don't already have one
2. If you don't already know how to work with github I recommend downloading the desktop github app
[Cloning a remote repo using github desktop](#)
3. Choose a class folder for storing github repos
4. You will also likely want a separate folder for your personal class files
 - once you've downloaded autoMITonism, copy and paste it into your personal class folder
 - this prevents github from overwriting or trying to commit your personal files

5. While you're at it, go ahead and clone the main class repo as well:
<https://github.com/collaborative-music-lab/NIME>
- just like before, you'll want to have a separate folder for your personal files and then copy and paste what you need from the class github

Note that there is a lot of info and a FAQ about puredata and autoMITonism in the pure data readme at:

<https://github.com/collaborative-music-lab/NIME/tree/master/Puredata>

The following two video tutorials to which show you how to install and create your first Automatonism patch.

Tutorial 1: Installing and setting up Pure Data and Automatonism

<https://youtu.be/2NrdJfelAJk?list=PLV5huCqz1xvmKQxbV-Vtem1phWbz5QieK>

- you should use autoMITonism rather than the default version described in the video
- configuring pure data settings
- quick overview of automatonism

Tutorial 2: First basic patch

<https://youtu.be/oDTEODfUUsE?list=PLV5huCqz1xvmKQxbV-Vtem1phWbz5QieK>

- VCO, sequencer, clock
- envelopes and VCAs
- reverb

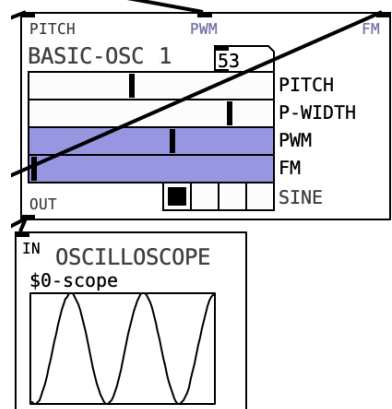
Notes:

- the quick-guide can be useful if you need a review of basic principles
- you can right-click on any module to read a help file describing the module and its controls
- hit the 'esc' key to open the module list
- command-E / ctrl-E to switch to edit mode in PD
- the 'manual' button gives some helpful information, especially the signal-flow and color-coding sections
- the 'scope' (or oscilloscope) module will give you a way to view the output of an oscillator

AUTOMATONISM

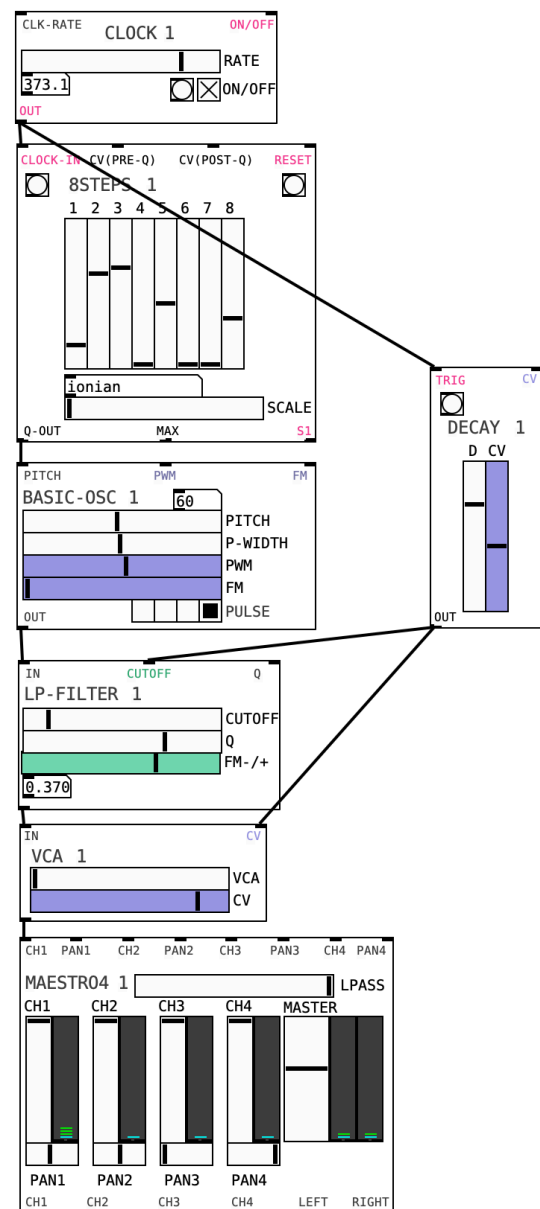
- ☐ <-- QUICK-GUIDE
- ☐ <-- MANUAL
- ☐ <-- MODULES (esc)
- ☐ <-- SAVE! (enter)
- ☐ <-- RESET!
- ☐ <-- EXTERNAL-MESSAGES!

5 CPU%

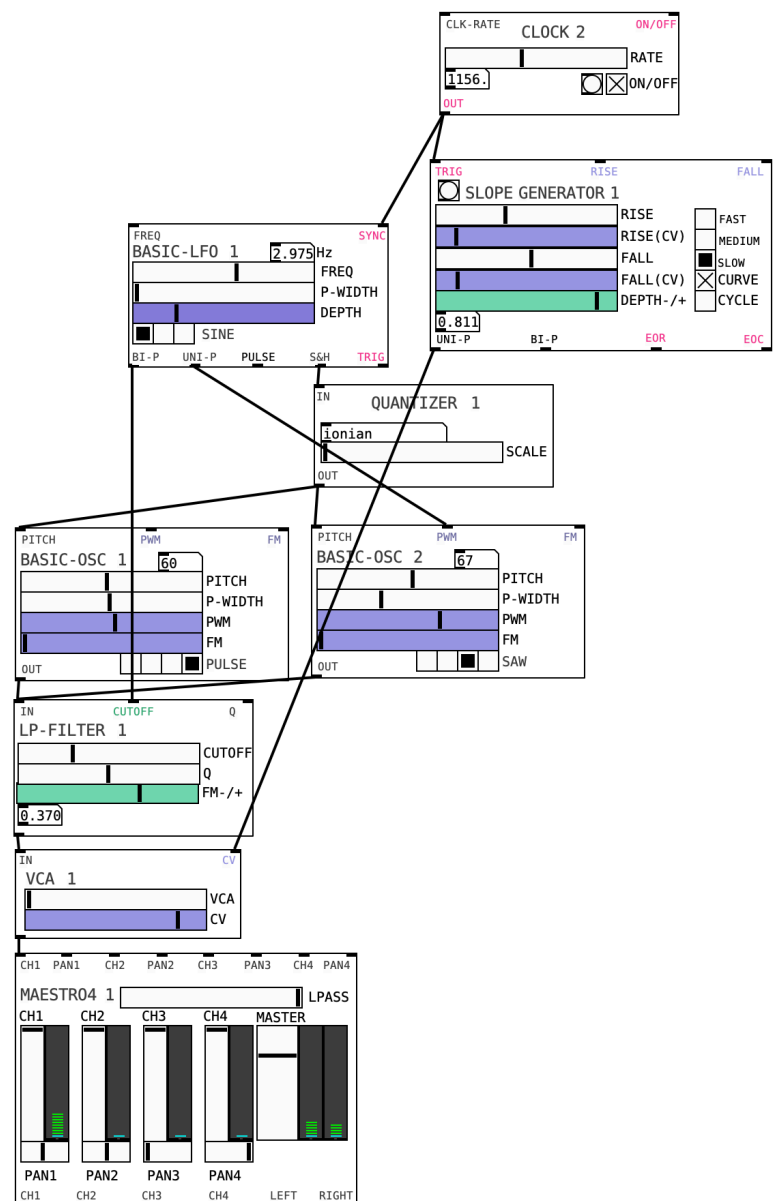


After watching the two videos you should be able to explore some of the other Automatonism modules. Here are a few configurations you might find interesting:

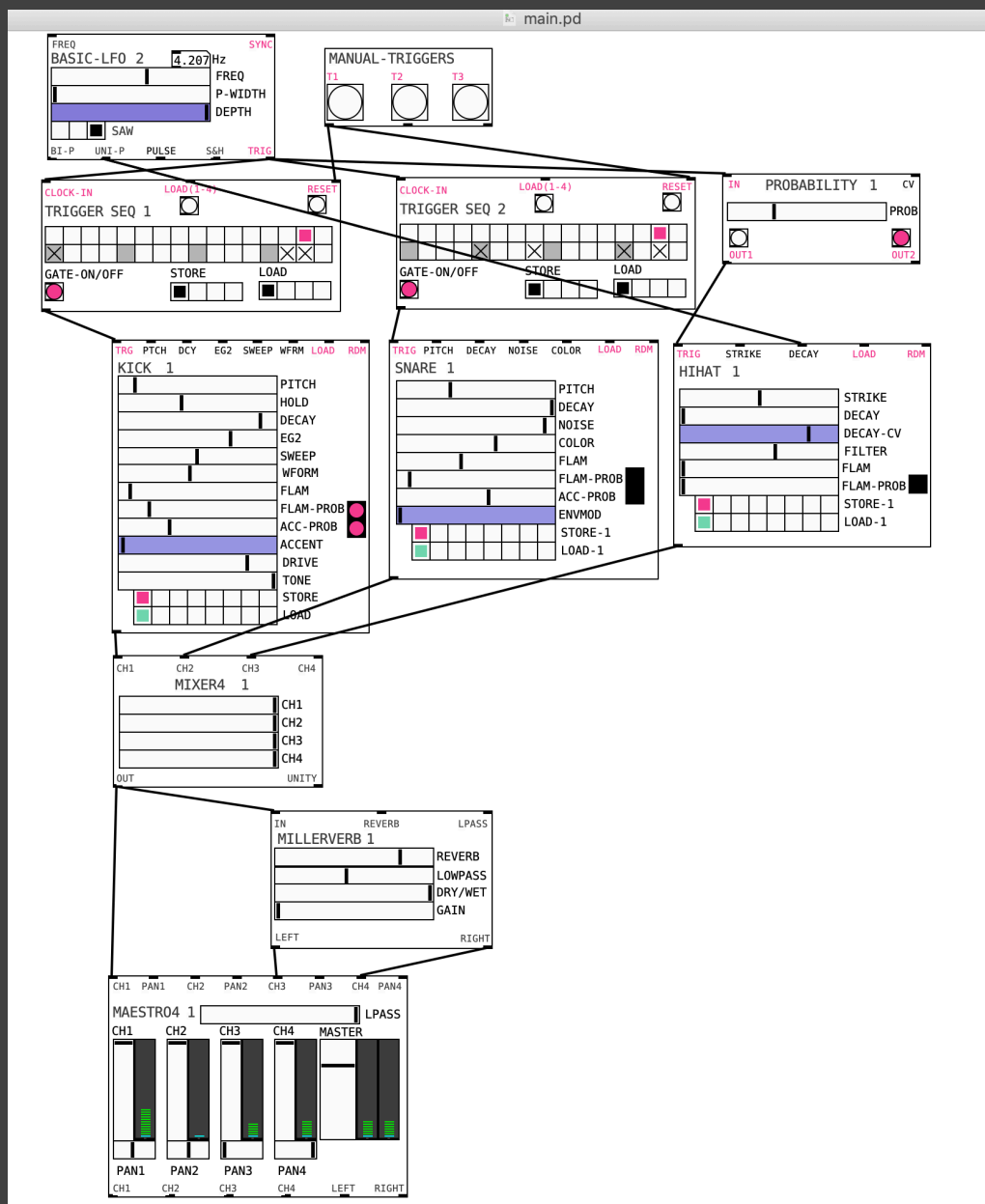
Basic subtractive synth



Two-voice subtractive synth with LFO



Drum sequencer



Two voice pitch sequencer.

