

## 21M.370 Digital Instrument Design

### Lab assignment - Due February 24 at 2:00pm

**Deliverable:**

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

Keep in mind the lab assignment is due at the end of class on the 24th - there will be time to work in class to finalize your patch before submitting it.

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**Assignment description:**

This week we are just going to get familiar with 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. Two intro to automatonism videos (description below, will give you everything you need to complete the lab).
3. One video by the creator of automatonism Johan Ericksson with more advanced techniques, as inspiration:  
<https://youtu.be/pcMXOuBf7yM>
4. 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

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>

- downloading the software
- configuring pure data settings
- quick overview of automatonism

Tutorial 2: First basic patch

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

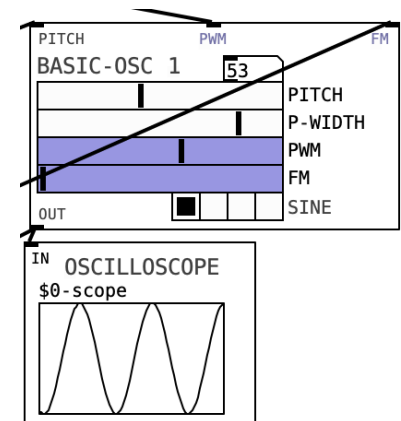
- VCO, sequencer, clock
- envelopes and VCAs
- reverb

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

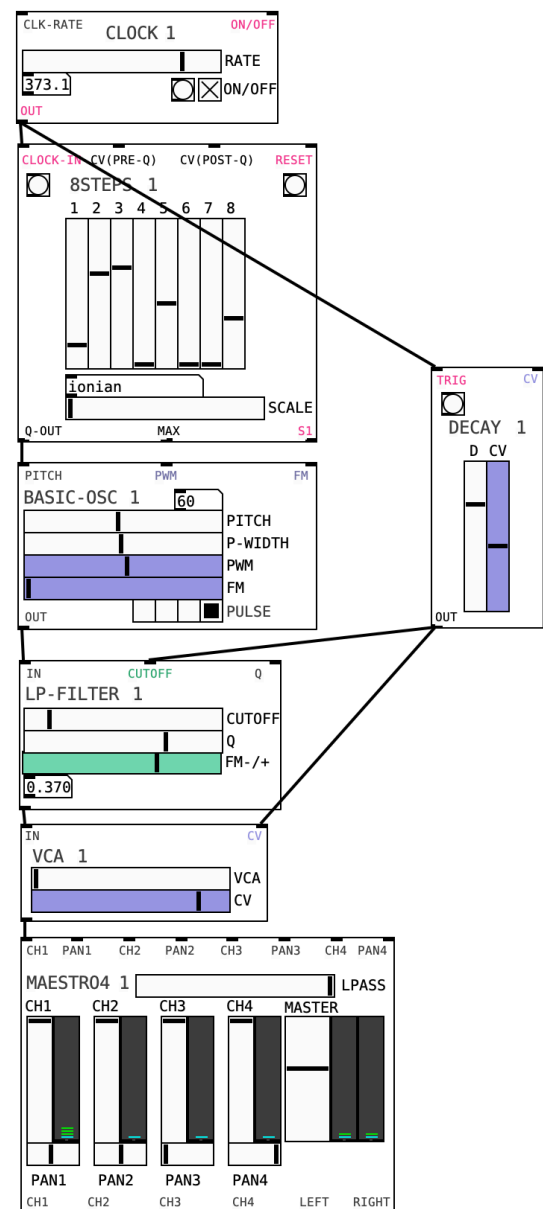
## AUTOMATONISM

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

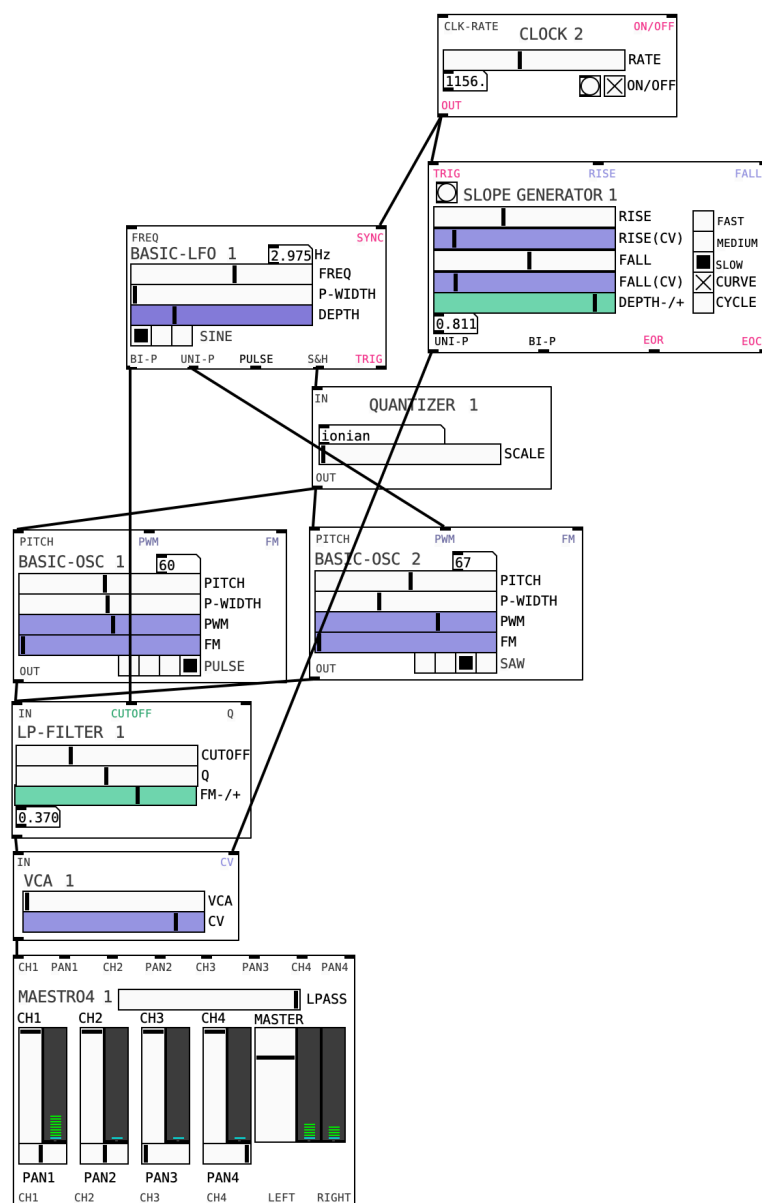


After watching the two videos you should be able to explore some of the other Automatonism modules. Here are a few configurations you might find interesting:

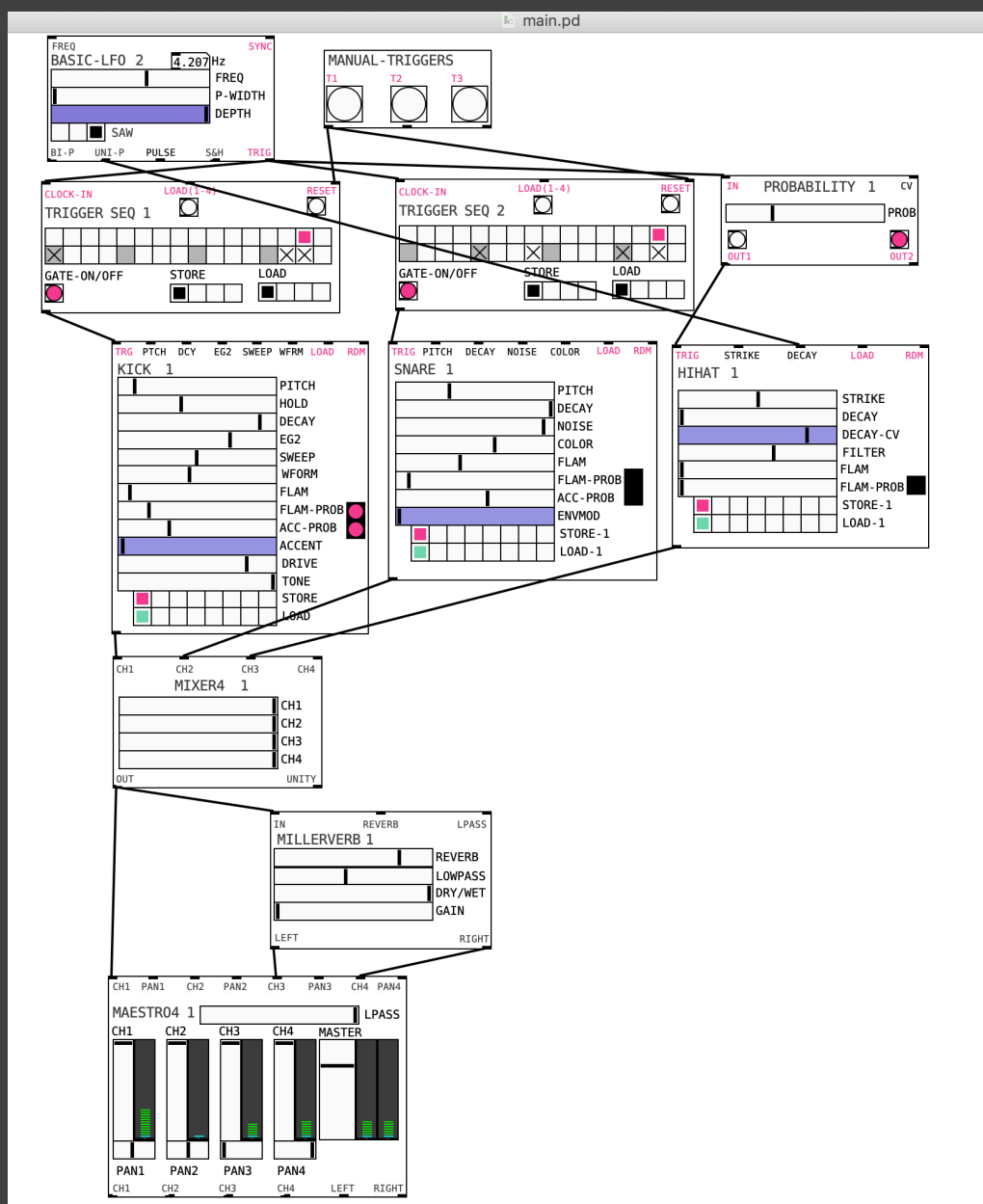
### Basic subtractive synth



### Two-voice subtractive synth with LFO



## Drum sequencer



## Two voice pitch sequencer.

