ArduinoIDE Sketch

The Teensy 4.1 is compatible with the ArduinoIDE through the usage of the Teensyduino add-on. This file takes in the sensor data from the twelve LDR modules and the two potentiometers. It turns the Teensy 4.1 into a MIDI device that can then be used in PureData as a MIDI input.

PureData

The main PureData patch begins with a toggle of a basic melodic sequencer of twelve steps. This patch also takes in the MIDI values from the LDR modules and maps them to each step of the sequencer. The data from the sensors are smoothed using two different smoothing algorithms. The first lightly smoothes the data and is used for detecting the placement of a pebble. The other is sent to a subpatch called “scale” where the values are locked into a musical scale. In this patch, each data stream is run through a subpatch called “change” where the stream is locked into a set of MIDI values that correspond to a musical scale. This scale can be changed in the main patch by altering the message list of note values.

Connecting to a DAW/synth plugin

To connect to another software, you must use a virtual MIDI port such as loopMIDI. Once you have created a virtual port, you can use the set port as a MIDI out in PureData. Once this is done, you can connect the patch to any other MIDI-capable software.