Week 1 - Pd Basics

Pd Maths

- Numerical values can be manipulated by the many arithmetic objects in Pd

- Arithmetic

`+`	addition
`-`	subtraction
`*`	multiplication
`/`	division
`pow`	raise to a power

- Arithmetic 2

`min`	minimum of two numbers
`max`	maximum of two numbers
`mod`	return remainder of a division
`div`	return result of division without remainder

- Relational tests

`==`	equal to
`!=`	not equal to
`>`	greater than
`<`	less than
`<=`	less than or equal to
`>=`	greater than or equal

- Acoustical unit conversion
  `mtof` midi note value to frequency
  `ftom` frequency to midi note value
  `dbtorms` decibels to linear (RMS) amplitude
  `rmstodb` linear amplitude to decibels

- Higher mathematical functions

`sin`	sine function
`cos`	cosine function
`tan`	tangent function
`atan`	arctangent
`exp`	exponential function
`log`	natural logarithm
`abs`	absolute value
`sqrt`	square root

- Other

`expr`	construct an expression
`random`	pseudorandom integers
`float`	store a float (may be shortened to simply ‘f’)
`int`	store an integer (may be shortened to simply ‘i’)

PD data flow

- Inlets
- Leftmost (1st) inlet is always ‘hot’: messages received here causes an object to process based on previously initialised, set or default values, and produce outputs
- Any other inlets cause result to be stored until next message received on 1st inlet

Order of connections

- Use of multiple connections from one output can sometimes be problematic if order is important
- Impossible to tell order just from graphic patch
- `trigger` object can be used to guarantee order and make code readable