Introduction to Creative Coding

Week 4 - Image, Video and Camera

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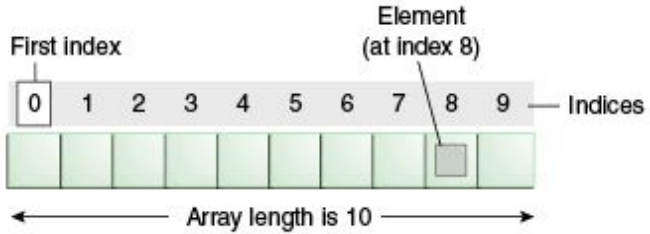
Resources for each week available at:
https://github.com/VizRCA/intro-to-creative-coding

Topics

Week 4

- Recap week 3
- MOAR OOP
- Images and Pixels
- Video and Camera



Recap wk3

Arrays
(these are important this week ;)

intro-to-creative-coding/g_arrays/
g_arrays.pde

intro-to-creative-coding/wk3/
arrayMappingWaves/
arrayMappingWaves.pde

intro-to-creative-coding/wk3/
array_challenge/
array_challenge.pde

Recap wk3

Continuous Evaluation, draw, frameRate, frameCount

Programs that animate or respond to input must run continuously.

In processing this is the draw() function.

You can only have one draw().

Frames (based on code inside draw) run at 60FPS by default, but you can change this.

Recap wk3

Flow control and wrapping, forces(Inertia and Damping, Gravity, Bouncing, Wind, Springs)

If things run forever we need to create rules so that things stay on the screen or behave in controllable ways.

Physical force models provide interesting ways to control behaviours visually.

Recap wk3

User Input (Mouse, Keyboard)

mouseFunctions_example.pde

keyboardFunctions_example.pde

Recap wk3

Abstraction and Object Oriented Programming (OOP)

Collecting together similar instructions or data structures to improve the design of programs.

It helps to reduce programming complexity and effort.

It can be done at a variety of levels: functions, classes and architecture.

Challenge

MOAR OOP

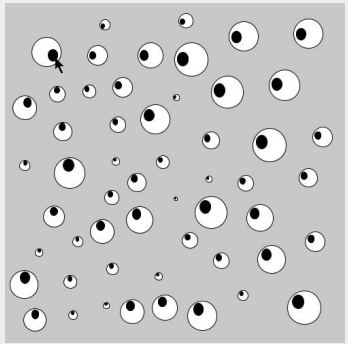
Open eye_challenge.pde

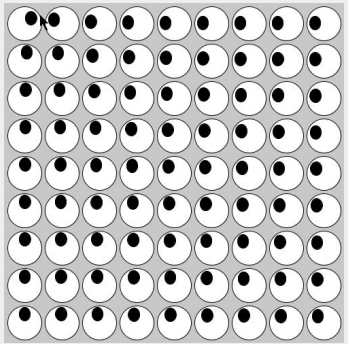
Complete this then open

oop_eye_challenge.pde

Once complete

Make an array of eyes that fills the screen e.g.





Tools

Images and Pixels

An image in Processing is an array of pixels.

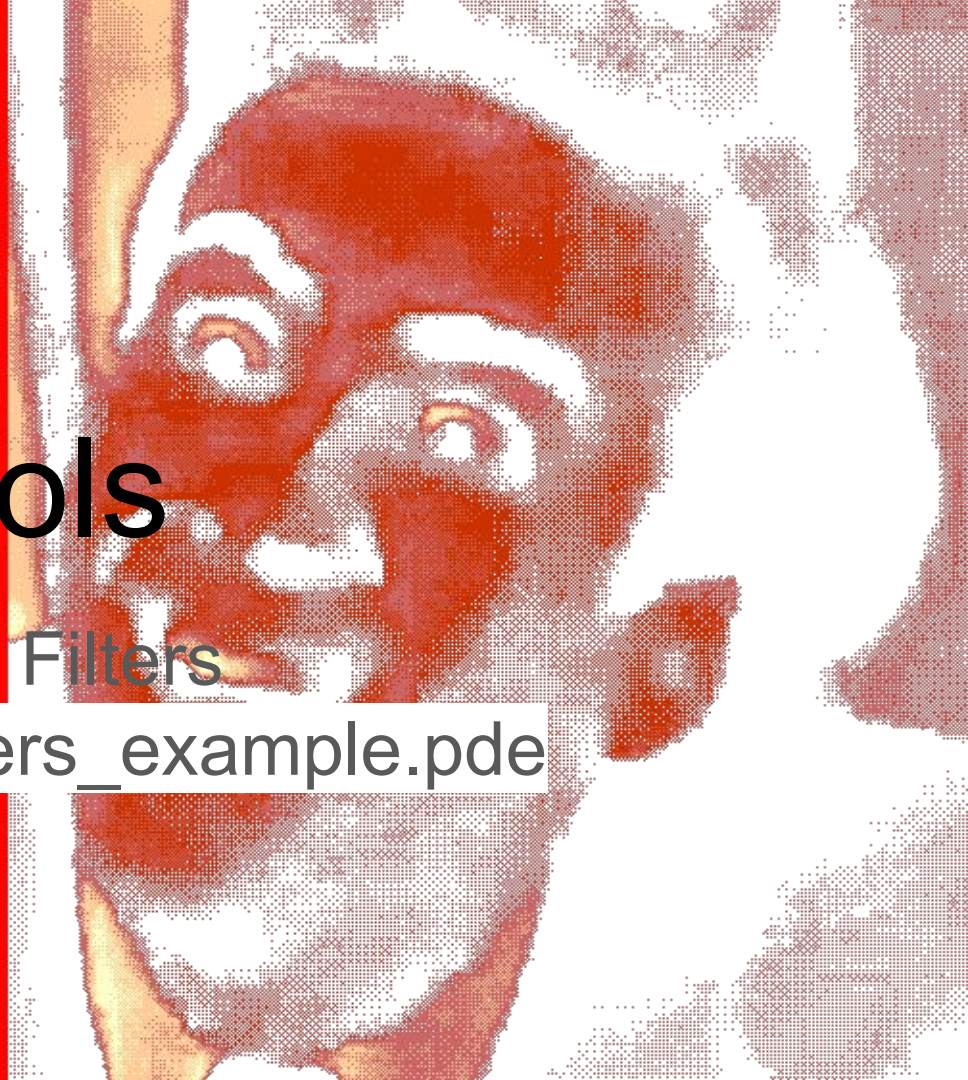
Displaying an image is easy, as processing has built-in functions to read .gif .jpg .tga .png

Open image_example.pde

Tools

Image Filters

Open imageFilters_example.pde



Tools

Pixel operations

Each image pixel can be queried or assigned using the get() and set() functions.

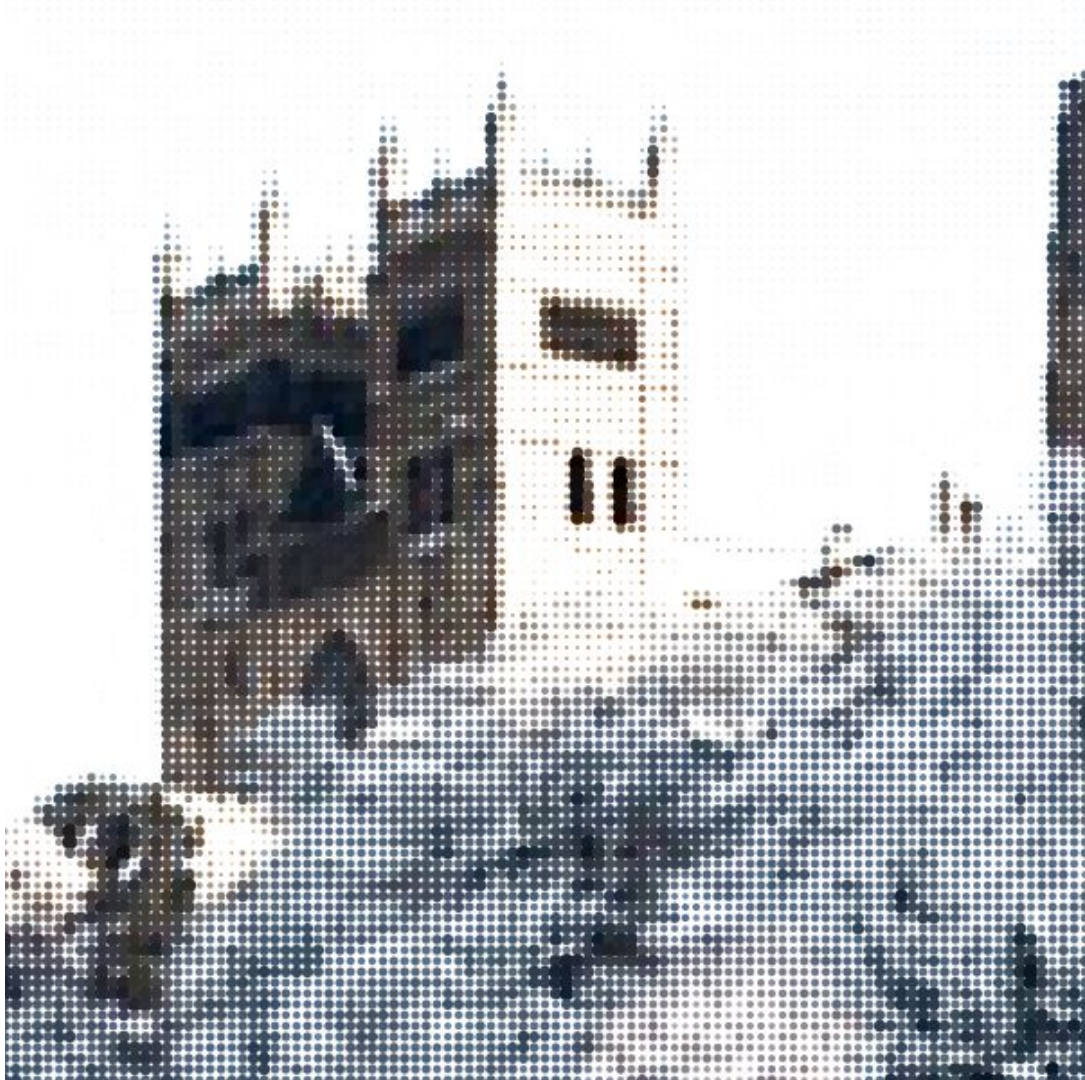
Open **colorFromImage_example.pde**

With this you can make your own filters.

Open **pixelPush_example.pde**

Challenge

extractPixel_challenge.pde
Make this >>>>>>>>>>>>>>



Experiment

imageProcess_experiment.pde

Ideas

- Replace the image
- Play with variables to give different effects
- Make it work horizontally
  - Switch modes using a button?
- Use some probability to pick slices from different zones with more chance

Tools

Video

Using the examples:

- basicVideo_example.pde
- tintVideo_example.pde
- movieOverview_example.pde
- torchMovie_example.pde
- pixelMovie_example.pde

Tools

Camera

Similar to video, but can access webcams. See processing examples if you have a camera on your computer.