creativity & computation lab

PGTE 5250
TUESDAY 3:50-6:30 PM
RM 1202, 6 EAST 16TH ST
MFA DESIGN+TECHNOLOGY, PARSONS THE NEW SCHOOL FOR DESIGN

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what is CC lab?

GIVE US TOOLS!

- Develop a foundation in the basics of computation
- Introduce you to new tools that you can use to realize/build your projects:
  - Survey three different programming languages
  - What is the best tool for the job?
- Practical, hands-on experience

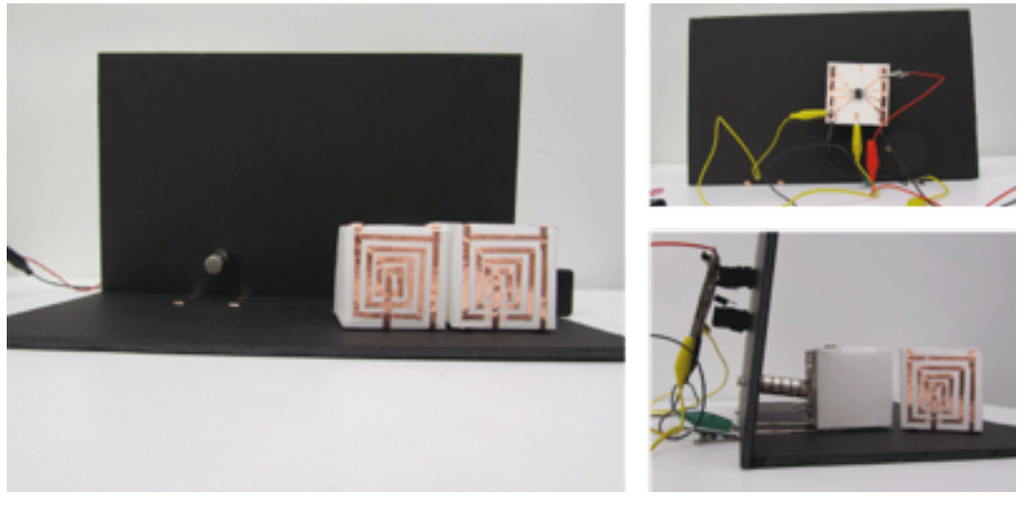
what is CC lab NOT?

GIVE US TOOLS!

- Super in depth study of one programming language
- Becoming a hardcore coder
- Learning how to hack code without understanding it

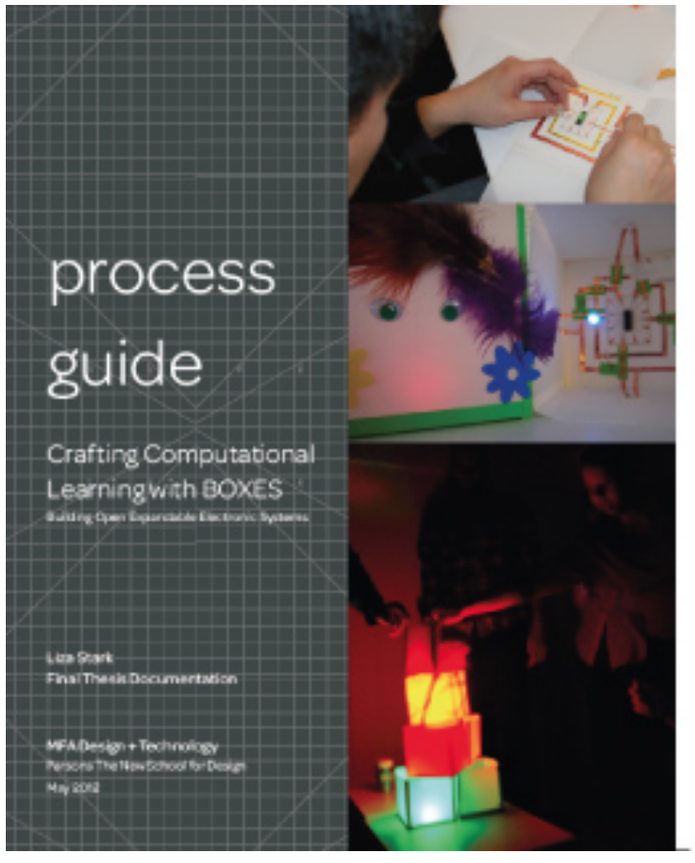
introductions

WHO AM I?



introductions

WHO AM I?



introductions

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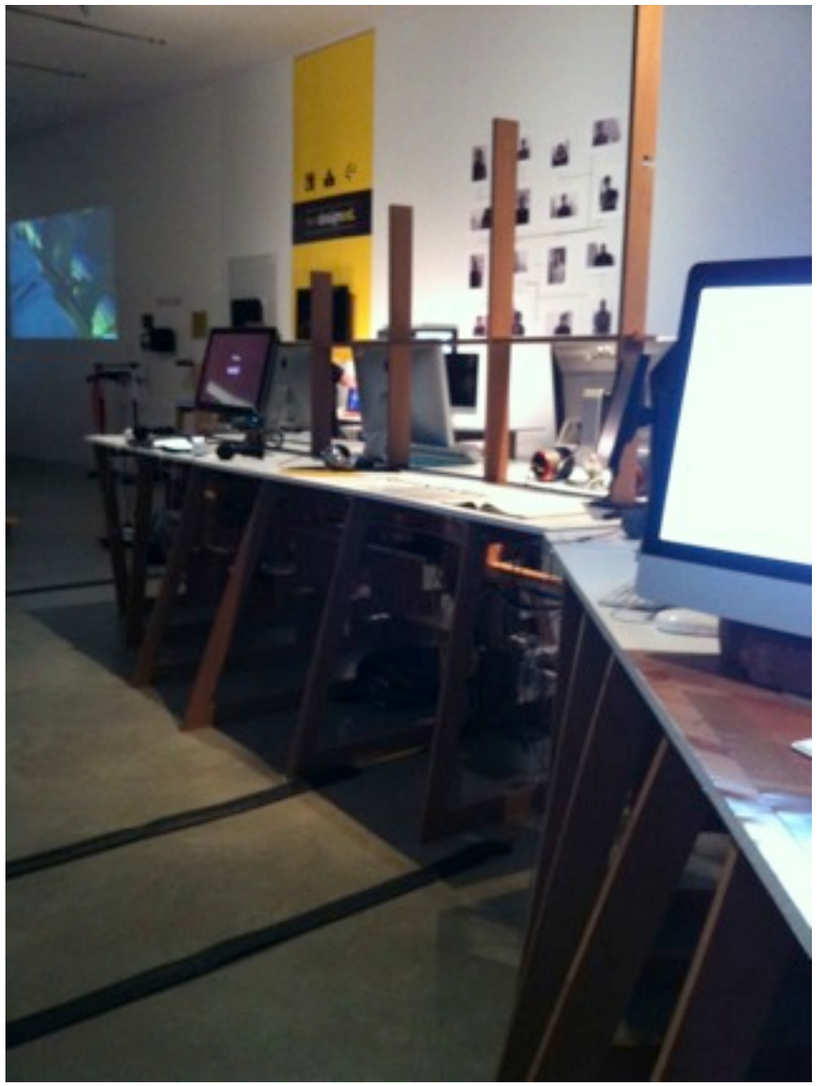
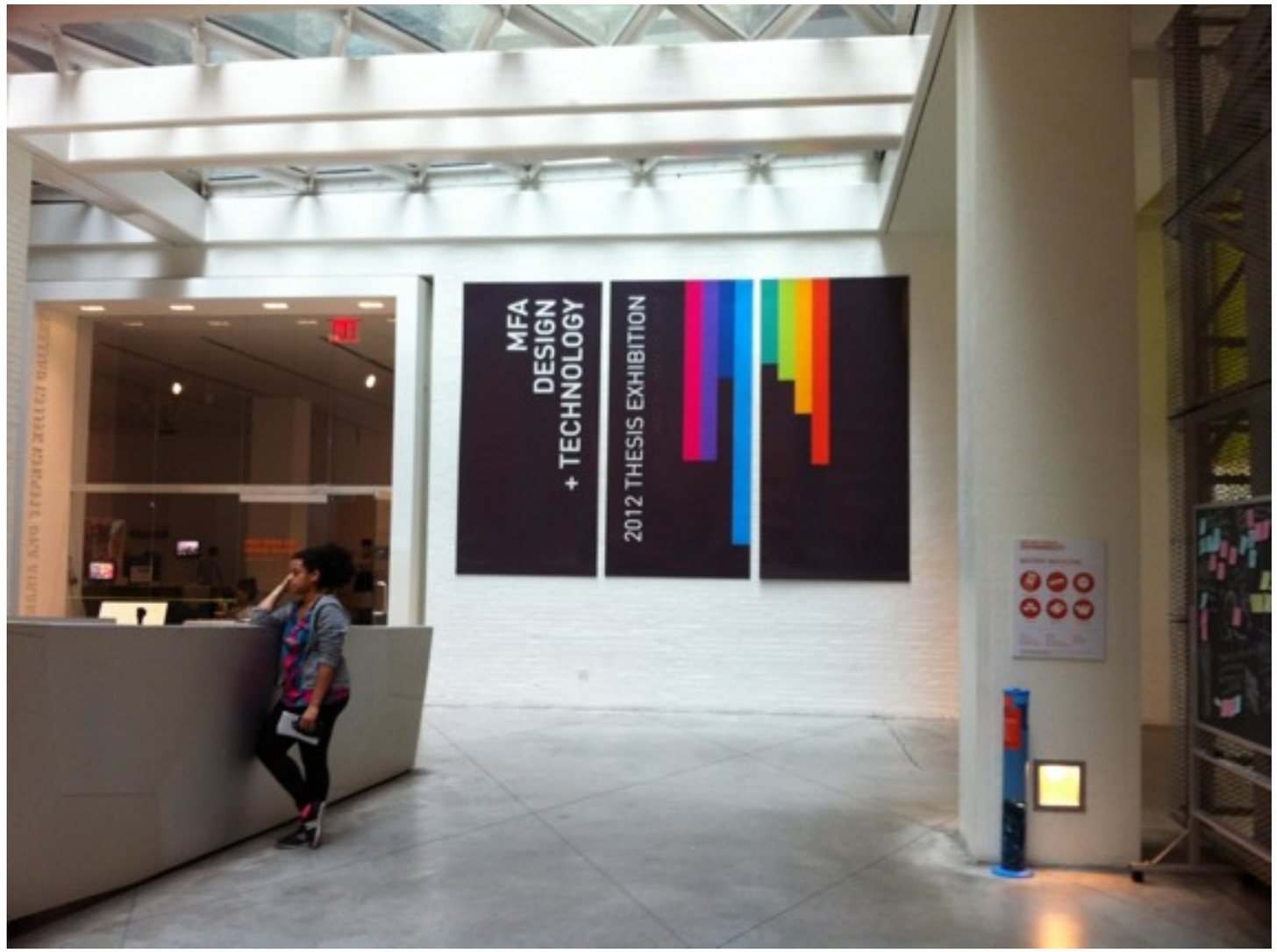




introductions

WHO AM I?

My role as your professor

Guidance

Teach you how to teach yourself

Help you design and execute awesome projects

introductions

WHO ARE YOU?

Your role as a CC Lab student

Complete your assignments

Participate in class

***Help your peers

introductions

WHO ARE YOU?

Presentation time!

bootcamp

LET'S AVOID BAD FLASHBACKS

What were your....

Triumphs?

Challenges?

Problem areas?

syllabus

OVERVIEW

What exactly are we going to be doing...

let's review

BACK TO BASICS

Some big questions

What is a programming language?

What tools are we learning?
//Which one is best for the project?

How do I study?

what is a programming language?

BACK TO BASICS

A language used to communicate instructions to a computer.

Allows humans to communicate with machines.

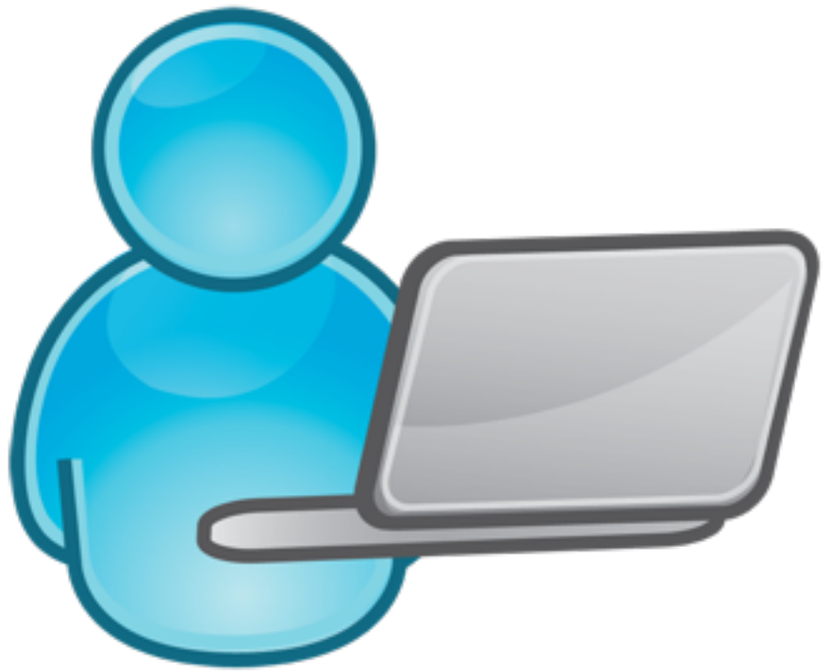
Composed of syntax (form) and semantics (meaning).

Performs computations or algorithms
Controls external devices.

High/Low level languages.

what is a programming language?

BACK TO BASICS



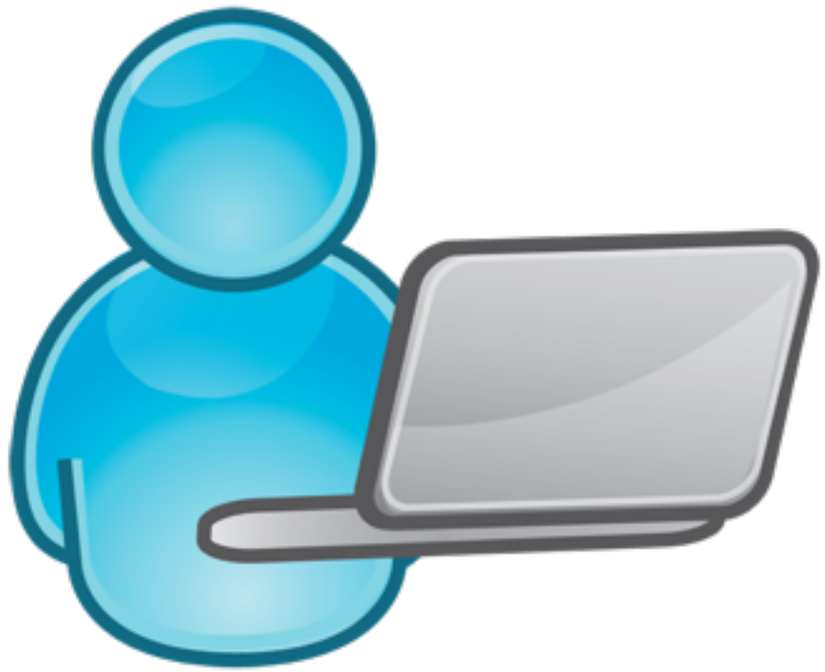
Hey computer!
Draw me a rectangle at 56, 46 with a width of 55 and a height of 20!

rect(56, 46, 55, 20);

1001001 010001
10000 10100...

what is a programming language?

BACK TO BASICS



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rect(56, 46, 55, 20);

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Compiler (translator)

what is a programming language?

THERE ARE SO FREAKING MANY!

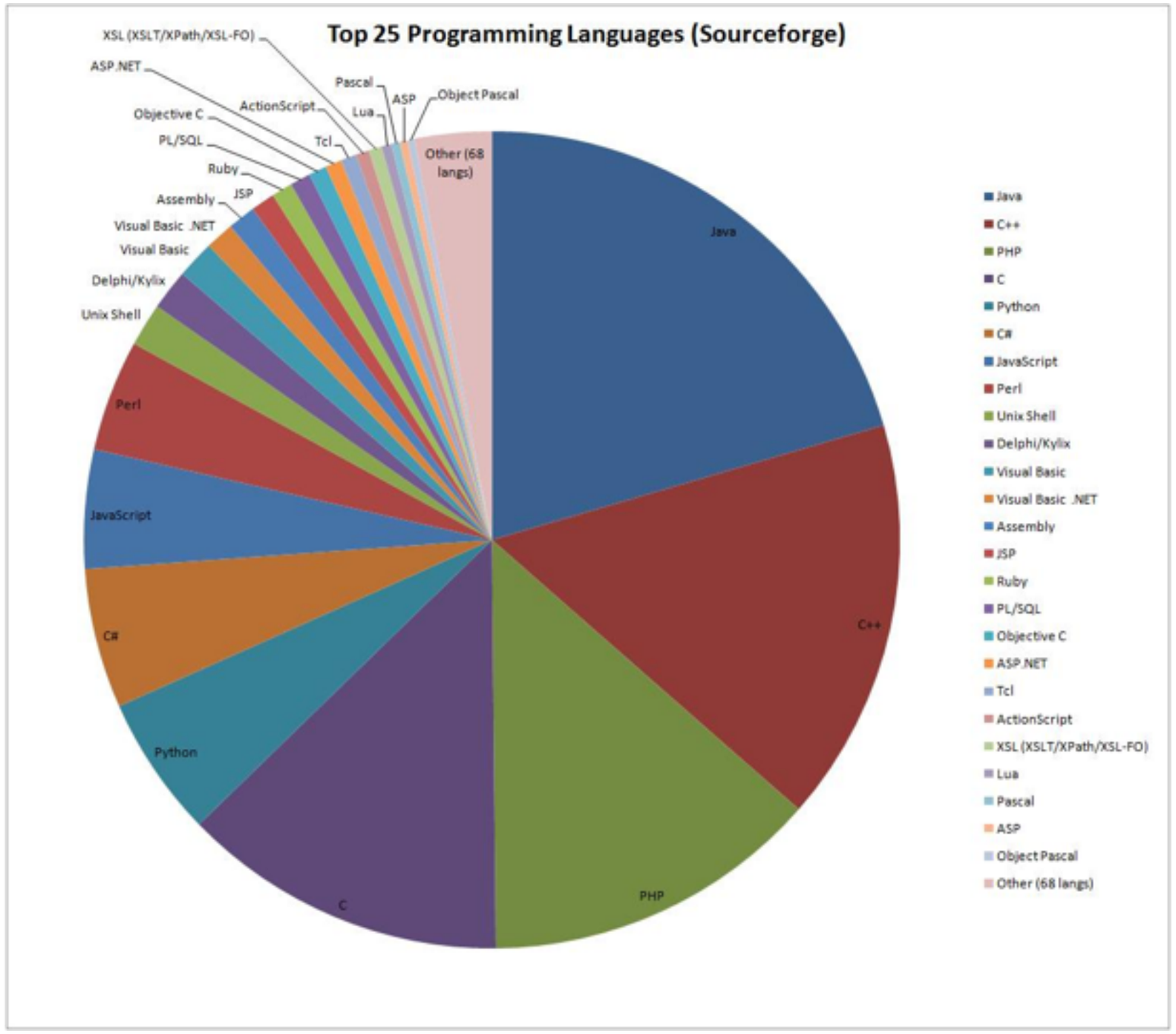


Image source: http://www.postmodernprogramming.org/

what tools are we learning?

WHICH ONE IS BEST FOR THE PROJECT?

Processing

Built on top of Java programming language

//Processing is actually a programming environment

Great tool to begin learning the basics of programming.

Widely used for education - LOTS of resources.

Good for quick prototyping.

Easy integration with Arduino.

what tools are we learning?

WHICH ONE IS BEST FOR THE PROJECT?

Arduino

//This is my jam.

Modeled on the Processing environment and uses simplified C++ commands and functions

Open source hardware/software.

Great tool to for rapid prototyping physical interfaces.

You can basically make anything with it.

Easy integration with Processing and oF.

what tools are we learning?

WHICH ONE IS BEST FOR THE PROJECT?

openFrameworks

Framework and set of libraries written in C++.

//You are actually writing C++

For more than the beginner, but more control over everything.

Can do things that Processing cannot.

Better for large scale projects.

Integrates with Arduino.

Display on interwebs

Runs easily on lots of computers

Quick prototypes

Anything with physical interaction or interfaces

Interface with Arduino

Gathering real world/time data with sensors

Use openCV

Work in video or 3D graphics

iOS or Android

a comparison

a.k.a. What is the best tool for the project?

how do i study?

JUST LIKE LEARNING ANOTHER LANGUAGE

Programming language.

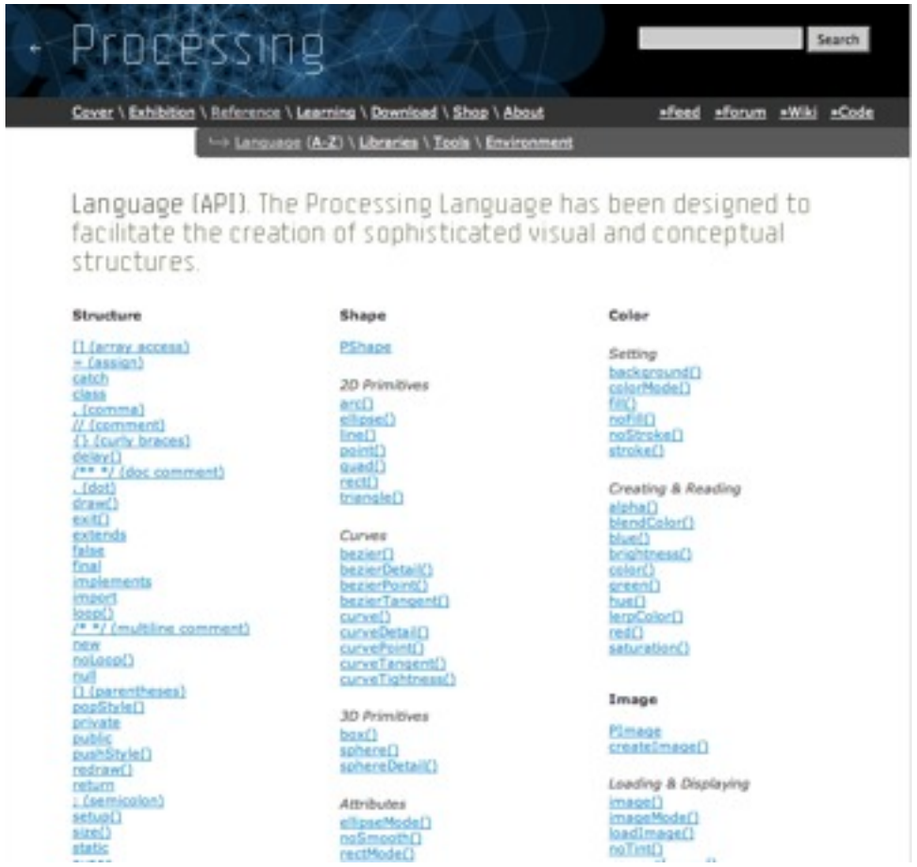
You need to use it frequently.

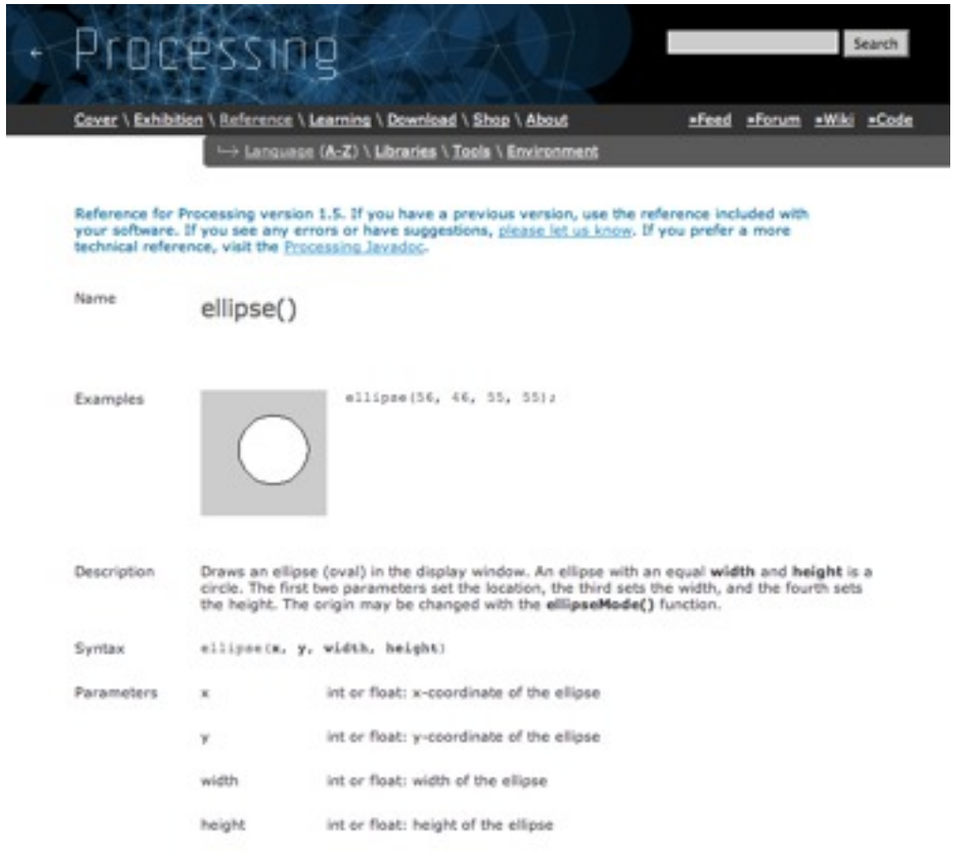
This is not about ~~memorizing~~.

how do i study?

JUST LIKE LEARNING ANOTHER LANGUAGE

1. Reference - every programming language has a documented reference. This is just like a dictionary.

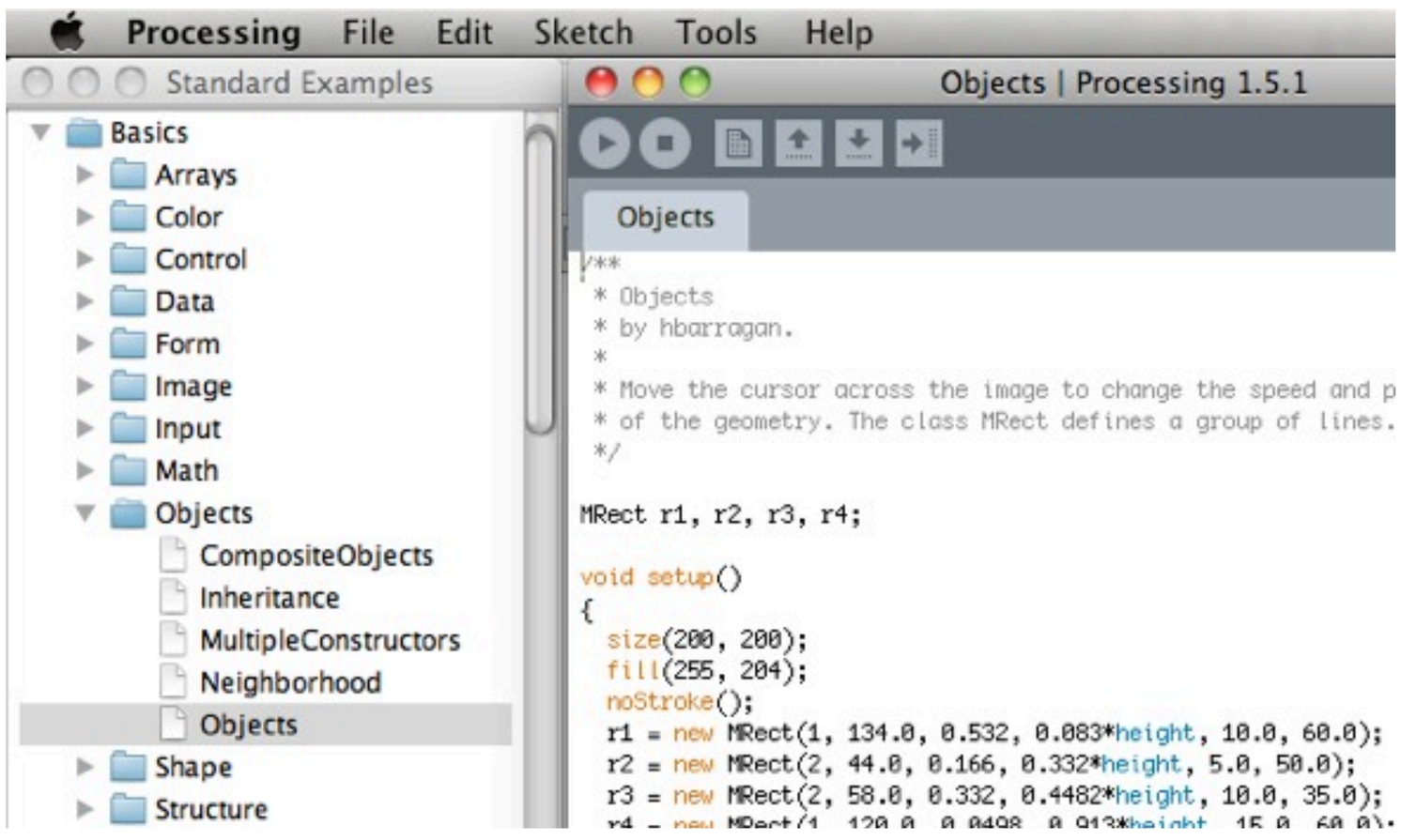




how do i study?

JUST LIKE LEARNING ANOTHER LANGUAGE

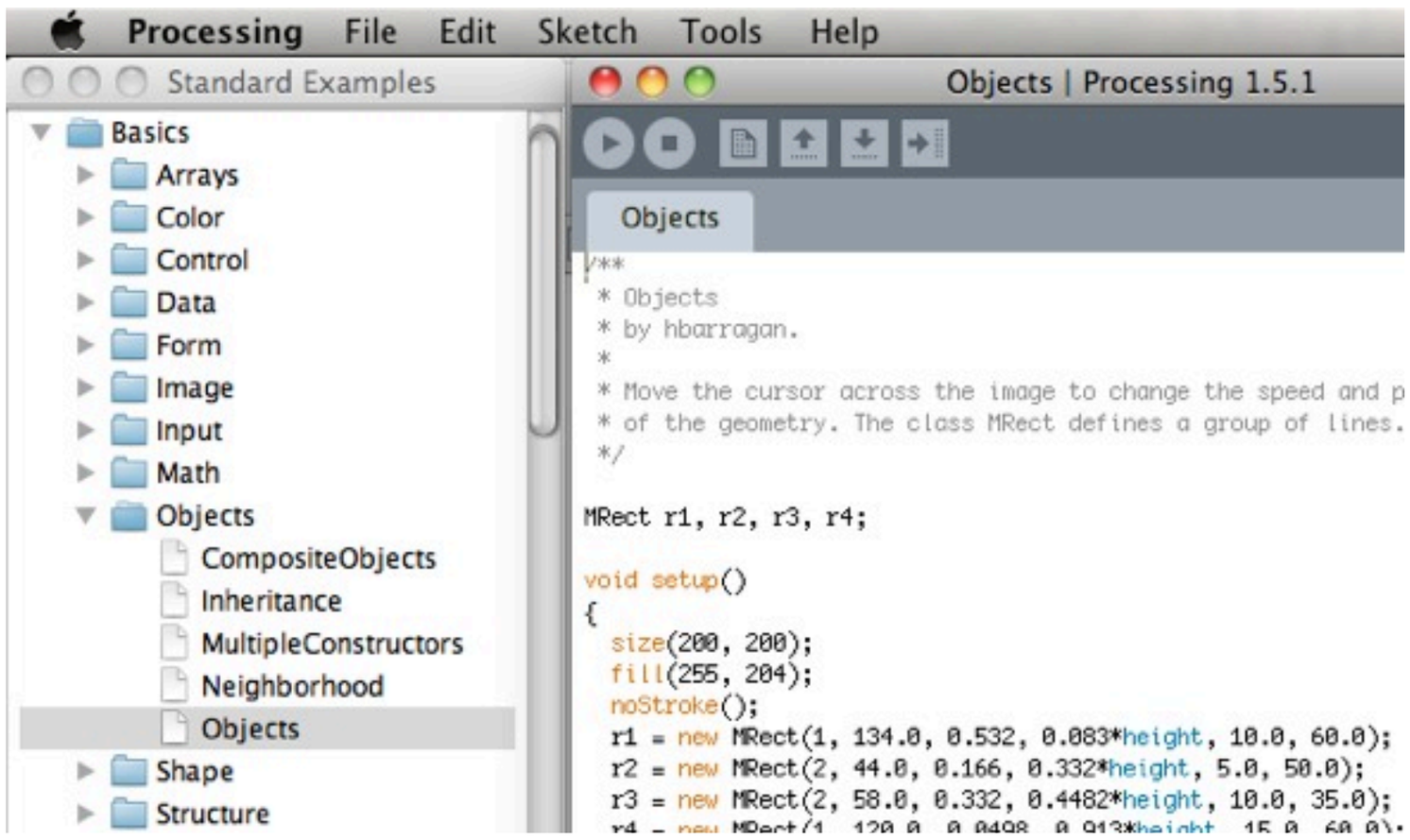
2. Tinker with examples and sample code - these are a great starting point! You can run examples, examine the code, and edit different parts to see what happens.



how do i study?

JUST LIKE LEARNING ANOTHER LANGUAGE

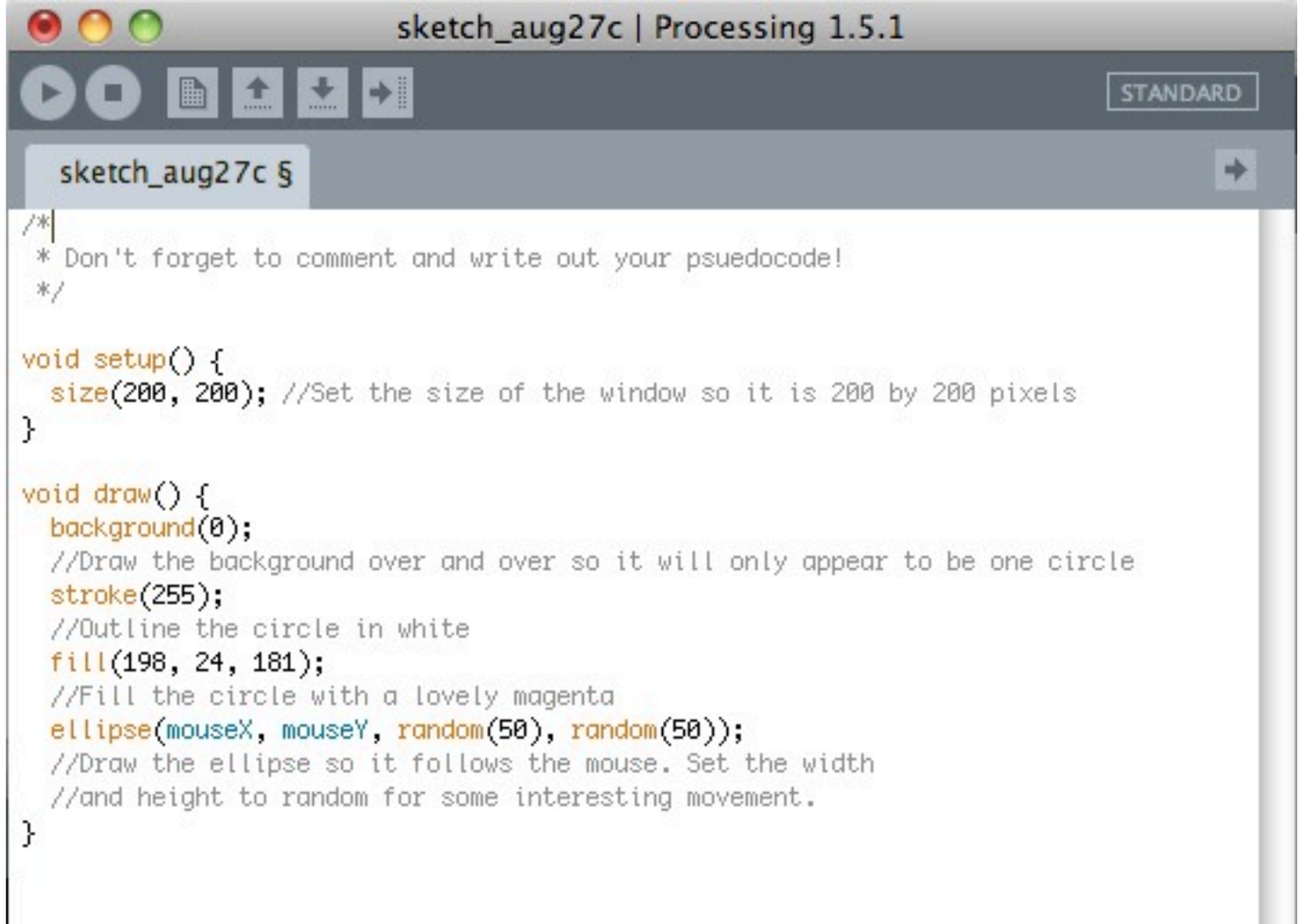
Don’t forget the examples in books - you may have to actually copy them, but this is good practice!



how do i study?

JUST LIKE LEARNING ANOTHER LANGUAGE

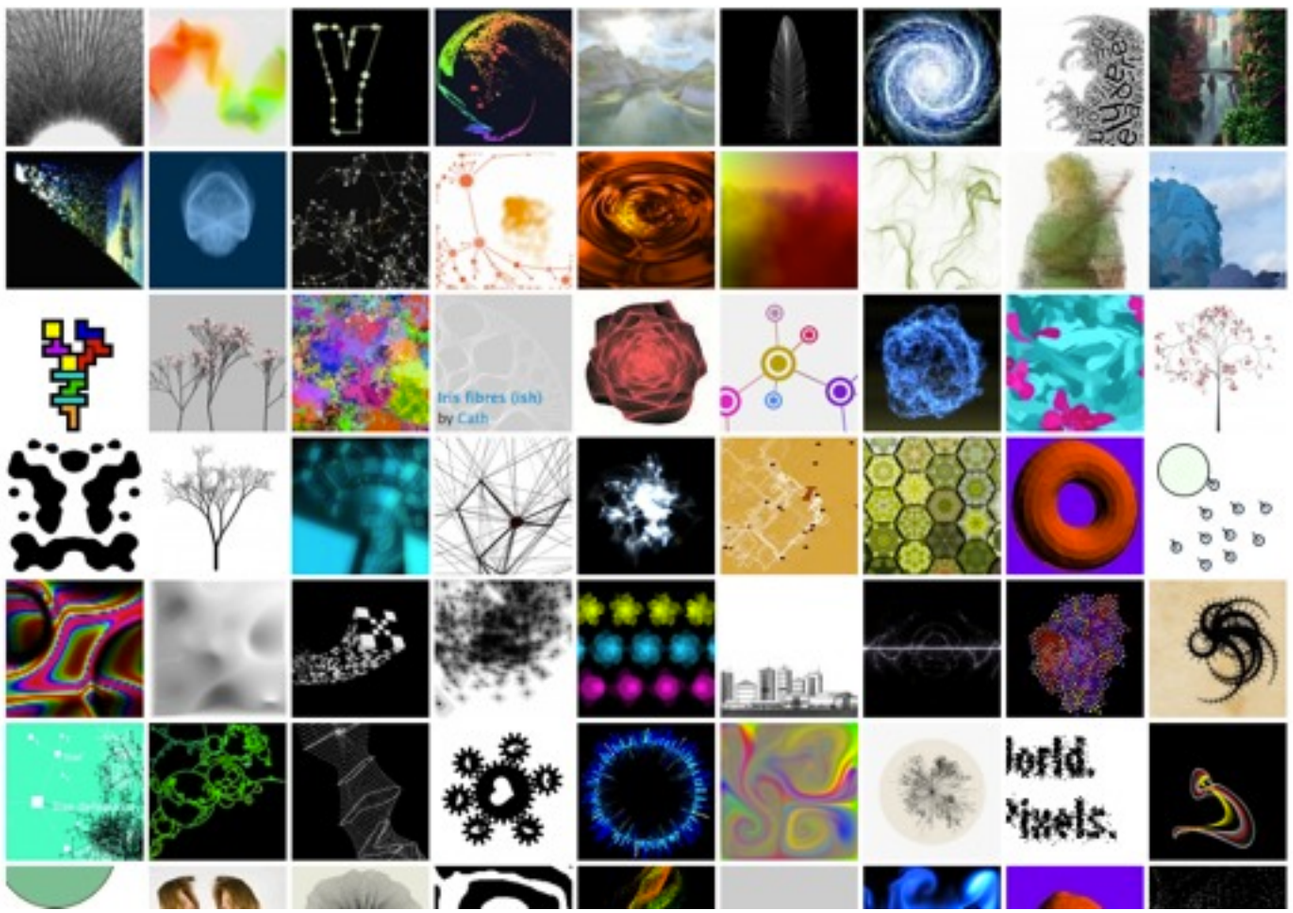
3. Commenting and pseudocode - not only are these requirements for the class, they are super helpful for structuring your code or when you get stuck in a problem.



how do i study?

JUST LIKE LEARNING ANOTHER LANGUAGE

4. Get inspired! Projects that inspire you will motivate you.

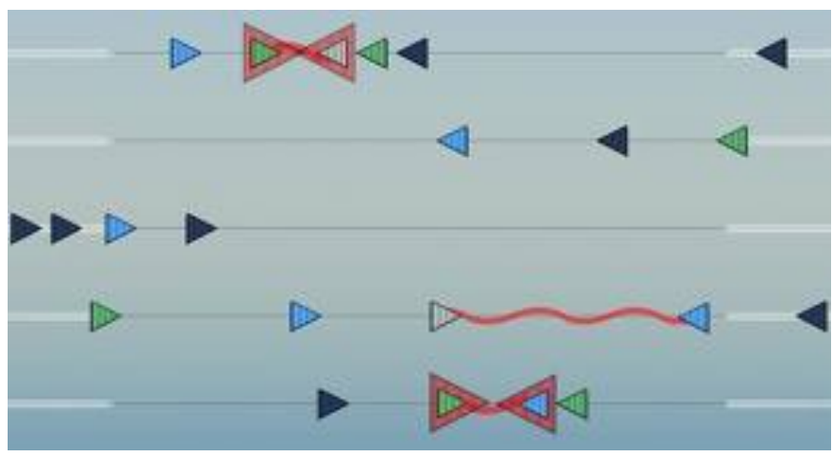


openprocessing.org

how do i study?

JUST LIKE LEARNING ANOTHER LANGUAGE

4. Every complex project started as something small...



Everything complex project started as something small!

recalibrate

IT'S NOT A TEST I SWEAR

Survey time!

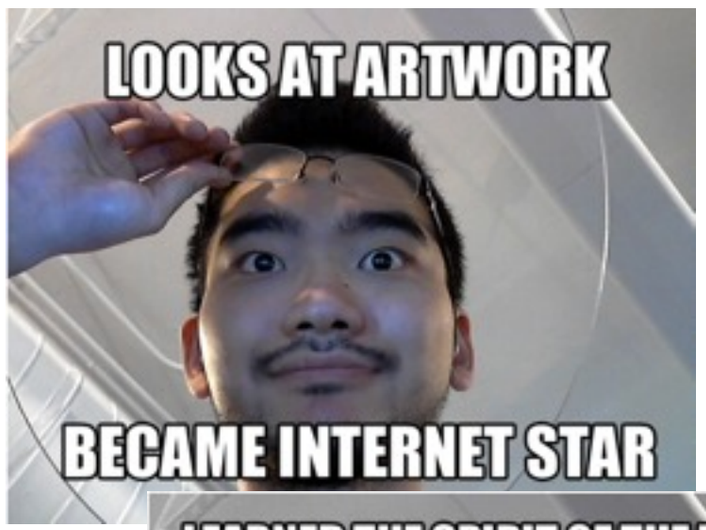
To help me know where you stand.

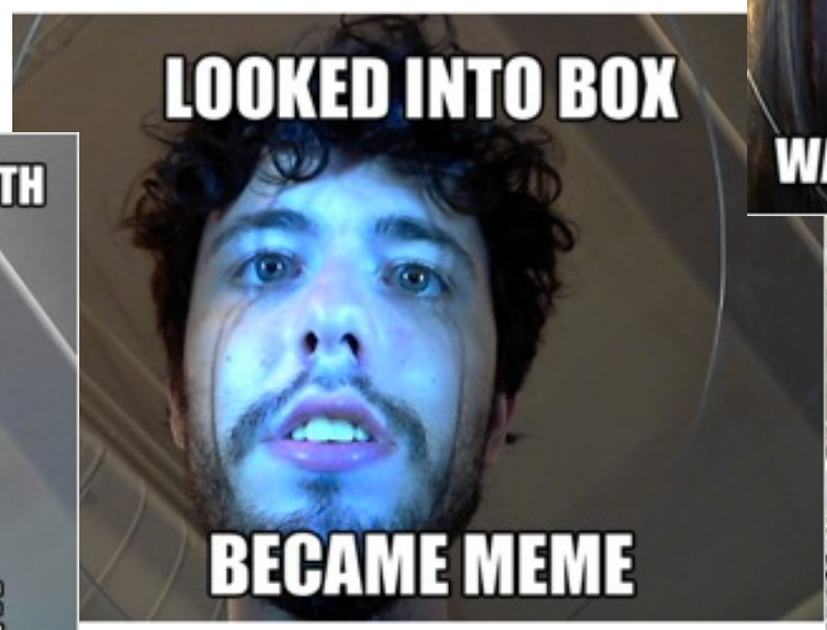
assignment for next class

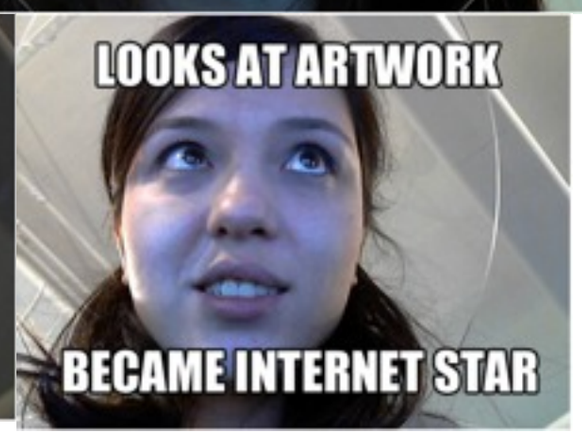
IT'S ABOUT TO GET REAL YALL

As you have probably already noticed, we love our memes.
We've even had thesis projects that generate memes

The Internet:
It's Serious Business
Brian Putz







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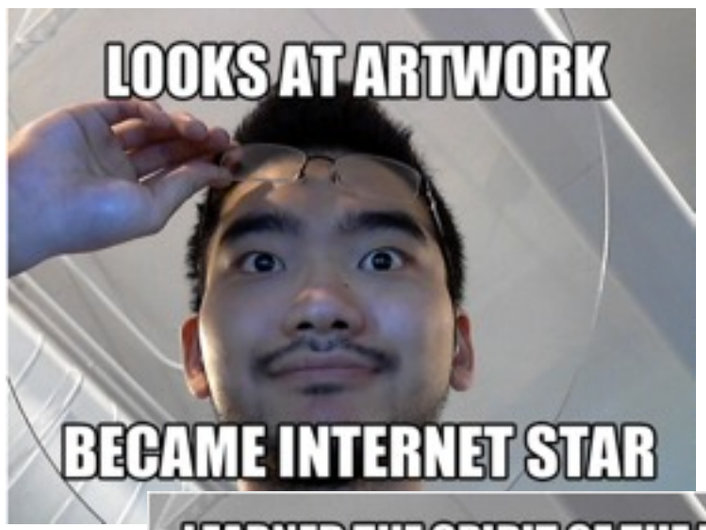
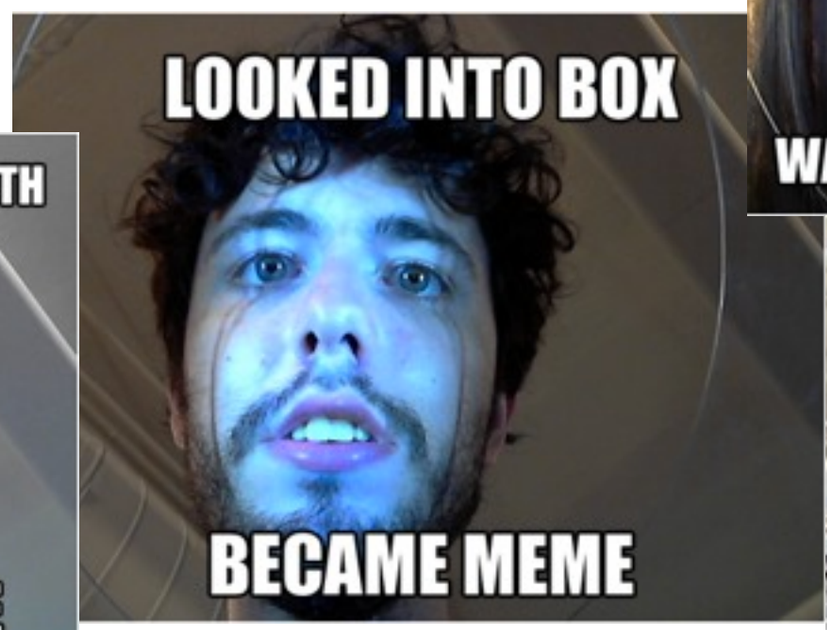
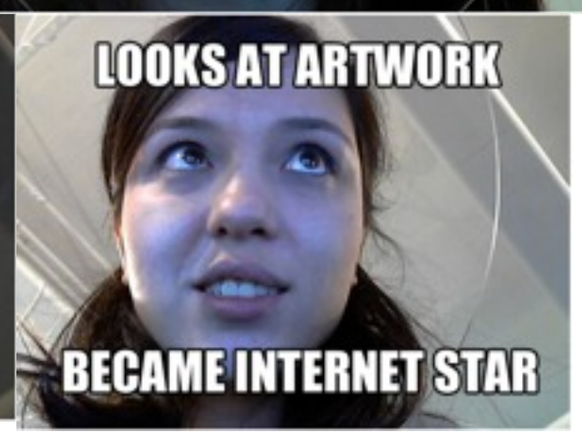


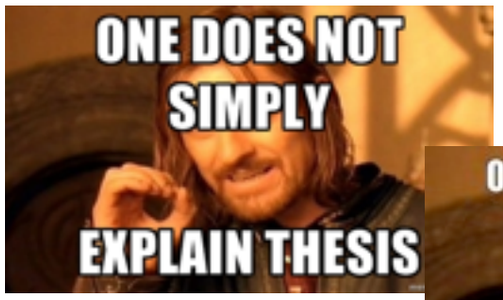


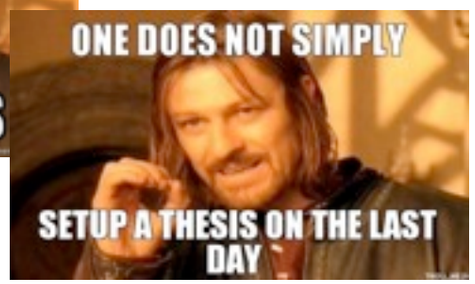


assignment for next class

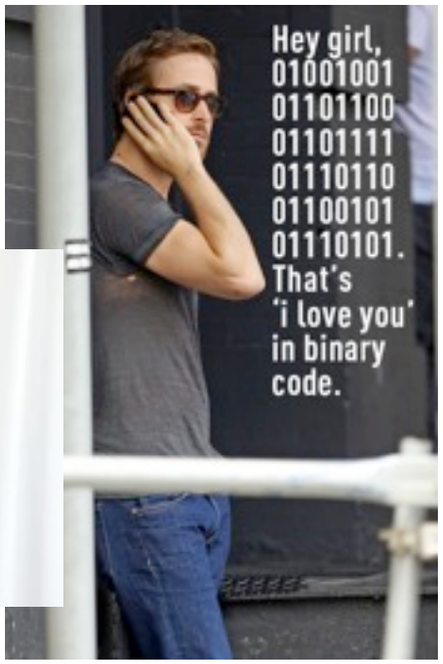
IT'S ABOUT TO GET REAL YALL

Battle of the DT memes !





vs.



For your first assignment, create a battle of the memes. This does not have to be a game per se, though if it is, be sure to include a win state. You should feel completely free (perhaps even compelled) to make your own DT memes.

assignment for next class

IT'S ABOUT TO GET REAL YALL

Battle of the DT memes !

You must use all of the following in your code:

1. Arrays + for loops (you must access your array using a for loop)
2. PImage
3. A function you created
4. Motion (physics + gravity)
   - location = location + speed
   - speed = speed + gravity
   **Extra points for collision detection
5. Interactivity (whether mousePressed, keyPressed, etc)
6. You should also add a title to your battle somewhere in your sketch.

Upload your sketch to our classroom on OpenProcessing:

http://www.openprocessing.org/classroom/1892