creativity
& computation
lab

week 4 || sharing is caring

review

WHERE WE HAVE BEEN

What we have done:

OOP

Arrays + OOP

agenda

WHERE WE ARE GOING

What’s on for today:

- Review objects
- Libraries
  - Default and Contributed
- Open source + Version Control
- Get set up on GitHub

object oriented programming

REVIEW

Biggest thing!

NAME YOUR CLASSES AND VARIABLES **WELL**!!

//Furreals yall, this is important.

object oriented programming

REVIEW

CLASS FILE

```
class Cupcake{  //Class name
//Class data - properties of the class
    int cupcakeSize;
    boolean filling;
    color icing;

Cupcake(){ //Constructor
    cupcakeSize = huge;
    filling = true;
    icing = color(chocolate);
}
//Class methods
void bake(){
//code here
}
void fill(){
}
void ice(){
}
void stuffYourFace(){
}
}
```

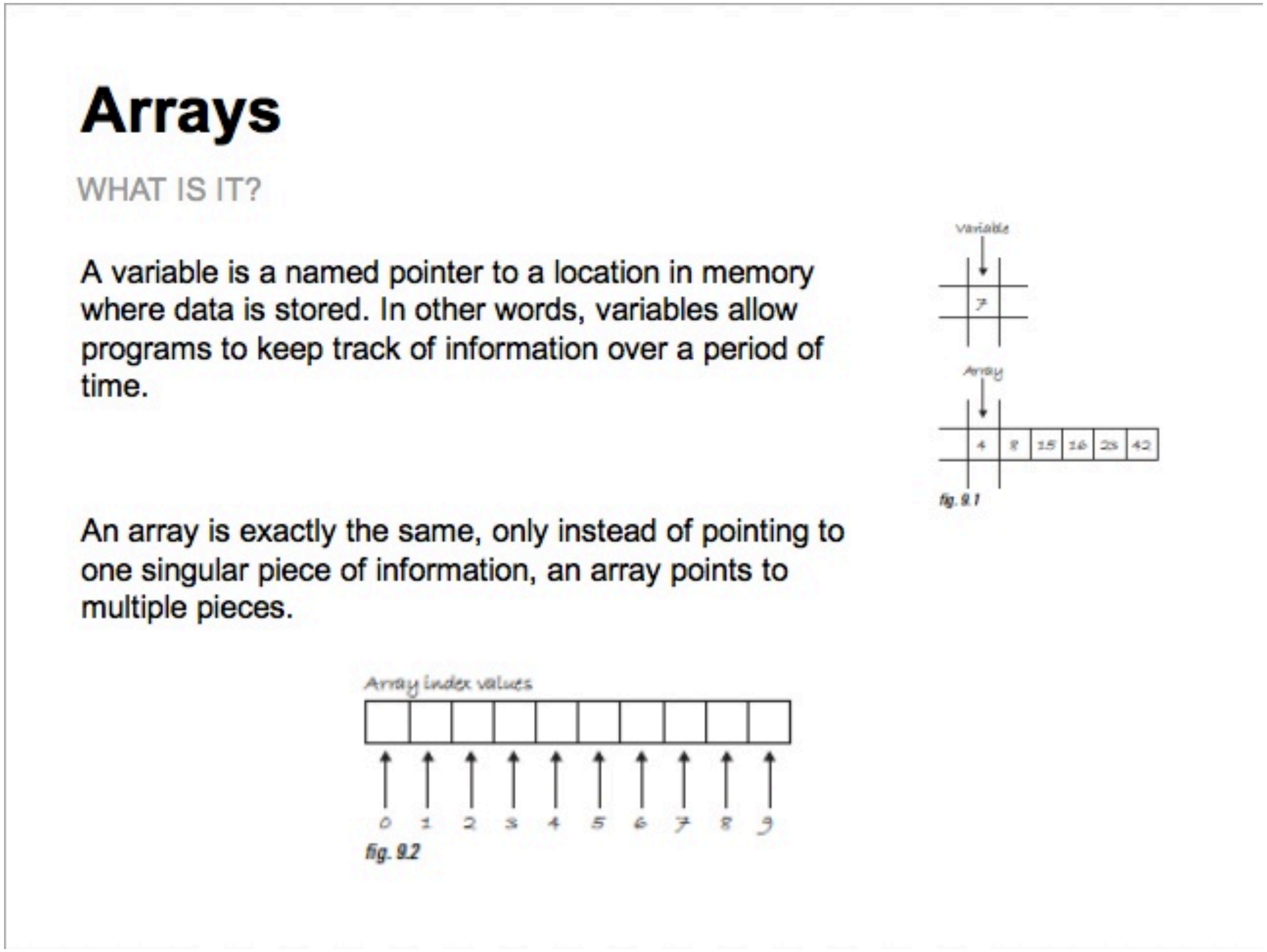
MAIN FILE

```
Cupcake peanutButter;
//Declare your object

void setup(){
//Instantiate each new object
peanutButter = new Cupcake();
}

void draw(){
//Call methods
peanutButter.cupcakeSize = small;

peanutButter.bake();
peanutButter.fill();
peanutButter.ice();
peanutButter.stuffYourFace();
}
```

object oriented programming

REVIEW

Onto arrays.



Arrays

WHAT IS IT?

A variable is a named pointer to a location in memory where data is stored. In other words, variables allow programs to keep track of information over a period of time.

An array is exactly the same, only instead of pointing to one singular piece of information, an array points to multiple pieces.

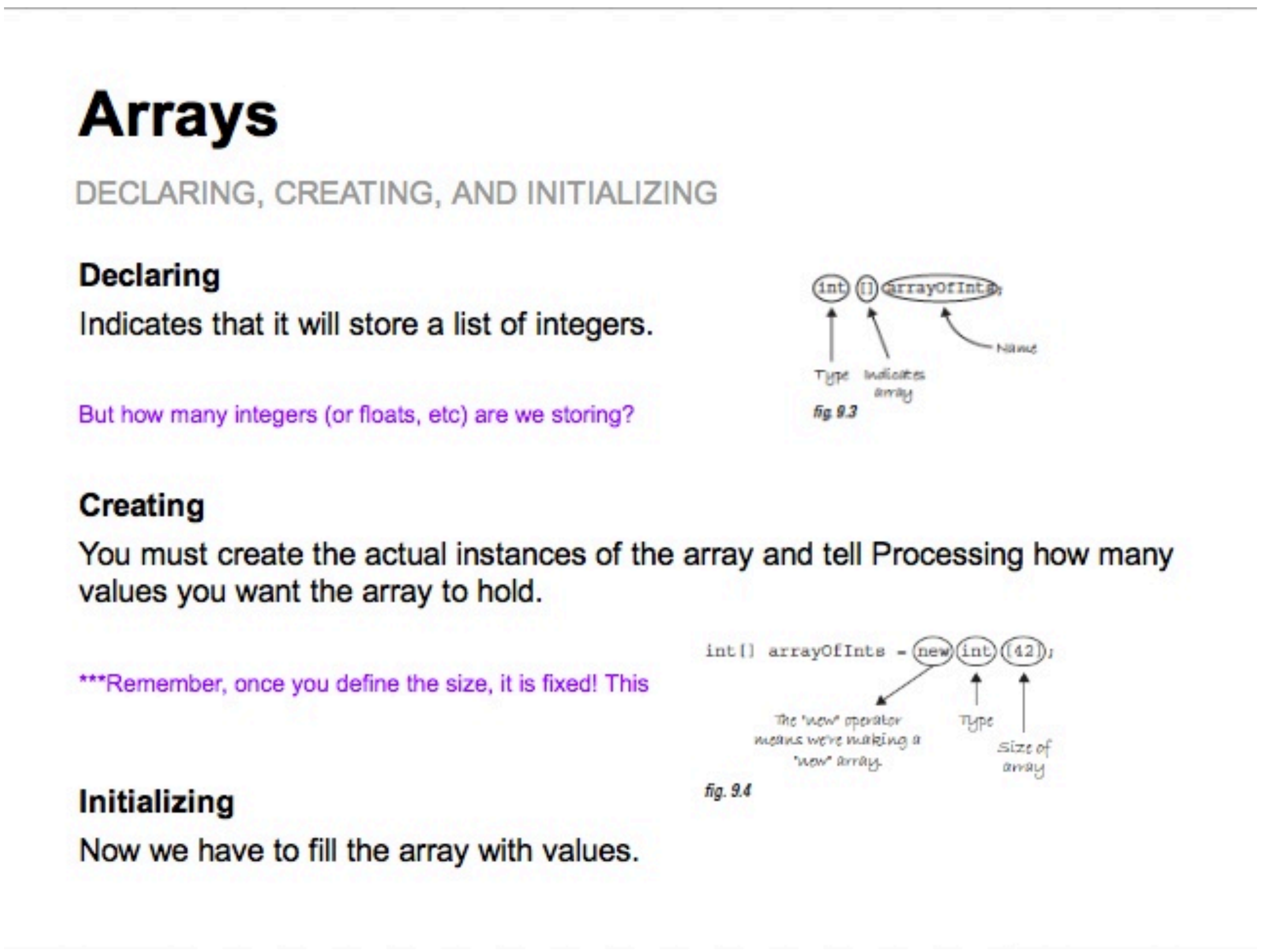
fig. 9.1

fig. 9.2

object oriented programming

REVIEW

Remember this?



Arrays

DECLARING, CREATING, AND INITIALIZING

Declaring

Indicates that it will store a list of integers.

```
int [] arrayOfInts;
```

fig 9.3

But how many integers (or floats, etc) are we storing?

Creating

You must create the actual instances of the array and tell Processing how many values you want the array to hold.

```
int[] arrayOfInts = new int[42];
```

fig. 9.4

***Remember, once you define the size, it is fixed! This

Initializing

Now we have to fill the array with values.

CLASS FILE

```
//Name your class
class Spot {

  //Declare all your variables
  float x, y; // X-coordinate, y-coordinate
  float diameter; // Diameter of the circle
  float speed; // Distance moved each frame
  int direction = 1; // Direction of motion (1
is down, -1 is up)

  // Constructor
  Spot(float xpos, float ypos, float dia, float
sp) {
    x = xpos;
    y = ypos;
    diameter = dia;
    speed = sp;
  }

  //Methods
  void move() {
    y += (speed * direction);
    if ((y > (height - diameter/2)) || (y <
diameter/2)) {
      direction *= -1;
    }
  }
  void display() {
    ellipse(x, y, diameter, diameter);
  }
}
```

MAIN FILE

```
//Variable to store the length of the array
int numSpots = 6;

// Declare and assign the array
Spot[] spots = new Spot[numSpots];

void setup() {
  size(100, 100);
  smooth();
  noStroke();

  //use a for loop to create each object - much
  //easier than doing it 6 times!
  for (int i = 0; i < spots.length; i++) {
    float x = 10 + i*16;
    float rate = 0.5 + i*0.05;
    // This is where each object is created
    spots[i] = new Spot(x, 50, 16, rate);
  }
}
void draw() {
  fill(0, 12);
  rect(0, 0, width, height);
  fill(255);

  //Run through each object and call a method
  //on each of them
  for (int i = 0; i < spots.length; i++) {
    spots[i].move(); // Move each object
    spots[i].display(); // Display each object
  }
}
```

processing libraries

NO BOOKS HERE

What is a library?

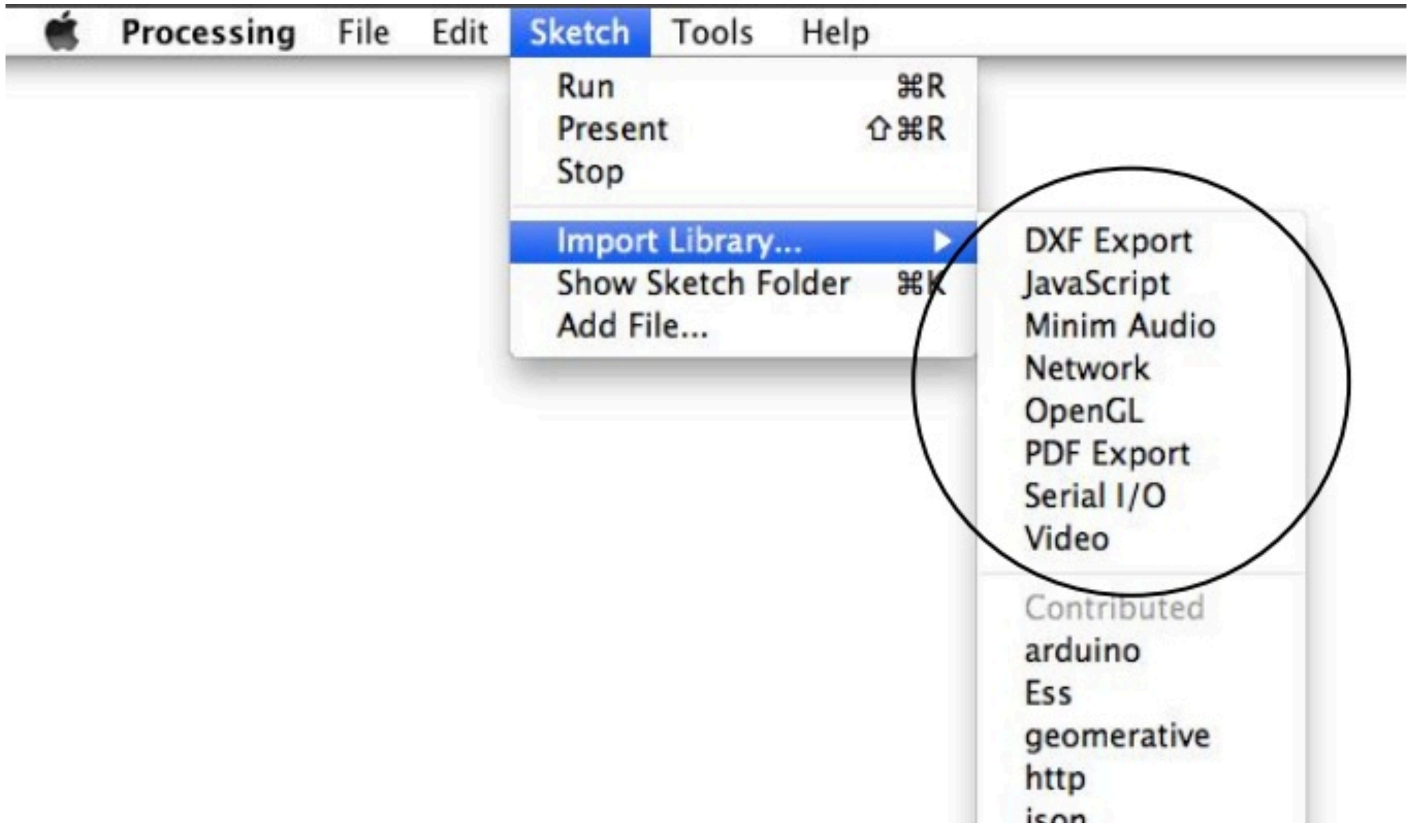
Collections of methods and classes designed for a specific purpose

Written within a format specific to Processing, but outside of the core API

processing libraries

NO BOOKS HERE

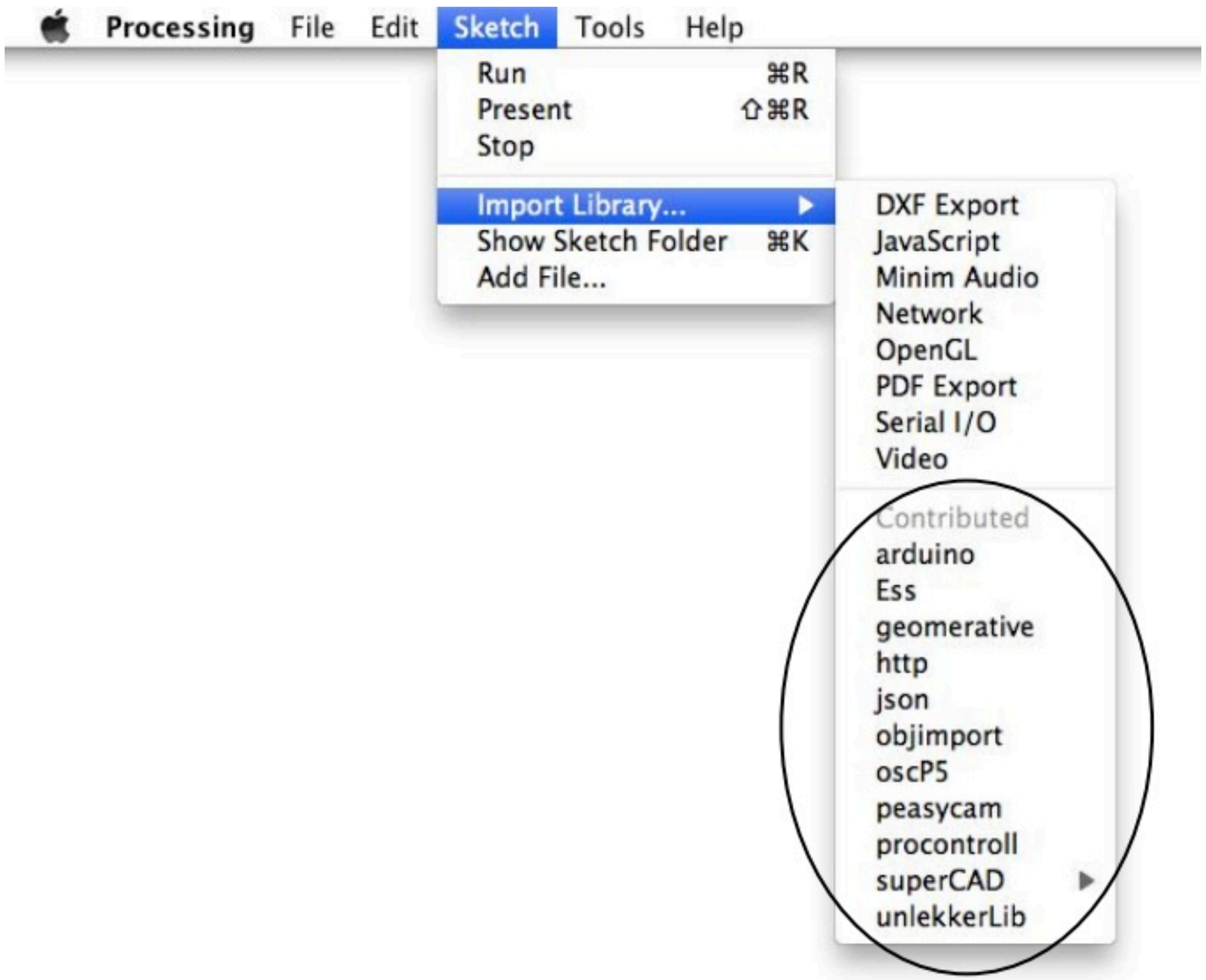
Default libraries



processing libraries

NO BOOKS HERE

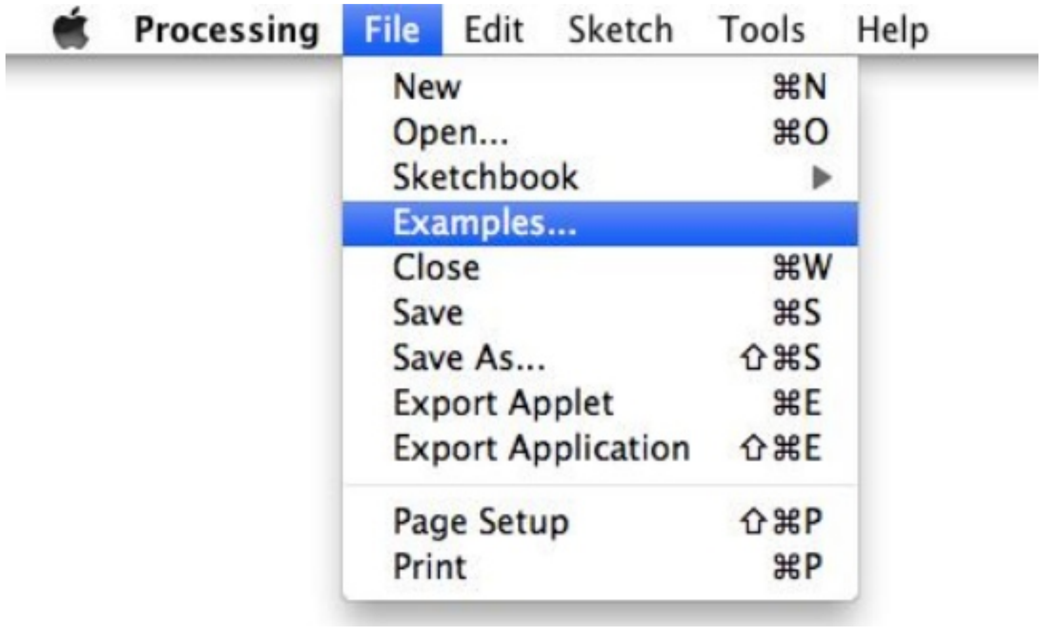
Contributed libraries

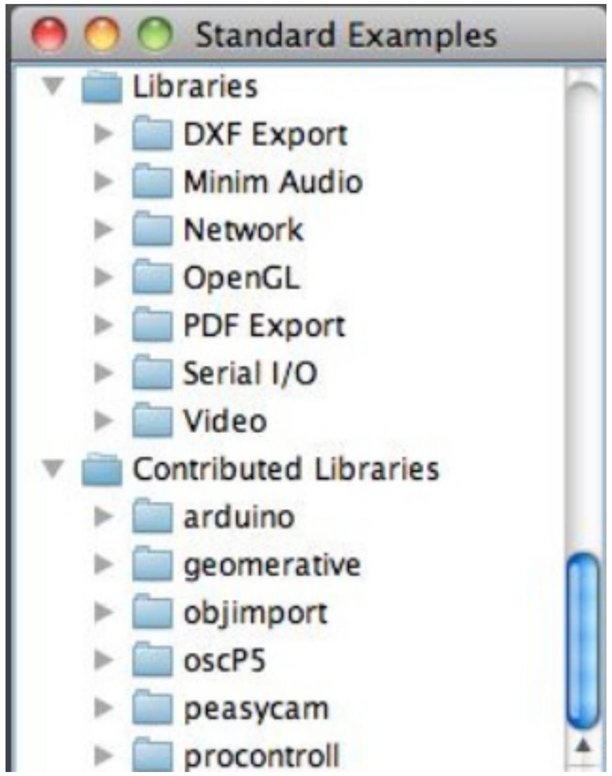


processing libraries

NO BOOKS HERE

Library examples





processing libraries

WHAT DID YOU THINK WAS NEXT?

In class exercise!

Create a new sketch or modify a sketch and incorporate a library.

//USE THE GOOGLE!!!

open source + version control

GETTIN GIT

GIT = Version Control System

Takes snapshots over time of a file or file system

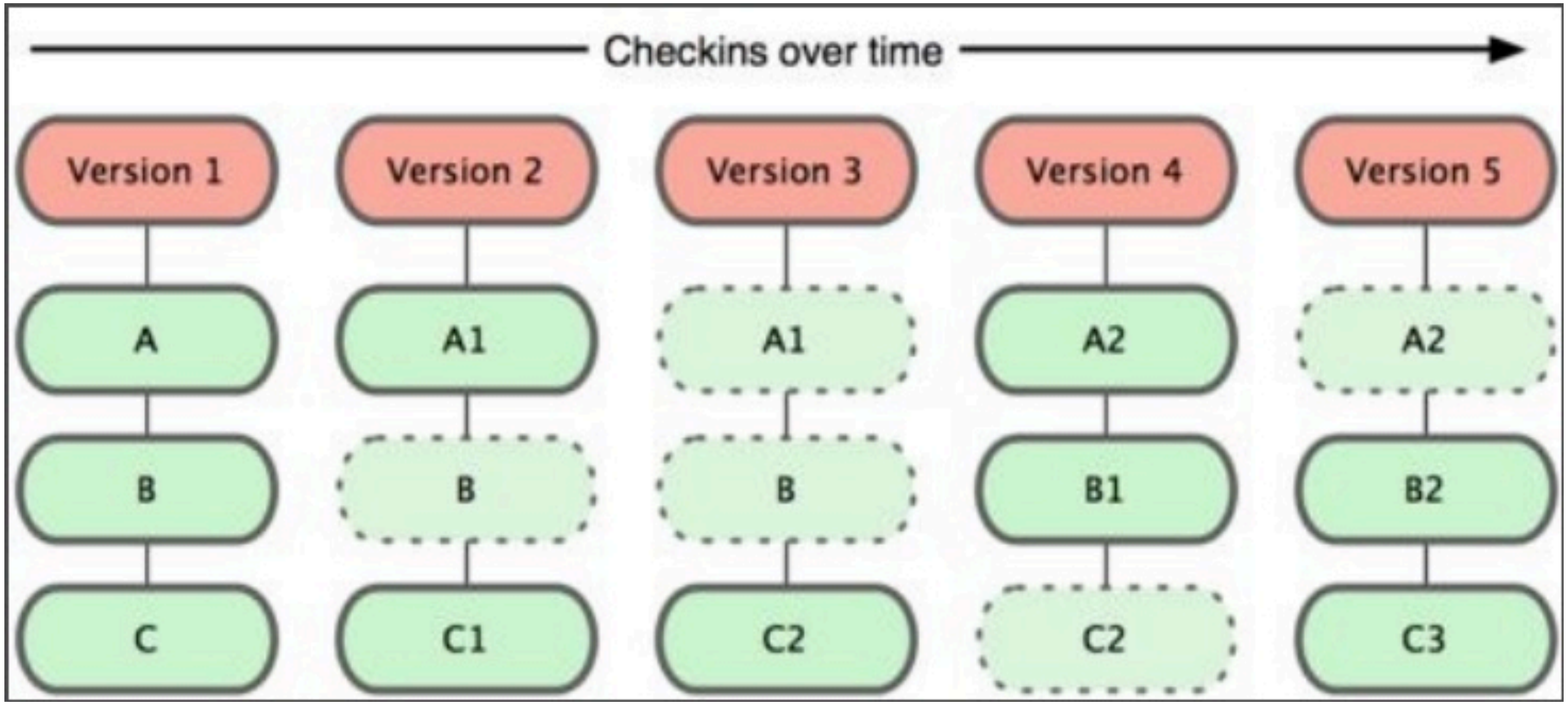
Mostly local (but can also be a sharing platform)
//This is what makes it different from many other VC systems

Difficult to "erase" data – built on adding data
//aka - "Git: Don't Lose Your Sh*t"

open source + version control

GETTIN GIT

GIT = Version Control System



file status

GETTIN GIT

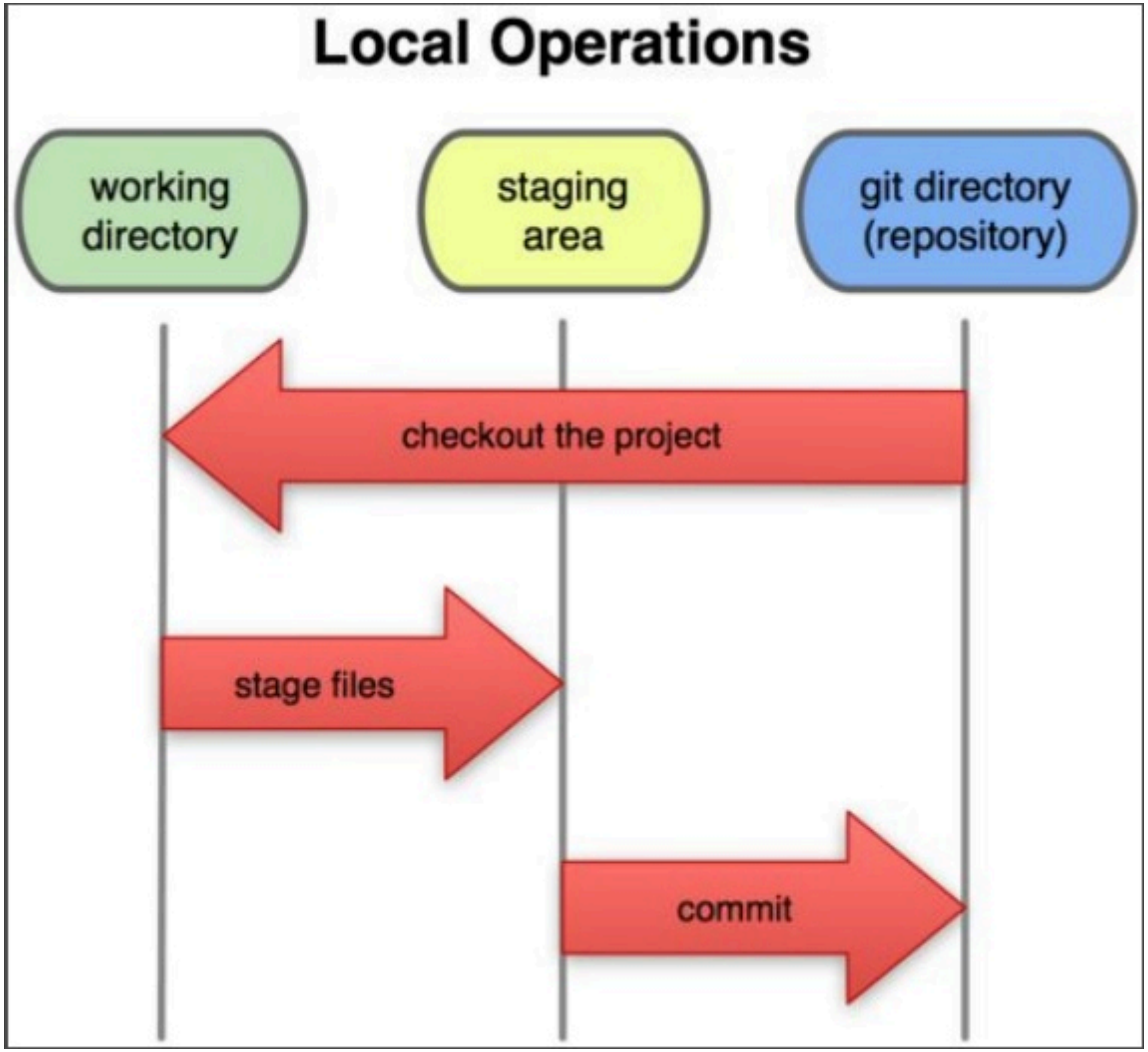
GIT repository (repo) = a folder watched by git

Files within a Git repository are generally in one of three states:

- Modified
- Staged
- Committed

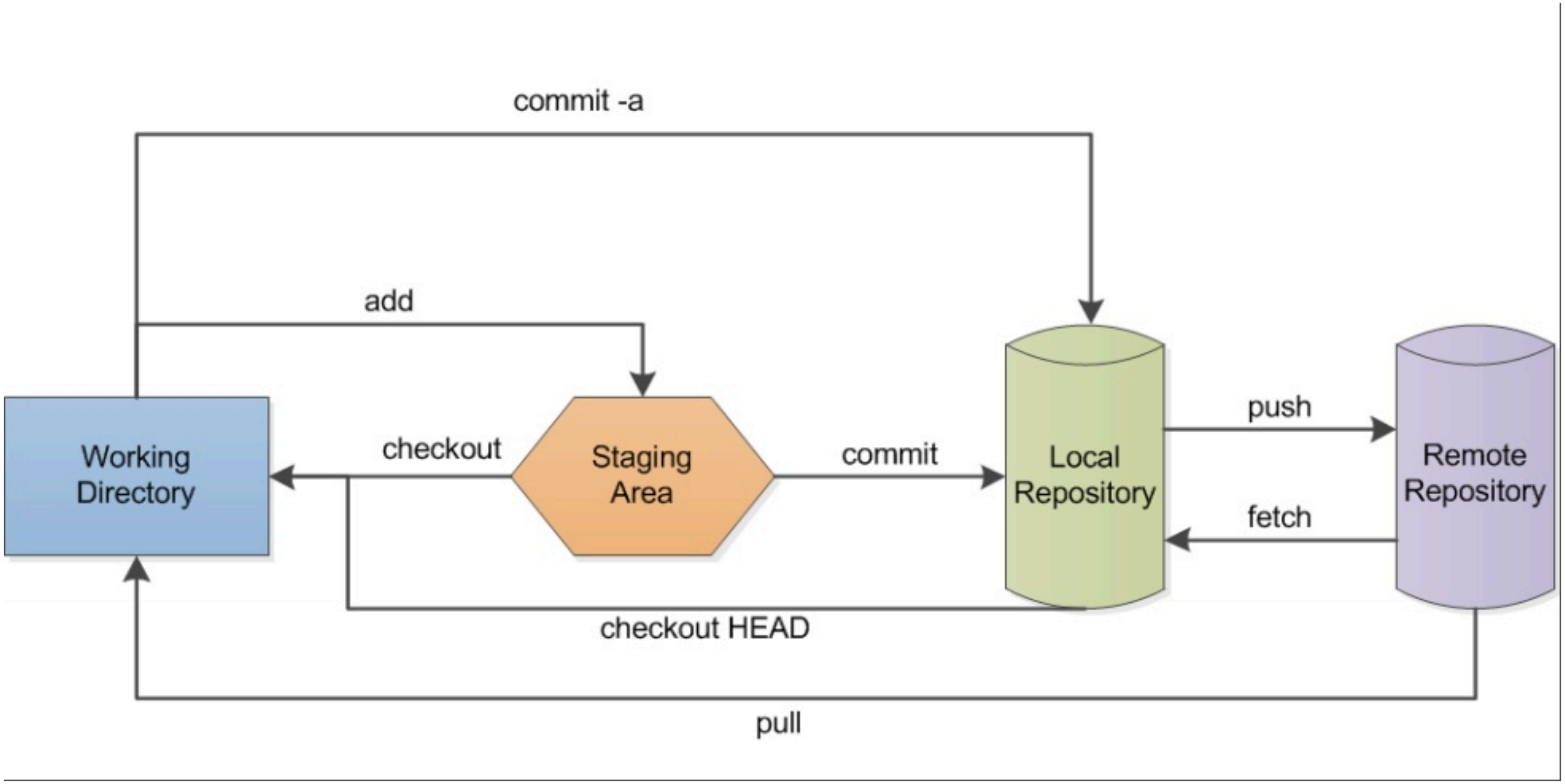
file status

GETTIN GIT



file status

GETTIN GIT



git vs. github

UH, THEY'RE NOT THE SAME THING?

Git = LOCAL versioning system, LOCAL database

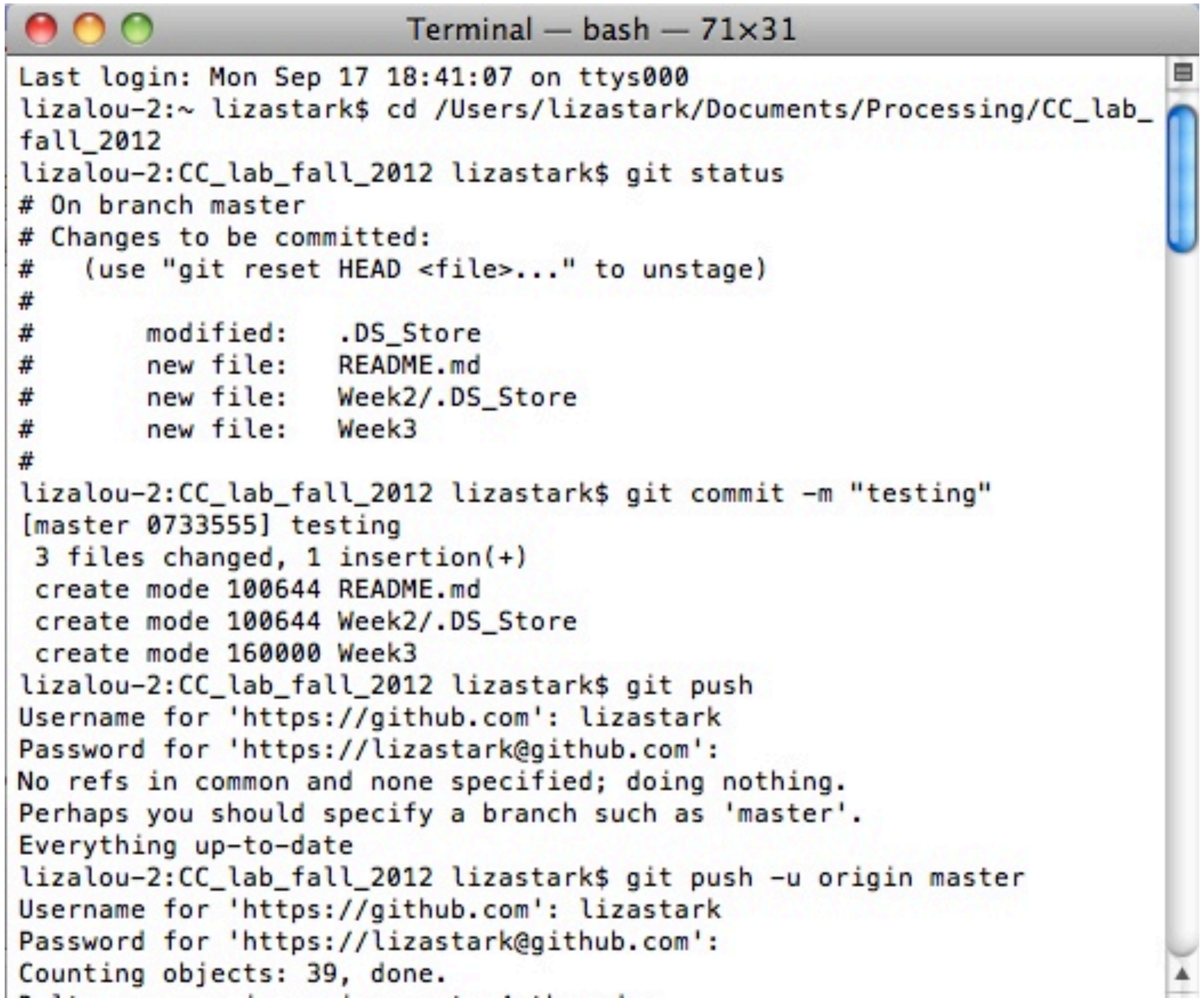
GitHub = REMOTE / WEB database

git setup

LET'S DO THIS

We're talkin terminal style.

//Don't be a-scared



```
Last login: Mon Sep 17 18:41:07 on ttys000
lizalou-2:~ lizastark$ cd /Users/lizastark/Documents/Processing/CC_lab_
fall_2012
lizalou-2:CC_lab_fall_2012 lizastark$ git status
# On branch master
# Changes to be committed:
#   (use "git reset HEAD <file>..." to unstage)
#
#       modified:   .DS_Store
#       new file:   README.md
#       new file:   Week2/.DS_Store
#       new file:   Week3
#
lizalou-2:CC_lab_fall_2012 lizastark$ git commit -m "testing"
[master 0733555] testing
 3 files changed, 1 insertion(+)
 create mode 100644 README.md
 create mode 100644 Week2/.DS_Store
 create mode 160000 Week3
lizalou-2:CC_lab_fall_2012 lizastark$ git push
Username for 'https://github.com': lizastark
Password for 'https://lizastark@github.com':
No refs in common and none specified; doing nothing.
Perhaps you should specify a branch such as 'master'.
Everything up-to-date
lizalou-2:CC_lab_fall_2012 lizastark$ git push -u origin master
Username for 'https://github.com': lizastark
Password for 'https://lizastark@github.com':
Counting objects: 39, done.
```

git setup

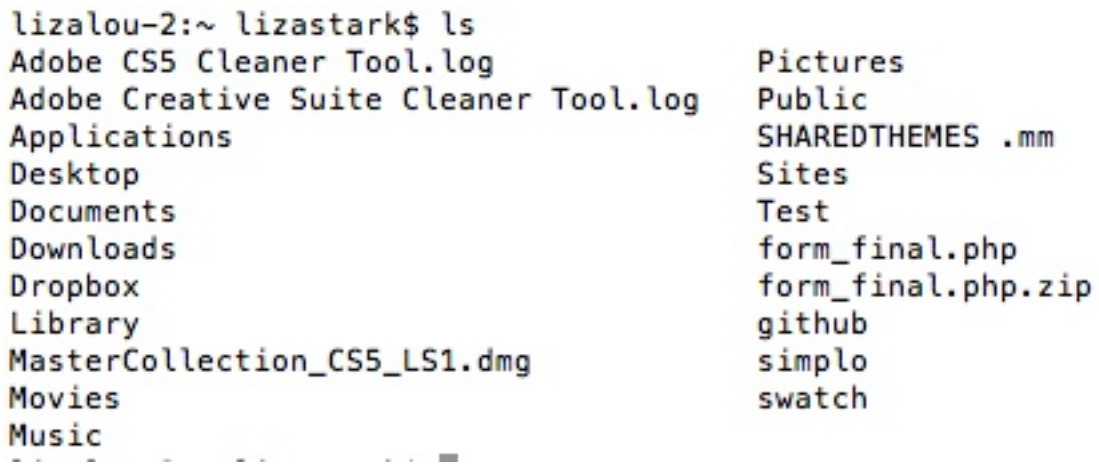
LET'S DO THIS

Spotlight terminal.

Let's do some cool tricks.

Type in "cd" = switch directories = lizalou-2:~ lizastark$
//This should be your home directory. If you want to poke around another directory, just drag and drop!

Type in "ls" = list all the folders /files in that directory
//for example...



```
lizalou-2:~ lizastark$ ls
Adobe CS5 Cleaner Tool.log                    Pictures
Adobe Creative Suite Cleaner Tool.log         Public
Applications                                  SHAREDTHEMES .mm
Desktop                                       Sites
Documents                                     Test
Downloads                                     form_final.php
Dropbox                                       form_final.php.zip
Library                                       github
MasterCollection_CS5_LS1.dmg                  simplo
Movies                                        swatch
Music
```

git setup

LET'S DO THIS

Now that we know a little bit, install should be **no problem.**

Let's do this:

https://help.github.com/articles/set-up-git

git commands

YOU WILL ONLY USE A FEW. OVER AND OVER AND OVER.

REPOSITORY / REPO = a data structure (folder)
INIT = create a git repository
ADD = add files to the staging area
COMMIT = send staging area to the local DB
PUSH = send local DB to the remote DB
CLONE = make a copy of a remote repo
PULL = pull down all files from a remote repo into your matching folder

STATUS = gives you the status of all file stages
//SUPER helpful
//I usually do this after every stage, just to debug/make sure

git workflow

PLAY NICE - IT'S WHAT SHARING IS ALL ABOUT!

SO, you want to...

ADD

//STATUS

COMMIT

//STATUS

(PULL)

//if you are working with others

//STATUS

PUSH

//STATUS

All at your own pace now.

Use this video to try with some text files:

http://vimeo.com/49349553
Password: cclab

Try uploading your library sketch to Github.