

# Intro to Tools

Day 1

# What tools are we going to use?

Github

p5.js and Atom

Arduino

Sensors & Actuators

# Github & Version Control

# What is Github?

Github [...] is a web-based hosting service for version control using Git. It is mostly used for computer code. It offers all of the distributed version control and source code management (SCM) functionality of Git as well as adding its own features.

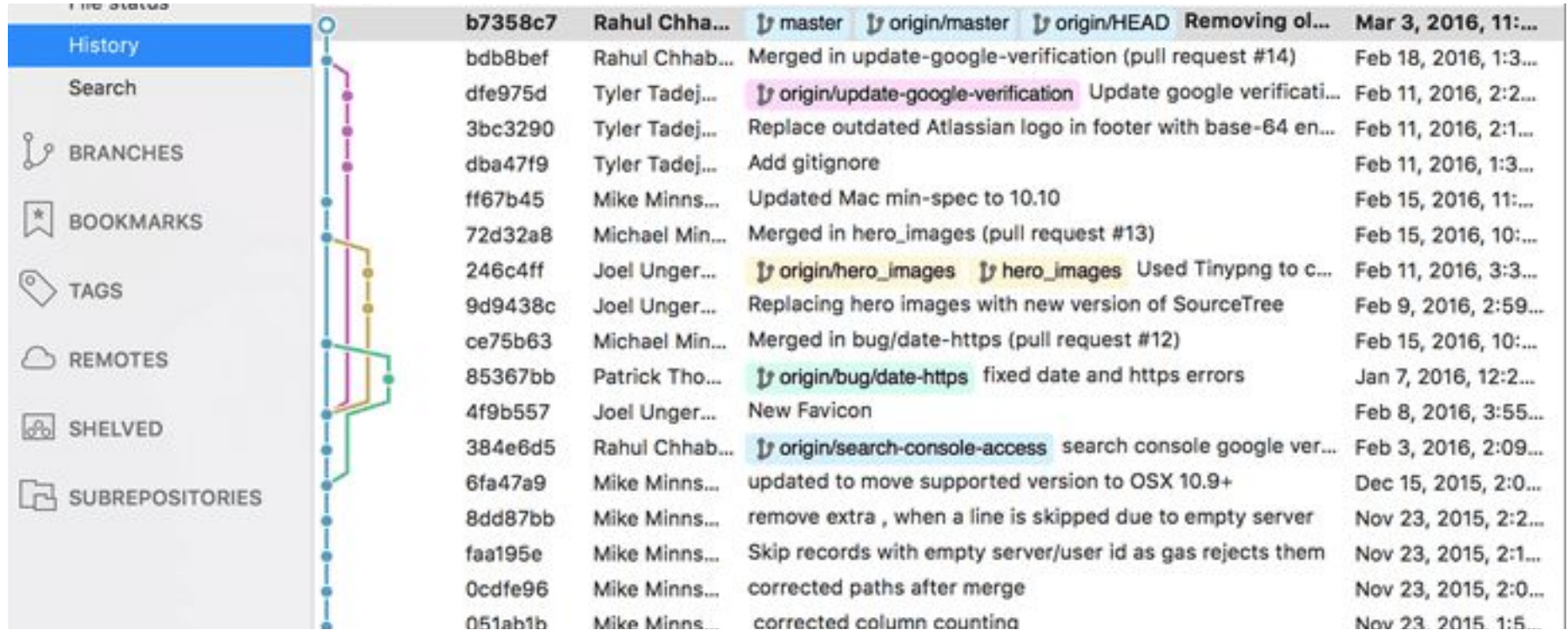
From Wikipedia

# What is Version Control?

Version Control [...] is the management of changes to documents, computer programs, large web sites, and other collections of information.

From Wikipedia

# What is Version Control?



The screenshot displays the SourceTree application interface. On the left, a sidebar contains navigation options: History (selected), Search, BRANCHES, BOOKMARKS, TAGS, REMOTES, SHELVED, and SUBREPOSITORIES. The main area shows a commit history table with columns for commit hash, author, message, and date. A vertical timeline on the left of the table visualizes the branching structure, with a blue line for the main branch and other colored lines for feature branches and merges.

Commit Hash	Author	Message	Date
b7358c7	Rahul Chha...	Removing ol...	Mar 3, 2016, 11:...
bdb8bef	Rahul Chhab...	Merged in update-google-verification (pull request #14)	Feb 18, 2016, 1:3...
dfe975d	Tyler Tadej...	Update google verificati...	Feb 11, 2016, 2:2...
3bc3290	Tyler Tadej...	Replace outdated Atlassian logo in footer with base-64 en...	Feb 11, 2016, 2:1...
dba47f9	Tyler Tadej...	Add gitignore	Feb 11, 2016, 1:3...
ff67b45	Mike Minns...	Updated Mac min-spec to 10.10	Feb 15, 2016, 11:...
72d32a8	Michael Min...	Merged in hero_images (pull request #13)	Feb 15, 2016, 10:...
246c4ff	Joel Unger...	Used Tinypng to c...	Feb 11, 2016, 3:3...
9d9438c	Joel Unger...	Replacing hero images with new version of SourceTree	Feb 9, 2016, 2:59...
ce75b63	Michael Min...	Merged in bug/date-https (pull request #12)	Feb 15, 2016, 10:...
85367bb	Patrick Tho...	fixed date and https errors	Jan 7, 2016, 12:2...
4f9b557	Joel Unger...	New Favicon	Feb 8, 2016, 3:55...
384e6d5	Rahul Chhab...	search console google ver...	Feb 3, 2016, 2:09...
6fa47a9	Mike Minns...	updated to move supported version to OSX 10.9+	Dec 15, 2015, 2:0...
8dd87bb	Mike Minns...	remove extra , when a line is skipped due to empty server	Nov 23, 2015, 2:2...
faa195e	Mike Minns...	Skip records with empty server/user id as gas rejects them	Nov 23, 2015, 2:1...
0cdf996	Mike Minns...	corrected paths after merge	Nov 23, 2015, 2:0...
051ab1b	Mike Minns...	corrected column counting	Nov 23, 2015, 1:5...

Source : <https://www.sourcetreeapp.com/>

A little demo

## Now your turn!

1. Head over to `github.com` and create an account
2. Head over to `sourcetreeapp.com` and download the desktop application



**Arduino**

## Now your turn!

1. Head over to `arduino.cc`
2. Download the software
3. Install it on your laptop

**p5.js**

# What is p5.js?

p5.js is a JavaScript library that starts with the original goal of Processing—to make coding accessible for artists, designers, educators, and beginners—and reinterprets this for today's web.

From the p5.js website

# What is Processing?

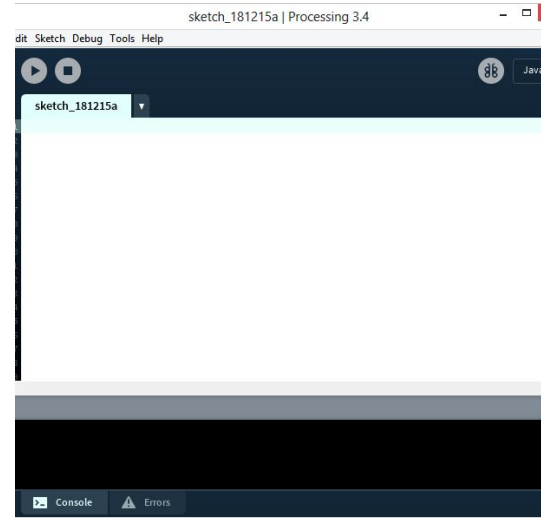
Processing is an open-source graphical library and integrated development environment (IDE) / playground built for the electronic arts, new media art, and visual design communities with the purpose of teaching non-programmers the fundamentals of computer programming in a visual context.

From Wikipedia

# What is Processing?

```
void draw(){  
  background(255,255,255);  
  rectWidth=mouseX;  
  rectHeight=mouseY;  
  
  rect(0,0,rectWidth,rectHeight);  
}  
  
void mousePressed(){  
  fill(255,0,0);  
}  
  
void mouseReleased(){  
  fill(0,0,255);  
}
```

Programming Language

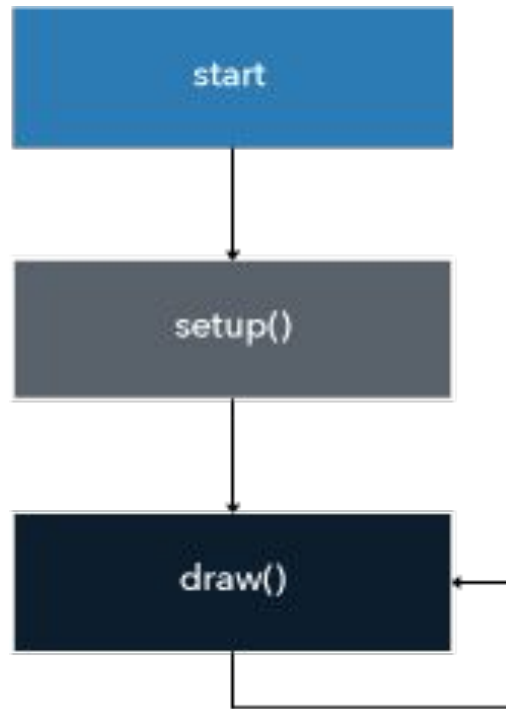


Integrated Development Environment

# Anatomy of a sketch

Two main functions:

- `setup()`
- `draw()`



# Useful Resources

1. "The Coding Train" channel on Youtube
2. <https://natureofcode.com/>
3. <http://www.generative-gestaltung.de/>
4. <https://p5js.org/examples/>
5. <https://processing.org/tutorials/>



## Now your turn!

1. Head over to `atom.io`
2. Download Atom