Programming in Teams

Using Version Control & GitHub
This is Git. It tracks collaborative work on projects through a beautiful distributed graph theory tree model.

Cool. How do we use it?

No idea. Just memorize these shell commands and type them to sync up. If you get errors, save your work elsewhere, delete the project, and download a fresh copy.
1. Understanding git & GitHub
2. Git for survival
3. Advanced Git
# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient
# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient

# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient
# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient
print "please"
# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient
print "please"

# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient
print "goodbye!"
# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient
print "please"

# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient
print "goodbye!"
Git

open source distributed version control system
Git
open source distributed version control system

github.com

remotes

local

commit

repository
# hello.py
# program to say hi!

recipient = "2.009"
greeting = "hello"

print greeting + recipient

+ # hello.py
+ # program to say hi!
+ recipient = "2.009"
+ greeting = "hello"
+ print greeting + recipient
# hello.py
# program to say hi!
recipient = "2.009"
greeting = "hello"

print greeting + recipient
print "please"
working directory

staging area

local repo

remote repo

git add

origin/

- README.md
- arduino/
  -- main.ino

git add main.ino
working directory  

staging area

local repo  

remote repo

git add

origin/
  - README.md
  - arduino/
    -- main.ino

git add main.ino

git add .
working directory  staging area  local repo  remote repo

- `git add`
- `git commit`

modified: README.md
modified: arduino/main.ino

`git commit -m "added 2 second delay"`
working directory → staging area → local repo → remote repo

- `git add`
- `git commit`
- `git push`
working directory ↔ staging area ↔ local repo ↔ remote repo

- **git add**
  - `git add .`

- **git commit**
  - `git commit -m "..."`

- **git push**

- **git pull**

- **git merge**

- **git fetch**

**mac:**
- `cd [name]` - navigate to folder
- `cd ../` - previous folder
- `ls` - list folder contents
- `pwd` - current path

**win:**
- `cd [name]` - navigate to folder
- `cd ../` - previous folder
- `dir` - list folder contents

**git clone** [https://github.com/poofytoo/2009tutorial2](https://github.com/poofytoo/2009tutorial2)