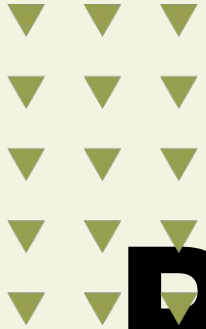


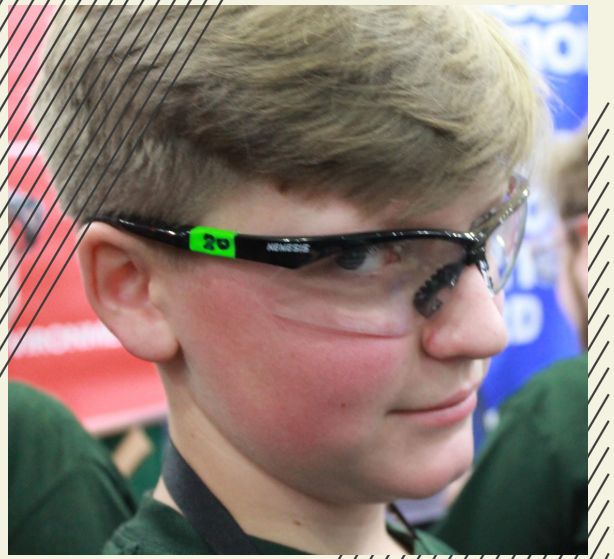
PROJECT 01

Tyler Duckworth

Tyler

Programming Lead

@tyler



Jackson

Programming Member

@jackson

GOALS

Primarily: Learn how to learn to code.

- Coding skills are just a corollary.

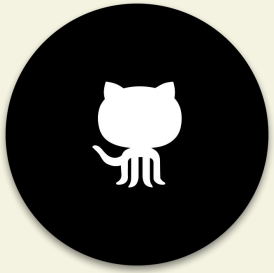
Secondarily: Code as much as you can.

- You learn by doing.

“[Insert corny, motivational quote here]”

Don’t be afraid to fail!

RESOURCES




Join **#programming** on Slack!

INSTALL

Download the file on #programming.

Enter the following commands:

```
cd ~/Downloads
chmod +x install.sh
./install.sh
```

COMPUTATIONAL THINKING

- Decomposition
- Pattern Analysis
- Algorithm Design
- Abstraction

PYTHON

Basics of Python 3: Writing and Running Programs

DATA TYPES AND VARIABLES

Programs are groups of **THINGS** that **DO THINGS** to other **THINGS**.

Variables are those **THINGS**.

Integer

Float

String

Boolean

Null

```
x = 5
y = 25.6
z = “Hello!”
a = True
b = None
```

ARRAYS

An array is a variable that can store *multiple elements*.

Most arrays are *zero-based*.
(Start at zero)

Examples: Numerical sequence, words, sensor data.

```
x = [25, 46, 31]
x[0] # 25
x[1] # 46
```

0	1	...	*n*
[25,	46,	31,	52]
-*n*	**...**	**-2**	**-1**

IF/ELSE CONDITIONAL

“if” statements takes a certain action when a condition evaluates to True.

Extended by *“else if”* and *“else”* statements.

```
x = 5
if x == 5:
   print(“It’s 5.”)
else:
   print(“It’s 0.”)
```

LOOPS

“while” loops continuously run based on a certain *condition*.

“for” loops run for a set amount of time with an iterator.

- Great for going through arrays.

```
x = True
while x:
    print(“WHILE”)
y = range(25) # 0-24
for i in y:
    print(i) # 0 1 2 3 4
```

FUNCTIONS

```
def hello_world:
    return “Hello!”


print(hello_world())
```

A function is a group of code that can be executed an unlimited number of times.

- Good for classes (that’s for later)

READING FILES

Open files in Python by using the *open* function and entering:

- *File path*
- *Mode*

```
f = open("file.txt", "a")
print(f.read())
f.close()
```

"a" - *Append* "r" - *Read*

"w" - *Write* "x" - *Create*

DEMO: IMPORT

OPEN YOUR TERMINAL

```
> python3
>>> import os
>>> os.path.abspath()
```

RUNNING PROGRAMS

OPEN YOUR TERMINAL

```
> python3 test.py
```

ACTIVITY #1

- Find a file.
- Print out 5 lines.
- Add a message anywhere that you want.

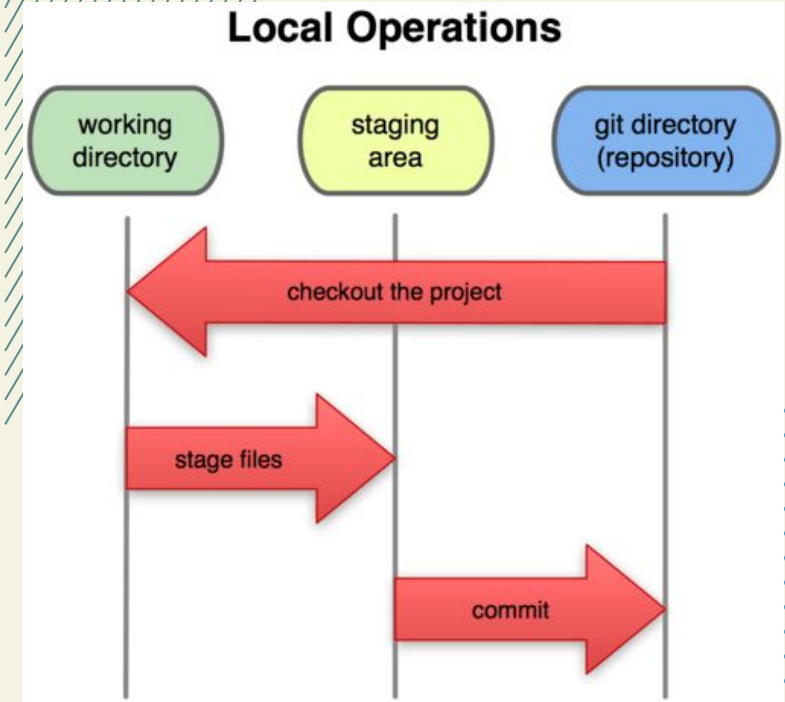
GITHUB

Storing, Sharing, and Showing Your Code

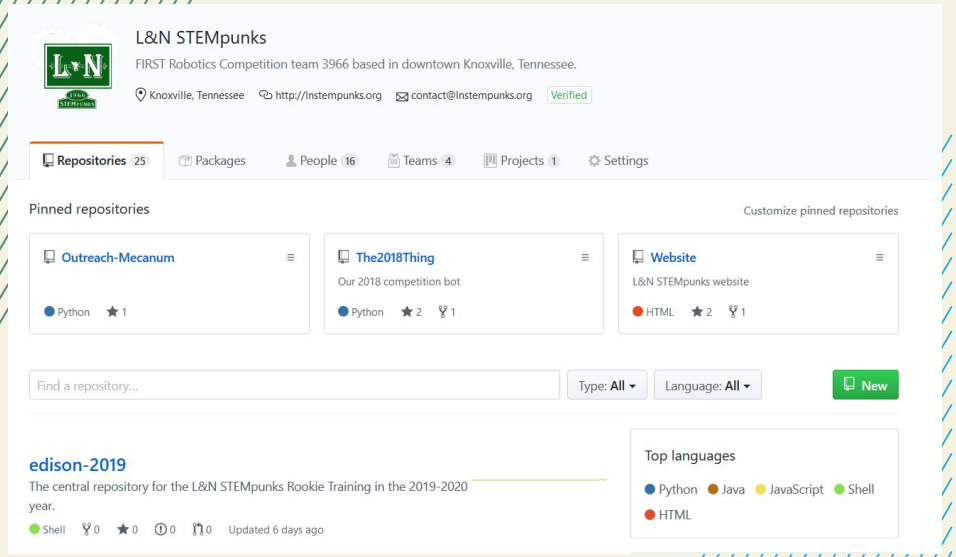
GIT OVERVIEW

Professionally, code is organized into *repositories*. (repos)

Users can *commit* that changes to the central repo.



GITHUB



The platform we use to manage our code is *GitHub*.

I'll walk you through how to commit some code to one of our repos.