

AutoRob

Introduction to Autonomous Robotics
Michigan EECS 367

Robot Kinematics and Dynamics
Michigan ME 567 EECS 567 ROB 510

Fall 2019

EECS 367 Lab:
Git-ing started with git

Administrative

- Welcome to AutoRob!
- Lots of information on the course website
 - <https://autorob.org>
- Assignment #1: Path Planning
 - Due 11:59pm, Wednesday, September 18

Administrative

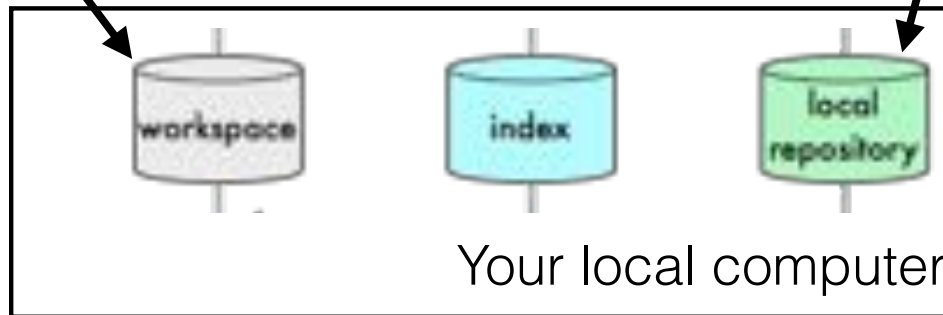


Motivation

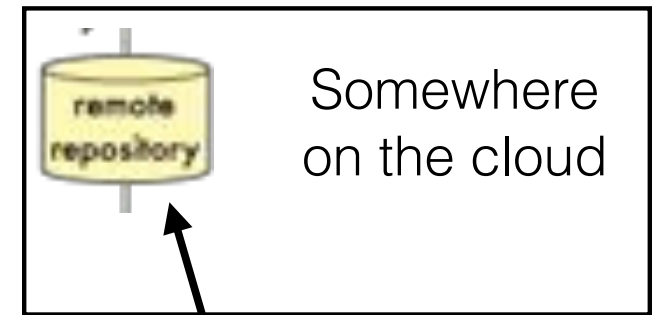
Git Data Transport Commands
<http://osteele.com>

The directory where
you are working

(~/uname/reponame or
C:\Users\uname\reponame)



The repository on your
local computer
(~/uname/reponame/.git)

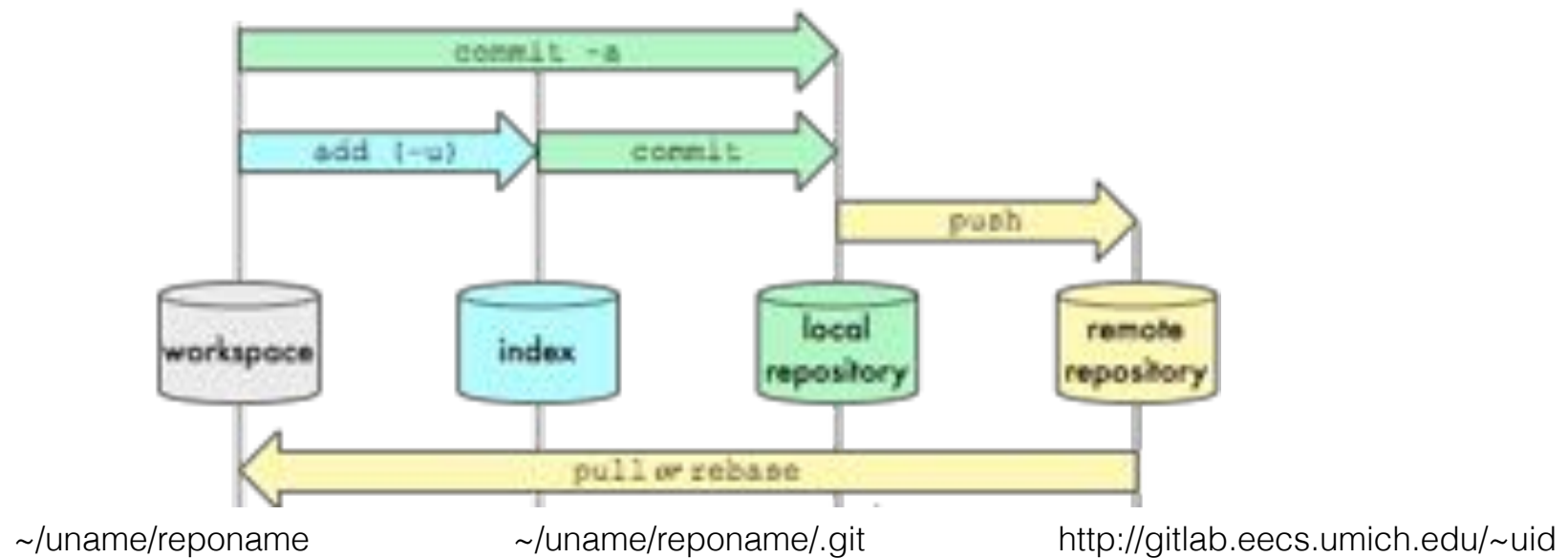


The repository on
a remote server
(<http://gitlab.eecs.umich.edu/uid>)

Motivation

Git Data Transport Commands

<http://osteele.com>



Lab Takeaways

**1) Git
Initialization**

**3) Make a Change
Commit & Push**

**5) Validate your
Changes**



**2) Clone, Copy, Commit
KinEval Stencil**

**4) Practice with
HTML**

Git Basics: commands

- Push completed project to repository (or just to update)
 - add files to a repository: `git add <file listing>`
 - commit changes to local repo: `git commit -a -m "<msg>"`
 - push local changes to a remote repository: `git push`
- Pull to updates your local repository (and workspace) from remote
 - pull remote changes to a local repository: `git pull`

Git Initialization

1) Create a git repository on github, bitbucket, or EECS gitlab website

2) Install git on your machine

<https://git-scm.com/book/en/v2/Getting-Started-Installing-Git>

OSX: <https://code.google.com/p/git-osx-installer/>

3) Clone the repository to your machine:

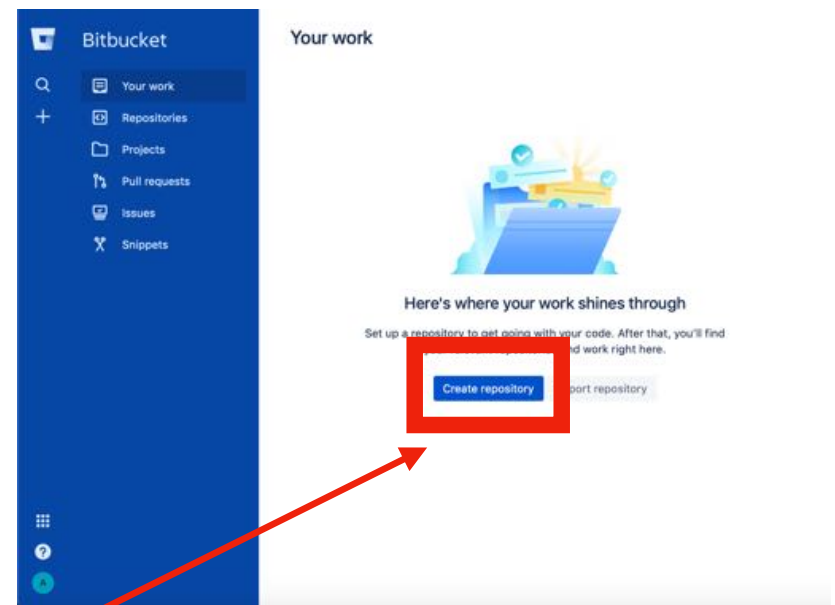
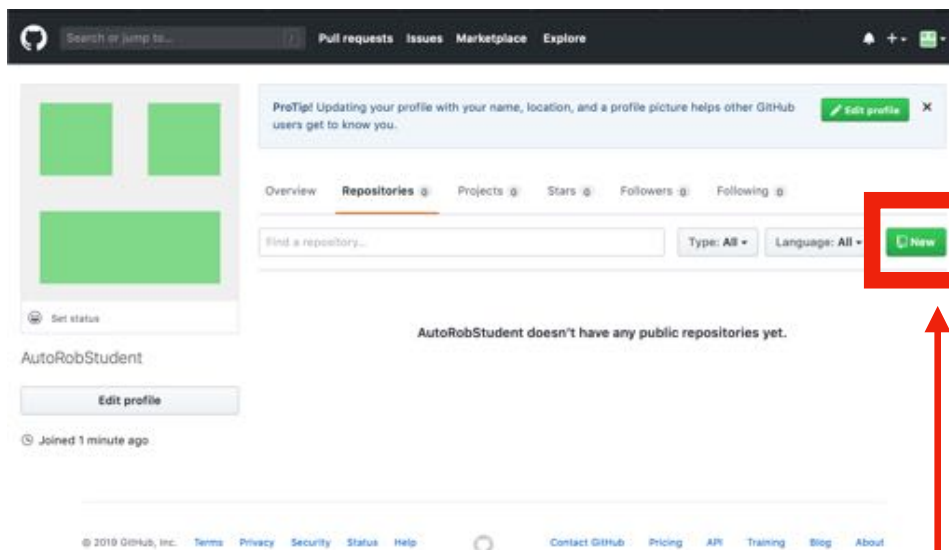
```
git clone https://github.com/yourid/yourrepo.git
```


1) Create a git repository on github, bitbucket, or EECS gitlab website

The screenshot shows the GitHub 'Join GitHub' page. At the top, there's a navigation bar with links like 'Why GitHub?', 'Enterprise', 'Explore', 'Marketplace', and 'Pricing'. Below this, the main heading is 'Join GitHub' with the tagline 'The best way to design, build, and ship software.' The page is divided into three steps: 'Step 1: Set up your account', 'Step 2: Choose your subscription', and 'Step 3: Tailor your experience'. Under 'Step 1', there are three main sections: 'Create your personal account', 'You'll love GitHub', and 'Verify account'. The 'Create your personal account' section includes fields for 'Username', 'Email address', and 'Password', each with a small asterisk indicating it's required. The 'Email address' field has a note: 'We'll occasionally send updates about your account to this inbox. We'll never share your email address with anyone.' The 'Password' field has a note: 'Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. Learn more.' The 'Verify account' section shows a placeholder for a CAPTCHA puzzle with the text 'Please solve this puzzle so we know you are a real person' and a 'Verify' button.

The screenshot shows the Bitbucket 'Create your account' page. At the top, there's a navigation bar with links like 'Features', 'Integrations', 'Server', 'Data Center', 'Pricing', 'Log in', and 'Get started'. The main heading is 'Create your account' with the subheading 'Complete your account details'. Below this, there are three main sections: 'Email', 'Full name', and 'Password'. The 'Email' field contains 'AutoRobStudent@gmail.com' and has a green checkmark. The 'Full name' field has a red error message 'Enter your name'. The 'Password' field is empty. Below these fields is a CAPTCHA section with a checkbox labeled 'I'm not a robot' and a 'Verify' button. At the bottom, there's a green button labeled 'Agree and sign up'. Below the main form, there's a section titled 'Almost done' with the subheading 'Create a unique username for Bitbucket Cloud'. It shows the domain 'bitbucket.org /' followed by a text input field for the 'Username'. At the bottom, there's a green button labeled 'Continue'. At the very bottom, there's a note: 'You're signing up with your Atlassian account for autorobstudent@gmail.com. Not the account you want to use? Log out and enter the correct email address.'

1) Create a git repository on github, bitbucket, or EECS gitlab website



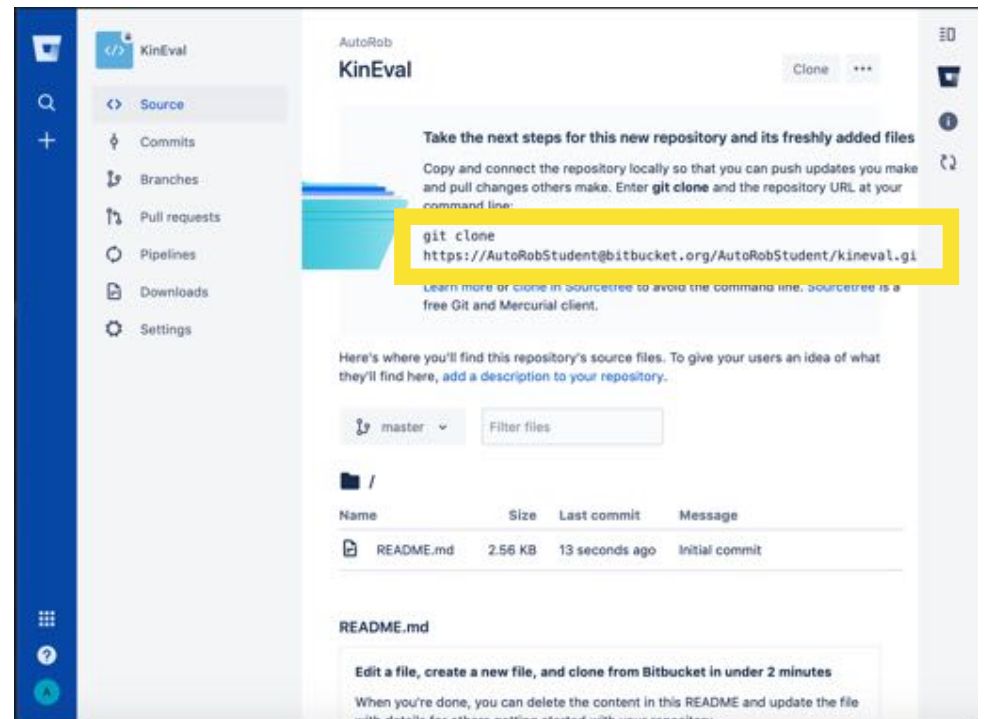
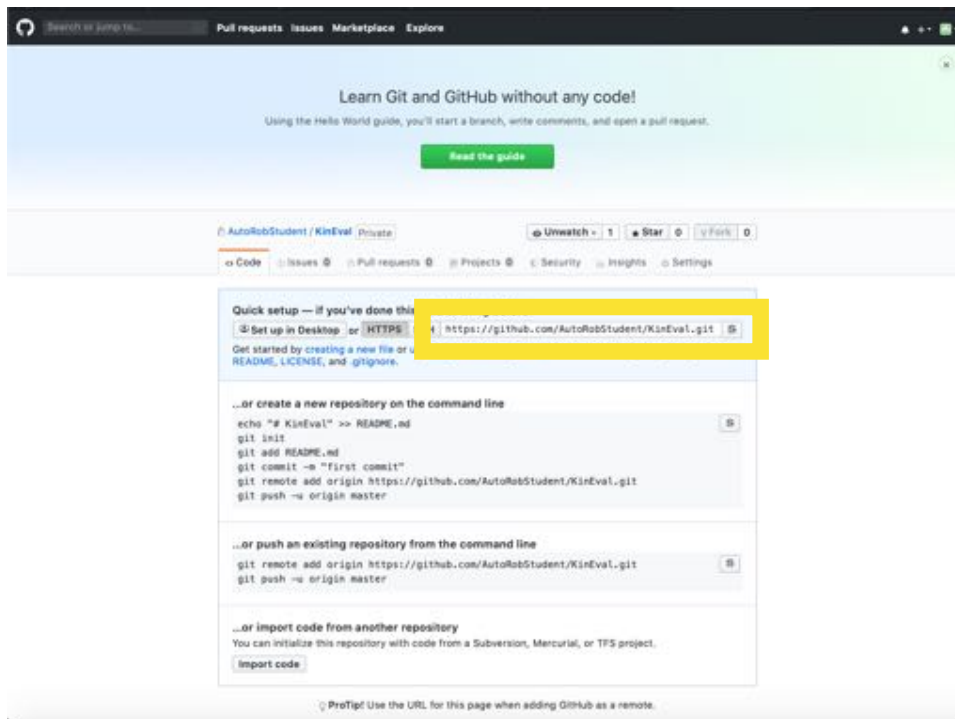
Create a new repository for course software

1) Create a git repository on github, bitbucket, or EECS gitlab website

The image displays two side-by-side screenshots of web interfaces for creating a new repository. The left screenshot is from GitHub, showing the 'Create a new repository' page. It includes fields for 'Owner' (AutoRobStudent) and 'Repository name' (KinEval). Under the 'Visibility' section, the 'Private' option is selected and highlighted with a red box. The right screenshot is from Bitbucket, showing a similar 'Create a new repository' form. In this form, the 'Access level' section has 'This is a private repository' selected, also highlighted with a red box. Two red arrows originate from a text block at the bottom and point to these two specific 'Private' options, emphasizing the requirement.

Ensure your repo is private!

1) Create a git repository on github, bitbucket, or EECS gitlab website



Success!

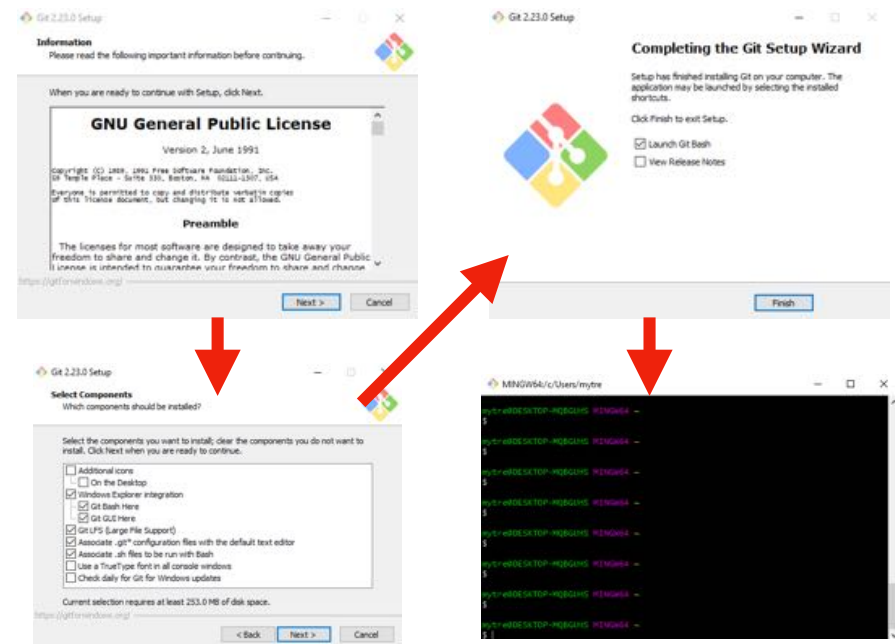
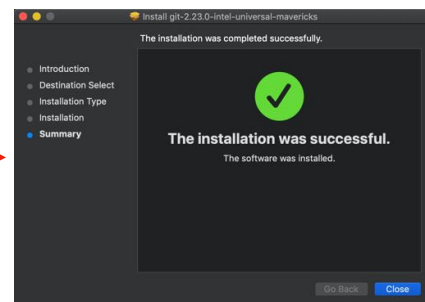
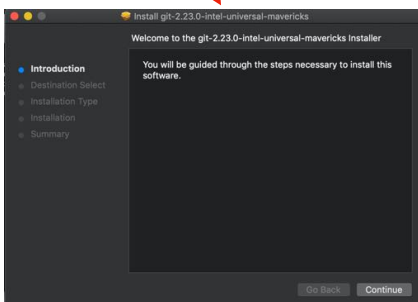
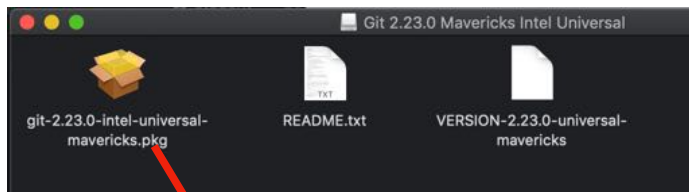
2) Install git on your machine

<https://git-scm.com/book/en/v2/Getting-Started-Installing-Git>

OSX: <https://code.google.com/p/git-osx-installer/>

```
[tpos-MacBook-Pro:~ student$ git --version  
git version 2.23.0
```

OR



3) Clone the repository to your machine:

`git clone https://github.com/yourid/yourrepo.git`

```
[tpos-MacBook-Pro:AutoRob student$ git clone https://AutoRobStudent@bitbucket.org/
AutoRobStudent/kineval.git
Cloning into 'kineval'...
[Password for 'https://AutoRobStudent@bitbucket.org':
remote: Counting objects: 3, done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0)
Unpacking objects: 100% (3/3), done.
[tpos-MacBook-Pro:AutoRob student$ ls
kineval
```

KinEval: Clone, Copy, Commit

- 4) Clone contents of stencil repository the repository to your machine:

```
git clone https://github.com/autorob/kineval-stencil
```

- 5) Copy contents of stencil repository to your repository

```
cd <your repository directory>
```

```
cp -r <stencil repository directory>/* .
```



**DON'T COPY .GIT
DIRECTORY!**

- 6) Commit these changes and then push them to your remote repository

```
cd <your repository directory>
```

```
git add *
```

```
git commit -a -m "initial commit"
```

```
git push
```

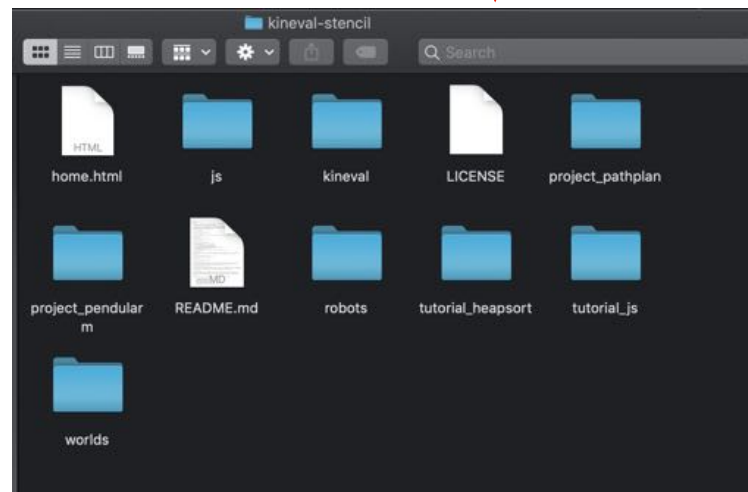
- 7) Check webpage for remote repository to see changes online

4) Clone contents of stencil repository the repository to your machine:

```
git clone https://github.com/autorob/kineval-stencil
```

```
[tpos-MacBook-Pro:AutoRob student$ git clone https://github.com/autorob/kineval-s]
tencil
Cloning into 'kineval-stencil'...
remote: Enumerating objects: 191, done.
remote: Total 191 (delta 0), reused 0 (delta 0), pack-reused 191
Receiving objects: 100% (191/191), 24.92 MiB | 11.59 MiB/s, done.
Resolving deltas: 100% (10/10), done.
```

kineval-stencil



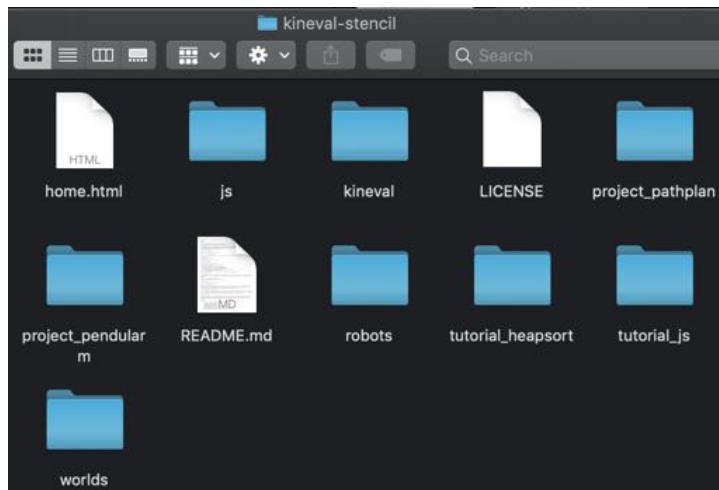
5) Copy contents of stencil repository to your repository

```
cd <your repository directory>
```

```
cp -r <stencil repository directory>/* .
```

```
[tpos-MacBook-Pro:~ student$ cd Documents/AutoRob/bit/kineval/
[tpos-MacBook-Pro:kineval student$ cp -r ~/Documents/AutoRob/kineval-stencil/* .
[tpos-MacBook-Pro:kineval student$ ls
LICENSE                kineval                tutorial_heapsort
README.md              project_pathplan       tutorial_js
home.html              project_pendularm      worlds
js                     robots
```

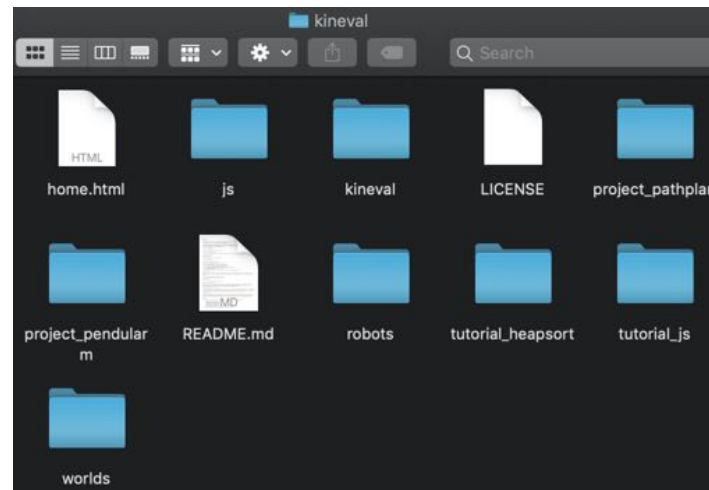
kineval-stencil



=



Student's local repo



6) Commit these changes and then push them to your remote repository

`cd <your repository directory>`

`git add *`

`git commit -a -m "initial commit"`

`git push`

```
[tpos-MacBook-Pro:kineval student$ git add *
[tpos-MacBook-Pro:kineval student$ git commit -a -m "initial commit"
[master 8d4a274] initial commit
Committer: Student <student@tpos-MacBook-Pro.local>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:
```

```
    git config --global --edit
```

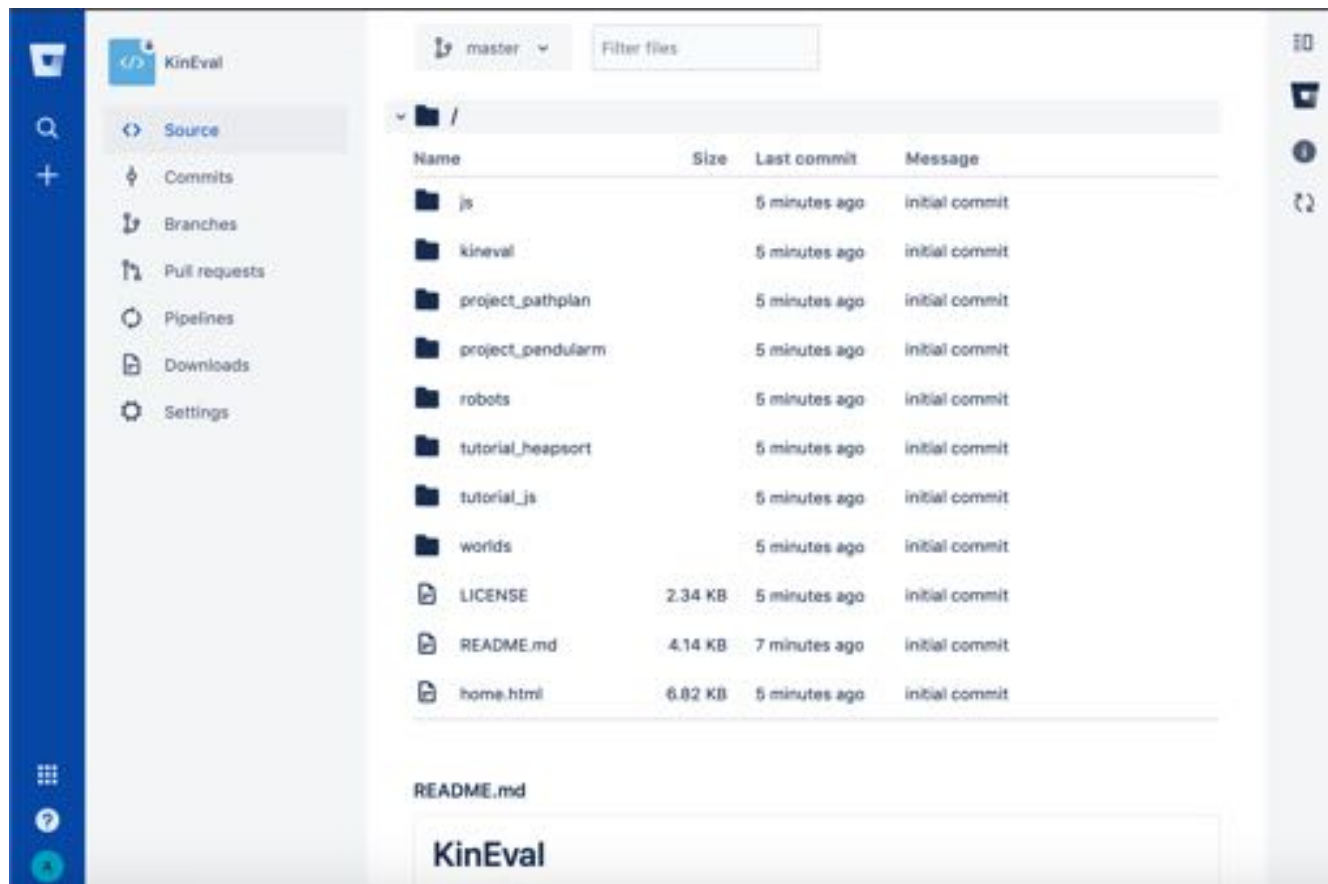
```
After doing this, you may fix the identity used for this commit with:
```

```
    git commit --amend --reset-author
```

```
167 files changed, 129553 insertions(+)
create mode 100644 LICENSE
create mode 100644 home.html
create mode 100644 js/3jsbot_camera.js.backup
create mode 100644 js/ColladaLoader.js
create mode 100644 js/ColladaLoader2.js
```

```
[tpos-MacBook-Pro:kineval student$ git push
Enumerating objects: 192, done.
Counting objects: 100% (192/192), done.
Delta compression using up to 4 threads
Compressing objects: 100% (188/188), done.
Writing objects: 100% (190/190), 23.72 MiB | 1.24 MiB/s, done.
Total 190 (delta 11), reused 0 (delta 0)
remote: Resolving deltas: 100% (11/11), done.
To https://bitbucket.org/AutoRobStudent/kineval.git
f32b1fb..8d4a274 master -> master
```

7) Check webpage for remote repository to see changes online



The screenshot displays the GitHub interface for the 'KinEval' repository. The left sidebar contains navigation links: Source, Commits, Branches, Pull requests, Pipelines, Downloads, and Settings. The main content area shows the 'master' branch with a 'Filter files' input. Below this, a table lists the repository's files and folders, including 'js', 'kineval', 'project_pathplan', 'project_pendulum', 'robots', 'tutorial_heapsort', 'tutorial_js', 'worlds', 'LICENSE', 'README.md', and 'home.html'. Each entry shows its size and the time since its last commit. At the bottom, the 'README.md' content is visible, featuring the 'KinEval' logo.

Name	Size	Last commit	Message
js		5 minutes ago	initial commit
kineval		5 minutes ago	initial commit
project_pathplan		5 minutes ago	initial commit
project_pendulum		5 minutes ago	initial commit
robots		5 minutes ago	initial commit
tutorial_heapsort		5 minutes ago	initial commit
tutorial_js		5 minutes ago	initial commit
worlds		5 minutes ago	initial commit
LICENSE	2.34 KB	5 minutes ago	initial commit
README.md	4.14 KB	7 minutes ago	initial commit
home.html	6.82 KB	5 minutes ago	initial commit

README.md

KinEval

Make a Change: Commit & Push

8) Open “home.html” and “project_pathplan/search_canvas.html” in a web browser (make sure this code runs properly)

9) Create “me.html” using a text editor with your name added to the file

10) Add “me.html” to your local repository

```
cd <your repository directory>  
git add *
```

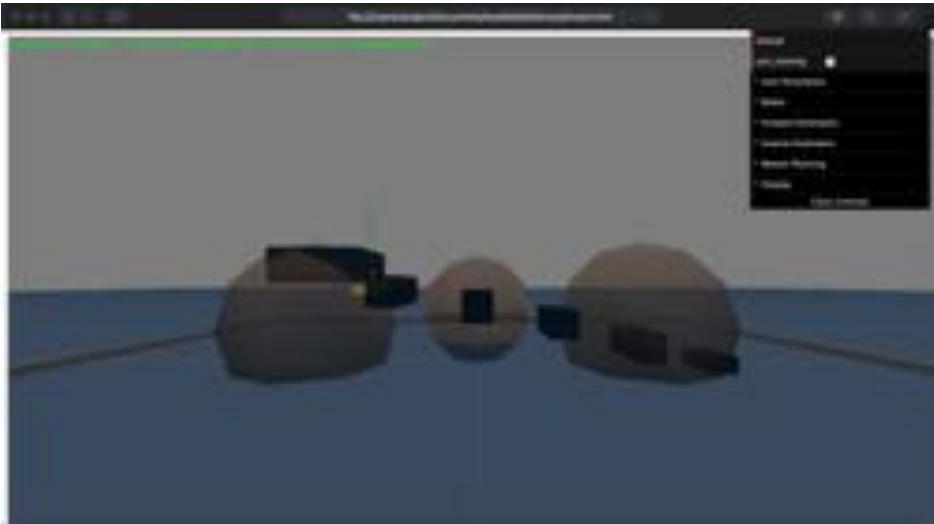
11) Commit and push “me.html” to your remote repository

```
git commit -a -m “created my html file”  
git push
```

12) Check webpage for remote repository to see changes online

8) Open “home.html” and “project_pathplan/search_canvas.html” in a web browser (make sure this code runs properly)

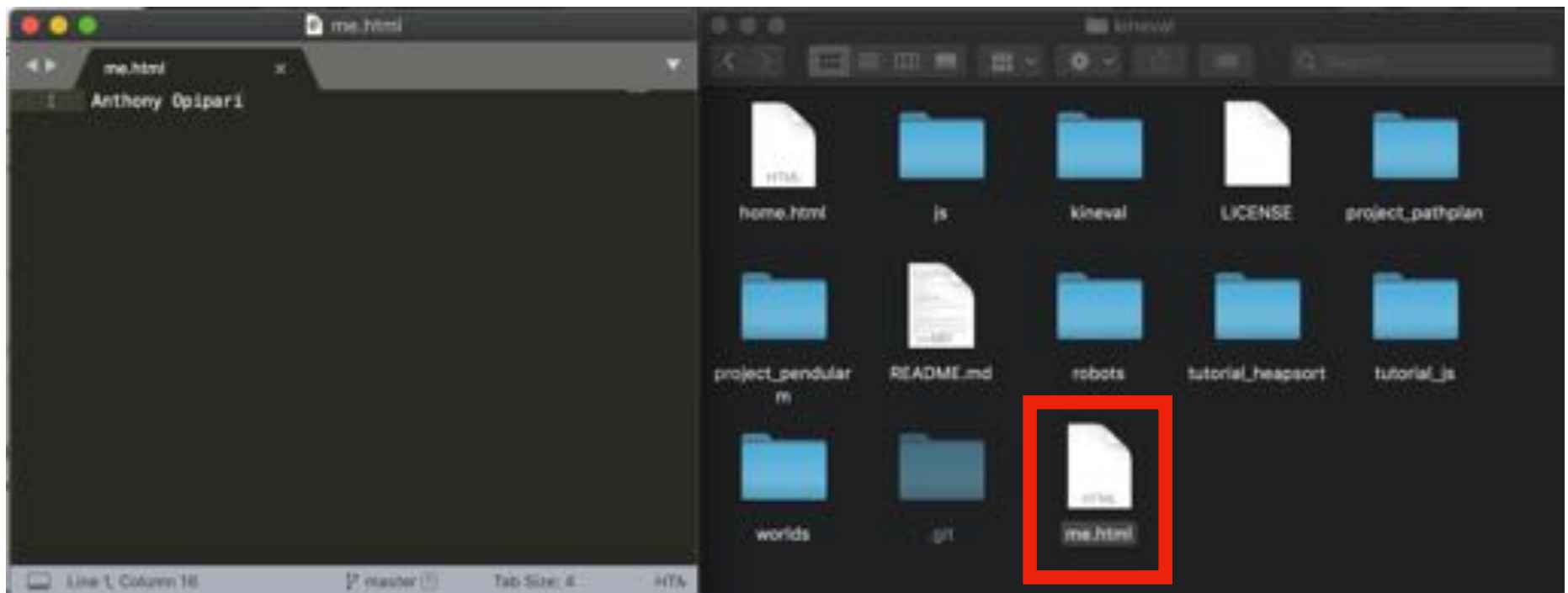
home.html



project_pathplan/search_canvas.html



9) Create “me.html” using a text editor with your name added to the file



10) Add "me.html" to your local repository

```
cd <your repository directory>  
git add *
```

11) Commit and push "me.html" to your remote repository

```
git commit -a -m "created my html file"  
git push
```

```
[tpos-MacBook-Pro:kineval student$ git push  
Enumerating objects: 4, done.  
Counting objects: 100% (4/4), done.  
Delta compression using up to 4 threads  
Compressing objects: 100% (2/2), done.  
Writing objects: 100% (3/3), 299 bytes | 299.00 KiB/s, done.  
Total 3 (delta 1), reused 0 (delta 0)  
To https://bitbucket.org/AutoRobStudent/kineval.git  
8d4a274..c9a80ac master -> master
```

12) Check webpage for remote repository to see changes online

The screenshot shows the GitHub interface for the 'KinEval' repository. The left sidebar contains navigation links: Source, Commits, Branches, Pull requests, Pipelines, Downloads, and Settings. The main area displays the file list for the 'master' branch. The files and folders listed are: js, kineval, project_pathplan, project_pendulum, robots, tutorial_heapsort, tutorial_js, worlds, LICENSE (2.34 KB), README.md (4.14 KB), home.html (6.82 KB), and me.html (15 B). The 'me.html' file is highlighted with a red box, indicating it is the latest commit, made 2 minutes ago with the message 'created my html file'.

Name	Size	Last commit	Message
js		29 minutes ago	initial commit
kineval		29 minutes ago	initial commit
project_pathplan		29 minutes ago	initial commit
project_pendulum		29 minutes ago	initial commit
robots		29 minutes ago	initial commit
tutorial_heapsort		29 minutes ago	initial commit
tutorial_js		29 minutes ago	initial commit
worlds		29 minutes ago	initial commit
LICENSE	2.34 KB	29 minutes ago	initial commit
README.md	4.14 KB	31 minutes ago	initial commit
home.html	6.82 KB	29 minutes ago	initial commit
me.html	15 B	2 minutes ago	created my html file

HTML Practice

- 13) Create the “me” directory within your local workspace
`cd <your repository directory>`
`mkdir me`
- 14) Copy a picture that best represents you to “me/me.png”
`cp <picture_location> me/me.png`
- 15) Add the following to “me.html” to your local repository
``
I am an awesome student. I’m most excited about:
`<script>`
`console.log(Array(16).join("wat"-1)+" Batman!")`
`</script>`
- 16) Open “me.html” in a web browser and open web console

13) Create the “me” directory within your local workspace

```
cd <your repository directory>
```

```
mkdir me
```

14) Copy a picture that best represents you to “me/me.png”

```
cp <picture_location> me/me.png
```

```
[tpos-MacBook-Pro:~ student$ cd Documents/AutoRob/bit/kineval/
[tpos-MacBook-Pro:kineval student$ mkdir me
[tpos-MacBook-Pro:kineval student$ cp ~/Documents/me.png me/me.png
[tpos-MacBook-Pro:kineval student$ ls
LICENSE                me                    tutorial_heapsort
README.md              me.html              tutorial_js
home.html              project_pathplan     worlds
js                     project_pendularm
kineval                robots
[tpos-MacBook-Pro:kineval student$ cd me/
[tpos-MacBook-Pro:me student$ ls
me.png
```

Is that a tree!?!



15) Add the following to “me.html” to your local repository

```

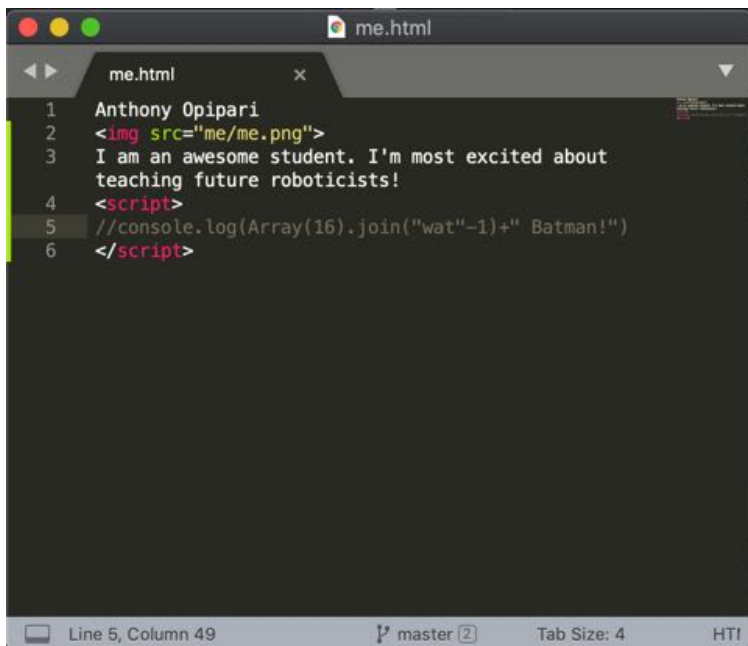
```

I am an awesome student. I'm most excited about:

<script>

```
console.log(Array(16).join("wat"-1)+" Batman!")
```

</script>



Validate Changes

17) Add the “me” directory to your local repository

```
cd <your repository directory>  
git add *
```

18) Commit and push “me.html” to remote repository

```
git commit -a -m “made my html file awesome”  
git push
```

19) Check webpage for remote repository to see changes online

17) Add the “me” directory to your local repository

```
cd <your repository directory>
```

```
git add *
```

18) Commit and push “me.html” to remote repository

```
git commit -a -m “made my html file awesome”
```

```
git push
```

```
tpos-MacBook-Pro:~ student$ cd Documents/AutoRob/bit/kineval/
tpos-MacBook-Pro:kineval student$ git add *
tpos-MacBook-Pro:kineval student$ git commit -a -m "made my html file awesome"
[master 36cb902] made my html file awesome
Committer: Student <student@tpos-MacBook-Pro.local>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

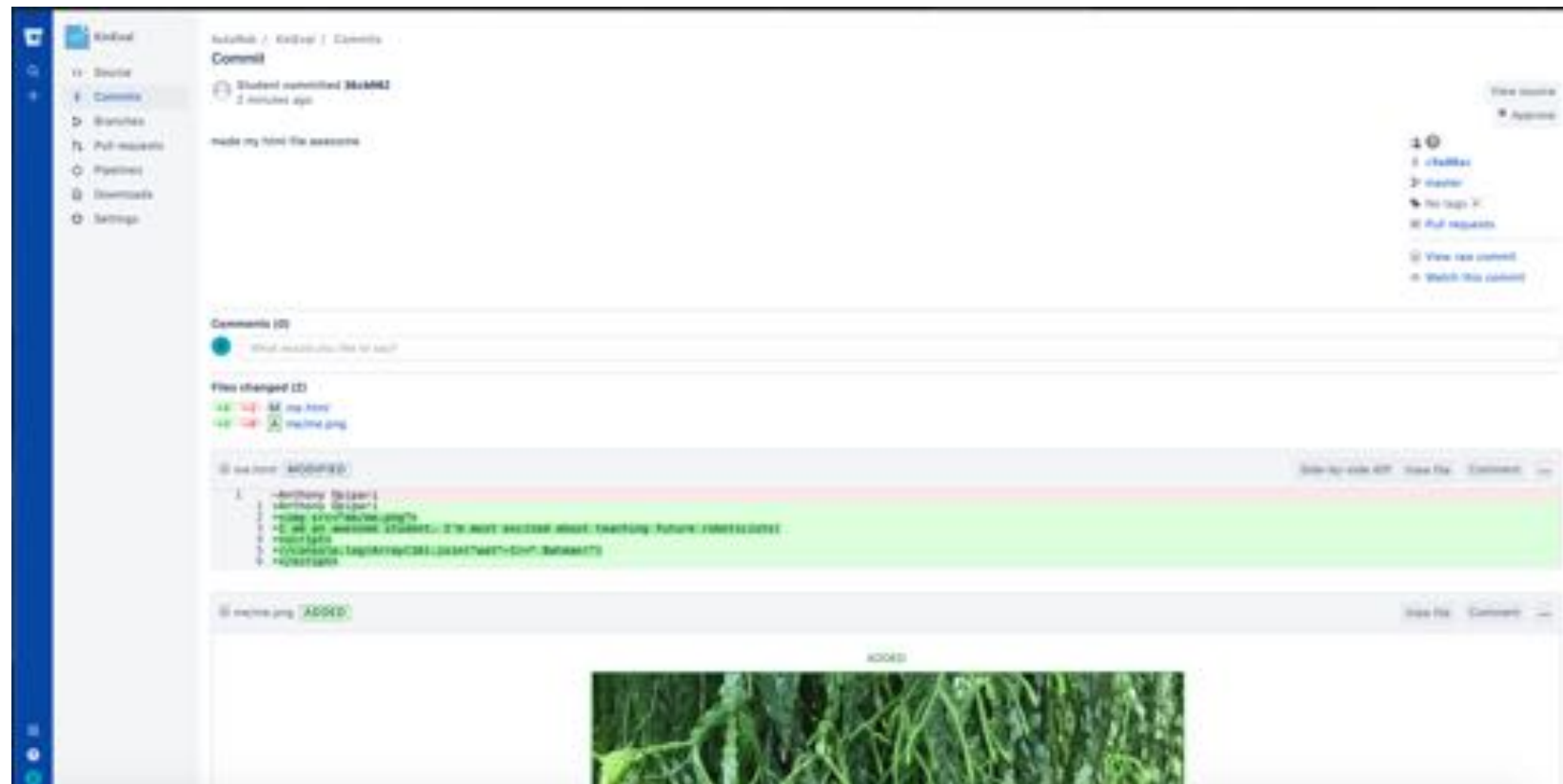
    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

2 files changed, 6 insertions(+), 1 deletion(-)
 create mode 100755 me/me.png
tpos-MacBook-Pro:kineval student$ git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 3.14 MiB | 763.00 KiB/s, done.
Total 5 (delta 1), reused 0 (delta 0)
To https://bitbucket.org/AutoRobStudent/kineval.git
 c9a80ac..36cb902  master -> master
```

19) Check webpage for remote repository to see changes online



Validate Changes

20) Add Professor Jenkins and Anthony to your collaborators with admin privileges

Github: ohseejay and tonyop

Bitbucket: ohseejay and tonyop

EECS gitlab: ocj and topipari

20) Add Professor Jenkins and Anthony to your collaborators with admin privileges

Github: ohseejay and tonyop

Bitbucket: ohseejay and tonyop

EECS gitlab: ocj and topipari

