GITHUB AND CODE VERSIONING
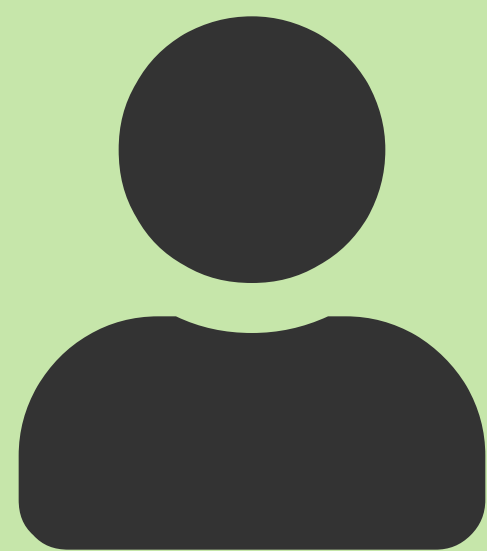
MICHAEL CRABB
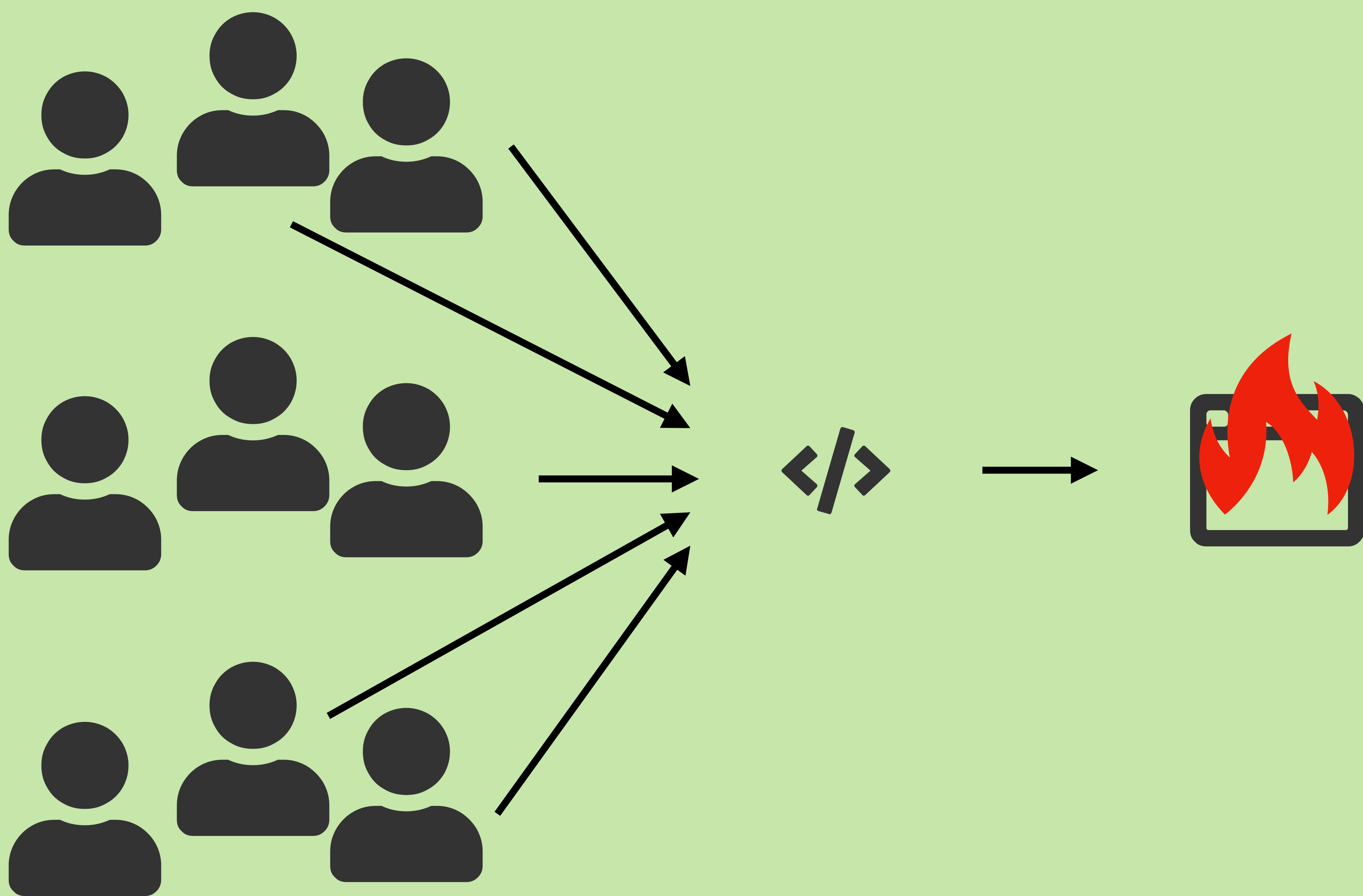
THE BASICS OF GIT
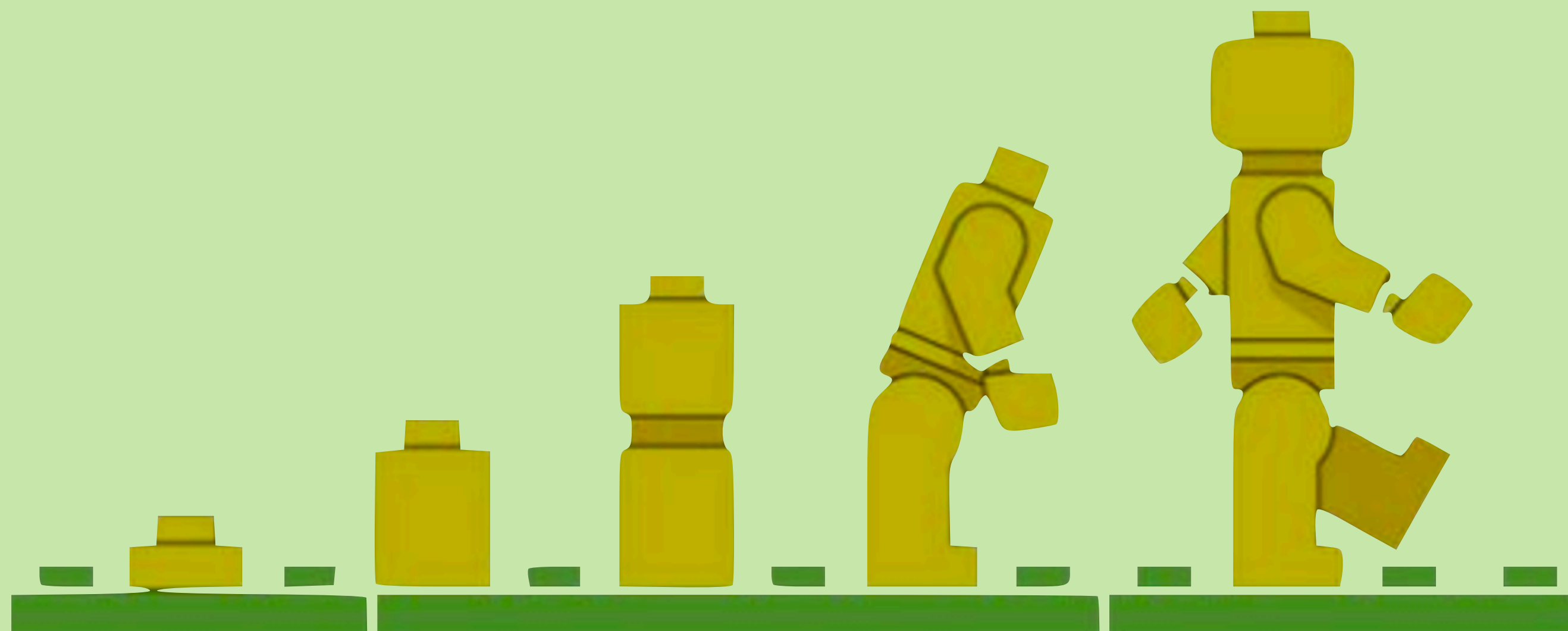
GIT NETWORK ACTIVITY

USING GITHUB FOR GROUP ACTIVITIES

THE BASICS OF GIT
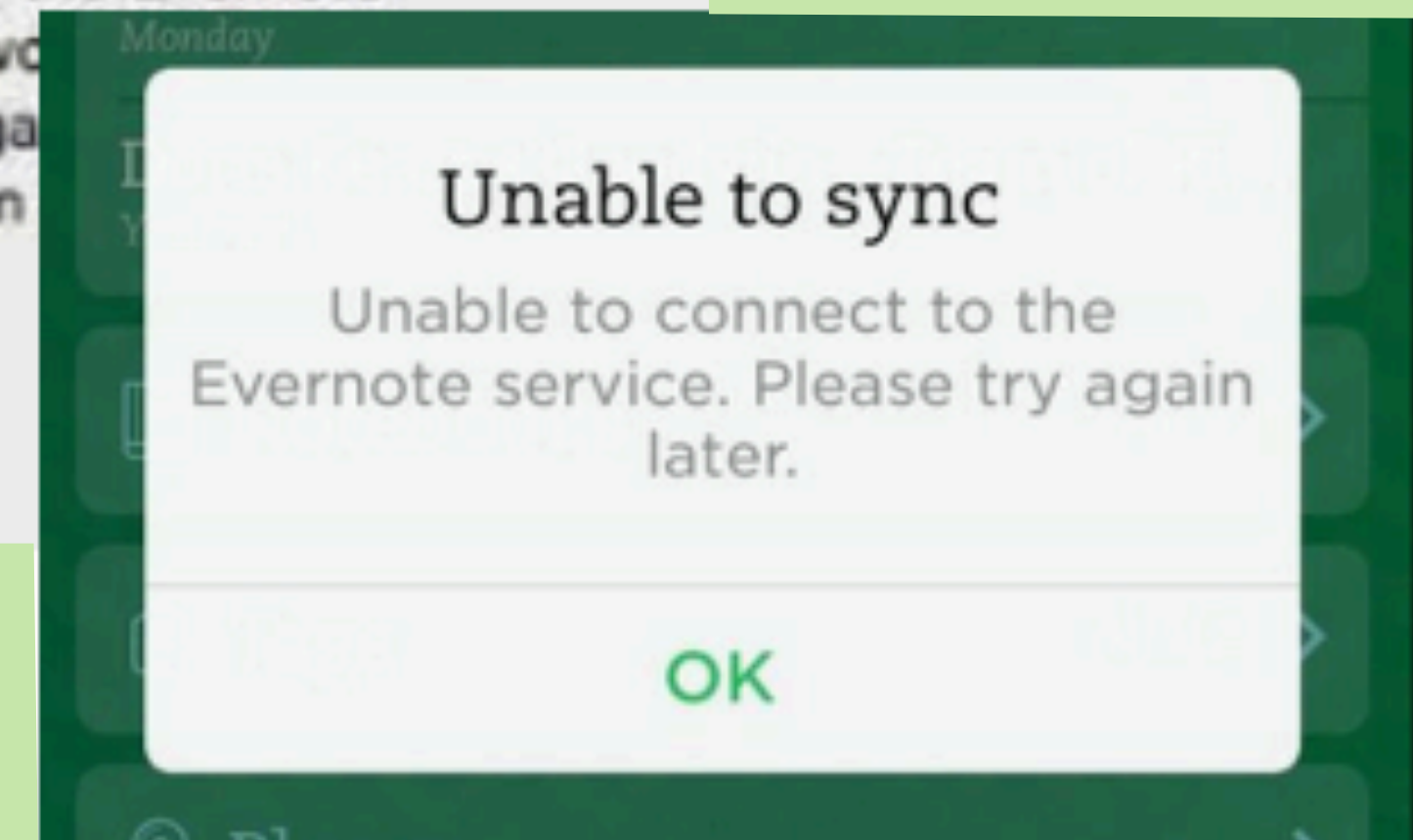
ENTER git

git

- IS A VERSION CONTROL SYSTEM
- IS A TOOL THAT LETS YOU TRACK PROGRESS OVER TIME
- SAVES SNAPSHOTS TO YOUR HISTORY
- KEEPS OTHERS UP-TO-DATE WITH YOUR LATEST WORK
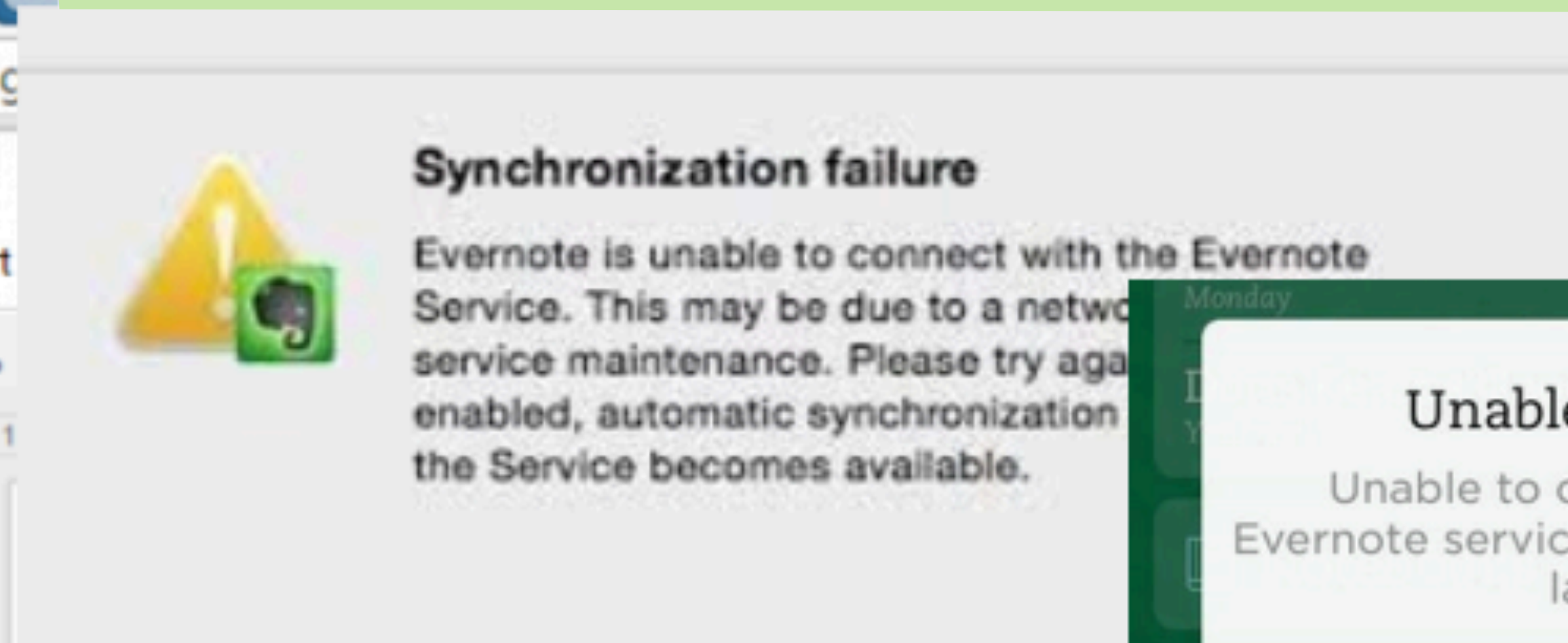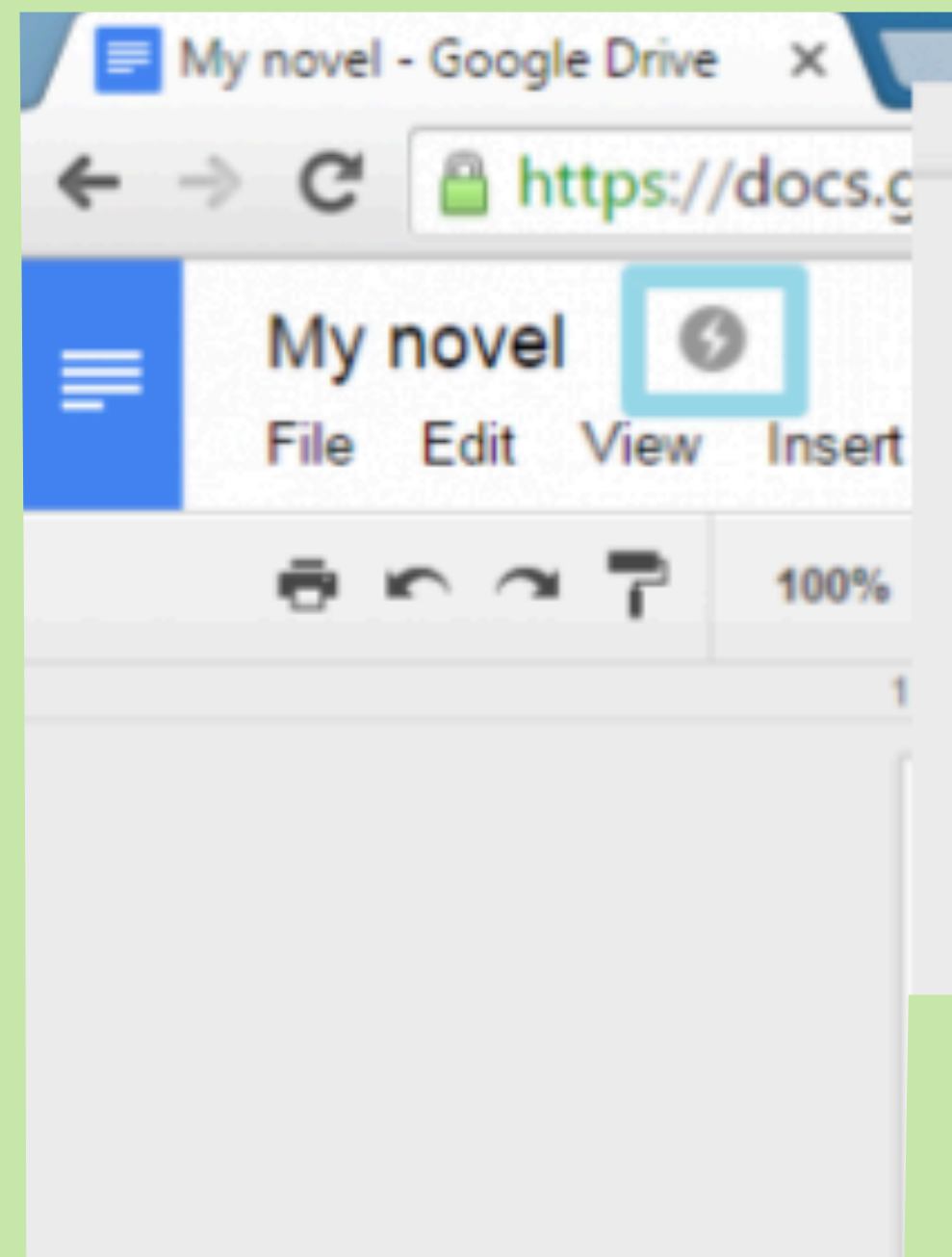
IN A CENTRALISED SYSTEM YOU CAN CALL VERSIONS IN A NUMERICAL PROGRESSION...

- VERSION 1
- VERSION 2
- FINAL
- ...FINAL 2
- PLEASE LET THIS BE THE FINAL
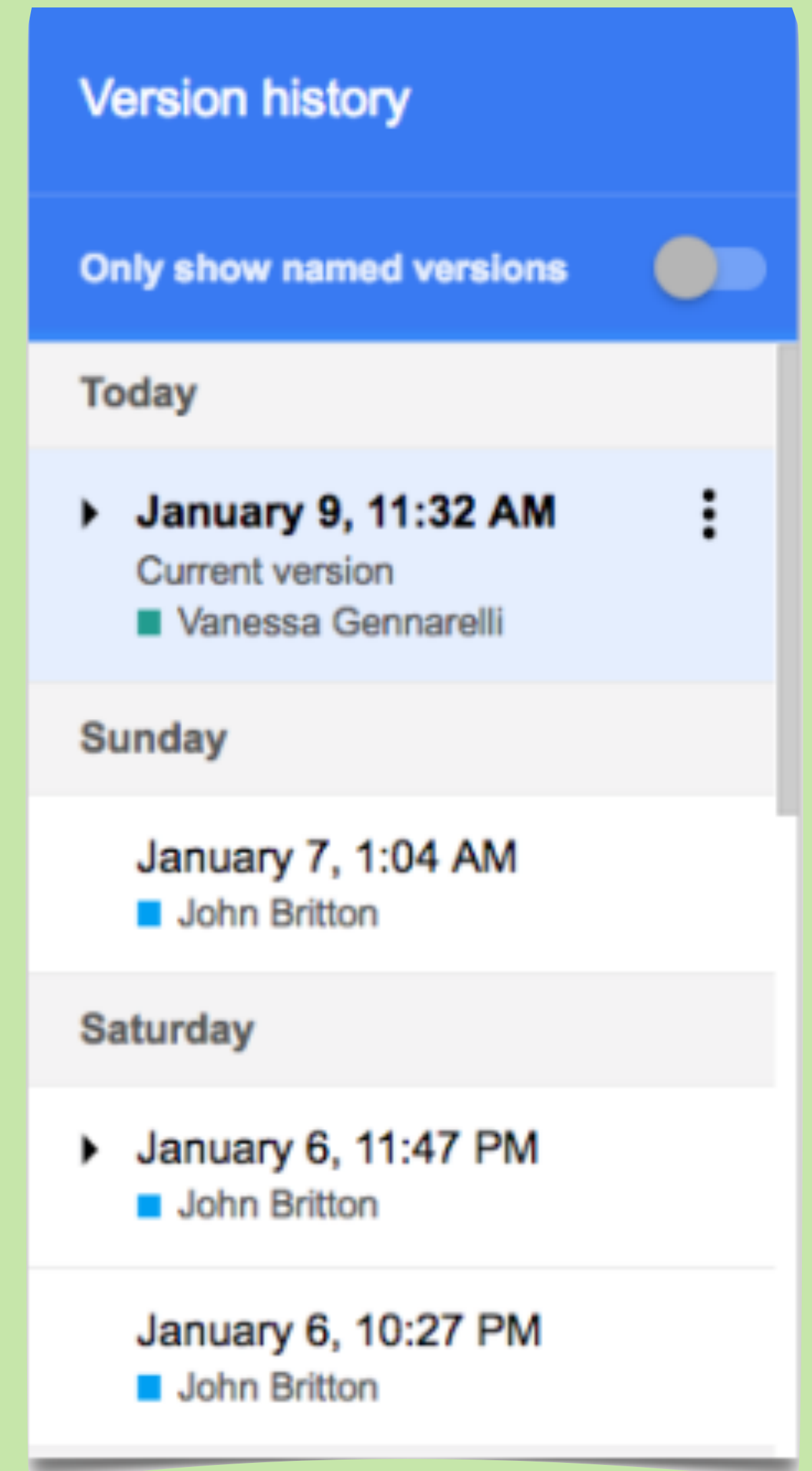
NOTE

THERE BE DRAGONS...

THERE ARE LOTS OF DIFFERENT PIECES OF SOFTWARE THAT CAN BE USED TO IMPLEMENT GIT AND MAKE LIFE EASIER FOR YOU

WE WILL BE USING COMMAND LINE AND THE GIT FEATURES BUILT INTO ATOM

FEEL FREE TO EXPLORE OTHERS IN YOUR OWN TIME (BUT YOU WILL HAVE TO PROVIDE YOUR OWN SUPPORT)

A REPOSITORY HOLDS THE ENTIRE HISTORY OF YOUR PROJECT

ITS THE UNIT OF SEPARATION BETWEEN PROJECTS IN GIT

EACH PROJECT, LIBRARY, OR DISCRETE PIECE OF SOFTWARE SHOULD HAVE ITS OWN REPOSITORY

CREATING A REPOSITORY

```
●●●                    📁 myFirstRepo — -bash — 80×24
[Michaels-MacBook:github michaelcrabb$ git init myFirstRepo
Initialized empty Git repository in /Users/michaelcrabb/Desktop/github/myFirstRe
po/.git/
[Michaels-MacBook:github michaelcrabb$ cd myFirstRepo/
[Michaels-MacBook:myFirstRepo michaelcrabb$ ls -al
total 0
drwxr-xr-x    3 michaelcrabb   staff    96 18 Jul 10:32 .
drwxr-xr-x    3 michaelcrabb   staff    96 18 Jul 10:32 ..
drwxr-xr-x   10 michaelcrabb   staff   320 18 Jul 10:32 .git
Michaels-MacBook:myFirstRepo michaelcrabb$ █
```

git init myFirstRepo

cd myFirstRepo

ls -al

ANATOMY OF A REPOSITORY
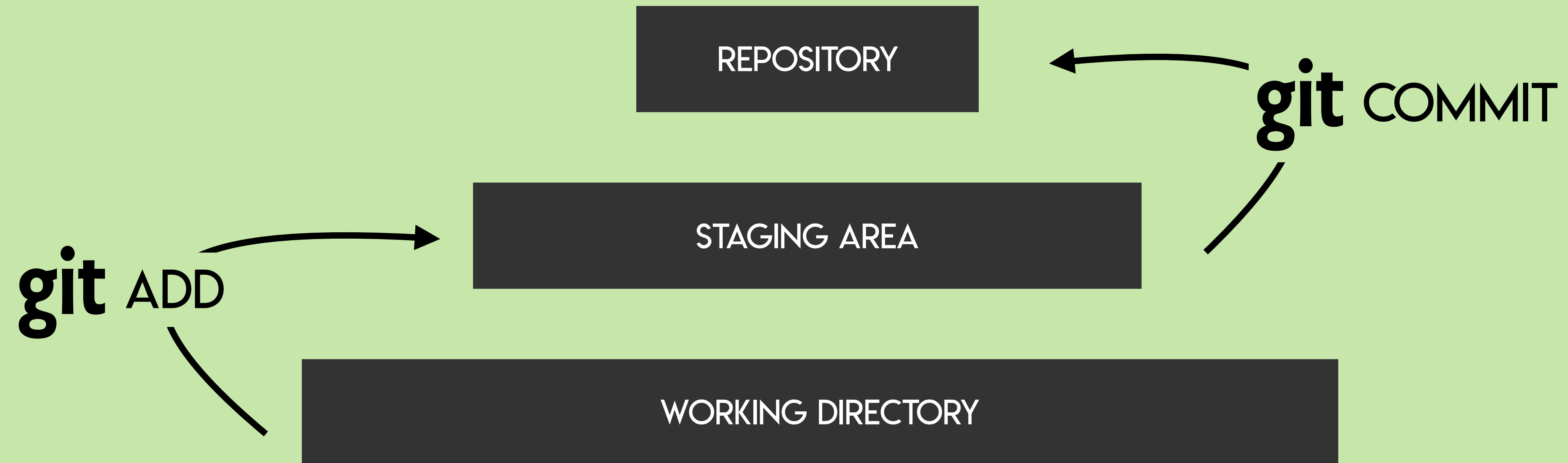
CREATING A FILE IN YOUR GIT REPO AND ADDING IT TO STAGING


```
[Michaels-MacBook:myFirstRepo michaelcrabb$ touch readme.md
[Michaels-MacBook:myFirstRepo michaelcrabb$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        readme.md

nothing added to commit but untracked files present (use "git add" to track)
[Michaels-MacBook:myFirstRepo michaelcrabb$ git add readme.md
[Michaels-MacBook:myFirstRepo michaelcrabb$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

        new file:   readme.md

Michaels-MacBook:myFirstRepo michaelcrabb$
```

touch readme.md

git status

git add readme.md

git status

MAKING COMMITS

```
[Michaels-MacBook:myFirstRepo michaelcrabb$ git commit -m "My First Commit"
[master (root-commit) 51c0f67] My First Commit
 1 file changed, 0 insertions(+), 0 deletions(-)
  create mode 100644 readme.md
[Michaels-MacBook:myFirstRepo michaelcrabb$ git status
On branch master
nothing to commit, working tree clean
Michaels-MacBook:myFirstRepo michaelcrabb$ ▊
```

git commit -m "My First Commit

git status

TELLS GIT TO SAVE THAT PORTION OF THE PROJECT FROM THE STAGING AREA INTO THE REPOSITORY HISTORY

GIT ALLOWS YOU TO BE SELECTIVE

THINGS CAN BE ADDED ACROSS SEVERAL FILES IN
THE 1 COMMIT

`git commit -m "New eMail Address Added"`

COMMITS SHOULD BE LOGICALLY GROUPED

✓ `git commit -m "Typo in readme.md"`

✓ `git commit -m "New layout for homepage"`

✗ `git commit -m "Type in readme.md, new layout for homepage, told Mike how awesome he is"`

IF A FEATURE GETS ROLLED BACK THEN YOU RE-INTRODUCE THE TYPO!

CARRYING OUT ATOMIC COMMITS IS WHY YOU SHOULD NEVER USE `git add .`

```
readme.md
Example.txt
example2.txt
```

REPOSITORY

git COMMIT

```
readme.md
Example.txt
example2.txt
```

git ADD

STAGING AREA

WORKING DIRECTORY
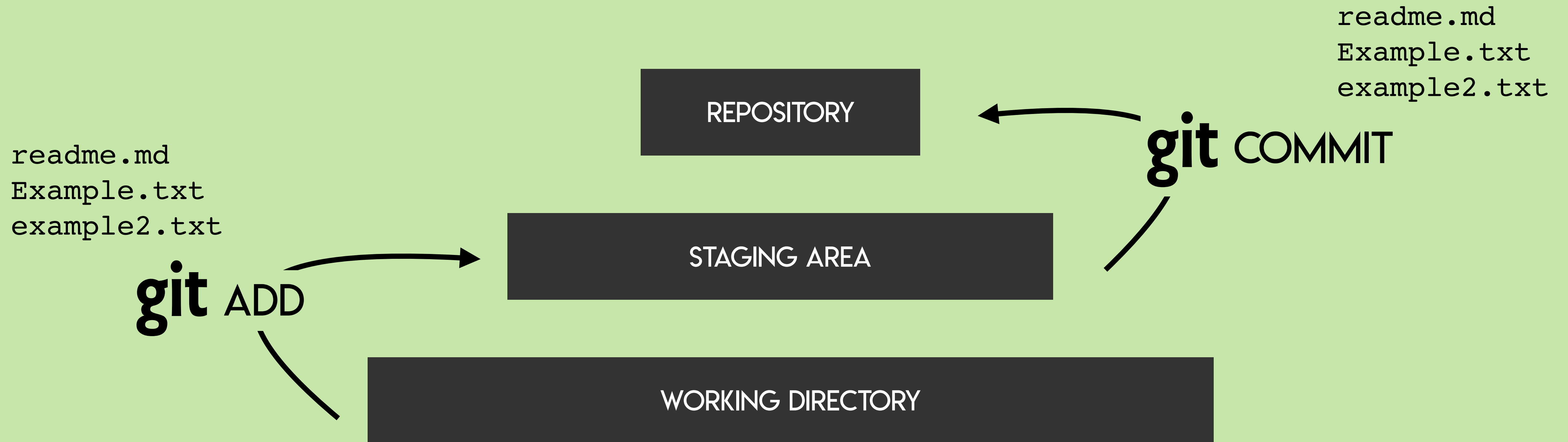
NOT GOING TO TEACH YOU ABOUT THIS BUT IF
YOU ARE A SNEAKY FOX AND FIND IT OUT WE'RE
GOING TO SAY WHY ITS BAD!

ORDER OF OPERATIONS

FIRST WE STAGE THE
MODIFICATION THAT
WE'VE MADE

git ADD

THEN WE COMMIT THE
MODIFICATIONS TO THE
REPOSITORY

git COMMIT

GIT NETWORK ACTIVITY

GIT ISN'T DESIGNED TO JUST WORK ON AN INDIVIDUAL MACHINE, IT CAN BE COLLABORATIVE!

ENTER
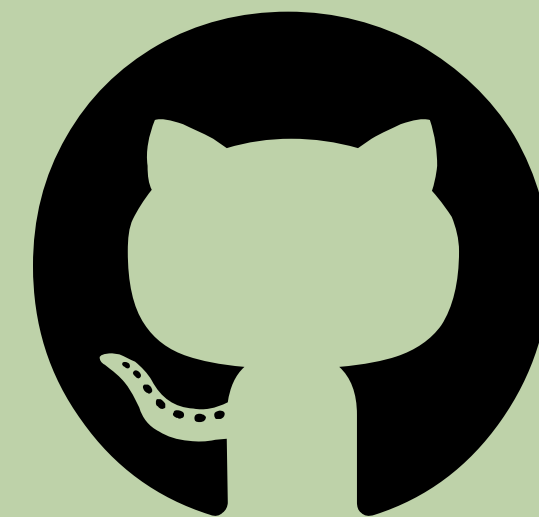
GITHUB

GITHUB.COM/NEW

MAKE SURE YOU HAVE A GITHUB ACCOUNT FIRST!

<> Code   ⓘ Issues **0**   ⑂ Pull requests **0**   ▥ Projects **0**   📖 Wiki   📊 Insights   ⚙ Settings

A place for me to hold all of my bats!

Edit

Add topics

⊙ **1** commit   ⑂ **1** branch   🏷 **0** releases   👥 **1** contributor

Branch: master ▾   New pull request   Create new file   Upload files   Find file   Clone or download ▾

mikecrabb Initial commit   Latest commit 7d33bef just now

📄 LICENSE	Initial commit	just now
📄 README.md	Initial commit	just now

📖 **README.md**

batcave

A place for me to hold all of my bats!
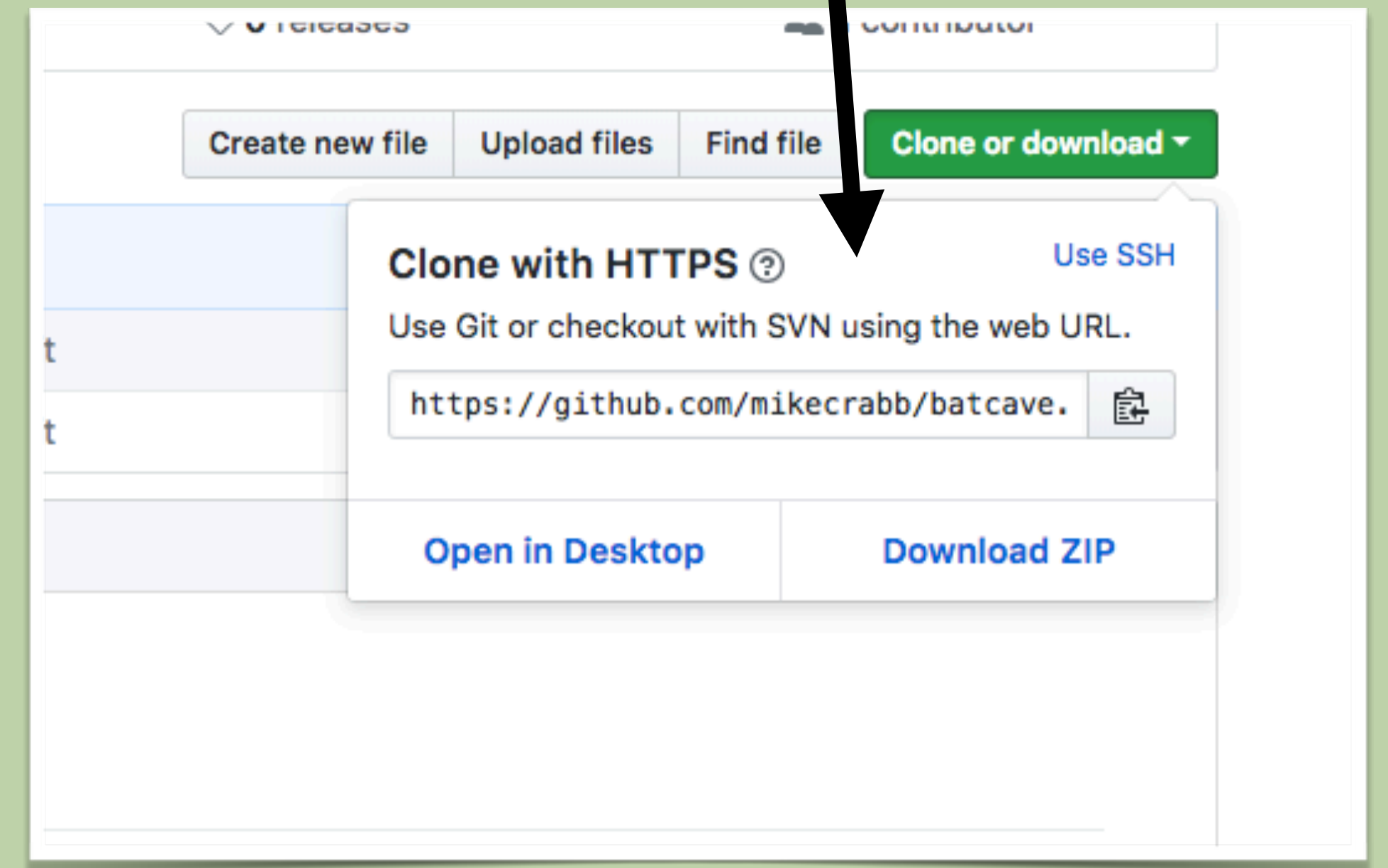
CREATING A LINK BETWEEN A REPO ON YOUR MACHINE AND A **NEW** REPO ONLINE

```
git remote add origin {{repo location}}
```

↓

```
git remote add origin https://github.com/mikecrabb/batcave.git
```

CREATING A LINK BETWEEN A REPO ON YOUR MACHINE AND A **NEW** REPO ONLINE

SEND MY COMMENTS
TO A LOCATION

ORIGIN IS AT THIS
ADDRESS

```
git remote add origin {{repo location}}
```

THE REMOTE IS
CALLED ORIGIN

CREATING A NEW REPO ON YOUR MACHINE BASED ON ONE ONLINE

```
git clone {{repo location}}
```

```
git clone https://github.com/mikecrabb/batcave.git
```

CREATING A NEW REPO ON YOUR MACHINE BASED ON ONE ONLINE

RETRIEVE AN ENTIRE
REPOSITORY FROM A
HOSTED LOCATION

↓

```
git clone {{repo location}}
```

↑

ORIGIN IS AT THIS
ADDRESS

THIS ADDS ANOTHER STEP INTO OUR WORKFLOW...
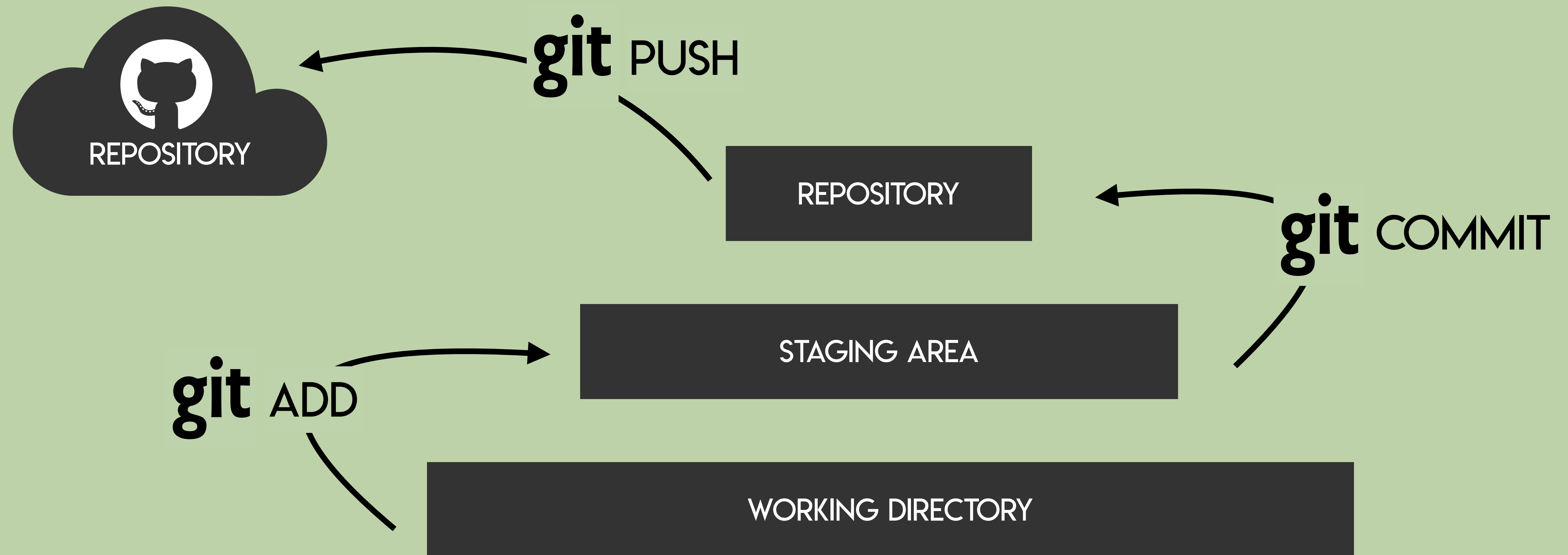
PUSHES UPDATES
FROM LOCAL
MACHINE TO
ONLINE REPO

BRANCH THAT IS
BEING PUSHED UP

git push origin master

NAME OF THE
REMOTE REPOSITORY

BRANCH THAT IS
BEING PUSHED UP

↓
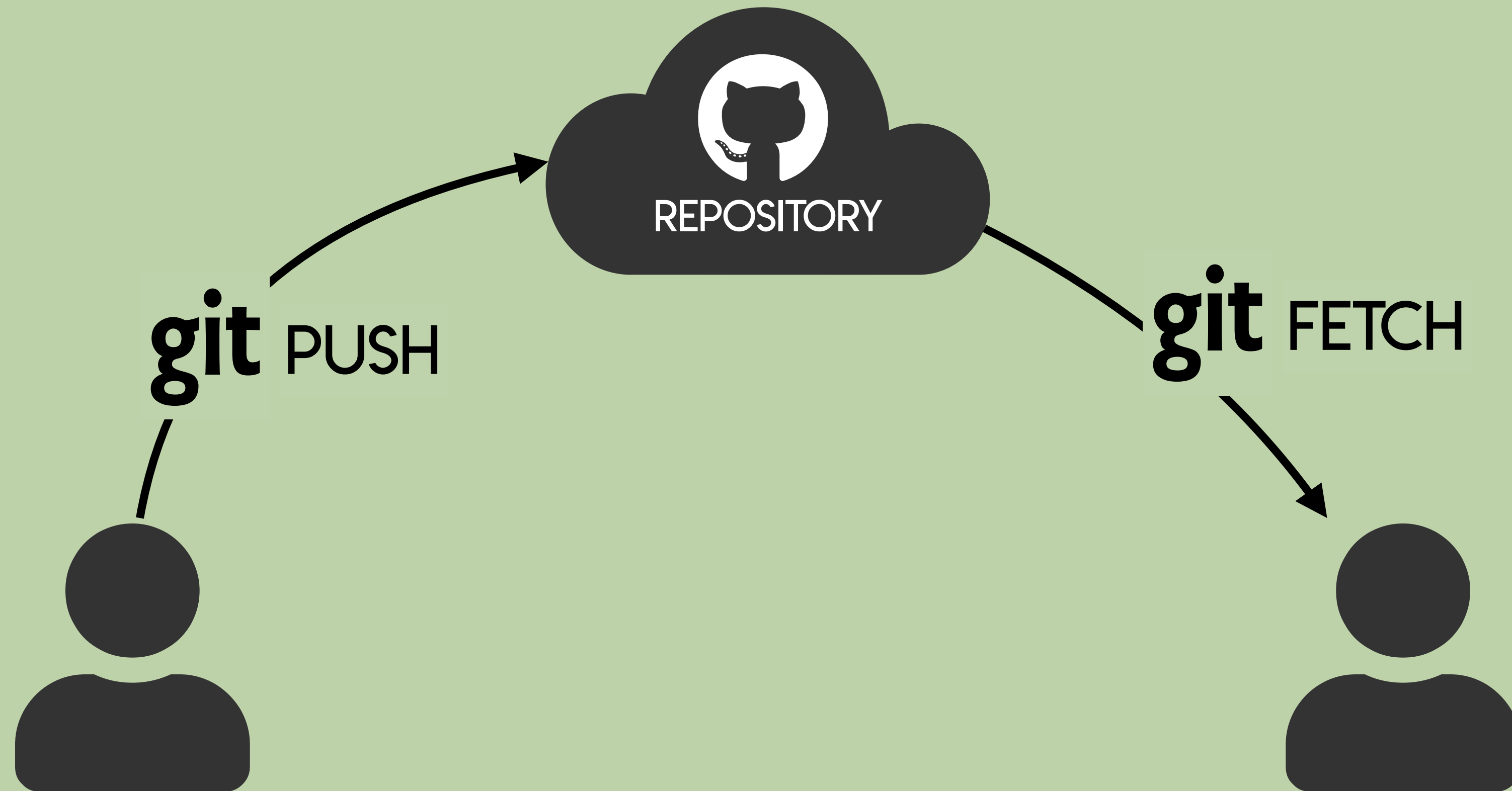
`git push origin master`

BRANCHES ARE BOOKMARKS TO COMMITS

"MASTER" IS THE DEFAULT

CAN THINK ABOUT BRANCHES AS EITHER A BOOKMARK OR A POINTER FOR COMMITS

AS WE ADD COMMITS THE ACTIVE BRANCH UPDATES TO THE POINT OF THE NEWEST COMMIT
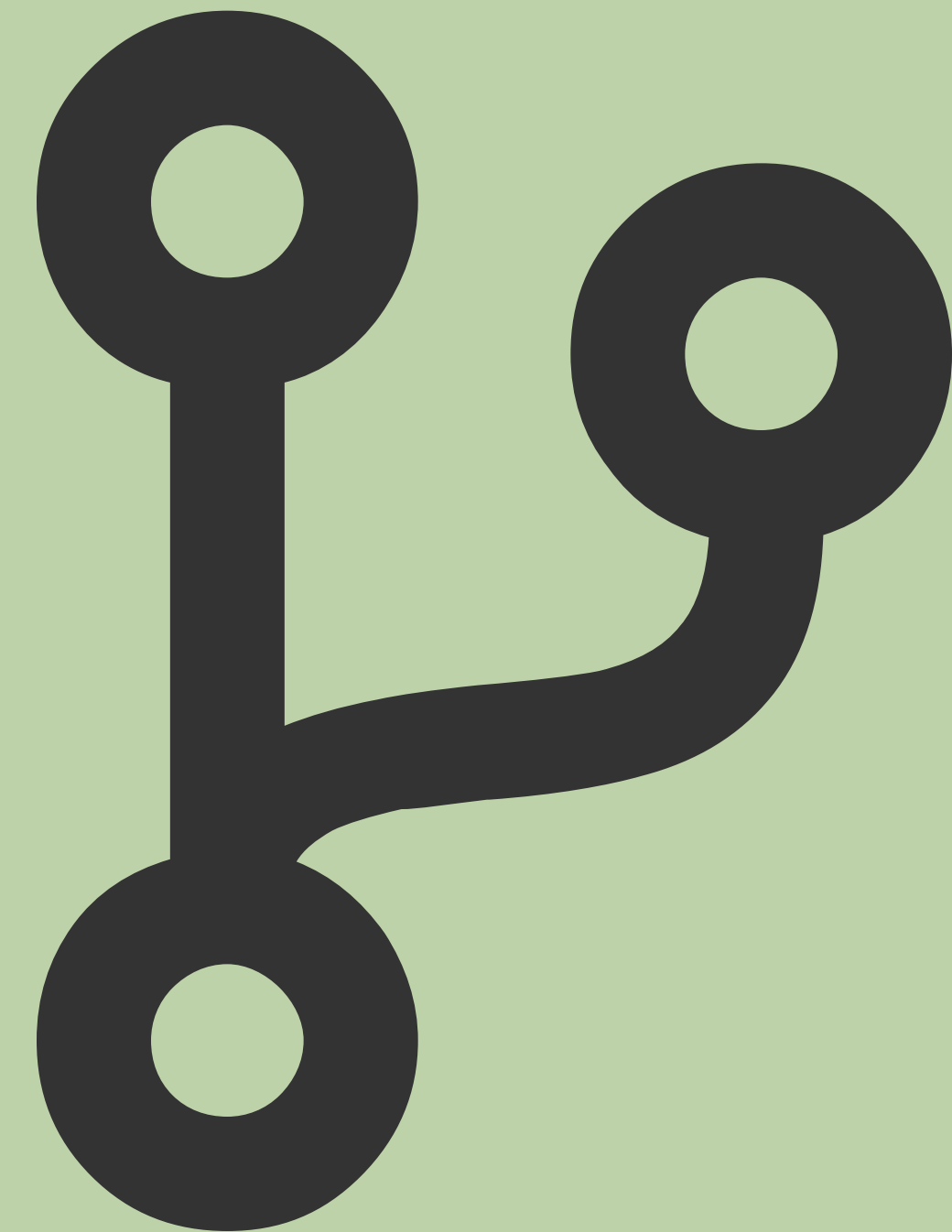
MAKING BRANCHES

```
[Michaels-MacBook:myFirstRepo michaelcrabb$ git branch
* master
[Michaels-MacBook:myFirstRepo michaelcrabb$ git branch newbranch
[Michaels-MacBook:myFirstRepo michaelcrabb$ git branch
* master
  newbranch
[Michaels-MacBook:myFirstRepo michaelcrabb$ git checkout newbranch
Switched to branch 'newbranch'
[Michaels-MacBook:myFirstRepo michaelcrabb$ git branch
  master
* newbranch
Michaels-MacBook:myFirstRepo michaelcrabb$ 
```

git branch

git branch newbranch

git branch

git checkout newbranch

git branch

TELLS GIT TO SAVE THAT PORTION OF THE PROJECT FROM THE STAGING AREA INTO THE REPOSITORY HISTORY

https://git-school.github.io/visualizing-git/
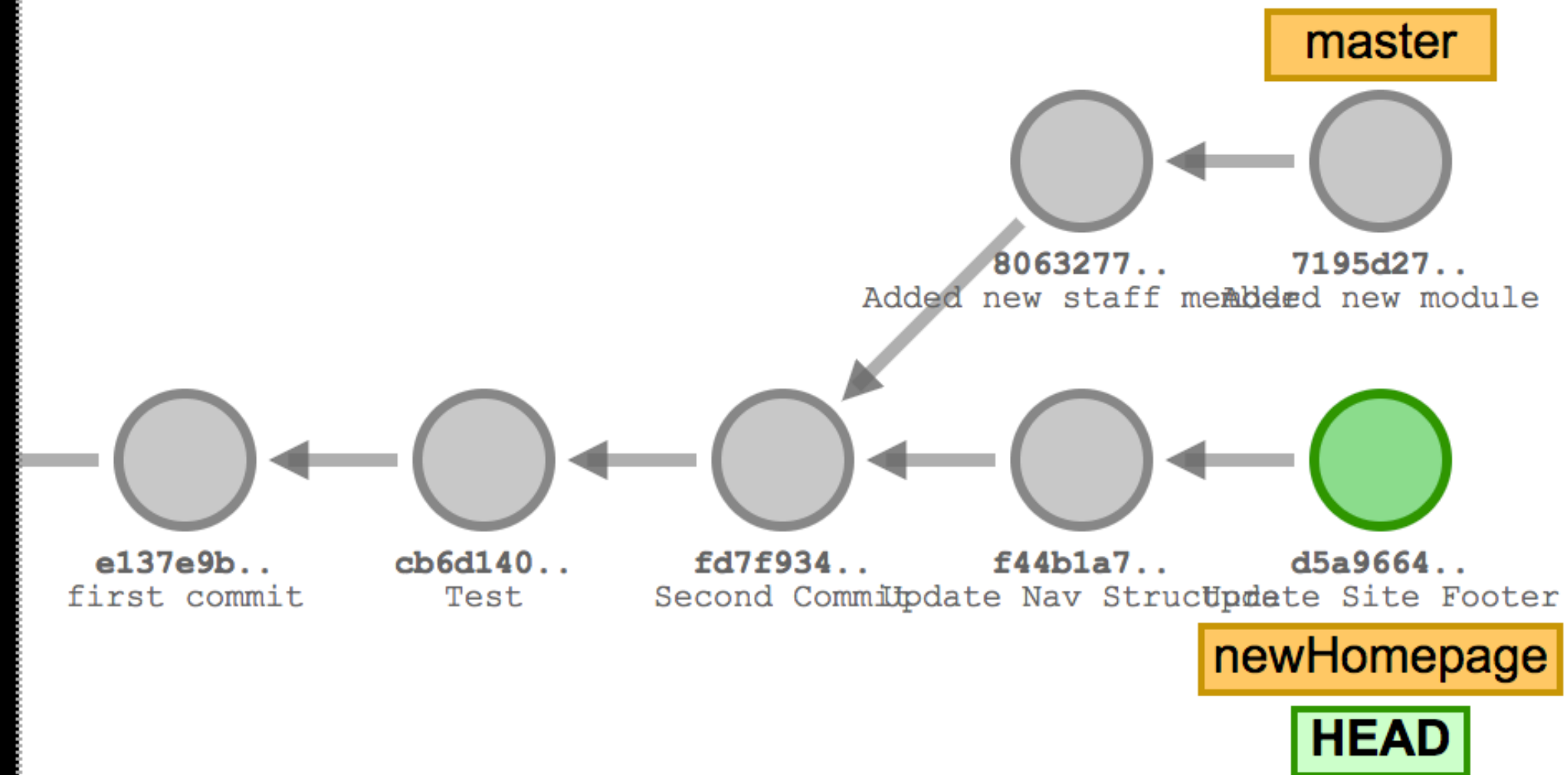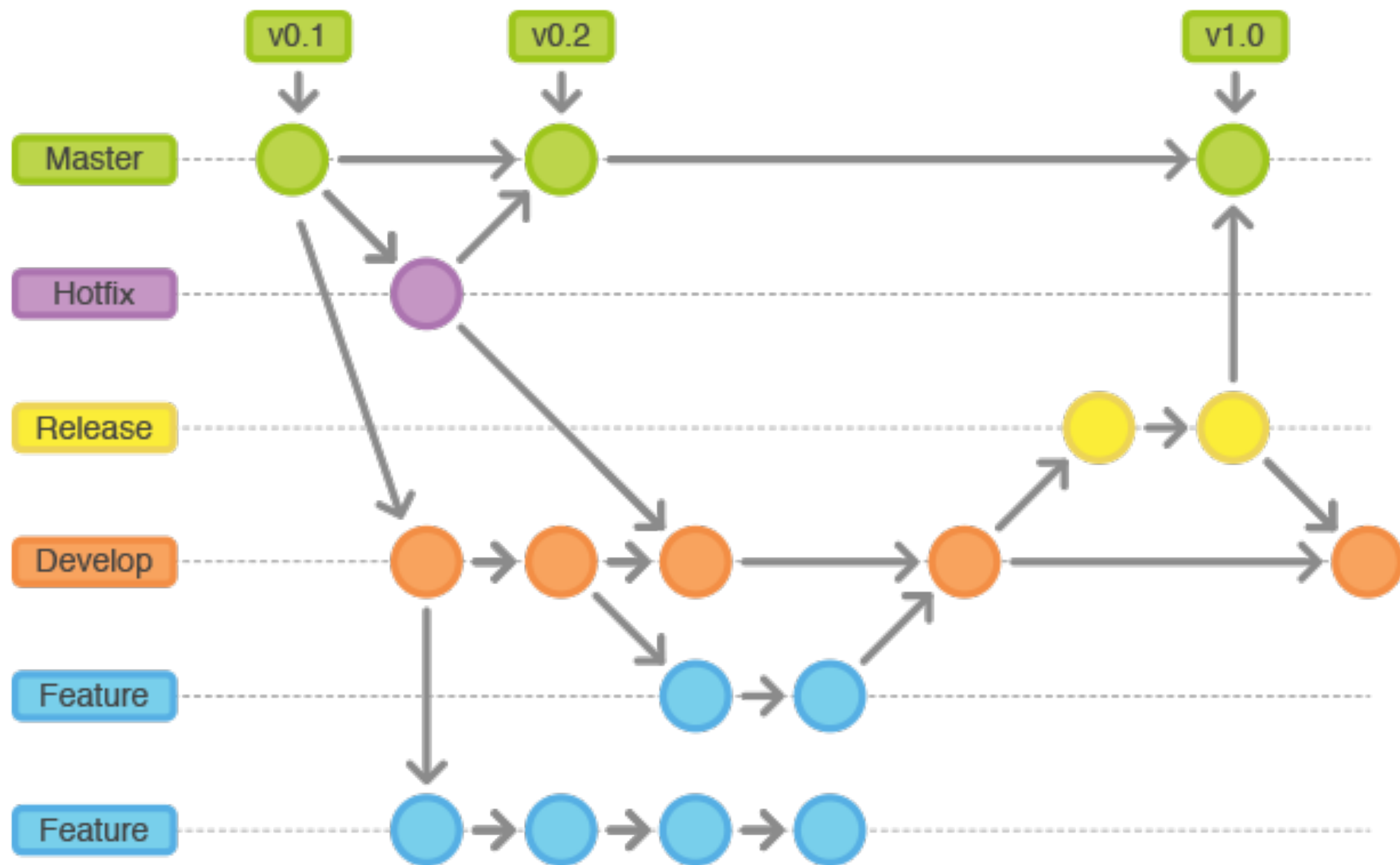
USING GITHUB FOR GROUP ACTIVITIES

PULL REQUESTS

USED TO MERGE ONE BRANCH INTO
ANOTHER BRANCH IN THE
REPOSITORY'S HISTORY

SHOULD ALSO BE USED FOR SOLO
WORK TO BUILD THE HABIT OF
PUSHING TO A REMOTE
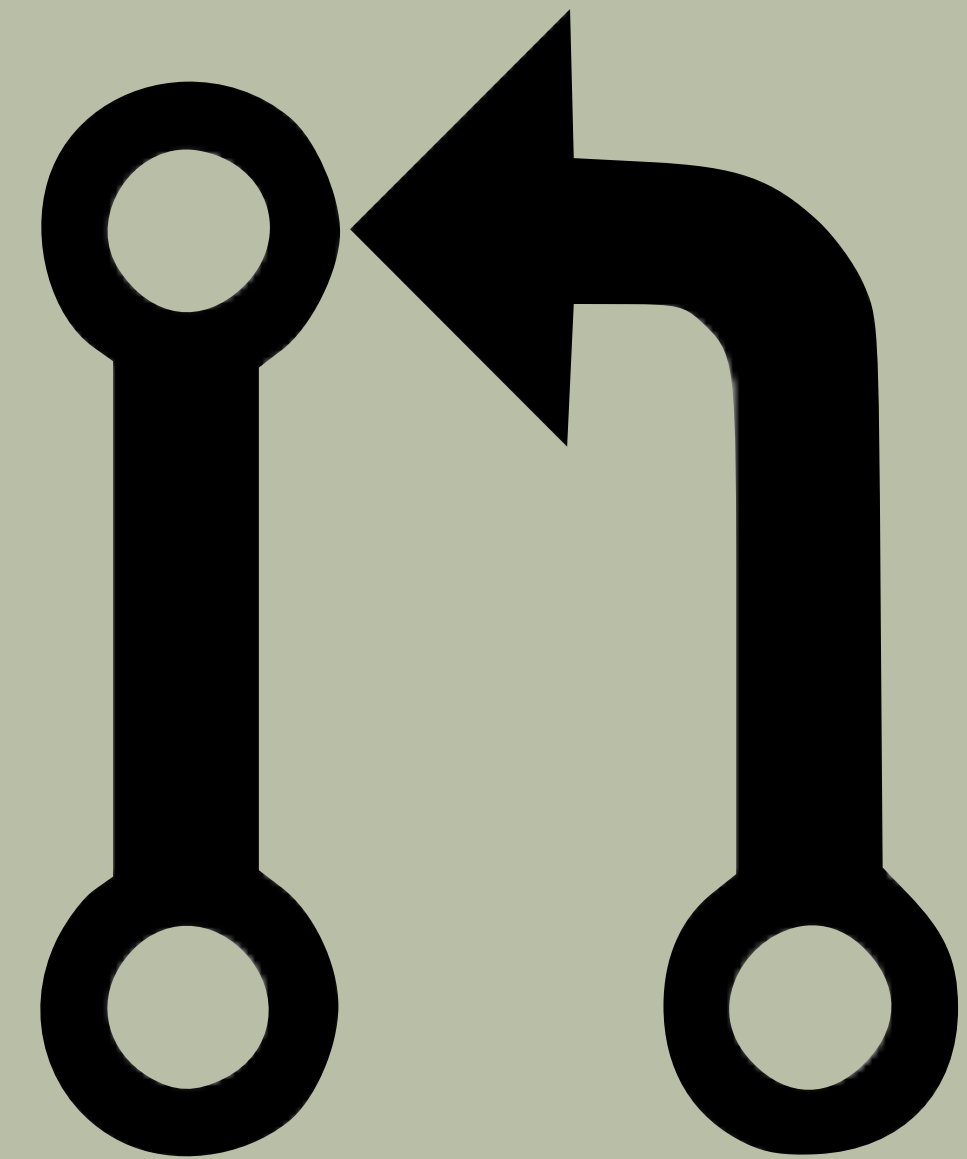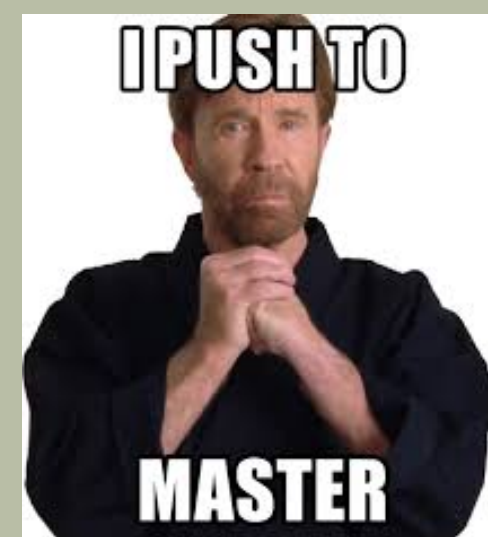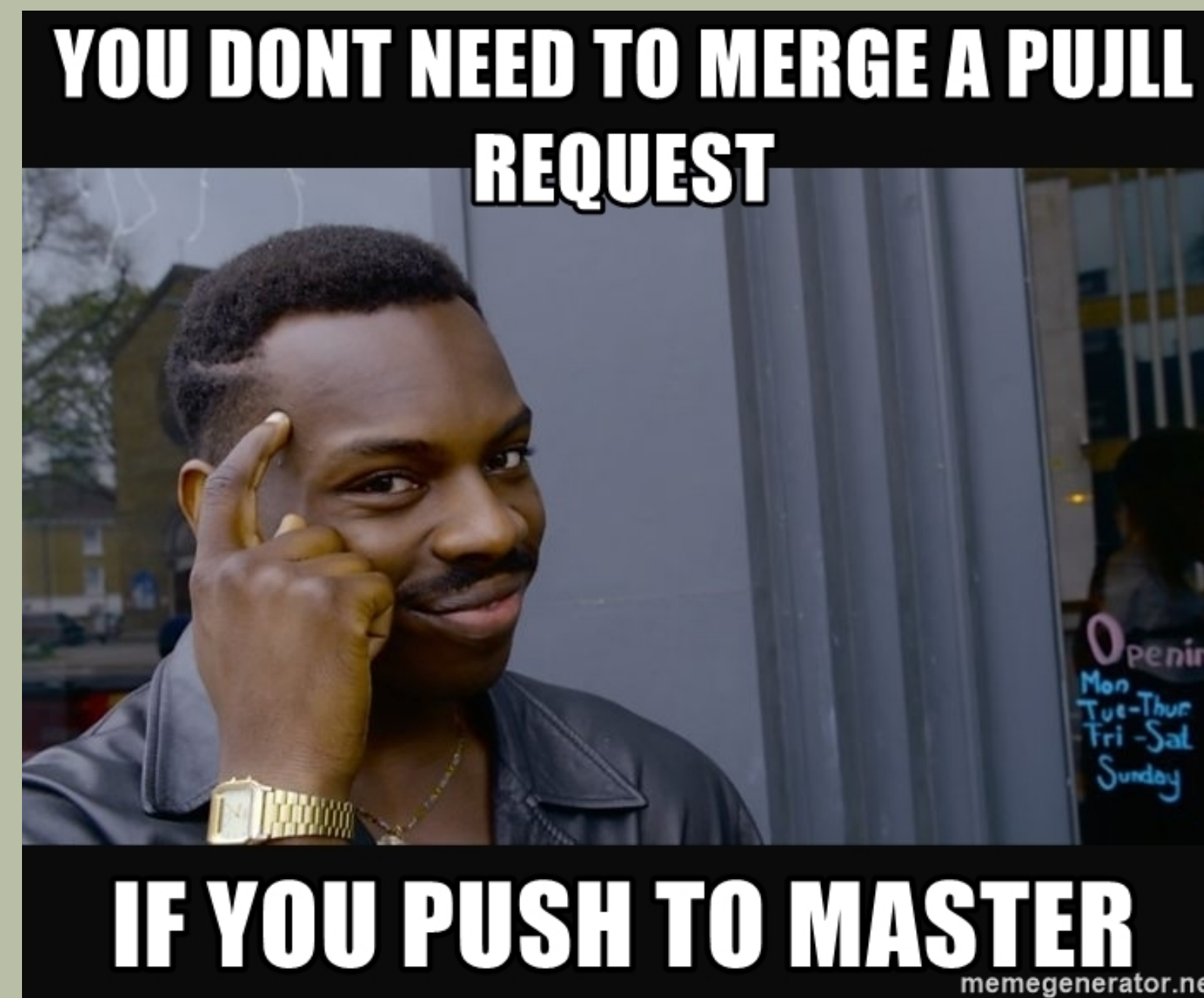
DON'T PUSH TO MASTER!!!

STEPS TO OPEN A PULL REQUEST

CLONE A REPOSITORY FROM GITHUB

CREATE A NEW BRANCH AND MAKE SOME
NEW SHINY CODE IN IT

ADD THEN COMMIT THIS CODE, THEN PUSH
THE BRANCH TO GITHUB

CREATE THE PULL REQUEST, DESCRIBE YOUR
CHANGES AND SELECT REVIEWERS

Project

README.md

batcave
  .git
  LICENSE
  README.md

```
1  # batcave
2  A place for me to hold all of my bats!
3
4  and its also a cave!
5
```

Unstaged Changes   Stage All

  README.md

Staged Changes

No changes

Commit message

Commit to MikesBranch   72

Initial commit   Undo   21h

README.md   4:21   LF   UTF-8   GitHub Markdown   MikesBranch   Publish   1 file

Project

- batcave
  - .git
  - LICENSE
  - README.md

README.md

```
1  # batcave
2  A place for me to hold all of my bats!
3
4  and its also a cave!
5
```

Git

Unstaged Changes

No changes

Staged Changes   Unstage All

README.md

Commit message

Commit to MikesBranch   72

Initial commit   Undo   21h

README.md   4:21   LF   UTF-8   GitHub Markdown   MikesBranch   Publish   1 file

Project

README.md

Git

batcave
  .git
  LICENSE
  README.md

```
1  # batcave
2  A place for me to hold all of my bats!
3
4  and its also a cave!
5
```

No changes

Staged Changes   Unstage All

README.md

Added in information about my cave

Commit to MikesBranch   38

Initial commit   Undo   21h

README.md   4:21   LF   UTF-8   GitHub Markdown   MikesBranch   Publish   1 file

Project

- batcave
  - .git
  - LICENSE
  - README.md

README.md

```
1  # batcave
2  A place for me to hold all of my bats!
3
4  and its also a cave!
5
```

Git

Unstaged Changes

No changes

Staged Changes

No changes

Commit message

Commit to MikesBranch   72

Added in inf...
Initial commi...

Click to set up a remote tracking branch
Right-click for more

README.md   4:21   LF   UTF-8   GitHub Markdown   MikesBranch   Publish   0 files

Search or jump to... /

Pull requests | Issues | Marketplace | Explore

mikecrabb / **batcave**

👁 Unwatch ▾ 1 | ★ Star 0 | Fork 0

<> **Code** | ① Issues 0 | ⑪ Pull requests 0 | 🗒 Projects 0 | 📖 Wiki | 📊 Insights | ⚙ Settings

A place for me to hold all of my bats!

[Edit]

Add topics

⊙ 1 commit	⑂ 1 branch	🏷 0 releases	👥 1 contributor	⚖ MIT

Your recently pushed branches:

⑂ **MikesBranch** (less than a minute ago)   [⑪ Compare & pull request]

[Branch: master ▾] [New pull request]   [Create new file] [Upload files] [Find file] [Clone or download ▾]

mikecrabb Initial commit   Latest commit 7d33bef 21 hours ago

📄 LICENSE	Initial commit	21 hours ago
📄 README.md	Initial commit	21 hours ago

📖 README.md

batcave

A place for me to hold all of my bats!

Search or jump to... /   **Pull requests** Issues **Marketplace** Explore

📖 **mikecrabb** / **batcave**

👁 Unwatch ▾ 1   ⭐ Star 0   Fork 0

<> Code   ⓘ Issues 0   Pull requests 0   Projects 0   Wiki   Insights   ⚙ Settings

Overview   Yours   Active   Stale   All branches

🔍 Search branches...

Default branch

master Updated 21 hours ago by mikecrabb   Default   Change default branch

Your branches

MikesBranch Updated 24 seconds ago by mikecrabb   0 | 1   ⟲ New pull request   🗑

Active branches

MikesBranch Updated 24 seconds ago by mikecrabb   0 | 1   ⟲ New pull request   🗑

Search or jump to...   /

Pull requests   Issues   Marketplace   Explore

mikecrabb / batcave

Unwatch ▾   1   ★ Star   0   Fork   0

<> Code   Issues 0   Pull requests 0   Projects 0   Wiki   Insights   Settings

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also compare across forks.

base: master ▾   ⬅   compare: MikesBranch ▾   ✓ Able to merge. These branches can be automatically merged.

Added in information about my cave

Write   Preview   AA B i   " <> 🔗   ☰ ☰ ☑   @ 🔖 ↩▾

Leave a comment

Attach files by dragging & dropping, selecting them, or pasting from the clipboard.

Ⓜ Styling with Markdown is supported   **Create pull request**

Reviewers   ⚙
No reviews

Assignees   ⚙
No one—assign yourself

Labels   ⚙
None yet

Projects   ⚙
None yet

Milestone   ⚙
No milestone

○ 1 commit   📄 1 file changed   💬 0 commit comments   👥 1 contributor

Commits on Jul 19, 2018

mikecrabb   Added in information about my cave   dd0b783

📄 Showing 1 changed file with 2 additions and 0 deletions.   Unified Split

2 ▇▇▇▁▁ README.md   <> 📄   View   🖥 ▾

... ...   @@ -1,2 +1,4 @@
1   1   # batcave
2   2   A place for me to hold all of my bats!

Search or jump to...   /

Pull requests   **Issues**   **Marketplace**   **Explore**

📖 **mikecrabb** / **batcave**

👁 Unwatch ▾   1   ⭐ Star   0   Fork   0

‹› Code   ⓘ Issues 0   ⑂ Pull requests 1   📋 Projects 0   📖 Wiki   📊 Insights   ⚙ Settings

Added in information about my cave #1

Edit

🟢 Open   **mikecrabb** wants to merge 1 commit into `master` from `MikesBranch`

💬 Conversation 0   ⊙ Commits 1   ✓ Checks 0   📄 Files changed 1   +2 −0 ◼◼◻◻◻

mikecrabb commented just now   Owner +😊 ✏️

> No description provided.

○── Added in information about my cave   dd0b783

Add more commits by pushing to the `MikesBranch` branch on mikecrabb/batcave.

⊡ **Continuous integration has not been set up**
Several apps are available to automatically catch bugs and enforce style.

✅ **This branch has no conflicts with the base branch**
Merging can be performed automatically.

Merge pull request ▾   You can also open this in GitHub Desktop or view command line instructions.

AA B i   " ‹› 🔗   ☰ ☰ ☑   @ 🔖 ↩▾

Leave a comment

Attach files by dragging & dropping, selecting them, or pasting from the clipboard.

ℳ Styling with Markdown is supported   **Close pull request**   **Comment**

Reviewers   ⚙
No reviews

Assignees   ⚙
No one—assign yourself

Labels   ⚙
None yet

Projects   ⚙
None yet

Milestone   ⚙
No milestone

Notifications

🔇 Unsubscribe

You're receiving notifications because you authored the thread.

1 participant

🔒 Lock conversation

💡 **ProTip!** Add comments to specific lines under Files changed.

Search or jump to... /   Pull requests   Issues   Marketplace   Explore

📖 **mikecrabb** / **batcave**

👁 Unwatch ⌄ | 1   ⭐ Star | 0   Fork | 0

‹› Code   ⓘ Issues 0   🏁 Pull requests 1   ▦ Projects 0   ▤ Wiki   📊 Insights   ⚙ Settings

Added in information about my cave #1

Edit

🏁 Open   **mikecrabb** wants to merge 1 commit into `master` from `MikesBranch`

🗨 Conversation 0   ○ Commits 1   ⊟ Checks 0   📄 Files changed 1

+2 −0 ■■□□□

mikecrabb commented just now	Owner +😊 ✏

No description provided.

○ Added in information about my cave   dd0b783

Add more commits by pushing to the `MikesBranch` branch on mikecrabb/batcave.

✉ **Continuous integration has not been set up**
Several apps are available to automatically catch bugs and enforce style.

✅ **This branch has no conflicts with the base branch**
Merging can be performed automatically.

Merge pull request ⌄   You can also open this in GitHub Desktop or view command line instructions.

Write | Preview   AA B i | " ‹› 🔗 | ☰ ☰ ☰ | @ 🔖 ↩⌄

This looks awesome Mike, you're obviously an awesome cave dweller.

Attach files by dragging & dropping, selecting them, or pasting from the clipboard.

ℳ Styling with Markdown is supported   Close and comment   Comment

Reviewers ⚙
No reviews

Assignees ⚙
No one—assign yourself

Labels ⚙
None yet

Projects ⚙
None yet

Milestone ⚙
No milestone

Notifications
🔇 Unsubscribe
You're receiving notifications because you authored the thread.

1 participant

🔒 Lock conversation

💡 **ProTip!** Add comments to specific lines under Files changed.

Search or jump to...   /   Pull requests   Issues   Marketplace   Explore

🗎 **mikecrabb** / **batcave**

◉ Unwatch ▾   1   ★ Star   0   Fork   0

<> Code   ⊙ Issues 0   ⏸ Pull requests 1   ▱ Projects 0   ☰ Wiki   ⑃ Insights   ⚙ Settings

Added in information about my cave #1

Edit

⑃ **Merged**   **mikecrabb** merged 1 commit into `master` from `MikesBranch` just now

🗨 Conversation 0   -○- Commits 1   ⊡ Checks 0   🗎 Files changed 1   +2 −0 ■■□□□

---

mikecrabb commented just now   Owner   +☺   ✎

No description provided.

○ 🗎 Added in information about my cave   dd0b783

mikecrabb commented just now   Owner   +☺   ···

This looks awesome Mike, you're obviously an awesome cave dweller.

⑃ 🗎 **mikecrabb** merged commit **1aa9fd7** into `master` just now   Revert

⑃ **Pull request successfully merged and closed**   Delete branch

You're all set—the `MikesBranch` branch can be safely deleted.

Write   Preview   AA B i   " <> 🔗   ☰ ☰ ☑   @ 🔖 ↩▾

Leave a comment

Attach files by dragging & dropping, selecting them, or pasting from the clipboard.

Ⓜ Styling with Markdown is supported   **Comment**

Reviewers   ⚙
No reviews

Assignees   ⚙
No one—assign yourself

Labels   ⚙
None yet

Projects   ⚙
None yet

Milestone   ⚙
No milestone

Notifications

🔇 Unsubscribe

You're receiving notifications because you modified the open/close state.

1 participant

🔒 Lock conversation

SOMETIMES MERGES GO WRONG

Add more commits by pushing to the **my-title** branch on **beardofedu/my-resume**.

⚠ **This branch has conflicts that must be resolved**
Use the web editor or the command line to resolve conflicts.

[Resolve conflicts]

Conflicting files

_config.yml

[Merge pull request] [▾] You can also open this in GitHub Desktop or view command line instructions.

STEPS TO RESOLVE A MERGE CONFLICT

NAVIGATE TO WHERE THE CONFLICT IS, SHOWN BY THE CONFLICT MARKERS
<<<<<<<<<<< =============== >>>>>>>>>>>

CHOOSE OPTION A, OPTION B, OR A BLEND OF THE OPTIONS

SAVE THE FILE AND STAGE YOUR CHANGES

COMMIT WITH A MESSAGE DOCUMENTING YOUR CHOICE

THE BASICS OF GIT

GIT NETWORK ACTIVITY

USING GITHUB FOR GROUP ACTIVITIES

GITHUB AND CODE VERSIONING

MICHAEL CRABB