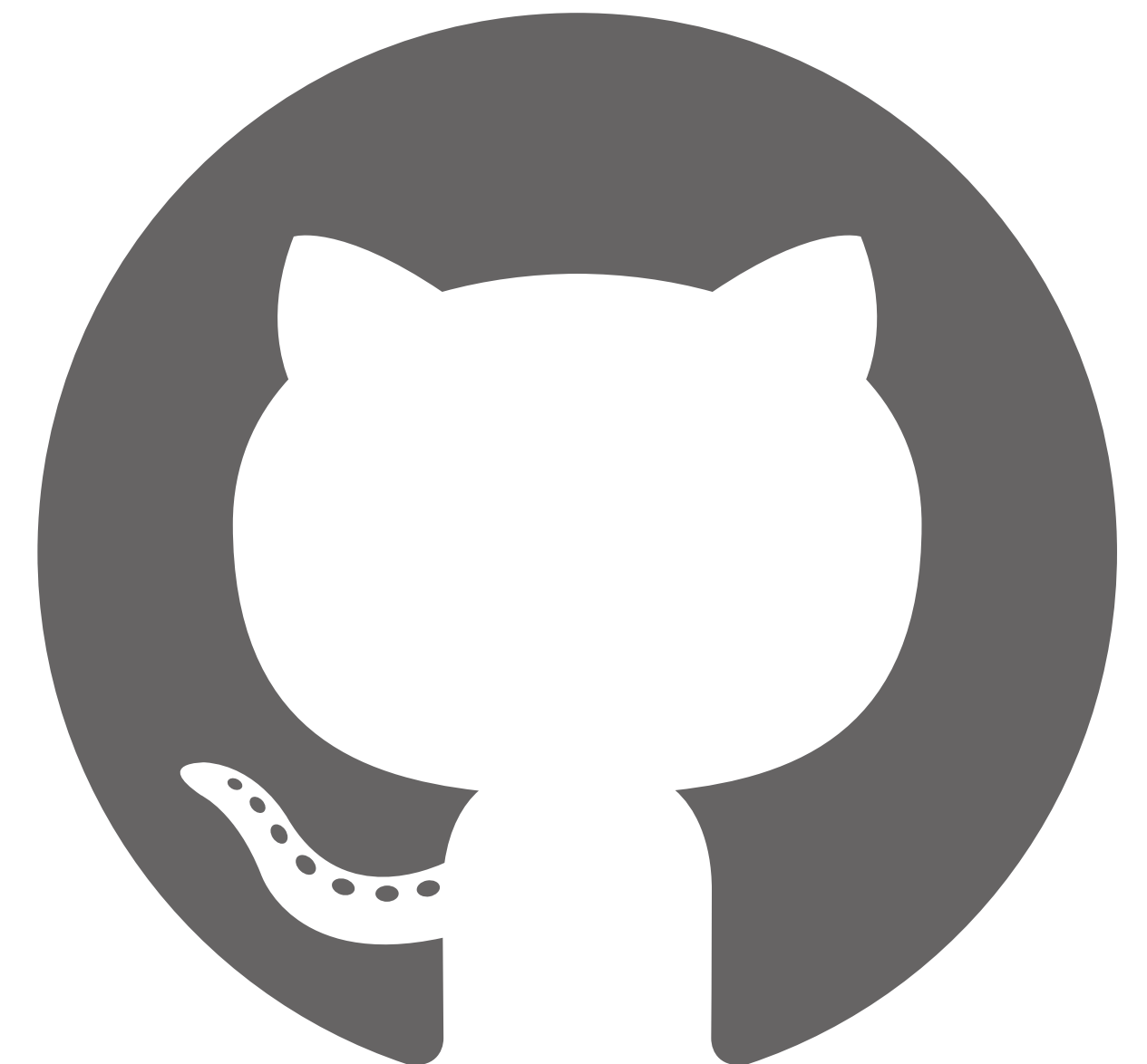




Getting started with Git & GitHub

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Git System that tracks changes to code from multiple users

- Revision control system (3rd generation: distributed, multi-user)
- Developed in 2005 by Linus Torvalds to support Linux kernel development

Repository The data + its metadata (i.e. log of changes to the data)

- Data structure that holds metadata for a set of directories / files (set of commit objects, historical record of changes)

GitHub Online service that holds Git repositories (public & private)

- Web-based Git repository hosting service
- Largest source code host in the world: > 9M users, > 21M repositories

Git commands: **git + command**

git



git **init**

git **clone**

git **add**

git **status**

git **diff**

git **commit**

git **reset**

git **rm**

Pushing and pulling data with Git



web -> local

“download”

1st time

clone

Download remote repository

```
> cd /Applications  
> git clone https://github.com/PennBBL/BBLutils.git
```

Creates '/Applications/BBLutils'

**Every time
after that**

pull

Get updates

```
> cd /Applications/BBLutils  
> git pull
```

local -> web “upload”

ok

what you thought would be
a single ‘upload’ command

status

Get info on local changes

```
> cd /Applications/BBLutils  
> git status
```

what have I changed here?

add

Stage new, modified and deleted files

```
> cd /Applications/BBLutils  
> git add -A
```

add these new / modified
files to the repository
next time I commit

commit

Commit changes to your local repository

```
> cd /Applications/BBLutils  
> git commit -m 'commit message'
```

“save” changes along with
a note of ‘what’s changed’
to my local repository

push

Upload committed changes to online repository

```
> cd /Applications/BBLutils  
> git push
```

sync local repository
to remote

local -> web “upload”

ok

what you thought would be
a single ‘upload’ command

status

Get info on local changes

```
> cd /Applications/BBLutils  
> git status
```

add

Stage new, modified and deleted files

```
> cd /Applications/BBLutils  
> git add -A
```

or use

> git pushall

commit

Commit changes to your local repository

```
> cd /Applications/BBLutils  
> git commit -m ‘commit message’
```

available at BBLutils!

push

Upload committed changes to online repository

```
> cd /Applications/BBLutils  
> git push
```

what have I changed here?

I want you to include these
new / modified files
next time I commit (“save”)

“save” changes along with
a note of ‘what’s changed’
on my local repository

sync from local repository
to remote

Demo:

<https://github.com/PennBBL>

Learning Git: Free online Resources

**Beginner /
Intermediate**

gitref.org

- Neat and to-the-point Git reference by the GitHub team

Advanced

git-scm.com/book/en/v2

- Almost everything there is to know on Git



More info at: <https://saturn.uphs.upenn.edu/Documents/mediawiki/index.php/BasicAnalystTraining>

2015 ::ssnn::