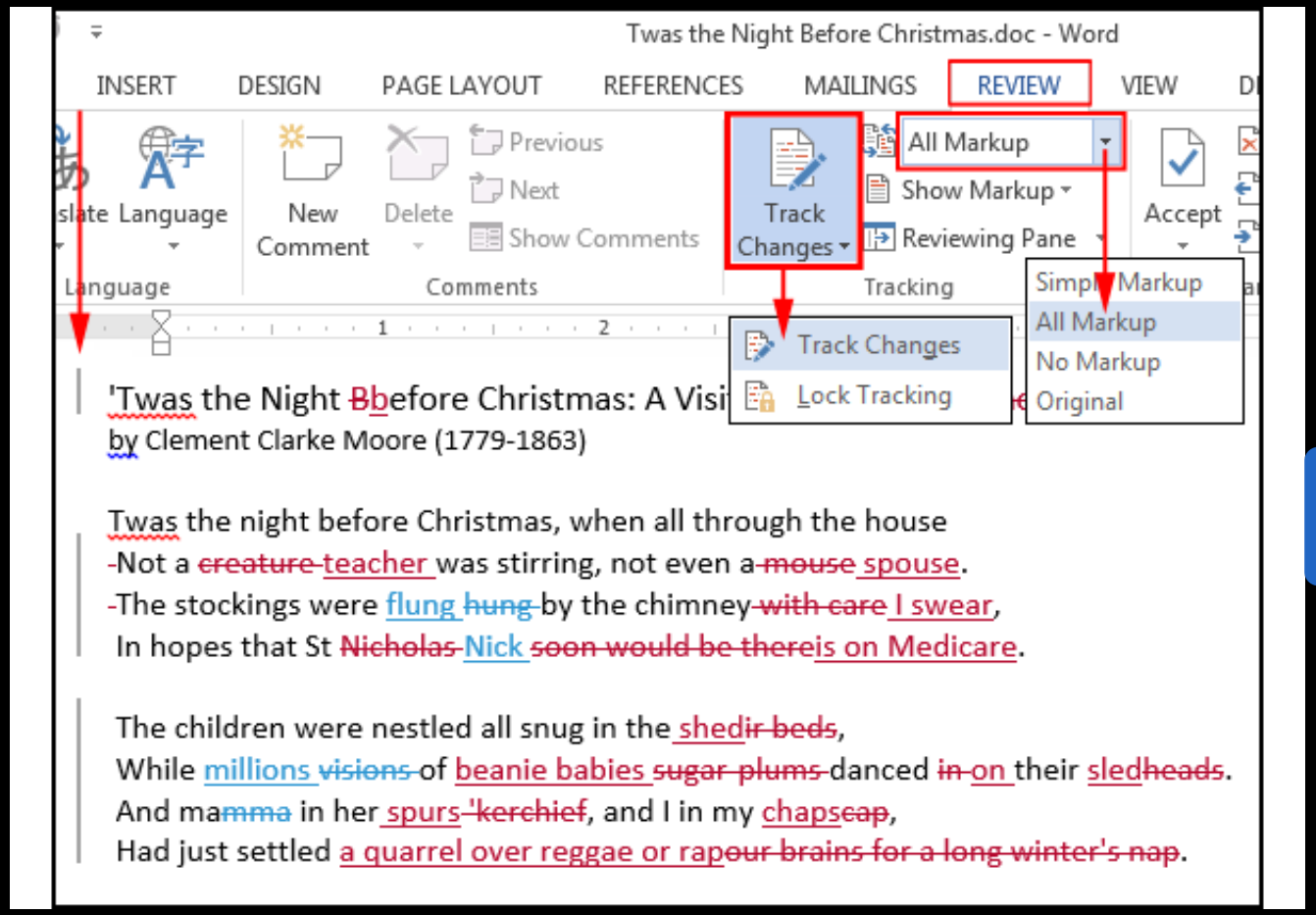
Welcome to the Onish Summer Computing Workshop 2022!

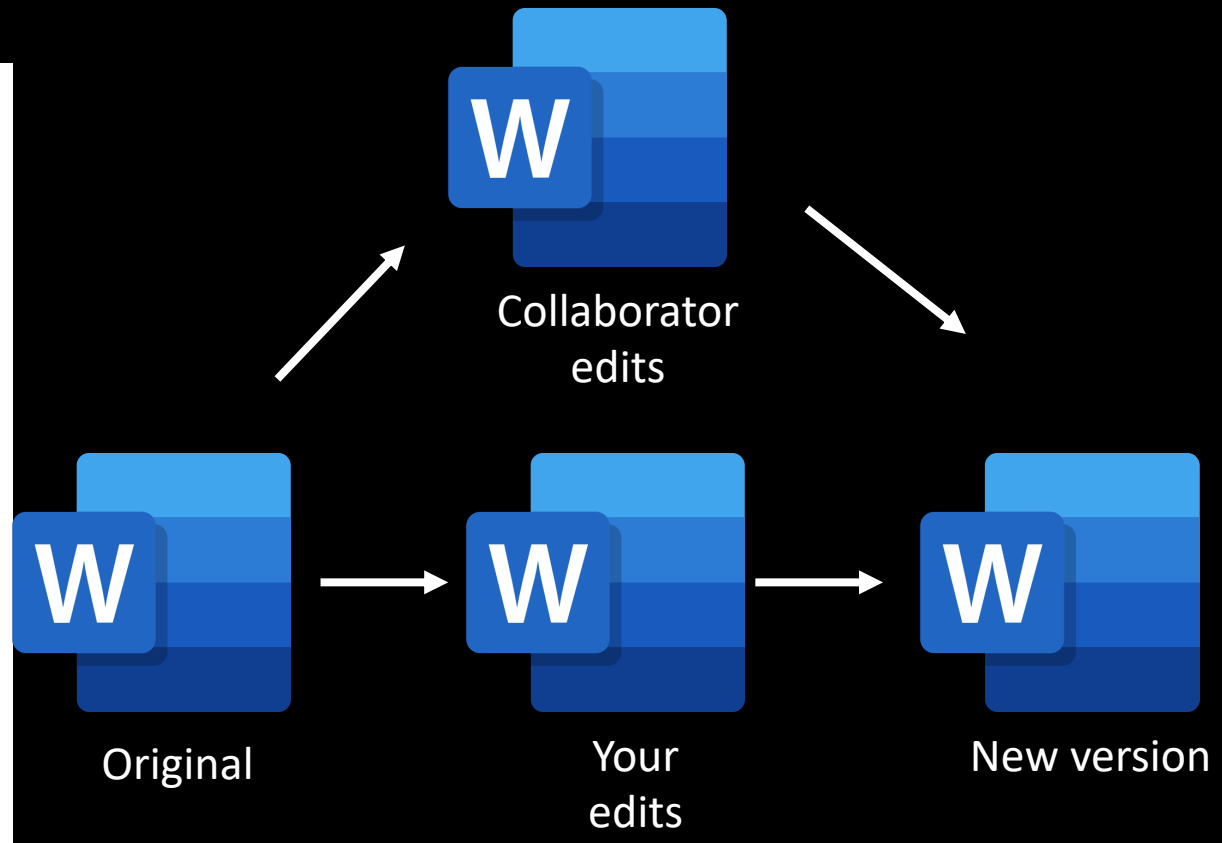
1 - 1:30 pm	Jessica Hill - Intro Computing Systems and Hardware
1:30 - 2 pm	Andrew Moore - Programming Languages and Their Usages
2 - 2:30 pm	David King - Installation and Package Management
2:30 - 3 pm	Robert Williams - Working on GitHub
after 3pm	Mixer – stay for light snacks!

Version control with Git, GitHub, and GitHub Desktop

Nishimura Lab Computational Workshop

What is version control?

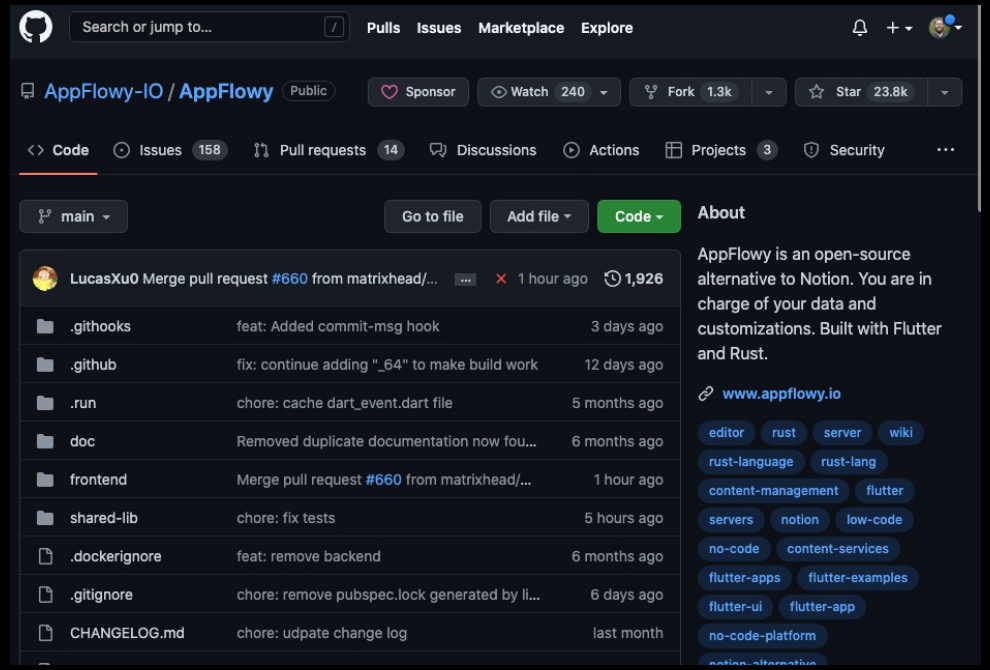




Git vs GitHub

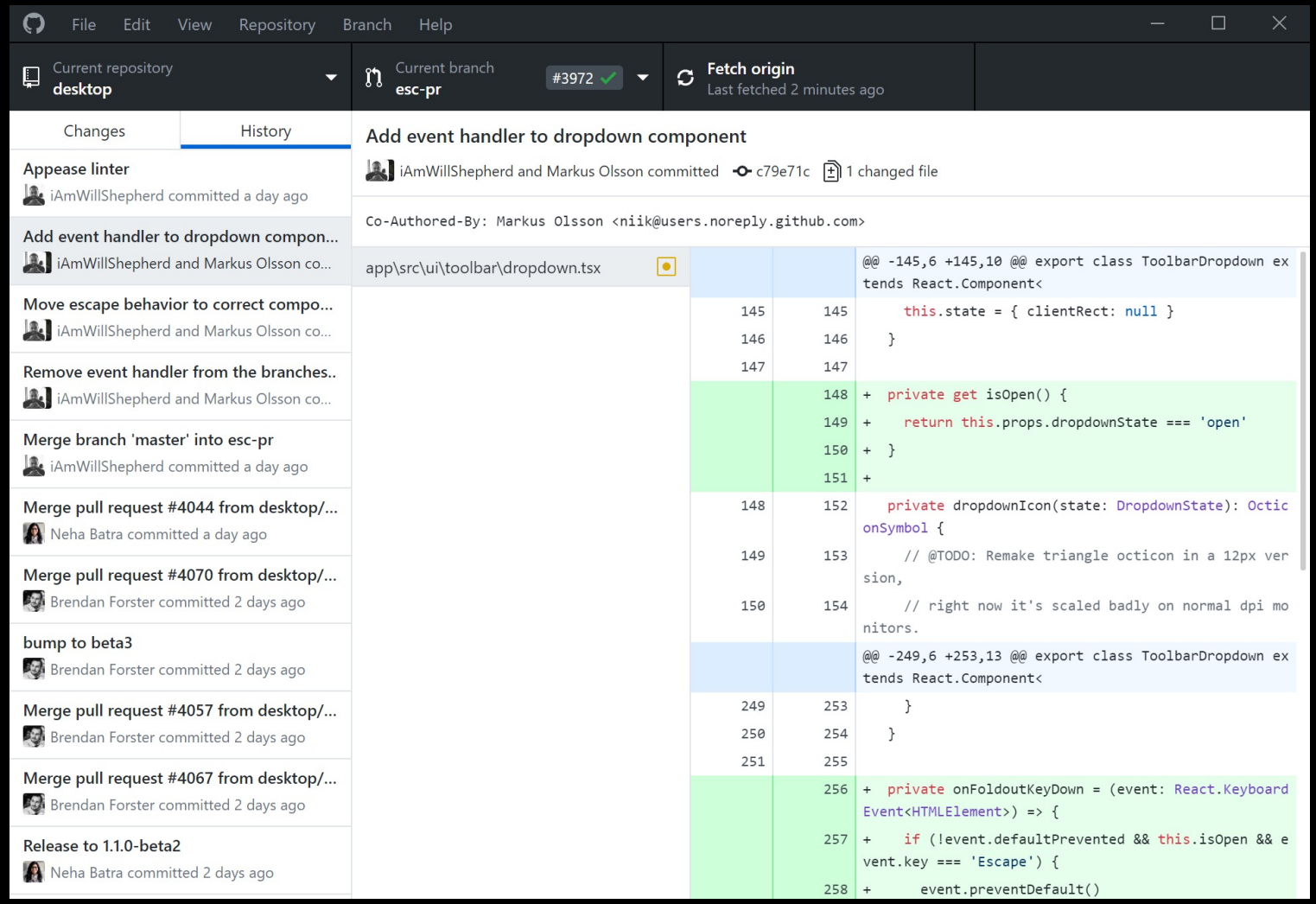
- https://www.geeksforgeeks.org/difference-between-git-and-github/
- Git is command line software, GitHub is a webservice + storage
- Git is for text file code, not for binary files like MS Word
- Alternatives like bitbucket and subversion

```
$ git init
Initialized empty Git repository in /tmp/tmp.IMBYSY7R8Y/.git/
$ cat > README << 'EOF'
> Git is a distributed revision control system.
> EOF
$ git add README
$ git commit
[master (root-commit) e4dcc69] You can edit locally and push
to any remote.
 1 file changed, 1 insertion(+)
 crate mode 100644 README
$ git remote add origin git@github.com:cdown/thats.git
$ git push -u origin master
```

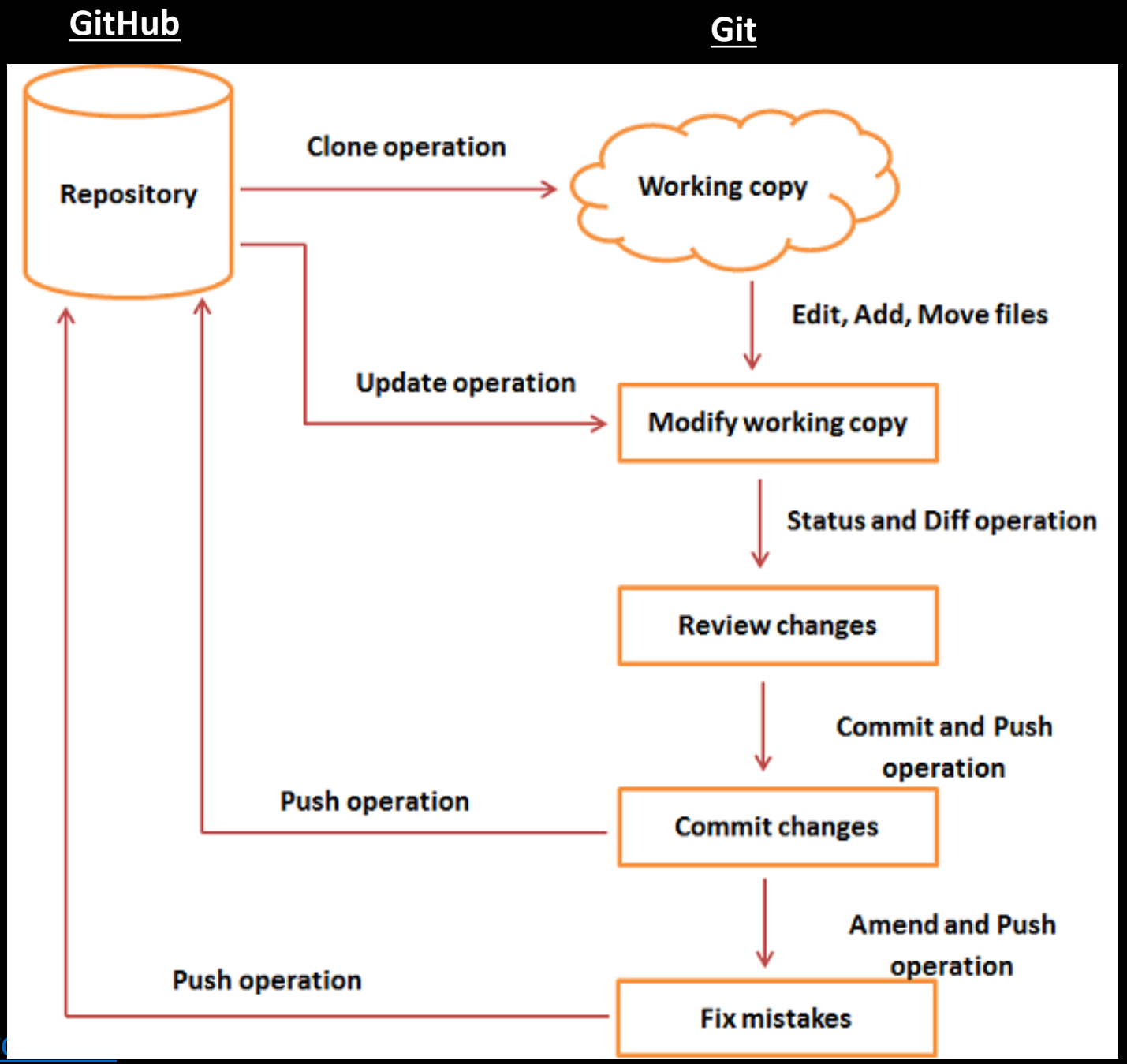


GitHub Desktop

- A convenient user interface (dl here)
- Will not cover adding SSH key to your account (info here)



Git lifecycle



https://www.tutorialspoint.com/git/git_life_cyc

Live Demo

- Making a repository with GitHub desktop
- Commit and push
- Reverting changes
- Collaboration and branches
- Pull requests

README Files

```
                                  _   _ ____  _
                              ___| | | |  _ \| |
                             / __| | | | |_) | |
                            | (__| |_| |  _ <| |___
                             \___|\___/|_| \_\_____|

README

  Curl is a command line tool for transferring data specified with URL
  syntax. Find out how to use curl by reading the curl.1 man page or the
  MANUAL document. Find out how to install Curl by reading the INSTALL
  document.

  libcurl is the library curl is using to do its job. It is readily
  available to be used by your software. Read the libcurl.3 man page to
  learn how!

  You find answers to the most frequent questions we get in the FAQ document.

  Study the COPYING file for distribution terms.

  Those documents and more can be found in the docs/ directory.

CONTACT

  If you have problems, questions, ideas or suggestions, please contact us
  by posting to a suitable mailing list. See https://curl.se/mail/

  All contributors to the project are listed in the THANKS document.

WEBSITE

  Visit the curl website for the latest news and downloads:

        https://curl.se/

GIT
```

https://en.wikipedia.org/wiki/README

Markdown

Edit new file | Preview

```
# Heading (h1)

## Heading 2 (h2)

### Heading 3 (h3)

#### Heading 4 (h4)

##### Heading 5 (h5)

###### Heading 6 (h6)

This is a text body. Lorem ipsum dolor sit amet, consectetur a
tempor incididunt ut labore et dolore magna aliqua.

- This is a list
- * or _ makes text _italicized_
- while ** or __ makes text __bold__

1. # start a ordered list
2. and backticks write `code`
3. you can write [links](https://www.mozilla.org/)

And images:

![Mozilla](https://www.mozilla.org/media/img/sandstone/footer-
```

Edit new file | Preview

Heading (h1)

Heading 2 (h2)

Heading 3 (h3)

Heading 4 (h4)

Heading 5 (h5)

Heading 6 (h6)

This is a text body. Lorem ipsum dolor sit amet, co
dolore magna aliqua.

- This is a list
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- while ** or __ makes text **bold**

1. # start a ordered list
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And images:

https://mozilla.github.io/open-leadership-training-series/articles/get-your-project-online/the-github-interface-and-markdown/

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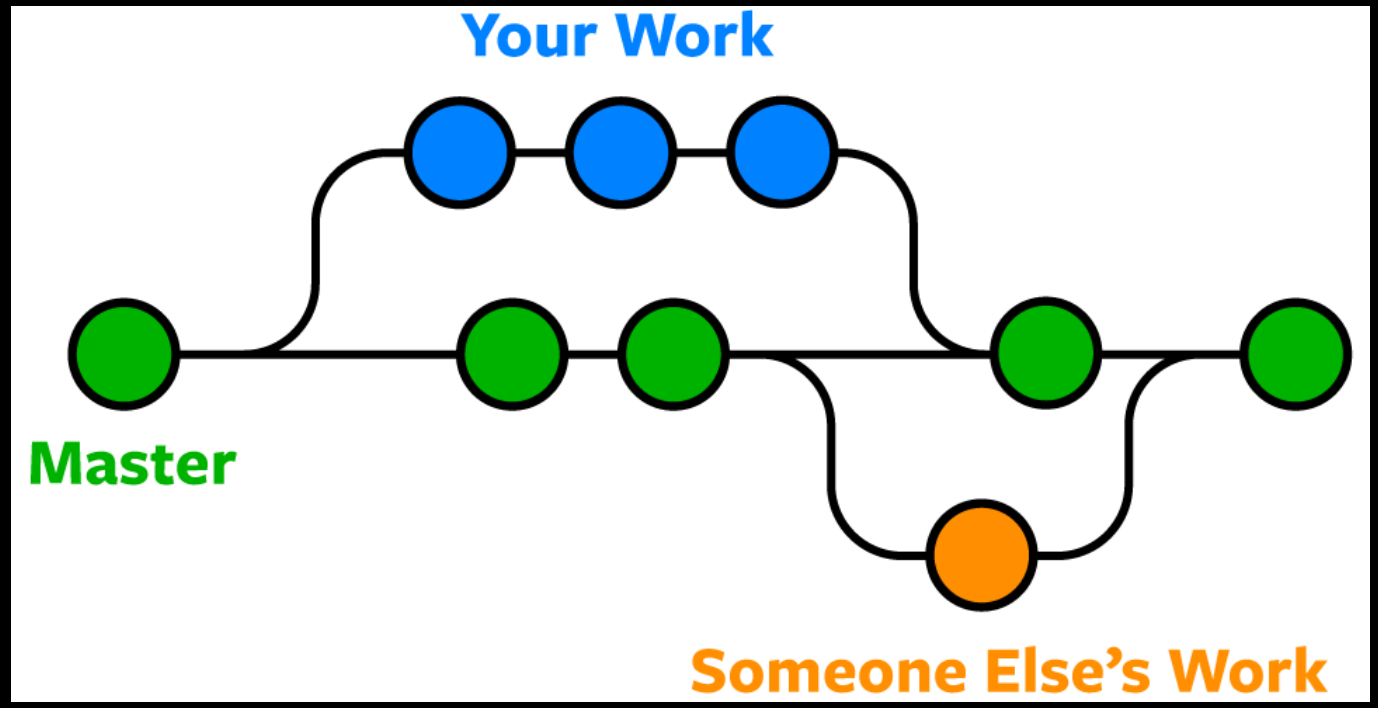


https://www.nobledesktop.com/learn/git/git-branches

Merge conflicts

identifies you

beginning of conflict marker

```
<<<<<<< HEAD
text you wrote
=======
text in version of file on GitHub
>>>>>>> alphanumeric hash
```

conflict divider

end of conflict divider

identifies the commit associated with text on GitHub

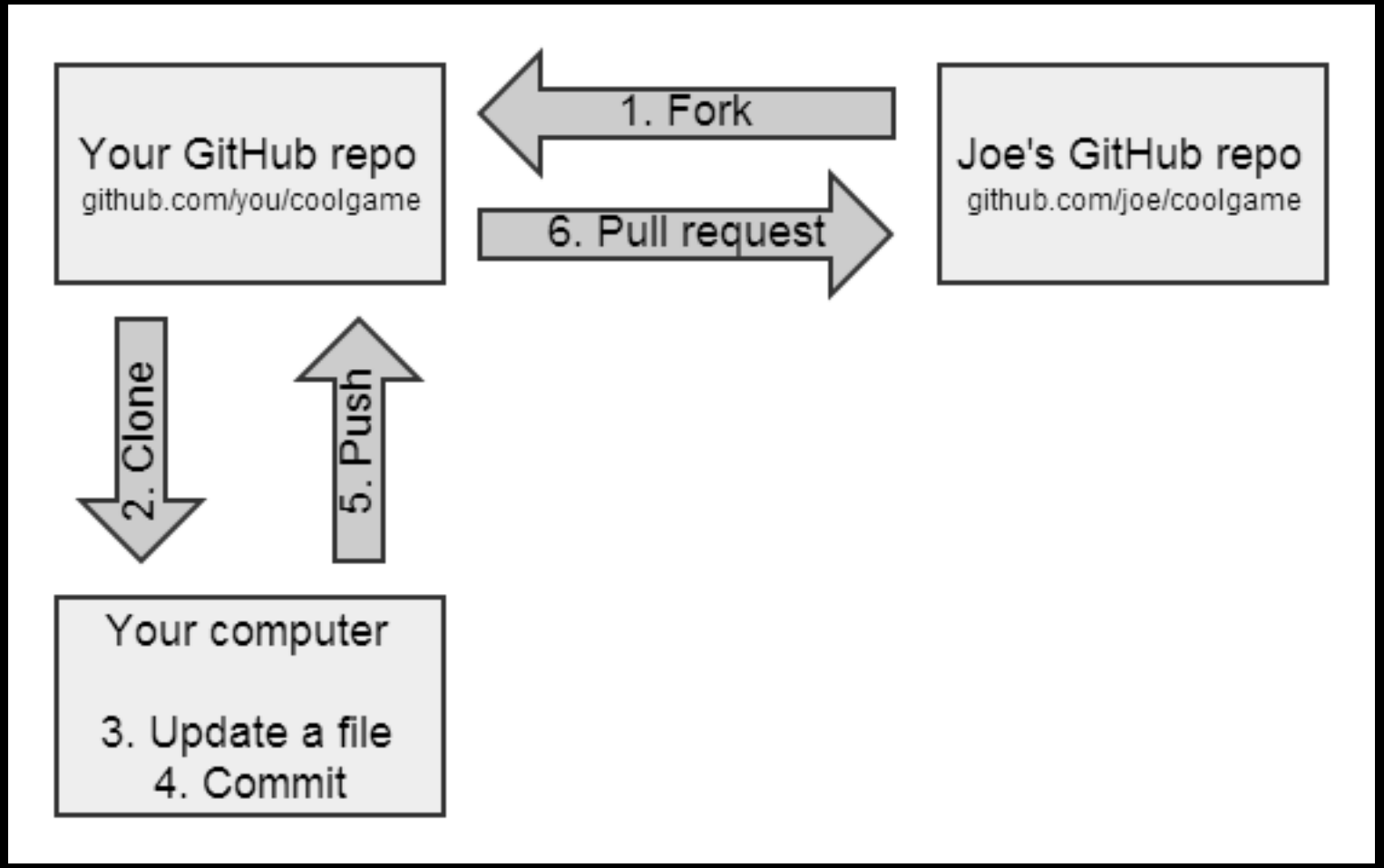
https://www2.stat.duke.edu/courses/Fall19/sta210.001/slides/lab-slides/03-lab-slides.html

Open source collaboration

- Issue tracking (example)
- Releases
- Forking a repository

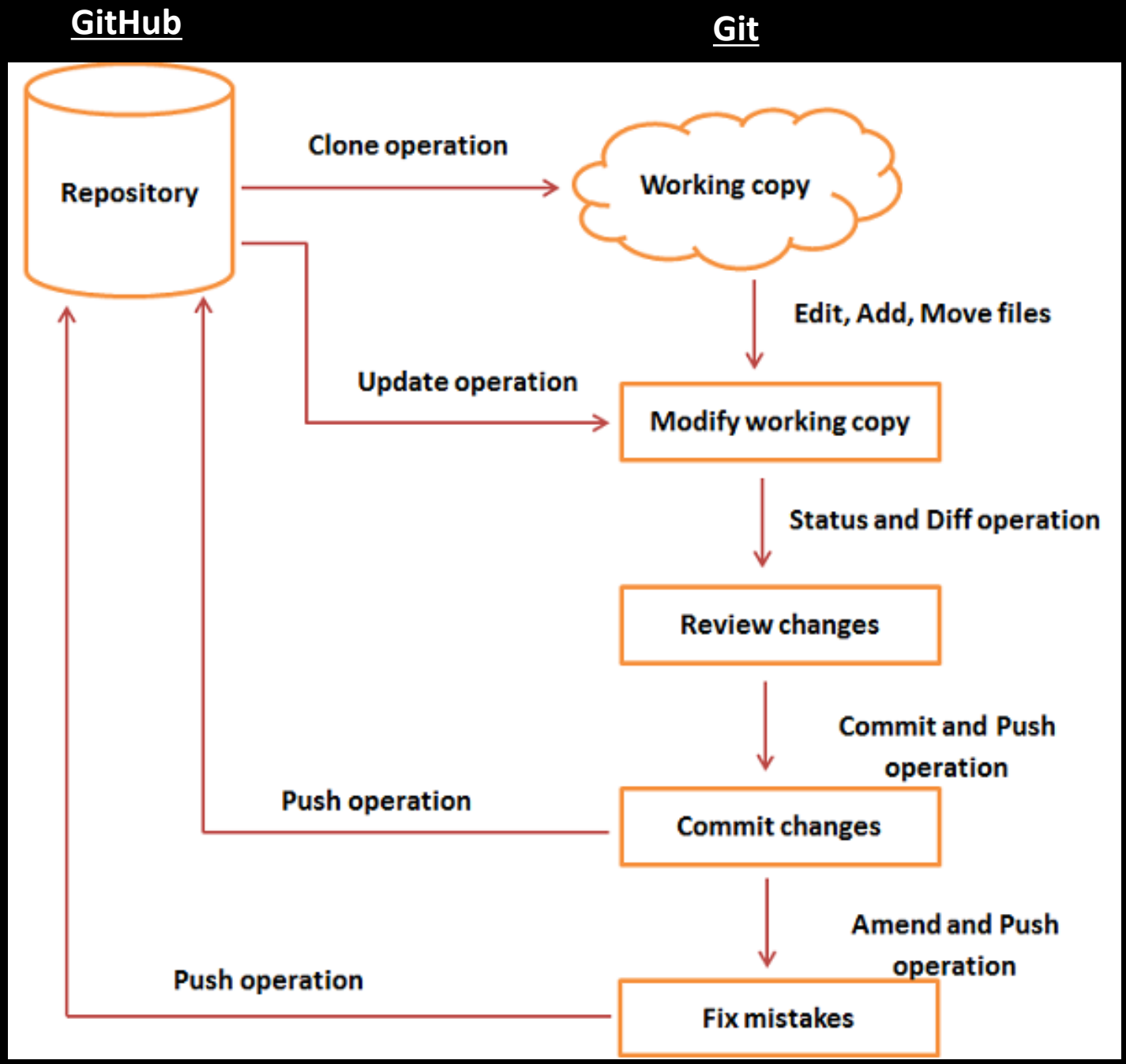
Open source collaboration

- Issue tracking
- Releases
- Forking a repository



https://www.dataschool.io/simple-guide-to-forks-in-github-and-git/

Questions?


GitHub
Git
Repository
Clone operation
Working copy
Edit, Add, Move files
Update operation
Modify working copy
Status and Diff operation
Review changes
Commit and Push operation
Push operation
Commit changes
Amend and Push operation
Push operation
Fix mistakes

Thank you for attending the Onish Summer Computing Workshop 2022!