GitHub

OBJECTIVES

- Introduction to GitHub
- Hands-on
  - Account Creation
  - Repository
  - Branching
  - Commit changes
  - Pull Requests
  - Collaboration
- UC local GitHub
- Helpful hints and Resources

WHAT IS GitHub?

- Free web based Public Repository for collaboration
- Web based Version Control System and Source Code Management based on '**git**'
- Mostly used for code in software development environments
- Can also be used for resource sharing and management in any team/environment

Popular collaboration platforms

- Microsoft SharePoint
- Confluence
- Asana

WHAT IS A VERSION CONTROL SYSTEM?

- Keeps records of changes
- Different users make changes to same shared documents at the same time
- Who made the changes?
- Revert changes to previous states
- Changes can be undone if needed
- GitHub works best to track changes in text-based files, but can be used to version other types of files as well
- If you make a mistake, you can usually undo it. Even if you accidentally delete a branch, GitHub will let you undelete it

COMPARING  AND GitHub

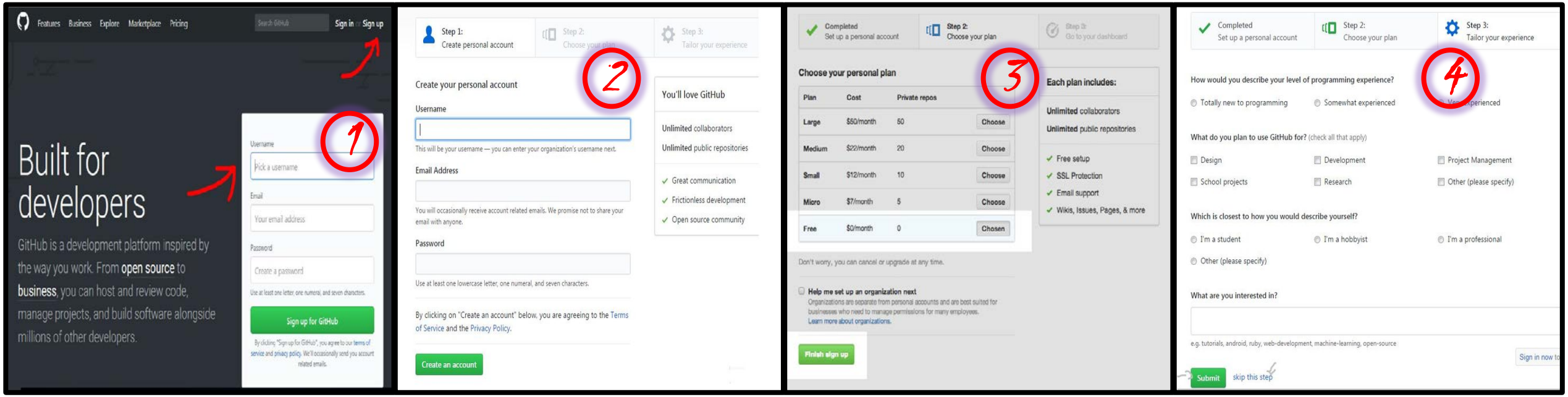
▶ **git** is an open source distributed version control system	▶ GitHub is a website that allows you to create online repositories or upload your **git** repositories online.
▶ Repositories are created and can be shared with a local team who have various privileges to files (access control)	▶ Gives a visual interface
▶ Strictly command-line	▶ Provides a backup for your local **git**
	▶ You can share repos to outsiders and access other teams repos; basis for open source projects.
	▶ GitHub version control is based on **git**
	▶ Adds more functionalities; several collaboration features such as task management, bug tracking feature and wikis
	▶ GitHub Desktop (Optional) – Can be locally installed on your computer to synchronize local code with *github.com*

git does not require the use of GitHub and vise versa;

However it very common to use GitHub if you use **git**

CREATING A GitHub ACCOUNT

- GitHub.com



- Choose the free account
- You will receive a verification email at the address provided
- Click the emailed link to complete the verification process

EXPLORING THE INTERFACE

▸ Your User Dashboard

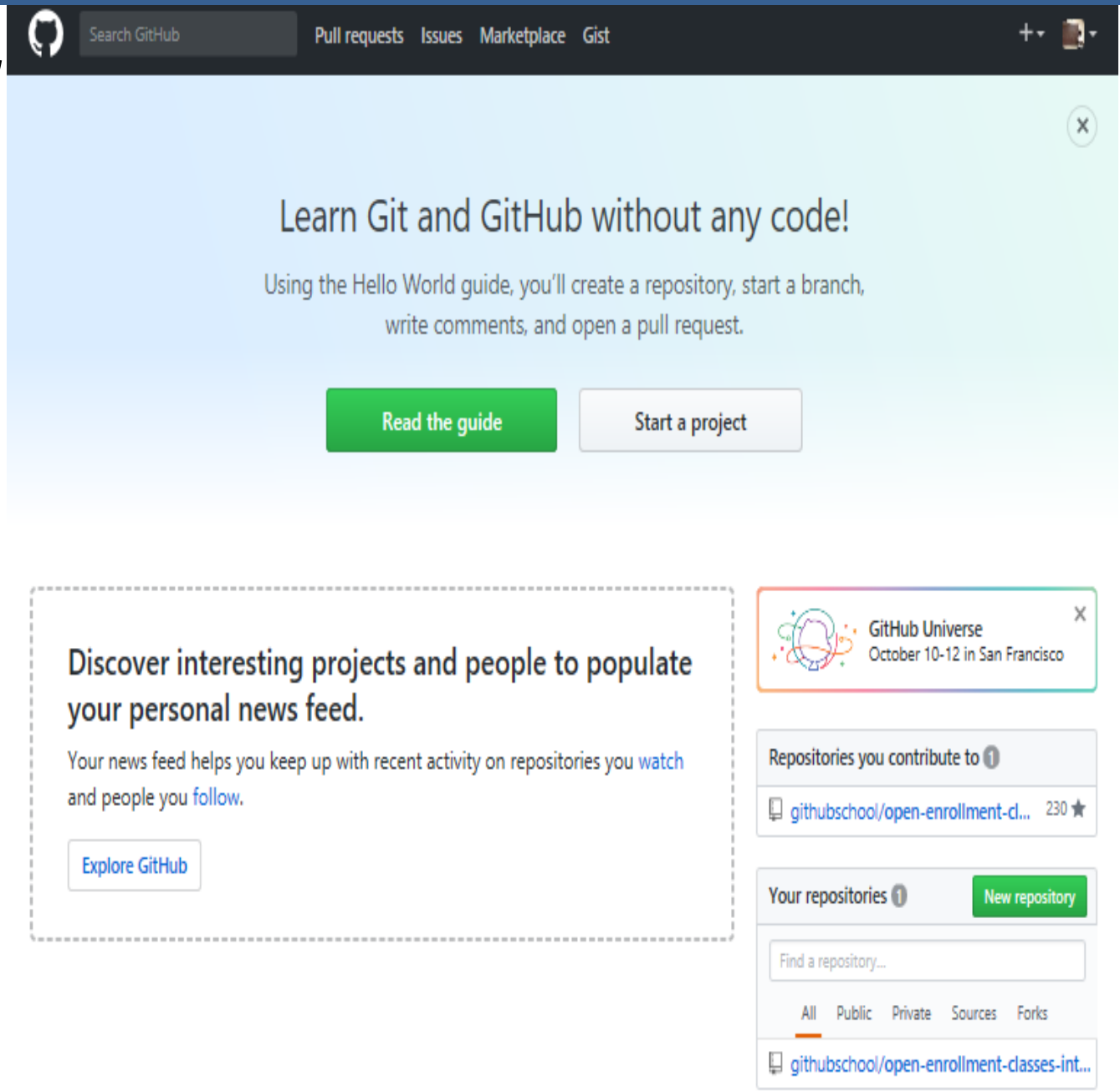
1. The Login Landing Page
2. Overview of the exciting things happening on GitHub.
3. Create new projects
4. Customize the projects you are watching
5. Quick links to your own projects.

▸ Your User Profile

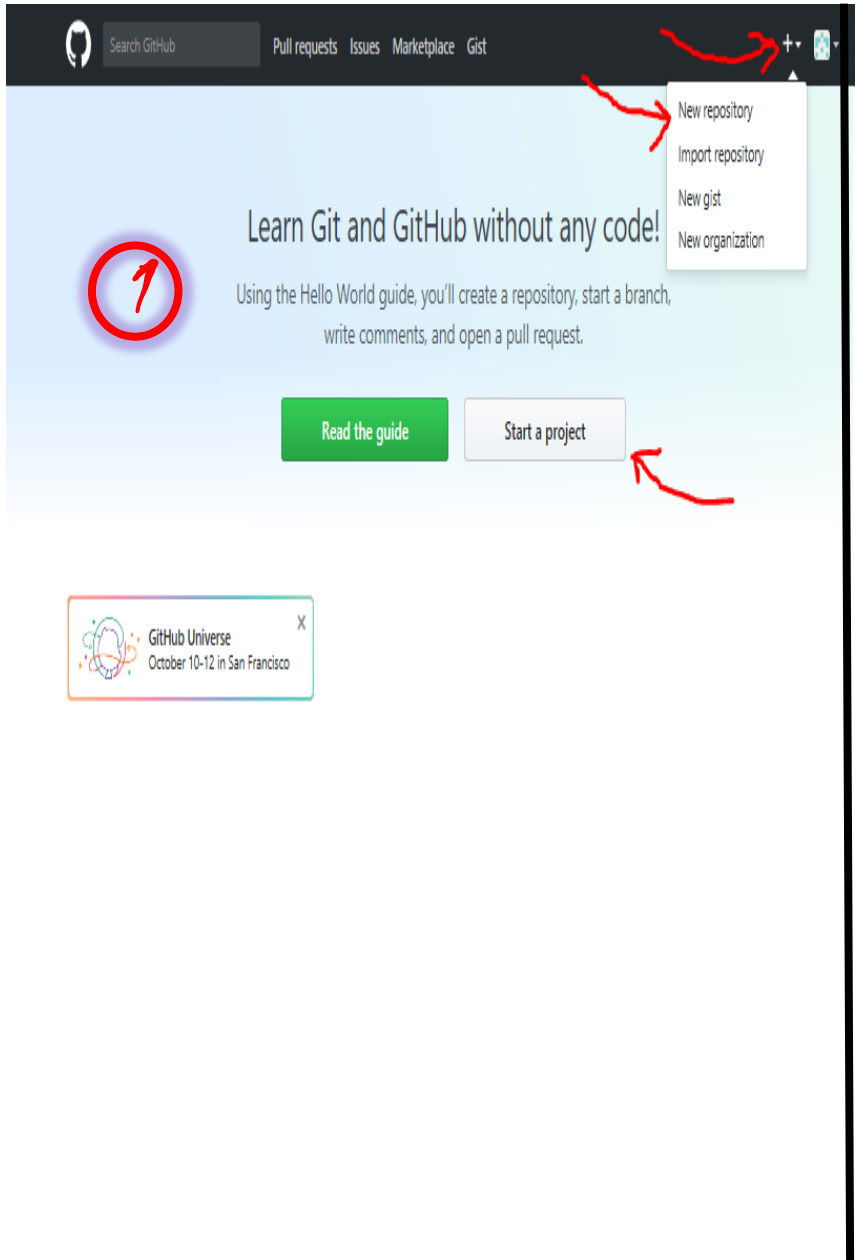
1. Top right corner
2. Contains your GitHub activity
3. Public (Open to employers)
4. Add some fun bio and awesome photo

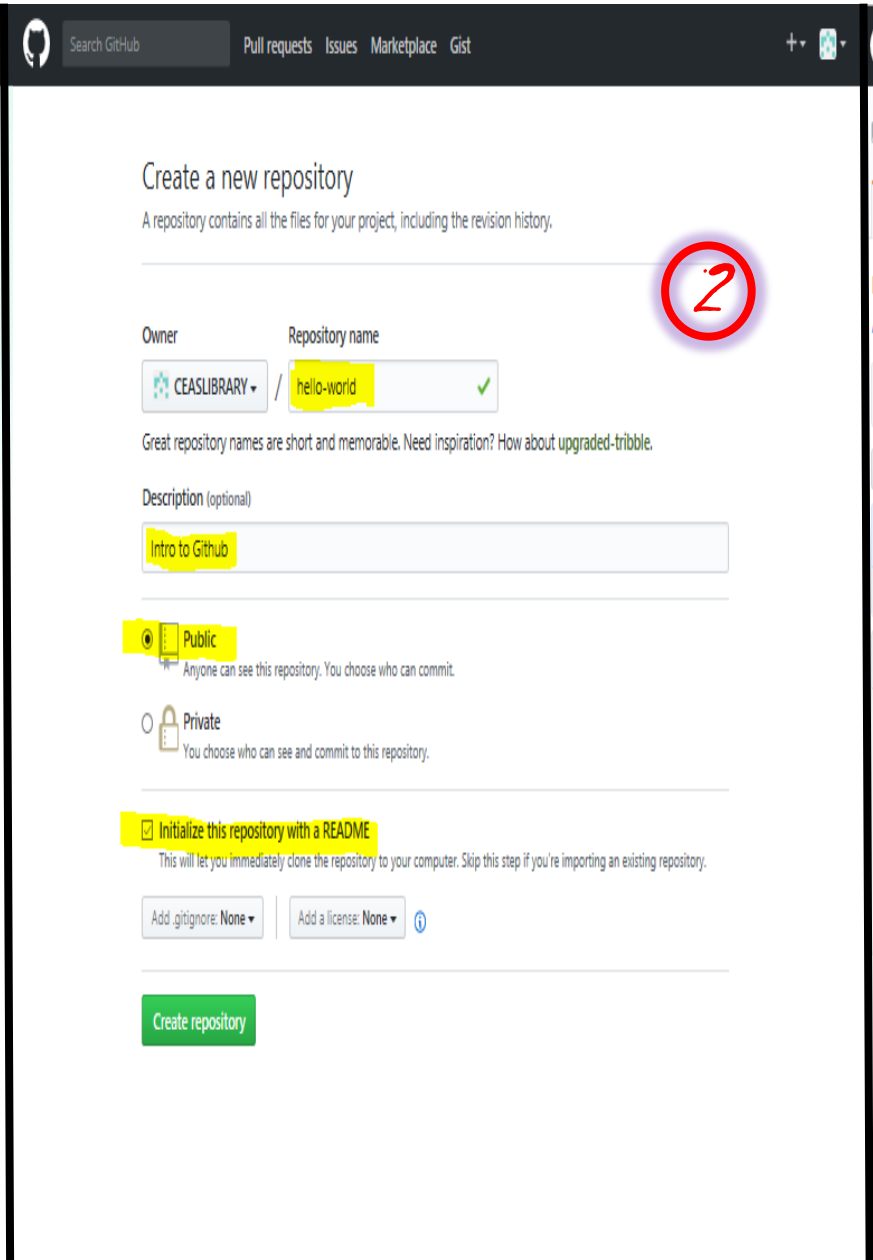
▸ Your GitHub Repositories ('Repo')

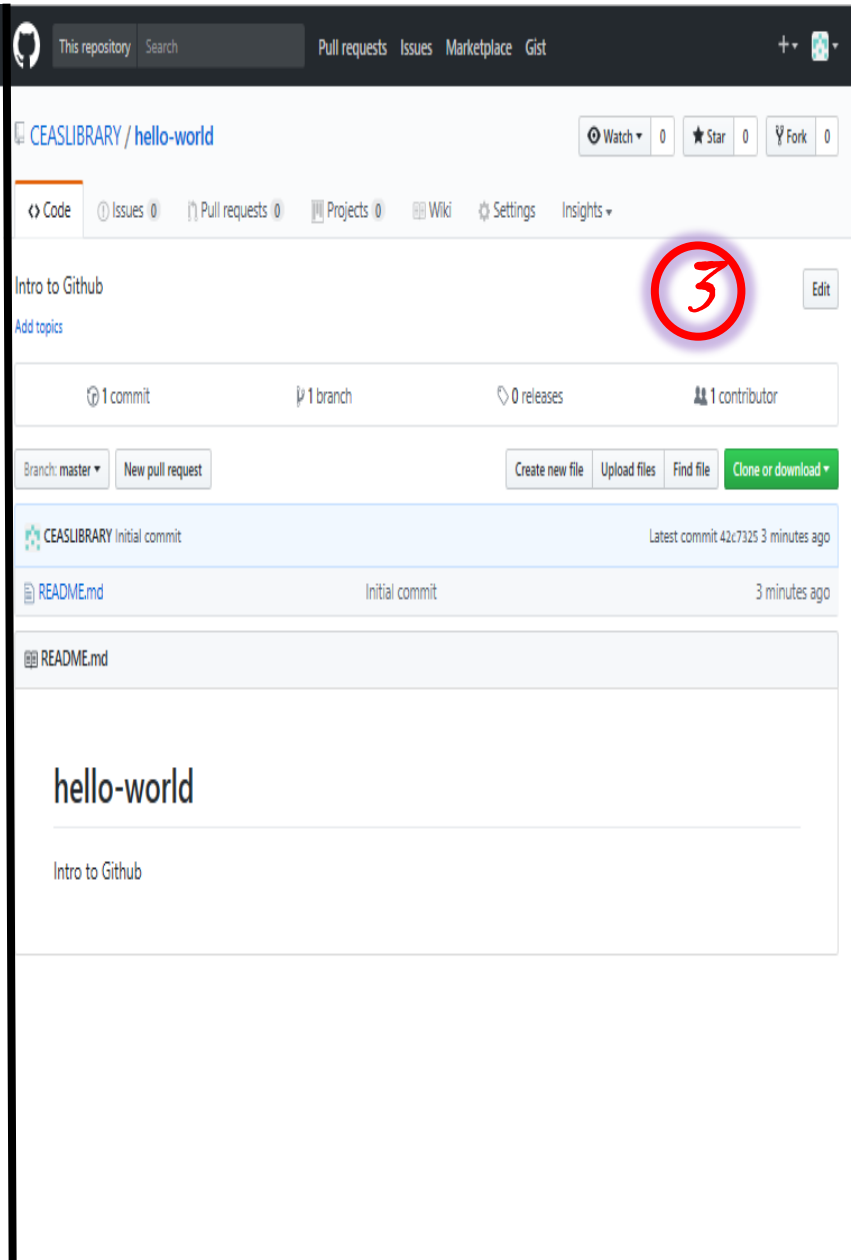
1. Containers to holds everything related to a specific project.
2. Used to organize a single project
3. Can contain folders and files– anything needed for the project
4. A *README* file recommended



CREATE A REPOSITORY

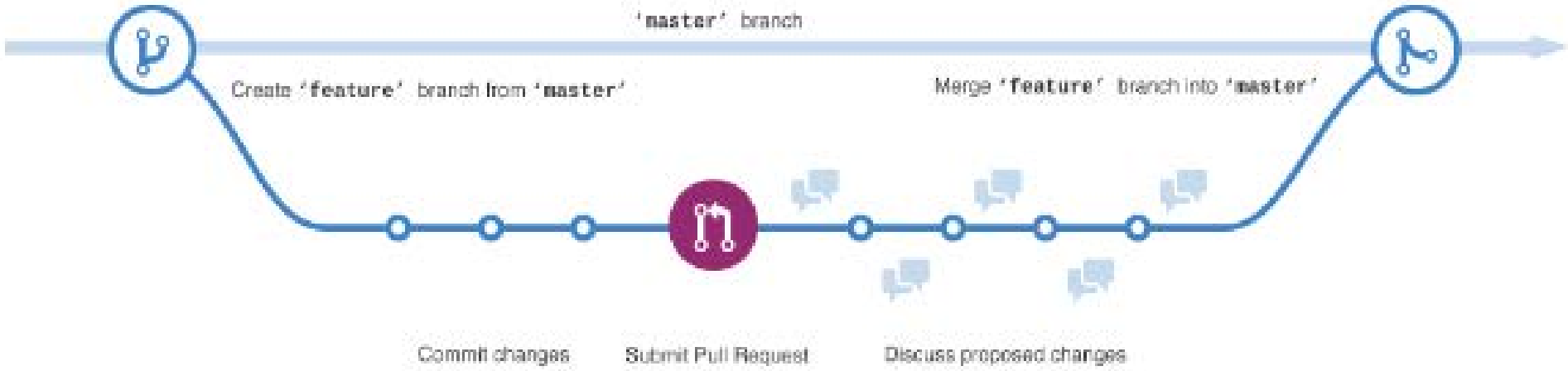




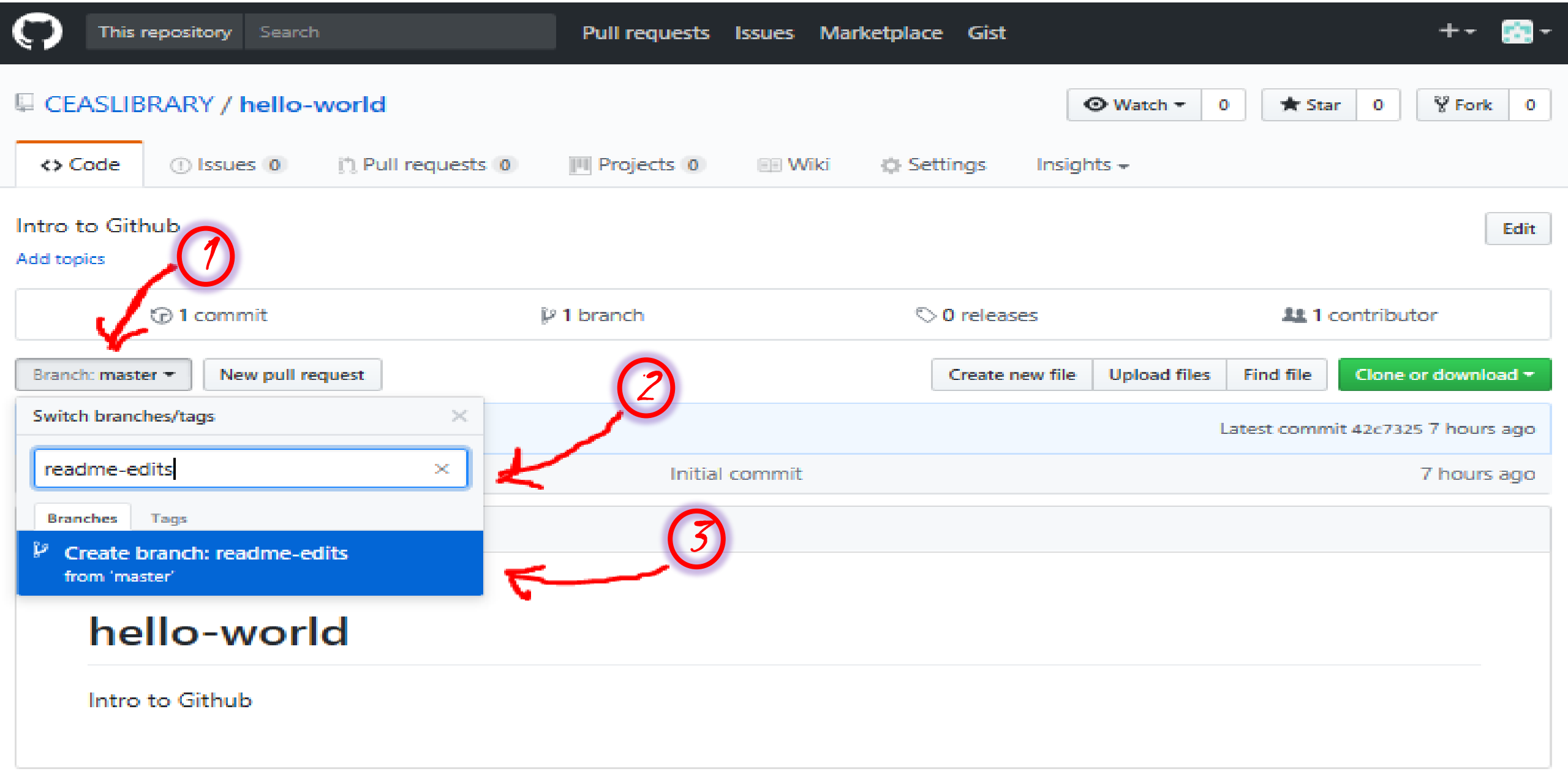


WHAT IS A BRANCH

- The way to work on different versions of a repository at one time
- Default Branch – `master`
- Other branches are used to experiment and make edits before ***commit***ting/***merg***ing to `master`
- A branch off the `master` is a copy or snapshot at that point in time
- Latter changes can be ***pull***ed to update the new branch while you were working on it

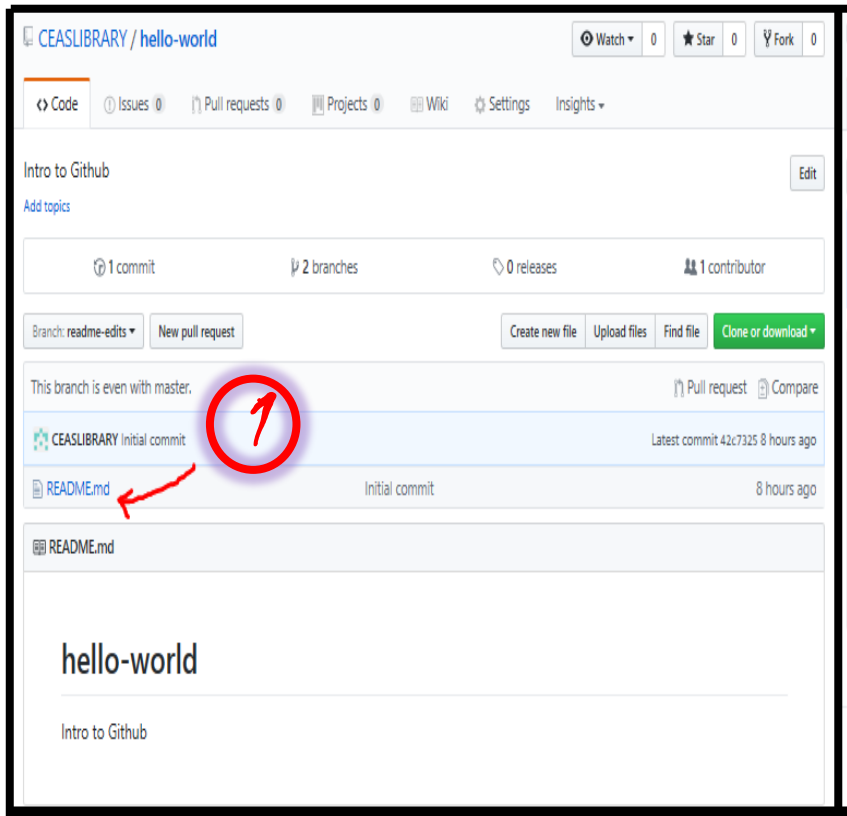


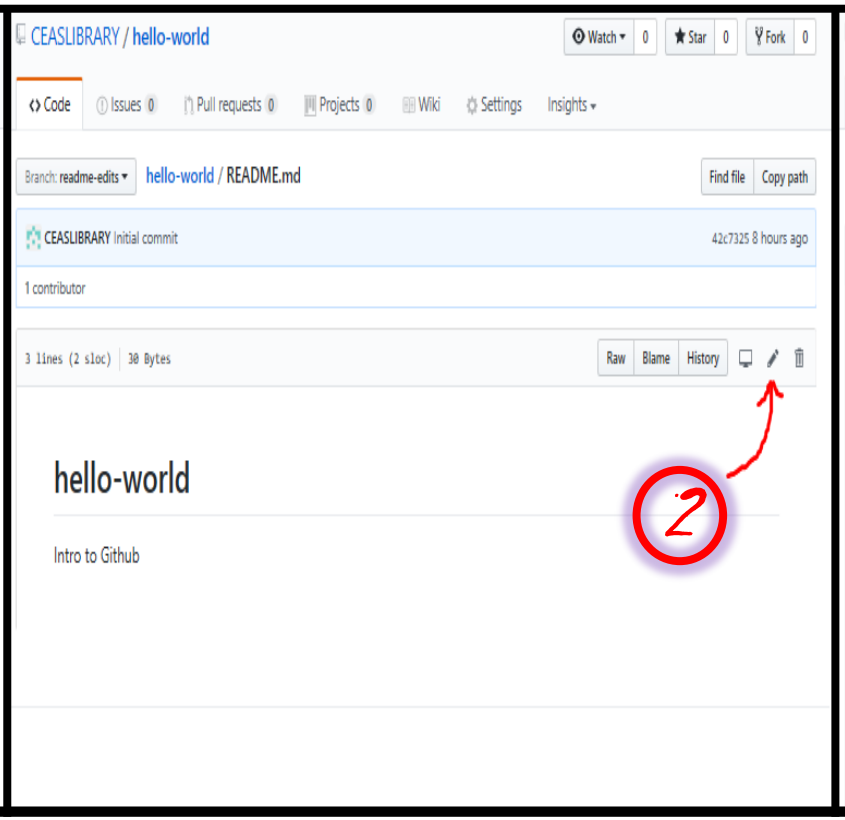
CREATE A NEW BRANCH

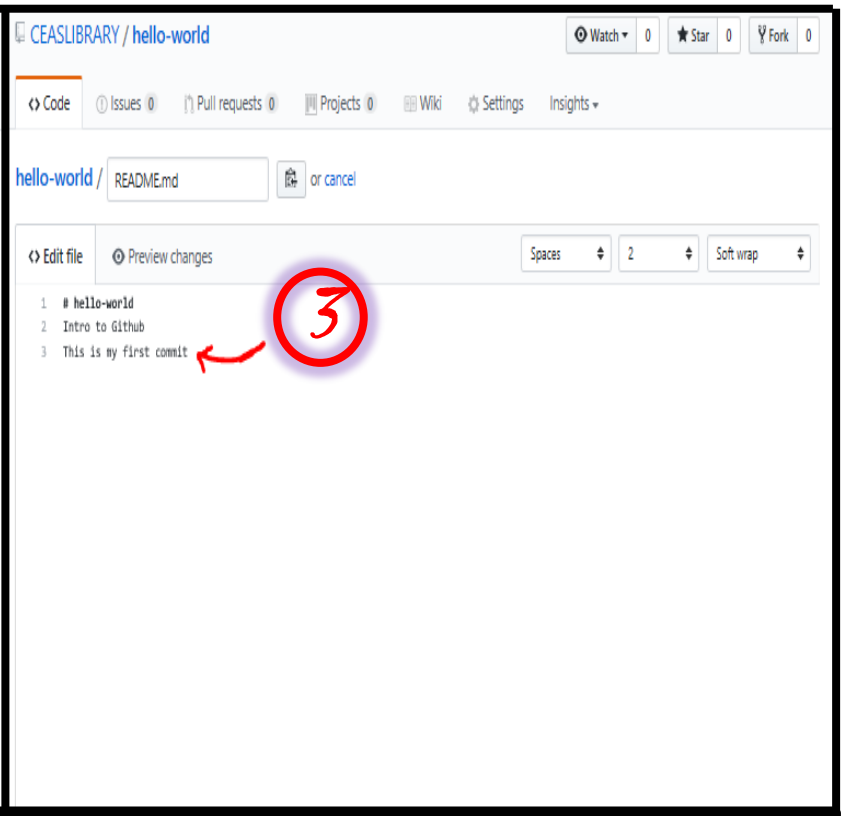


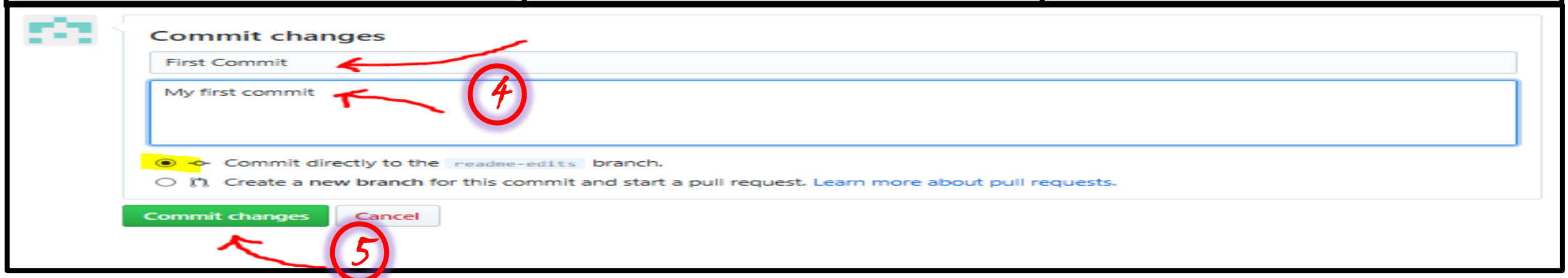
MAKE CHANGES, ADD COMMIT MESSAGES AND COMMIT CHANGES

- Changes to files can be made and saved by ***commits***
- A ***commit message*** can be associated with each commit
- Commit messages describe or explain reason for the change
- Commit messages capture the history of changes for later reference by other contributors


CEASLIBRARY / hello-world
Watch 0 Star 0 Fork 0
Code Issues 0 Pull requests 0 Projects 0 Wiki Settings Insights
Intro to Github
Edit
Add topics
1 commit 2 branches 0 releases 1 contributor
Branch: readme-edits New pull request
Create new file Upload files Find file Clone or download
This branch is even with master.
Pull request Compare
CEASLIBRARY Initial commit
Latest commit 42c7325 8 hours ago
README.md
Initial commit
8 hours ago
README.md
hello-world
Intro to Github
1


CEASLIBRARY / hello-world
Watch 0 Star 0 Fork 0
Code Issues 0 Pull requests 0 Projects 0 Wiki Settings Insights
Branch: readme-edits
hello-world / README.md
Find file Copy path
CEASLIBRARY Initial commit
42c7325 8 hours ago
1 contributor
3 lines (2 sloc) 30 Bytes
Raw Blame History
hello-world
Intro to Github
2

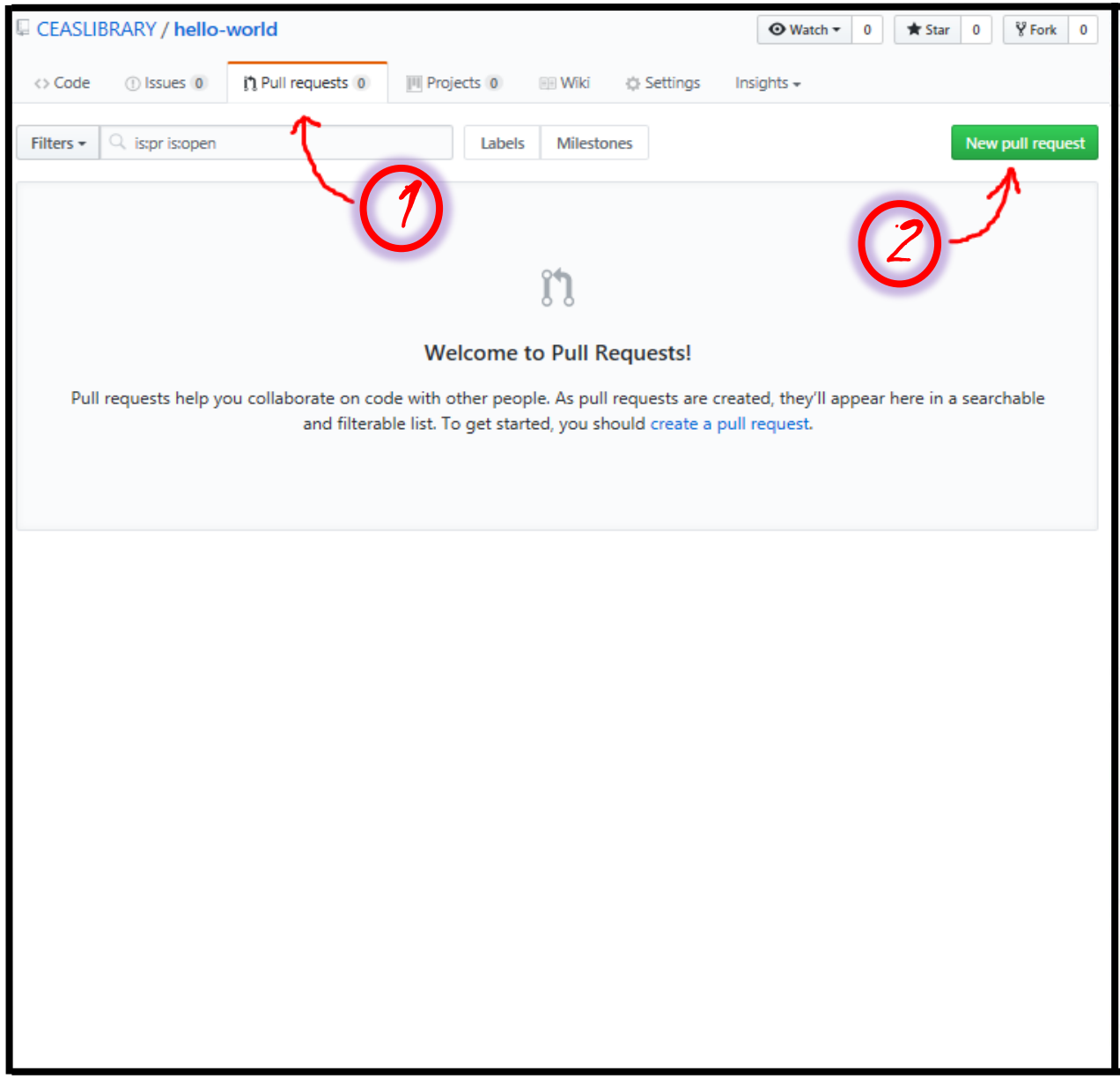

CEASLIBRARY / hello-world
Watch 0 Star 0 Fork 0
Code Issues 0 Pull requests 0 Projects 0 Wiki Settings Insights
hello-world / README.md
or cancel
Edit file
Preview changes
Spaces 2 Soft wrap
1 # hello-world
2 Intro to Github
3 This is my first commit
3

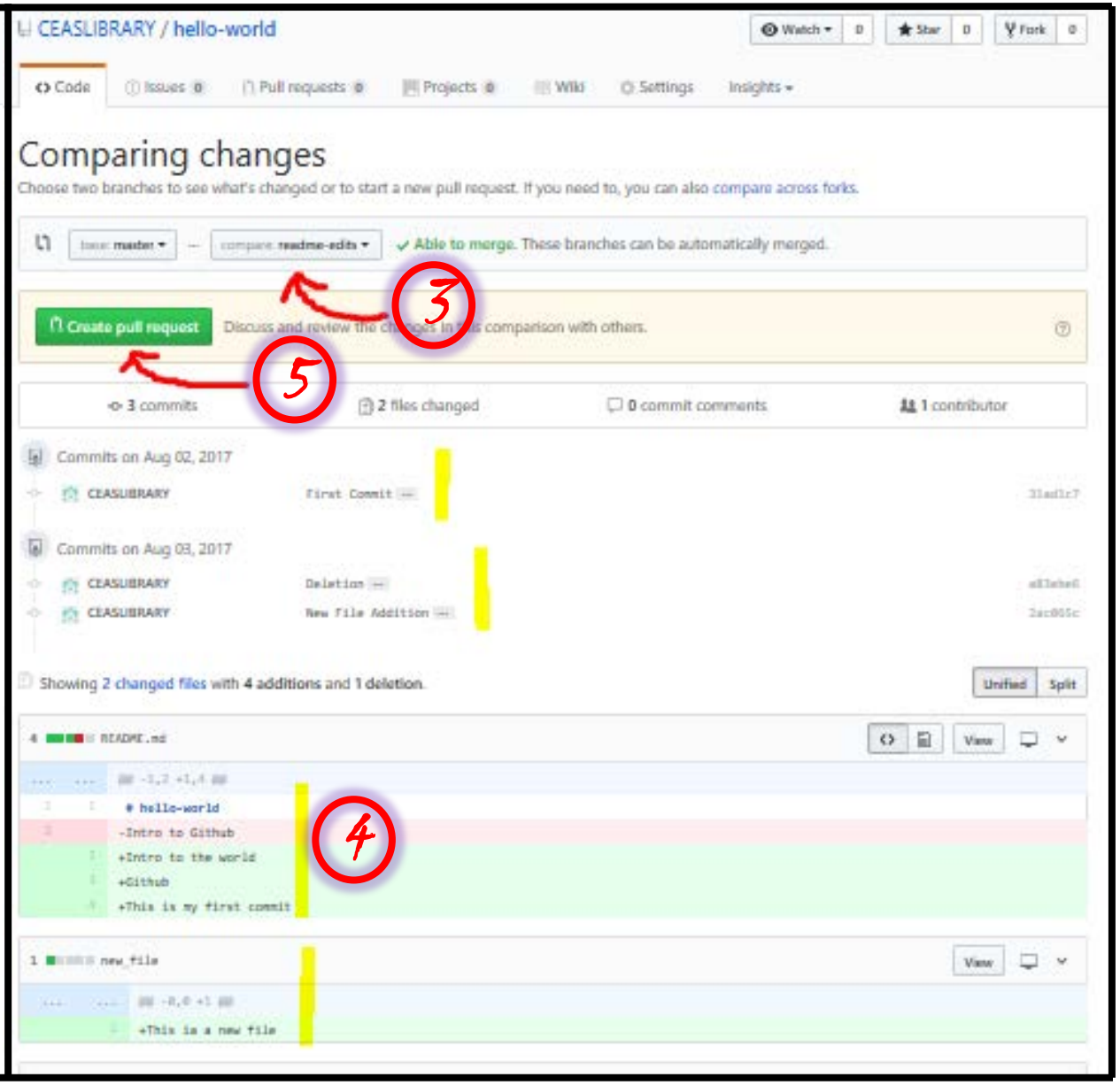

Commit changes
First Commit
My first commit
4
Commit directly to the readme-edits branch.
Create a new branch for this commit and start a pull request. Learn more about pull requests.
Commit changes
Cancel
5

WHY DO A PULL REQUEST?

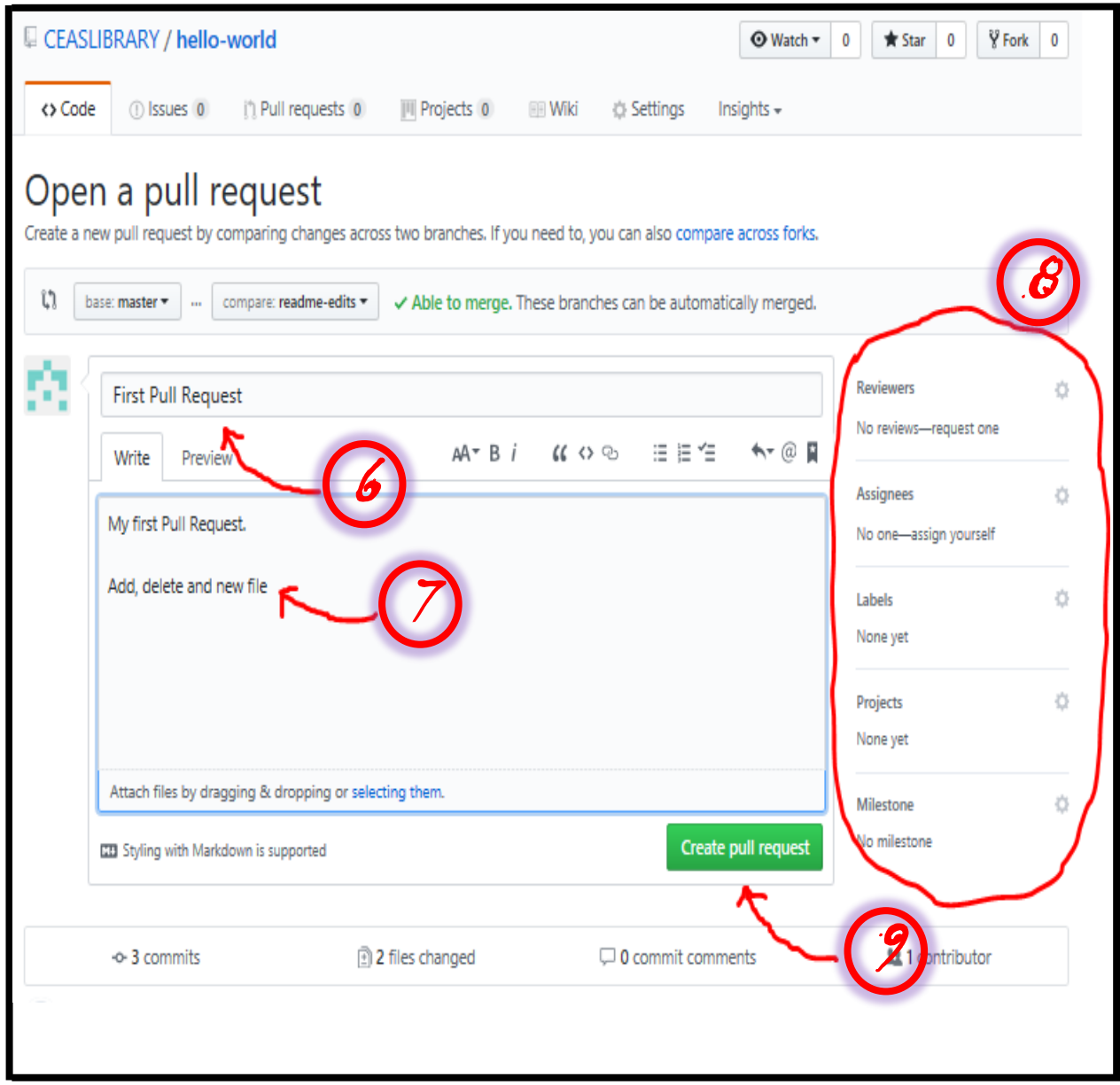
- Propose your changes
- Show differences (***diffs***) of the content from both branches being compared
- Changes, additions, and subtractions are color coded in green and red
- Request peer reviews (feedback from specific team members)
- Have peers pull in your contribution and merge them into their own branches

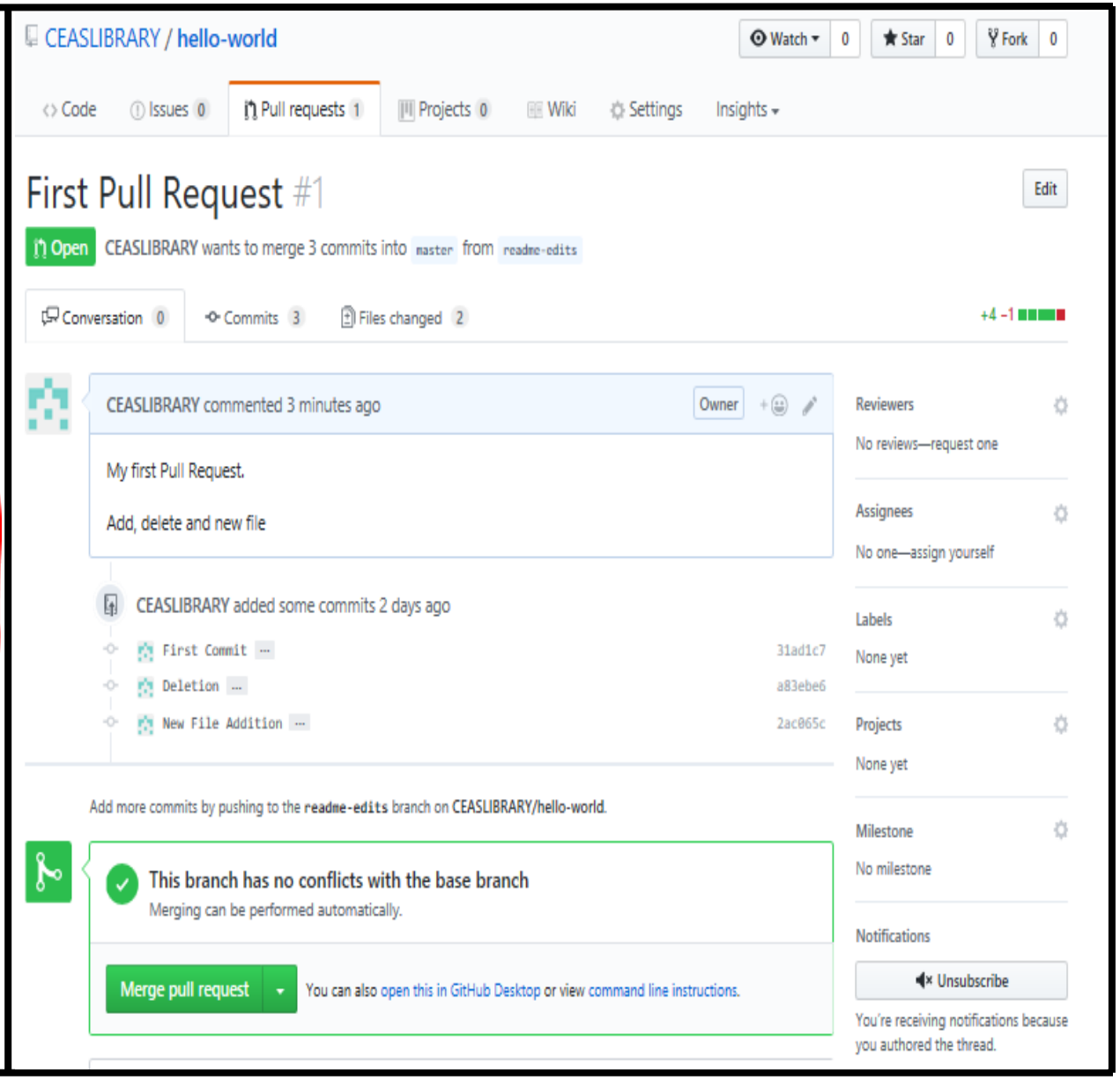
CREATE A PULL REQUEST





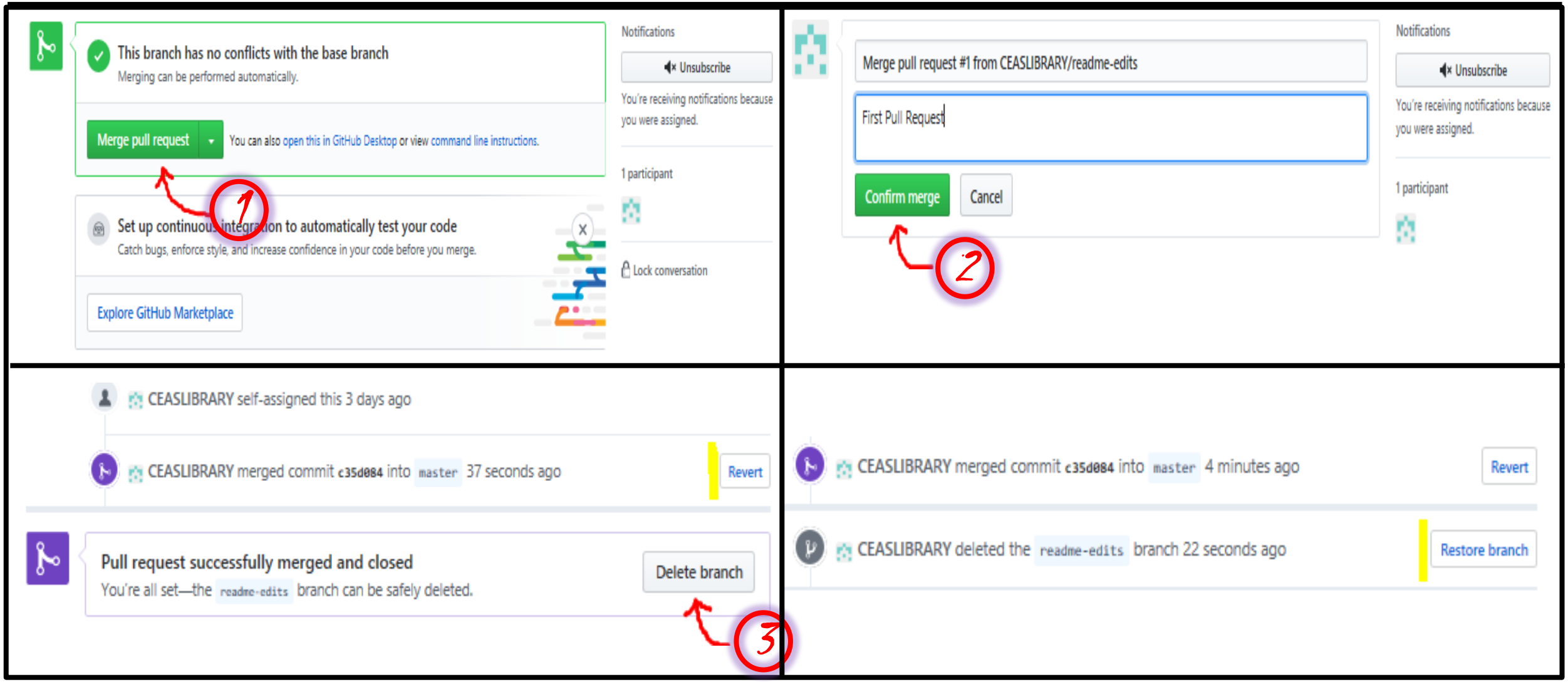
CREATE A PULL REQUEST





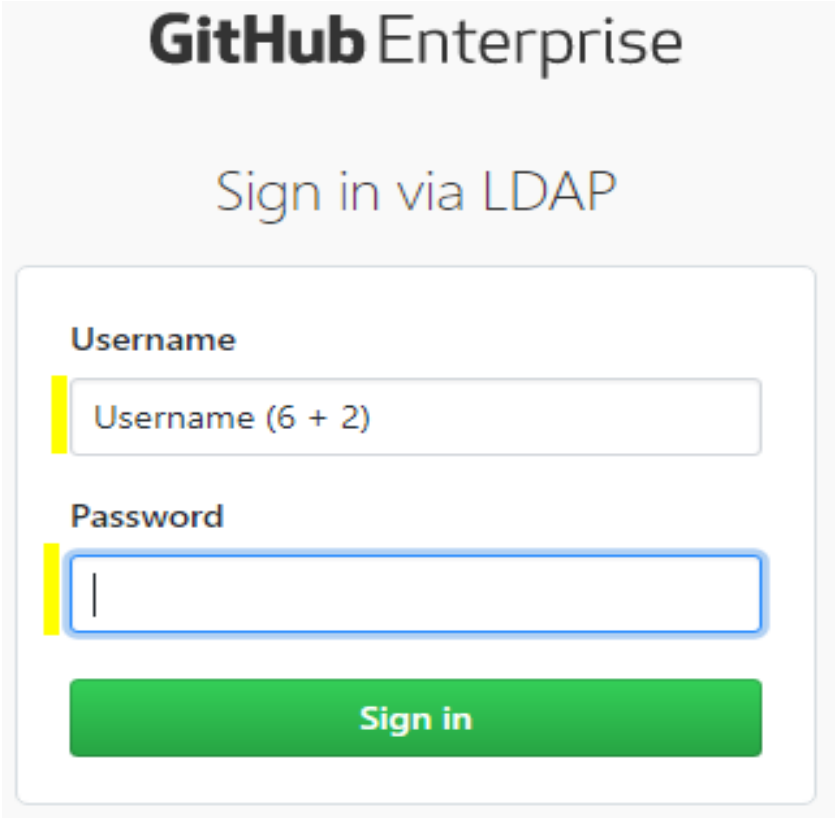
MERGE YOUR PULL REQUEST

Bring your changes together



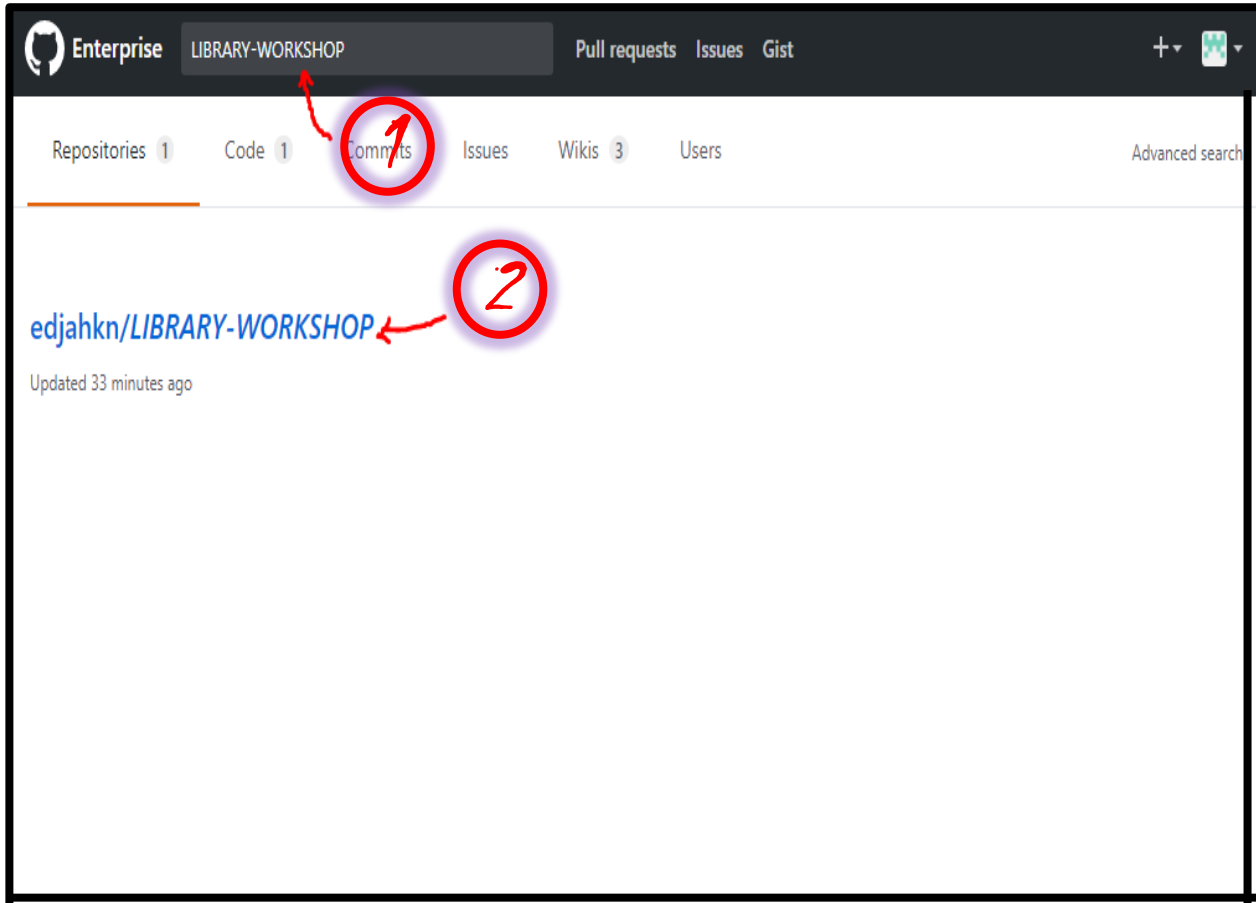
UC LOCAL GitHub

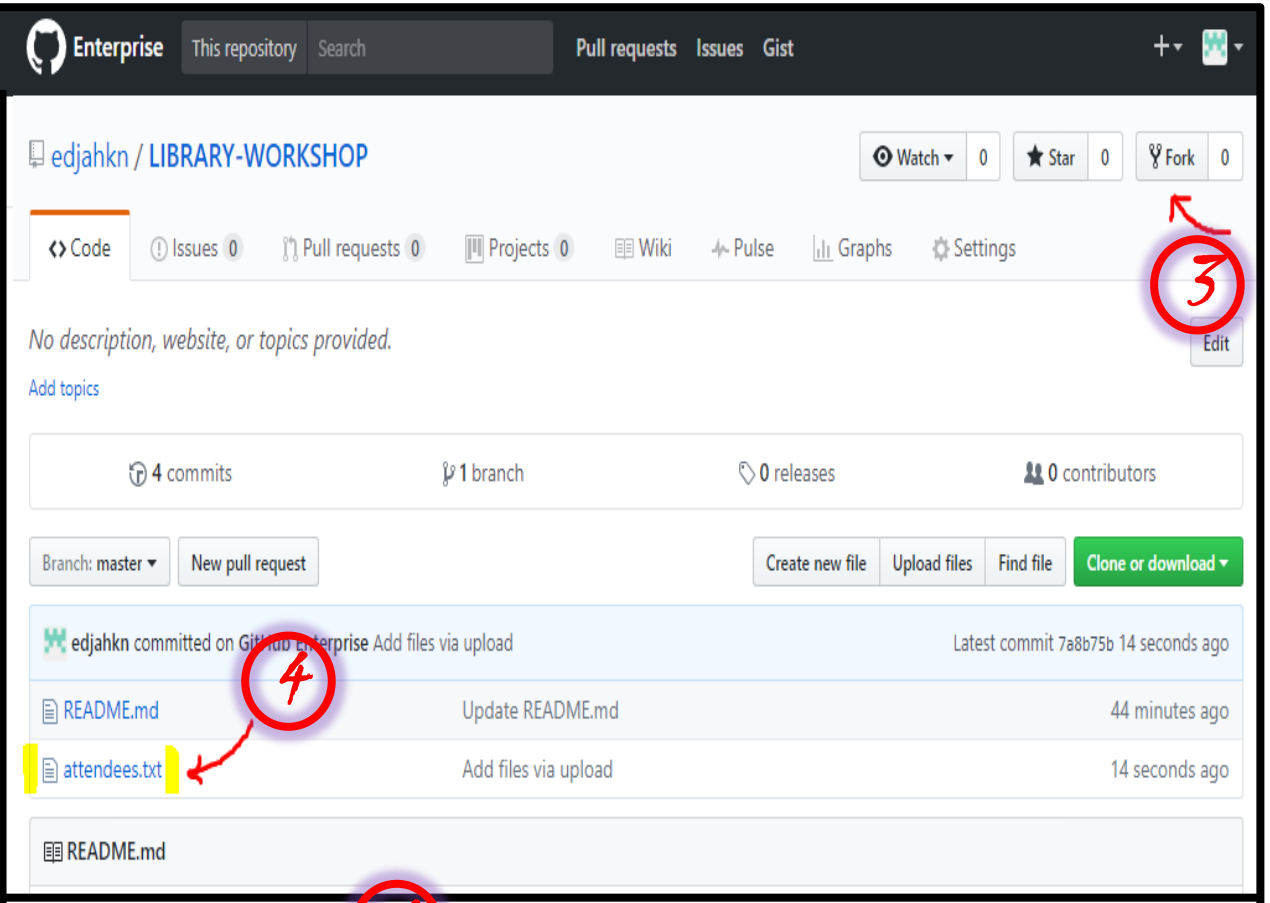
- https://github.uc.edu/
- Go to Profile
- Click “Add a bio”
- Add an email address

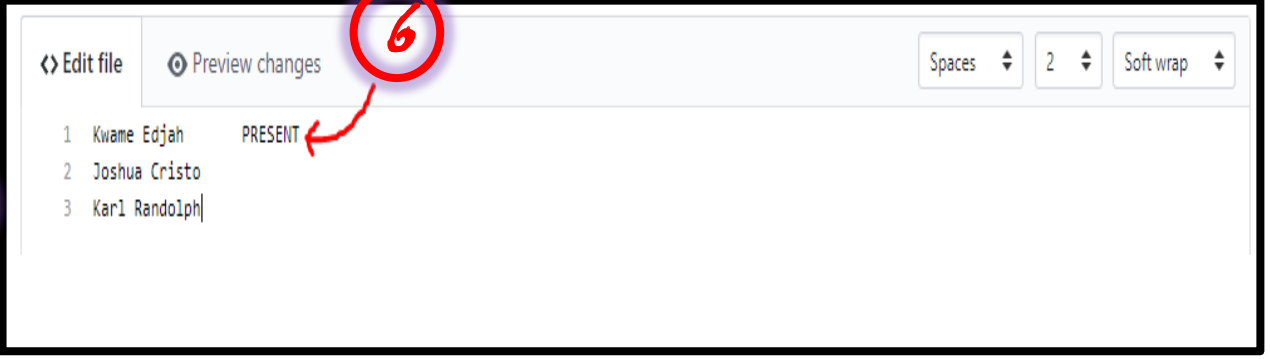


LET'S COLLABORATE

Search for: ***CEASLibrary/LIBRARY-WORKSHOP***







LET'S COLLABORATE

- Commit changes
- Submit Pull Request: compare across forks
- Merge your changes after access is granted

ONLINE TUTORIALS & RESOURCES

- CEAS Library GitHub resources

  http://guides.libraries.uc.edu/GitHub

- Online LATEX links & tutorials
  - Working with GitHub at UC

    https://kb.uc.edu/KBArticles/GitHub-Intro.aspx
  - Github tutorials

    https://guides.github.com/

    https://services.github.com/on-demand/
  - How to Get Started with Github - Beginner Tutorial

    http://www.youtube.com/watch?v=73I5dRucCds

Questions?

Thank you for attending the workshop!!