

# 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

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>▶ <b>git</b> is an open source distributed version control system</li><li>▶ Repositories are created and can be shared with a local team who have various privileges to files (access control)</li><li>▶ Strictly command-line</li></ul> | <ul style="list-style-type: none"><li>▶ GitHub is a website that allows you to create online repositories or upload your <b>git</b> repositories online.</li><li>▶ Gives a visual interface</li><li>▶ Provides a backup for your local <b>git</b></li><li>▶ You can share repos to outsiders and access other teams repos; basis for open source projects.</li><li>▶ GitHub version control is based on <b>git</b></li><li>▶ Adds more functionalities; several collaboration features such as task management, bug tracking feature and wikis</li><li>▶ GitHub Desktop (Optional) – Can be locally installed on your computer to synchronize local code with <i>github.com</i></li></ul> |
|--|---|

**git** does not require the use of GitHub and vice versa;  
However it very common to use GitHub if you use **git**

# CREATING A GitHub ACCOUNT

► [GitHub.com](https://github.com)

The image shows four sequential screenshots of the GitHub account creation process, numbered 1 to 4 in red circles.

**Screenshot 1:** The GitHub homepage. A red arrow points to the 'Sign up' link in the top right corner. Another red arrow points to the 'Sign up for GitHub' button on the 'Built for developers' section.

**Screenshot 2:** The 'Create your personal account' form. It includes fields for Username, Email Address, and Password. A red circle with the number 2 is around the 'Create an account' button.

**Screenshot 3:** The 'Choose your personal plan' screen. It shows a table of plans with the 'Free' plan selected. A red circle with the number 3 is around the 'Choose' button for the 'Free' plan.

**Screenshot 4:** The 'Tailor your experience' screen. It includes questions about programming experience, intended use, and self-description. A red circle with the number 4 is around the 'Submit' button.

- 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

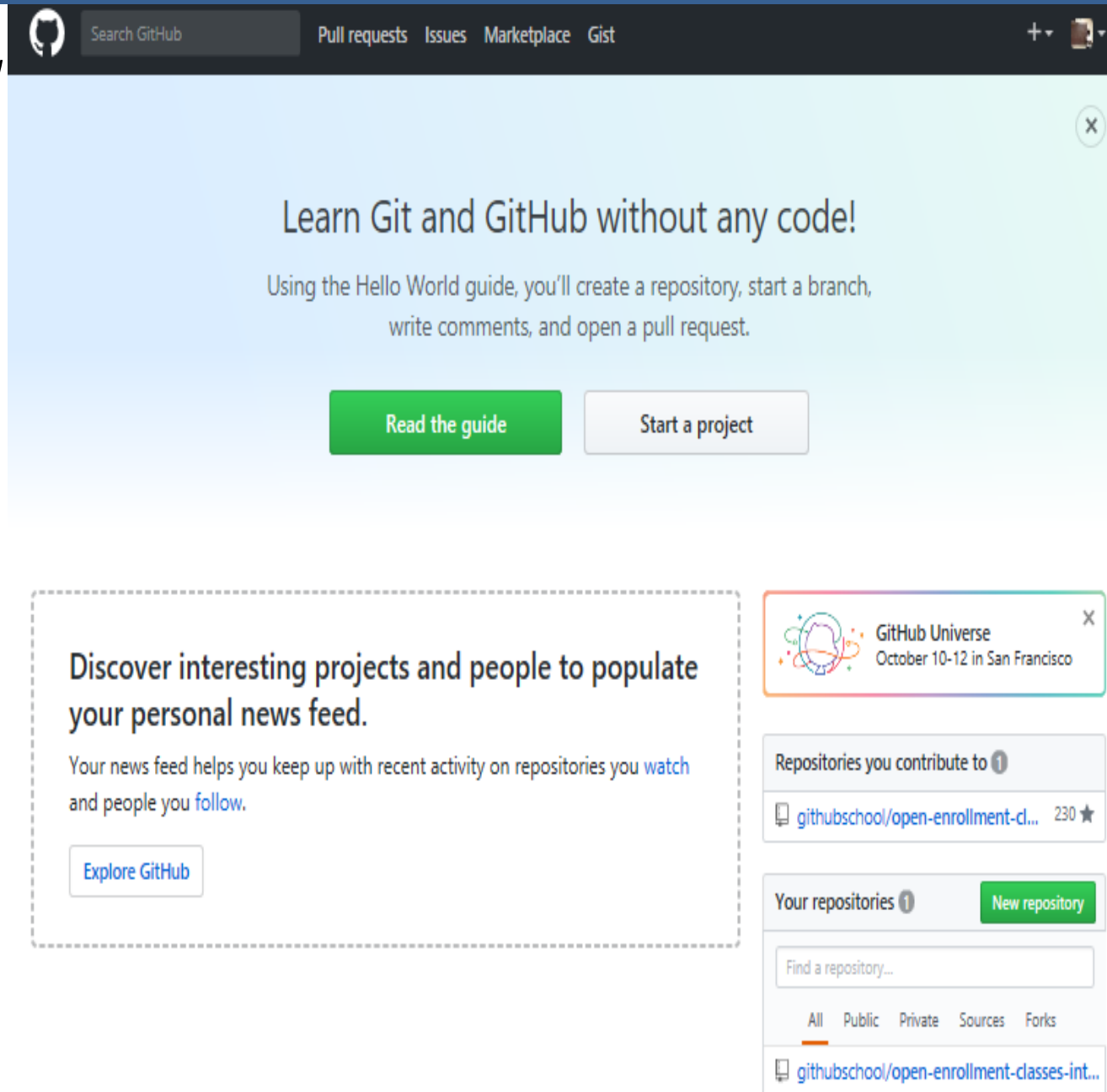
1. The Login Landing Page
2. Overview of the exciting things happening on GitHub.
3. Create new projects
4. Customize the projects you are watching
5. Quick links to your own projects.

## ► 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

The image shows three sequential screenshots of the GitHub website, illustrating the process of creating a new repository. Red circles with numbers 1, 2, and 3 mark the key steps, and red arrows indicate the flow between them.

**Step 1: GitHub Homepage**

The first screenshot shows the GitHub homepage. A red circle with the number 1 is around the "Start a project" button. A red arrow points from the "New repository" option in the top navigation menu to the "Start a project" button. The text "Learn Git and GitHub without any code!" is visible, along with a "Read the guide" button.

**Step 2: Create a new repository**

The second screenshot shows the "Create a new repository" form. A red circle with the number 2 is around the "Repository name" field, which contains "hello-world". The form includes fields for "Owner" (CEASLIBRARY), "Description (optional)" (Intro to Github), and "Visibility" (Public). The "Initialize this repository with a README" checkbox is checked. A "Create repository" button is at the bottom.

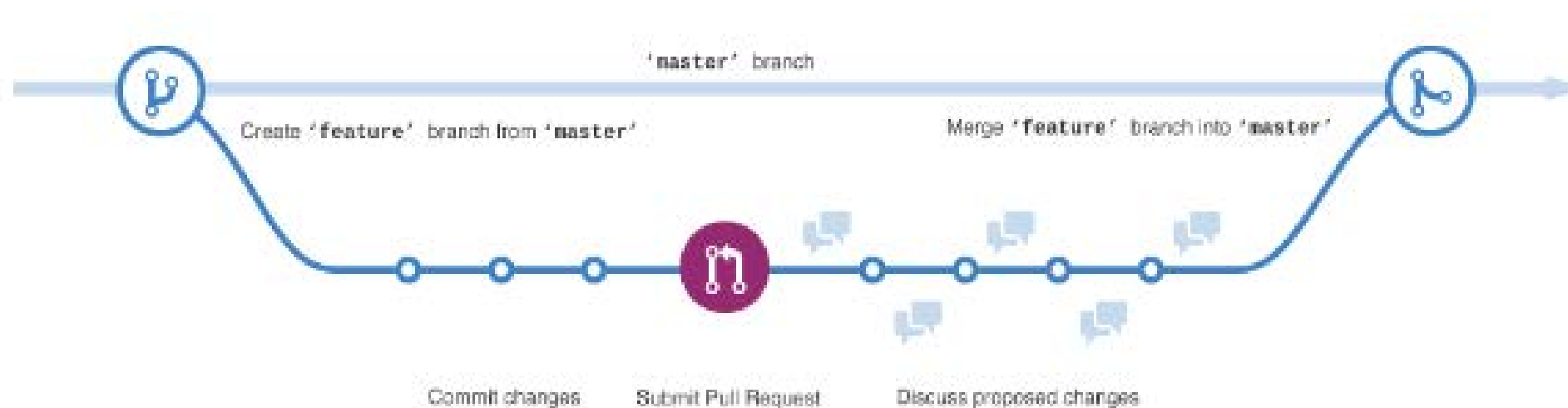
**Step 3: Repository View**

The third screenshot shows the view of the newly created repository, "CEASLIBRARY / hello-world". A red circle with the number 3 is around the "Intro to Github" link in the "Add topics" section. The repository shows 1 commit, 1 branch, 0 releases, and 1 contributor. The "Clone or download" button is visible. The repository content shows the initial commit and the README.md file.



# 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 ***committing/merging*** to `master`
- ▶ A branch off the `master` is a copy or snapshot at that point in time
- ▶ Latter changes can be ***pulled*** to update the new branch while you were working on it



# CREATE A NEW BRANCH

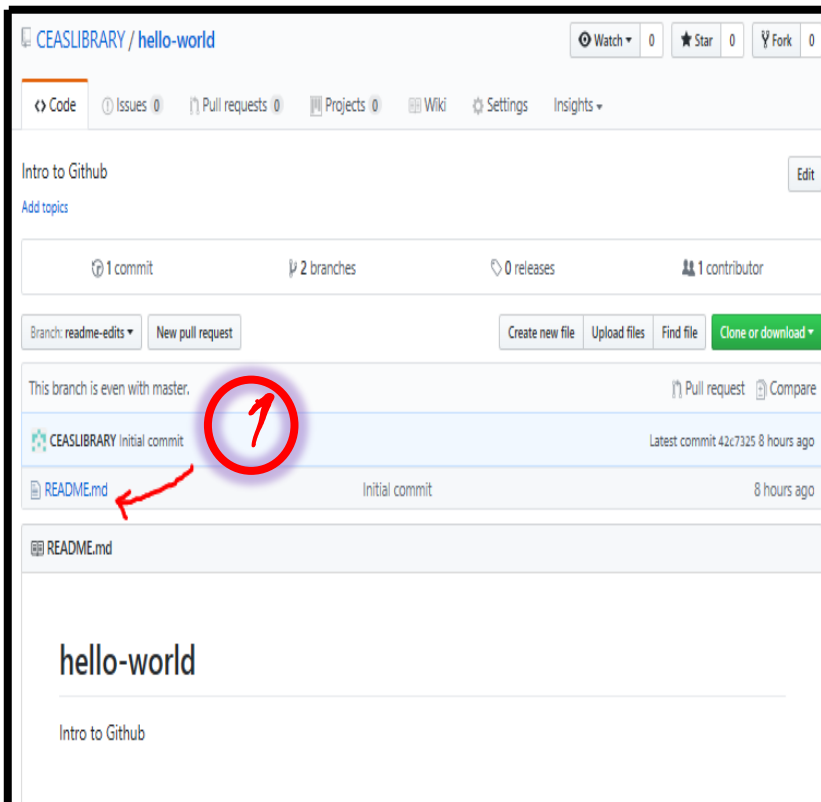
The screenshot shows the GitHub interface for the repository **CEASLIBRARY / hello-world**. The top navigation bar includes links for **This repository**, **Search**, **Pull requests**, **Issues**, **Marketplace**, and **Gist**. The repository page features a header with **Watch** (0), **Star** (0), and **Fork** (0) buttons. Below the header, a navigation bar contains **Code**, **Issues** (0), **Pull requests** (0), **Projects** (0), **Wiki**, **Settings**, and **Insights**.

The main content area displays the repository's metadata: **1 commit**, **1 branch**, **0 releases**, and **1 contributor**. A red arrow labeled **1** points to the repository name **CEASLIBRARY / hello-world**. Below this, a dropdown menu is open, showing the **Switch branches/tags** section. The input field contains **readme-edits**. A red arrow labeled **2** points to the **Initial commit** link. A red arrow labeled **3** points to the **Create branch: readme-edits from 'master'** option in the dropdown menu.

The repository's main content area shows the **hello-world** file and the **Intro to Github** README file. The commit history table shows the **Initial commit** made **7 hours ago** with the commit hash **42c7325**.

# 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

Intro to Github

1 commit 2 branches 0 releases 1 contributor

Branch: readme-edits New pull request Create new file Upload files Find file Clone or download

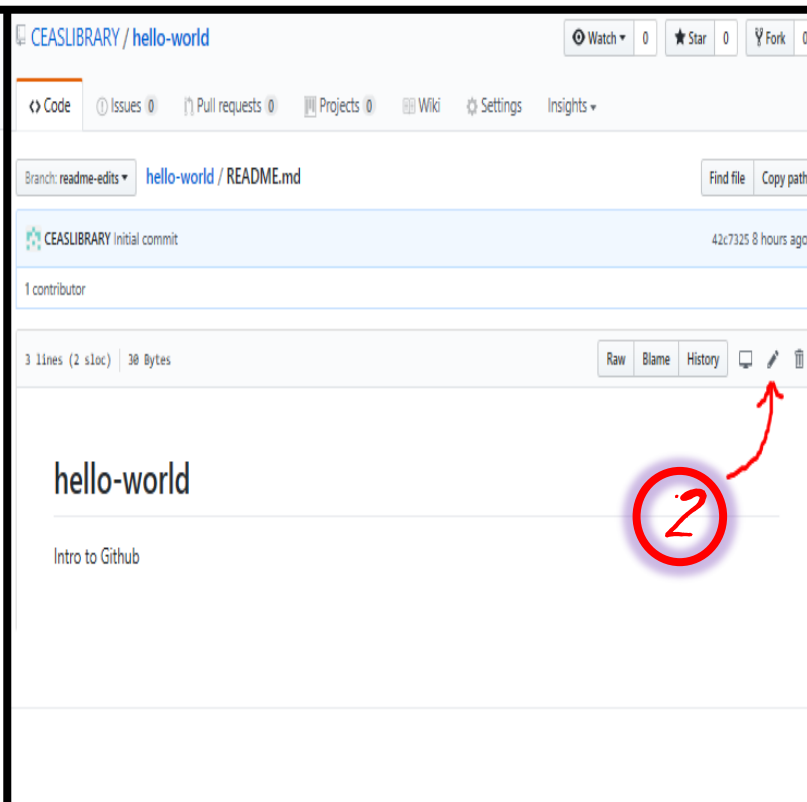
This branch is even with master. Pull request Compare

CEASLIBRARY Initial commit Latest commit 42c7325 8 hours ago

README.md Initial commit 8 hours ago

hello-world

Intro to Github



CEASLIBRARY / hello-world

Branch: readme-edits hello-world / README.md Find file Copy path

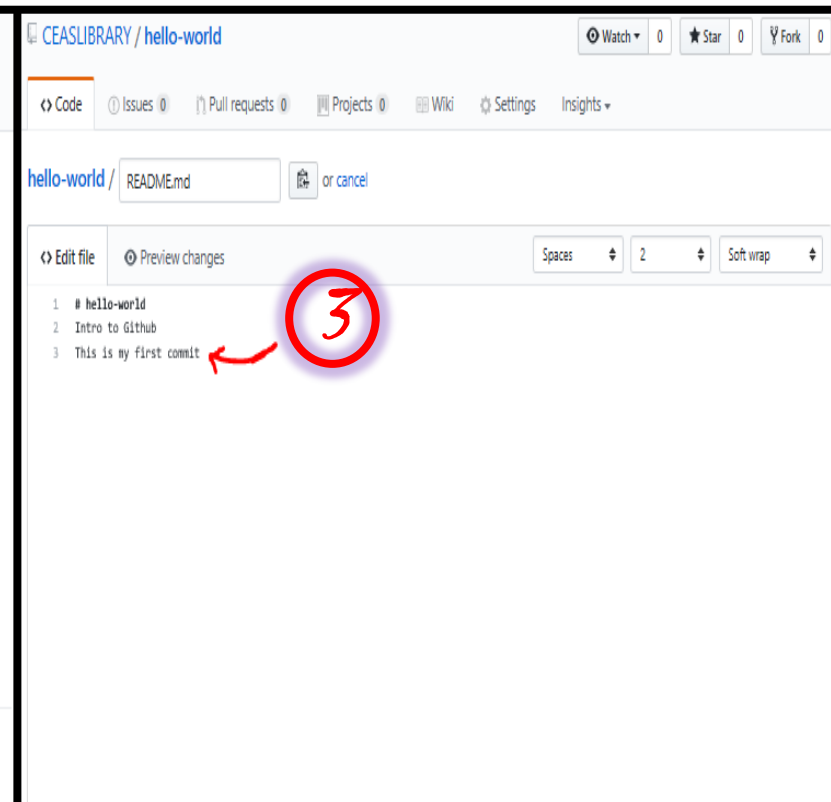
CEASLIBRARY Initial commit 42c7325 8 hours ago

1 contributor

3 lines (2 sloc) 38 Bytes Raw Blame History

hello-world

Intro to Github

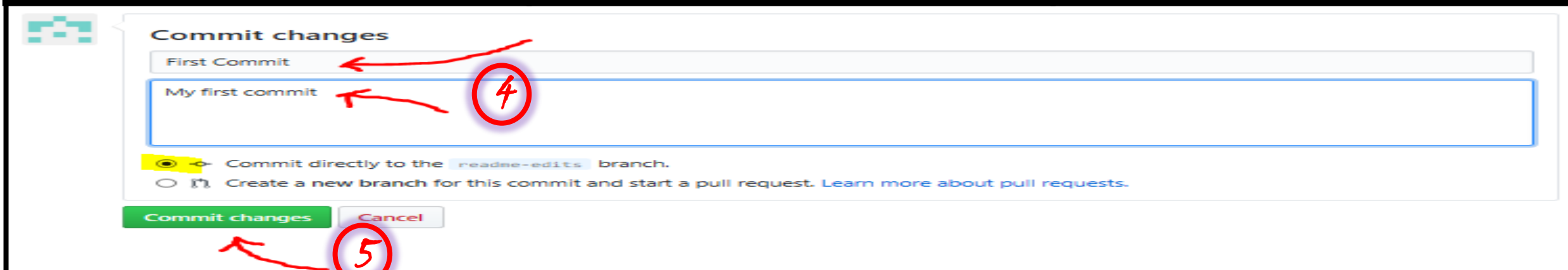


CEASLIBRARY / hello-world

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
```



Commit changes

First Commit My first commit

☒ Commit directly to the readme-edits branch.

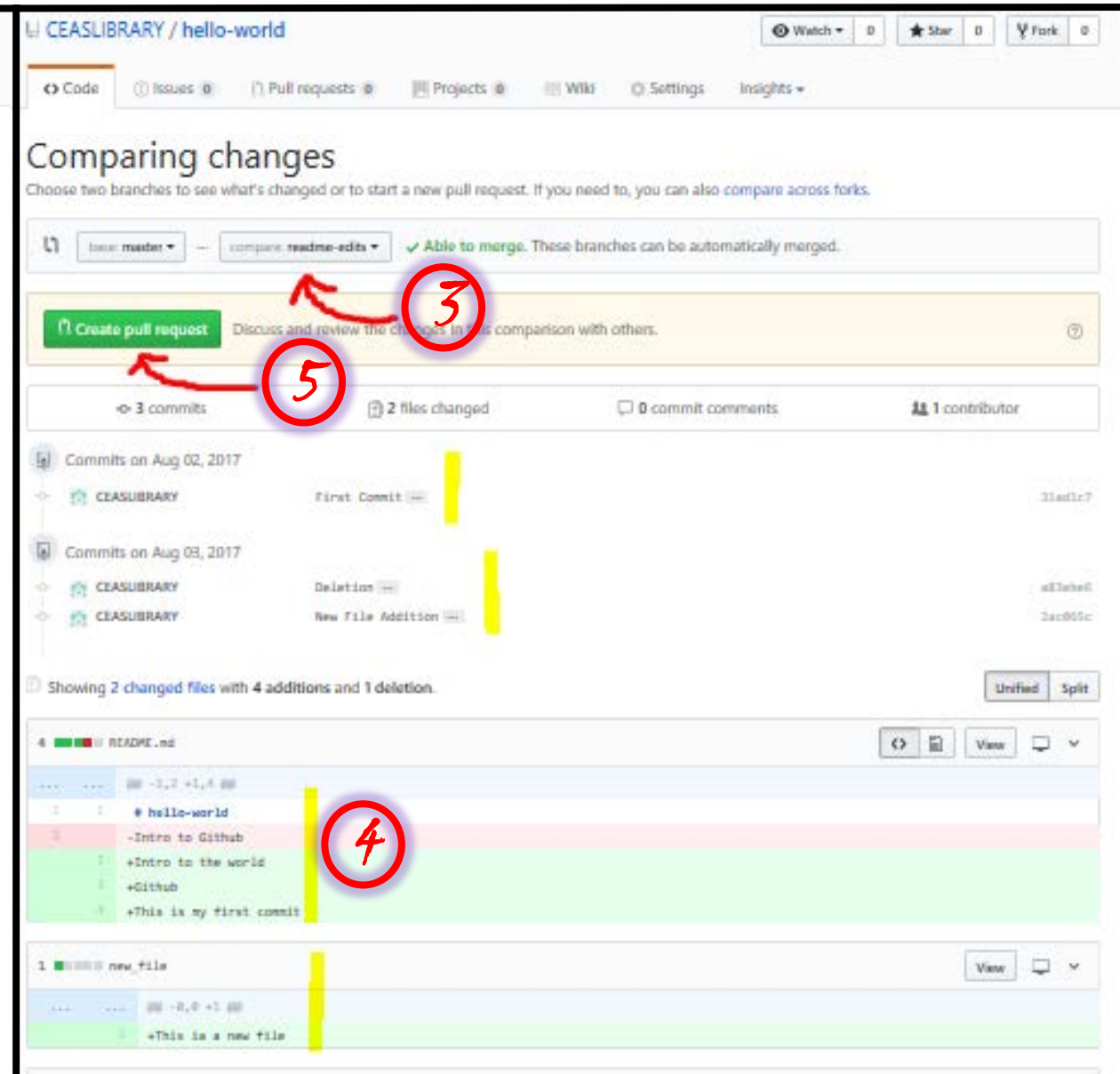
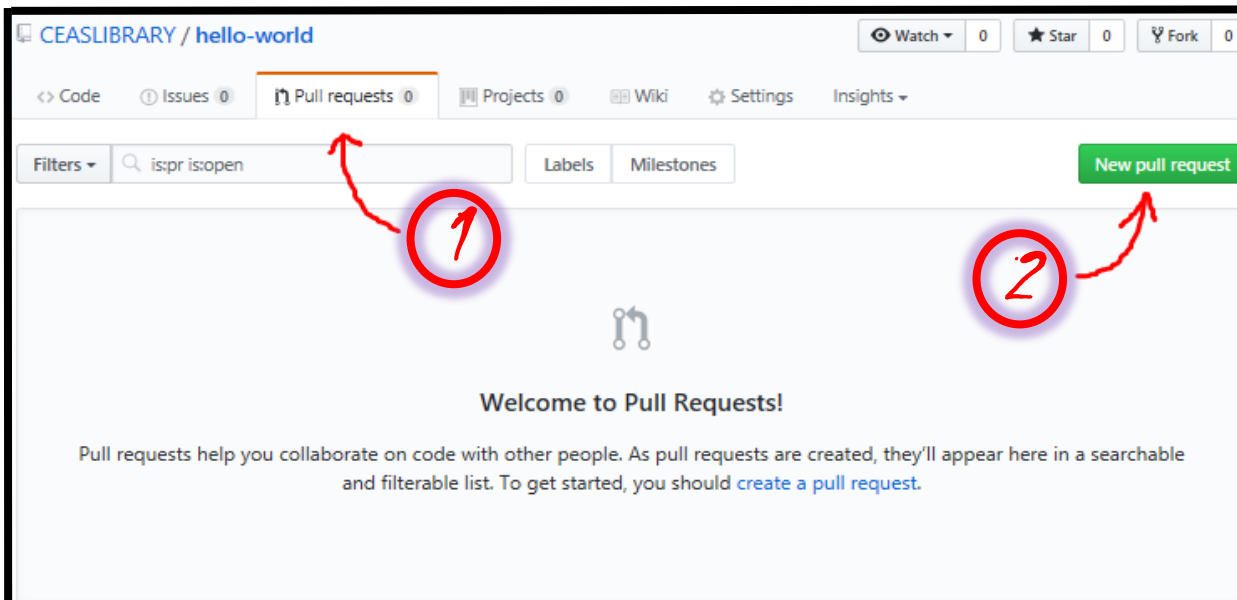
☐ Create a new branch for this commit and start a pull request. Learn more about pull requests.

Commit changes Cancel

# 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

CEASLIBRARY / hello-world

Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Settings Insights

## 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: readme-edits ✓ Able to merge. These branches can be automatically merged.

First Pull Request

Write Preview 6

My first Pull Request.

Add, delete and new file 7

Attach files by dragging & dropping or selecting them.

Styling with Markdown is supported

Create pull request 8

3 commits 2 files changed 0 commit comments 1 contributor 9

CEASLIBRARY / hello-world

Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 1 Projects 0 Wiki Settings Insights

## First Pull Request #1

Open CEASLIBRARY wants to merge 3 commits into master from readme-edits

Conversation 0 Commits 3 Files changed 2 +4 -1

CEASLIBRARY commented 3 minutes ago

My first Pull Request.

Add, delete and new file

CEASLIBRARY added some commits 2 days ago

- First Commit 31ad1c7
- Deletion a83ebe6
- New File Addition 2ac065c

Add more commits by pushing to the readme-edits branch on CEASLIBRARY/hello-world.

✓ 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](#).

Unsubscribe

# MERGE YOUR PULL REQUEST

Bring your changes together

**Panel 1: Merge pull request**

✓ 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](#).

Notifications  
Unsubscribe  
You're receiving notifications because you were assigned.

1 participant

Set up continuous integration to automatically test your code  
Catch bugs, enforce style, and increase confidence in your code before you merge.

[Explore GitHub Marketplace](#)

**Panel 2: Confirm merge**

Merge pull request #1 from CEASLIBRARY/readme-edits

First Pull Request

**Confirm merge** Cancel

Notifications  
Unsubscribe  
You're receiving notifications because you were assigned.

1 participant

**Panel 3: Pull request successfully merged and closed**

CEASLIBRARY self-assigned this 3 days ago

CEASLIBRARY merged commit c35d084 into master 37 seconds ago [Revert](#)

**Pull request successfully merged and closed**  
You're all set—the `readme-edits` branch can be safely deleted.

[Delete branch](#)

**Panel 4: Merge history**

CEASLIBRARY merged commit c35d084 into master 4 minutes ago [Revert](#)

CEASLIBRARY deleted the `readme-edits` branch 22 seconds ago [Restore branch](#)



# UC LOCAL GitHub

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

**GitHub** Enterprise

Sign in via LDAP

Username

Username (6 + 2)

Password

Sign in

# LET'S COLLABORATE

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

The screenshot displays the GitHub interface for the repository **edjahkn/LIBRARY-WORKSHOP**. The interface is divided into several sections:

- Top Bar:** Includes the GitHub logo, the repository name **LIBRARY-WORKSHOP**, and navigation links for **Pull requests**, **Issues**, and **Gist**.
- Repository Overview:** Shows the repository name **edjahkn/LIBRARY-WORKSHOP**, updated 33 minutes ago. It includes tabs for **Repositories** (1), **Code** (1), **Commits** (1), **Issues**, **Wikis** (3), and **Users**.
- Repository Details:** Displays the repository name **edjahkn / LIBRARY-WORKSHOP**, **Watch** (0), **Star** (0), and **Fork** (0) buttons. It also shows **Code**, **Issues** (0), **Pull requests** (0), **Projects** (0), **Wiki**, **Pulse**, **Graphs**, and **Settings** tabs.
- Repository Statistics:** Shows **4 commits**, **1 branch**, **0 releases**, and **0 contributors**.
- Commit History:** Lists recent commits, including **edjahkn committed on GitHub Enterprise** and **edjahkn committed on GitHub Enterprise** (latest commit 7a8b75b 14 seconds ago).
- File List:** Shows files **README.md** and **attendees.txt**. The **attendees.txt** file is highlighted with a red circle (4).
- File Editor:** Displays the **attendees.txt** file content, showing 4 lines (3 sloc) and 46 Bytes. The editor includes tabs for **Raw**, **Blame**, and **History**. The **Edit file** button is highlighted with a red circle (5).
- Preview Changes:** Shows the changes made in the file, including the **PRESENT** status. The **Preview changes** button is highlighted with a red circle (6).

# 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!!

