Course- BTech/BCA/B.Sc: (B.Tech)
Course Code- ECSE460L

Year- III (VI Sem)
Date- 25-01-2022

Type- Core/Elective (Elective)
Course Name: DevOps Engineering Practices
Semester- Even/Odd (Even)
Batch- B1-B14

A- Type- Lab Assignment (Week 2, Lab 2)

Objectives:

1. **Create a different branch with git**
2. **Create Pull Request and do code review**
3. **Git revert, status, add, pull, push and commit**
4. **Linux commands**

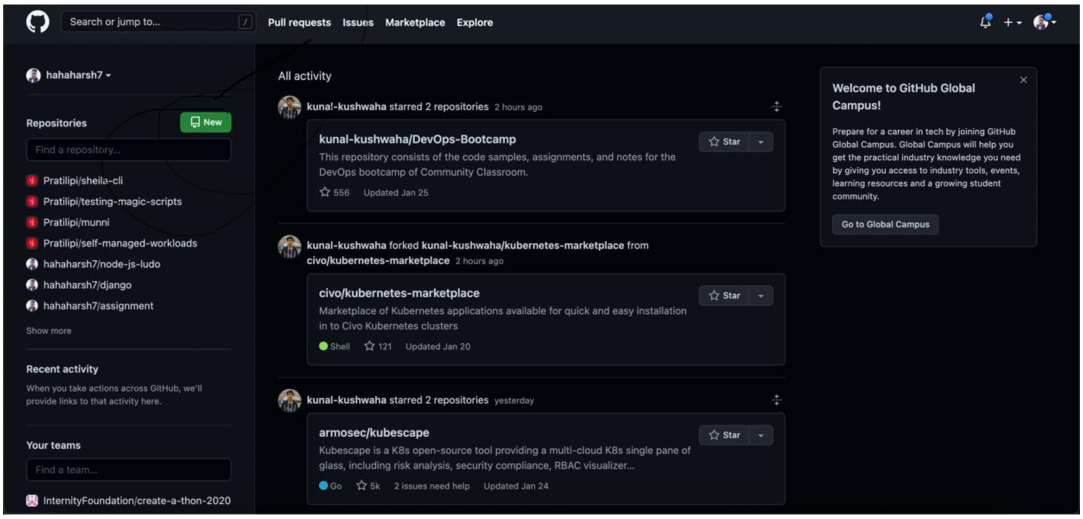
GIT Commands

1) **Git checkout -b “branch name”**
2) **Git status**
3) **Git add .**
4) **Git commit -m “Your commit message”**
5) **Git push origin “your branch”**
6) **Git pull**

Theoritical background (To be discussed)

a. **What are branches in git**
b. **Why use branches**
c. **How to maintain a clean repo**

1. **Create a branch from github GUI**
   - **Go to https://github.com/<your username> and initialize a new repository by clicking on new**



When you take actions across GitHub, we'll provide links to that activity here.

kunal-kushwaha starred 2 repositories 2 hours ago

kunal-kushwaha/DevOps-Bootcamp
This repository consists of the code samples, assignments, and notes for the DevOps bootcamp of Community Classroom.
☆ 556 Updated Jan 25

kunal-kushwaha forked kunal-kushwaha/kubernetes-marketplace from civo/kubernetes-marketplace 2 hours ago

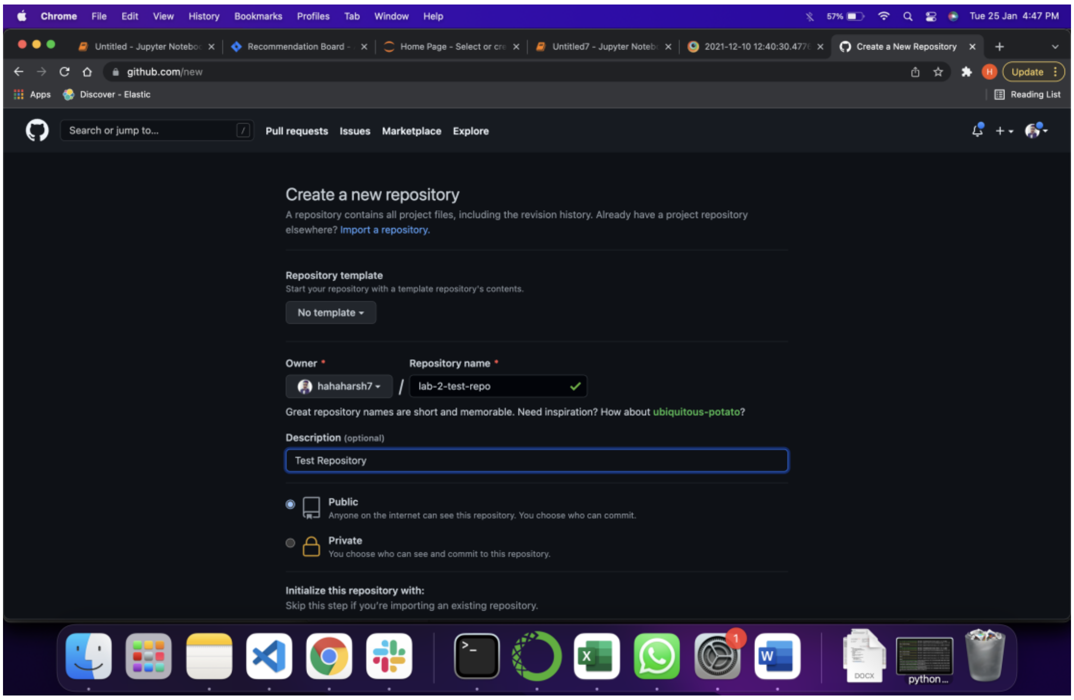
civo/kubernetes-marketplace
Marketplace of Kubernetes applications available for quick and easy installation in to Civo Kubernetes clusters
● Shell ☆ 121 Updated Jan 20

kunal-kushwaha starred 2 repositories yesterday

armosec/kubescape
Kubescape is a K8s open-source tool providing a multi-cloud K8s single pane of glass, including risk analysis, security compliance, RBAC visualizer...
● Go ☆ 5k 2 issues need help Updated Jan 24

Welcome to GitHub Global Campus!
Prepare for a career in tech by joining GitHub Global Campus. Global Campus will help you get the practical industry knowledge you need by giving you access to industry tools, events, learning resources and a growing student community.

2. **Give a name to your repository and add readme, and license files (MIT license) and create the repo**



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

Repository template

Start your repository with a template repository's contents.

No template

Owner * hahaharsh7 / Repository name * lab-2-test-repo ✓

Great repository names are short and memorable. Need inspiration? How about ubiquitous-potato?

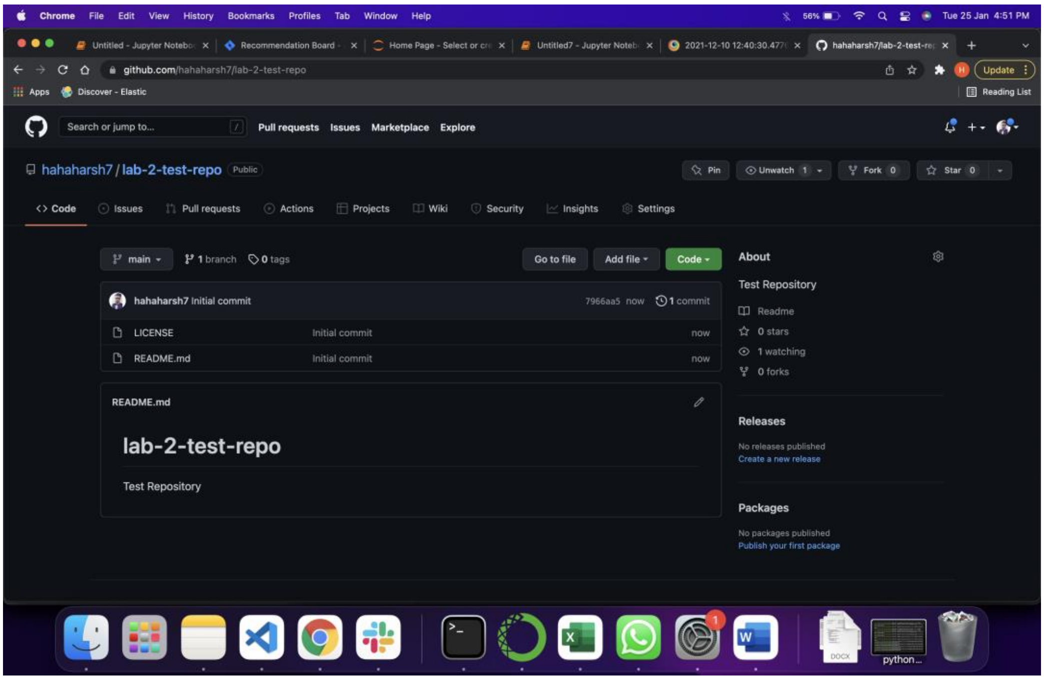
Description (optional): Test Repository

● Public
Anyone on the internet can see this repository. You choose who can commit.

○ Private
You choose who can see and commit to this repository.

Initialize this repository with:
Skip this step if you're importing an existing repository.

3. **Your screen should look like this –**



hahaharsh7 / lab-2-test-repo Public

main · 1 branch · 0 tags

hahaharsh7 Initial commit · 7966aa5 now · 1 commit

LICENSE	Initial commit	now
README.md	Initial commit	now

README.md

lab-2-test-repo

Test Repository

About

Test Repository

Readme
0 stars
1 watching
0 forks

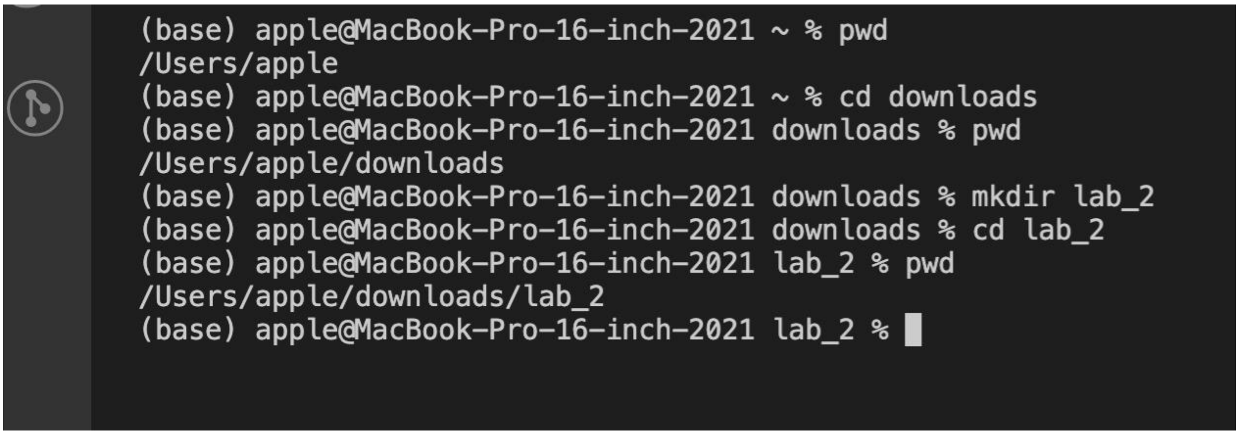
Releases

No releases published
Create a new release

Packages

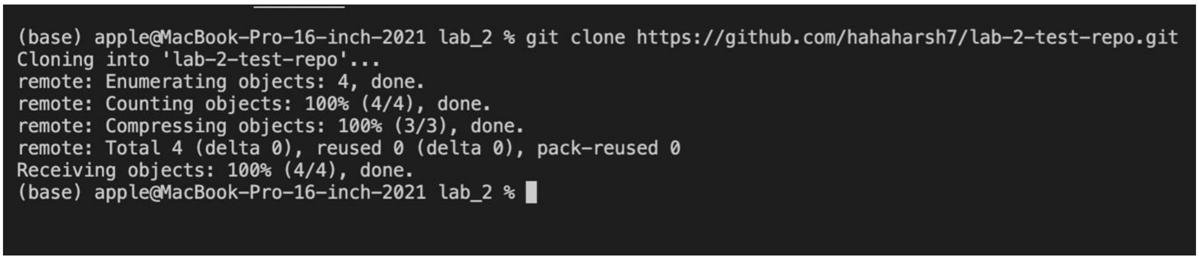
No packages published
Publish your first package

4. **Click on code and copy the Https link**
5. **Open you terminal, preferably in VScode terminal so we can track our file and test the following commands**
   a. **Pwd – Gives you your current location**
   b. **Cd – Enters a folder**
   c. **Cd .. – Exits a folder**
   d. **Mkdir - Makes a directory in the specified location**
   e. **Touch <filename> - creates a file in a directory**



```
(base) apple@MacBook-Pro-16-inch-2021 ~ % pwd
/Users/apple
(base) apple@MacBook-Pro-16-inch-2021 ~ % cd downloads
(base) apple@MacBook-Pro-16-inch-2021 downloads % pwd
/Users/apple/downloads
(base) apple@MacBook-Pro-16-inch-2021 downloads % mkdir lab_2
(base) apple@MacBook-Pro-16-inch-2021 downloads % cd lab_2
(base) apple@MacBook-Pro-16-inch-2021 lab_2 % pwd
/Users/apple/downloads/lab_2
(base) apple@MacBook-Pro-16-inch-2021 lab_2 % █
```

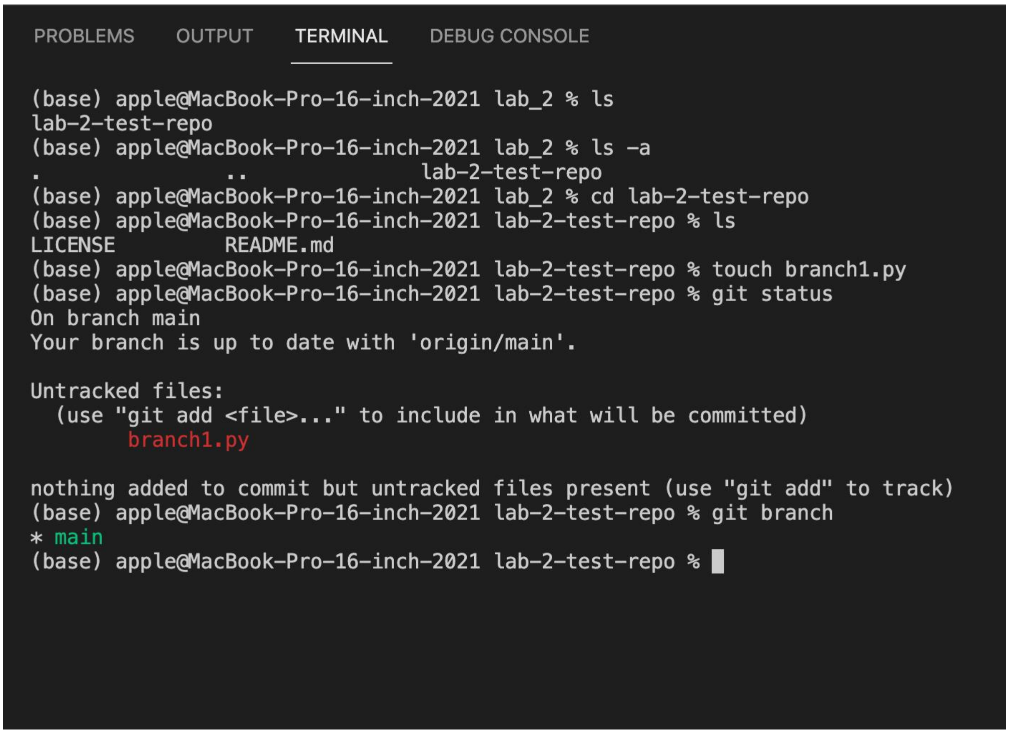
6. Cloning the freshly created repository in the directory you just made
    a. Type Git clone <url> in your terminal to obtain this in your terminal



```
(base) apple@MacBook-Pro-16-inch-2021 lab_2 % git clone https://github.com/hahaharsh7/lab-2-test-repo.git
Cloning into 'lab-2-test-repo'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), done.
(base) apple@MacBook-Pro-16-inch-2021 lab_2 % █
```

    b. Open that location in your device to check the contents which were cloned, you should find LICENSE and Readme files

7. Open that folder in your IDE and lets start writing some scripts for our repo so that we can observe some events
    a. After you open your IDE, open your terminal
    b. Type ls – to check your folder contents
    c. Ls -a (here a means all) to see git files
    d. Git Status to check if our files are upto date and which branch are we on, it also tells us if we added any files



```
(base) apple@MacBook-Pro-16-inch-2021 lab_2 % ls
lab-2-test-repo
(base) apple@MacBook-Pro-16-inch-2021 lab_2 % ls -a
.               ..              lab-2-test-repo
(base) apple@MacBook-Pro-16-inch-2021 lab_2 % cd lab-2-test-repo
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % ls
LICENSE         README.md
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % touch branch1.py
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git status
On branch main
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        branch1.py

nothing added to commit but untracked files present (use "git add" to track)
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git branch
* main
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % █
```

e. Type git branch to check which branch are you on

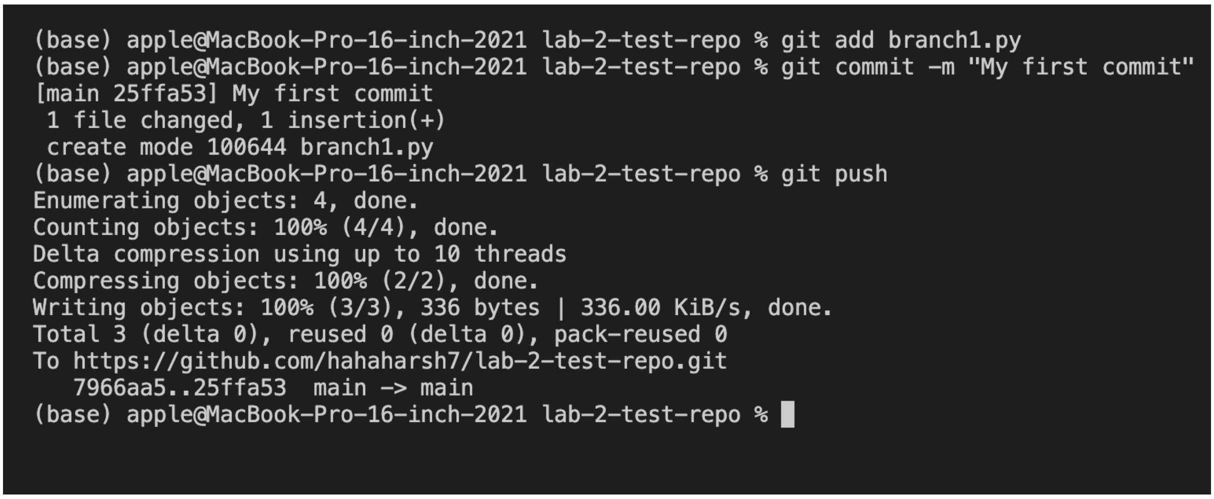
f. Add a branch1.py file in the directory so we can add it to our repo

8. After you have added the python file , type the following on your terminal

   a. Git add <your .py file> → The git add command is **used to add file contents to the Index (Staging Area)**. This command updates the current content of the working tree to the staging area. It also prepares the staged content for the next commit.

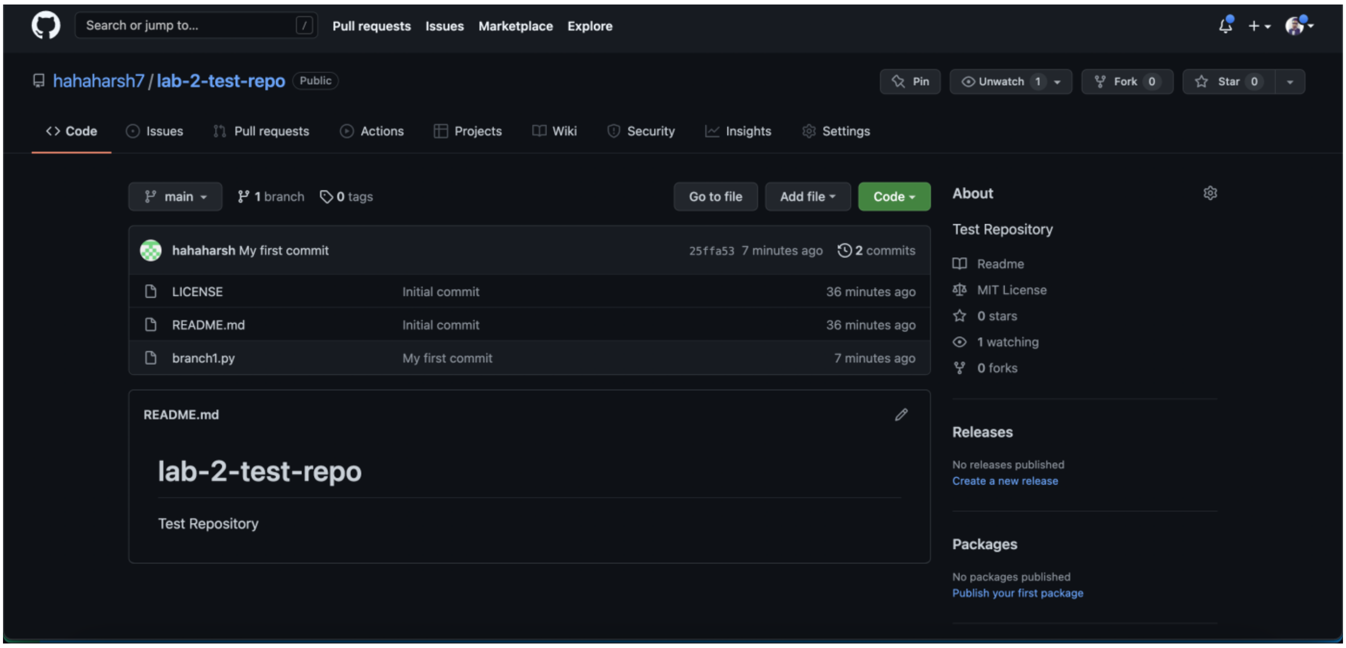
   b. Git commit -m “your commit message” → A commit is **a snapshot of your repo at a specific point in time**. ... Think of your working directory as your “in progress” working area; here, created or modified files are not yet reflected in your Git repo. Changes made to files in your working directly only exist locally on your machine.

   c. Git push → The git push command is **used to upload local repository content to a remote repository**. Pushing is how you transfer commits from your local repository to a remote repo. It's the counterpart to git fetch , but whereas fetching imports commits to local branches, pushing exports commits to remote branches.



```
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git add branch1.py
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git commit -m "My first commit"
[main 25ffa53] My first commit
 1 file changed, 1 insertion(+)
 create mode 100644 branch1.py
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 10 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 336 bytes | 336.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/hahaharsh7/lab-2-test-repo.git
   7966aa5..25ffa53  main -> main
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % 
```

9. Check your remote repository to see the python file pushed



hahaharsh My first commit 25ffa53 7 minutes ago 2 commits

LICENSE	Initial commit	36 minutes ago
README.md	Initial commit	36 minutes ago
branch1.py	My first commit	7 minutes ago

README.md

lab-2-test-repo

Test Repository

Test Repository

Readme

MIT License

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

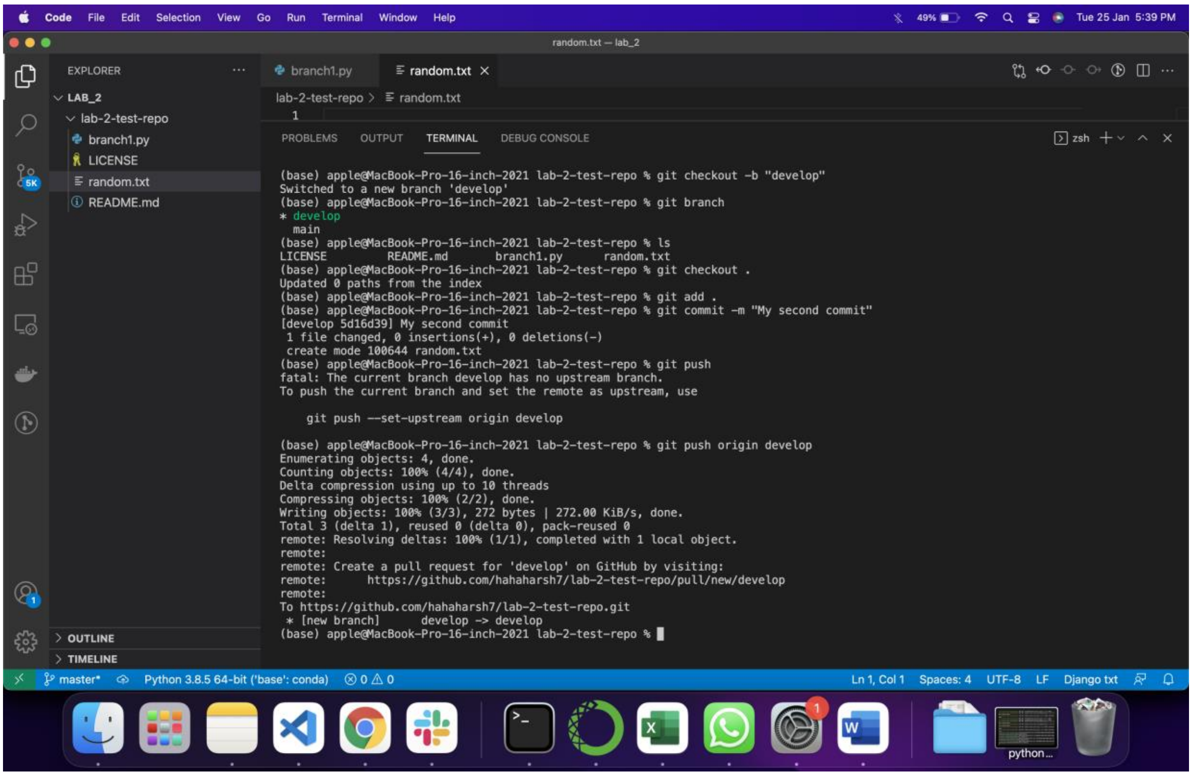
Packages

No packages published

Publish your first package

   a. Click on the commits button to see your commit message and the history of your branch

10. Come back to your terminal to create a new branch. We will create this branch from our command line. This will help us to understand development stages and how pull requests and code reviews work
    a. Git checkout - The git checkout command lets **you navigate between the branches created by git branch** . Checking out a branch updates the files in the working directory to match the version stored in that branch, and it tells Git to record all new commits on that branch.
    b. Git checkout -b "branch name" → Helps us create a new branch and git checkout . updates our branch
    c. Add a text file in this branch and push it to github with – git push origin <your branch name>. with any content in text file

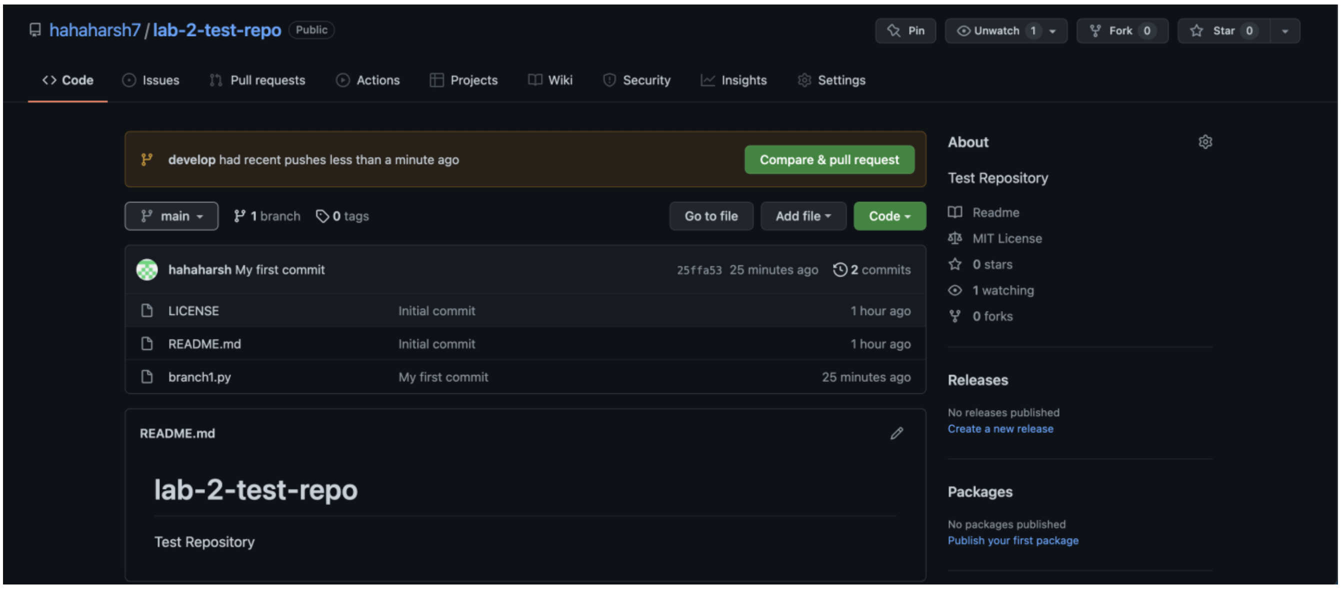


```
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git checkout -b "develop"
Switched to a new branch 'develop'
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git branch
* develop
  main
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % ls
LICENSE         README.md       branch1.py      random.txt
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git checkout .
Updated 0 paths from the index
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git add .
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git commit -m "My second commit"
[develop 5d16d39] My second commit
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 random.txt
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git push
fatal: The current branch develop has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin develop

(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % git push origin develop
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 10 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 272 bytes | 272.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
remote:
remote: Create a pull request for 'develop' on GitHub by visiting:
remote:      https://github.com/hahaharsh7/lab-2-test-repo/pull/new/develop
remote:
To https://github.com/hahaharsh7/lab-2-test-repo.git
 * [new branch]      develop -> develop
(base) apple@MacBook-Pro-16-inch-2021 lab-2-test-repo % █
```

11. Creating a pull request
    a. After you pushed your changes to your new branch , you will see a compare pull request option on top of your repository
    b. Alternatively, you can go to pull request button on top and proceed from there



develop had recent pushes less than a minute ago

hahaharsh My first commit 25ffa53 25 minutes ago 2 commits

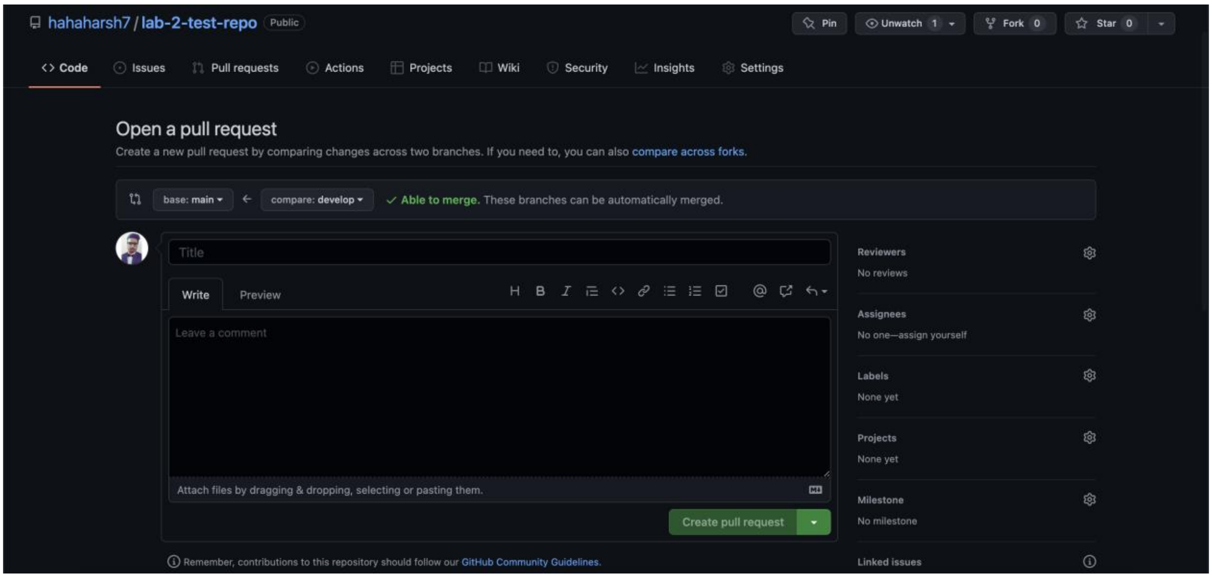
LICENSE Initial commit 1 hour ago
README.md Initial commit 1 hour ago
branch1.py My first commit 25 minutes ago

README.md

lab-2-test-repo

Test Repository

    c. You will now see this page, where you can update the title of your pull requests and add a description there



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: main ← compare: develop ✓ Able to merge. These branches can be automatically merged.

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

Remember, contributions to this repository should follow our GitHub Community Guidelines.

Reviewers: No reviews

Assignees: No one—assign yourself

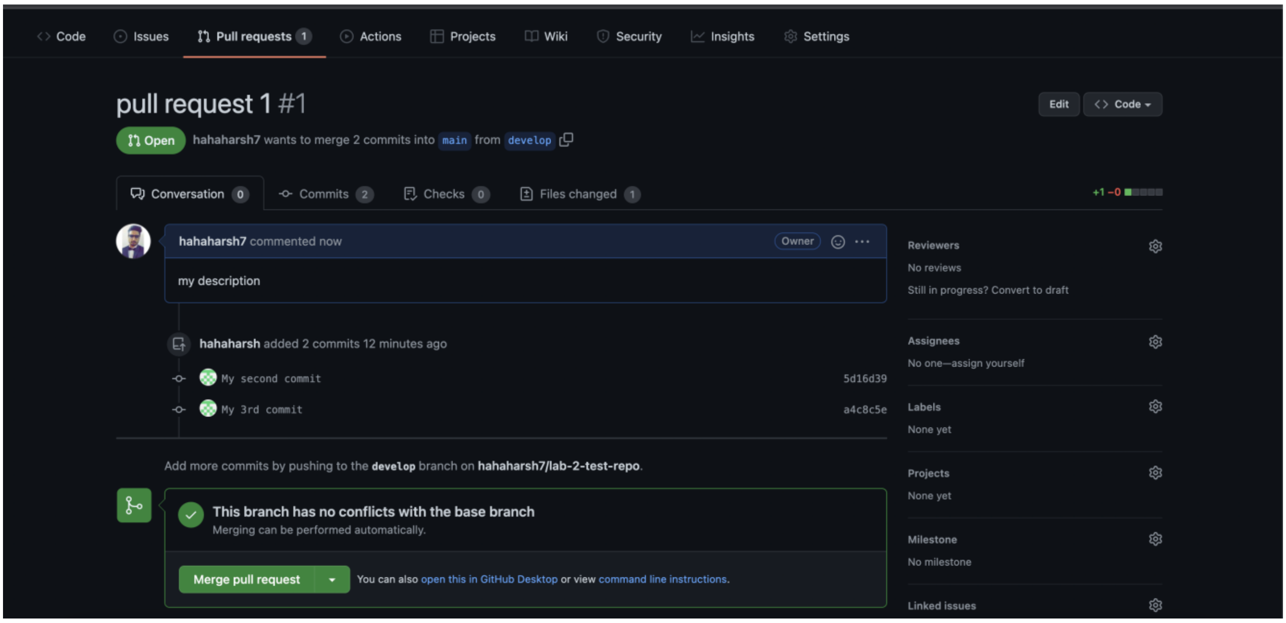
Labels: None yet

Projects: None yet

Milestone: No milestone

Linked issues

d. Give a name and title to your PR and click create pull request, that will direct you to the screen below.



pull request 1 #1

Open hahaharsh7 wants to merge 2 commits into main from develop

hahaharsh7 commented now

my description

hahaharsh added 2 commits 12 minutes ago

My second commit 5d16d39

My 3rd commit a4c8c5e

Add more commits by pushing to the develop branch on hahaharsh7/lab-2-test-repo.

This branch has no conflicts with the base branch

Merging can be performed automatically.

You can also open this in GitHub Desktop or view command line instructions.

Reviewers: No reviews

Still in progress? Convert to draft

Assignees: No one—assign yourself

Labels: None yet

Projects: None yet

Milestone: No milestone

Linked issues

e. Click on the files button to review your changes and merge your branch with the main branch