

DevOps Lab 1

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1. Exploring Git Commands through Collaborative Coding – Basic Git commands.

a. Create a Repository

- Setting Up Git Repository named “Master”

```
C:\Users\Rohit\SNU\sem7\devops\lab1>git init
Initialized empty Git repository in C:/Users/Rohit/SNU/sem7/devops/lab1/.git/
```

Initialised a remote git repository.

b. Add and Commit Changes

- Create a new text file named ReadMe.txt using any text editor.

```
C:\Users\Rohit\SNU\sem7\devops\lab1>echo "Capstone Project" >> README.md

C:\Users\Rohit\SNU\sem7\devops\lab1>dir
Volume in drive C is Windows-SSD
Volume Serial Number is 26F8-0E61

Directory of C:\Users\Rohit\SNU\sem7\devops\lab1

12-07-2024  16:09    <DIR>          .
12-07-2024  16:08    <DIR>          ..
12-07-2024  16:09                21 README.md
               1 File(s)                21 bytes
               2 Dir(s) 100,485,926,912 bytes free

C:\Users\Rohit\SNU\sem7\devops\lab1>code .

C:\Users\Rohit\SNU\sem7\devops\lab1>git branch

C:\Users\Rohit\SNU\sem7\devops\lab1>git add .

C:\Users\Rohit\SNU\sem7\devops\lab1>git commit -m "Created Readme File"
[master (root-commit) 320c5c7] Created Readme File
1 file changed, 1 insertion(+)
create mode 100644 README.md
```

c. Exploring history

- Modify/add content to the textfile.

d. Branching and merging

- Create a new branch named "Updated_ReadMe" and commit the changes in the branch.
- Merge the changes from the Updated_ReadMe branch into the Master branch.

```
C:\Users\Rohit\SNU\sem7\devops\lab1>git checkout -b dev
Switched to a new branch 'dev'

C:\Users\Rohit\SNU\sem7\devops\lab1>git branch
* dev
  master

C:\Users\Rohit\SNU\sem7\devops\lab1>echo "This is an AI based full stack project" >> README.md

C:\Users\Rohit\SNU\sem7\devops\lab1>git add .

C:\Users\Rohit\SNU\sem7\devops\lab1>git commit -m "Updated Readme File"
[dev a1e0548] Updated Readme File
1 file changed, 1 insertion(+)
```

```
C:\Users\Rohit\SNU\sem7\devops\lab1>git merge dev
Updating 320c5c7..a1e0548
Fast-forward
 README.md | 1 +
1 file changed, 1 insertion(+)
```

Created a new branch called “dev” and merged it to the master branch locally.

e. Collaborating with Remote Repositories

- Link your local repository to the remote repository

```
C:\Users\Rohit\SNU\sem7\devops\lab1>git remote set-url origin https://github.com/rohitarrunachalam/devops-lab.git
```

Set up local repo with remote repo

f. Push Changes

- Push your local commits to the remote repository

```
C:\Users\Rohit\SNU\sem7\devops\lab1>git push -u origin main
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (6/6), 501 bytes | 125.00 KiB/s, done.
Total 6 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To https://github.com/rohitarrunachalam/devops-lab.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
```

Pushed the local changes to Github Repo

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2. Implement GitHub Operations using Git.

a. Cloning a Repository

- Clone the repository of your project from github

```
C:\Users\Rohit\SNU\sem7\devops>git clone https://github.com/rohitarrunachalam/devops-lab.git
Cloning into 'devops-lab'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 6 (delta 1), reused 6 (delta 1), pack-reused 0
Receiving objects: 100% (6/6), done.
Resolving deltas: 100% (1/1), done.
```

Cloned the repo from Github.

b. Making Changes and Creating a Branch

- Navigate into the cloned repository, do the necessary changes and check the status of the repository

```
C:\Users\Rohit\SNU\sem7\devops\devops-lab>git checkout -b sub
Switched to a new branch 'sub'

C:\Users\Rohit\SNU\sem7\devops\devops-lab>code .

C:\Users\Rohit\SNU\sem7\devops\devops-lab>git status
On branch sub
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    main.py

nothing added to commit but untracked files present (use "git add" to track)
```

Created a new main.py file in a new branch named "sub"

c. Pushing Changes to GitHub

- Add Repository URL in a variable
- Push the local branch to the repository

```
C:\Users\Rohit\SNU\sem7\devops\devops-lab>git add .

C:\Users\Rohit\SNU\sem7\devops\devops-lab>git commit -m "Added main.py"
[sub a69ed46] Added main.py
1 file changed, 1 insertion(+)
create mode 100644 main.py

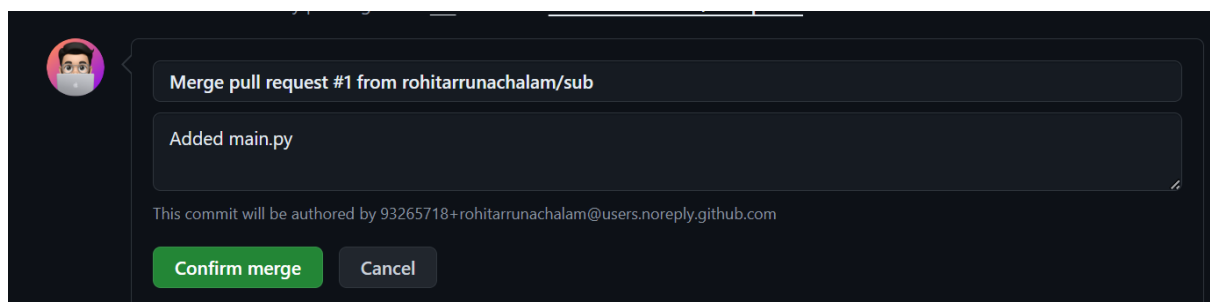
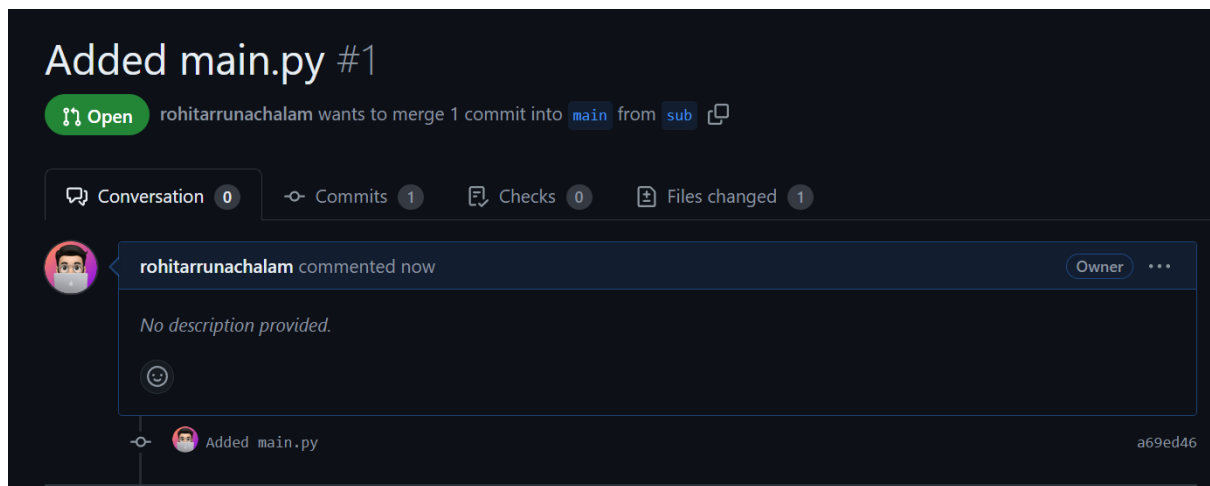
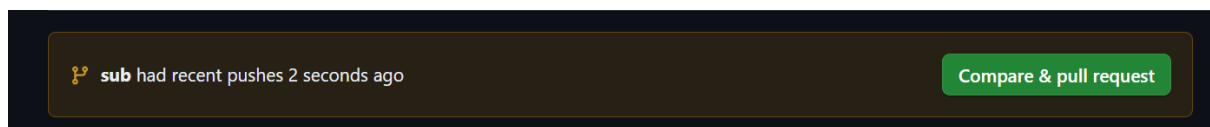
C:\Users\Rohit\SNU\sem7\devops\devops-lab>git remote -v
origin https://github.com/rohitarrunachalam/devops-lab.git (fetch)
origin https://github.com/rohitarrunachalam/devops-lab.git (push)

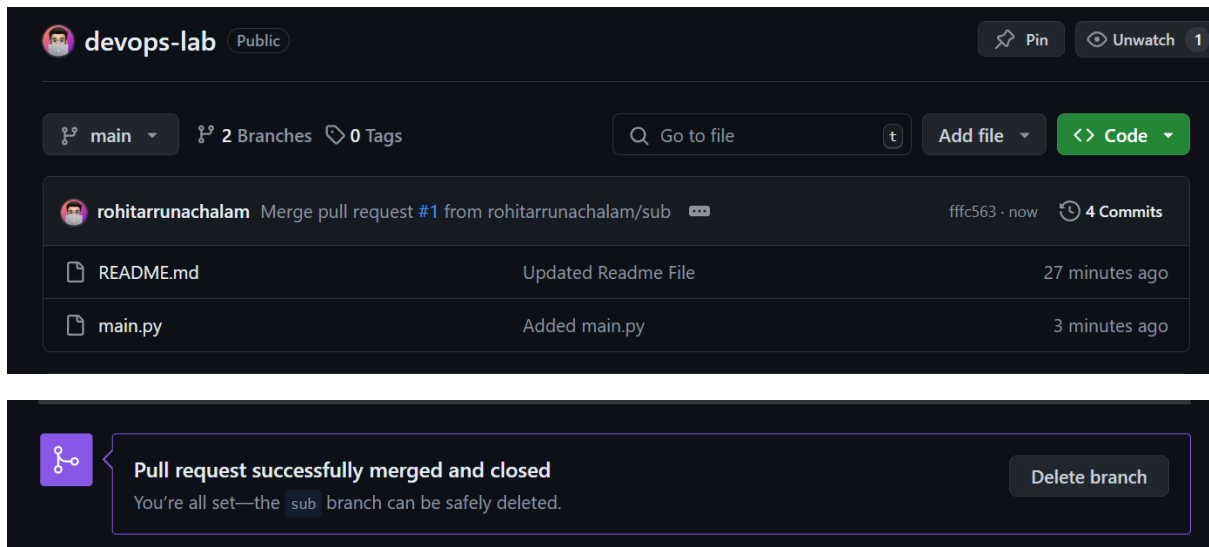
C:\Users\Rohit\SNU\sem7\devops\devops-lab>git push origin sub
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 290 bytes | 145.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'sub' on GitHub by visiting:
remote: https://github.com/rohitarrunachalam/devops-lab/pull/new/sub
remote:
To https://github.com/rohitarrunachalam/devops-lab.git
* [new branch] sub -> sub
```

Now push the new branch to Github.

d. Collaborating through Pull Requests

- Create a pull request on GitHub
- Choose the base branch and compare it with the branch
- Review the changes and merge the pull request.
- Add a title and description for the pull request
- Assign reviewers
- Reviewers approve the pull request, merge it into the base branch.





Opened a pull request and merged it successfully with the main branch.

e. Syncing Changes

- After the pull request is merged, update your local repository

```
C:\Users\Rohit\SNU\sem7\devops\devops-lab>git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

C:\Users\Rohit\SNU\sem7\devops\devops-lab>git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

C:\Users\Rohit\SNU\sem7\devops\devops-lab>git pull origin main
remote: Enumerating objects: 1, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (1/1), 899 bytes | 179.00 KiB/s, done.
From https://github.com/rohitarrunachalam/devops-lab
* branch          main          -> FETCH_HEAD
   ale0548..fffc563 main        -> origin/main
Updating ale0548..fffc563
Fast-forward
 main.py | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 main.py
```

Used git pull to update my local repository with the remote repo changes.