

Version Control using Git

Working with Remote Repositories and Collaboration

Objective:

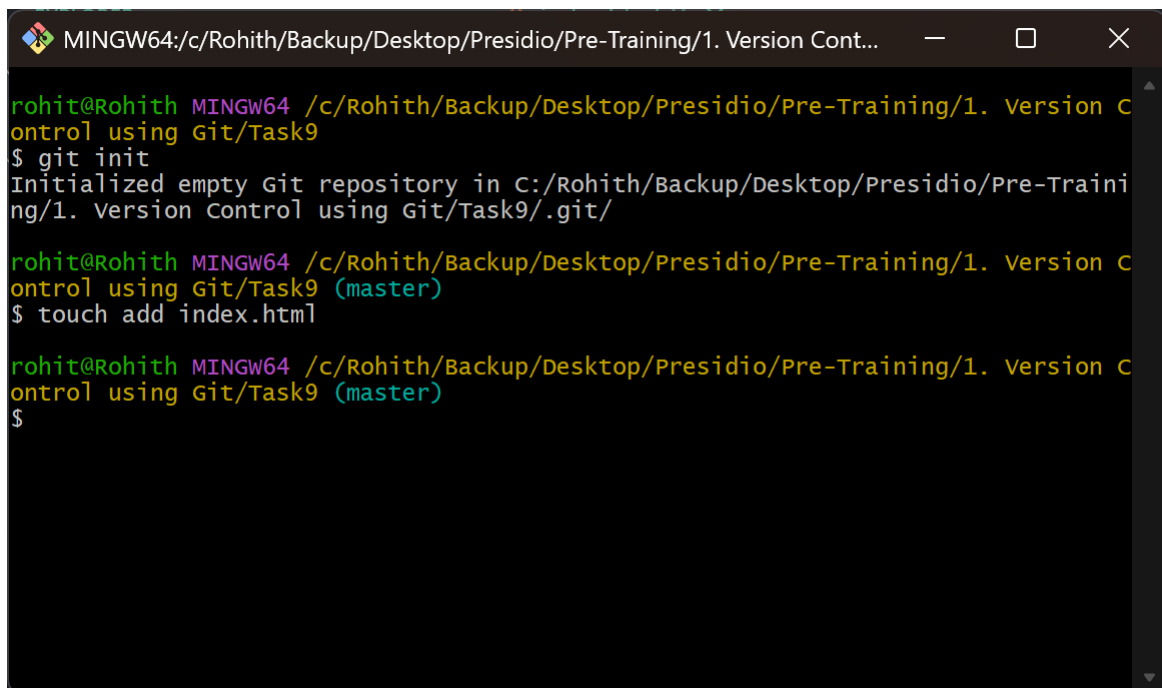
- Simulate a collaborative workflow with remote repositories.

Requirements:

- Create a local repository and push it to a remote service (e.g., GitHub or GitLab).
- Create a feature branch, make commits, and push the branch to the remote.
- Open a Pull Request (or Merge Request) and perform a code review process.
- Merge the feature branch into the main branch on the remote and then pull the changes locally.

Setting Up a Local Repository and Pushing to a Remote

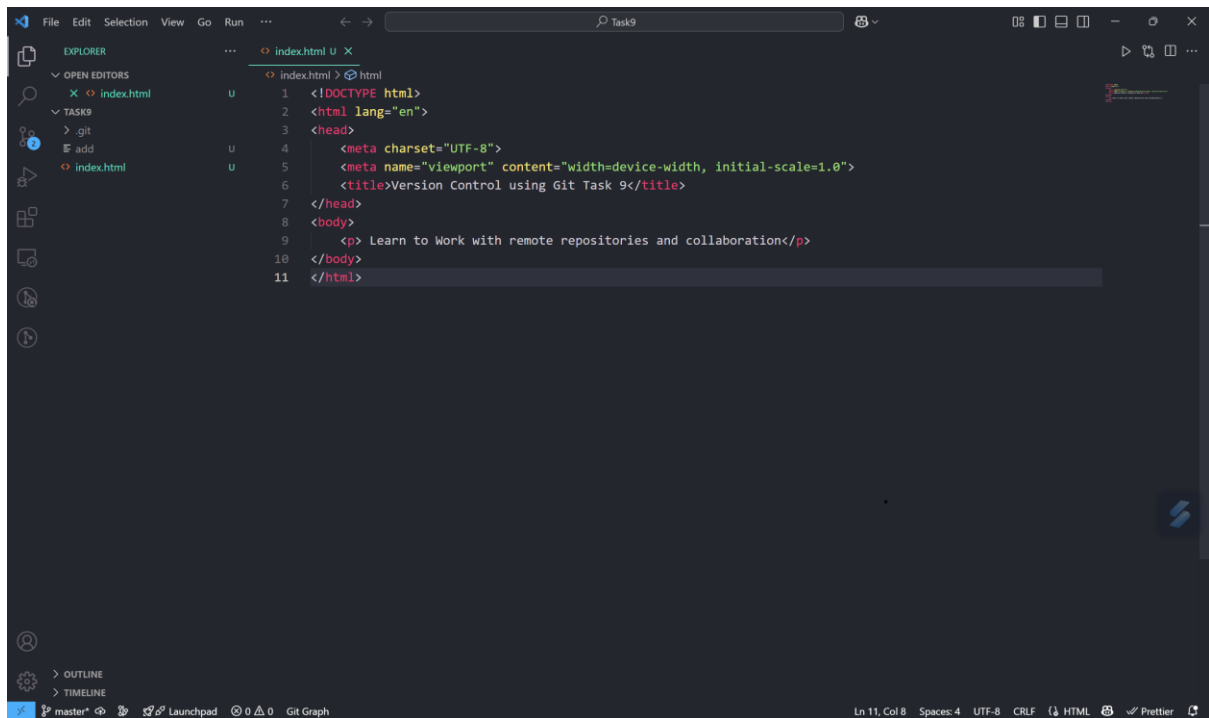
Step 1: Initialize a Local Repository

A screenshot of a Windows terminal window with a dark background. The title bar shows the path 'MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...'. The terminal text shows a user named 'rohit@Rohith' in a 'MINGW64' environment at the specified path. They run 'git init', which outputs 'Initialized empty Git repository in C:/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Control using Git/Task9/.git/'. Then they run 'touch add index.html'. Finally, they run 'git status', which outputs 'On branch master' and shows the new file 'add index.html' as 'new file: add index.html'.

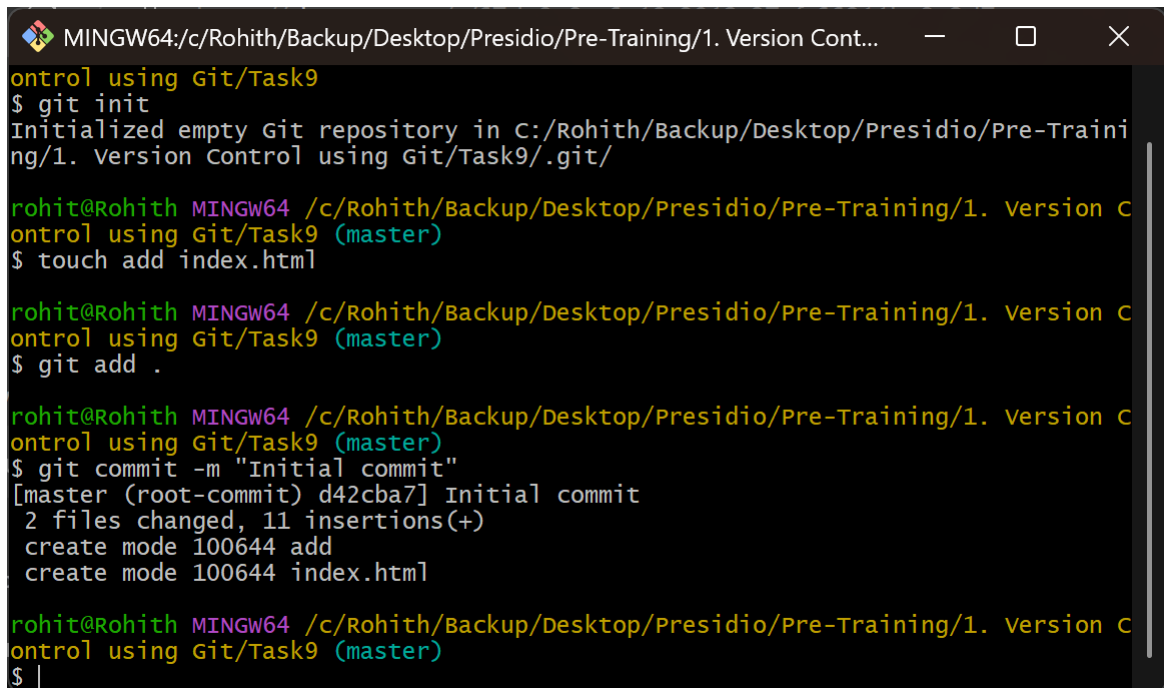
```
rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9
$ git init
Initialized empty Git repository in C:/Rohith/Backup/Desktop/Presidio/Pre-Traini
ng/1. Version Control using Git/Task9/.git/

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ touch add index.html

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$
```



```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Version Control using Git Task 9</title>
7 </head>
8 <body>
9   <p> Learn to Work with remote repositories and collaboration</p>
10 </body>
11 </html>
```



```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
ontrol using Git/Task9
$ git init
Initialized empty Git repository in C:/Rohith/Backup/Desktop/Presidio/Pre-Traini
ng/1. Version Control using Git/Task9/.git/

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ touch add index.html

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ git add .

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ git commit -m "Initial commit"
[master (root-commit) d42cba7] Initial commit
 2 files changed, 11 insertions(+)
 create mode 100644 add
 create mode 100644 index.html

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ |
```

Step 2: Connect to a Remote Repository

First, create a new repository on GitHub or GitLab (e.g., my-project). Then, link your local repo to the remote:

```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ git remote add origin https://github.com/rohith18111407/version-control-using-
Git.git

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ git remote -v
origin https://github.com/rohith18111407/version-control-using-Git.git (fetch)
origin https://github.com/rohith18111407/version-control-using-Git.git (push)

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ git push -u origin main
error: src refspec main does not match any
error: failed to push some refs to 'https://github.com/rohith18111407/version-co
ntrol-using-Git.git'

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (master)
$ git branch -M main

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
```

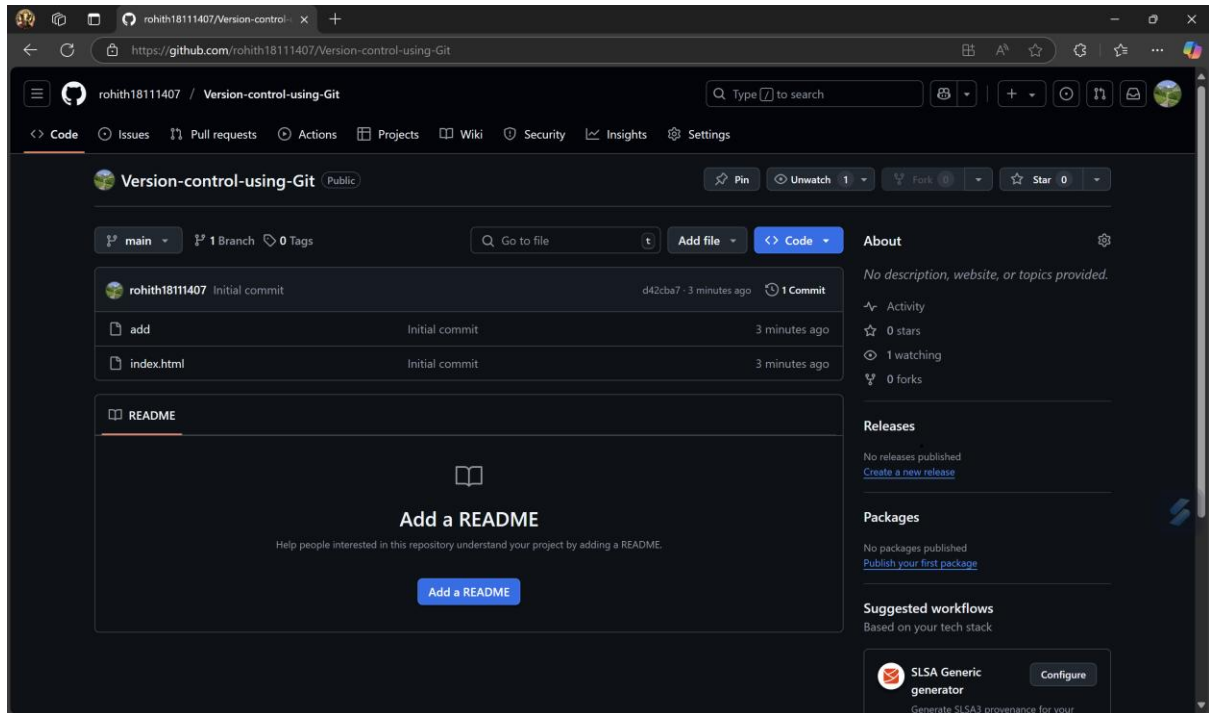
Step 3: Push to Remote Repository

```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ git branch
* main

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ git push -u origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 16 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 456 bytes | 456.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/rohith18111407/version-control-using-Git.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ |
```

This uploads your local files to the remote repository.

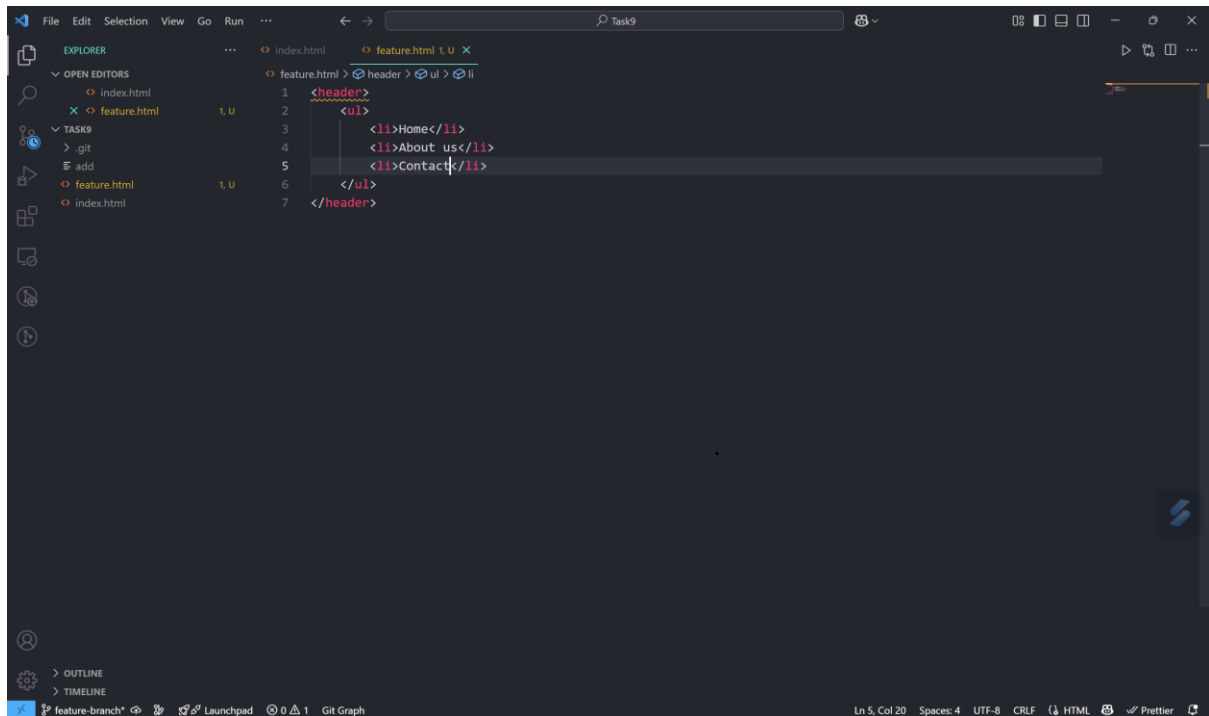


Step 4: Create and Switch to a Feature Branch

```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
rohith@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ git checkout -b feature-branch
Switched to a new branch 'feature-branch'

rohith@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (feature-branch)
$ touch feature.html

rohith@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (feature-branch)
$
```



```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (feature-branch)
$ git add feature.html

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (feature-branch)
$ git commit -m "Add new feature"
[feature-branch 4eea2c7] Add new feature
1 file changed, 7 insertions(+)
create mode 100644 feature.html

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (feature-branch)
$ git push -u origin feature-branch
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 16 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 364 bytes | 364.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature-branch' on GitHub by visiting:
remote: https://github.com/rohith18111407/Version-control-using-Git/pull/ne
```

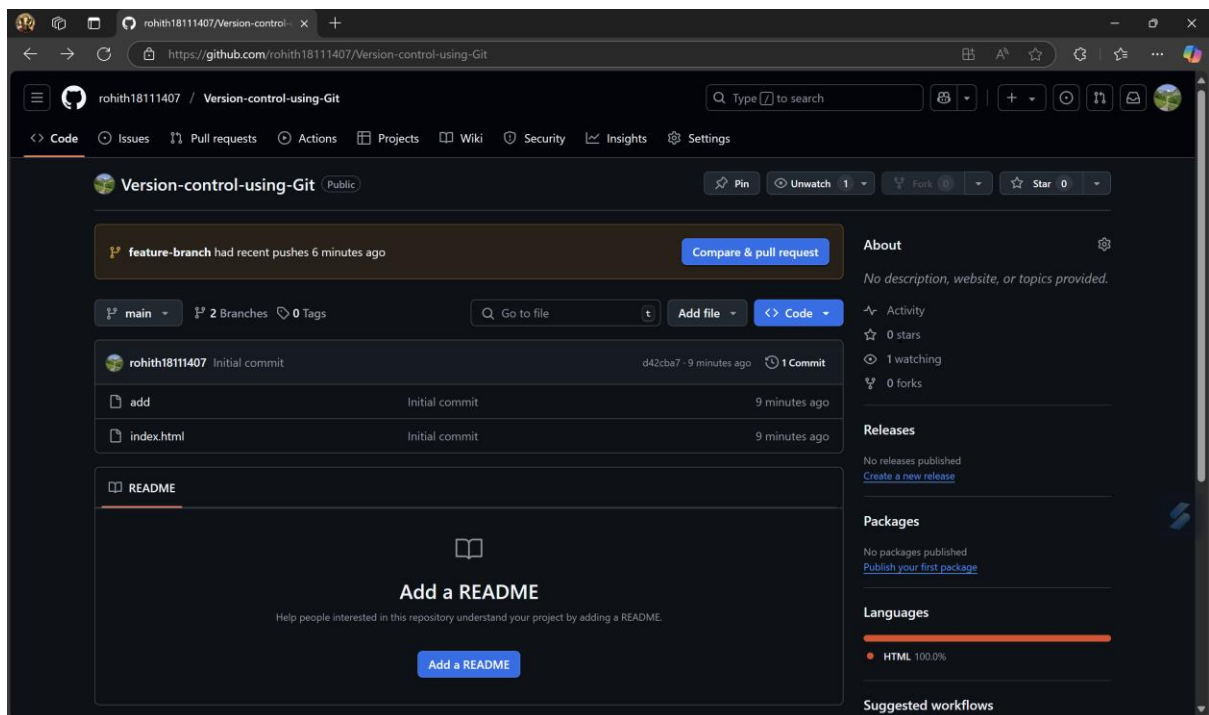
Step 5: Push the Feature Branch to Remote

```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
1 file changed, 7 insertions(+)
create mode 100644 feature.html

rohit@rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (feature-branch)
$ git push -u origin feature-branch
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 16 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 364 bytes | 364.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature-branch' on GitHub by visiting:
remote:   https://github.com/rohith1811407/Version-control-using-Git/pull/new/feature-branch
remote:
To https://github.com/rohith1811407/Version-control-using-Git.git
 * [new branch]      feature-branch -> feature-branch
branch 'feature-branch' set up to track 'origin/feature-branch'.

rohit@rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (feature-branch)
$
```

Click New Pull Request and select feature-branch as the source and main as the target.



Add a description and submit the PR.

The screenshot shows the GitHub interface for creating a pull request. The browser address bar displays the URL: `https://github.com/rohith18111407/Version-control-using-Git/compare/feature-branch?expand=1`. The page title is "Open a pull request". Below the title, a message states: "Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#). [Learn more about diff comparisons here](#)."

The form includes a dropdown menu for the base branch, currently set to "base: main", and a dropdown for the compare branch, currently set to "compare: feature-branch". A status indicator shows "Able to merge. These branches can be automatically merged."

The "Add a title" section has a text input field containing "Header has been added".

The "Add a description" section has a text area with the following content:

```
# Compare and Merge Pull Request

Header has been added as a feature

- Home
- About us
- Contact us
```

Below the text area, there are checkboxes for "Markdown is supported" and "Paste, drop, or click to add files". A blue button labeled "Create pull request" is at the bottom right.

On the right side, there are sections for "Reviewers" (No reviews), "Assignees" (No one—assign yourself), "Labels" (None yet), "Projects" (None yet), "Milestone" (No milestone), and "Development" (Use [closing keywords](#) in the description to automatically close issues).

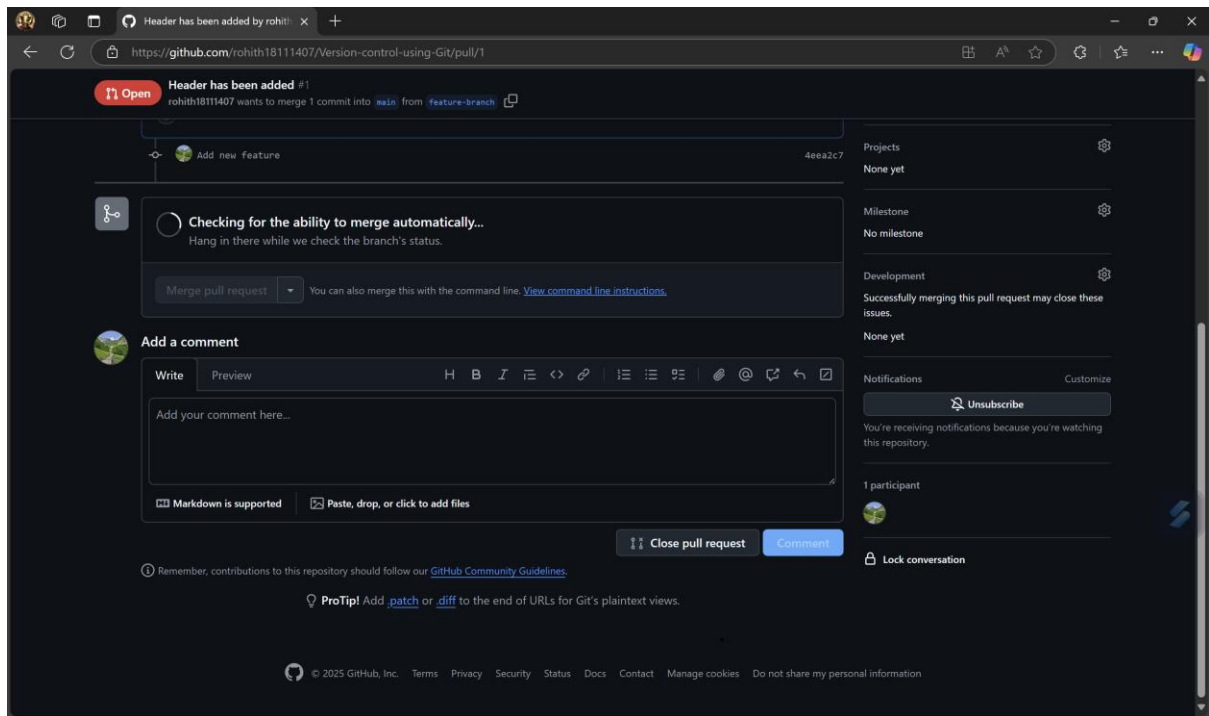
The screenshot shows the GitHub interface for a pull request. The browser address bar displays the URL: `https://github.com/rohith18111407/Version-control-using-Git/pull/1`. The page title is "Header has been added #1".

The pull request is open, and the owner is "rohith18111407". The pull request description is the same as the one in the previous screenshot.

Below the description, there is a section for "Add new feature" with a commit hash of "4eea2c7".

At the bottom, there is a section for "Checking for the ability to merge automatically..." with a message: "Hang in there while we check the branch's status." Below this, there is a dropdown menu for "Merge pull request" and a link to "View command line instructions".

On the right side, there are sections for "Reviewers" (No reviews, Still in progress? [Convert to draft](#)), "Assignees" (No one—assign yourself), "Labels" (None yet), "Projects" (None yet), "Milestone" (No milestone), and "Development" (Successfully merging this pull request may close these issues).



Reviewing and Merging the PR

Step 7: Code Review and Approval

- Team members review the PR, suggest changes, and approve it.
- If changes are needed, modify the code locally and push updates:

`git add .`

`git commit -m "Apply code review changes"`

`git push origin feature-branch`

- Once approved, merge the PR.

Step 8: Merge into Main

After approval, merge the PR using GitHub/GitLab UI or via CLI:


```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (feature-branch)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ git merge feature-branch
Updating d42cba7..4eea2c7
Fast-forward
 feature.html | 7 ++++++
 1 file changed, 7 insertions(+)
 create mode 100644 feature.html

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ |
```

Header has been added by rohit: x +

https://github.com/rohit18111407/Version-control-using-Git/pull/1

<> Code Issues Pull requests 1 Actions Projects Wiki Security Insights Settings

Header has been added #1

Open rohit18111407 wants to merge 1 commit into main from feature-branch

Conversation 0 Commits 1 Checks 0 Files changed 1 +7 -0

rohit18111407 commented 12 minutes ago Owner

Compare and Merge Pull Request

Header has been added as a feature

- Home
- About us
- Contact us

Add new feature 4eea2c7

No conflicts with base branch
Merging can be performed automatically.

Merge pull request You can also merge this with the command line. [View command line instructions.](#)

Add a comment

Reviewers
No reviews
Still in progress? [Convert to draft](#)

Assignees
No one—[assign yourself](#)

Labels
None yet

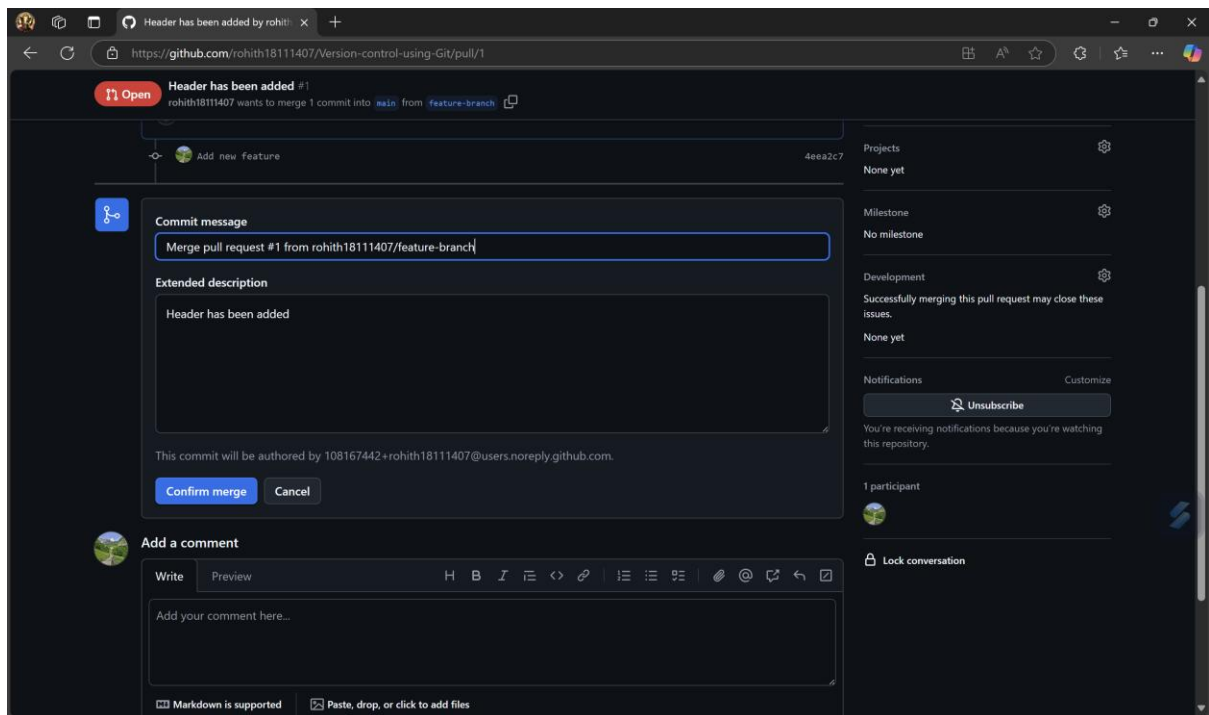
Projects
None yet

Milestone
No milestone

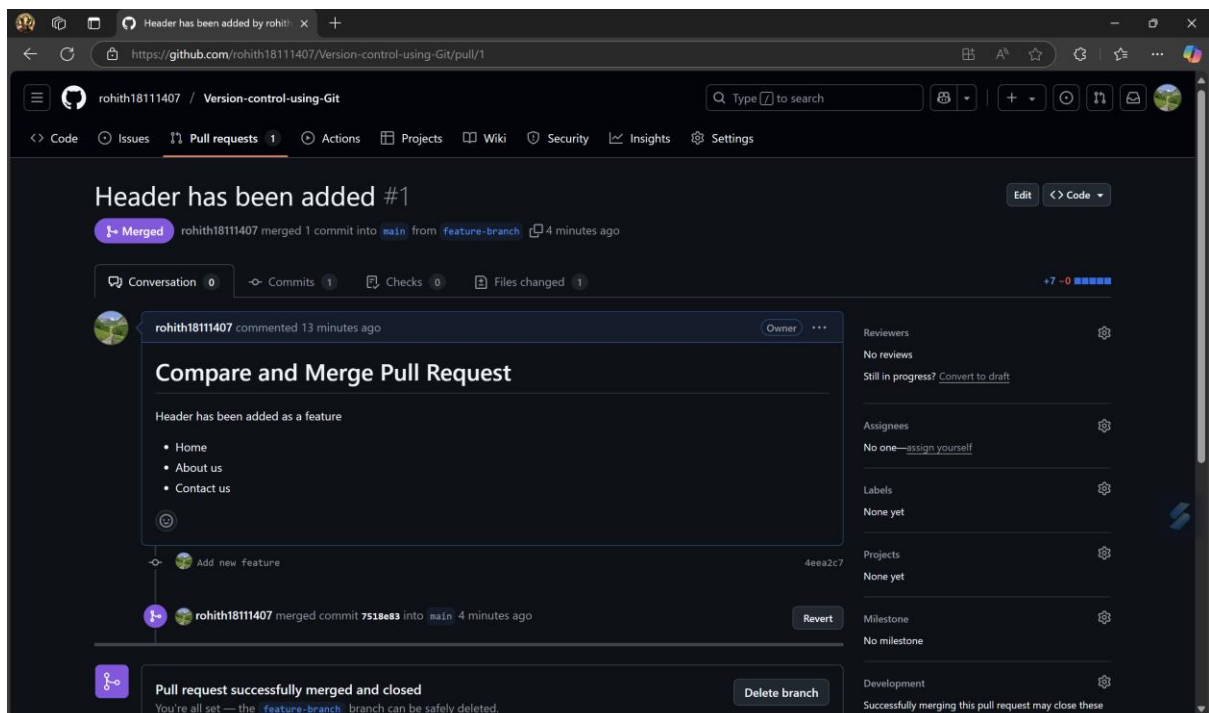
Development
Successfully merging this pull request may close these issues.

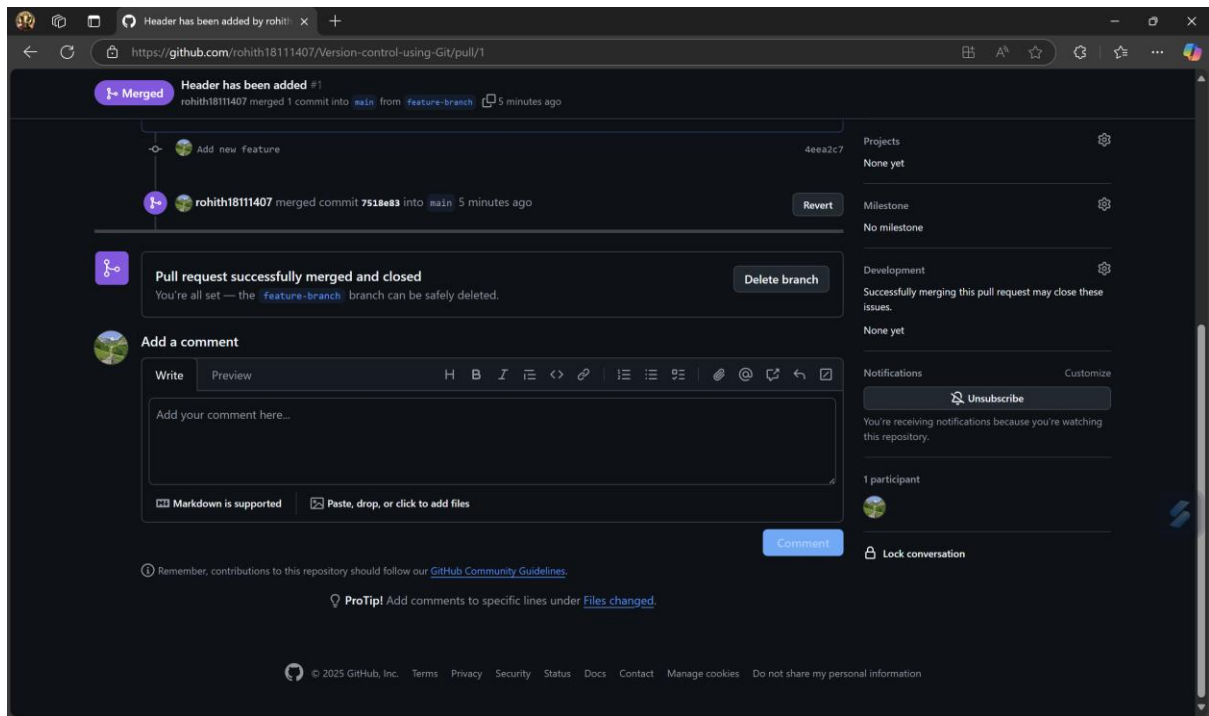
None yet

Click Merge pull request



Click confirm





5. Syncing the Local Repository with Remote

Step 9: Pull the Latest Changes Locally

After merging, update your local repository:

```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ git pull origin main
From https://github.com/rohith1811407/version-control-using-git
* branch          main          -> FETCH_HEAD
Already up to date.

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$
```

If working with multiple branches, delete the merged branch:

```
MINGW64:/c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version Cont...
rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ git branch -d feature-branch
Deleted branch feature-branch (was 4eea2c7).

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ git push origin --delete feature-branch
To https://github.com/rohit1811407/Version-control-using-Git.git
- [deleted]          feature-branch

rohit@Rohith MINGW64 /c/Rohith/Backup/Desktop/Presidio/Pre-Training/1. Version C
ontrol using Git/Task9 (main)
$ |
```

