

Lesson 04 Demo 02

Merging Branches in Git

Objective: To demonstrate how to merge branches in Git to integrate changes from one branch into another while maintaining a cohesive codebase and version history

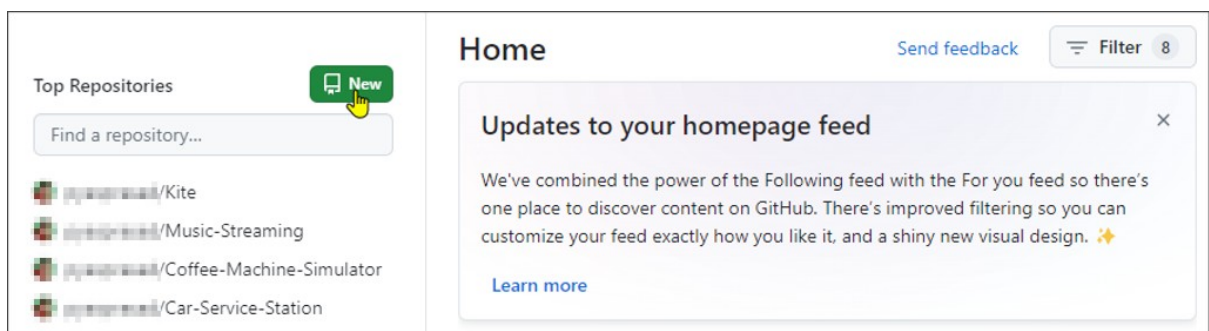
Tools required: Git and GitHub

Steps to be followed:

1. Create a new GitHub repository
2. Clone the GitHub repository
3. List all the branches in your repository
4. Create and switch to the new branch
5. Create a file and commit the changes
6. Check the status of the new branch
7. Switch back to the main branch
8. Merge the branches

Step 1: Create a new GitHub repository

1.1 Click on the **New** button to create a new repository




1.2 Enter a repository name and click on the **Create repository** button

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk ().*

Owner *

 /

Repository name *

✔ Your new repository will be created as lesson-end-project.
The repository name can only contain ASCII letters, digits, and the characters ., -, and _.


Great repository names are short and memorable. Need inspiration? How about **fuzzy-giggle** ?


Description (optional)

Choose a license

License: None ▾

A license tells others what they can and can't do with your code. [Learn more about licenses.](#)

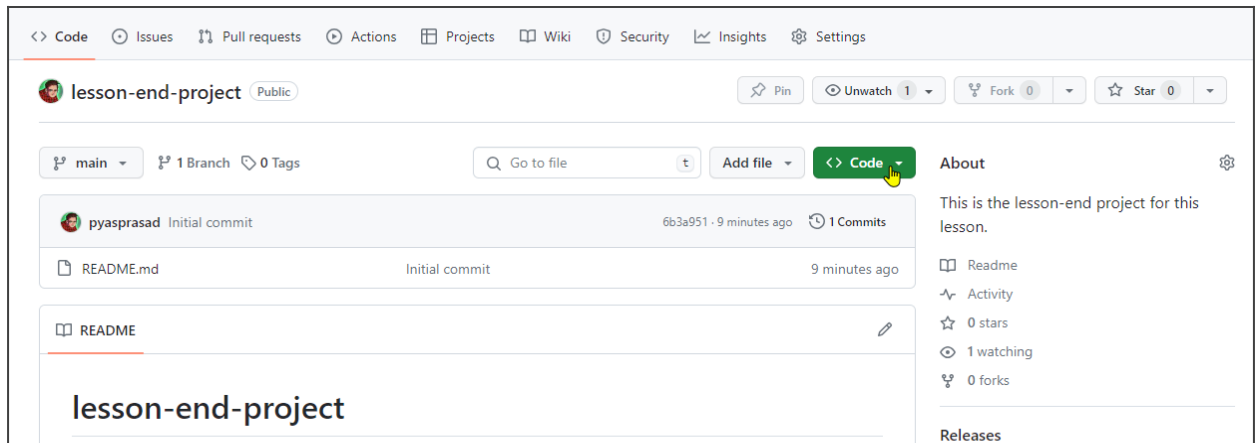
This will set  main as the default branch. Change the default name in your [settings](#).

 You are creating a public repository in your personal account.

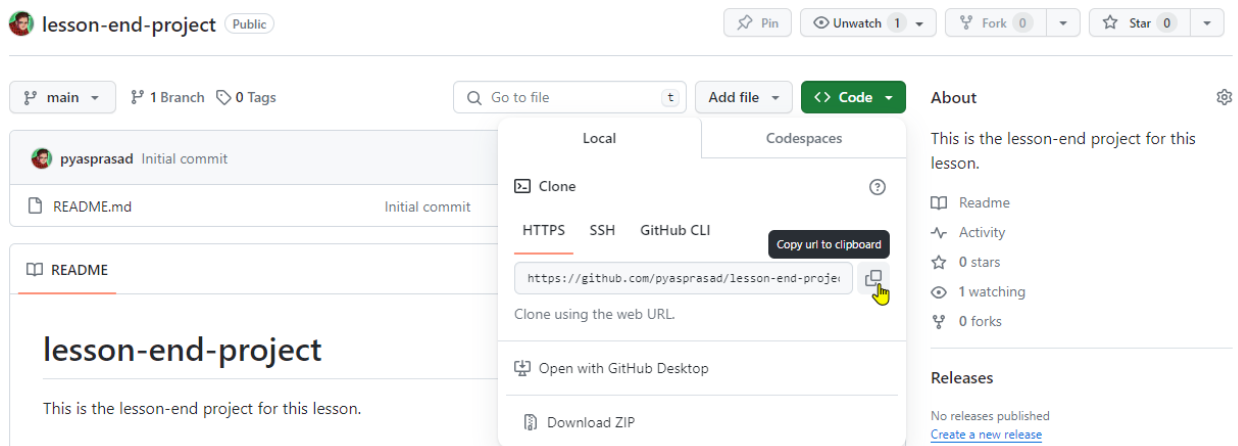
Create repository

Step 2: Clone the GitHub repository

2.1 Open the created repository in GitHub and click on the **Code** button



2.2 Click on the copy icon to copy the **HTTPS URL** as shown below:



2.3 Open the terminal tab on your lab and use the following command to clone the repository:

git clone <URL>

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu$ git clone https://github.com/pyasprasad/lesson-end-project.git
Cloning into 'lesson-end-project'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 6 (delta 0), reused 3 (delta 0), pack-reused 0
Receiving objects: 100% (6/6), done.
priyanshurajsim@ip-172-31-28-201:~/Priyanshu$
```

Note: Replace the URL with the copied URL from the directory

Step 3: List all the branches in your repository

- 3.1 Navigate to the cloned repository using the following command:
cd lesson-end-project

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu$ cd lesson-end-project
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

- 3.2 Run the following command to display all repository branches:
git branch

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git branch
* main
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

Step 4: Create and switch to the new branch

- 4.1 Run the following command to create a new branch in your repository:
git branch dev

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git branch dev
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

- 4.2 Use the following command to switch to the newly created branch:
git checkout dev

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git checkout dev
Switched to branch 'dev'
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

Step 5: Create a file and commit the changes

5.1 Execute the given command to create a file:

vi index.html

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ vi index.html
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

5.2 Add the given code snippet into the **index.html** file:

```
<html>
  <body>
    <p> This is a Test HTML file. </p>
  </body>
</html>
```

```
<html>
  <body>
    <p> This is a Test HTML file. </p>
  </body>
</html>
```

```
~
~
```

Note: Press **i** to edit the files. Press the **Esc** button to exit insert mode and enter **:wq** to save the file

5.3

Use the following command to add the file to the **dev** branch:

git add .

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git commit -m "Added Index.html"
[dev 803f971] Added Index.html
1 file changed, 6 insertions(+)
create mode 100644 index.html
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

5.4 Use the following command to commit the changes:

git commit -m "Added Index.html"

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git commit -m "Added Index.html"
[dev 803f971] Added Index.html
1 file changed, 6 insertions(+)
create mode 100644 index.html
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

Step 6: Check the status of the new branch

6.1 Check the status of the new branch using the following command:

git status

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git status
On branch dev
nothing to commit, working tree clean
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

Step 7: Switch back to the main branch

7.1 Use the following command to switch back to the main branch:

git checkout main

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

Step 8: Merge the branches

8.1 Use the following command to merge the **dev** branch to the main branch:

git merge dev

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git merge dev
Updating 1e3e4e7..803f971
Fast-forward
 index.html | 6 ++++++
 1 file changed, 6 insertions(+)
 create mode 100644 index.html
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

8.2 Push the changes to the remote repository using the following command:

git push origin main

```
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$ git push origin main
Username for 'https://github.com': priyanshurajsim
Password for 'https://priyanshurajsim@github.com':
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 346 bytes | 346.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/priyanshurajsim/lesson-end-project.git
 1e3e4e7..803f971  main -> main
priyanshurajsim@ip-172-31-28-201:~/Priyanshu/lesson-end-project$
```

By following these steps, you have successfully demonstrated how to merge branches in Git to integrate changes from one branch into another while ensuring a cohesive codebase and version history.