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# Lesson 02 Demo 06

# 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

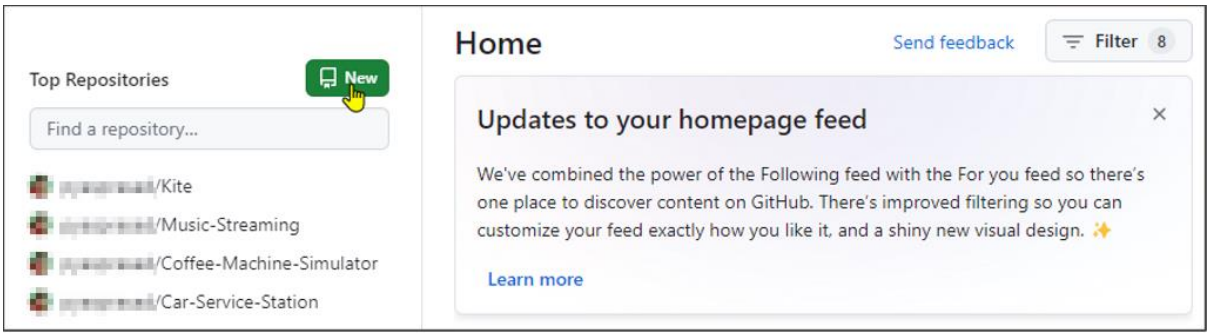
**Prerequisites:** You must have Git installed to proceed with this demo.

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



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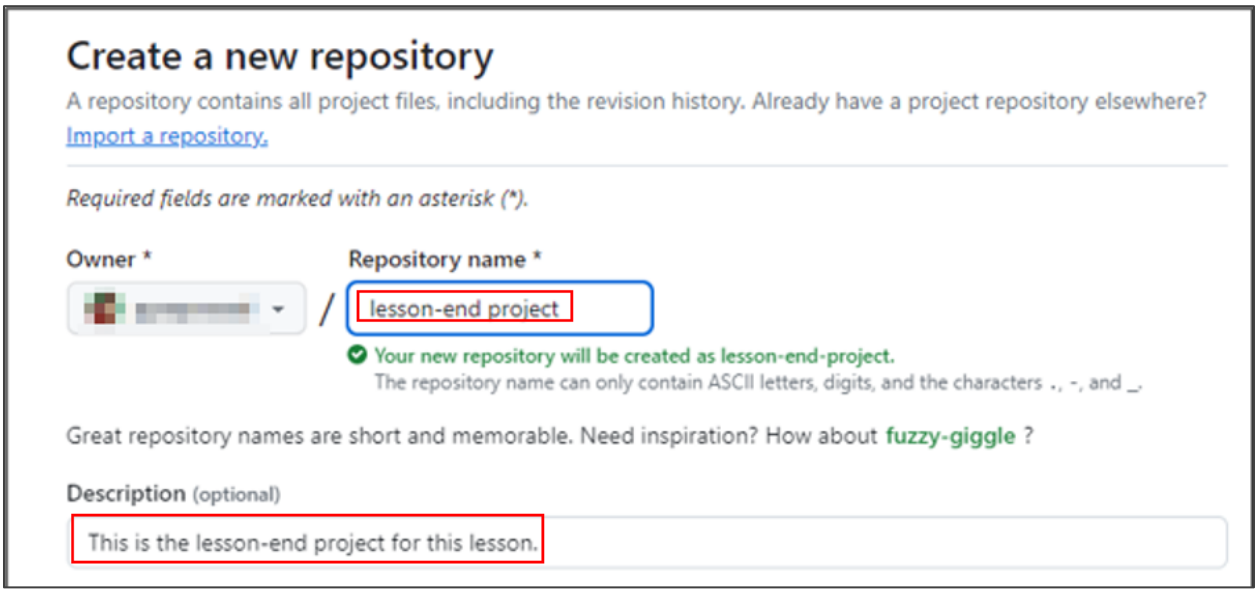
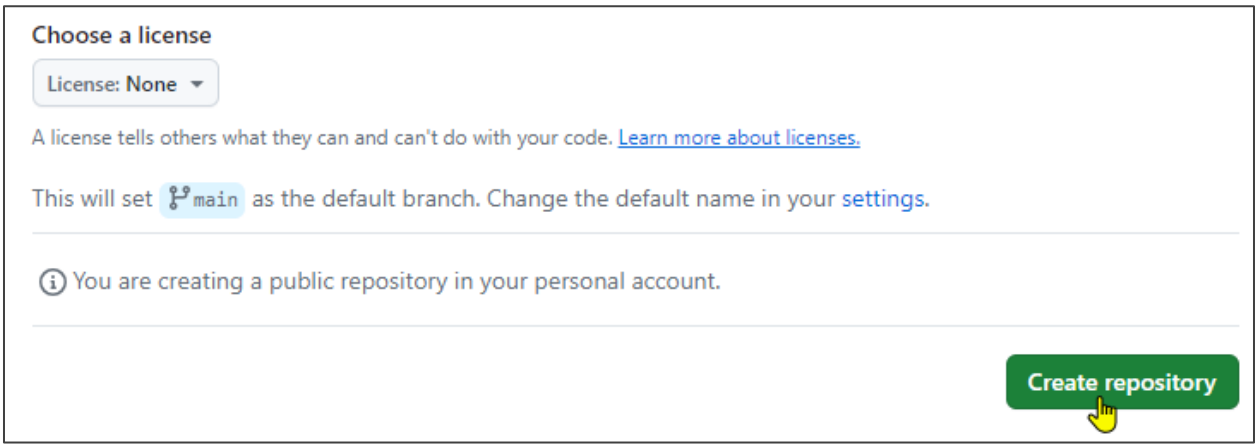
1.2 Enter a repository name and click on the **Create repository** button



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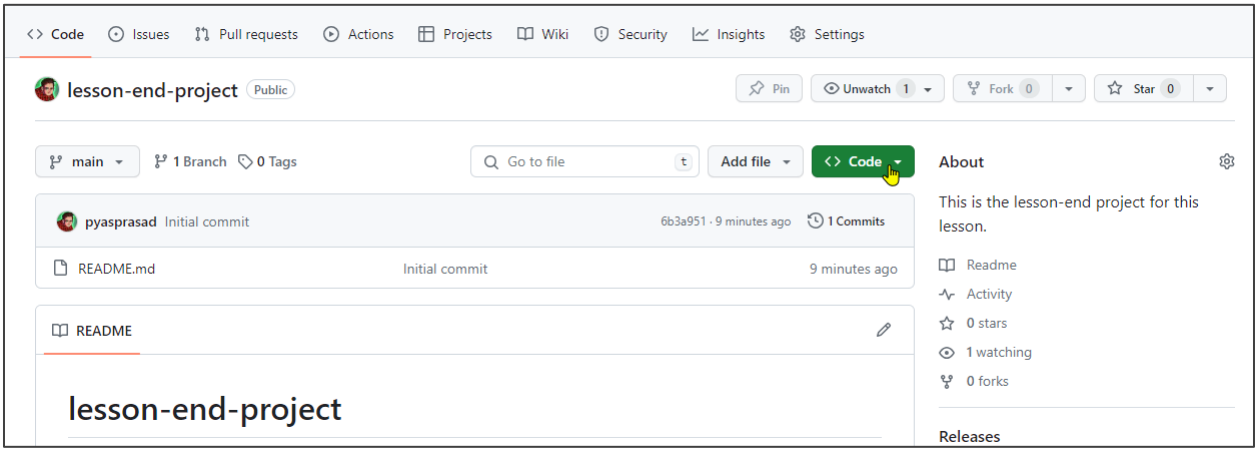
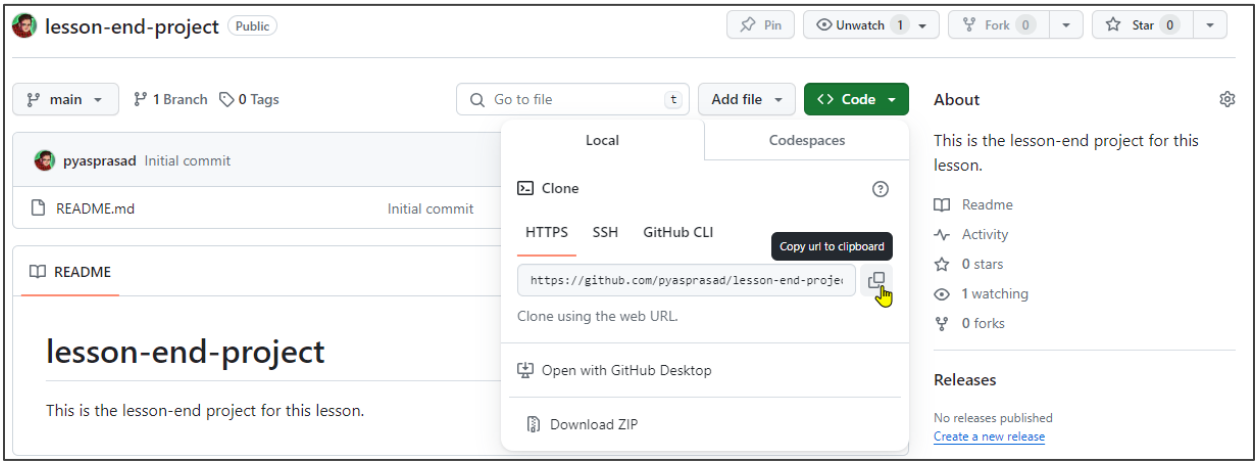
## Step 2: Clone the GitHub repository

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

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## 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$
```

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## 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$
```

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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$
```

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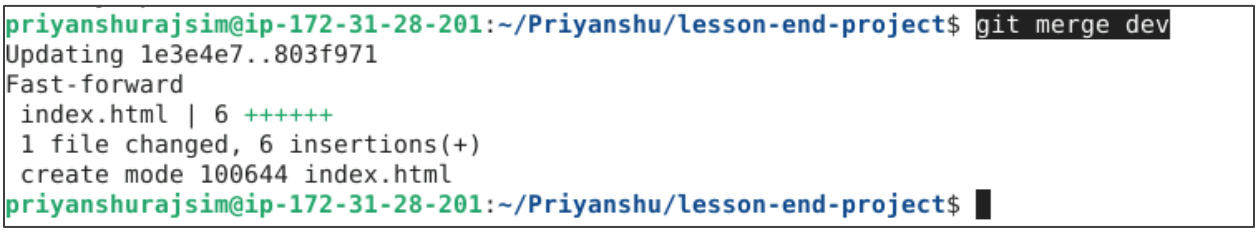
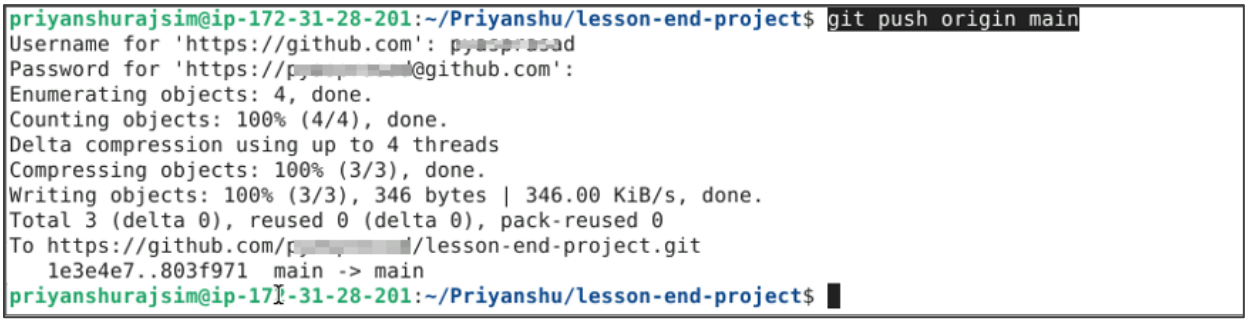
## Step 8: Merge the branches

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




8.2 Push the changes to the remote repository using the following command:
**git push origin main**




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