Name: Sakib Tamboli
Roll No:131 Div: B

Practical No 1

Aim : To Perform Basic GIT Commands.

1. **git -v**
   Displays the installed Git version

```
C:\Users\USER>git -v
git version 2.47.1.windows.2
```

2. **git config**
   Sets configuration options for Git

```
D:\Sakib_T_Devops_Practicals>git config --global user.name "Sakib"

D:\Sakib_T_Devops_Practicals>git config --global user.email "sakibmca2024_131@ncrdsims.edu.in"

D:\Sakib_T_Devops_Practicals>git config --global user.name
Sakib

D:\Sakib_T_Devops_Practicals>git config --global user.email
sakibmca2024_131@ncrdsims.edu.in
```

3. **git init**
   Initializes a new Git repository

```
PS D:\Sakib_T_Devops_Practicals> git init
Initialized empty Git repository in D:/Sakib_T_Devops_Practicals/.git/
PS D:\Sakib_T_Devops_Practicals>
```

4. **Git clone**
   retrieve an entire repository from a hosted location via URL

```
PS D:\Sakib_T_Devops_Practicals> git clone https://github.com/sakibtheseeker/todo-react
Cloning into 'todo-react'...
remote: Enumerating objects: 60, done.
remote: Counting objects: 100% (60/60), done.
remote: Compressing objects: 100% (42/42), done.
remote: Total 60 (delta 15), reused 45 (delta 8), pack-reused 0 (from 0)
Receiving objects: 100% (60/60), 473.33 KiB | 5.32 MiB/s, done.
Resolving deltas: 100% (15/15), done.
```

5. **Git rm**

delete the file from project and stage the removal for commit

```
PS D:\Sakib_T_Devops_Practicals\todo-react> git rm NewTxtfile
rm 'NewTxtfile'
```

6. **Git diff**

```
PS D:\Sakib_T_Devops_Practicals\todo-react> git diff main origin/main
>>
diff --git a/NewTxtfile b/NewTxtfile
new file mode 100644
index 0000000..84f8ce1
--- /dev/null
+++ b/NewTxtfile
@@ -0,0 +1,2 @@
+User Name
+Password
diff --git a/public/index.html b/public/index.html
index 3d72536..aa069f2 100644
--- a/public/index.html
+++ b/public/index.html
@@ -2,81 +2,42 @@
 <html lang="en">
   <head>
     <meta charset="utf-8" />
-    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
     <link rel="icon" href="%PUBLIC_URL%/favicon.ico" />
     <meta name="viewport" content="width=device-width, initial-scale=1" />
PS D:\Sakib_T_Devops_Practicals\todo-react> git diff main origin/main
>> q
diff --git a/NewTxtfile b/NewTxtfile
new file mode 100644
index 0000000..84f8ce1
--- /dev/null
+++ b/NewTxtfile
@@ -0,0 +1,2 @@
+User Name
+Password
diff --git a/public/index.html b/public/index.html
index 3d72536..aa069f2 100644
--- a/public/index.html
+++ b/public/index.html
@@ -2,81 +2,42 @@
```

Name: Sakib Tamboli
Roll No:131 Div: B

7. **Git fetch**

```
PS D:\Sakib_T_Devops_Practicals\todo-react> git fetch
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 4 (delta 3), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (4/4), 1022 bytes | 35.00 KiB/s, done.
From https://github.com/sakibtheseeker/todo-react
   c8c0a2a..0e6c0c2  main       -> origin/main
```

8. **git add index.js**
   Stages changes for the next commit

```
PS D:\Sakib_T_Devops_Practicals> git init
Initialized empty Git repository in D:/Sakib_T_Devops_Practicals/.git/
PS D:\Sakib_T_Devops_Practicals> git add index.js
```

9. **git commit -m “commit message”**
   Saves staged changes with a message

a)Initial Commit

```
PS D:\Sakib_T_Devops_Practicals> git commit -m "Initial Code added"
[master (root-commit) 0ef2422] Initial Code added
 1 file changed, 4 insertions(+)
 create mode 100644 index.js
```

a)Second Commit

```
PS D:\Sakib_T_Devops_Practicals> git commit -m "Code Deleted"
[master 4c9c4b1] Code Deleted
 1 file changed, 2 insertions(+), 2 deletions(-)
```

10. **git log**
    Displays the commit history

a)Log after initial commit

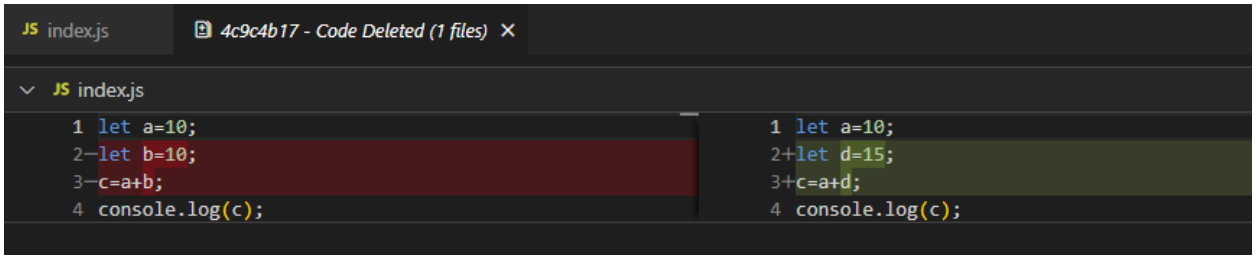
```
PS D:\Sakib_T_Devops_Practicals> git log
commit 0ef242294135fc17d3b48c5be45fff425efbc5b7 (HEAD -> master)
Author: Sakib <sakibmca2024_131@ncrdsims.edu.in>
Date:   Sat Jan 18 16:15:12 2025 +0530

    Initial Code added
```

b)Log after another commit

Name: Sakib Tamboli
Roll No:131 Div: B

```
commit 4c9c4b17b142ba6b0d17dd437058235c77e39c6d (HEAD -> master)
Author: Sakib <sakibmca2024_131@ncrdsims.edu.in>
Date:   Sat Jan 18 16:23:38 2025 +0530

    Code Deleted

commit 0ef242294135fc17d3b48c5be45fff425efbc5b7
Author: Sakib <sakibmca2024_131@ncrdsims.edu.in>
Date:   Sat Jan 18 16:15:12 2025 +0530

    Initial Code added
```

c)Tree of commit executed



11. Git log

Displays the commit history

```
PS D:\Sakib_T_Devops_Practicals> git log
commit 3528158d39d039a8564f11a52a83d4c7ee3c6d0e (HEAD -> XYZ)
Author: Sakib <sakibmca2024_131@ncrdsims.edu.in>
Date:   Mon Jan 20 15:39:34 2025 +0530

    Added variable d

commit 4c8c83735842641d7a4e12bd80b3b0f09992f83a (origin/master, master)
Author: Sakib <sakibmca2024_131@ncrdsims.edu.in>
Date:   Mon Jan 20 15:00:17 2025 +0530

    Revert "Initial Code added"

    This reverts commit 0ef242294135fc17d3b48c5be45fff425efbc5b7.

commit 0ef242294135fc17d3b48c5be45fff425efbc5b7
Author: Sakib <sakibmca2024_131@ncrdsims.edu.in>
Date:   Sat Jan 18 16:15:12 2025 +0530

    Initial Code added
```

12. git log –oneline

```
PS D:\Sakib_T_Devops_Practicals> git log --oneline
4c9c4b1 (HEAD -> master) Code Deleted
0ef2422 Initial Code added
```

```
PS D:\Sakib_T_Devops_Practicals> git log --oneline
3528158 (HEAD -> XYZ) Added variable d
4c8c837 (origin/master, master) Revert "Initial Code added"
0ef2422 Initial Code added
```

13. git show commitid

Displays detailed information about a specific commit

```
PS D:\Sakib_T_Devops_Practicals> git show 4c9c4b1
commit 4c9c4b17b142ba6b0d17dd437058235c77e39c6d (HEAD -> master)
Author: Sakib <sakibmca2024_131@ncrdsims.edu.in>
Date:   Sat Jan 18 16:23:38 2025 +0530

    Code Deleted

diff --git a/index.js b/index.js
index 3c30033..8ba1519 100644
--- a/index.js
+++ b/index.js
@@ -1,4 +1,4 @@
 let a=10;
-let b=10;
-c=a+b;
+let d=15;
+c=a+d;
 console.log(c);
\ No newline at end of file
```

14. git blame

Shows who last modified each line of a file and when

```
PS D:\Sakib_T_Devops_Practicals> git blame index.js
^0ef2422 (Sakib 2025-01-18 16:15:12 +0530 1) let a=10;
4c9c4b17 (Sakib 2025-01-18 16:23:38 +0530 2) let d=15;
4c9c4b17 (Sakib 2025-01-18 16:23:38 +0530 3) c=a+d;
^0ef2422 (Sakib 2025-01-18 16:15:12 +0530 4) console.log(c);
```

15. git status

Shows the current status of changes in the repo

```
PS D:\Sakib_T_Devops_Practicals> git status
On branch master
nothing to commit, working tree clean
```

16. **git reset --hard commitid**
    Undoes changes by resetting the current HEAD

```
PS D:\Sakib_T_Devops_Practicals> git reset --hard 0ef2422
HEAD is now at 0ef2422 Initial Code added
```

17. **git revert commitid**
    Creates a new commit that undoes the changes from a previous commit

```
PS D:\Sakib_T_Devops_Practicals> git revert 0ef2422
[master 4c8c837] Revert "Initial Code added"
 1 file changed, 4 deletions(-)
 delete mode 100644 index.js
```

18. **git remote add origin**
    Manages remote repository connections

```
PS D:\Sakib_T_Devops_Practicals> git remote
PS D:\Sakib_T_Devops_Practicals> git remote add origin https://github.com/sakibtheseeker/Devops-lab-Practice.git
```

19. **git remote -v**

```
PS D:\Sakib_T_Devops_Practicals> git remote -v
origin  https://github.com/sakibtheseeker/Devops-lab-Practice.git (fetch)
origin  https://github.com/sakibtheseeker/Devops-lab-Practice.git (push)
```

20. **Git branch**
    Lists, creates, or deletes branches

```
PS D:\Sakib_T_Devops_Practicals> git branch "XYZ"
PS D:\Sakib_T_Devops_Practicals> git branch
  XYZ
* master
```

21. **Git branch**

```
PS D:\Sakib_T_Devops_Practicals> git branch
* XYZ
  master
```

22. **Git checkout**
    Switches to a different branch

```
PS D:\Sakib_T_Devops_Practicals> git checkout XYZ
Switched to branch 'XYZ'
```

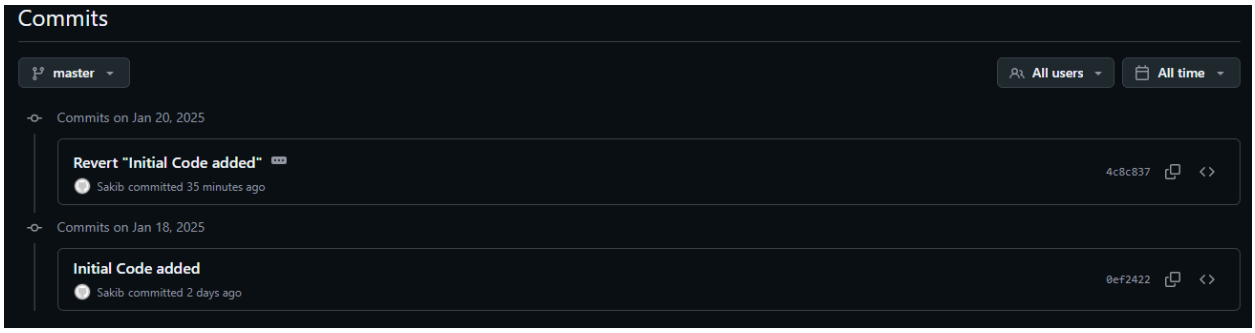
```
PS D:\Sakib_T_Devops_Practicals> git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
```

Name: Sakib Tamboli
Roll No:131 Div: B

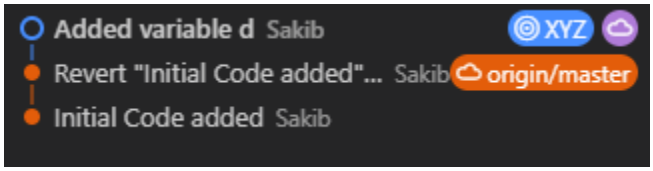
23. Git push

Uploads local commits to the remote repository

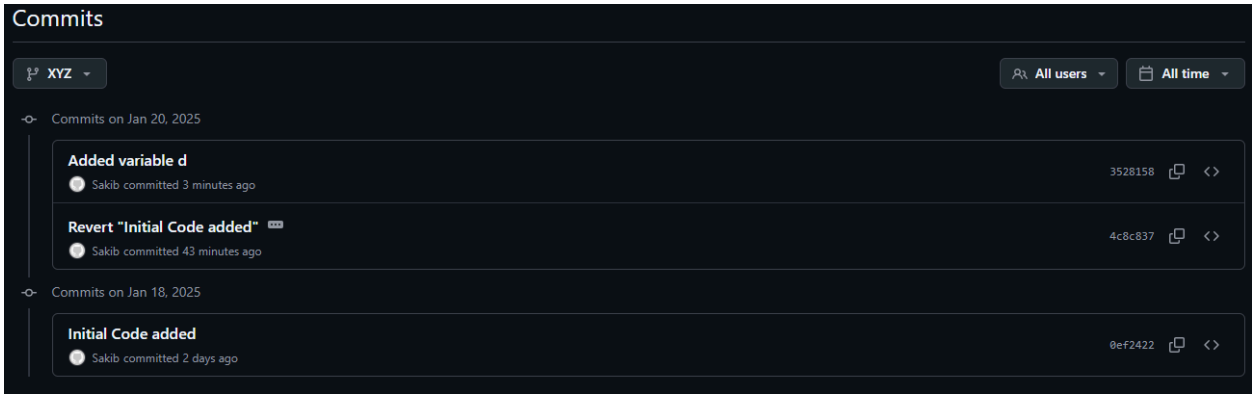
```
PS D:\Sakib_T_Devops_Practicals> git push -u origin master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 20 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (5/5), 460 bytes | 460.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/sakibtheseeker/Devops-lab-Practice2.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
PS D:\Sakib_T_Devops_Practicals>
```




```
PS D:\Sakib_T_Devops_Practicals> git push --set-upstream origin XYZ
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 20 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 296 bytes | 296.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'XYZ' on GitHub by visiting:
remote:      https://github.com/sakibtheseeker/Devops-lab-Practice2/pull/new/XYZ
remote:
To https://github.com/sakibtheseeker/Devops-lab-Practice2.git
 * [new branch]      XYZ -> XYZ
branch 'XYZ' set up to track 'origin/XYZ'.
```



Name: Sakib Tamboli
Roll No:131 Div: B




```
PS D:\Sakib_T_Devops_Practicals> git push
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/sakibtheseeker/Devops-lab-Practice2.git
   4c8c837..3528158  master -> master
```

24. Git merge

Combines changes from another branch into the current one

```
PS D:\Sakib_T_Devops_Practicals> git merge origin/XYZ
Updating 4c8c837..3528158
Fast-forward
 index.js | 5 +++++
 1 file changed, 5 insertions(+)
 create mode 100644 index.js
```

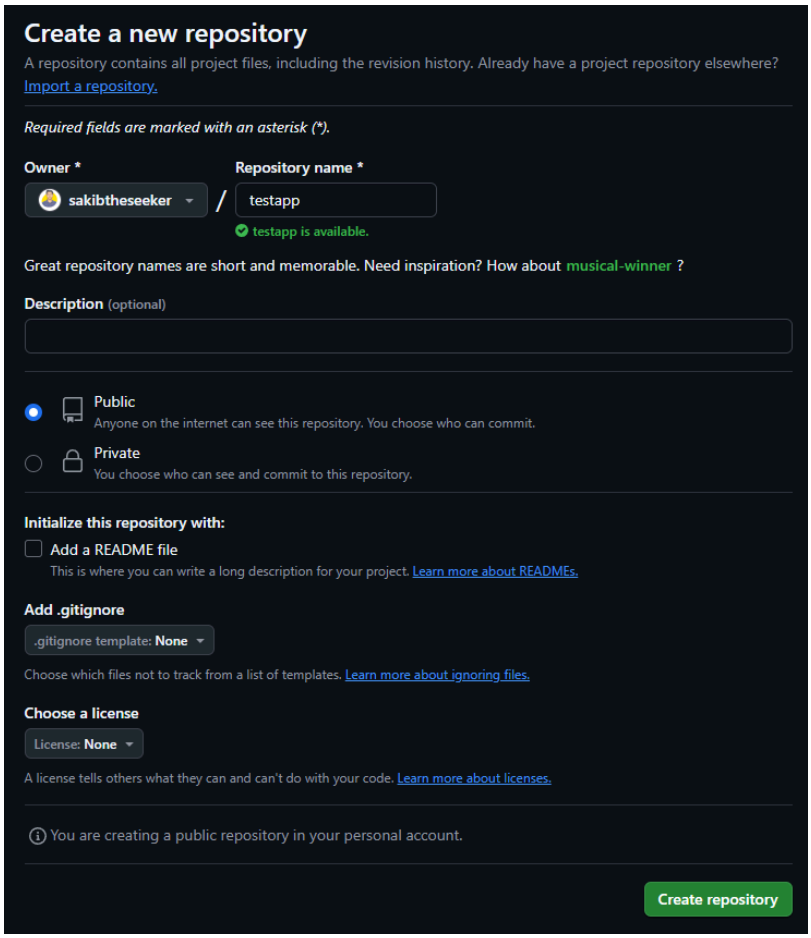
Name: Sakib Tamboli
Roll No:131 Div: B

Practical 2

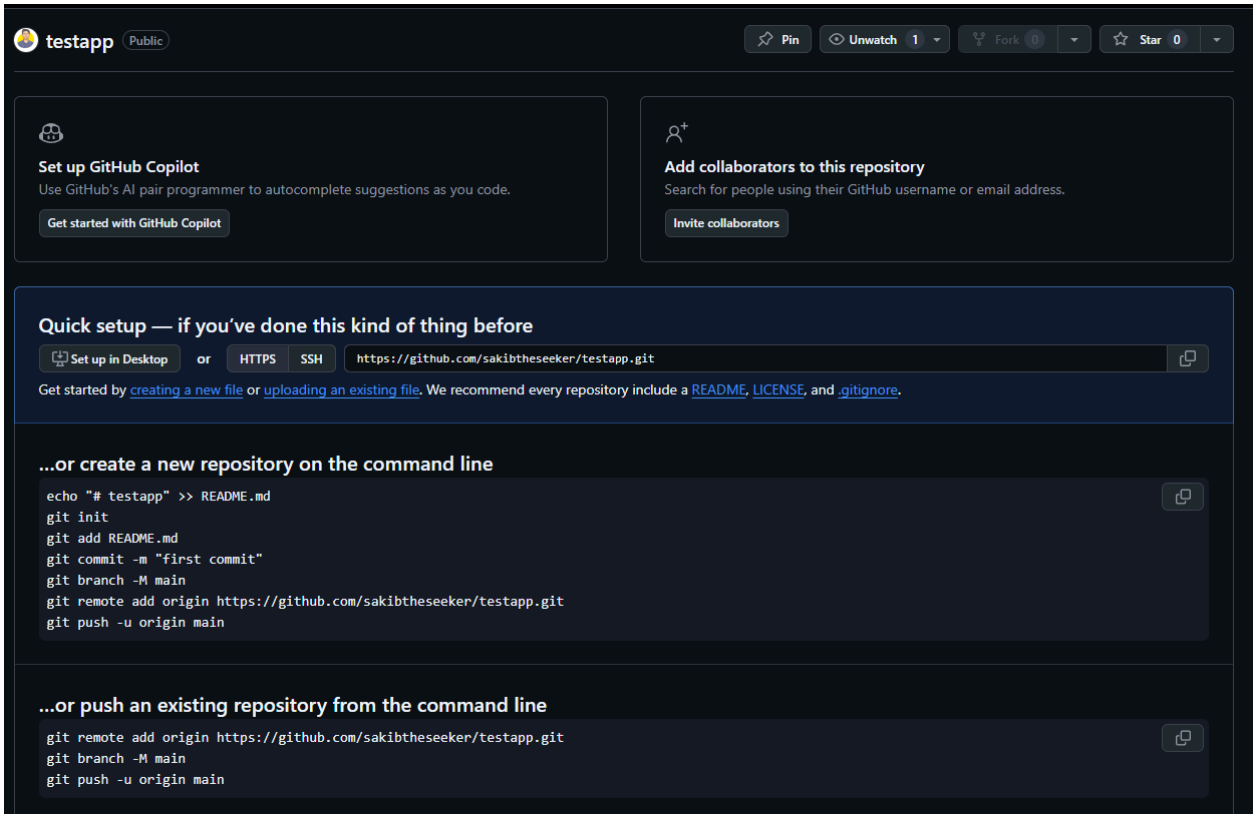
Aim:Create and fork repositories in github.

- ## Create Repository

1. In the top-right corner, click the + icon and select New repository.
2. Name your repository and add a description (optional).
3. Choose Public or Private.
4. Check Initialize with README (optional).
5. Optionally, add a .gitignore and choose a license.
6. Click Create repository.



Name: Sakib Tamboli
Roll No:131 Div: B

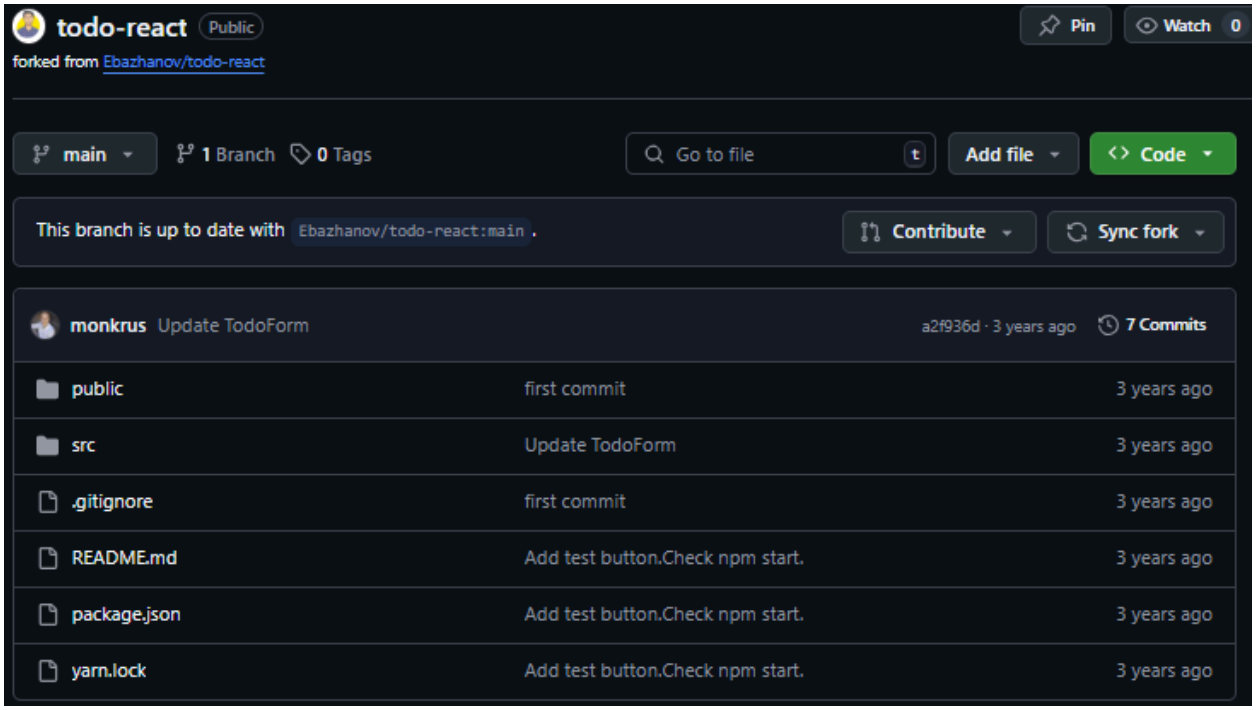


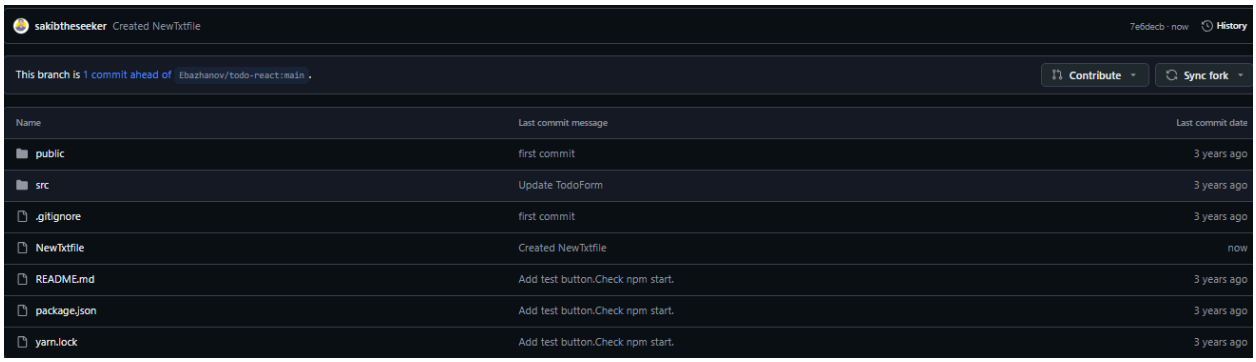
- **Fork Repository:**

1. Find the repository you want to fork: Go to the GitHub page of the repository you want to fork.

2. Fork the repository:
    a. In the upper-right corner of the repository page, click the Fork button.
    b. You can choose where to fork it (either under your username or to an organization, if applicable).

Name: Sakib Tamboli
Roll No:131 Div: B

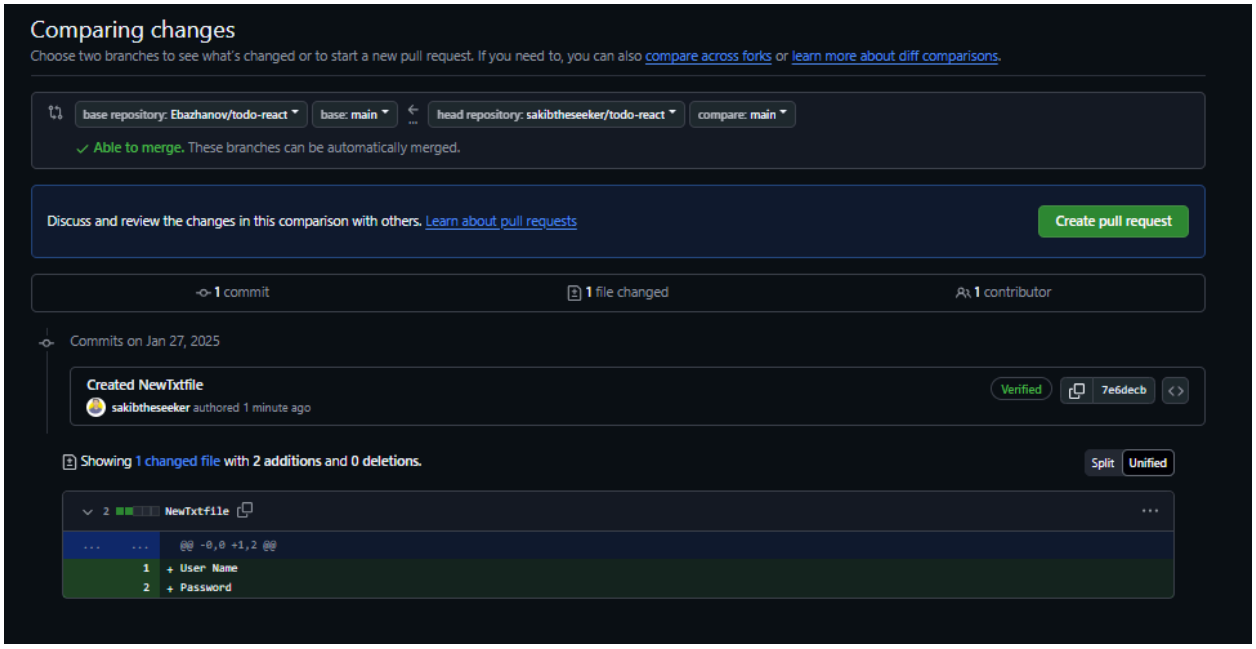


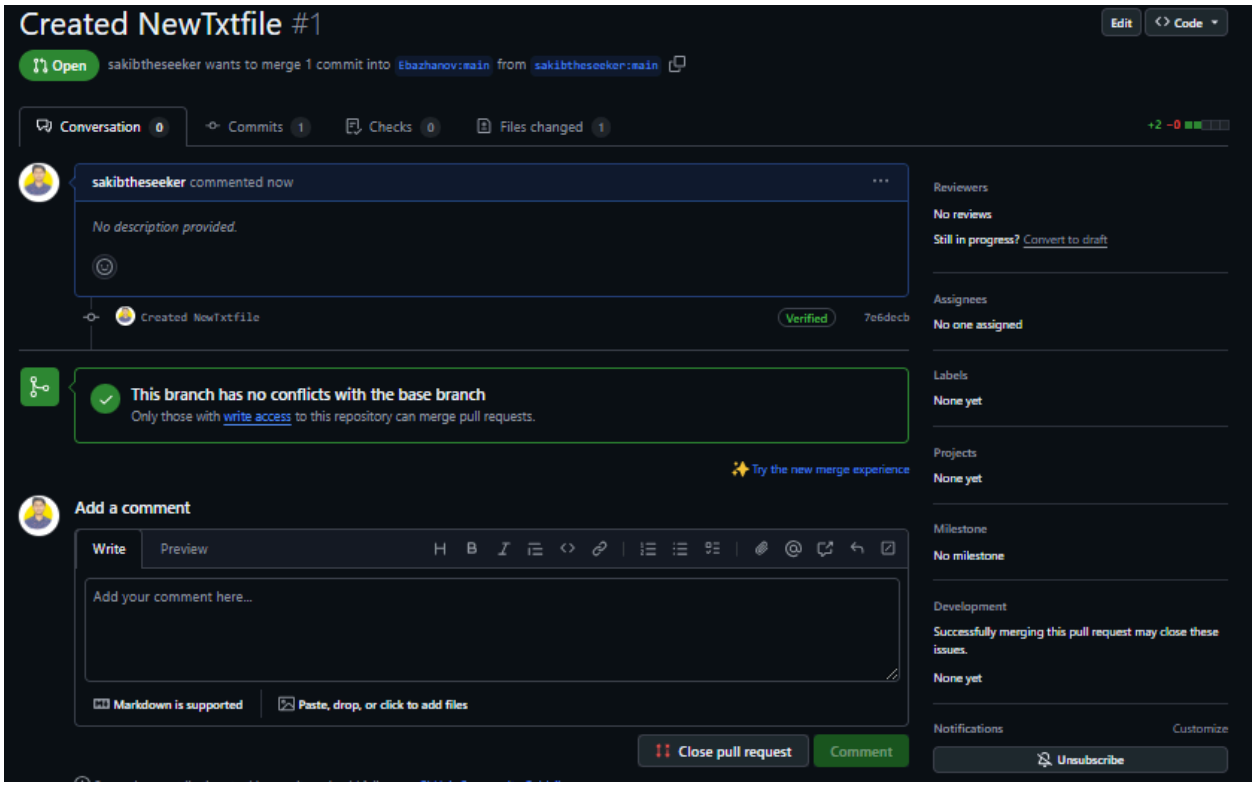


- **Create Pull Request**

1. Go to your forked repo on GitHub.
2. Click Pull Requests and then click New Pull Request.
3. Select Compare across forks if the repository you want to submit to is a fork.
4. Select your fork and branch, then click Create Pull Request.

Name: Sakib Tamboli
Roll No:131 Div: B





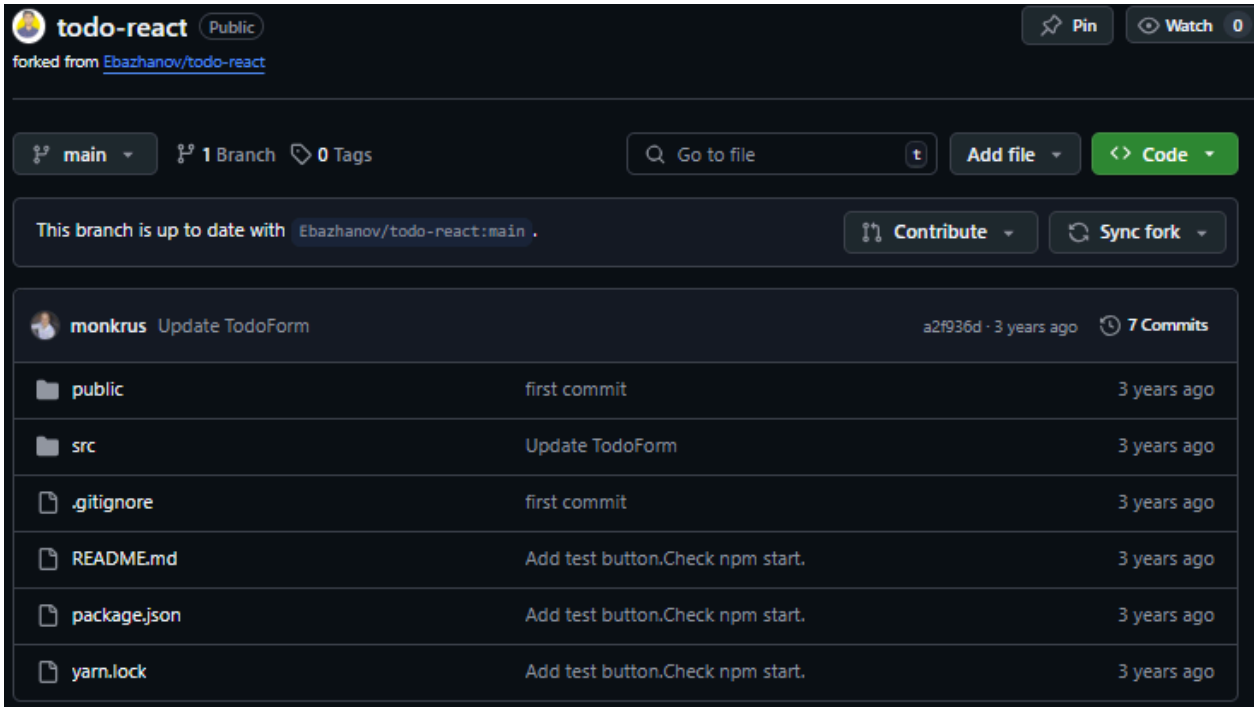
Name: Sakib Tamboli
Roll No:131 Div: B

Practical 3

Aim:Using Git for Collaboration

1. Fork a Repository

1. Go to the repository you want to contribute to.
2. In the top-right corner, click Fork to create a copy of the repo under your account.



---

2. Clone Your Fork Locally

1. Copy the repository's URL (HTTPS or SSH).

```
PS D:\Sakib_T_Devops_Practicals> git clone https://github.com/sakibtheseeker/todo-react/
Cloning into 'todo-react'...
remote: Enumerating objects: 68, done.
remote: Counting objects: 100% (68/68), done.
remote: Compressing objects: 100% (48/48), done.
remote: Total 68 (delta 20), reused 48 (delta 10), pack-reused 0 (from 0)
Receiving objects: 100% (68/68), 475.59 KiB | 4.62 MiB/s, done.
Resolving deltas: 100% (20/20), done.
PS D:\Sakib_T_Devops_Practicals>
```

---

3. Create a New Branch

1. Navigate to the repo directory:
2. Create a new branch for your changes

```
PS D:\Sakib_T_Devops_Practicals> cd todo-react
PS D:\Sakib_T_Devops_Practicals\todo-react> git checkout -b new-feature
>>
```

---

4. Make Changes and Commit

1. Edit files as needed.
2. Commit your changes

```
PS D:\Sakib_T_Devops_Practicals\todo-react> git add public/index.html
PS D:\Sakib_T_Devops_Practicals\todo-react> git commit -m "Added SEO Enhancement"
[new-feature e96889f] Added SEO Enhancement
 1 file changed, 27 insertions(+), 20 deletions(-)
```

---

5. Push Changes to Your Fork

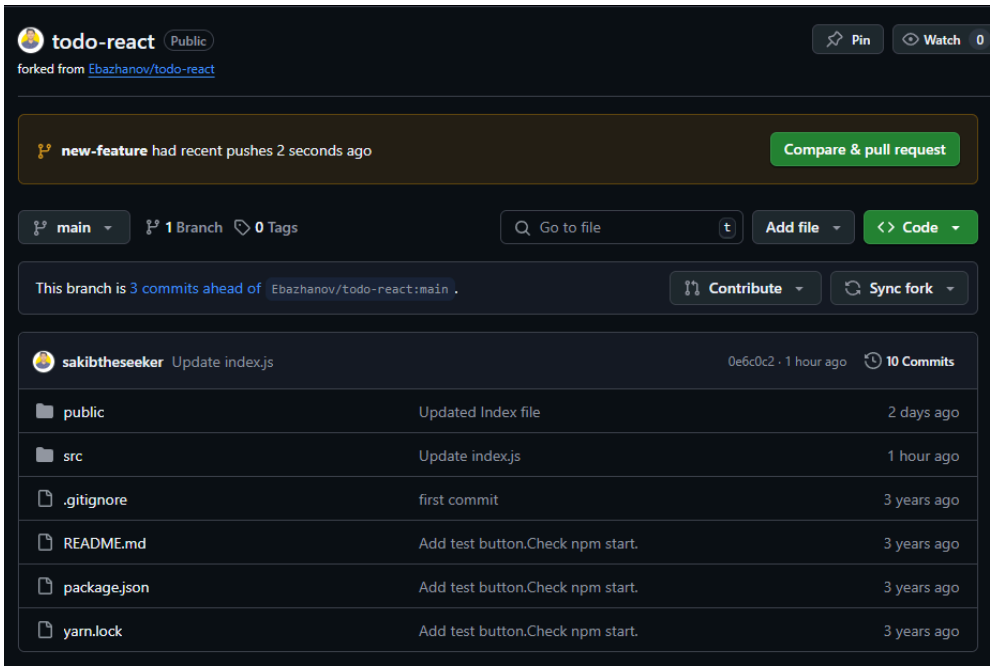
Push your changes to GitHub

```
PS D:\Sakib_T_Devops_Practicals\todo-react> git push origin new-feature
>>
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 783 bytes | 783.00 KiB/s, done.
Total 4 (delta 3), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (3/3), completed with 3 local objects.
remote:
remote: Create a pull request for 'new-feature' on GitHub by visiting:
remote:      https://github.com/sakibtheseeker/todo-react/pull/new/new-feature
remote:
To https://github.com/sakibtheseeker/todo-react/
 * [new branch]      new-feature -> new-feature
```

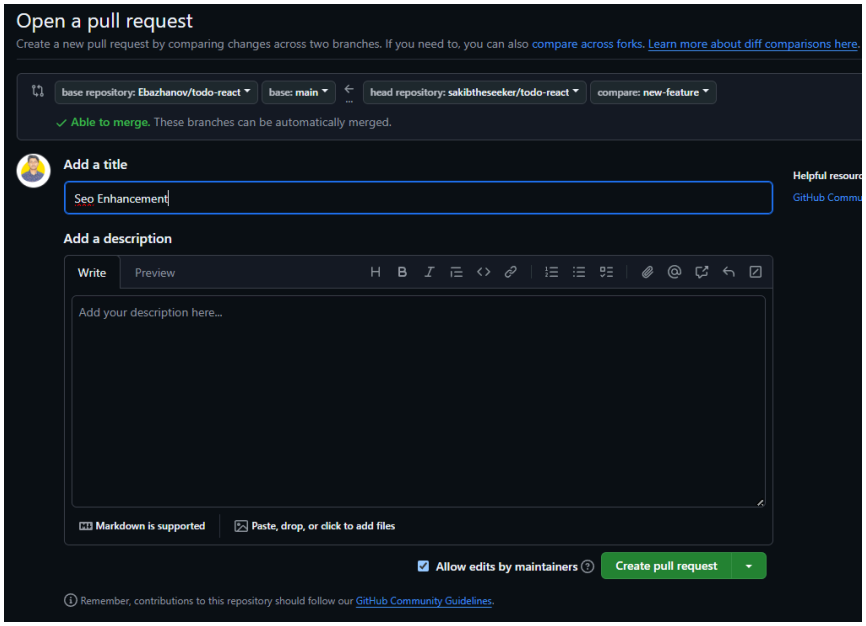
---

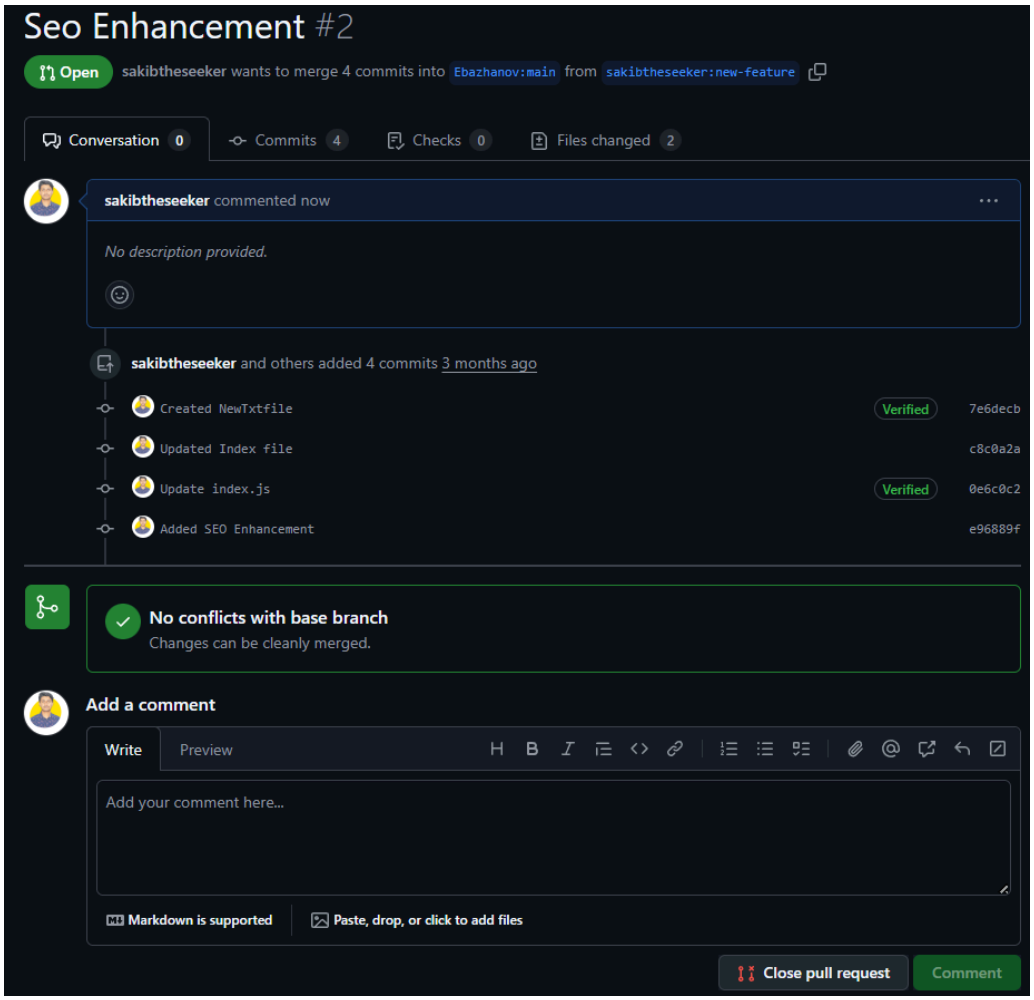
6. Create a Pull Request (PR)

1. Go to your forked repo on GitHub.
2. Click Pull Requests > New Pull Request.
3. Select your branch and click Create Pull Request.



Name: Sakib Tamboli
Roll No:131 Div: B





Name: Sakib Tamboli
Roll No:131 Div: B

7. Sync Your Fork with the Original Repo (Upstream)

1. Add the original repository as a remote
2. Fetch the latest changes
3. Merge changes into your branch
4. Push the updates to your fork:

```
PS D:\Sakib_T_Devops_Practicals\todo-react> git remote add upstream https://github.com/monkrus/todo-react
PS D:\Sakib_T_Devops_Practicals\todo-react> git fetch upstream
>>
remote: Enumerating objects: 27, done.
remote: Counting objects: 100% (24/24), done.
remote: Compressing objects: 100% (11/11), done.
remote: Total 15 (delta 3), reused 14 (delta 3), pack-reused 0 (from 0)
Unpacking objects: 100% (15/15), 14.86 KiB | 237.00 KiB/s, done.
From https://github.com/monkrus/todo-react
 * [new branch]      main       -> upstream/main
```

```
PS D:\Sakib_T_Devops_Practicals\todo-react> git checkout main
>> git merge upstream/main
>>
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
Merge made by the 'ort' strategy.
 README.md                   |  14 +++---
 img.png                     | Bin 0 -> 13467 bytes
 src/App.js                  |  13 +++---
 src/components/TodoForm.jsx |  80 ++++++++++++++++++----------
 src/components/TodoItem.jsx |  42 ++++++++++++++
 src/components/TodoList.css |   5 +++
 src/components/TodoList.jsx | 101 ++++++++++++++++++++++++++++++++++++
 src/components/TodoTab.jsx  |  29 +++++++++++
 src/services/todoService.js |  45 +++++++++++-----
 9 files changed, 250 insertions(+), 79 deletions(-)
 create mode 100644 img.png
```

Name: Sakib Tamboli
Roll No:131 Div: B

```
PS D:\Sakib_T_Devops_Practicals\todo-react> git push origin main
>>
Enumerating objects: 10, done.
Counting objects: 100% (10/10), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 979 bytes | 979.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/sakibtheseeker/todo-react/
   0e6c0c2..d8d6baa  main -> main
PS D:\Sakib_T_Devops_Practicals\todo-react>
```

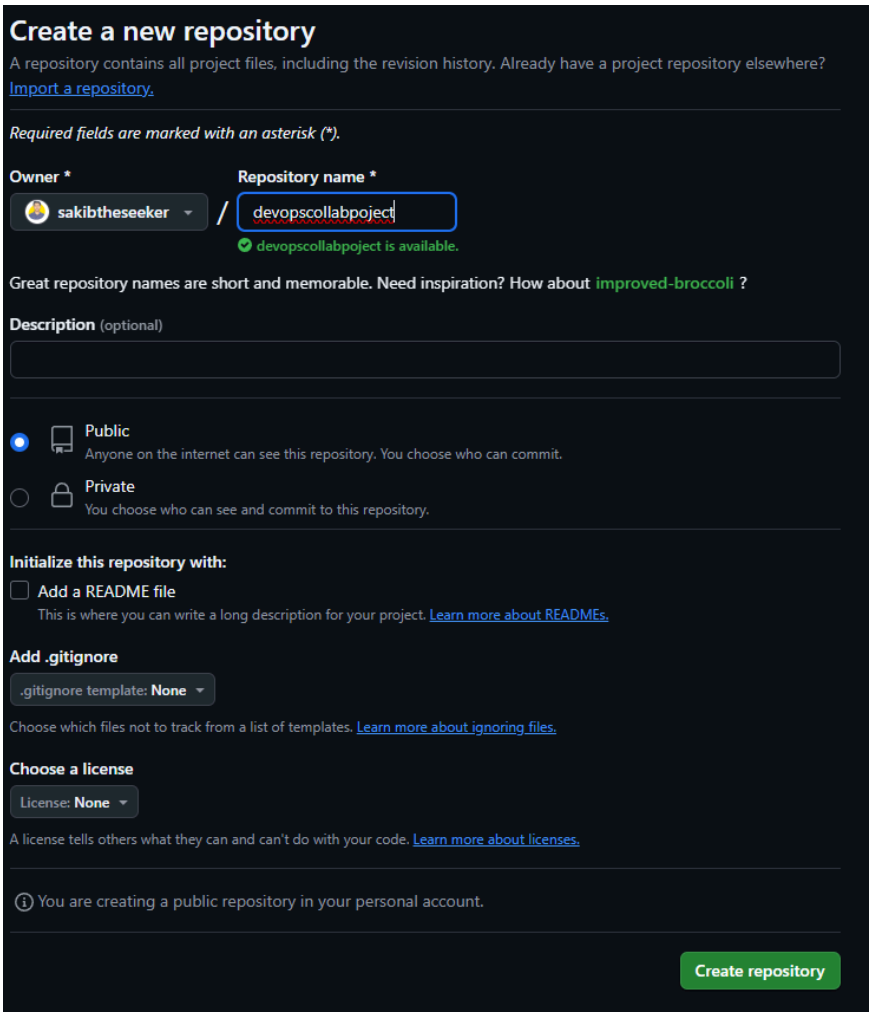
Name: Sakib Tamboli
Roll No:131 Div: B

Practical 4

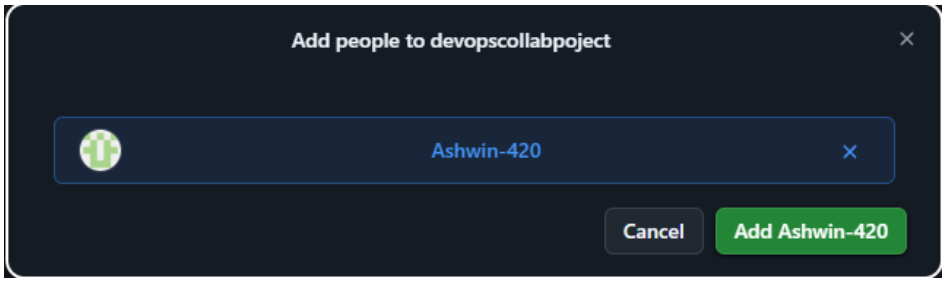
Aim:Collaborating and Cloning using GitHub.

Steps for Collaborating and Cloning using GitHub:

1. **Create a GitHub Repository (Owner):**
    - **Sign in to GitHub.**
    - **Click on New Repository, add a name, and create it.**

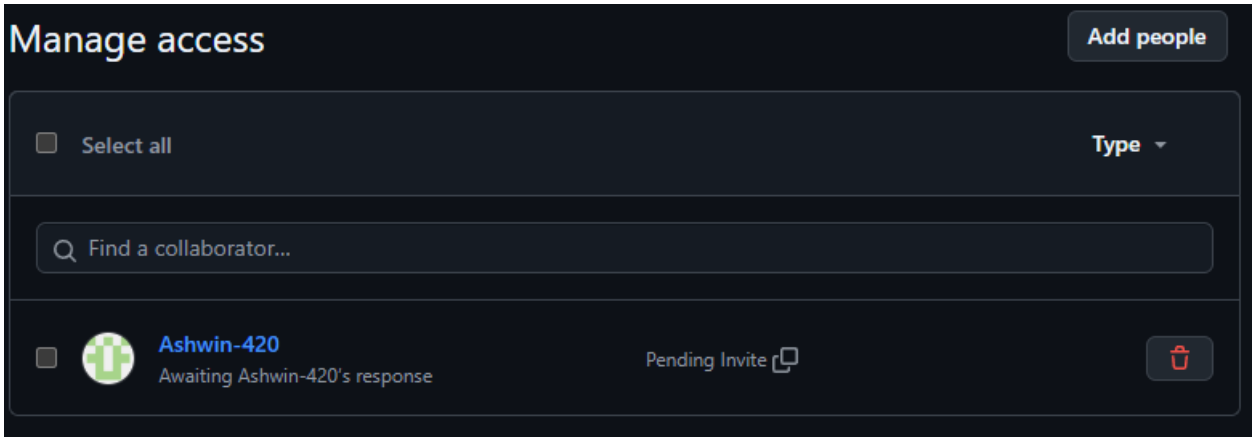


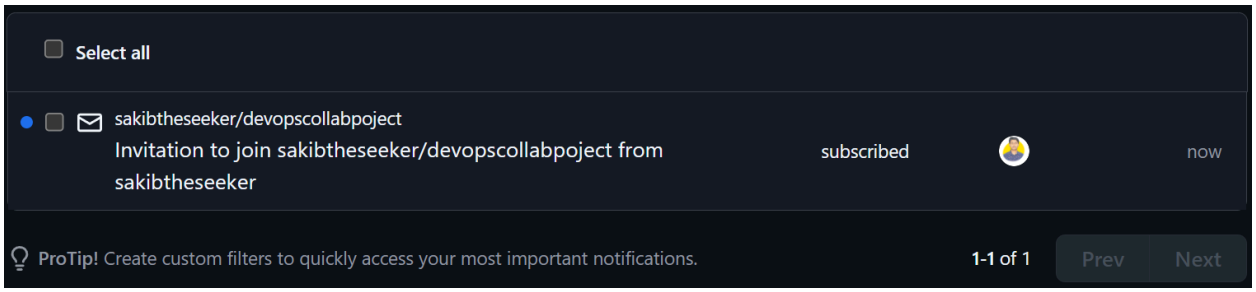
- **Share the repository link with collaborators.**



2. Invite Collaborators (Owner):

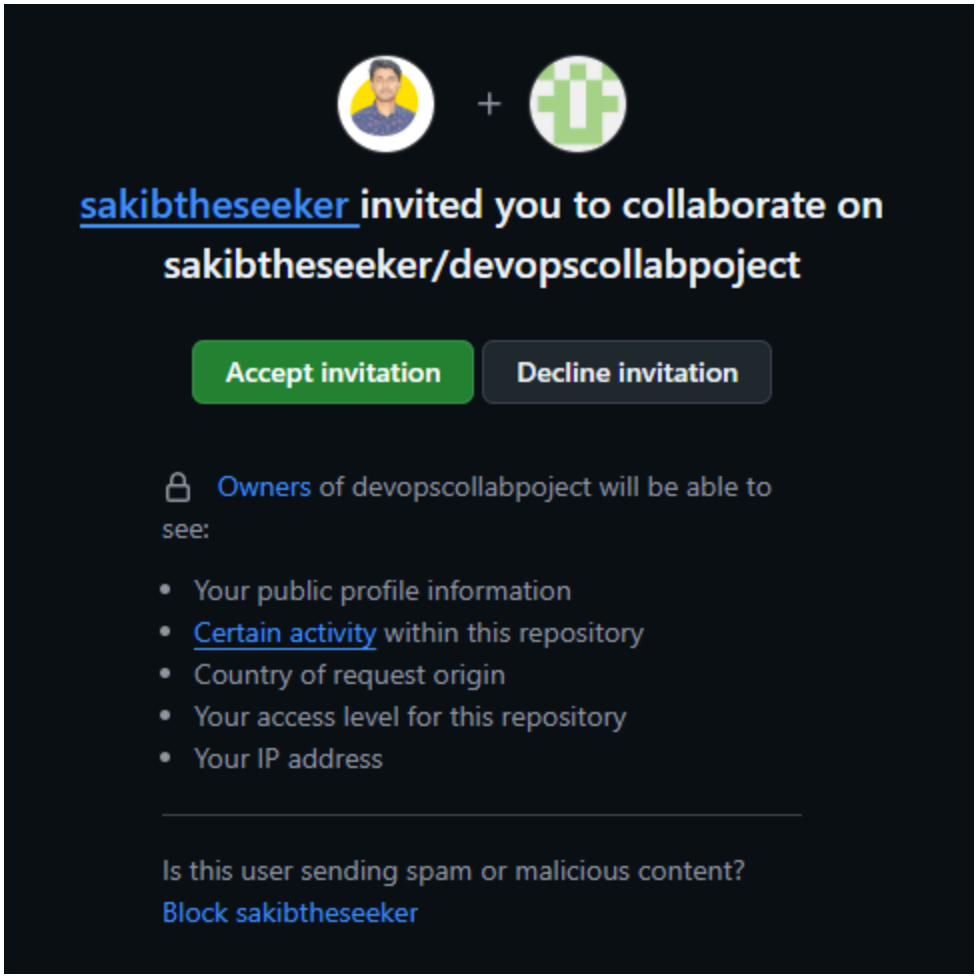
- **Go to the repository > Settings > Collaborators.**

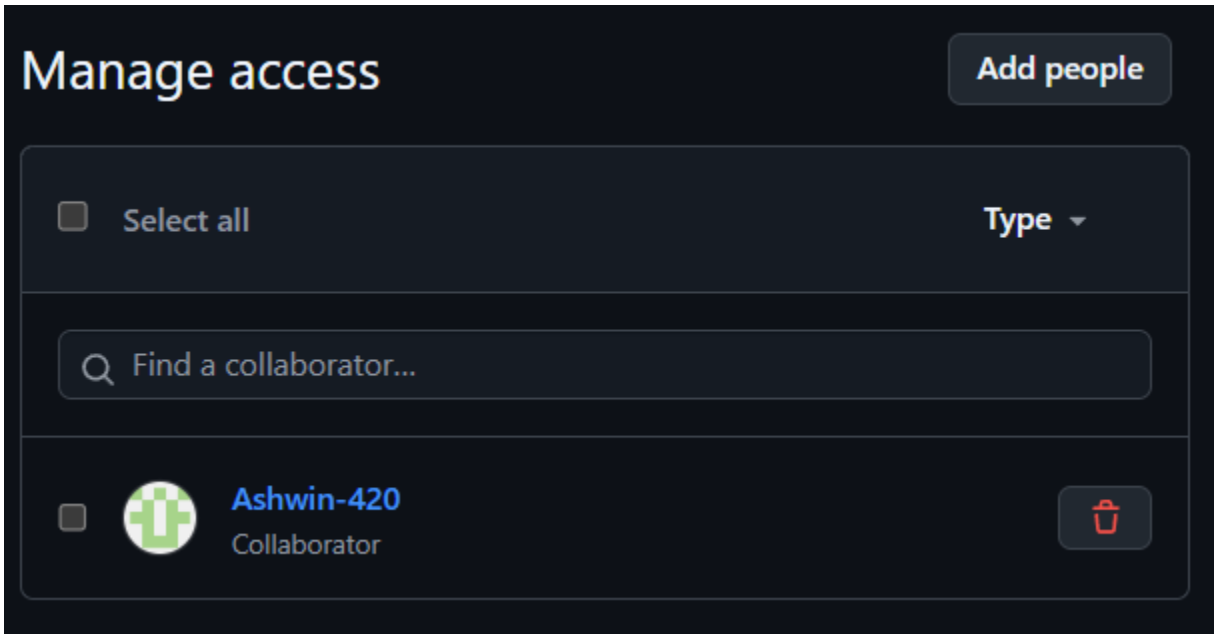




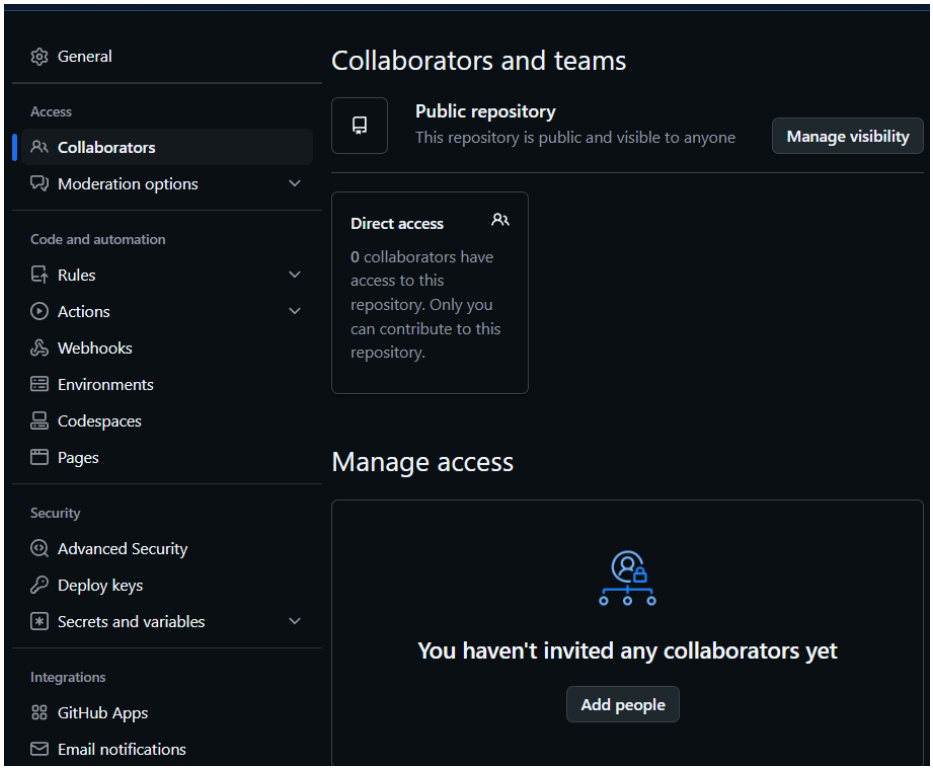
- **Add GitHub usernames or email IDs and send invitations.**

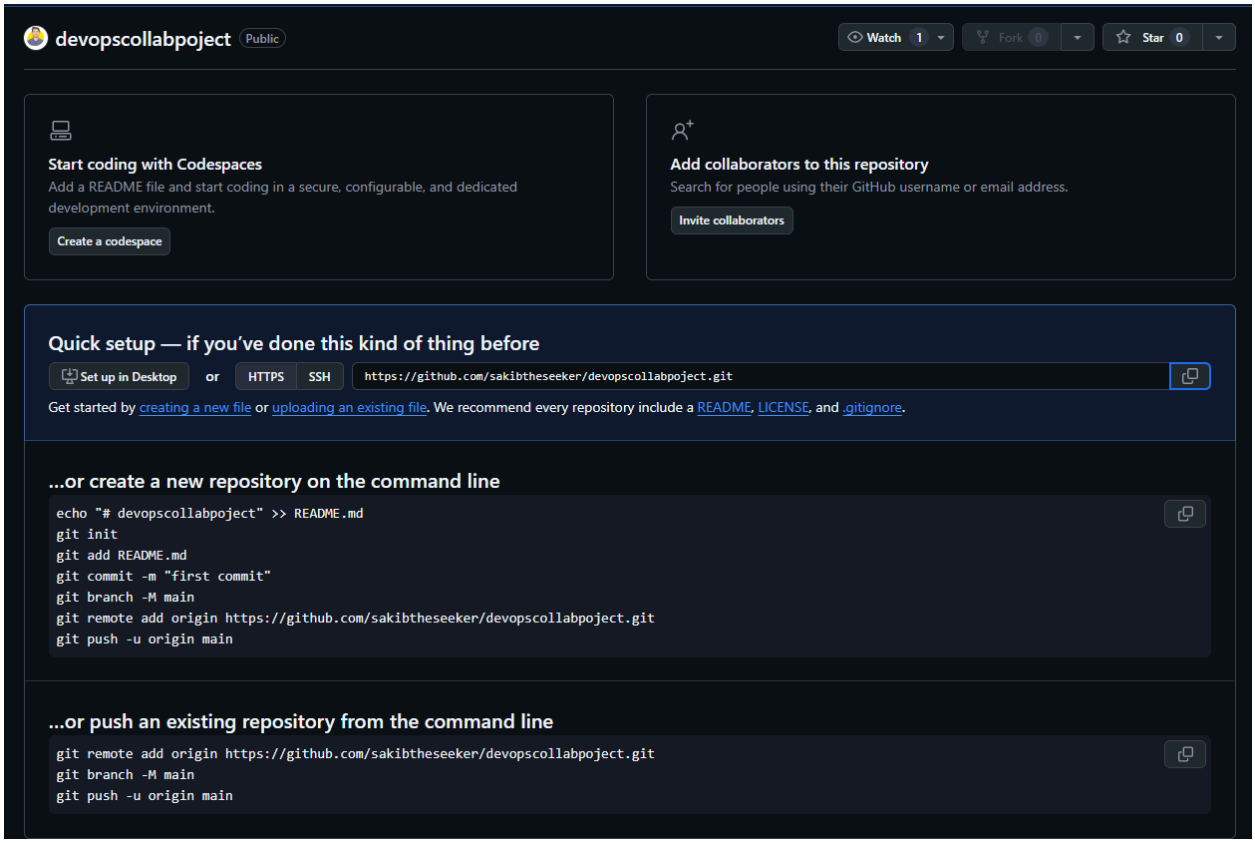
Name: Sakib Tamboli
Roll No:131 Div: B





Name: Sakib Tamboli
Roll No:131 Div: B





3. **Clone the Repository (Collaborator):**

- **Open Git Bash or Terminal**

Use the command:

git clone https://github.com/username/repository-name.git

```
Sakib@LAPTOP-BPSVF1HI MINGW64 ~
$ git clone https://github.com/sakibtheseeker/devopscollabpoject.git
Cloning into 'devopscollabpoject'...
warning: You appear to have cloned an empty repository.
```

Navigate into the project folder:

cd repository-name

```
Sakib@LAPTOP-BPSVF1HI MINGW64 ~
$ cd devopscollabpoject

Sakib@LAPTOP-BPSVF1HI MINGW64 ~/devopscollabpoject (main)
$
```

4. **Create a New Branch (Collaborator):**

To avoid conflicts, create a separate branch:

git checkout -b branch-name

```
Sakib@LAPTOP-BPSVF1HI MINGW64 ~/devopscollabpoject (main)
$ git checkout -b new-feature
Switched to a new branch 'new-feature'
```

5. **Make Changes and Commit:**

- **Make the required changes in the code.**

Name: Sakib Tamboli
Roll No:131 Div: B

Stage the changes:

git add .

```
Sakib@LAPTOP-BPSVF1HI MINGW64 ~/devopscollabpoject (new-feature)
$ git add index.html
git commit -m "Added new paragraph to index.html"
[new-feature 174694a] Added new paragraph to index.html
 1 file changed, 3 insertions(+)
```

```html
<html lang="en">
<head>
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Welcome | Sakib's DevOps Project</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            background: #f4f4f4;
            color: #333;
            text-align: center;
            padding-top: 50px;
        }
        h1 {
            color: #007acc;
        }
        p {
            font-size: 18px;
        }
        footer {
            margin-top: 40px;
            font-size: 14px;
            color: #777;
        }
    </style>
</head>
<body>
    <h1>Welcome to Sakib's DevOps Collaboration Project</h1>
    <p>This is a sample HTML page created to demonstrate collaboration using GitHub.</p>
    <!-- Add this line somewhere inside the <body> -->
<p>This is a new feature added by Sakib.</p>

    <footer>
        <p>Created by Sakib | © 2025</p>
    </footer>
</body>
</html>
```

Commit with a meaningful message:

sql
CopyEdit
git commit -m "Added feature XYZ"

```
git commit -m "Added new paragraph to index.html"
```

6. Push Changes to GitHub:

Push your branch to the remote repository:
git push origin branch-name

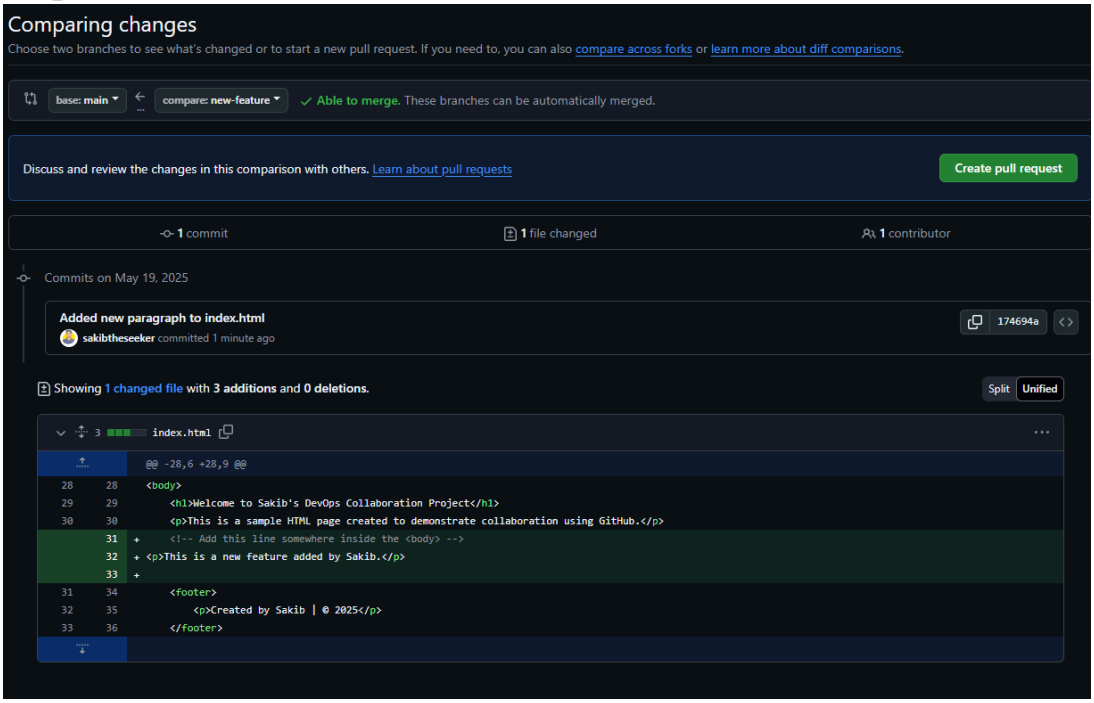
```
Sakib@LAPTOP-BPSVF1HI MINGW64 ~/devopscollabpoject (xyz)
$ git push origin xyz
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 651 bytes | 651.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/sakibtheseeker/devopscollabpoject.git
 * [new branch]      xyz -> xyz
```

7. Create a Pull Request (PR):

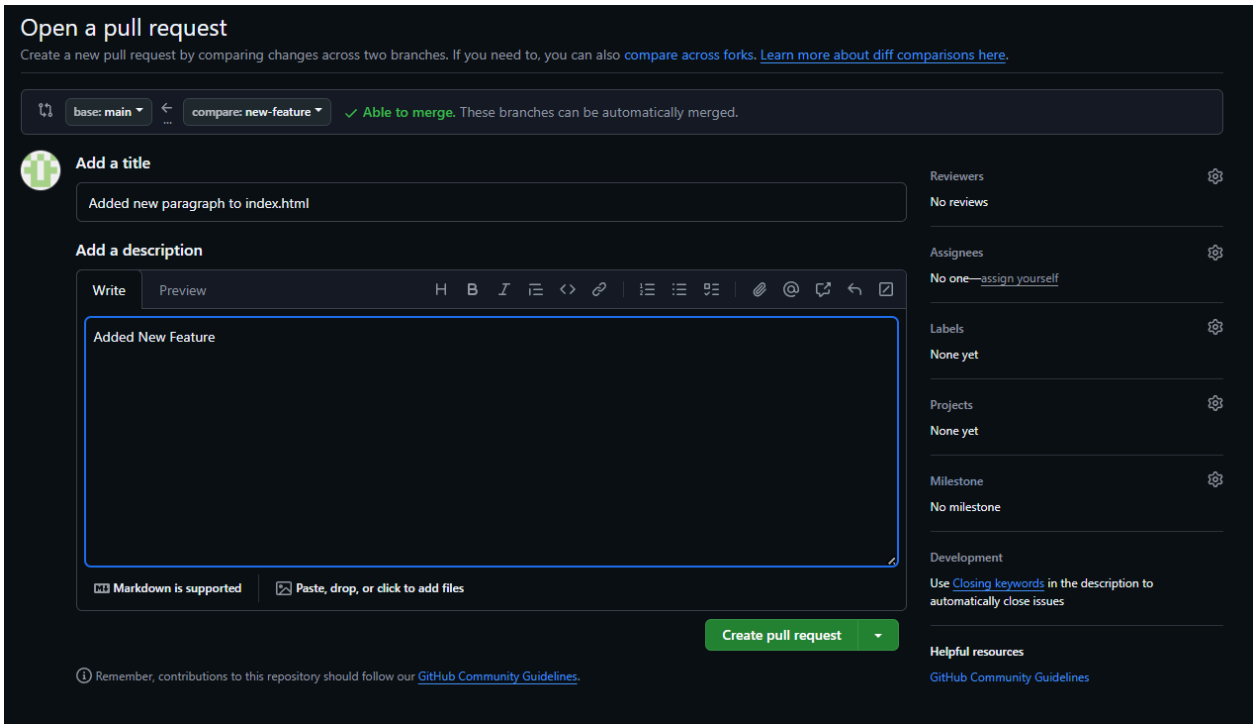
- **Go to the GitHub repository in your browser.**

Name: Sakib Tamboli
Roll No:131 Div: B

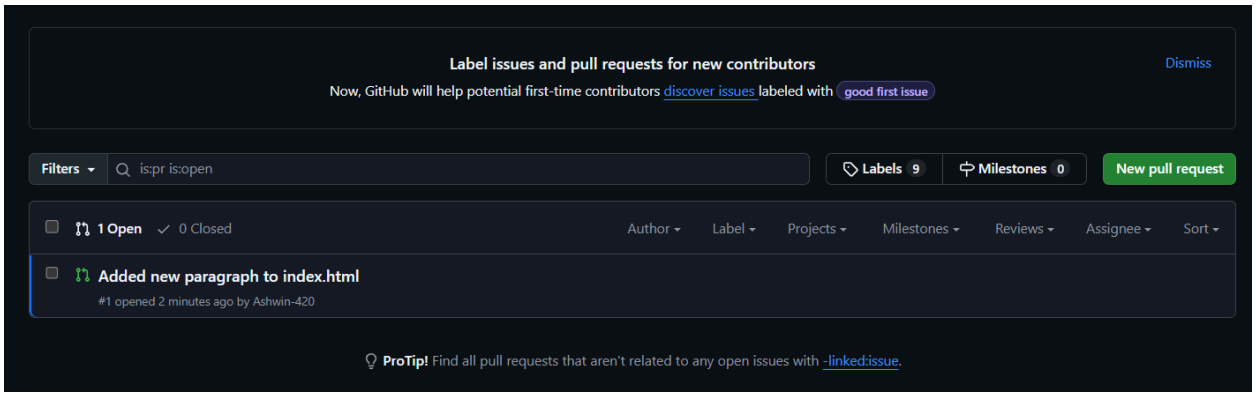
- **GitHub will detect the new branch and show an option to create a Pull Request.**



- **Add a description of the changes and submit the PR.**

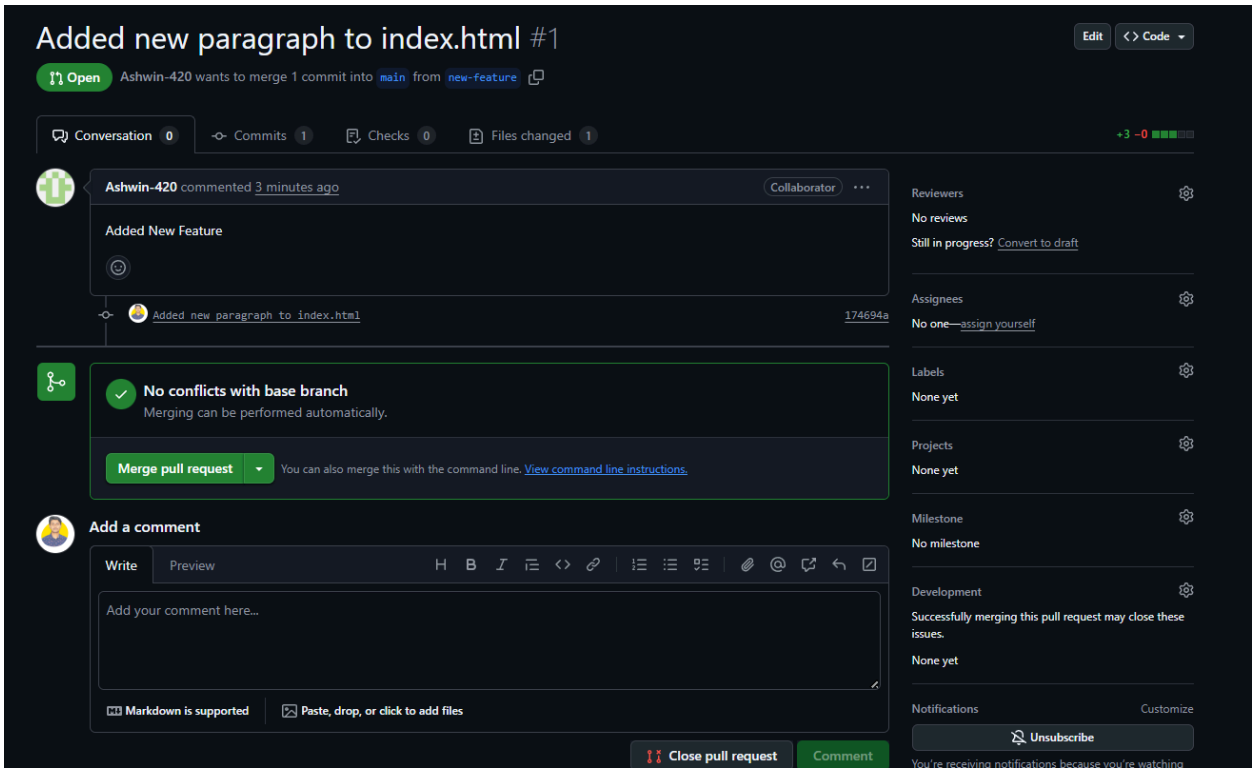


Name: Sakib Tamboli
Roll No:131 Div: B

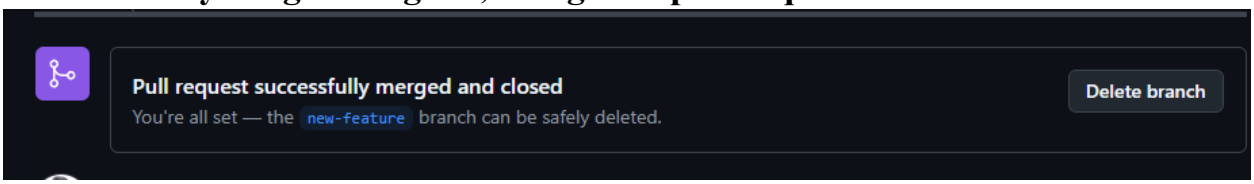


8. Review and Merge (Owner or Admin):

- **Review the pull request.**



- **If everything looks good, Merge the pull request into the main branch.**



9. Sync the Repository (All Collaborators):

- **Pull the latest changes to keep your local repo updated:**

git pull origin main

```
Sakib@LAPTOP-BPSVF1HI MINGW64 ~/devopscollabpoject (new-feature)
$ 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 (from 0)
Unpacking objects: 100% (1/1), 922 bytes | 307.00 KiB/s, done.
From https://github.com/sakibtheseeker/devopscollabpoject
 * branch            main       -> FETCH_HEAD
   32a23af..a04056a  main       -> origin/main
Updating 174694a..a04056a
Fast-forward
```

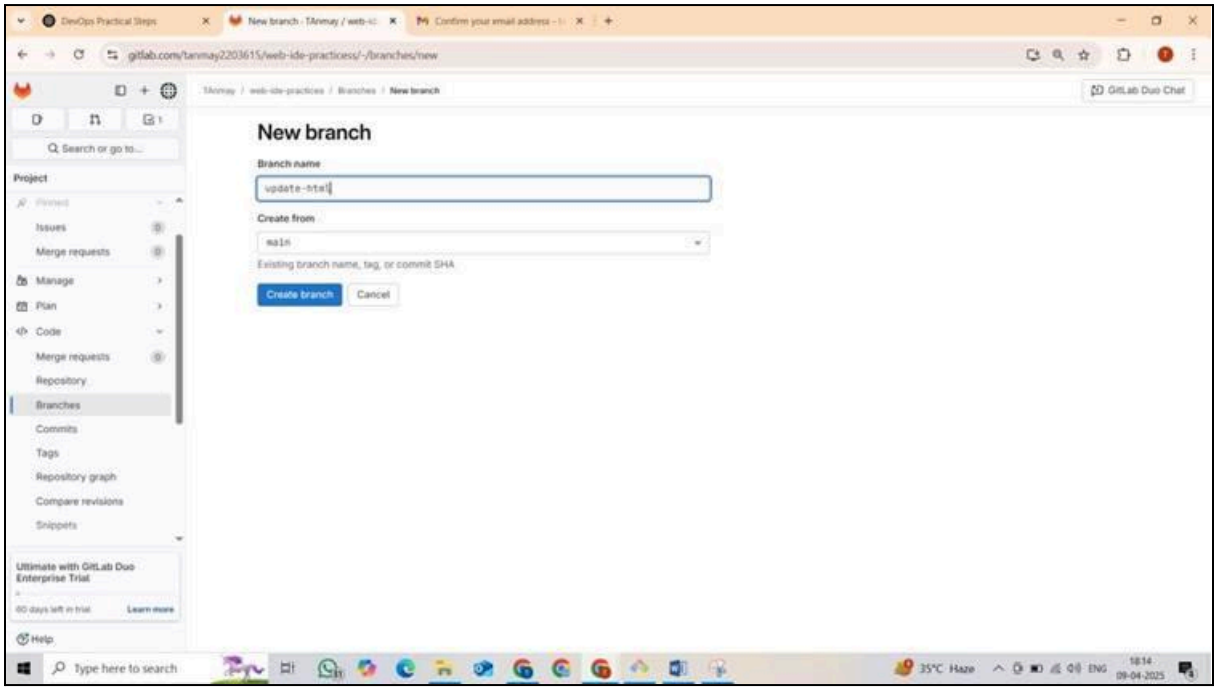
Name: Sakib Tamboli
Roll No:131 Div: B

Practical 5

Aim:Using GitLab Web IDE

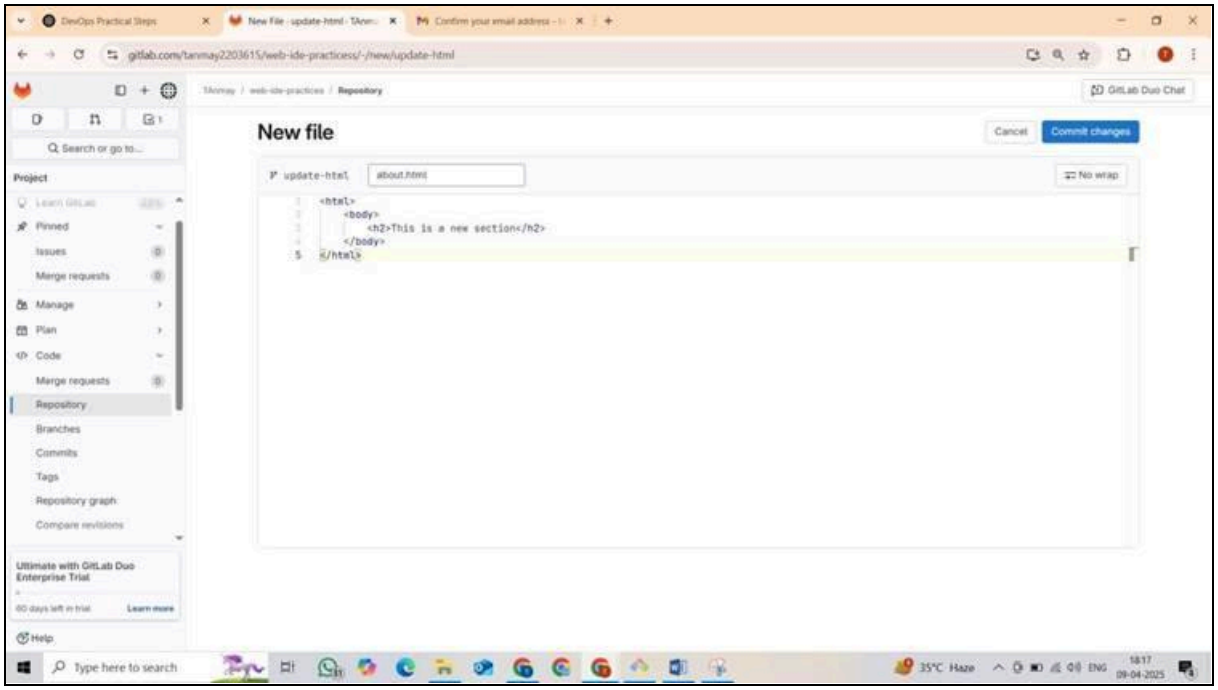
Performing Merge Requests Using GitLab
Steps:

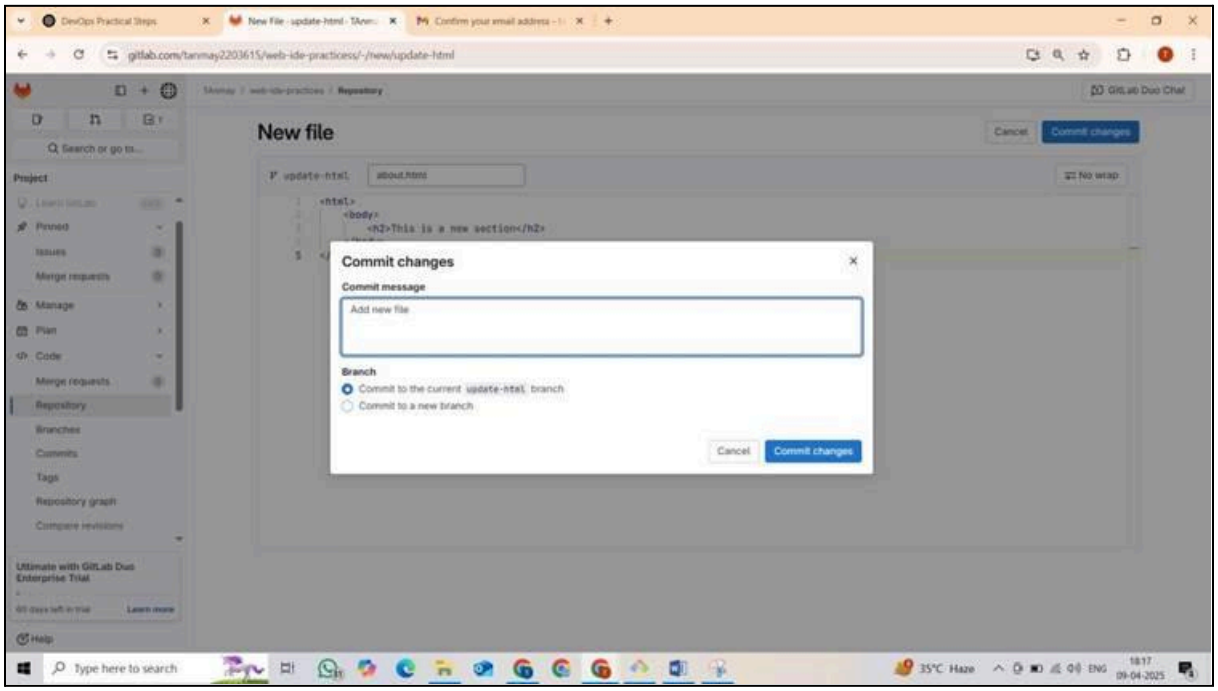
1. **Create a new branch in Web IDE.**



2. **Add/edit a file and commit.**

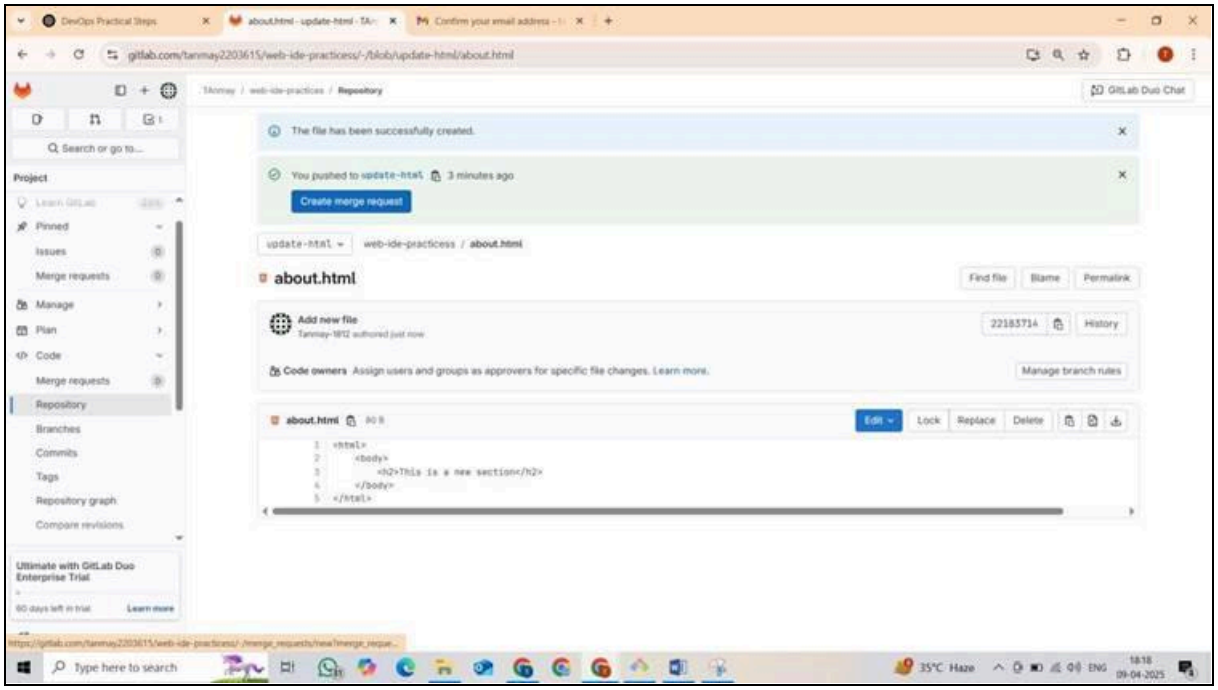
Name: Sakib Tamboli
Roll No:131 Div: B

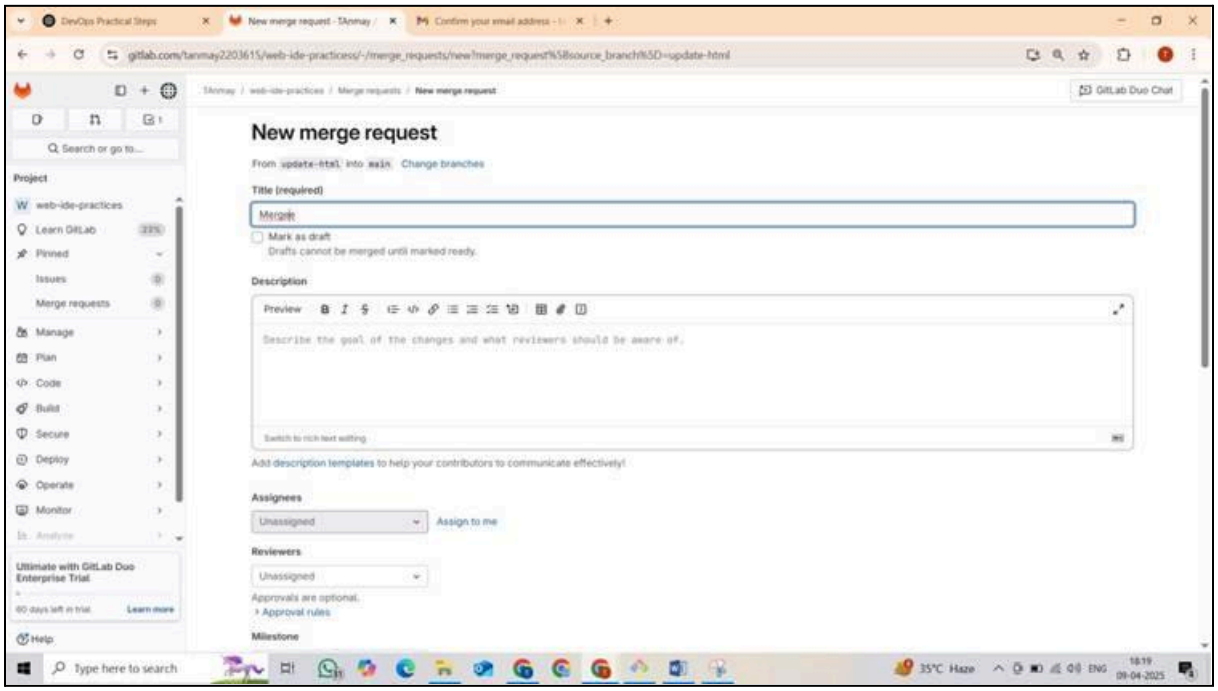




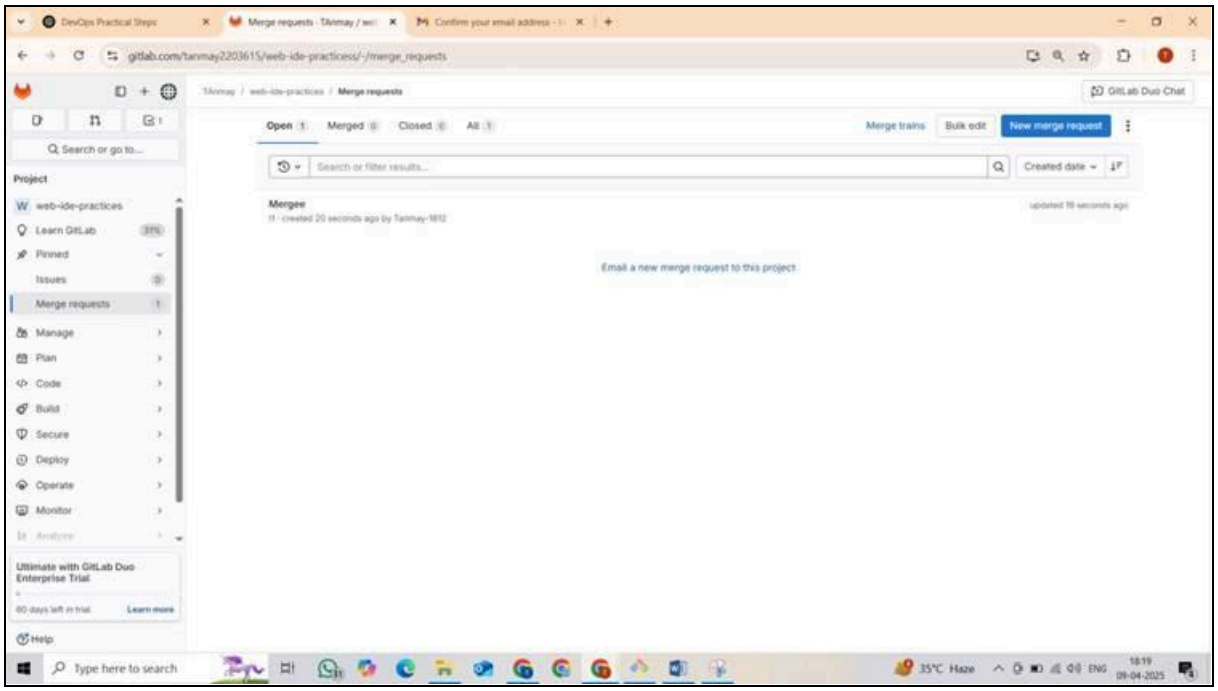
3. Click on Merge Requests > New Merge Request.

Name: Sakib Tamboli
Roll No:131 Div: B

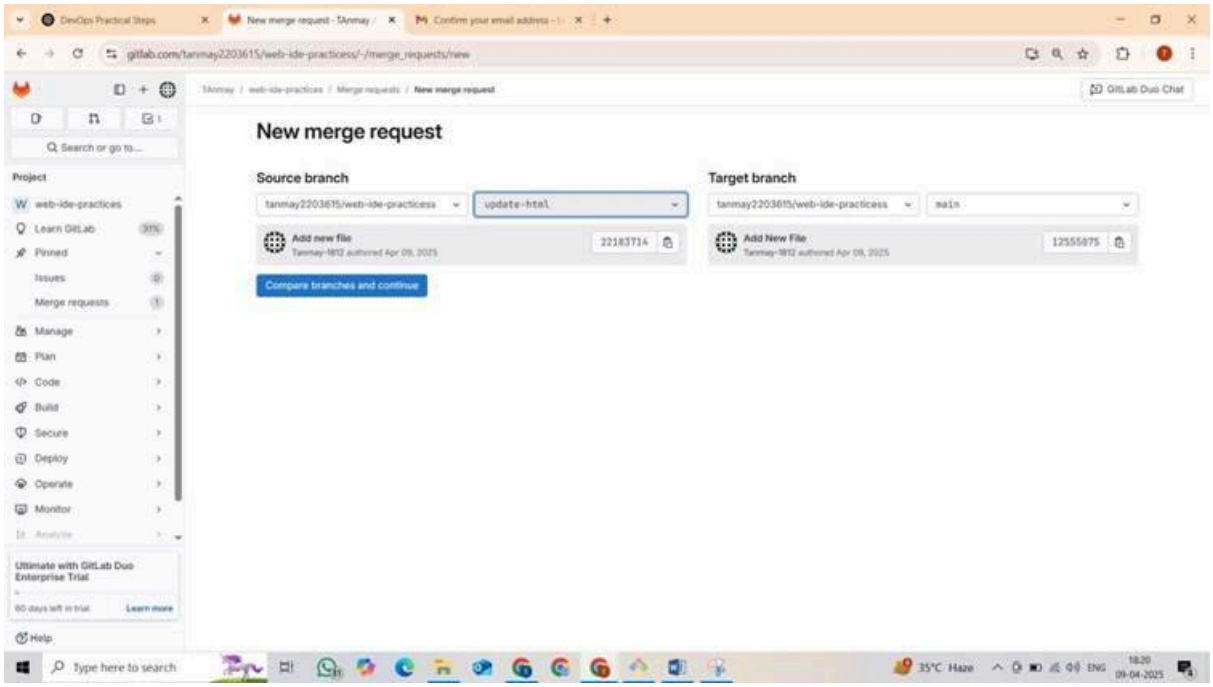




Name: Sakib Tamboli
Roll No:131 Div: B



4. **Select source and target branches.**
5. **Submit and merge after review.**



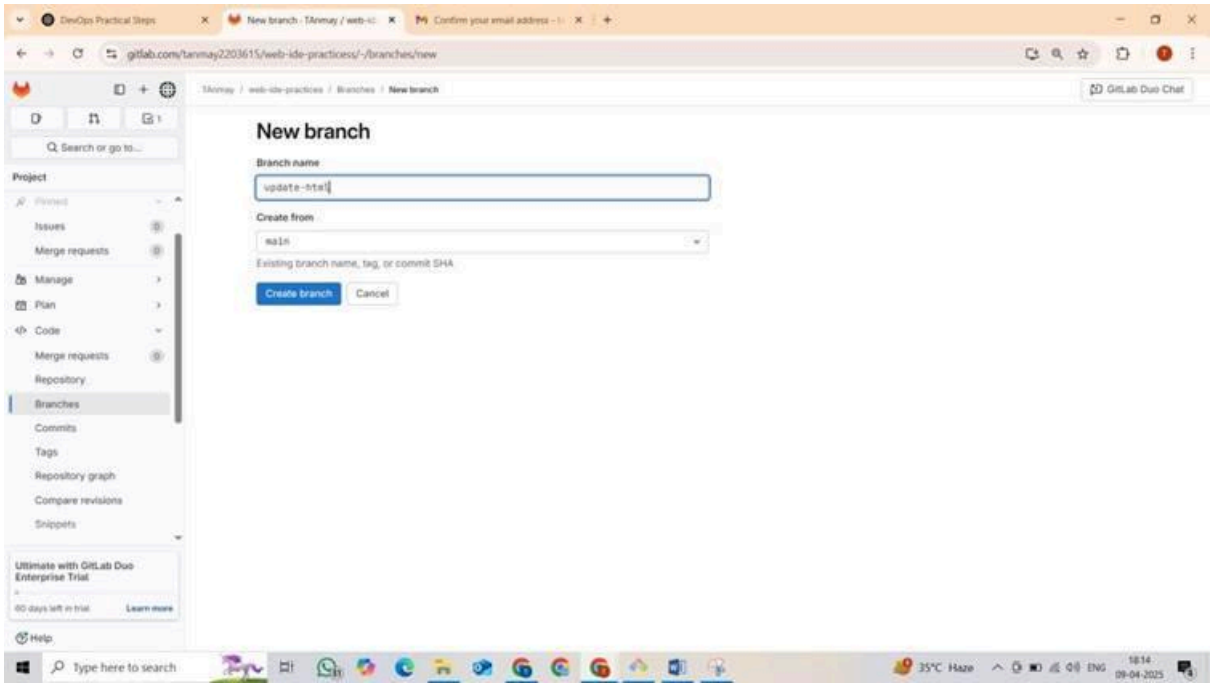
Name: Sakib Tamboli
Roll No:131 Div: B

Practical 6

Aim:Performing merge requests using GitLab

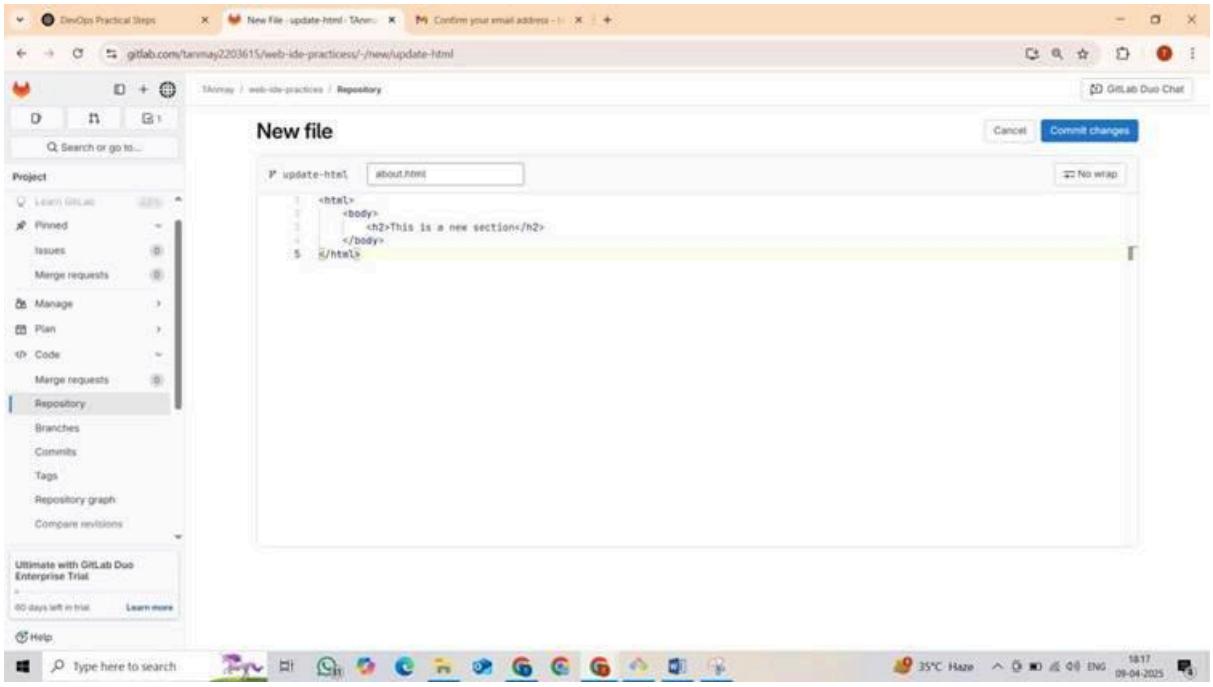
Steps:

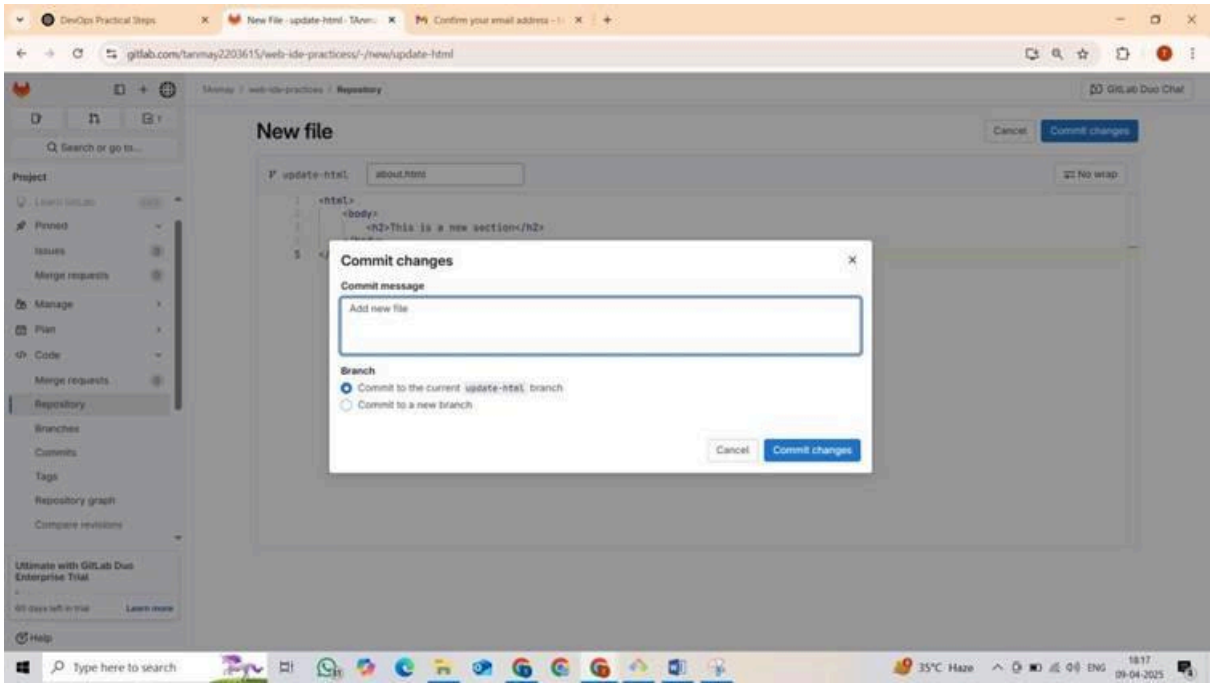
1. **Create a new branch in Web IDE.**



2. **Add/edit a file and commit.**

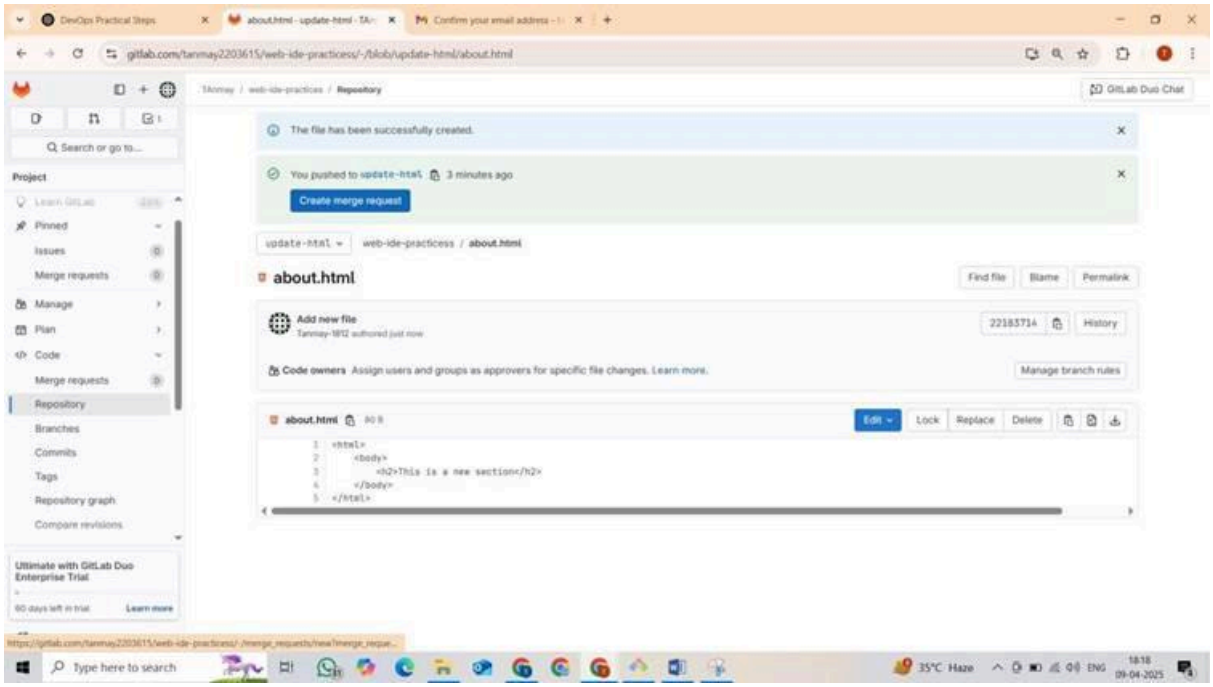
Name: Sakib Tamboli
Roll No:131 Div: B

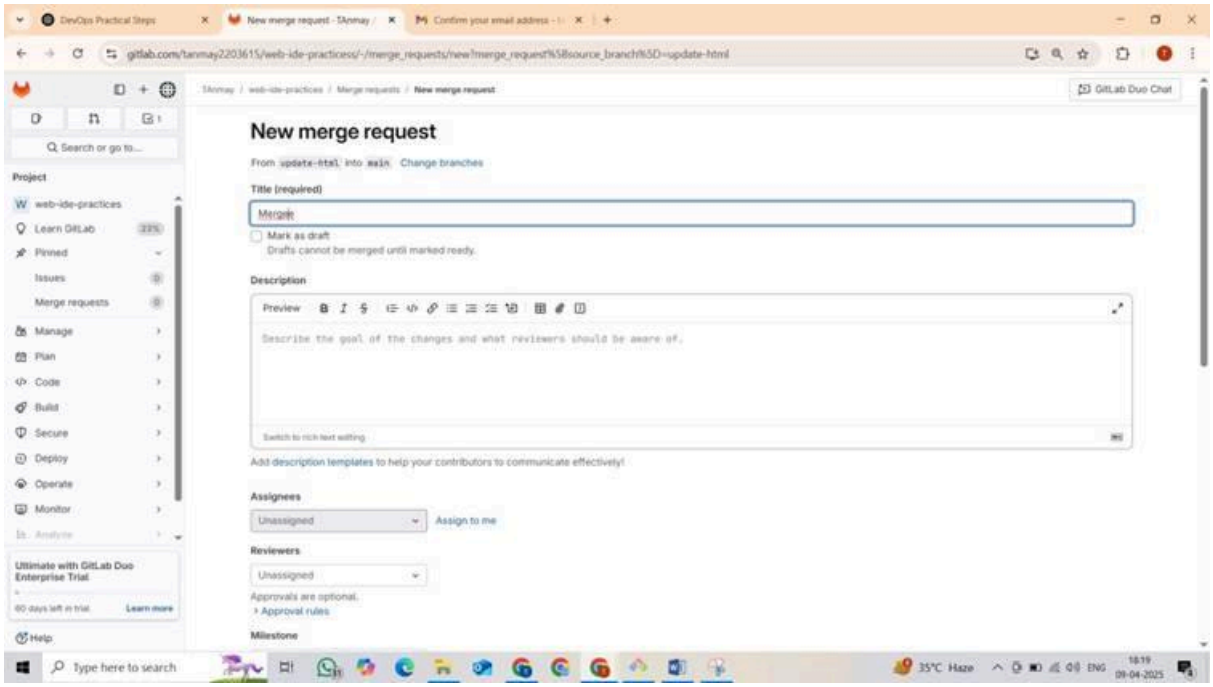




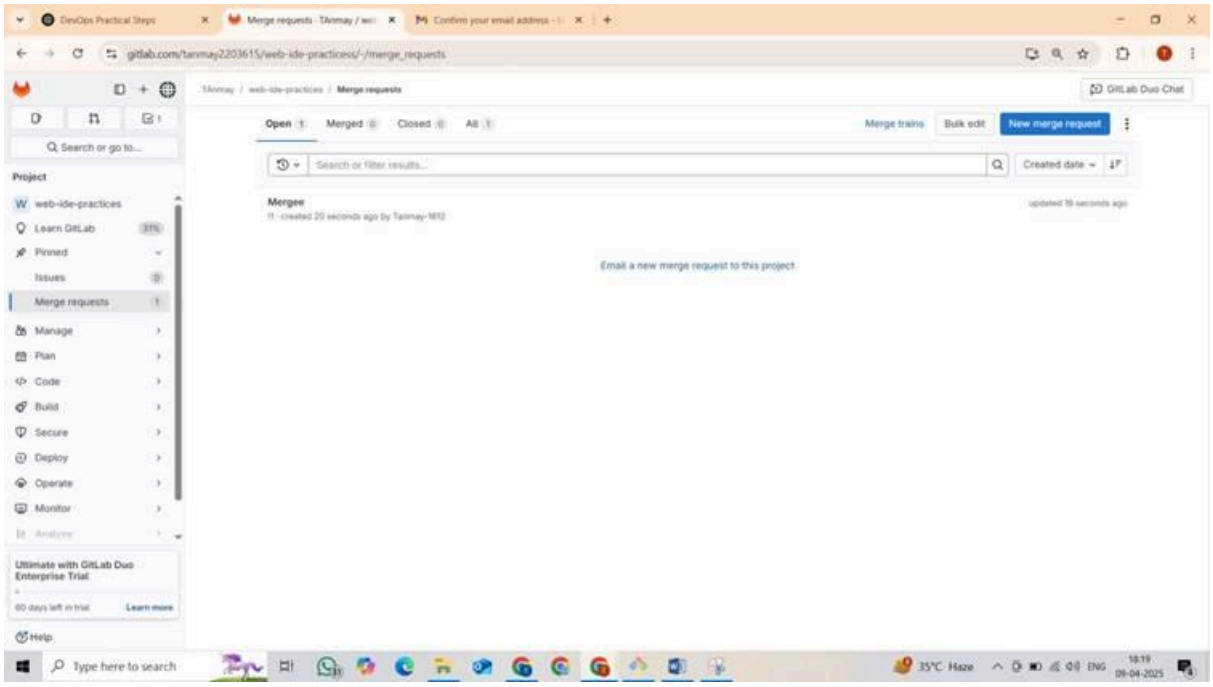
Name: Sakib Tamboli
Roll No:131 Div: B

3. **Click on Merge Requests > New Merge Request.**

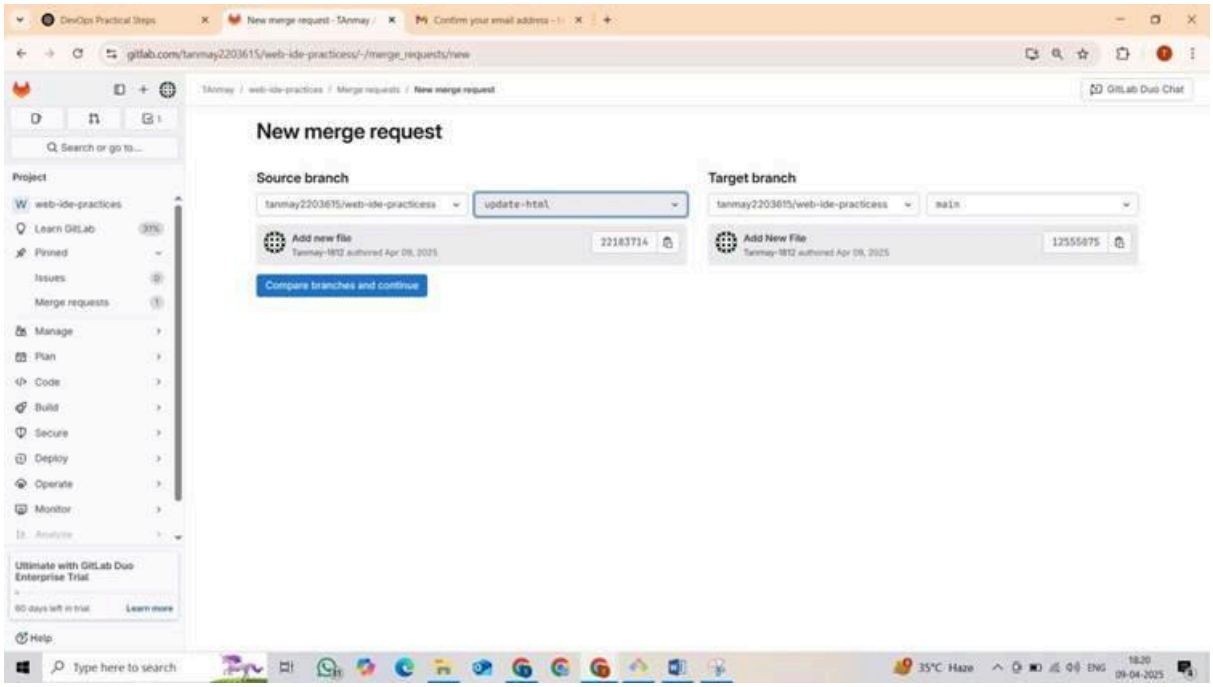




Name: Sakib Tamboli
Roll No:131 Div: B



4. **Select source and target branches.**
5. **Submit and merge after review.**



Name: Sakib Tamboli
Roll No:131 Div: B

Practical 7

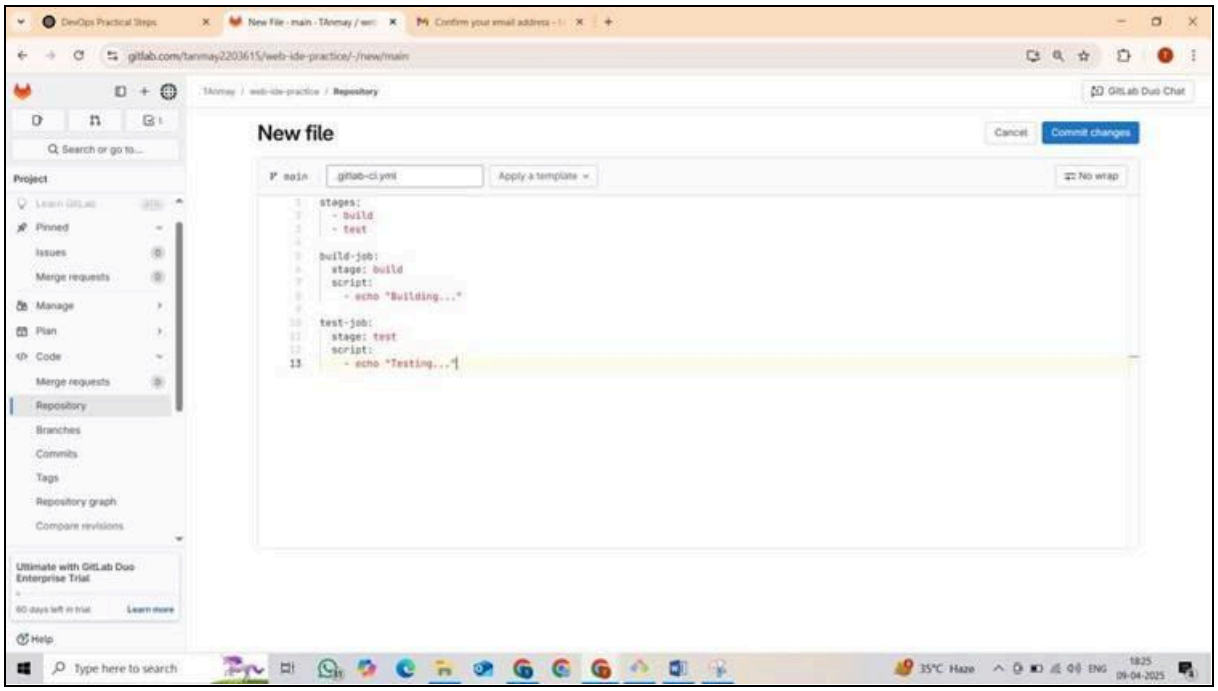
Aim:Workflow management in GitLab.

Steps:

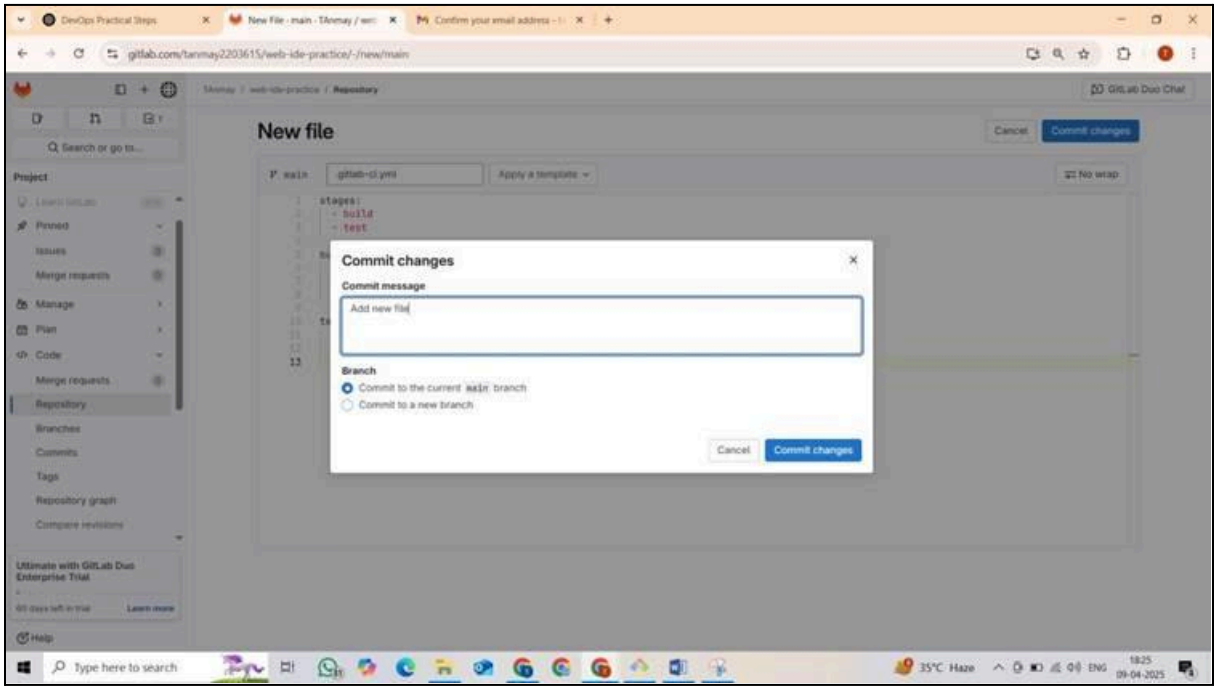
1. **In your repo, create .gitlab-ci.yml:**

```
stages:
  - build
  - test

build-job:
  stage: build
  script:
    - echo "Building..."

test-job:
  stage: test
  script:
    - echo "Testing..."
```

Name: Sakib Tamboli
Roll No:131 Div: B



2. Commit and push.



Name: Sakib Tamboli
Roll No:131 Div: B

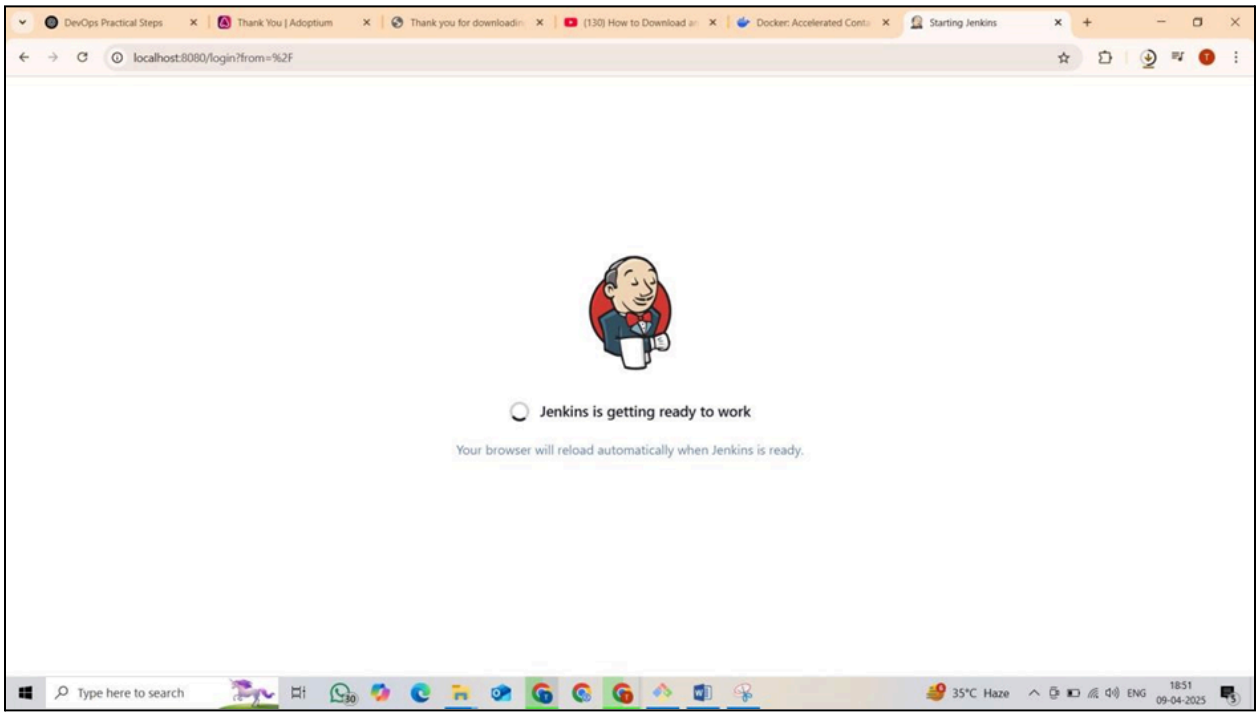
3. Go to CI/CD > Pipelines and view the build/test stages.

Name: Sakib Tamboli
Roll No:131 Div: B

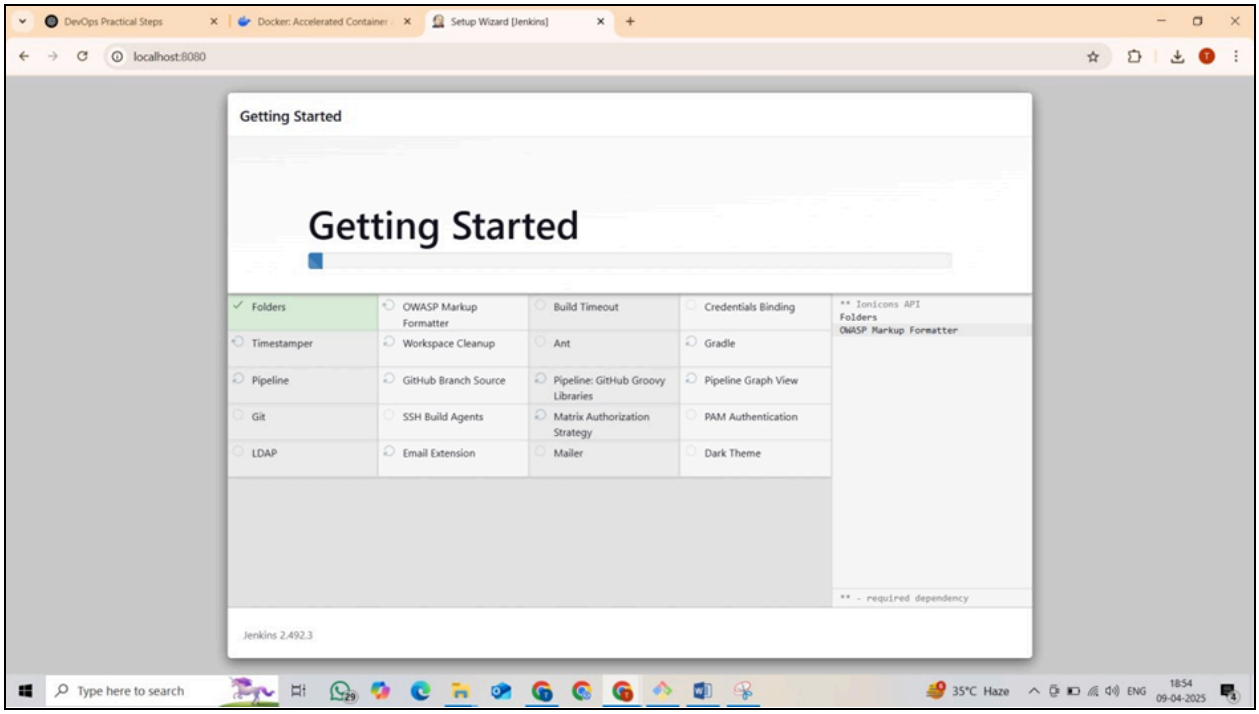
Practical 8

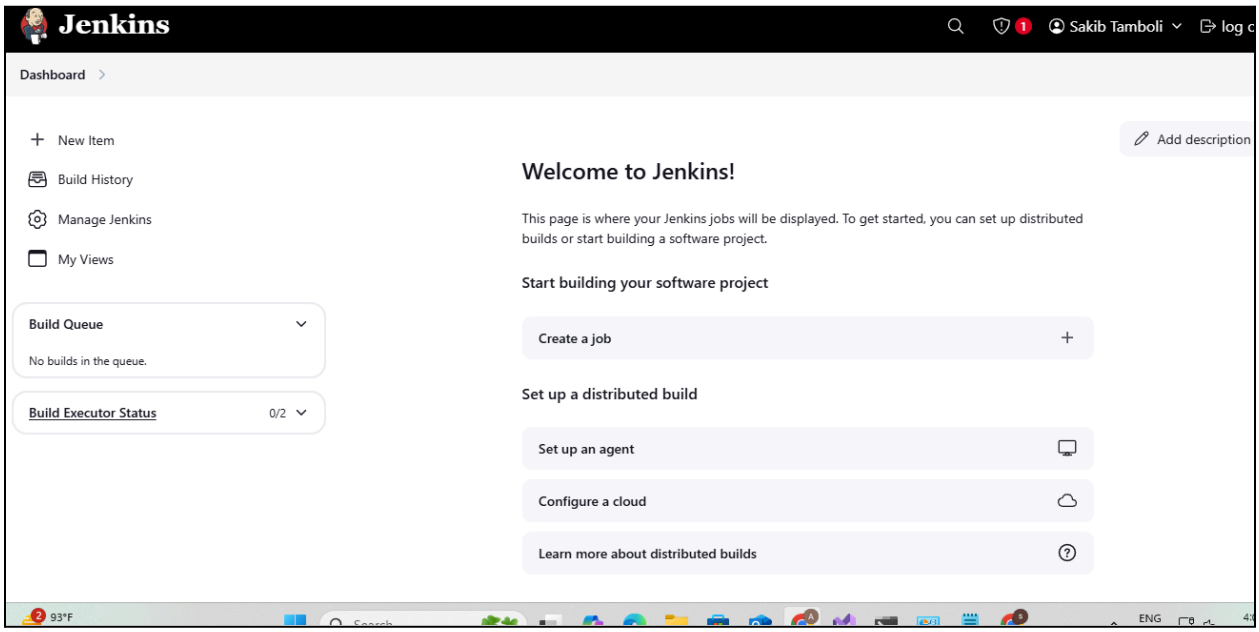
Aim:Demonstrate Continuous Integration and development using Jenkins.

1. Install Jenkins (visit https://www.jenkins.io)
2. Run Jenkins: http://localhost:8080

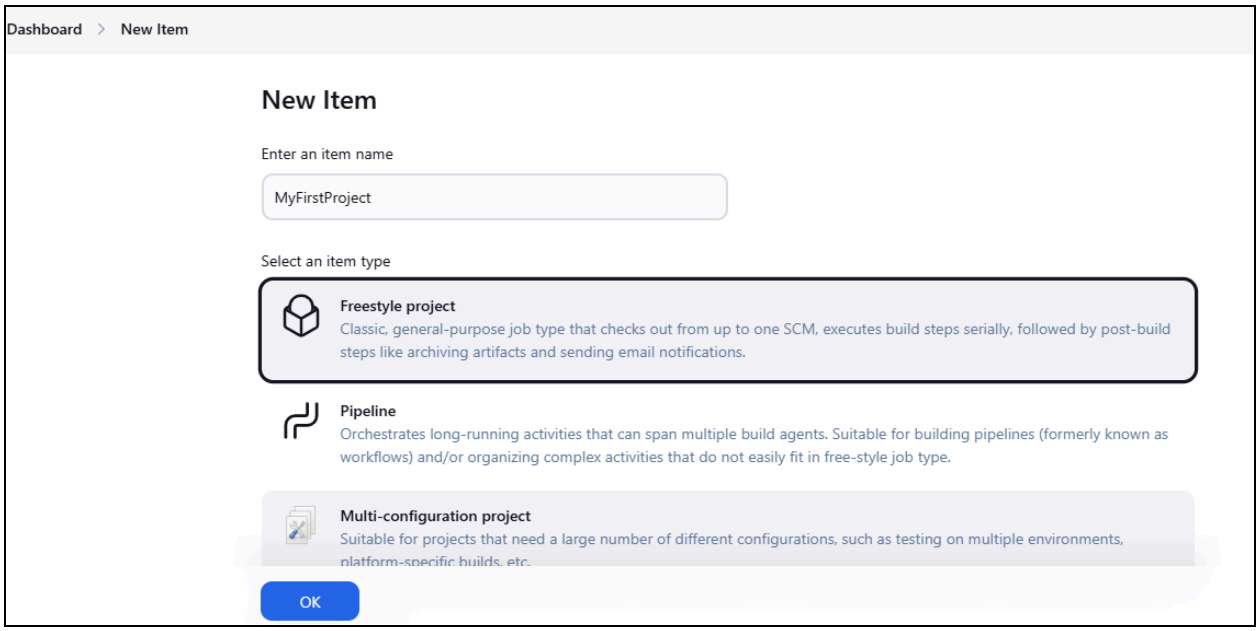


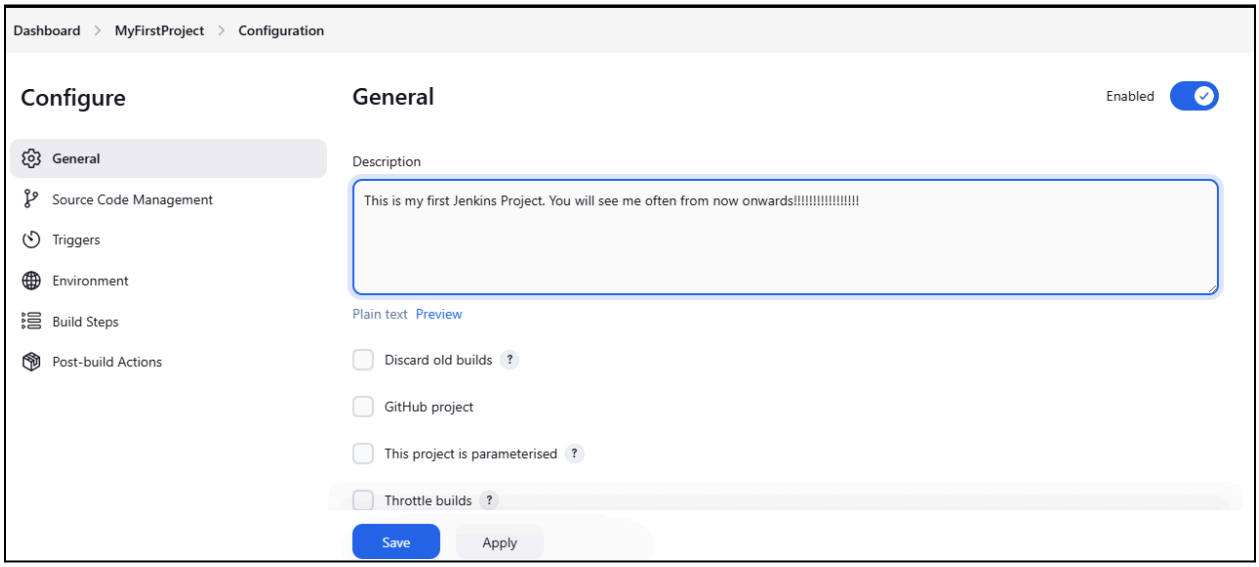
Name: Sakib Tamboli
Roll No:131 Div: B





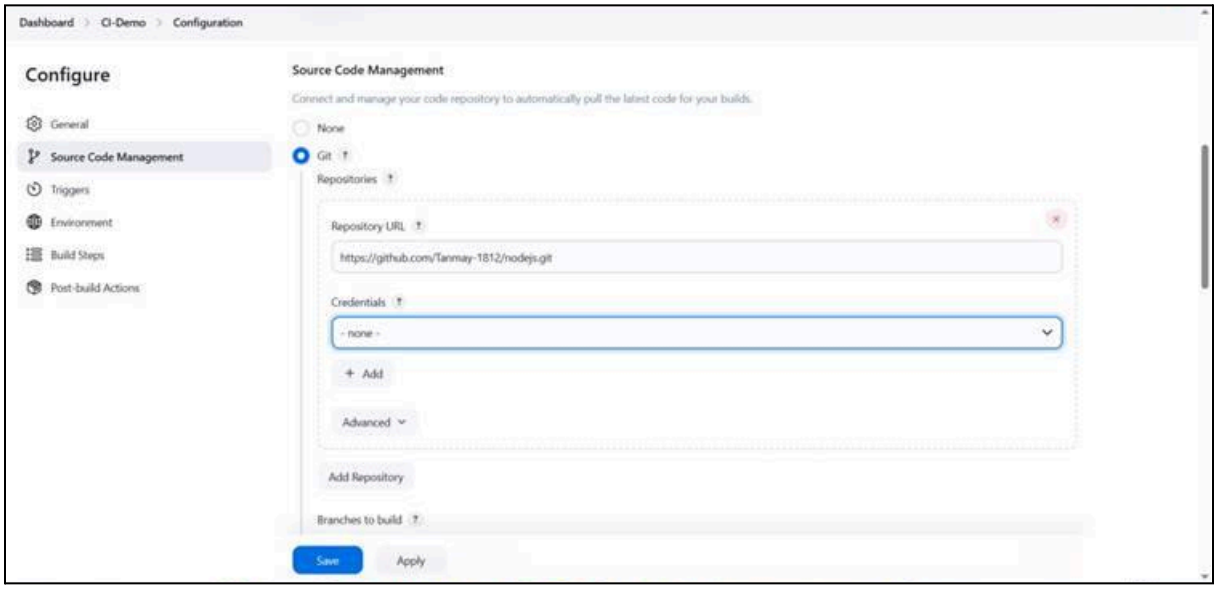
Name: Sakib Tamboli
Roll No:131 Div: B





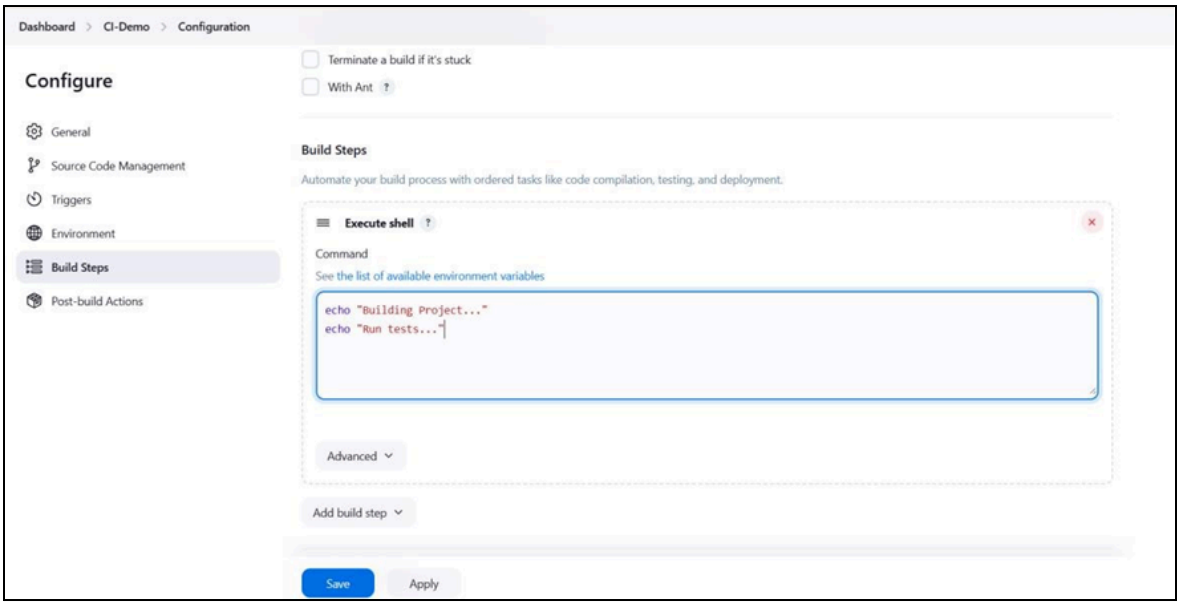
Name: Sakib Tamboli
Roll No:131 Div: B

4. **Under Source Code Management, choose Git and enter your repo URL.**

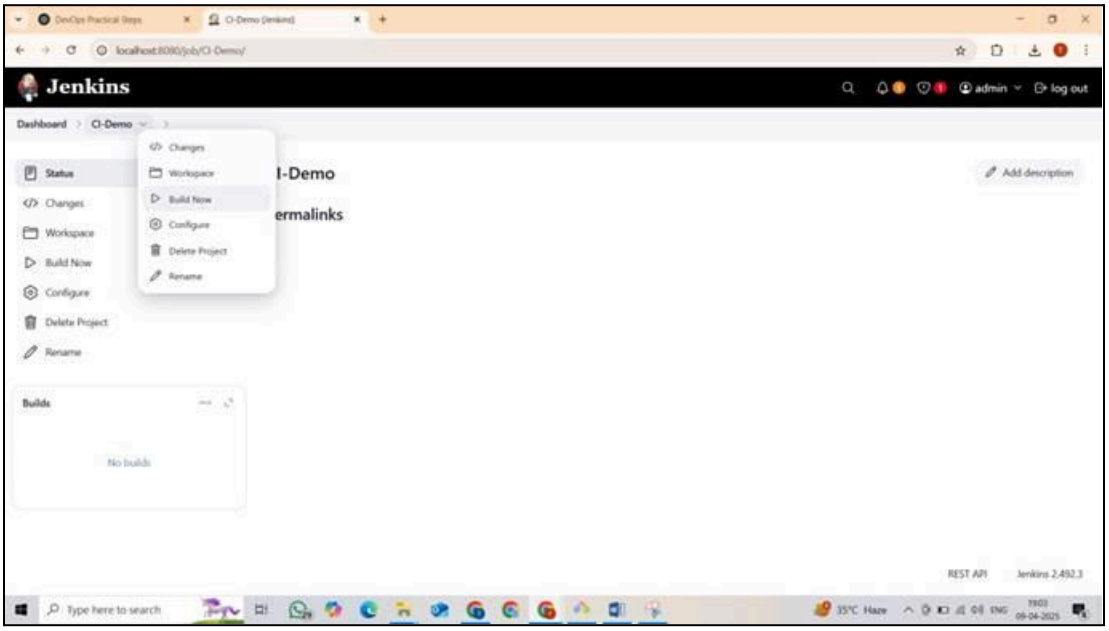


5. **Add Build Step > Execute Shell:**

```
echo "Building Project..."
echo "Run tests..."
```



6. Save and click Build Now.



7. Check output in Console Output.

```
+ echo 'Building Project...'
Building Project...
+ echo 'Run tests...'
Run tests...
Finished: SUCCESS
```

Name: Sakib Tamboli
Roll No:131 Div: B

Practical 9

Aim:Explore docker commands for content management.

```
FROM node

WORKDIR /testapp

COPY . .

RUN npm install

EXPOSE 3000

CMD ["npm", "start"]
```

IMAGES

Docker image ls
lists all locally stored Docker images along with their repository, tag, image ID, creation time, and size.

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker image ls
REPOSITORY   TAG       IMAGE ID       CREATED              SIZE
<none>       <none>    7837a88b33fe   About a minute ago   1.41GB
```

docker build -t <image_name> .
Build an Image from a Dockerfile

Name: Sakib Tamboli
Roll No:131 Div: B

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker build -t sakibtheseeker/image1 .
[+] Building 3.6s (10/10) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 136B
 => [internal] load metadata for docker.io/library/node:latest
 => [auth] library/node:pull token for registry-1.docker.io
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [1/4] FROM docker.io/library/node:latest@sha256:c5bfe90b30e795ec57bcc0040065ca6f284af84a1dafd22a207bd6b48c39ce01
 => [internal] load build context
 => => transferring context: 4.57kB
 => CACHED [2/4] WORKDIR /testapp
 => CACHED [3/4] COPY . .
 => CACHED [4/4] RUN npm install
 => exporting to image
 => => exporting layers
 => => writing image sha256:d2ad3484e2d51a91e1d26d39ea5b63e5fad591d209b51009dce394da1a8cee13
 => => naming to docker.io/sakibtheseeker/image1
```

docker build --no-cache -t <image_name> .

Build an Image from a Dockerfile without the cache

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker build --no-cache -t sakibtheseeker/image1 .
>>
[+] Building 1657.2s (7/8)
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 136B
 => [internal] load metadata for docker.io/library/node:latest
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [1/4] FROM docker.io/library/node:latest@sha256:c5bfe90b30e795ec57bcc0040065ca6f284af84a1dafd22a207bd6b48c39ce01
 => [internal] load build context
 => => transferring context: 4.57kB
 => CACHED [2/4] WORKDIR /testapp
 => [3/4] COPY . .
 => [4/4] RUN npm install
 => => # Run `npm audit` for details.
 => => # npm notice
 => => # npm notice New major version of npm available! 10.9.2 -> 11.3.0
 => => # npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.3.0
 => => # npm notice To update run: npm install -g npm@11.3.0
 => => # npm notice
```

docker images

List local images

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker images
REPOSITORY   TAG       IMAGE ID       CREATED          SIZE
<none>       <none>    2cf0635c1cd2   12 minutes ago   1.45GB
```

docker rmi <image_name>

Delete an Image

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker rmi 7837a88b33fe
Deleted: sha256:7837a88b33fe6b574e69df6d76601d7c14218673c386d746abb0199d2f7c8d6e
```

docker image prune
Remove all unused images

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker image prune
WARNING! This will remove all dangling images.
Are you sure you want to continue? [y/N] y
Total reclaimed space: 0B
```

DOCKER HUB

docker login -u <username>
Login into Docker

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker login -u sakibtheseeker

i Info → A Personal Access Token (PAT) can be used instead.
         To create a PAT, visit https://app.docker.com/settings

Password:
Login Succeeded
```

docker push <username>/<image_name>
Publish an image to Docker Hub

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker push sakibtheseeker/image1
Using default tag: latest
The push refers to repository [docker.io/sakibtheseeker/image1]
5da5f392adeb: Pushed
f05aeb5bfe25: Pushed
6e31715d48b2: Pushed
e37d7127ca71: Mounted from library/node
090904c3c0d9: Mounted from library/node
b1d7e40bae33: Mounted from library/node
8c76c6aff648: Pushed
6c7c1b88da61: Mounted from library/node
b2bcbd8ebb2b: Mounted from library/node
7f0053786e6e: Mounted from library/node
f7f2b929d8a5: Mounted from library/node
latest: digest: sha256:5bd32ea3f9cfd3fde25f7be78d95e4d0527482c8d28ce50385da1c3bdd4cbfe6 size: 2633
```

docker search <image_name>
Search Hub for an image

Name: Sakib Tamboli
Roll No:131 Div: B

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker search sha256:2cf0635c1cd2
NAME                        DESCRIPTION                                     STARS     OFFICIAL
runshenzhujm/sha256                                                         0
ggt3jfnxnakc/sha256                                                         0
david236/sha256                                                             0
tsarkar1/sha256                                                             0
gbarlop330/sha256                                                           0
dashresearch/sha256                                                         0
donslon/sha256                                                              0
invain55/sha256                                                             0
mintrees/sha256                                                             0
alaren123/sha256                                                            0
jynkkidocker/sha256                                                         0
matheusandrade4dev/sha256                                                   0
barristars/sha256           leveraige document recommendation assistant     0
ahm3dka/sha256                                                              0
duplexa/sha256                                                              0
the1ahmed/sha256            jar application                                 0
minicokr/sha256                                                             0
8846228343484/sha256                                                        0
17662437552/sha256                                                          0
pmichalikcc/sha256                                                          0
denic5/sha256                                                               0
johnf1103/sha256                                                            0
lastbraincell/sha256                                                        0
kgb1997/sha256                                                              0
ariear/sha256                                                               0
```

docker pull <image_name>

Pull an image from a Docker Hub

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker pull sakibtheseeker/image1
Using default tag: latest
latest: Pulling from sakibtheseeker/image1
Digest: sha256:5bd32ea3f9cfd3fde25f7be78d95e4d0527482c8d28ce50385da1c3bdd4cbfe6
Status: Image is up to date for sakibtheseeker/image1:latest
docker.io/sakibtheseeker/image1:latest
```

CONTAINERS

docker run --name <container_name> <image_name>

Create and run a container from an image, with a custom name:

Name: Sakib Tamboli
Roll No:131 Div: B

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker run --name lamboyant_euclid sakibtheseeker/image1

> testapp@0.1.0 start
> react-scripts start

(node:26) [DEP_WEBPACK_DEV_SERVER_ON_AFTER_SETUP_MIDDLEWARE] DeprecationWarning: 'onAfterSetupMiddleware' option is deprecated. Please use the 'setupMiddlewares' opti
on.
(Use `node --trace-deprecation ...` to show where the warning was created)
(node:26) [DEP_WEBPACK_DEV_SERVER_ON_BEFORE_SETUP_MIDDLEWARE] DeprecationWarning: 'onBeforeSetupMiddleware' option is deprecated. Please use the 'setupMiddlewares' o
tion.
Starting the development server...

Compiled successfully!

You can now view testapp in the browser.

  Local:            http://localhost:3000
  On Your Network:  http://172.17.0.7:3000

Note that the development build is not optimized.
To create a production build, use npm run build.

webpack compiled successfully
Compiling...
Compiled successfully!
webpack compiled successfully
```

Run a container with and publish a container's port(s) to the host.

docker run -p <host_port>:<container_port> <image_name>

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker run -p 3000:3000 7837a88b33fe

> testapp@0.1.0 start
> react-scripts start

(node:26) [DEP_WEBPACK_DEV_SERVER_ON_AFTER_SETUP_MIDDLEWARE] DeprecationWarning: 'onAfterSetupMiddleware' option is deprecated. Please use the 'setupMiddlewares' opti
on.
(Use `node --trace-deprecation ...` to show where the warning was created)
(node:26) [DEP_WEBPACK_DEV_SERVER_ON_BEFORE_SETUP_MIDDLEWARE] DeprecationWarning: 'onBeforeSetupMiddleware' option is deprecated. Please use the 'setupMiddlewares' op
tion.
Starting the development server...

Compiled successfully!

You can now view testapp in the browser.

  Local:            http://localhost:3000
  On Your Network:  http://172.17.0.2:3000

Note that the development build is not optimized.
To create a production build, use npm run build.

webpack compiled successfully
Compiling...
Compiled successfully!
webpack compiled successfully
```

docker run -d <image_name>

Run a container in the background

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker run -d  sha256:2cf0635c1cd2
62f1cdaac4fb65c920c5f8d9ea7bb40db904b942be1f1d728a5615f393d6540c
```

Name: Sakib Tamboli
Roll No:131 Div: B

docker start|stop <container_name> (or <container-id>)

Start or stop an existing container:

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker start sweet_poitras
sweet_poitras
```

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker stop sweet_poitras
sweet_poitras
```

docker rm <container_name>

Remove a stopped container:

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker rmi 7837a88b33fe
Error response from daemon: conflict: unable to delete 7837a88b33fe (must be forced) - image is being used by stopped container b0b2204c28dd
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker image ls
REPOSITORY   TAG       IMAGE ID       CREATED          SIZE
<none>       <none>    7837a88b33fe   50 minutes ago   1.41GB
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker rmi 7837a88b33fe
Error response from daemon: conflict: unable to delete 7837a88b33fe (must be forced) - image is being used by stopped container b0b2204c28dd
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker rm b0b2204c28dd
>>
b0b2204c28dd
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker rmi 7837a88b33fe
Deleted: sha256:7837a88b33fe6b574e69df6d76601d7c14218673c386d746abb0199d2f7c8d6e
```

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker rm b0b2204c28dd
>>
b0b2204c28dd
```

docker exec -it <container_name> sh

Open a shell inside a running container:

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker exec -it sweet_poitras sh
#
```

docker logs -f <container_name>

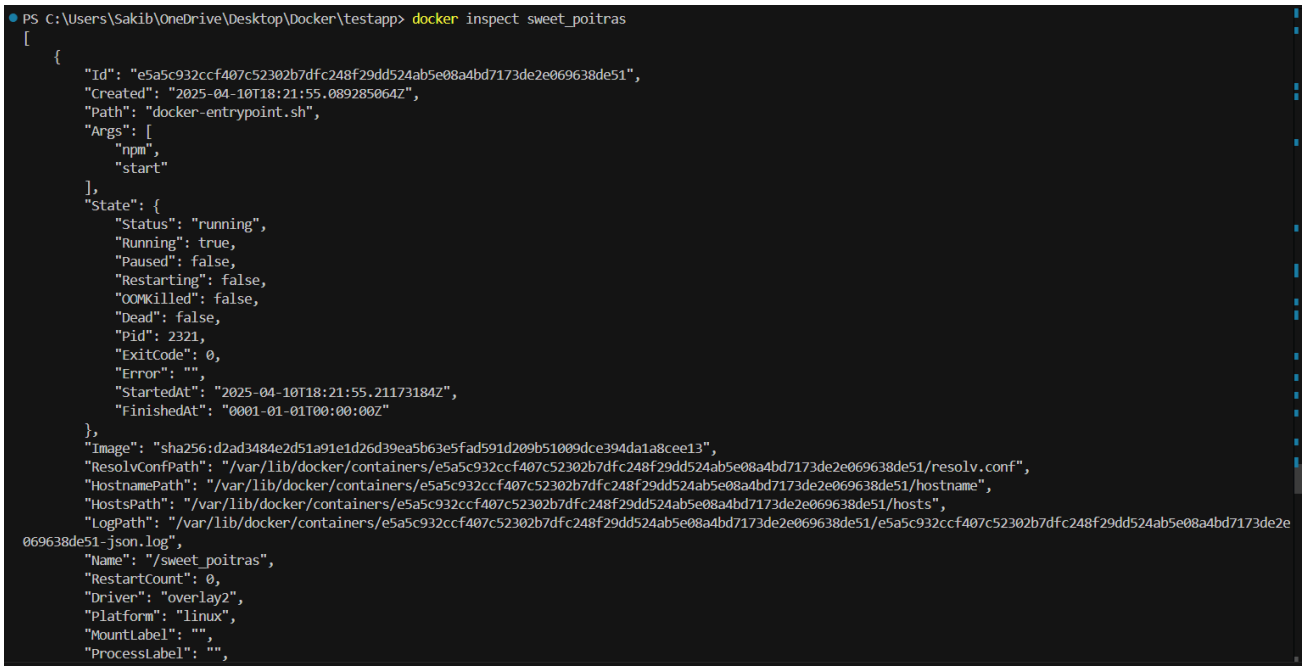
Fetch and follow the logs of a container:

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\testapp> docker logs -f sweet_poitras

> testapp@0.1.0 start
> react-scripts start

(node:26) [DEP_WEBPACK_DEV_SERVER_ON_AFTER_SETUP_MIDDLEWARE] DeprecationWarning: 'onAfterSetupMiddleware' option is deprecated. Please use the 'setupMiddlewares' opti
on.
(Use `node --trace-deprecation ...` to show where the warning was created)
(node:26) [DEP_WEBPACK_DEV_SERVER_ON_BEFORE_SETUP_MIDDLEWARE] DeprecationWarning: 'onBeforeSetupMiddleware' option is deprecated. Please use the 'setupMiddlewares' op
tion.
Starting the development server...

Compiled successfully!

You can now view testapp in the browser.

  Local:            http://localhost:3000
  On Your Network:  http://172.17.0.2:3000

Note that the development build is not optimized.
To create a production build, use npm run build.

webpack compiled successfully
Compiling...
Compiled successfully!
webpack compiled successfully
```

Name: Sakib Tamboli
Roll No:131 Div: B

docker inspect <container_name> (or <container_id>)

To inspect a running container:

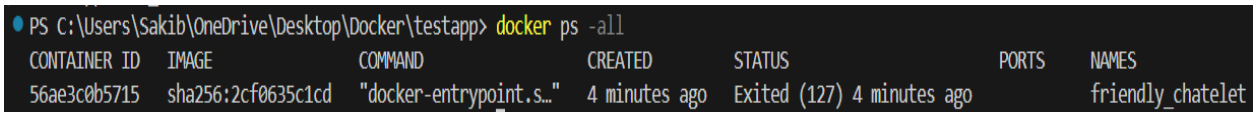


docker ps

To list currently running containers:

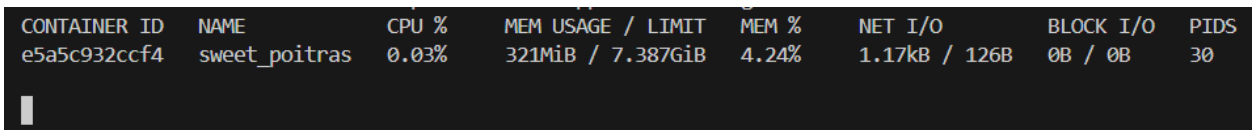
docker ps --all

List all docker containers (running and stopped):



docker container stats

View resource usage stats



Name: Sakib Tamboli
Roll No:131 Div: B

Practical 10

Aim:Develop a simple containerized application using Docker.

Code:

Index.ejs

```
<!DOCTYPE html>
<html>
<head>
  <title>Blog - Home</title>
  <link rel="stylesheet" href="/style.css">
</head>
<body>
  <nav>
    <a href="/">Home</a> | <a href="/about">About</a> | <a href="/contact">Contact</a> | <a
href="/create">Create Post</a>
  </nav>

  <h1>Welcome to My Blog!</h1>
  <p>Latest Posts:</p>

  <!-- Blog Posts List -->
  <ul>
    <% posts.forEach(post => { %>
      <li>
        <h2><a href="/post/<%= post.id %>"><%= post.title %></a></h2>
        <p><%= post.description %></p>
      </li>
    <% }); %>
  </ul>

  <!-- Add message about the app being inside the Docker container -->
  <div id="docker-message">
    <p><strong>This app is running inside a Docker container!</strong></p>
  </div>
</body>
</html>
```

About.ejs

```
<!DOCTYPE html>
```

Name: Sakib Tamboli
Roll No:131 Div: B

```
<html>
<head>
  <title>About</title>
  <link rel="stylesheet" href="/style.css">
</head>
<body>
  <nav>
    <a href="/">Home</a> | <a href="/about">About</a> | <a href="/contact">Contact</a>
  </nav>
  <h1>About This App</h1>
  <p>This is a sample application built with Node.js and Docker. It's great for learning how to containerize
apps.</p>
</body>
</html>
```

Create.ejs

```
<!DOCTYPE html>
<html>
<head>
  <title>Create a New Post</title>
  <link rel="stylesheet" href="/style.css">
</head>
<body>
  <nav>
    <a href="/">Home</a> | <a href="/about">About</a> | <a href="/contact">Contact</a> | <a
href="/create">Create Post</a>
  </nav>

  <h1>Create a New Blog Post</h1>

  <!-- Form to Create Post -->
  <form action="/create" method="POST">
    <input type="text" name="title" placeholder="Title" required>
    <textarea name="description" placeholder="Description" required></textarea>
    <button type="submit">Publish</button>
  </form>
</body>
</html>
```

Name: Sakib Tamboli
Roll No:131 Div: B

Output:

```
PS C:\Users\Sakib\OneDrive\Desktop\Docker\node-docker-app> docker build -t node-docker-app .
 >> docker run -p 3000:3000 node-docker-app
 >>
[+] Building 3.4s (11/11) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 353B
 => [internal] load metadata for docker.io/library/node:18
 => [auth] library/node:pull token for registry-1.docker.io
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [1/5] FROM docker.io/library/node:18@sha256:df9fa4e0e39c9b97e30240b5bb1d99bdb861573a82002b2c52ac7d6b8d6d773e
 => [internal] load build context
 => => transferring context: 58.98kB
 => CACHED [2/5] WORKDIR /app
 => CACHED [3/5] COPY package*.json ./
 => CACHED [4/5] RUN npm install
 => [5/5] COPY . .
 => exporting to image
 => => exporting layers
 => => writing image sha256:1d9a70d57dfd66b00bfe67599b65a145a90be162cd1099682ea55abdda8e4a03
 => => naming to docker.io/library/node-docker-app

> node-docker-app@1.0.0 start
> node app.js

App running at http://localhost:3000
```

Name: Sakib Tamboli
Roll No:131 Div: B

Home | About | Contact | Create Post

First Blog Post

This is the first post!

Back to Home

Home | About | Contact

About This App

This is a sample application built with Node.js and Docker. It's great for learning how to containerize apps.

Name: Sakib Tamboli
Roll No:131 Div: B

Practical 11

Aim:Ad-hoc Ansible commands.

Wsl –install

```
C:\Windows\System32>wsl --install
Downloading: Ubuntu
Installing: Ubuntu
Distribution successfully installed. It can be launched via 'wsl.exe -d Ubuntu'
```

wsl --install -d Ubuntu-22.04

```
C:\Windows\System32>wsl --install -d Ubuntu-22.04
wsl: Using legacy distribution registration. Consider using a tar based distribution instead.
Installing: Ubuntu 22.04 LTS
Ubuntu 22.04 LTS has been installed.
Launching Ubuntu 22.04 LTS...
Installing, this may take a few minutes...
Please create a default UNIX user account. The username does not need to match your Windows username.
For more information visit: https://aka.ms/wslusers
Enter new UNIX username: sakib
New password:
Retype new password:
passwd: password updated successfully
Installation successful!
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.167.4-microsoft-standard-WSL2 x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Sun May 18 22:53:19 IST 2025

  System load:  0.7                Processes:             54
  Usage of /:   0.1% of 1006.85GB  Users logged in:       0
  Memory usage: 5%                 IPv4 address for eth0: 172.28.184.172
  Swap usage:   0%


This message is shown once a day. To disable it please create the
/home/sakib/.hushlogin file.
sakib@LAPTOP-BPSVF1HI:~$
```

wsl -l –v

Name: Sakib Tamboli
Roll No:131 Div: B

```
C:\Windows\System32>wsl -l -v
  NAME              STATE           VERSION
* docker-desktop    Stopped         2
  Ubuntu-22.04      Stopped         2
  Ubuntu            Stopped         2
```

wsl -d Ubuntu-22.04

```
C:\Windows\System32>wsl -d Ubuntu-22.04
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

sakib@LAPTOP-BPSVF1HI:/mnt/c/Windows/System32$
```

sudo apt update && sudo apt upgrade -y

Name: Sakib Tamboli
Roll No:131 Div: B

```
sakib@LAPTOP-BPSVF1HI:/mnt/c/Windows/System32$ sudo apt update && sudo apt upgrade -y
[sudo] password for sakib:
Hit:1 http://archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [2338 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [354 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [13.6 kB]
Get:9 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [3429 kB]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [613 kB]
Get:11 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [624 B]
Get:12 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [974 kB]
Get:13 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [210 kB]
Get:14 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [21.7 kB]
Get:15 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [39.6 kB]
Get:16 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [8716 B]
Get:17 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [368 B]
Get:18 http://archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:19 http://archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:20 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:21 http://archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:22 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:23 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2583 kB]
Get:24 http://archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [418 kB]
Get:25 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [18.5 kB]
Get:26 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [3549 kB]
Get:27 http://archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [631 kB]
Get:28 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [676 B]
Get:29 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1203 kB]
Get:30 http://archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [297 kB]
Get:31 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [28.7 kB]
Get:32 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [46.5 kB]
Get:33 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [11.8 kB]
Get:34 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [592 B]
Get:35 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [68.8 kB]
Get:36 http://archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [11.4 kB]
Get:37 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [392 B]
Get:38 http://archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:39 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [30.0 kB]
Get:40 http://archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:41 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [672 B]
Get:42 http://archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 37.7 MB in 15s (2499 kB/s)
```

sudo apt install ansible -y

Name: Sakib Tamboli
Roll No:131 Div: B

```
sakib@LAPTOP-BPSVF1HI:/mnt/c/Windows/System32$ sudo apt install ansible -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ieee-data python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-netaddr python3-ntlm-auth python3-packaging python3-pycryptodome
  python3-requests-kerberos python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-simplejson python3-winrm python3-xmltodict
Suggested packages:
  cowsay sshpass python3-sniffio python3-trio python-lockfile-doc ipython3 python-netaddr-docs
The following NEW packages will be installed:
  ansible ieee-data python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-netaddr python3-ntlm-auth python3-packaging python3-pycryptodome
  python3-requests-kerberos python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-simplejson python3-winrm python3-xmltodict
0 upgraded, 19 newly installed, 0 to remove and 0 not upgraded.
Need to get 22.9 MB of archives.
After this operation, 243 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3-packaging all 21.3-1 [30.7 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-pycryptodome amd64 3.11.0+dfsg1-3ubuntu0.1 [1029 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3-dnspython all 2.1.0-1ubuntu1 [123 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy/main amd64 ieee-data all 20210605.1 [1887 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3-netaddr all 0.8.0-2 [309 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy/universe amd64 ansible all 2.10.7+merged+base+2.10.8+dfsg-1 [17.5 MB]
Get:7 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-argcomplete all 1.8.1-1.5 [27.2 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3-jmespath all 0.10.0-1 [21.7 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-kerberos amd64 1.1.14-3.1build5 [23.0 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3-lockfile all 1:0.12.2-2.2 [14.6 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3-simplejson amd64 3.17.6-1build1 [54.7 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-libcloud all 3.2.0-2 [1554 kB]
Get:13 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-ntlm-auth all 1.4.0-1 [20.4 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-requests-kerberos all 0.12.0-2 [11.9 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-requests-ntlm all 1.1.0-1.1 [6160 B]
Get:16 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3-requests-toolbelt all 0.9.1-1 [38.0 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-selinux amd64 3.3-1build2 [159 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-xmltodict all 0.12.0-2 [12.6 kB]
Get:19 http://archive.ubuntu.com/ubuntu jammy/universe amd64 python3-winrm all 0.3.0-2 [21.7 kB]
Fetched 22.9 MB in 10s (2280 kB/s)
Selecting previously unselected package python3-packaging.
(Reading database ... 42598 files and directories currently installed.)
Preparing to unpack .../00-python3-packaging_21.3-1_all.deb ...
Unpacking python3-packaging (21.3-1) ...
Selecting previously unselected package python3-pycryptodome.
Preparing to unpack .../01-python3-pycryptodome_3.11.0+dfsg1-3ubuntu0.1_amd64.deb ...
Unpacking python3-pycryptodome (3.11.0+dfsg1-3ubuntu0.1) ...
Selecting previously unselected package python3-dnspython.
```

ansible --version

```
sakib@LAPTOP-BPSVF1HI:/mnt/c/Windows/System32$ ansible --version
ansible 2.10.8
  config file = None
  configured module search path = ['/home/sakib/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  executable location = /usr/bin/ansible
  python version = 3.10.12 (main, Feb  4 2025, 14:57:36) [GCC 11.4.0]
```

sudo mkdir -p /etc/ansible
sudo vi /etc/ansible/hosts

```
sakib@LAPTOP-BPSVF1HI:/mnt/c/Windows/System32$ sudo mkdir -p /etc/ansible
sakib@LAPTOP-BPSVF1HI:/mnt/c/Windows/System32$ sudo vi /etc/ansible/hosts
```

Name: Sakib Tamboli
Roll No:131 Div: B

```
[local]

localhost ansible_connection=local
~
~
~
~
~
~
~
~
~
~
~
~
```

ansible local -m ping

```
sakib@LAPTOP-BPSVF1HI:/mnt/c/Windows/System32$ ansible local -m ping
localhost | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
```

ansible local -m shell -a "ls -la /home/$USER"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m shell -a "ls -la /home/$USER"
localhost | CHANGED | rc=0 >>
total 32
drwxr-x--- 4 sakib sakib 4096 May 18 23:13 .
drwxr-xr-x 3 root  root  4096 May 18 22:53 ..
drwxr-xr-x 3 sakib sakib 4096 May 18 23:13 .ansible
-rw------- 1 sakib sakib   27 May 18 23:00 .bash_history
-rw-r--r-- 1 sakib sakib  220 May 18 22:53 .bash_logout
-rw-r--r-- 1 sakib sakib 3771 May 18 22:53 .bashrc
drwx------ 2 sakib sakib 4096 May 18 22:53 .cache
-rw-r--r-- 1 sakib sakib    0 May 18 22:53 .motd_shown
-rw-r--r-- 1 sakib sakib  807 May 18 22:53 .profile
-rw-r--r-- 1 sakib sakib    0 May 18 23:06 .sudo_as_admin_successful
```

Name: Sakib Tamboli
Roll No:131 Div: B

sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m shell -a "echo 'Hello' > /tmp/hello.txt"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m shell -a "echo 'Hello' > /tmp/hello.txt"
localhost | CHANGED | rc=0 >>
```

ansible local -m shell -a "ls -l /tmp | grep hello"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m shell -a "ls -l /tmp | grep hello"
localhost | CHANGED | rc=0 >>
-rw-r--r-- 1 sakib sakib    6 May 18 23:41 hello.txt
```

ansible local -m command -a "uptime"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m command -a "uptime"
localhost | CHANGED | rc=0 >>
 23:51:59 up 55 min,  1 user,  load average: 0.00, 0.01, 0.00
```

ansible local -m command -a "cat /etc/os-release"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m command -a "cat /etc/os-release"
localhost | CHANGED | rc=0 >>
PRETTY_NAME="Ubuntu 22.04.5 LTS"
NAME="Ubuntu"
VERSION_ID="22.04"
VERSION="22.04.5 LTS (Jammy Jellyfish)"
VERSION_CODENAME=jammy
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=jammy
```

ansible local -m command -a "name=nginx state=present" -b

```
localhost | FAILED! => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "module_stderr": "sudo: a password is required\n",
    "module_stdout": "",
    "msg": "MODULE FAILURE\nSee stdout/stderr for the exact error",
    "rc": 1
}
```

Name: Sakib Tamboli
Roll No:131 Div: B

ansible local -m apt -a "name=nginx state=present" -b --ask-become-pass

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m apt -a "name=nginx state=present" -b --ask-become-pass
BECOME password:
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "cache_update_time": 1747589790,
    "cache_updated": false,
    "changed": true,
    "stderr": "",
    "stderr_lines": [],
    "stdout": "Reading package lists...\nBuilding dependency tree...\nReading state information...\nThe following additi
onal packages will be installed:\n  libgd3 libnginx-mod-http-geoip2 libnginx-mod-http-image-filter\n  libnginx-mod-http-
xslt-filter libnginx-mod-mail libnginx-mod-stream\n  libnginx-mod-stream-geoip2 libxpm4 libxslt1.1 nginx-common nginx-co
re\nSuggested packages:\n  libgd-tools fcgiwrap nginx-doc ssl-cert\nThe following NEW packages will be installed:\n  lib
gd3 libnginx-mod-http-geoip2 libnginx-mod-http-image-filter\n  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-
mod-stream\n  libnginx-mod-stream-geoip2 libxpm4 libxslt1.1 nginx nginx-common nginx-core\n0 upgraded, 12 newly installe
d, 0 to remove and 0 not upgraded.\nNeed to get 1028 kB of archives.\nAfter this operation, 3466 kB of additional disk s
```

ansible local -m apt -a "name=nginx state=present" -b

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m apt -a "name=nginx state=present" -b
localhost | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "cache_update_time": 1747589790,
    "cache_updated": false,
    "changed": false
}
```

dpkg -l | grep nginx

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ dpkg -l | grep nginx
ii  libnginx-mod-http-geoip2       1.18.0-6ubuntu14.6                  amd64        GeoIP2 HTTP module for Nginx
ii  libnginx-mod-http-image-filter 1.18.0-6ubuntu14.6                  amd64        HTTP image filter module for Ngi
nx
ii  libnginx-mod-http-xslt-filter  1.18.0-6ubuntu14.6                  amd64        XSLT Transformation module for N
ginx
ii  libnginx-mod-mail              1.18.0-6ubuntu14.6                  amd64        Mail module for Nginx
ii  libnginx-mod-stream            1.18.0-6ubuntu14.6                  amd64        Stream module for Nginx
ii  libnginx-mod-stream-geoip2     1.18.0-6ubuntu14.6                  amd64        GeoIP2 Stream module for Nginx
ii  nginx                          1.18.0-6ubuntu14.6                  amd64        small, powerful, scalable web/pr
oxy server
ii  nginx-common                   1.18.0-6ubuntu14.6                  all          small, powerful, scalable web/pr
oxy server - common files
ii  nginx-core                     1.18.0-6ubuntu14.6                  amd64        nginx web/proxy server (standard
 version)
```

ansible local -m apt -a "name=nginx state=absent" -b

Name: Sakib Tamboli
Roll No:131 Div: B

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m apt -a "name=nginx state=absent" -b
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "stderr": "",
    "stderr_lines": [],
    "stdout": "Reading package lists...\nBuilding dependency tree...\nReading state information...\nThe following packag
es were automatically installed and are no longer required:\n  libgd3 libnginx-mod-http-geoip2 libnginx-mod-http-image-f
ilter\n  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream\n  libnginx-mod-stream-geoip2 libxpm4 libxs
lt1.1 nginx-common nginx-core\nUse 'sudo apt autoremove' to remove them.\nThe following packages will be REMOVED:\n  ngi
nx\n0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.\nAfter this operation, 50.2 kB disk space will be fre
ed.\n(Reading database ... \r(Reading database ... 5%\r(Reading database ... 10%\r(Reading database ... 15%\r(Reading da
tabase ... 20%\r(Reading database ... 25%\r(Reading database ... 30%\r(Reading database ... 35%\r(Reading database ... 4
0%\r(Reading database ... 45%\r(Reading database ... 50%\r(Reading database ... 55%\r(Reading database ... 60%\r(Reading
 database ... 65%\r(Reading database ... 70%\r(Reading database ... 75%\r(Reading database ... 80%\r(Reading database ..
 85%\r(Reading database ... 90%\r(Reading database ... 95%\r(Reading database ... 100%\r(Reading database ... 81172 fil
```

ansible local -m user -a "name=testuser state=present" -b

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m user -a "name=testuser state=present" -b
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "comment": "",
    "create_home": true,
    "group": 1001,
    "home": "/home/testuser",
    "name": "testuser",
    "shell": "/bin/sh",
    "state": "present",
    "system": false,
    "uid": 1001
}
```

cat /etc/passwd | grep testuser

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ cat /etc/passwd | grep testuser
testuser:x:1001:1001::/home/testuser:/bin/sh
```

ansible local -m user -a "name=testuser state=absent" -b

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m user -a "name=testuser state=absent" -b
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "force": false,
    "name": "testuser",
    "remove": false,
    "state": "absent"
}
```

Name: Sakib Tamboli
Roll No:131 Div: B

ansible local -m file -a "path=/tmp/myfile.txt state=touch"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m file -a "path=/tmp/myfile.txt state=touch"
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "dest": "/tmp/myfile.txt",
    "gid": 1000,
    "group": "sakib",
    "mode": "0644",
    "owner": "sakib",
    "size": 0,
    "state": "file",
    "uid": 1000
}
```

ansible local -m shell -a "echo 'This is a first line.' > /tmp/myfile.txt"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m shell -a "echo 'This is a first line.' > /tmp/myfile.txt"
localhost | CHANGED | rc=0 >>
```

ansible local -m shell -a "echo 'This is an additional line.' >> /tmp/myfile.txt"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m shell -a "echo 'This is an additional line.' >> /tmp/myfile.txt"
localhost | CHANGED | rc=0 >>
```

ansible local -m command -a "cat /tmp/myfile.txt"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m command -a "cat /tmp/myfile.txt"
localhost | CHANGED | rc=0 >>
This is a first line.
This is an additional line.
```

ansible local -m file -a "path=/tmp/myfile.txt state=absent"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m file -a "path=/tmp/myfile.txt state=absent"
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "path": "/tmp/myfile.txt",
    "state": "absent"
}
```

ansible local -m file -a "path=/tmp/mydire state=directory mode=0755"

Name: Sakib Tamboli
Roll No:131 Div: B

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m file -a "path=/tmp/mydire state=directory mode=0755"
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "gid": 1000,
    "group": "sakib",
    "mode": "0755",
    "owner": "sakib",
    "path": "/tmp/mydire",
    "size": 4096,
    "state": "directory",
    "uid": 1000
}
```

ls -la /tmp | grep mydire

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ls -la /tmp | grep mydire
drwxr-xr-x  2 sakib sakib 4096 May 19 00:57 mydire
```

ansible local -m file -a "path=/tmp/mydire state=absent"

```
sakib@LAPTOP-BPSVF1HI:/etc/ansible$ ansible local -m file -a "path=/tmp/mydire state=absent"
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "path": "/tmp/mydire",
    "state": "absent"
}
```

Name: Sakib Tamboli
Roll No:131 Div: B

Practical 12

Aim:Using Ansible playbooks.

Sudo mkdir myansibleprj

```
sakib@LAPTOP-BPSVF1HI:/home$ sudo mkdir myansibleprj
sakib@LAPTOP-BPSVF1HI:/home$ ls
myansibleprj  sakib  testuser
```

1.PLAYBOOK FOR DEMO PROJECT

nano firstplaybook.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ nano firstplaybook.yml
```

cat firstplaybook.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ cat firstplaybook.yml
---
- name: Sakib's First Ansible Playbook
  hosts: localhost
  gather_facts: no
  tasks:
    - name: Print Hello Message
      debug:
        msg: "Hello from Sakib!"
```

ansible-playbook firstplaybook.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ ansible-playbook firstplaybook.yml

PLAY [Sakib's First Ansible Playbook] ******************************************************************************

TASK [Print Hello Message] *****************************************************************************************
ok: [localhost] => {
    "msg": "Hello from Sakib!"
}

PLAY RECAP *********************************************************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Name: Sakib Tamboli
Roll No:131 Div: B

nano firstplaybook.yml
cat firstplaybook.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ nano firstplaybook.yml
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ cat firstplaybook.yml
---
- name: Sakib's First Ansible Playbook
  hosts: localhost
  tasks:
    - name: Print Hello Message
      debug:
        msg: "Hello from Sakib!"
    - name: print host name
      debug:
          var: ansible_hostname
    - name: print Ubuntu version
      debug:
          var: ansible_distribution
```

ansible-playbook firstplaybook.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ ansible-playbook firstplaybook.yml

PLAY [Sakib's First Ansible Playbook] ******************************************************************
**********************
TASK [Gathering Facts] *********************************************************************************
**********************ok: [localhost]

TASK [Print Hello Message] *****************************************************************************
**********************ok: [localhost] => {
    "msg": "Hello from Sakib!"
}

TASK [print host name] *********************************************************************************
**********************ok: [localhost] => {
    "ansible_hostname": "LAPTOP-BPSVF1HI"
}

TASK [print Ubuntu version] ****************************************************************************
**********************ok: [localhost] => {
    "ansible_distribution": "Ubuntu"
}

PLAY RECAP *********************************************************************************************
**********************localhost                  : ok=4    changed=0    unreachable=0    failed=0
   skipped=0    rescued=0    ignored=0
```

Name: Sakib Tamboli
Roll No:131 Div: B

2.INSTALLING AND RUNNING APACHE USING PLAYBOOK

nano startapache.yml
cat startapache.yml

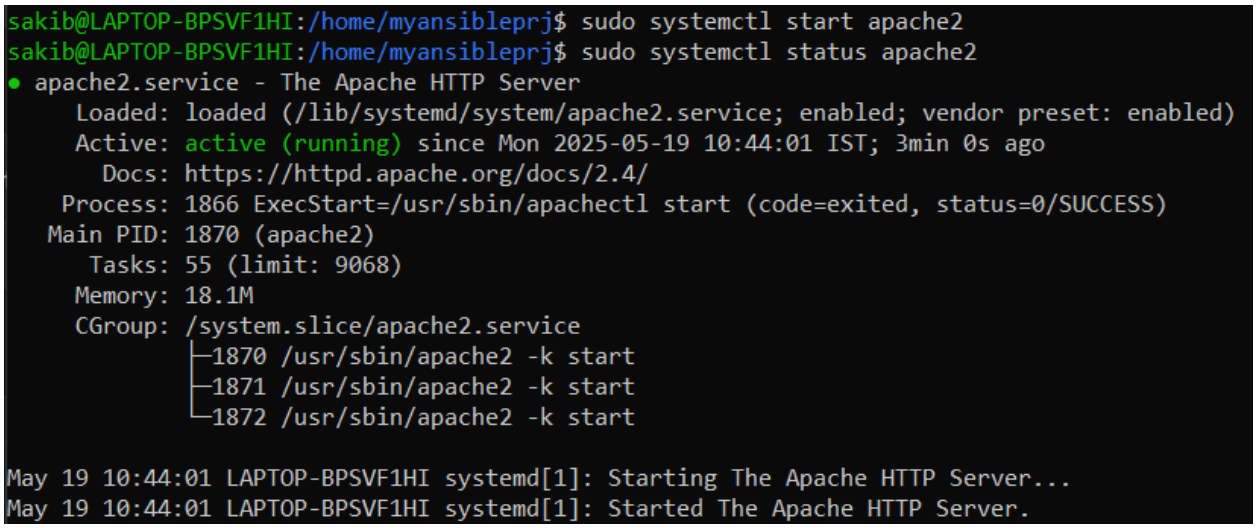
```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ nano startapache.yml
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ cat startapache.yml
---
- name: Install and Start Apache
  hosts: local
  become: yes
  tasks:
    - name: Install Apache
      apt:
        name: apache2
        state: present

    - name: Start Apache Service
      service:
        name: apache2
        state: started
        enabled: yes
```

ansible-playbook startapache.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ ansible-playbook startapache.yml

PLAY [Install and Start Apache] ************************************************************

TASK [Gathering Facts] *********************************************************************
ok: [localhost]

TASK [Install Apache] **********************************************************************
ok: [localhost]

TASK [Start Apache Service] ****************************************************************
ok: [localhost]

PLAY RECAP *********************************************************************************
localhost                  : ok=3    changed=0    unreachable=0    failed=0    skipped=0    rescue
d=0    ignored=0
```

Name: Sakib Tamboli
Roll No:131 Div: B

sudo systemctl start apache2
sudo systemctl status apache2



Name: Sakib Tamboli
Roll No:131 Div: B

3.PLAYBOOK FOR INFRASTRUCTURE AS A CODE

nano infraascode2.yml
cat infraascode2.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ nano infraascode2.yml
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ cat infraascode2.yml
---
- name: Simple Infrastracture Setup
  hosts: localhost
  become: yes

  tasks:
    - name: Install Apache
      apt:
        name: apache2
        state: present
        update_cache: yes

    - name: Start Apache service
      service:
        name: apache2
        state: started
        enabled: yes

    -name: Deploy index.html
     copy:
       content: "<h1> Hello World from Sakib ....! </h1>"
       dest: /var/www/html/index.html
```

ansible-playbook infraascode2.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ ansible-playbook infraascode2.yml

PLAY [Simple Infrastracture Setup] *********************************************************

TASK [Gathering Facts] *********************************************************************
ok: [localhost]

TASK [Install Apache] **********************************************************************
ok: [localhost]

TASK [Start Apache service] ****************************************************************
ok: [localhost]

TASK [Deploy index.html] *******************************************************************
changed: [localhost]

PLAY RECAP *********************************************************************************
localhost                  : ok=4    changed=1    unreachable=0    failed=0    skipped=0    rescue
d=0    ignored=0
```

Name: Sakib Tamboli
Roll No:131 Div: B

4.PLAYBOOK FOR APPLICATION DEPLOYMENT

nano appdeployplaybook.yml
cat appdeployplaybook.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ cat appdeployplaybook.yml
- name: Deploy a PHP Web Application
  hosts: localhost
  become: yes
  tasks:
    - name: Install Apache and PHP
      apt:
        name:
          - apache2
          - php
        state: present

    - name: Deploy a PHP application
      copy:
        content: |
          <?php
          echo "<h1>Hello from Ansible and PHP!</h1>";
          echo "<body>This is demo page</body>";
          ?>
        dest: /var/www/html/index.php

    - name: Restart Apache
      service:
        name: apache2
        state: restarted
```

ansible-playbook appdeployplaybook.yml

Name: Sakib Tamboli
Roll No:131 Div: B

5.Playbook for Running HelloWorld.java

sudo apt install openjdk-21-jdk-headless

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ sudo apt install openjdk-21-jdk-headless
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libgd3 libnginx-mod-http-geoip2 libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter
  libnginx-mod-mail libnginx-mod-stream libnginx-mod-stream-geoip2 libxpm4 libxslt1.1
  nginx-common nginx-core
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  alsa-topology-conf alsa-ucm-conf ca-certificates-java java-common libasound2 libasound2-data
  libnspr4 libnss3 libpcsclite1 openjdk-21-jre-headless
Suggested packages:
  default-jre libasound2-plugins alsa-utils pcscd openjdk-21-demo openjdk-21-source libnss-mdns
  fonts-dejavu-extra fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei
  | fonts-wqy-zenhei fonts-indic
The following NEW packages will be installed:
  alsa-topology-conf alsa-ucm-conf ca-certificates-java java-common libasound2 libasound2-data
  libnspr4 libnss3 libpcsclite1 openjdk-21-jdk-headless openjdk-21-jre-headless
0 upgraded, 11 newly installed, 0 to remove and 0 not upgraded.
Need to get 131 MB of archives.
After this operation, 306 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 alsa-topology-conf all 1.2.5.1-2 [15.5 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 libasound2-data all 1.2.6.1-1ubuntu1 [19.1
 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy/main amd64 libasound2 amd64 1.2.6.1-1ubuntu1 [390 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 alsa-ucm-conf all 1.2.6.3-1ubuntu1
.12 [43.5 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy/main amd64 java-common all 0.72build2 [6782 B]
```

sudo apt install openjdk-21-jre-headless

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ sudo apt install openjdk-21-jre-headless
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
openjdk-21-jre-headless is already the newest version (21.0.7+6~us1-0ubuntu1~22.04).
openjdk-21-jre-headless set to manually installed.
The following packages were automatically installed and are no longer required:
  libgd3 libnginx-mod-http-geoip2 libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter
  libnginx-mod-mail libnginx-mod-stream libnginx-mod-stream-geoip2 libxpm4 libxslt1.1
  nginx-common nginx-core
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

java -version

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ java -version
openjdk version "21.0.7" 2025-04-15
OpenJDK Runtime Environment (build 21.0.7+6-Ubuntu-0ubuntu122.04)
OpenJDK 64-Bit Server VM (build 21.0.7+6-Ubuntu-0ubuntu122.04, mixed mode, sharing)
```

Name: Sakib Tamboli
Roll No:131 Div: B

javac -version

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ javac -version
javac 21.0.7
```

nano HelloWorld.java
cat HelloWorld.java

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ nano HelloWorld.java
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ cat HelloWorld.java
class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello World");
    }
}
```

nano javaplaybook.yml
cat javaplaybook.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ nano javaplaybook.yml
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ cat javaplaybook.yml
- name: Run Java Program using Ansible
  hosts: localhost
  gather_facts: no
  tasks:
    - name: Compile Java Program
      command: javac HelloWorld.java
      args:
        chdir: /home/myansibleprj
      register: compile_output

    - name: Run Java Program
      command: java -cp . HelloWorld
      args:
        chdir: /home/myansibleprj
      register: run_output

    - name: Display Java Program Output
      debug:
        msg: "{{ run_output.stdout }}"
```

Name: Sakib Tamboli
Roll No:131 Div: B

ansible-playbook javaplaybook.yml

```
sakib@LAPTOP-BPSVF1HI:/home/myansibleprj$ ansible-playbook javaplaybook.yml

PLAY [Run Java Program using Ansible] ******************************************************

TASK [Compile Java Program] ****************************************************************
changed: [localhost]

TASK [Run Java Program] ********************************************************************
changed: [localhost]

TASK [Display Java Program Output] *********************************************************
ok: [localhost] => {
    "msg": "Hello World"
}

PLAY RECAP *********************************************************************************
localhost                  : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescue
d=0    ignored=0
```