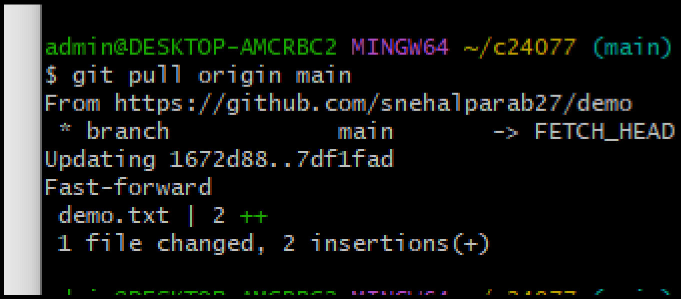
AIM: Demonstrate basic git commands

1. Set-up Git (One-time setup)
    - **git config --global user.name ""** -- Set your name for commits.
    - **git config --global user.email ""**-- Set your email for commits.
2. Start a new project
    - **git init :-** Initialize a new repository in your project folder.
    - **git status:-** Check the status of files in the working directory (untracked, modified, etc.).
    - **git add . :-** Stage all changes (new, modified, or deleted files).
    - **git commit -m "Initial Commit" :-** Commit the staged files with a message describing the changes.
3. **Work on a New Feature**
    - **git branch master:-** Create a new branch for a feature (e.g., feature-1).
    - **git checkout master** :- Switch to the new branch.
4. **Make Changes and Commit them**
    - **git add <file>:-** Stage specific files for commit.
    - **git commit -m "Add new feature" :-** Commit changes with a descriptive message.
    - **git log :-** View the history of commits in the current branch.
5. **Merge changes back into main branch.**
    - **git checkout main** :- Switch back to the main branch
    - **git merge <branch_name>** :- Merge the changes from the feature branch into the main branch.
6. **Set up a remote repository**
    - **git remote add origin <repository-url> :-** Link your local repository to a remote repository (e.g., on GitHub).
    - **git push -u origin main**
      Push the main branch to the remote repository for the first time.

7. **Collaborate with a team**
    - **git pull origin main :-** Fetch and merge changes from the remote main branch to your local branch.

    - **git branch:-** List all branches to see if new ones were created by collaborators.


```
admin@DESKTOP-AMCRBC2 MINGW64 ~/c24077 (main)
$ git pull origin main
From https://github.com/snehalparab27/demo
 * branch            main       -> FETCH_HEAD
Updating 1672d88..7df1fad
Fast-forward
 demo.txt | 2 ++
 1 file changed, 2 insertions(+)
```

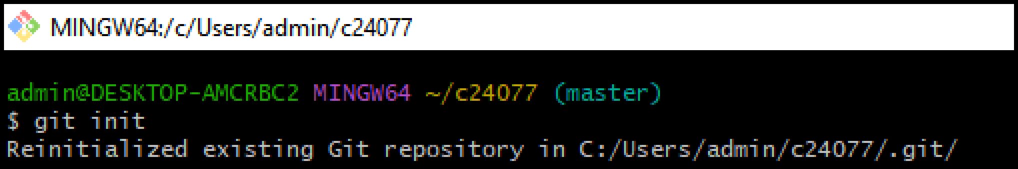
AIM: Create and fork repositories in Git Hub. Apply branch, merge and rebase concepts.

Step 1: Initial Setup

1. **Create a Git repository (if not already created)**

   If you don't have a repository yet, you can create one by running:

git init


MINGW64:/c/Users/admin/c24077

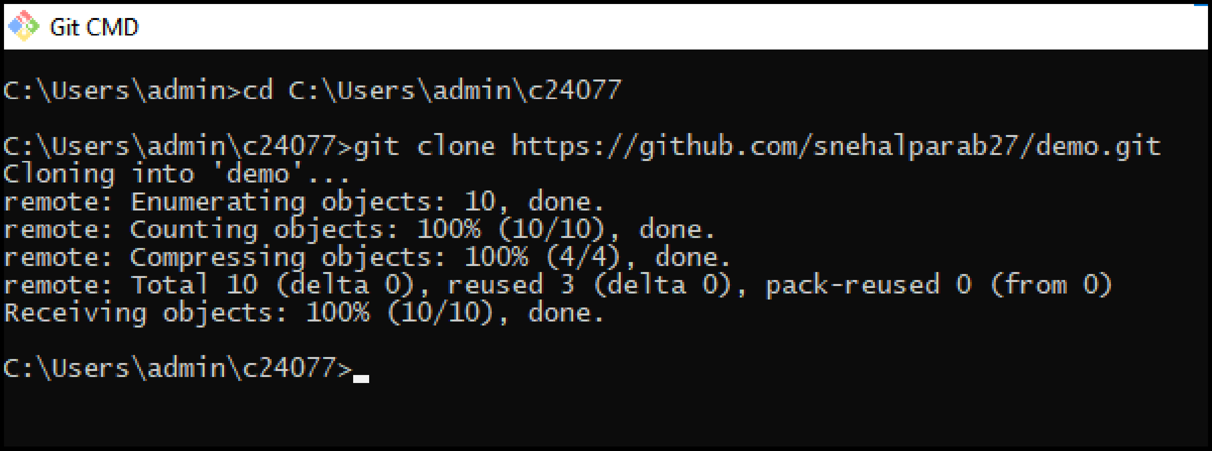
```
admin@DESKTOP-AMCRBC2 MINGW64 ~/c24077 (master)
$ git init
Reinitialized existing Git repository in C:/Users/admin/c24077/.git/
```

2. **Clone an existing repository (if you're working on an existing project)**

   If you're working with an existing remote repository, you can clone it by running:

   git clone <repository-url>

   cd <repository-name>


Git CMD

```
C:\Users\admin>cd C:\Users\admin\c24077

C:\Users\admin\c24077>git clone https://github.com/snehalparab27/demo.git
Cloning into 'demo'...
remote: Enumerating objects: 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 10 (delta 0), reused 3 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (10/10), done.

C:\Users\admin\c24077>
```

Step 2: Working with Branches

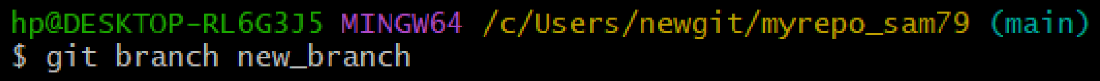
1. **Check the current branch** By default, Git starts with a branch named main or master. To see which branch you are currently on, use:

   git branch

   The current branch will be marked with an asterisk (*).

2. **Create a new branch** To create a new branch, use:

   git branch <branch-name>



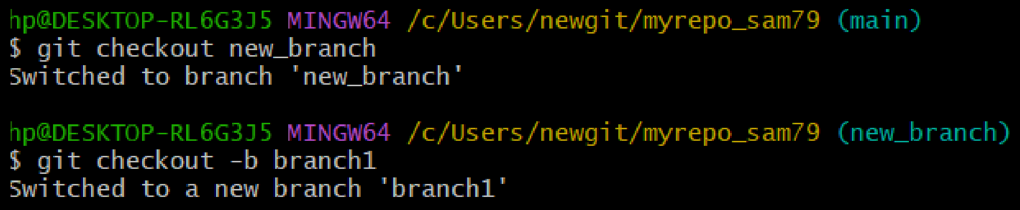
```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (main)
$ git branch new_branch
```

3. **Switch to the new branch** To start working on the new branch, use:

   git checkout <branch-name>

   You can also combine the creation and switch into one command:

   git checkout -b <branch-name>



```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (main)
$ git checkout new_branch
Switched to branch 'new_branch'

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git checkout -b branch1
Switched to a new branch 'branch1'
```

4. **View all branches** To see all branches in your repository:

   git branch

   The current branch will be marked with an asterisk (*).

Step 3: Make Changes in the Branch

1. **Make some changes in the code**

   Now that you're on your new branch, make some changes to your files (e.g., modify code, add new features, etc.).

2. **Stage the changes** After making changes, you need to add them to the staging area:

   bash

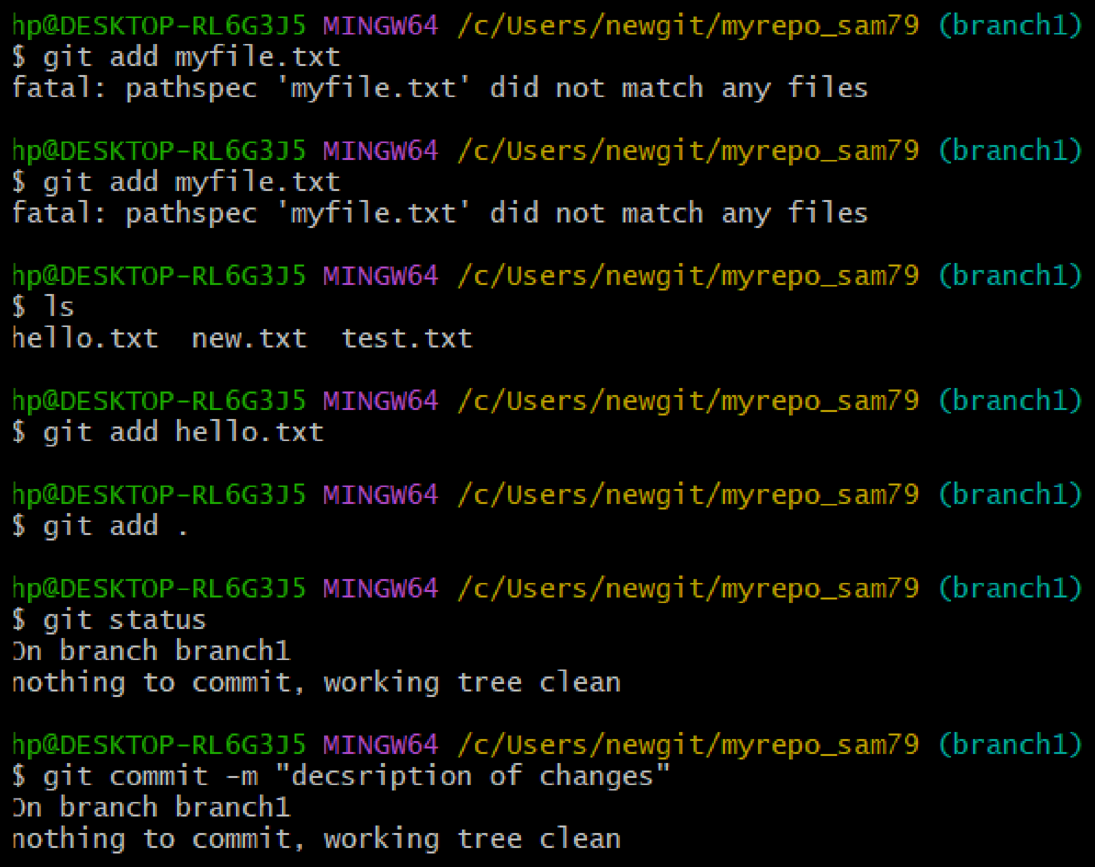
git add <file-name> # Add a specific file

git add .   # Add all files (recommended if you want to stage everything)

3. **Commit the changes** After staging, commit the changes to your branch:

   git commit -m "Description of changes"

   git

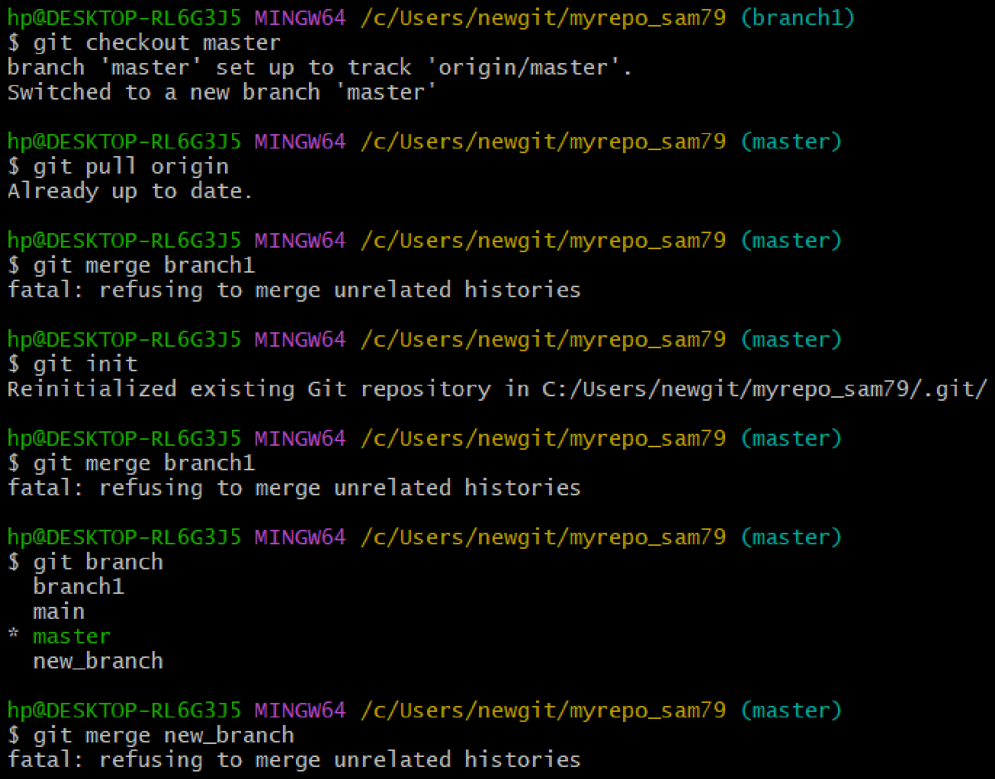


```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (branch1)
$ git add myfile.txt
fatal: pathspec 'myfile.txt' did not match any files

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (branch1)
$ git add myfile.txt
fatal: pathspec 'myfile.txt' did not match any files

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (branch1)
$ ls
hello.txt  new.txt  test.txt

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (branch1)
$ git add hello.txt

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (branch1)
$ git add .

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (branch1)
$ git status
On branch branch1
nothing to commit, working tree clean

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (branch1)
$ git commit -m "decsription of changes"
On branch branch1
nothing to commit, working tree clean
```

Step 4: Merge the Branch into Main

1. **Switch to the main branch (or the branch you want to merge into)** Before merging, switch back to the main branch:

   git checkout main



```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (branch1)
$ git checkout master
branch 'master' set up to track 'origin/master'.
Switched to a new branch 'master'

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git pull origin
Already up to date.

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git merge branch1
fatal: refusing to merge unrelated histories

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git init
Reinitialized existing Git repository in C:/Users/newgit/myrepo_sam79/.git/

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git merge branch1
fatal: refusing to merge unrelated histories

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git branch
  branch1
  main
* master
  new_branch

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git merge new_branch
fatal: refusing to merge unrelated histories
```

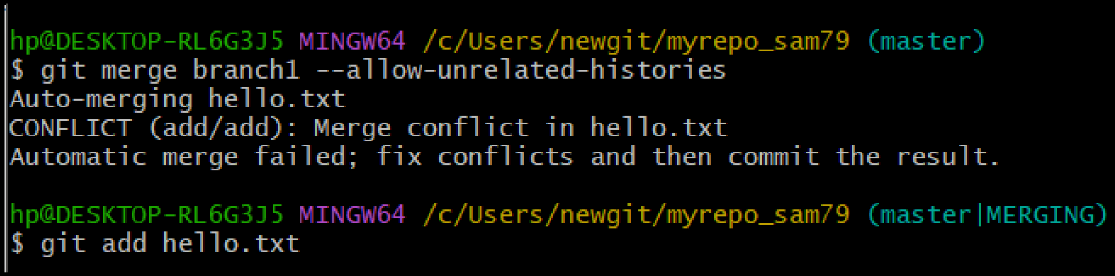
2. **Pull the latest changes** Ensure your main branch is up to date with the remote repository:

   git pull origin main

3. **Merge the feature branch into main** Now merge your branch into main:

   git merge <branch-name>

   - If there are no conflicts, Git will automatically complete the merge and add a merge commit.
   - If there are conflicts, Git will notify you, and you'll need to resolve them manually.



```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git merge branch1 --allow-unrelated-histories
Auto-merging hello.txt
CONFLICT (add/add): Merge conflict in hello.txt
Automatic merge failed; fix conflicts and then commit the result.

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master|MERGING)
$ git add hello.txt
```

Step 5: Resolving Merge Conflicts (If Any)

1. **Check for conflicts** If Git encounters conflicts during the merge, it will pause and mark the conflicted files.
2. **Open the conflicted files** Conflicted sections will be marked with:

   ```
   <<<<<<< HEAD

   (changes from `main` branch)

   =======

   (changes from `<branch-name>`)

   >>>>>>> <branch-name>
   ```

3. **Resolve the conflicts** Edit the file to keep the changes you want and remove the conflict markers (<<<<<<<, =======, >>>>>>>).
4. **Mark the conflicts as resolved** After resolving conflicts, stage the files as resolved:

   ```
   git add <resolved-file>
   ```

5. **Complete the merge** Once all conflicts are resolved, commit the merge:

   ```
   git commit
   ```

   Git will automatically create a merge commit if you didn't need to resolve conflicts manually

Step 6: Push Changes to Remote

1. **Push the changes to the remote repository** After merging, push the changes to the remote repository:

   ```
   git push origin main
   ```

   This updates the remote repository with the changes from your merge.

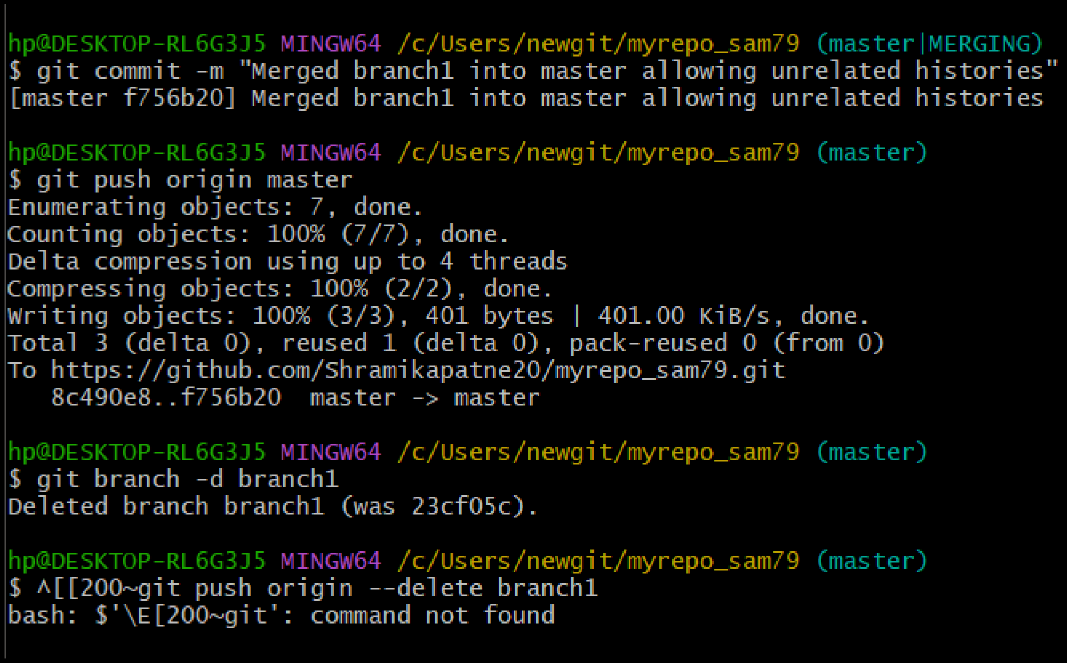
Step 7: Clean Up (Optional)

1. **Delete the branch after merging (optional)** After merging, you can delete your feature branch if you no longer need it:

   ```
   git branch -d <branch-name>  # Deletes the local branch
   ```

2. **Delete the remote branch (optional)** If you want to delete the branch on the remote as well, use:

   ```
   git push origin --delete <branch-name>
   ```



```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master|MERGING)
$ git commit -m "Merged branch1 into master allowing unrelated histories"
[master f756b20] Merged branch1 into master allowing unrelated histories

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git push origin master
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 401 bytes | 401.00 KiB/s, done.
Total 3 (delta 0), reused 1 (delta 0), pack-reused 0 (from 0)
To https://github.com/Shramikapatne20/myrepo_sam79.git
   8c490e8..f756b20  master -> master

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git branch -d branch1
Deleted branch branch1 (was 23cf05c).

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ ^[[200~git push origin --delete branch1
bash: $'\E[200~git': command not found
```

Step 8: Regular Maintenance

1. **Sync your local repository with the remote regularly** To avoid conflicts, it's good practice to frequently pull changes from the main branch into your working branch:

   git checkout <branch-name>   # Switch to your feature branch

   git pull origin main   # Pull the latest changes from main

2. **Stay organized**
   - Use descriptive branch names (e.g., feature/auth, bugfix/login).
   - Regularly merge back into main to keep your changes synchronized.

AIM: Demonstrate Git for Collaboration

Set Up Git and GitHub

Before you start collaborating or cloning repositories, make sure you have the following set up:

1. **Install Git**: If you haven't already, download and install Git on your machine.
2. **Create a GitHub Account**: Go to GitHub and create an account if you don't have one.
3. **Configure Git**: Set up your Git configuration with your name and email.

git config --global user.name "Your Name"

git config --global user.email youremail@example.com

Step 2: Clone a GitHub Repository

Cloning a repository allows you to create a copy of a project on your local machine, enabling you to work on it.

1. **Find a Repository to Clone**: Visit the repository page on GitHub (e.g., https://github.com/username/repository) and click the green **Code** button.
2. **Copy the Clone URL**: In the popup, choose either **HTTPS** or **SSH** and copy the URL. If you're using HTTPS, it will look like https://github.com/username/repository.git.
3. **Clone the Repository Locally**:

   Open a terminal on your computer and navigate to the directory where you want to clone the repository. Then run:

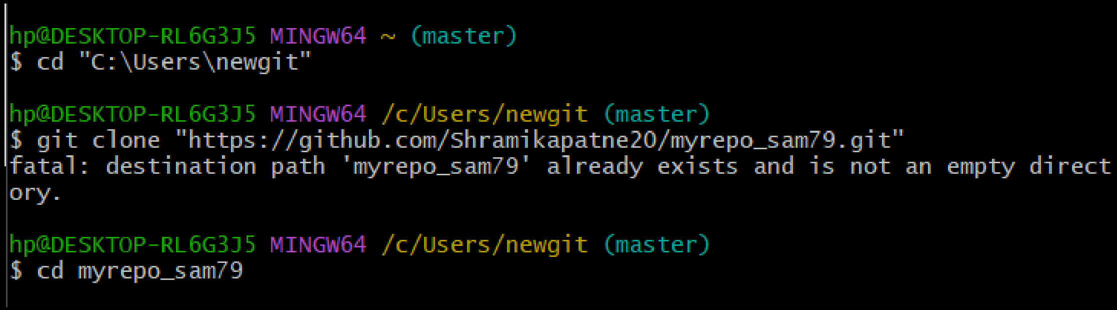
   git clone https://github.com/username/repository.git

 Replace https://github.com/username/repository.git with the URL you copied.

This will create a local copy of the repository on your machine.

 Navigate to the Repository Folder:

cd repository # Navigate into the cloned directory



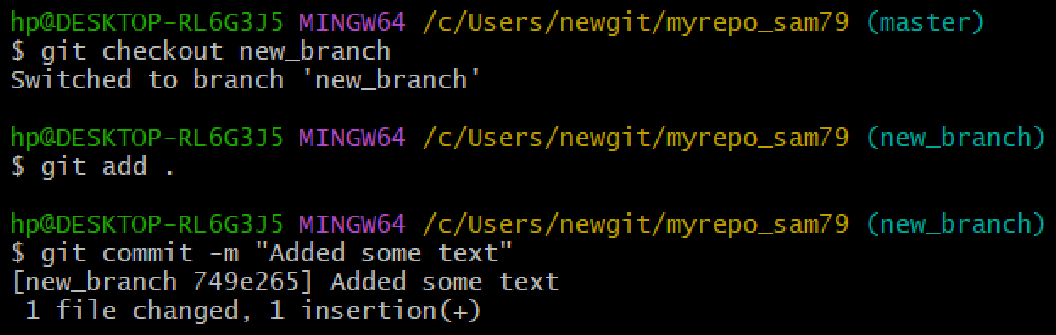
```
hp@DESKTOP-RL6G3J5 MINGW64 ~ (master)
$ cd "C:\Users\newgit"

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit (master)
$ git clone "https://github.com/Shramikapatne20/myrepo_sam79.git"
fatal: destination path 'myrepo_sam79' already exists and is not an empty direct
ory.

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit (master)
$ cd myrepo_sam79
```

Step 3: Work on the Project Locally

Once you've cloned the repository, you can start making changes to the code.

1. **Create a New Branch**: Before making changes, it's recommended to create a new branch. This ensures your changes don't interfere with the main codebase until you're ready to merge.

```
git checkout -b feature/your-feature  # Create and switch to a new
```



```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git checkout new_branch
Switched to branch 'new_branch'

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git add .

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git commit -m "Added some text"
[new_branch 749e265] Added some text
 1 file changed, 1 insertion(+)
```

1. **Make Changes**: Edit files as needed using your preferred editor or IDE.
2. **Stage Changes**: After making changes, you need to stage them before committing.

   ```
   git add .  # Stages all modified files
   ```

3. **Commit Changes**: Once changes are staged, commit them to your local branch.

   ```
   git commit -m "Add feature X"
   ```

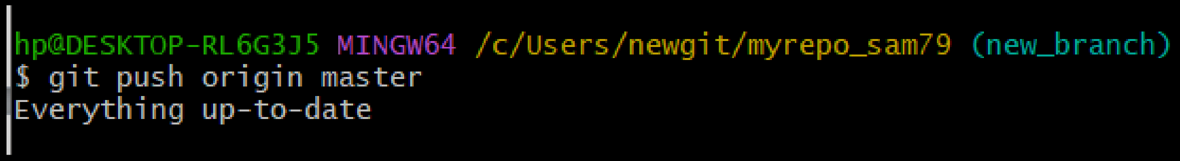
Step 4: Push Changes to GitHub

Once you've committed your changes locally, you need to push them to your GitHub repository.

1 **Push Your Changes** to the remote repository:

```
git push origin feature/your-feature  # Push the feature branch to GitHub
```

This uploads your local changes to your GitHub repository.

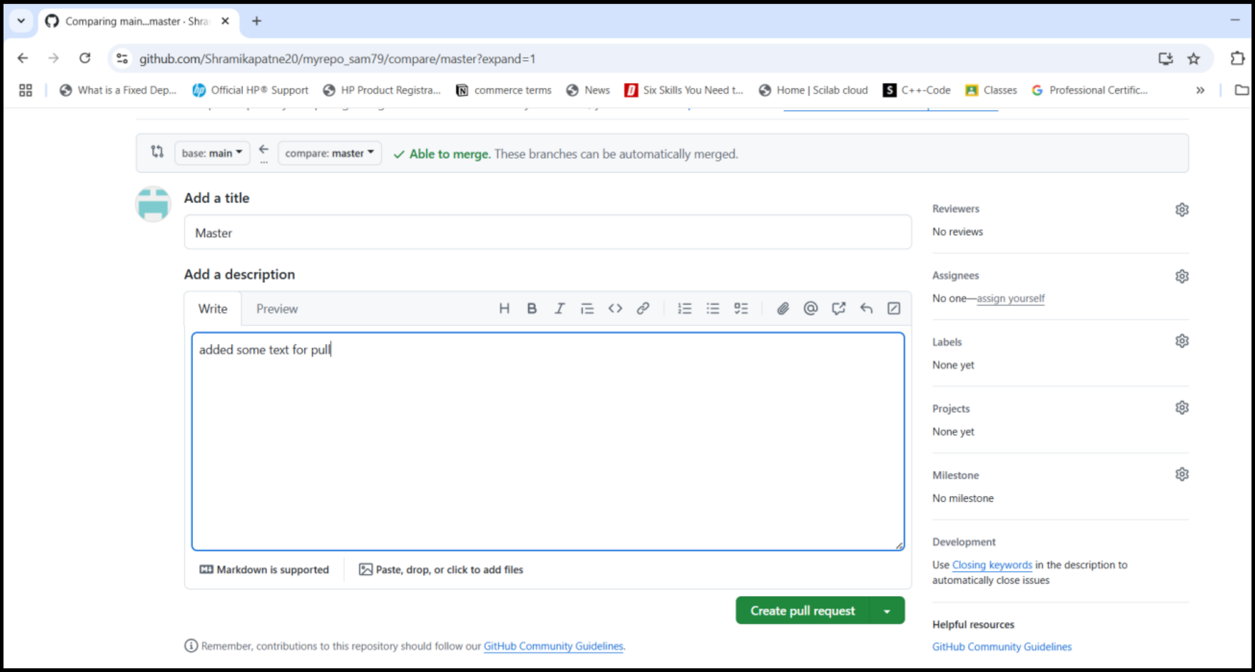


```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git push origin master
Everything up-to-date
```

Step 5: Create a Pull Request (PR)

To contribute your changes back to the original repository, you'll need to open a pull request (PR).

1. **Go to the GitHub Repository**: Visit the repository where you want to make the changes.
2. **Create a Pull Request**: On GitHub, you'll see an option to compare your branch (e.g., feature/your-feature) with the main branch of the repository (e.g., main). Click **New Pull Request**.
3. **Fill Out the Pull Request Form**:
   - Add a **title** and **description** explaining the changes you've made.
   - Review your changes.
   - Click **Create Pull Request**.



github.com/Shramikapatne20/myrepo_sam79/compare/master?expand=1

base: main ← compare: master ✓ Able to merge. These branches can be automatically merged.

Add a title

Master

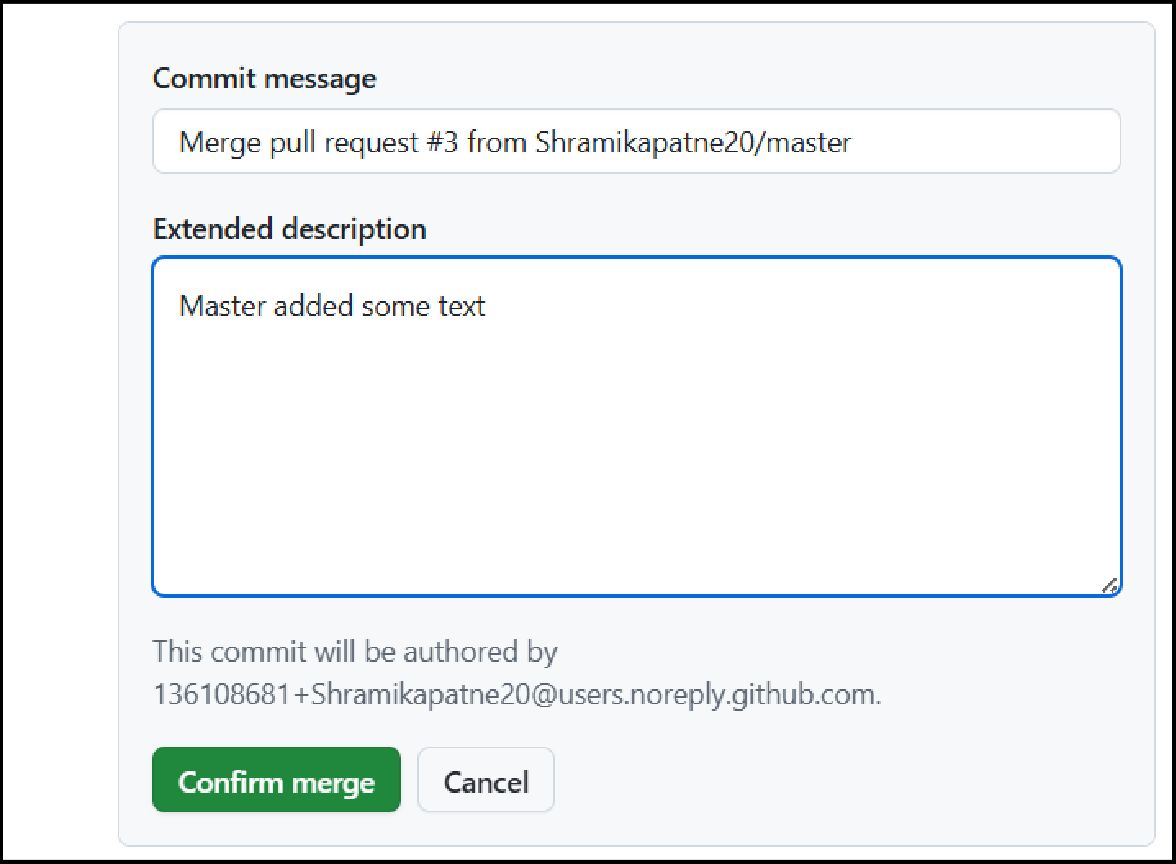
Add a description

added some text for pull

Comparing main...master · Shra
Write
Preview
Markdown is supported
Paste, drop, or click to add files
Create pull request
Reviewers
No reviews
Assignees
No one—assign yourself
Labels
None yet
Projects
None yet
Milestone
No milestone
Development
Use Closing keywords in the description to automatically close issues
Helpful resources
GitHub Community Guidelines
Remember, contributions to this repository should follow our GitHub Community Guidelines.

4. **Code Review**: The repository maintainer (or other collaborators) will review your changes. They might ask for changes or approve the PR.

5. **Merge the Pull Request**: Once your changes are approved, the maintainer will merge your changes into the main branch of the project.



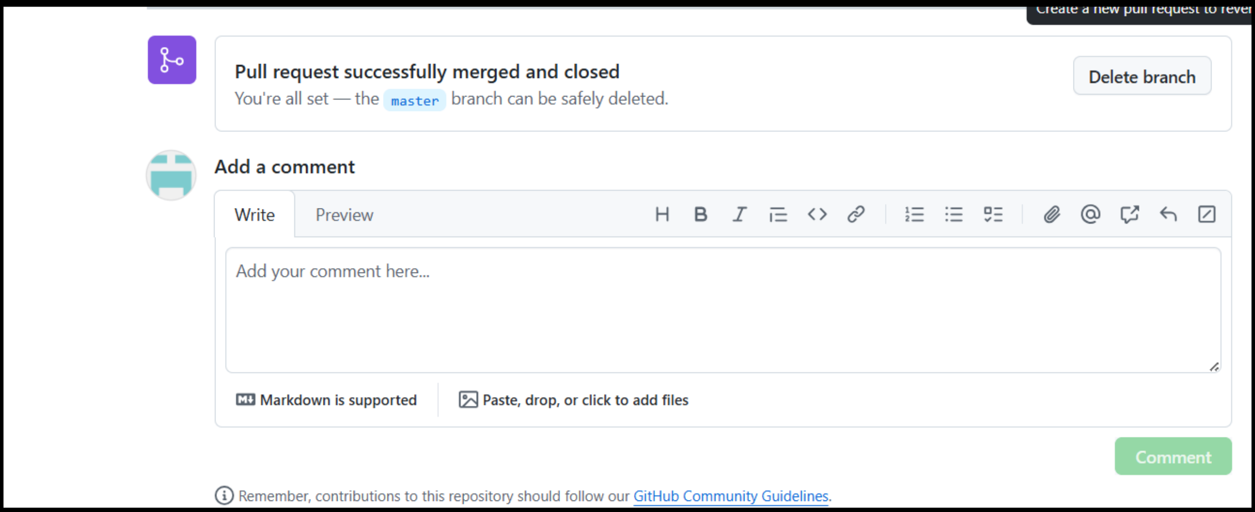
Commit message

Merge pull request #3 from Shramikapatne20/master

Extended description

Master added some text

This commit will be authored by 136108681+Shramikapatne20@users.noreply.github.com.



Pull request successfully merged and closed

You're all set — the `master` branch can be safely deleted.

Remember, contributions to this repository should follow our GitHub Community Guidelines.

Step 6: Sync Your Fork (If Working on a Forked Repo)

If you are working on a forked repository and want to keep your fork in sync with the original repository:

1. **Add the Original Repository as a Remote**: This allows you to fetch updates from the original repository.

```
git remote add upstream https://github.com/owner/original-repository.git
```

Replace https://github.com/owner/original-repository.git with the original repository's URL.

2. **Fetch the Latest Changes from the Original Repository**:

```
git fetch upstream  # Fetch the changes from the original repo
```

3. **Merge the Latest Changes into Your Local Branch**:

```
git checkout main  # Switch to your main branch
git merge upstream/main  # Merge the latest changes from the original repo
```

4. **Push the Changes to Your Fork**:

```
git push origin main  # Push the updated main branch to your fork
```

Step 7: Pull Latest Changes from the Original Repository

To keep your local repository up-to-date with the remote repository on GitHub, you can pull the latest changes.

1. **Switch to Your Local Main Branch**:

```
git checkout main
```

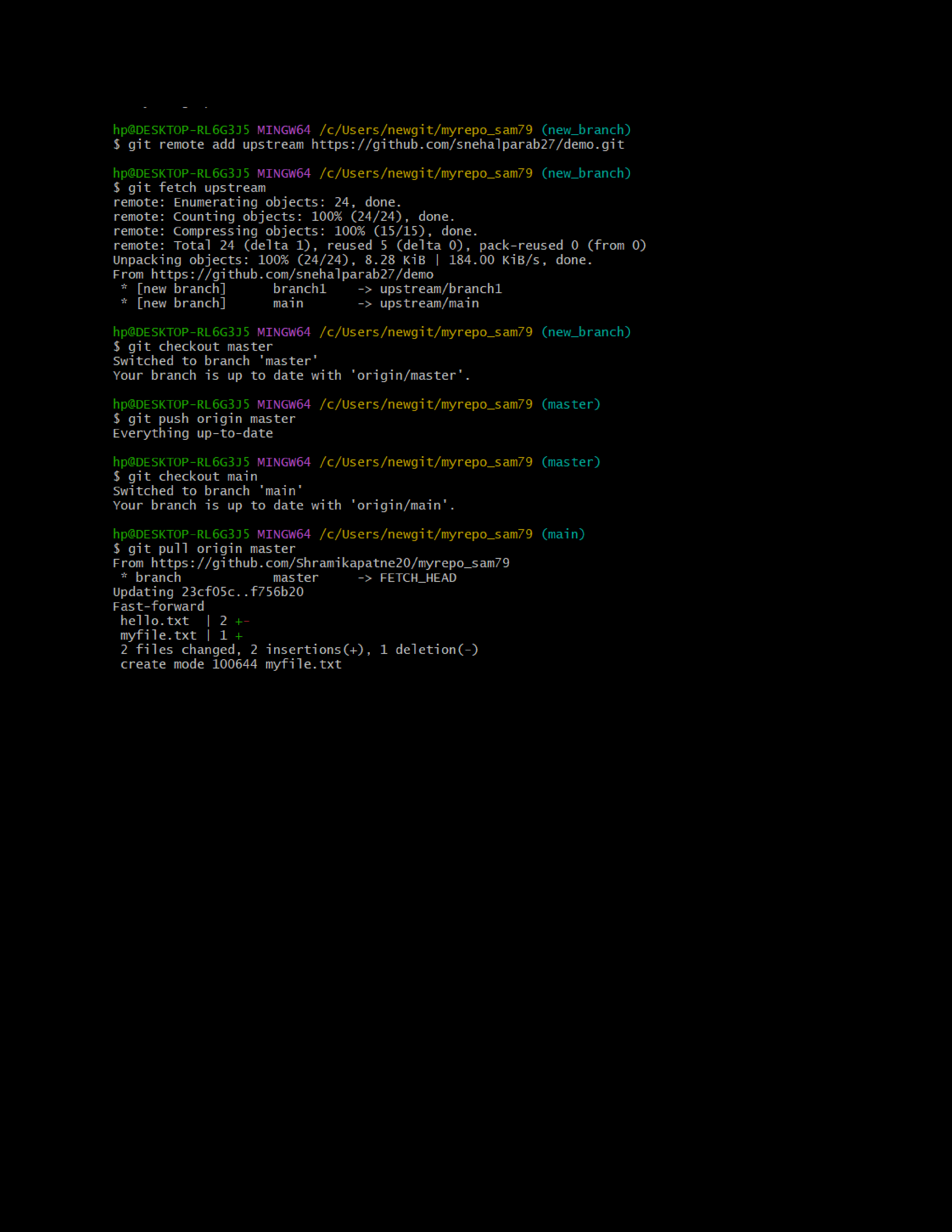
2. **Pull Latest Changes from GitHub**:

```
git pull origin main  # Pull the latest changes from the remote repository
```

Step 8: Collaborate with Other Developers

When collaborating with other developers on GitHub, you'll typically follow these best practices:

1. **Regularly Pull Latest Changes**: To ensure you're not working on outdated code, frequently pull the latest changes from the main branch (especially before you start working on new features or bug fixes).
2. **Create Feature Branches**: Always create a new branch for each feature or bug fix. This avoids conflicts and keeps the history clean.
3. **Review Pull Requests**: If you're reviewing someone else's PR, ensure you provide feedback and approve it once you're satisfied.
4. **Resolve Merge Conflicts**: If two developers edit the same part of a file, a merge conflict will occur when merging. Resolve these conflicts manually by editing the files and then committing the changes.



```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git remote add upstream https://github.com/snehalparab27/demo.git

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git fetch upstream
remote: Enumerating objects: 24, done.
remote: Counting objects: 100% (24/24), done.
remote: Compressing objects: 100% (15/15), done.
remote: Total 24 (delta 1), reused 5 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (24/24), 8.28 KiB | 184.00 KiB/s, done.
From https://github.com/snehalparab27/demo
 * [new branch]      branch1    -> upstream/branch1
 * [new branch]      main       -> upstream/main

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git push origin master
Everything up-to-date

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (main)
$ git pull origin master
From https://github.com/Shramikapatne20/myrepo_sam79
 * branch            master     -> FETCH_HEAD
Updating 23cf05c..f756b20
Fast-forward
 hello.txt  | 2 +-
 myfile.txt | 1 +
 2 files changed, 2 insertions(+), 1 deletion(-)
 create mode 100644 myfile.txt
```

AIM: Demonstrate Collaborating and cloning using Git

Set Up Git and GitHub

Before you start collaborating or cloning repositories, make sure you have the following set up:

Install Git: If you haven't already, download and install Git on your machine.

Create a GitHub Account: Go to GitHub and create an account if you don't have one.

Configure Git: Set up your Git configuration with your name and email.
git config --global user.name "Your Name"

git config --global user.email youremail@example.com

Step 2: Clone a GitHub Repository

Cloning a repository allows you to create a copy of a project on your local machine, enabling you to work on it.

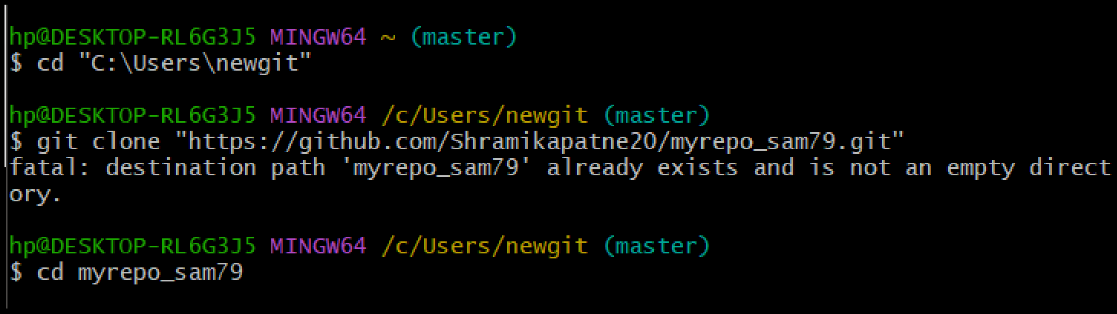
4. **Find a Repository to Clone**: Visit the repository page on GitHub (e.g., https://github.com/username/repository) and click the green **Code** button.
5. **Copy the Clone URL**: In the popup, choose either **HTTPS** or **SSH** and copy the URL. If you're using HTTPS, it will look like https://github.com/username/repository.git.
6. **Clone the Repository Locally**:

   Open a terminal on your computer and navigate to the directory where you want to clone the repository. Then run:
   git clone https://github.com/username/repository.git

 Replace https://github.com/username/repository.git with the URL you copied.

This will create a local copy of the repository on your machine.

 Navigate to the Repository Folder:
cd repository # Navigate into the cloned directory



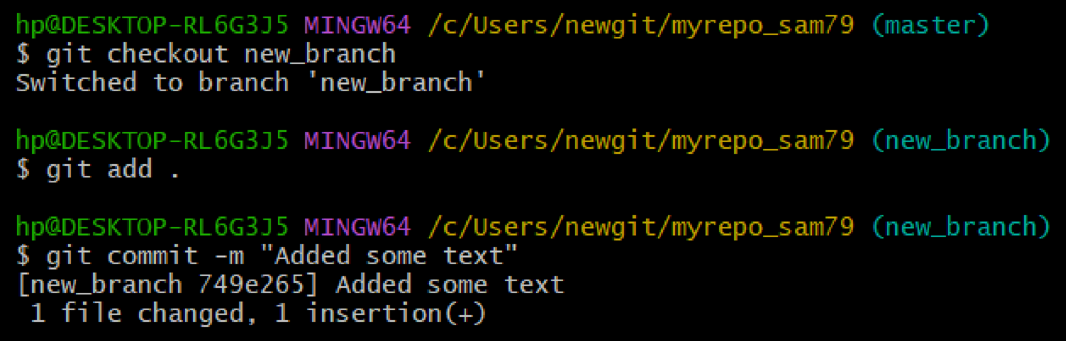
```
hp@DESKTOP-RL6G3J5 MINGW64 ~ (master)
$ cd "C:\Users\newgit"

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit (master)
$ git clone "https://github.com/Shramikapatne20/myrepo_sam79.git"
fatal: destination path 'myrepo_sam79' already exists and is not an empty direct
ory.

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit (master)
$ cd myrepo_sam79
```

Step 3: Work on the Project Locally

Once you've cloned the repository, you can start making changes to the code.

2. **Create a New Branch**: Before making changes, it's recommended to create a new branch. This ensures your changes don't interfere with the main codebase until you're ready to merge.

git checkout -b feature/your-feature # Create and switch to a new



```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git checkout new_branch
Switched to branch 'new_branch'

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git add .

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git commit -m "Added some text"
[new_branch 749e265] Added some text
 1 file changed, 1 insertion(+)
```

4. **Make Changes**: Edit files as needed using your preferred editor or IDE.
5. **Stage Changes**: After making changes, you need to stage them before committing.

   git add . # Stages all modified files

6. **Commit Changes**: Once changes are staged, commit them to your local branch.

   git commit -m "Add feature X"

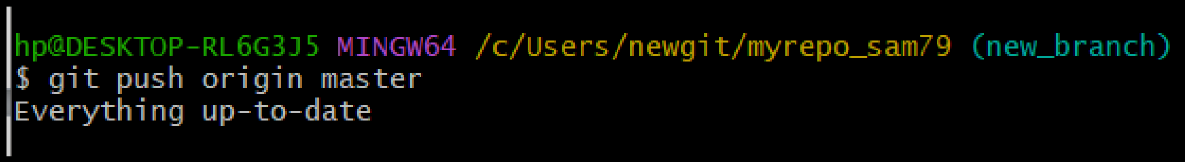
Step 4: Push Changes to GitHub

Once you've committed your changes locally, you need to push them to your GitHub repository.

Push Your Changes to the remote repository:

   git push origin feature/your-feature # Push the feature branch to GitHub

   This uploads your local changes to your GitHub repository.



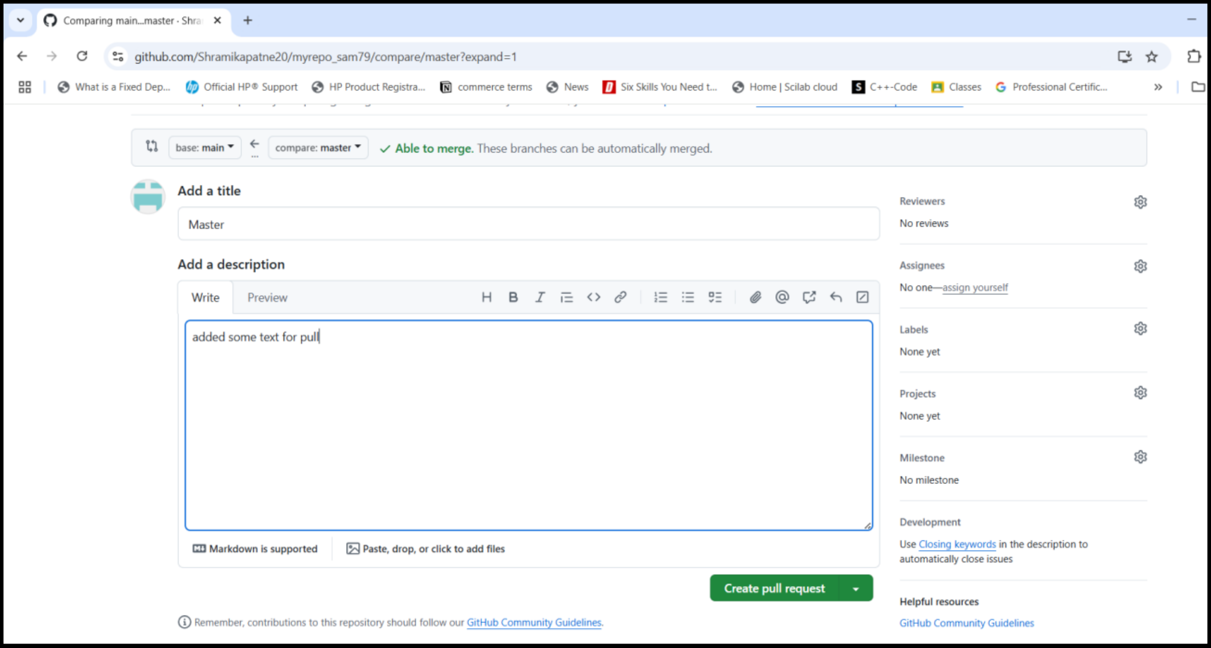
```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git push origin master
Everything up-to-date
```

Step 5: Create a Pull Request (PR)

To contribute your changes back to the original repository, you'll need to open a pull request (PR).

6. **Go to the GitHub Repository**: Visit the repository where you want to make the changes.

7. **Create a Pull Request**: On GitHub, you'll see an option to compare your branch (e.g., feature/your-feature) with the main branch of the repository (e.g., main). Click **New Pull Request**.
8. **Fill Out the Pull Request Form**:
   - Add a **title** and **description** explaining the changes you've made.
   - Review your changes.
   - Click **Create Pull Requ**



Comparing main...master · Shra

github.com/Shramikapatne20/myrepo_sam79/compare/master?expand=1

base: main ← compare: master ✓ Able to merge. These branches can be automatically merged.

Add a title

Master

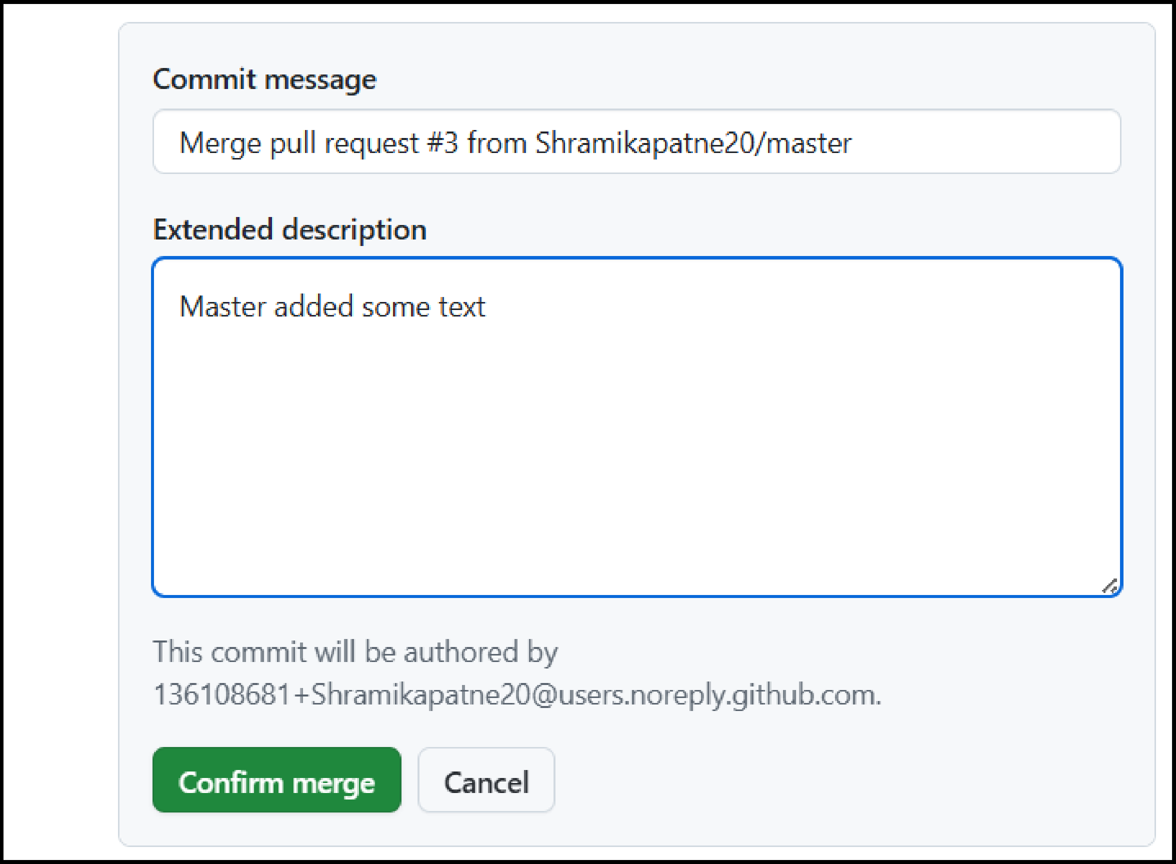
Add a description

added some text for pull

Write
Preview
Markdown is supported
Paste, drop, or click to add files
Create pull request
Reviewers
No reviews
Assignees
No one—assign yourself
Labels
None yet
Projects
None yet
Milestone
No milestone
Development
Use Closing keywords in the description to automatically close issues
Helpful resources
GitHub Community Guidelines
Remember, contributions to this repository should follow our GitHub Community Guidelines.

9. **Code Review**: The repository maintainer (or other collaborators) will review your changes. They might ask for changes or approve the PR.

10. **Merge the Pull Request**: Once your changes are approved, the maintainer will merge your changes into the main branch of the project.

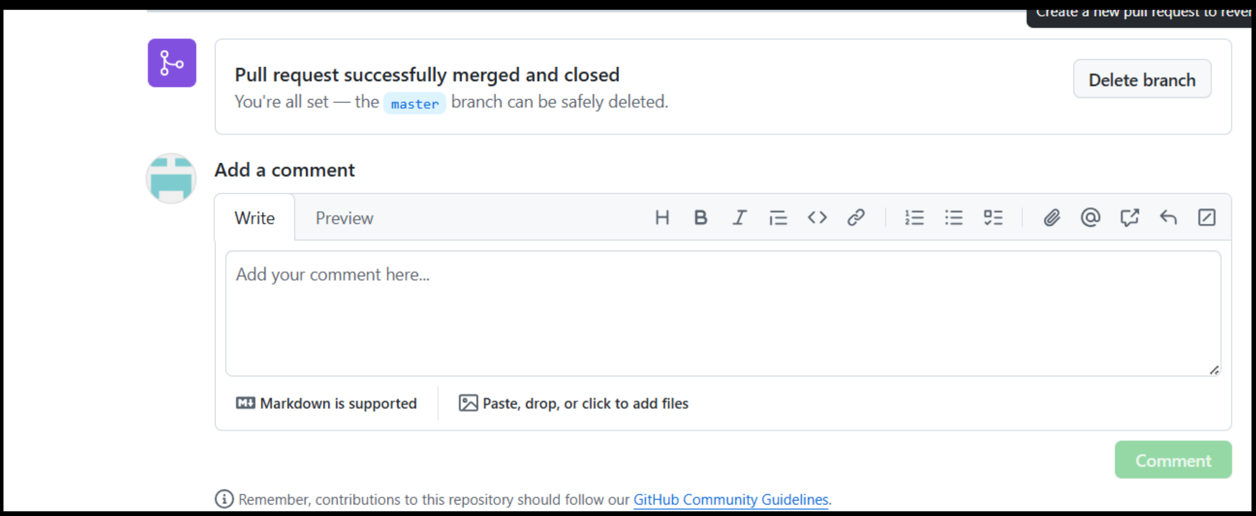

Commit message

Merge pull request #3 from Shramikapatne20/master

Extended description

Master added some text

This commit will be authored by 136108681+Shramikapatne20@users.noreply.github.com.


Pull request successfully merged and closed

You're all set — the `master` branch can be safely deleted.

Remember, contributions to this repository should follow our GitHub Community Guidelines.

Step 6: Sync Your Fork (If Working on a Forked Repo)

If you are working on a forked repository and want to keep your fork in sync with the original repository:

5. **Add the Original Repository as a Remote**: This allows you to fetch updates from the original repository.

   ```
   git remote add upstream https://github.com/owner/original-repository.git
   ```

   Replace https://github.com/owner/original-repository.git with the original repository's URL.

6. **Fetch the Latest Changes from the Original Repository**:

   ```
   git fetch upstream  # Fetch the changes from the original repo
   ```

7. **Merge the Latest Changes into Your Local Branch**:

   ```
   git checkout main  # Switch to your main branch
   git merge upstream/main  # Merge the latest changes from the original repo
   ```

8. **Push the Changes to Your Fork**:

   ```
   git push origin main  # Push the updated main branch to your fork
   ```

Step 7: Pull Latest Changes from the Original Repository

To keep your local repository up-to-date with the remote repository on GitHub, you can pull the latest changes.

3. **Switch to Your Local Main Branch**:

   ```
   git checkout main
   ```

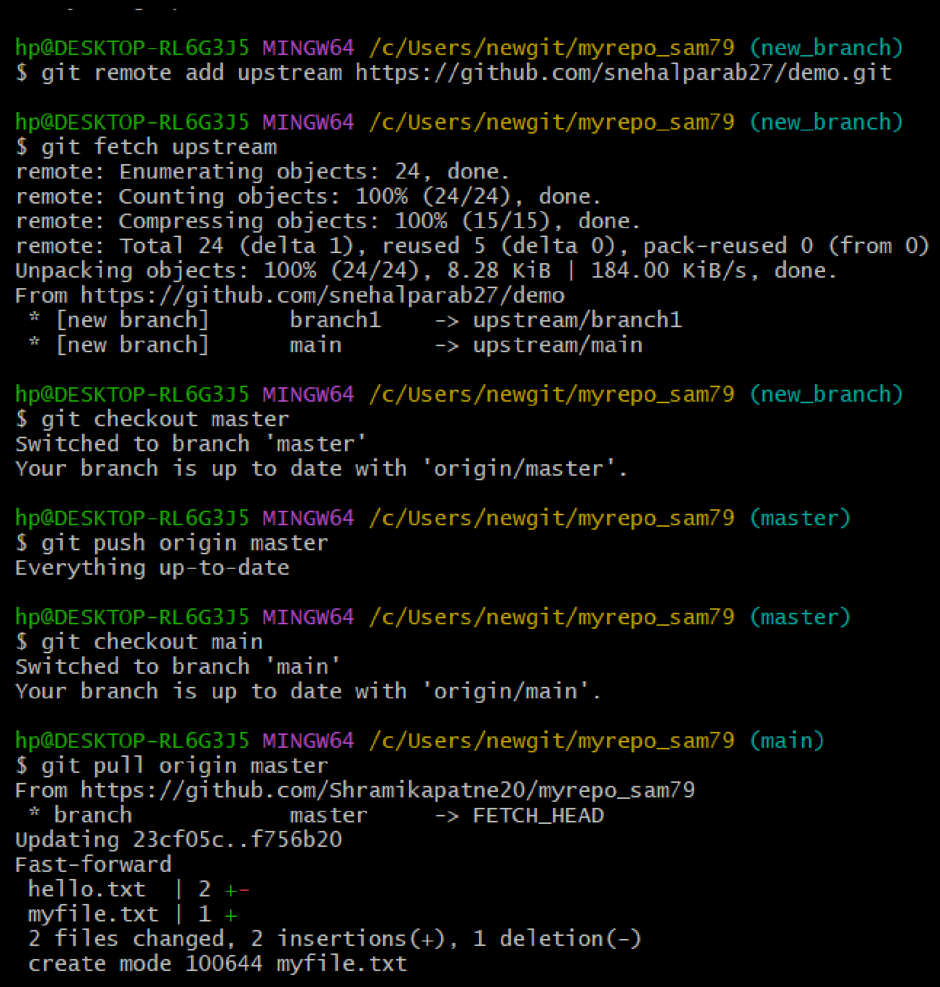
4. **Pull Latest Changes from GitHub**:

   ```
   git pull origin main  # Pull the latest changes from the remote repository
   ```

Step 8: Collaborate with Other Developers

When collaborating with other developers on GitHub, you'll typically follow these best practices:

5. **Regularly Pull Latest Changes**: To ensure you're not working on outdated code, frequently pull the latest changes from the main branch (especially before you start working on new features or bug fixes).
6. **Create Feature Branches**: Always create a new branch for each feature or bug fix. This avoids conflicts and keeps the history clean.
7. **Review Pull Requests**: If you're reviewing someone else's PR, ensure you provide feedback and approve it once you're satisfied.
8. **Resolve Merge Conflicts**: If two developers edit the same part of a file, a merge conflict will occur when merging. Resolve these conflicts manually by editing the files and then committing the changes.

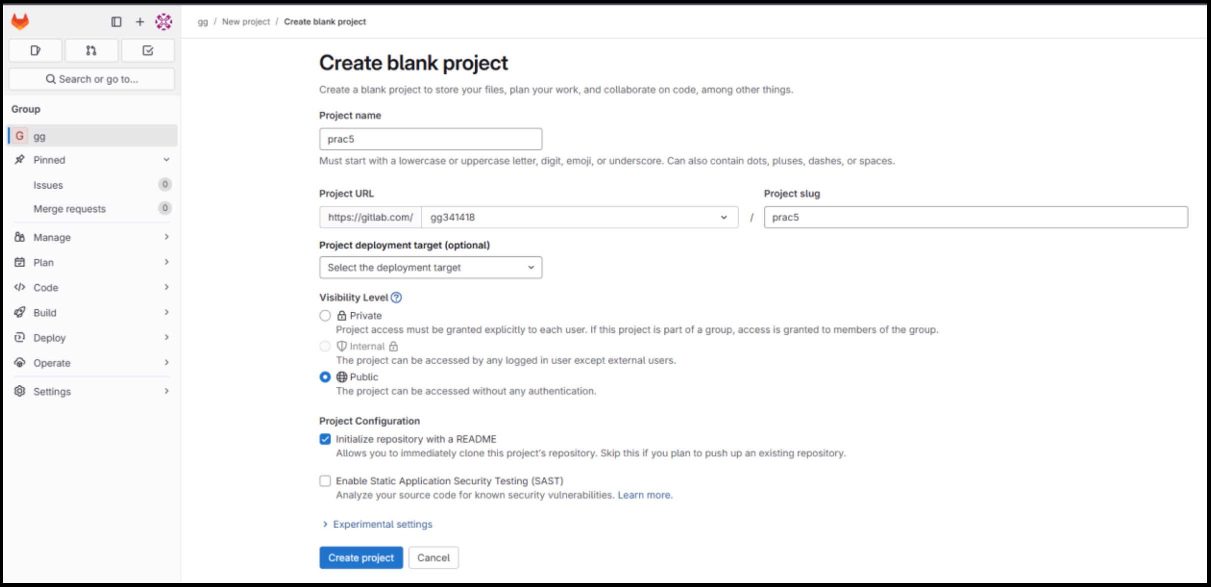


```
hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git remote add upstream https://github.com/snehalparab27/demo.git

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git fetch upstream
remote: Enumerating objects: 24, done.
remote: Counting objects: 100% (24/24), done.
remote: Compressing objects: 100% (15/15), done.
remote: Total 24 (delta 1), reused 5 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (24/24), 8.28 KiB | 184.00 KiB/s, done.
From https://github.com/snehalparab27/demo
 * [new branch]      branch1    -> upstream/branch1
 * [new branch]      main       -> upstream/main

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (new_branch)
$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git push origin master
Everything up-to-date

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (master)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

hp@DESKTOP-RL6G3J5 MINGW64 /c/Users/newgit/myrepo_sam79 (main)
$ git pull origin master
From https://github.com/Shramikapatne20/myrepo_sam79
 * branch            master     -> FETCH_HEAD
Updating 23cf05c..f756b20
Fast-forward
 hello.txt  | 2 +-
 myfile.txt | 1 +
 2 files changed, 2 insertions(+), 1 deletion(-)
 create mode 100644 myfile.txt
```

AIM: Using Gitlab Web IDE

Steps:

1. **Sign up at https://gitlab.com**
2. **Create a project.**
3. **Click on Web IDE in your repository.**



gg / New project / Create blank project

Create blank project

Create a blank project to store your files, plan your work, and collaborate on code, among other things.

Project name: prac5

Must start with a lowercase or uppercase letter, digit, emoji, or underscore. Can also contain dots, pluses, dashes, or spaces.

Project URL: https://gitlab.com/ gg341418 / Project slug: prac5

Project deployment target (optional): Select the deployment target

Visibility Level
- Private: Project access must be granted explicitly to each user. If this project is part of a group, access is granted to members of the group.
- Internal: The project can be accessed by any logged in user except external users.
- [✓ Public]: The project can be accessed without any authentication.

Project Configuration
- [✓] Initialize repository with a README: Allows you to immediately clone this project's repository. Skip this if you plan to push up an existing repository.
- [ ] Enable Static Application Security Testing (SAST): Analyze your source code for known security vulnerabilities. Learn more.

4. **Create a file (index.html):**

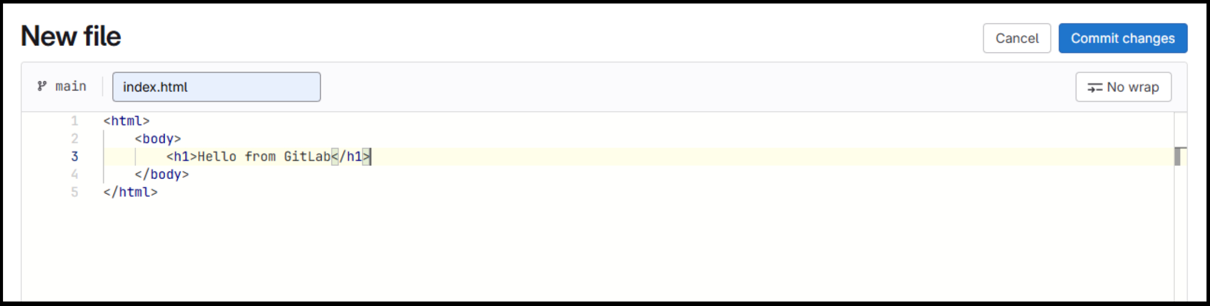
<html>

<body>

<h1>Hello from GitLab</h1>

</body>

</html>

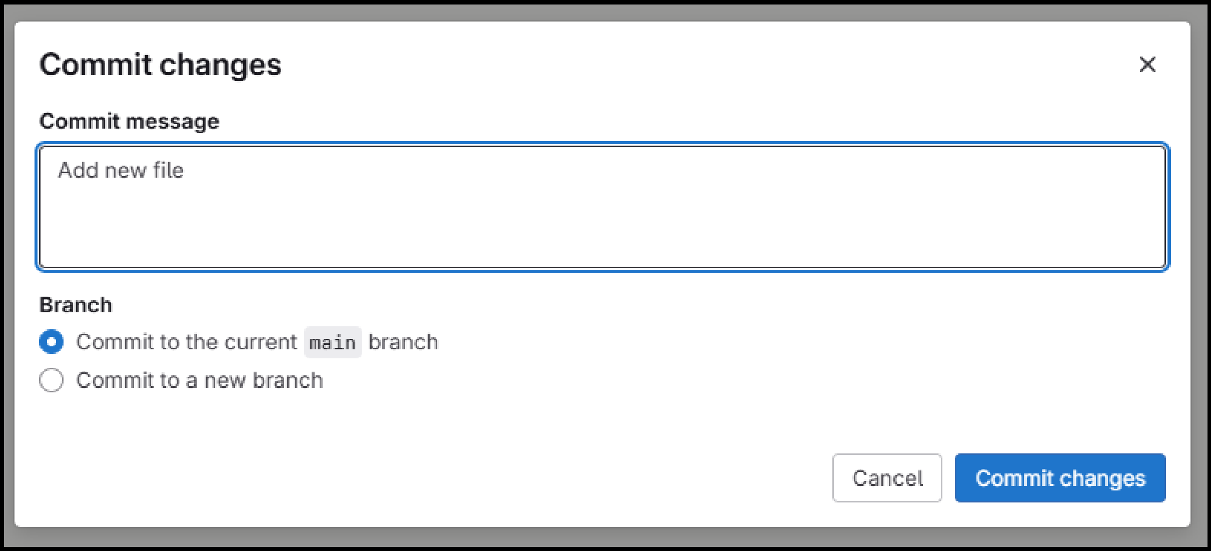


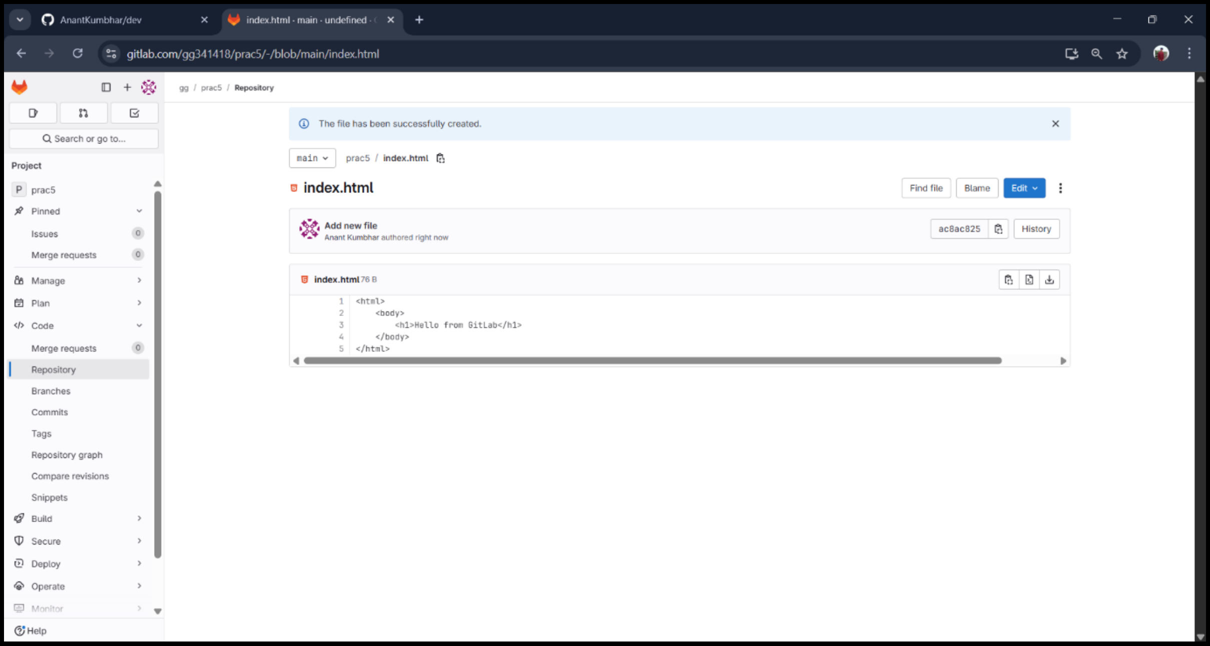
New file

main / index.html

```
<html>
    <body>
        <h1>Hello from GitLab</h1>
    </body>
</html>
```

5. Click Commit and push changes.





The file has been successfully created.

main prac5 / index.html

index.html

Find file | Blame | Edit

Add new file
Anant Kumbhar authored right now

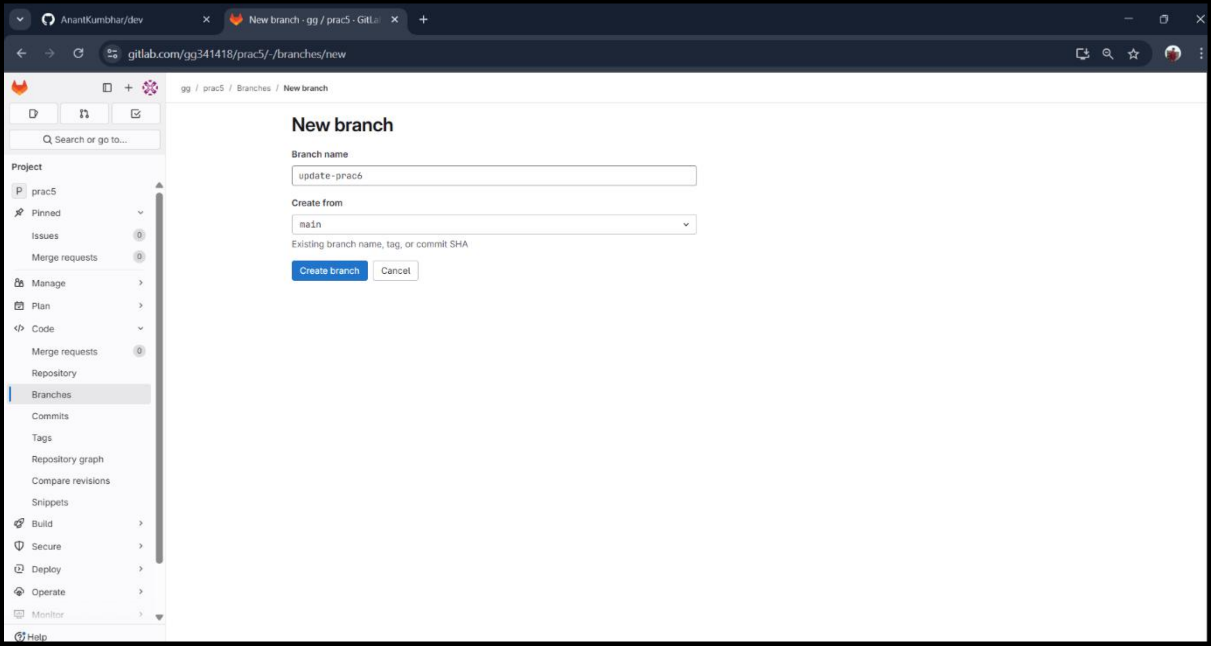
ac8ac825 | History

index.html 76 B

```
<html>
    <body>
        <h1>Hello from GitLab</h1>
    </body>
</html>
```

Performing merge requests using GitLab

1. Create a new branch in Web IDE.



New branch

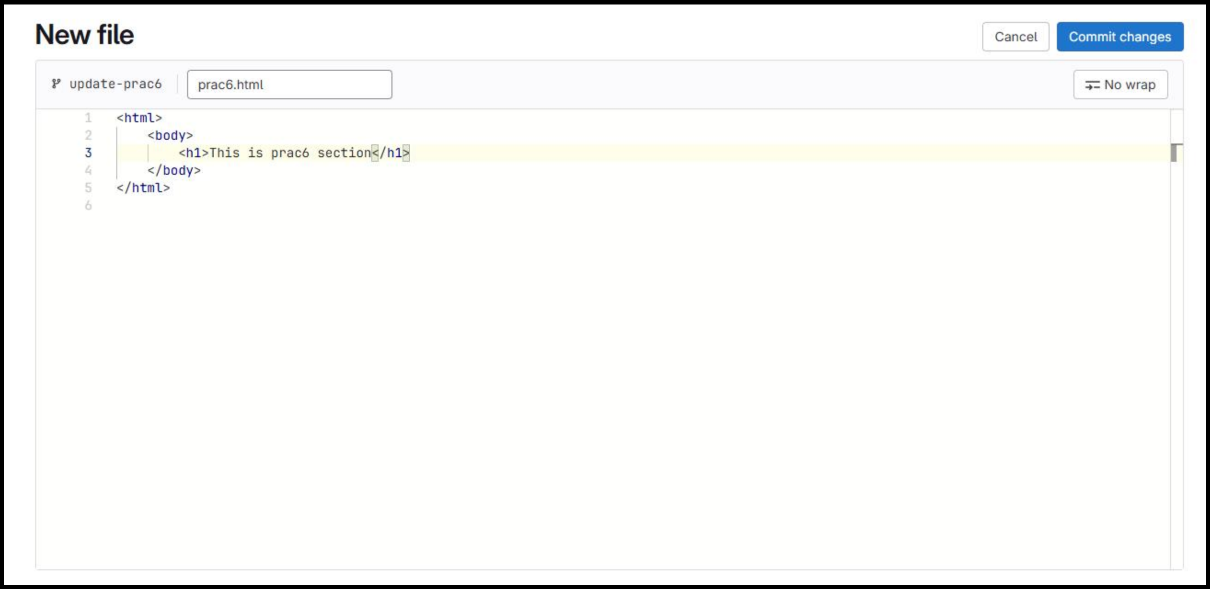
Branch name: update-prac6

Create from: main

Existing branch name, tag, or commit SHA

Create branch | Cancel

2. Add /Edit a File and Commit

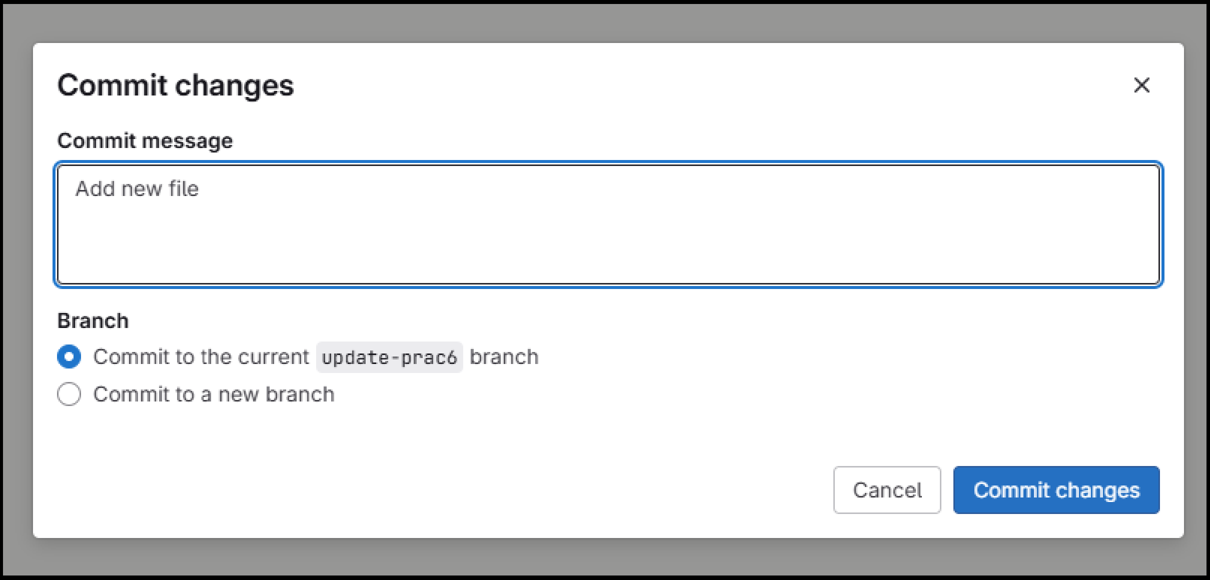


New file

Cancel | Commit changes

update-prac6 | prac6.html | No wrap

```
<html>
    <body>
        <h1>This is prac6 section</h1>
    </body>
</html>
```



Commit changes

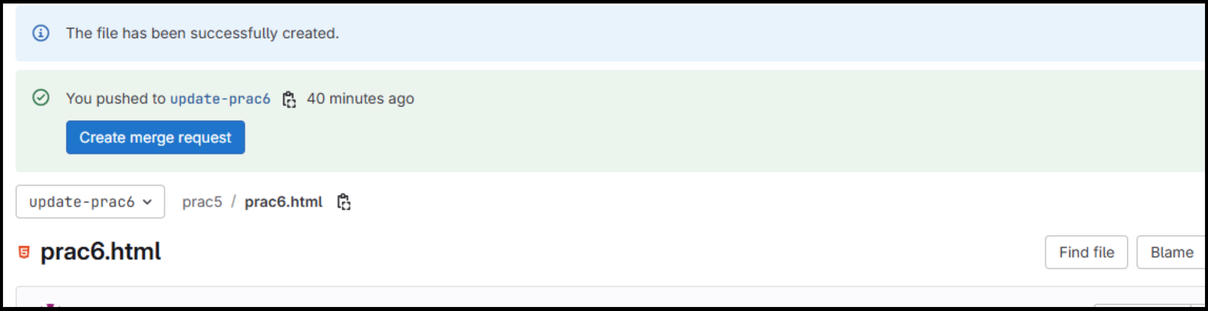
Commit message

Add new file

Branch

- [✓ Commit to the current `update-prac6` branch]
- Commit to a new branch

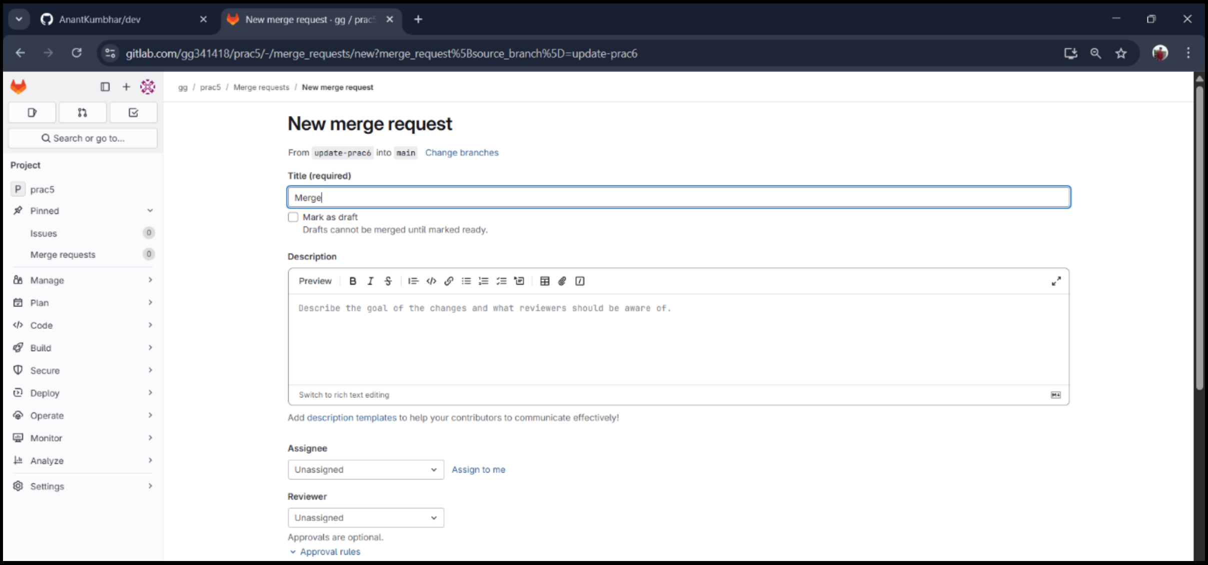
3. Click on merge Request > New Merge request



The file has been successfully created.

You pushed to `update-prac6` 40 minutes ago

4. Select source and target branches



AnantKumbhar/dev
New merge request · gg / prac5
gitlab.com/gg341418/prac5/-/merge_requests/new?merge_request%5Bsource_branch%5D=update-prac6
Search or go to...
Project
prac5
Pinned
Issues 0
Merge requests 0
Manage
Plan
Code
Build
Secure
Deploy
Operate
Monitor
Analyze
Settings
gg / prac5 / Merge requests / New merge request

New merge request

From `update-prac6` into `main` Change branches

Title (required)

Merge

Mark as draft
Drafts cannot be merged until marked ready.

Description

Describe the goal of the changes and what reviewers should be aware of.

Switch to rich text editing

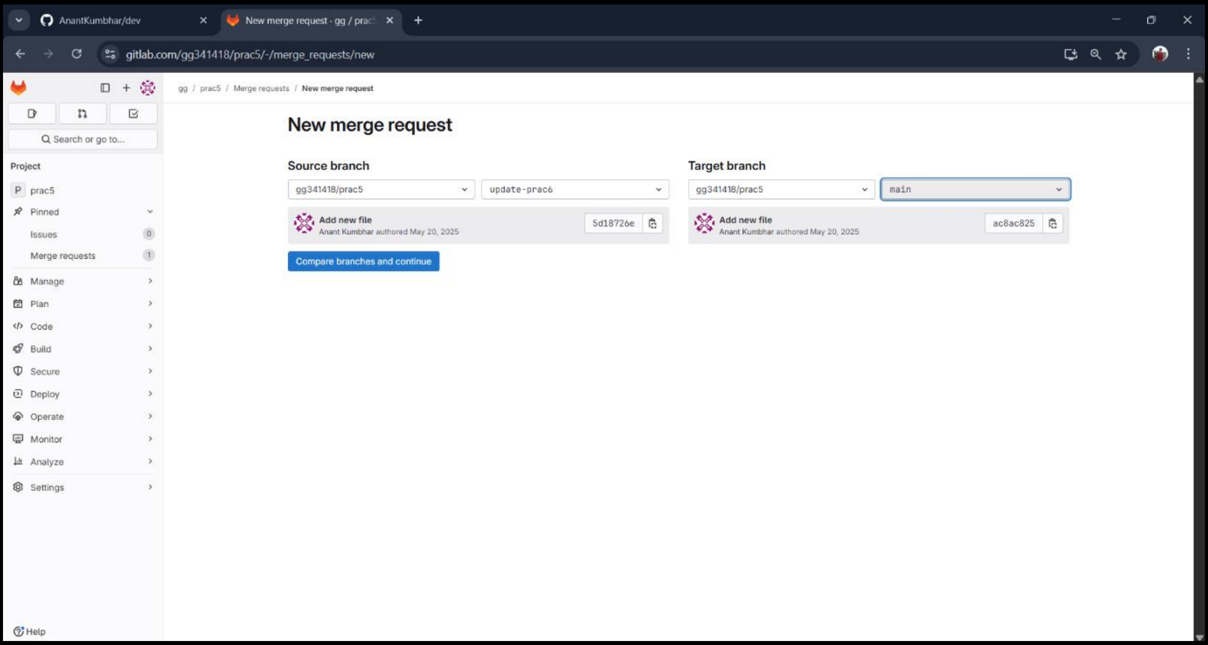
Add description templates to help your contributors to communicate effectively!

Assignee: Unassigned — Assign to me

Reviewer: Unassigned

Approvals are optional.

Approval rules



New merge request

Source branch

gg341418/prac5 | update-prac6

Add new file
Anant Kumbhar authored May 20, 2025 | 5d18726e

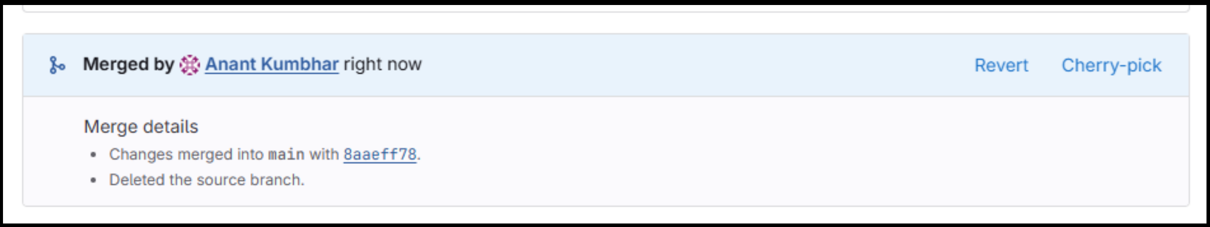
Target branch

gg341418/prac5 | main

Add new file
Anant Kumbhar authored May 20, 2025 | ac8ac825

Compare branches and continue

5. Submit and merge after review



Merged by Anant Kumbhar right now

Merge details

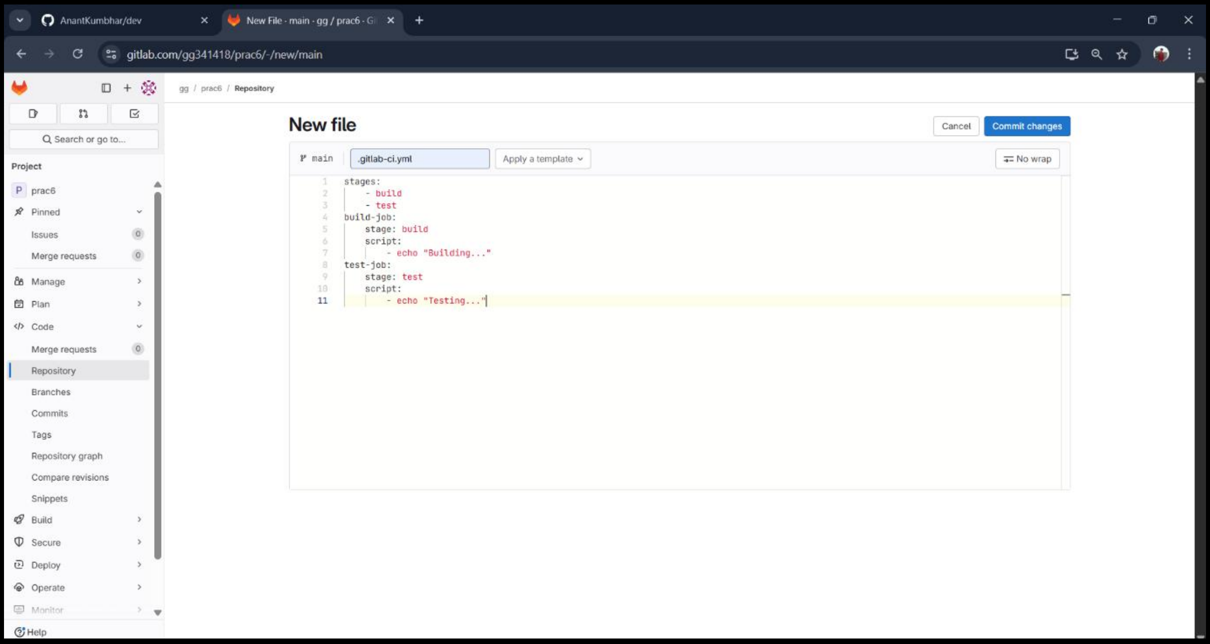
- Changes merged into `main` with 8aaeff78.
- Deleted the source branch.

Aim: Demonstrate the CI/CD workflow in GitLab using .py, .bash, .java file

Steps:

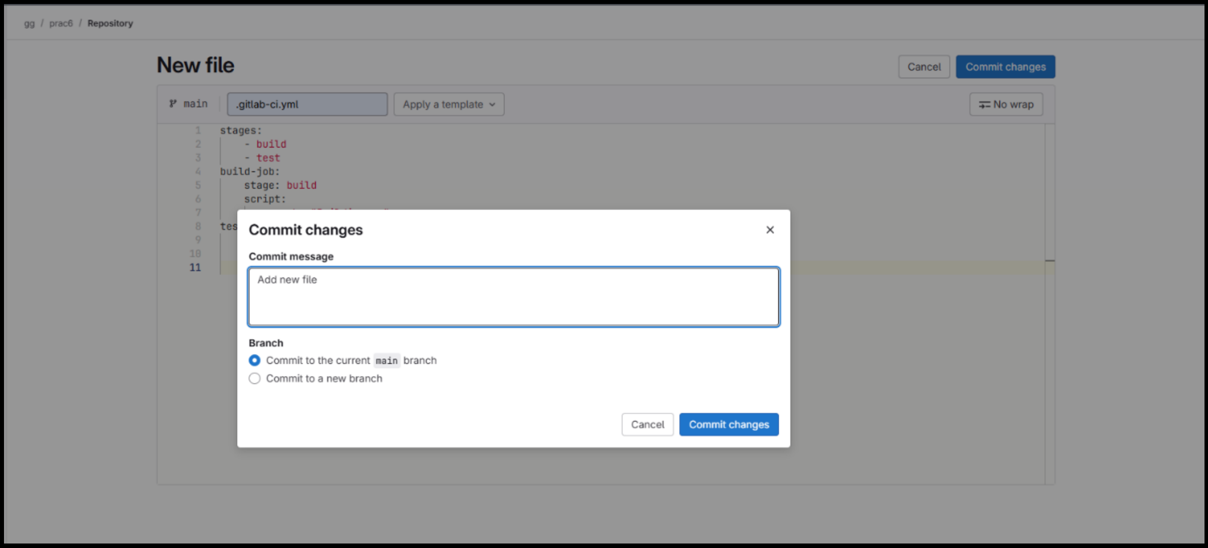
1. In your repo, create .gitlab-ci.yml:

```
stages:
  - build
  - test
build-job:
  stage: build
  script:
    - echo "Building..."
test-job:
  stage: test
  script:
    - echo "Testing..."
```



```
stages:
  - build
  - test
build-job:
  stage: build
  script:
    - echo "Building..."
test-job:
  stage: test
  script:
    - echo "Testing..."
```

2. Commite and push



gg / prac6 / Repository

New file

main .gitlab-ci.yml

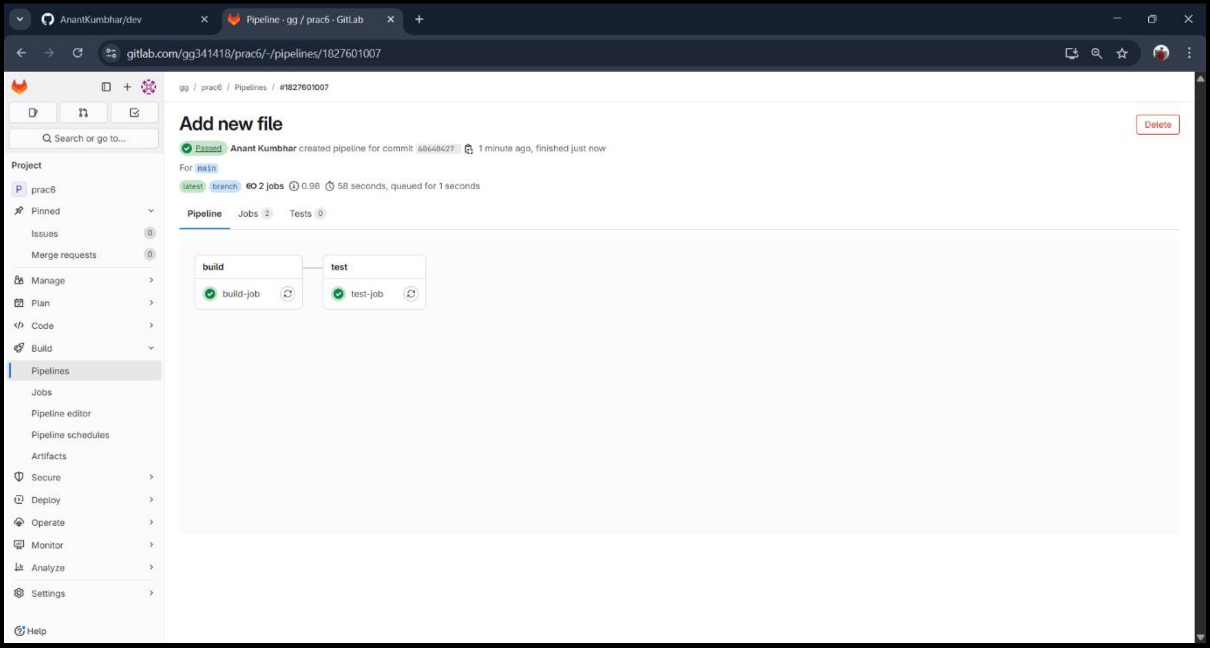
```
stages:
    - build
    - test
build-job:
    stage: build
    script:

tes
```

Commit changes

Commit message: Add new file

Branch:
- [✓ Commit to the current `main` branch]
- Commit to a new branch

3. Go To Bulid Pipeline and View the build/test stages



gitlab.com/gg341418/prac6/-/pipelines/1827601007

gg / prac6 / Pipelines / #1827601007

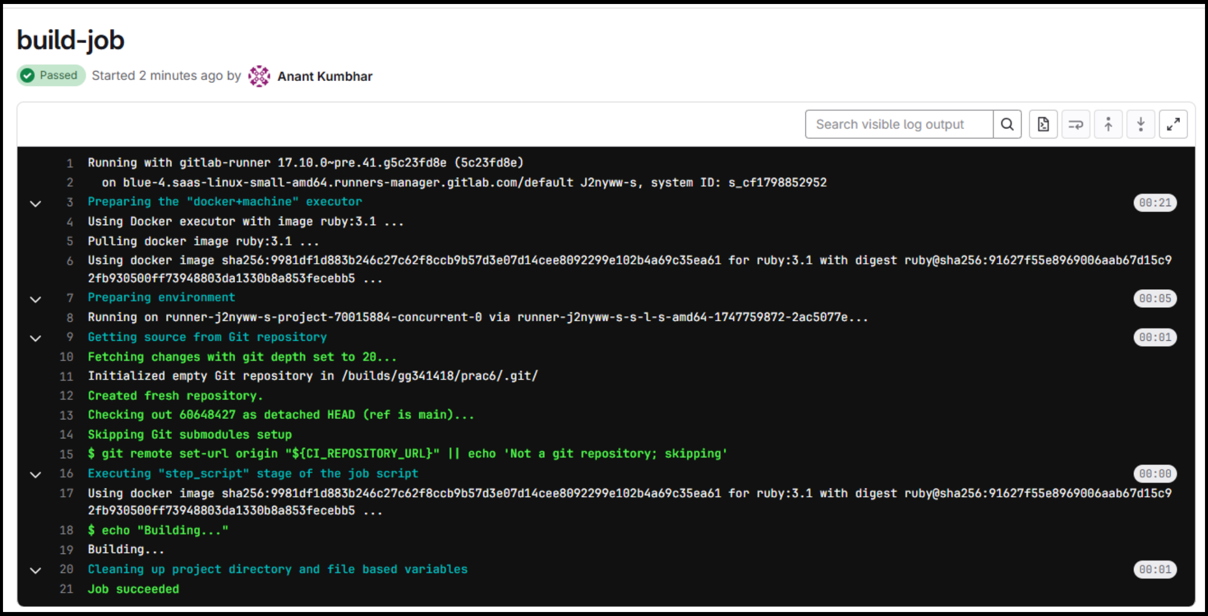
Add new file

Passed Anant Kumbhar created pipeline for commit 68648427 1 minute ago, finished just now

For main

latest branch 2 jobs 0.98 58 seconds, queued for 1 seconds

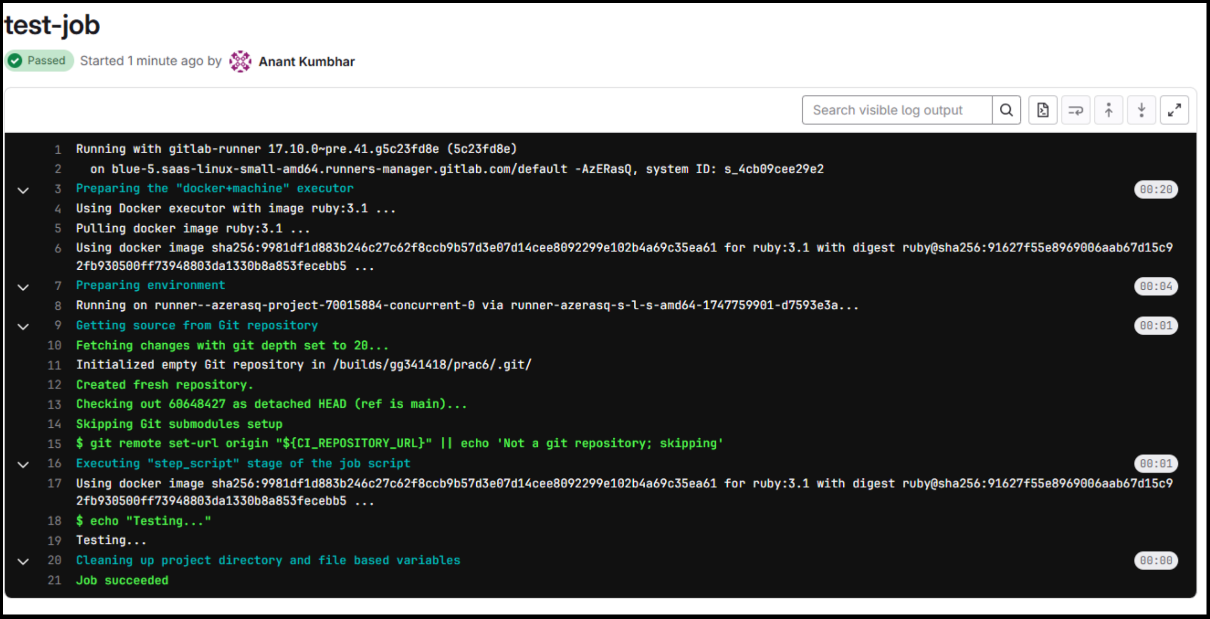
build	test
build-job	test-job



build-job

Passed Started 2 minutes ago by Anant Kumbhar

```
Running with gitlab-runner 17.10.0~pre.41.g5c23fd8e (5c23fd8e)
  on blue-4.saas-linux-small-amd64.runners-manager.gitlab.com/default J2nyww-s, system ID: s_cf1798852952
Preparing the "docker+machine" executor                                         00:21
Using Docker executor with image ruby:3.1 ...
Pulling docker image ruby:3.1 ...
Using docker image sha256:9981df1d883b246c27c62f8ccb9b57d3e07d14cee8092299e102b4a69c35ea61 for ruby:3.1 with digest ruby@sha256:91627f55e8969006aab67d15c9
2fb930500ff73948803da1330b8a853fecebb5 ...
Preparing environment                                                           00:05
Running on runner-j2nyww-s-project-70015884-concurrent-0 via runner-j2nyww-s-s-l-s-amd64-1747759872-2ac5077e...
Getting source from Git repository                                              00:01
Fetching changes with git depth set to 20...
Initialized empty Git repository in /builds/gg341418/prac6/.git/
Created fresh repository.
Checking out 60648427 as detached HEAD (ref is main)...
Skipping Git submodules setup
$ git remote set-url origin "${CI_REPOSITORY_URL}" || echo 'Not a git repository; skipping'
Executing "step_script" stage of the job script                                 00:00
Using docker image sha256:9981df1d883b246c27c62f8ccb9b57d3e07d14cee8092299e102b4a69c35ea61 for ruby:3.1 with digest ruby@sha256:91627f55e8969006aab67d15c9
2fb930500ff73948803da1330b8a853fecebb5 ...
$ echo "Building..."
Building...
Cleaning up project directory and file based variables                          00:01
Job succeeded
```



test-job

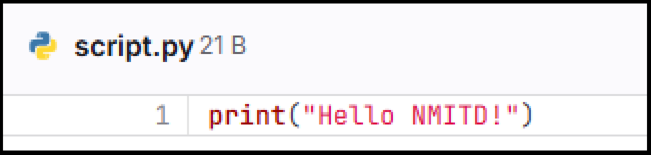
Passed Started 1 minute ago by Anant Kumbhar

```
Running with gitlab-runner 17.10.0~pre.41.g5c23fd8e (5c23fd8e)
  on blue-5.saas-linux-small-amd64.runners-manager.gitlab.com/default -AzERasQ, system ID: s_4cb09cee29e2
Preparing the "docker+machine" executor                                         00:20
Using Docker executor with image ruby:3.1 ...
Pulling docker image ruby:3.1 ...
Using docker image sha256:9981df1d883b246c27c62f8ccb9b57d3e07d14cee8092299e102b4a69c35ea61 for ruby:3.1 with digest ruby@sha256:91627f55e8969006aab67d15c9
2fb930500ff73948803da1330b8a853fecebb5 ...
Preparing environment                                                           00:04
Running on runner--azerasq-project-70015884-concurrent-0 via runner-azerasq-s-l-s-amd64-1747759901-d7593e3a...
Getting source from Git repository                                              00:01
Fetching changes with git depth set to 20...
Initialized empty Git repository in /builds/gg341418/prac6/.git/
Created fresh repository.
Checking out 60648427 as detached HEAD (ref is main)...
Skipping Git submodules setup
$ git remote set-url origin "${CI_REPOSITORY_URL}" || echo 'Not a git repository; skipping'
Executing "step_script" stage of the job script                                 00:01
Using docker image sha256:9981df1d883b246c27c62f8ccb9b57d3e07d14cee8092299e102b4a69c35ea61 for ruby:3.1 with digest ruby@sha256:91627f55e8969006aab67d15c9
2fb930500ff73948803da1330b8a853fecebb5 ...
$ echo "Testing..."
Testing...
Cleaning up project directory and file based variables                          00:00
Job succeeded
```

CI/Cd for python

Create script.py

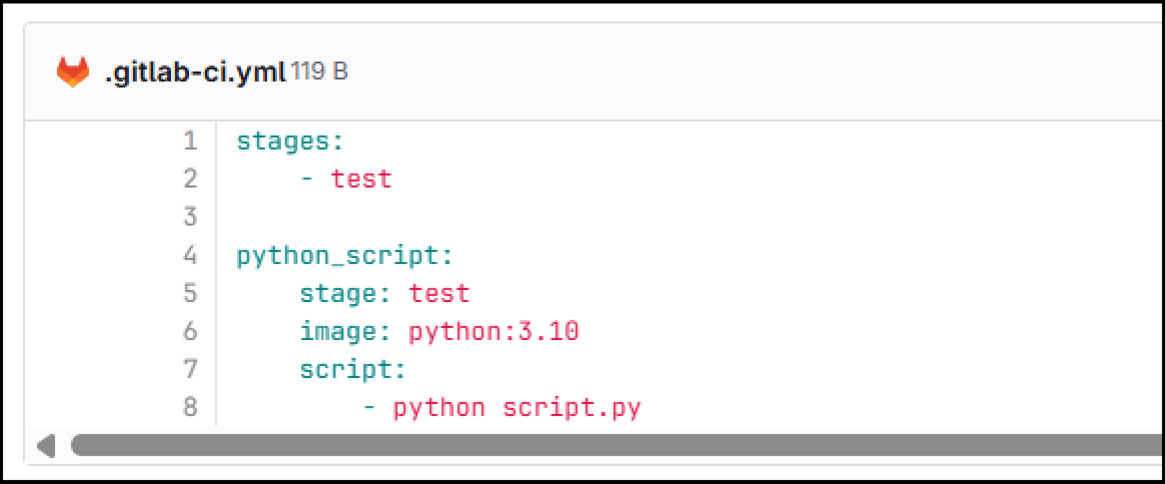
print("Hello NMITD!")



script.py 21 B

```python
print("Hello NMITD!")
```

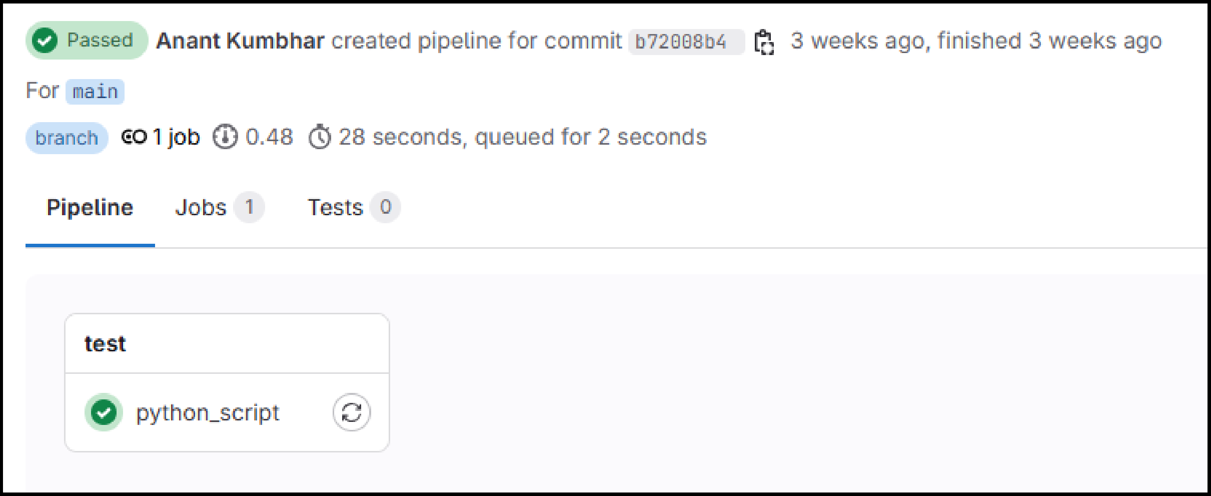
Create .gitlab-ci.yml



.gitlab-ci.yml 119 B

```
stages:
    - test

python_script:
    stage: test
    image: python:3.10
    script:
        - python script.py
```

Commit the changes and bulid pipeline

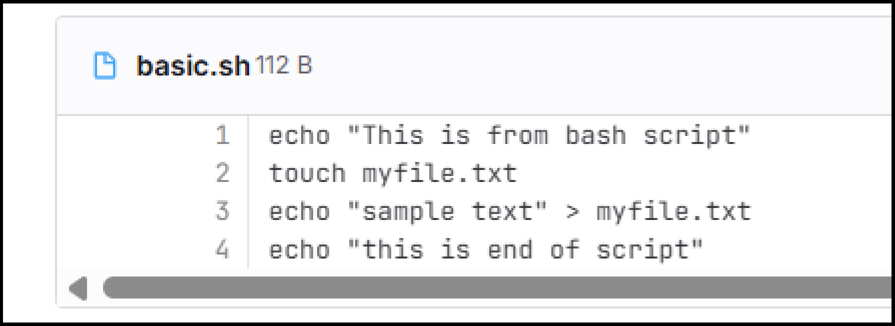


Passed Anant Kumbhar created pipeline for commit b72008b4 3 weeks ago, finished 3 weeks ago

For main branch 1 job 0.48 28 seconds, queued for 2 seconds

CI/Cd for bash

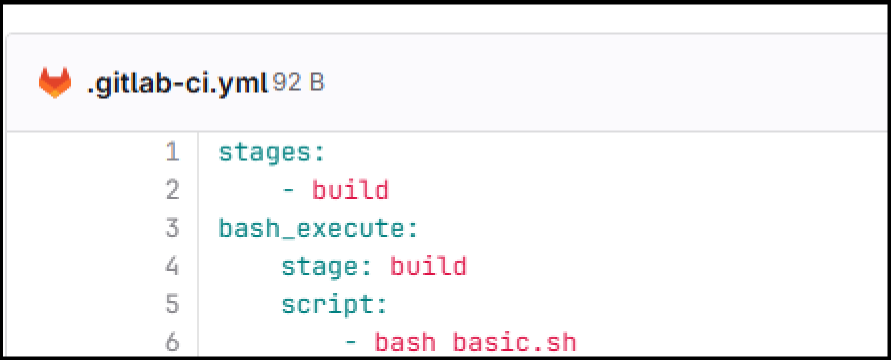
Create basic.sh file



basic.sh 112 B

```
echo "This is from bash script"
touch myfile.txt
echo "sample text" > myfile.txt
echo "this is end of script"
```

Create .gitlab-ci.yml

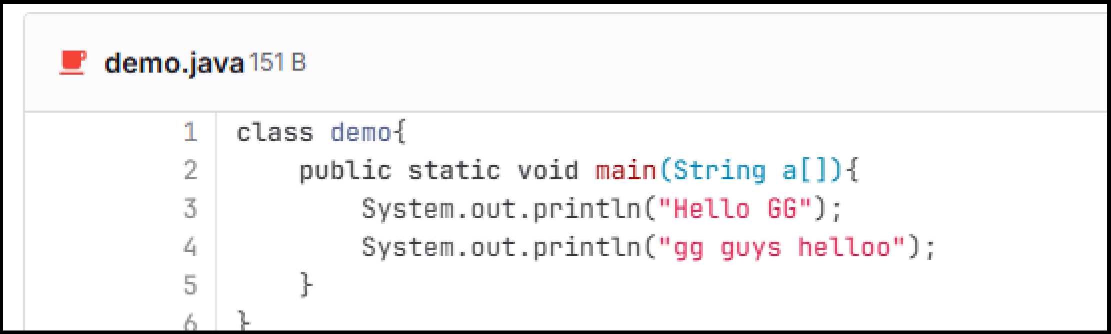


.gitlab-ci.yml 92 B

```yaml
stages:
    - build
bash_execute:
    stage: build
    script:
        - bash basic.sh
```

CI/Cd for Java

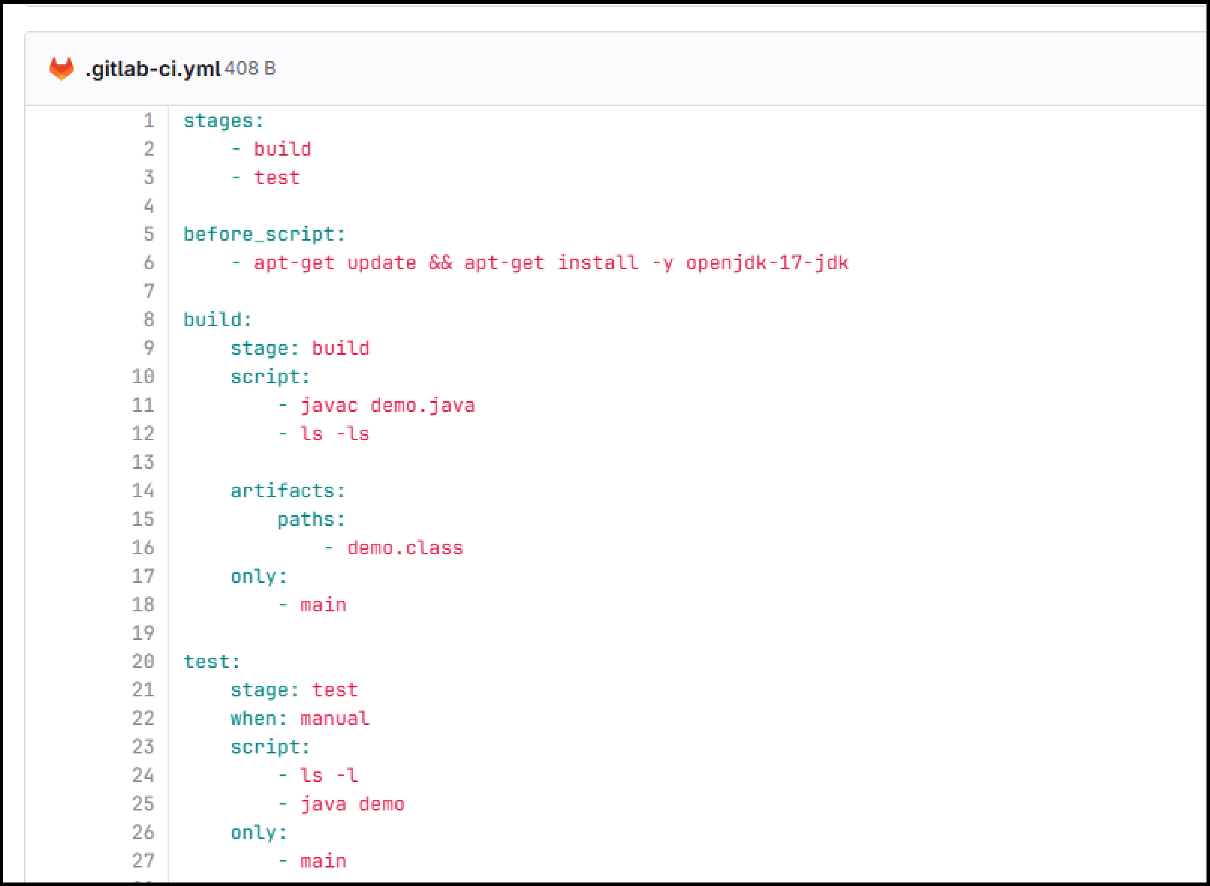
Create demo.java



demo.java 151 B

```java
class demo{
    public static void main(String a[]){
        System.out.println("Hello GG");
        System.out.println("gg guys helloo");
    }
}
```

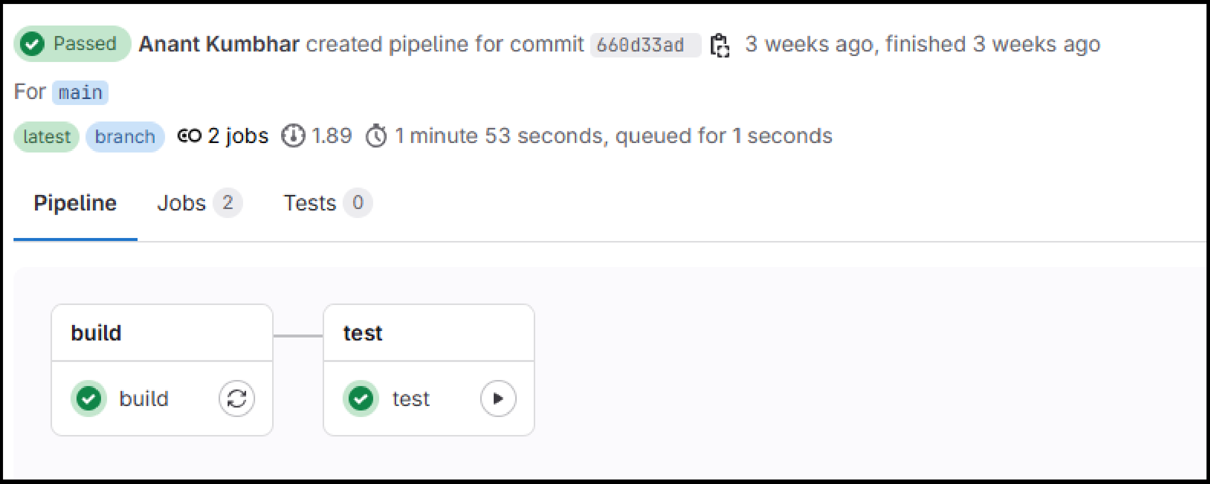
Create .gitlab-ci.yml



.gitlab-ci.yml 408 B

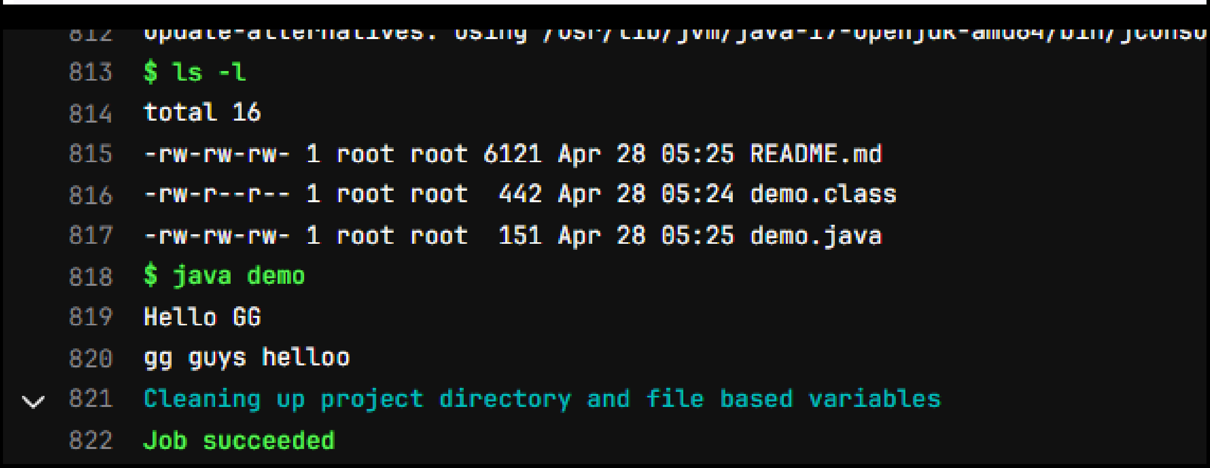
```yaml
stages:
    - build
    - test

before_script:
    - apt-get update && apt-get install -y openjdk-17-jdk

build:
    stage: build
    script:
        - javac demo.java
        - ls -ls

    artifacts:
        paths:
            - demo.class
    only:
        - main

test:
    stage: test
    when: manual
    script:
        - ls -l
        - java demo
    only:
        - main
```

Commite and build pipleline

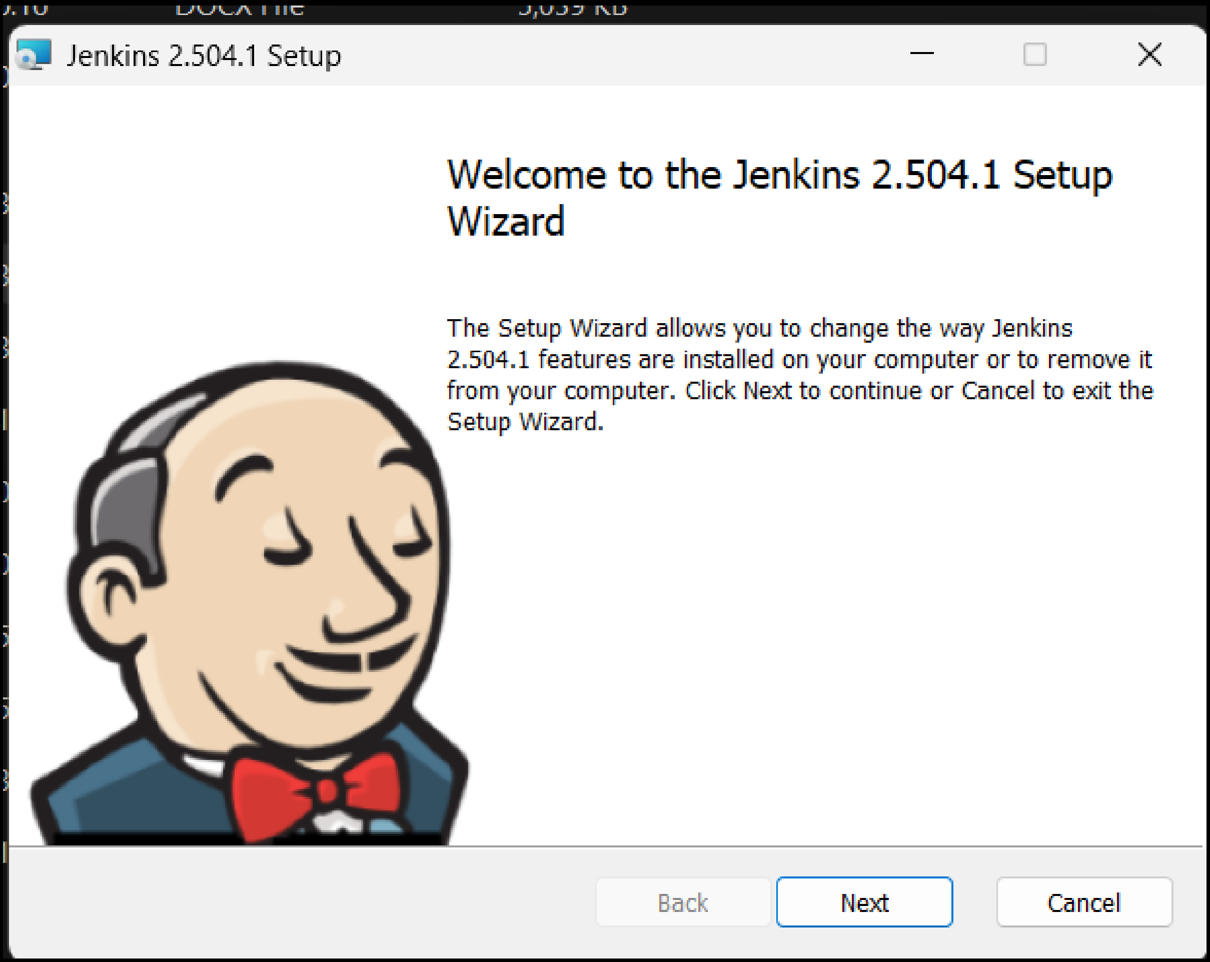

Passed Anant Kumbhar created pipeline for commit 660d33ad 3 weeks ago, finished 3 weeks ago

For main

latest branch 2 jobs 1.89 1 minute 53 seconds, queued for 1 seconds

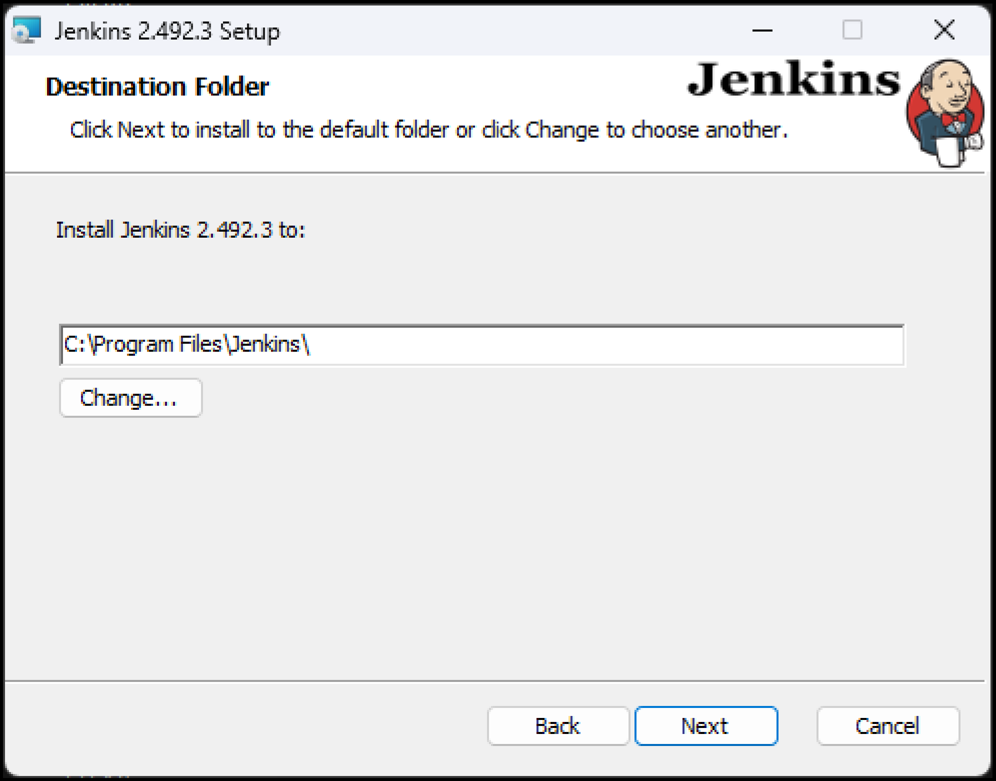

```
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/jconso
$ ls -l
total 16
-rw-rw-rw- 1 root root 6121 Apr 28 05:25 README.md
-rw-r--r-- 1 root root  442 Apr 28 05:24 demo.class
-rw-rw-rw- 1 root root  151 Apr 28 05:25 demo.java
$ java demo
Hello GG
gg guys helloo
Cleaning up project directory and file based variables
Job succeeded
```

Aim : demonstrate settings jenkins CI/CD piplline.


Jenkins 2.504.1 Setup

Welcome to the Jenkins 2.504.1 Setup Wizard

The Setup Wizard allows you to change the way Jenkins 2.504.1 features are installed on your computer or to remove it from your computer. Click Next to continue or Cancel to exit the Setup Wizard.

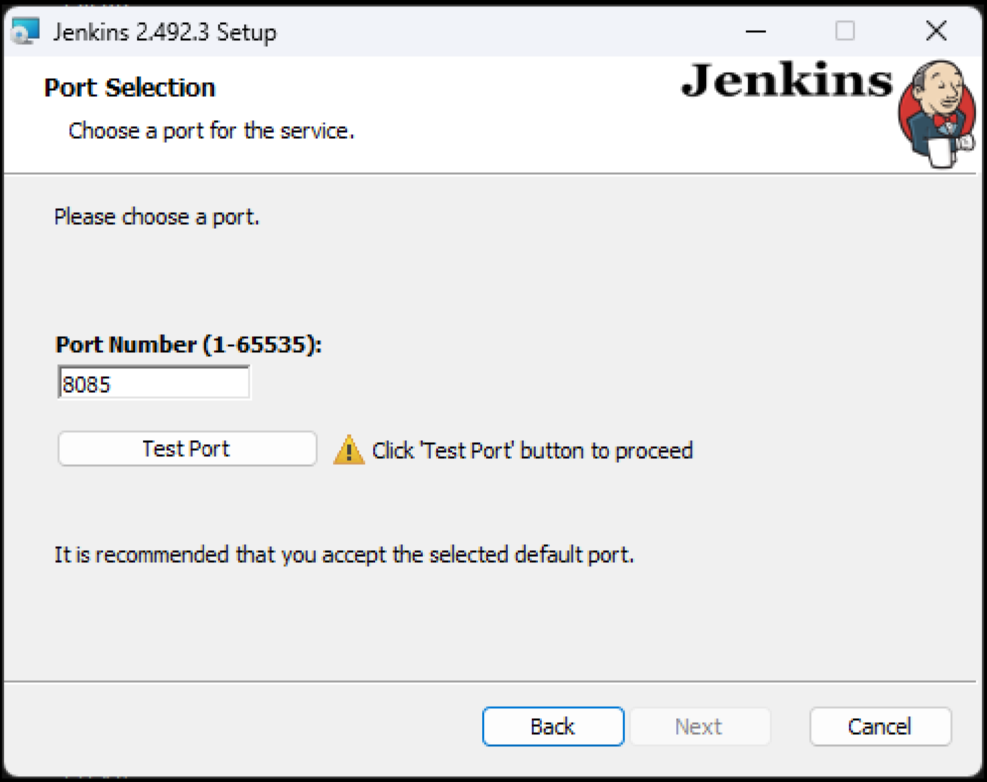

Jenkins 2.492.3 Setup

Destination Folder

Click Next to install to the default folder or click Change to choose another.

Install Jenkins 2.492.3 to:

C:\Program Files\Jenkins\


Jenkins 2.492.3 Setup

Port Selection

Choose a port for the service.

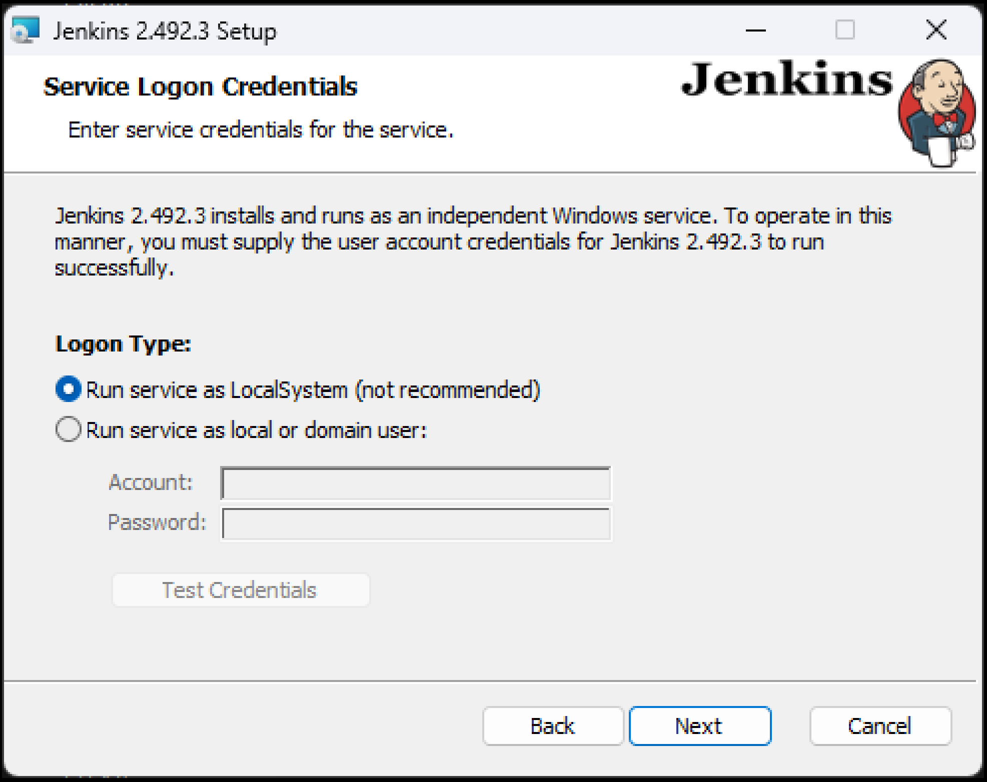
Please choose a port.

Port Number (1-65535):

8085

Test Port ⚠ Click 'Test Port' button to proceed

It is recommended that you accept the selected default port.


Jenkins 2.492.3 Setup

Service Logon Credentials

Enter service credentials for the service.

Jenkins 2.492.3 installs and runs as an independent Windows service. To operate in this manner, you must supply the user account credentials for Jenkins 2.492.3 to run successfully.

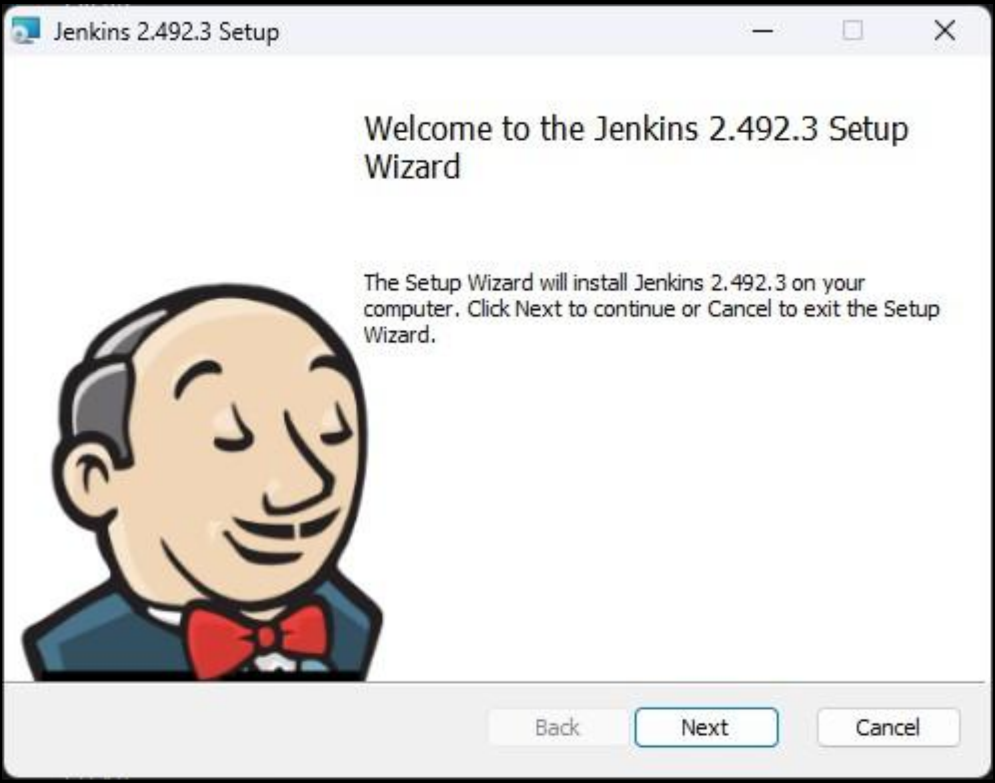
Logon Type:

● Run service as LocalSystem (not recommended)

○ Run service as local or domain user:

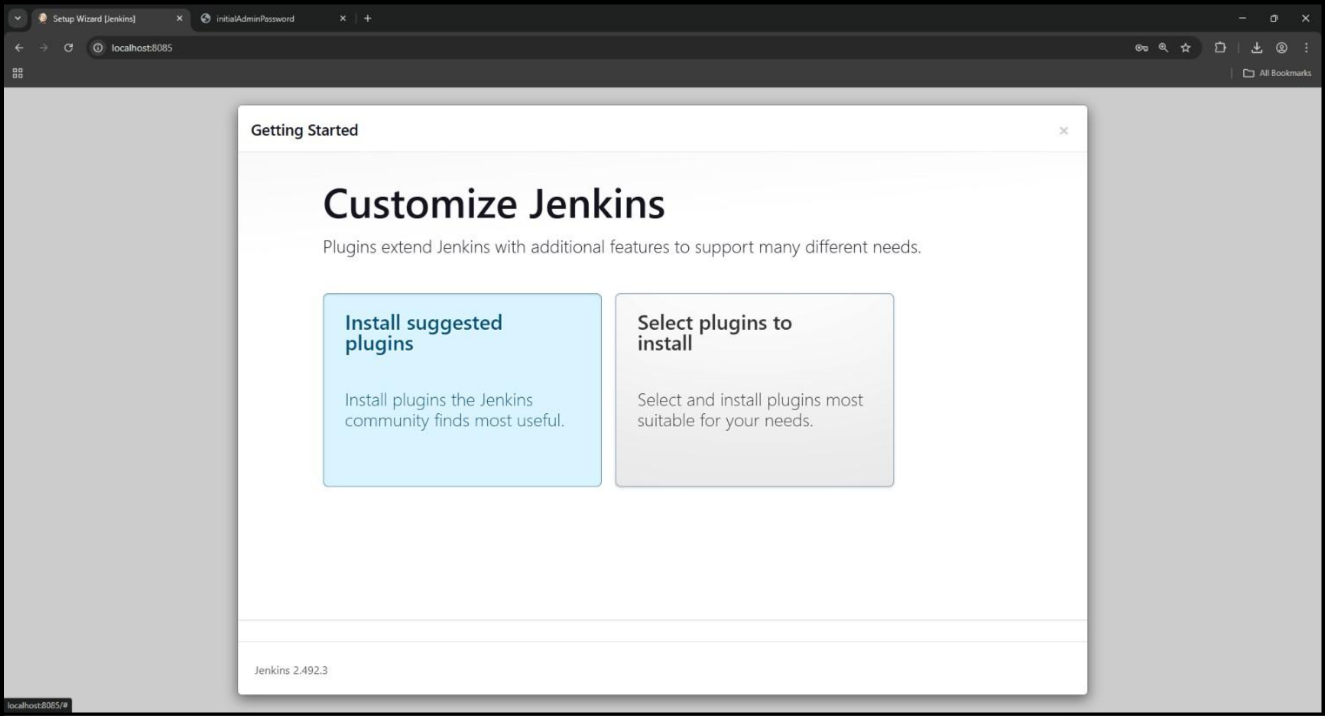
Account:

Password:


Jenkins 2.492.3 Setup

Welcome to the Jenkins 2.492.3 Setup Wizard

The Setup Wizard will install Jenkins 2.492.3 on your computer. Click Next to continue or Cancel to exit the Setup Wizard.



Getting Started

Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

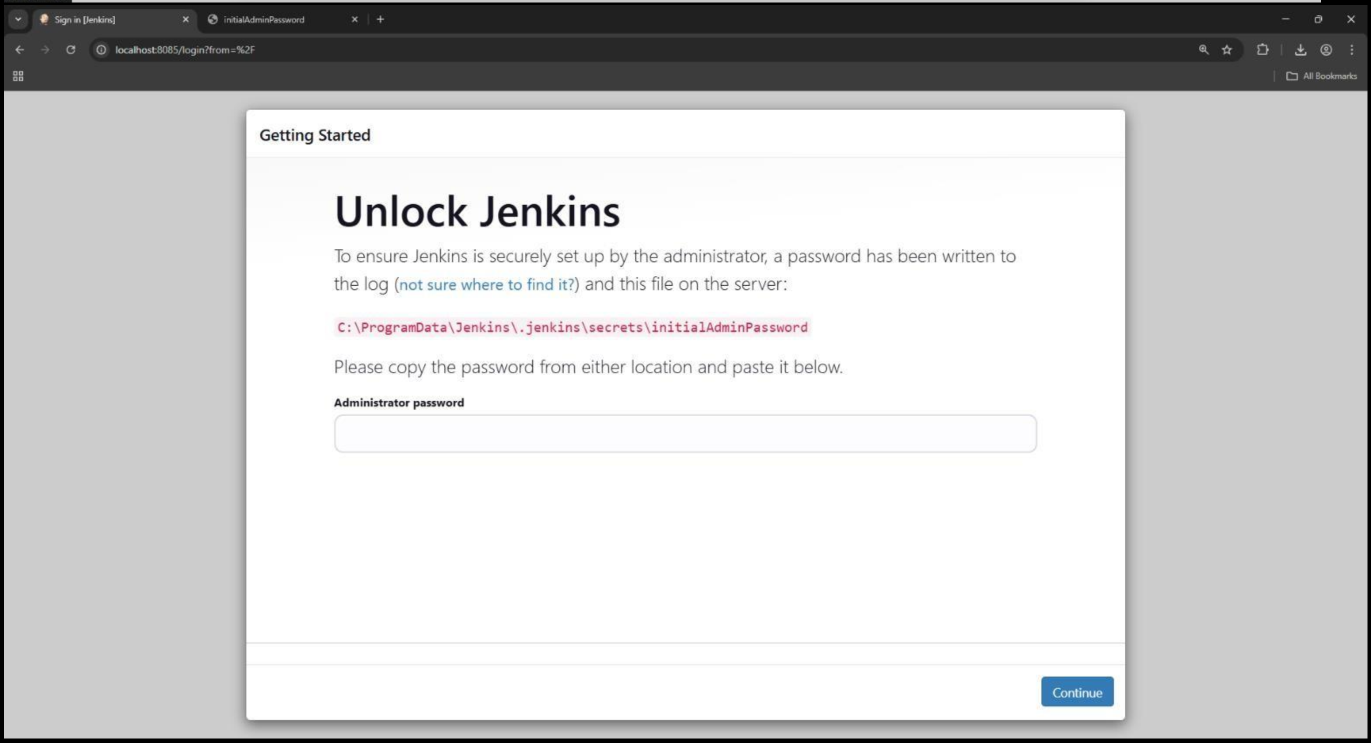
Install suggested plugins

Install plugins the Jenkins community finds most useful.

Select plugins to install

Select and install plugins most suitable for your needs.

Jenkins 2.492.3



Getting Started

Unlock Jenkins

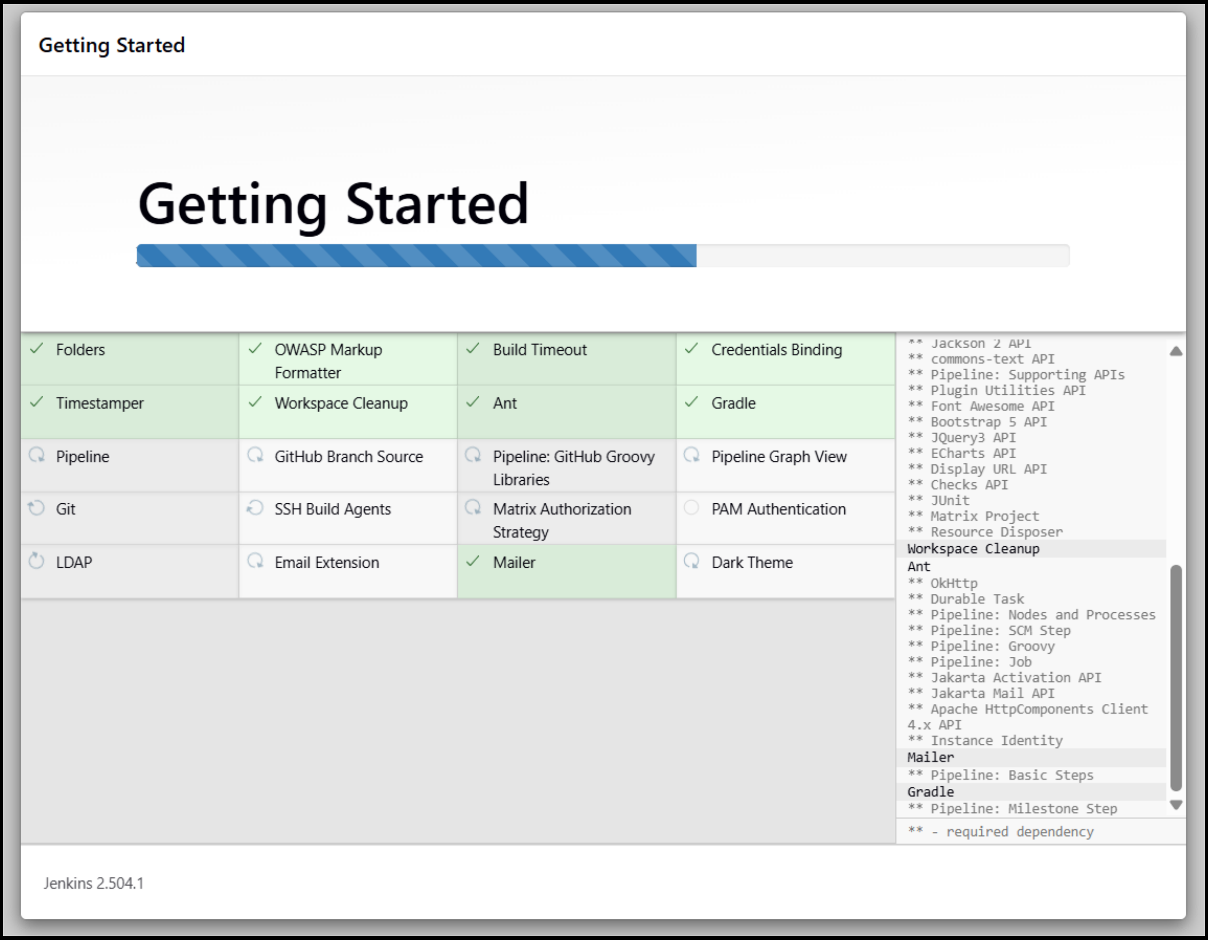
To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

`C:\ProgramData\Jenkins\.jenkins\secrets\initialAdminPassword`

Please copy the password from either location and paste it below.

Administrator password

Continue



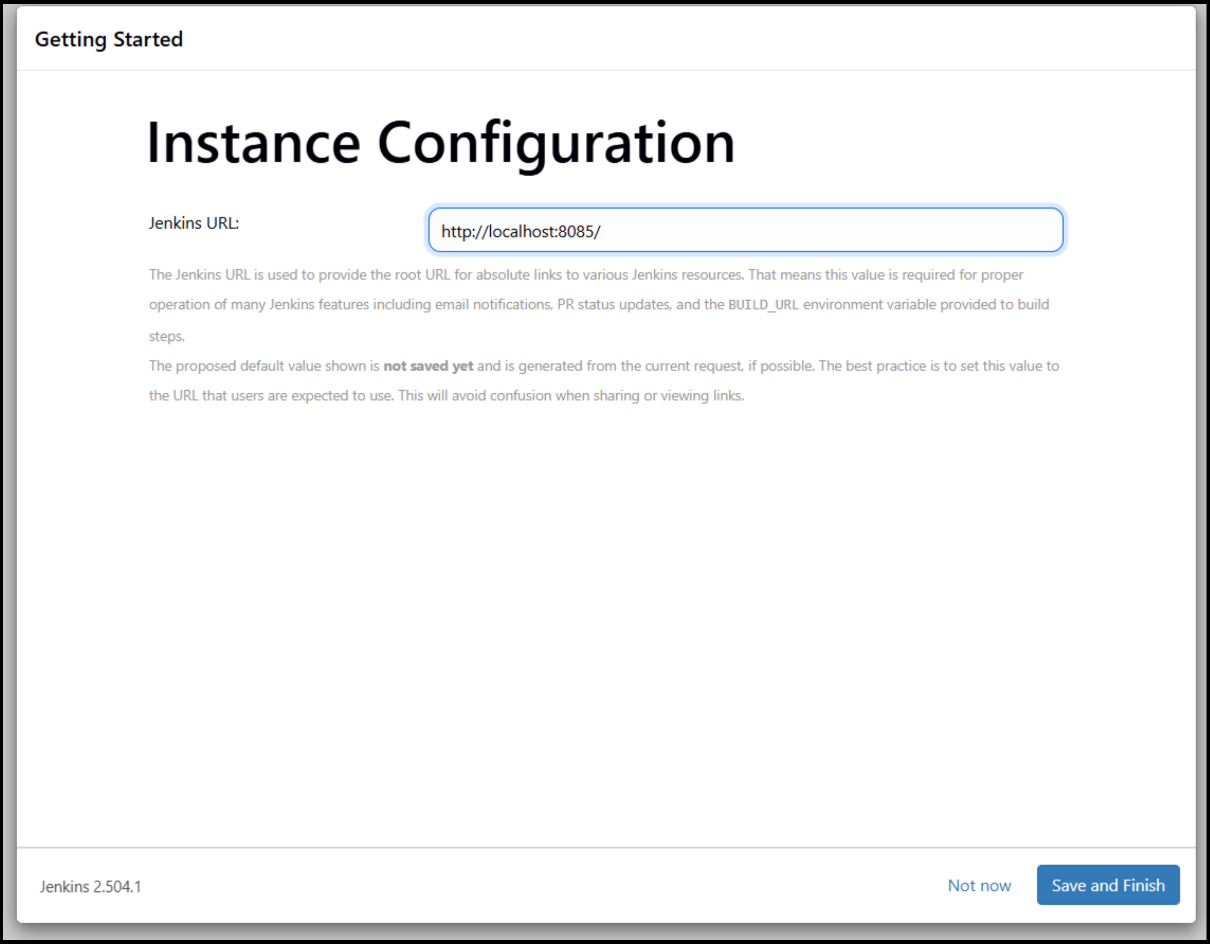
Getting Started

Getting Started

✓ Folders	✓ OWASP Markup Formatter	✓ Build Timeout	✓ Credentials Binding
✓ Timestamper	✓ Workspace Cleanup	✓ Ant	✓ Gradle
Pipeline	GitHub Branch Source	Pipeline: GitHub Groovy Libraries	Pipeline Graph View
Git	SSH Build Agents	Matrix Authorization Strategy	PAM Authentication
LDAP	Email Extension	✓ Mailer	Dark Theme

```
** Jackson 2 API
** commons-text API
** Pipeline: Supporting APIs
** Plugin Utilities API
** Font Awesome API
** Bootstrap 5 API
** JQuery3 API
** ECharts API
** Display URL API
** Checks API
** JUnit
** Matrix Project
** Resource Disposer
Workspace Cleanup
Ant
** OkHttp
** Durable Task
** Pipeline: Nodes and Processes
** Pipeline: SCM Step
** Pipeline: Groovy
** Pipeline: Job
** Jakarta Activation API
** Jakarta Mail API
** Apache HttpComponents Client
4.x API
** Instance Identity
Mailer
** Pipeline: Basic Steps
Gradle
** Pipeline: Milestone Step
** - required dependency
```

Jenkins 2.504.1


Getting Started

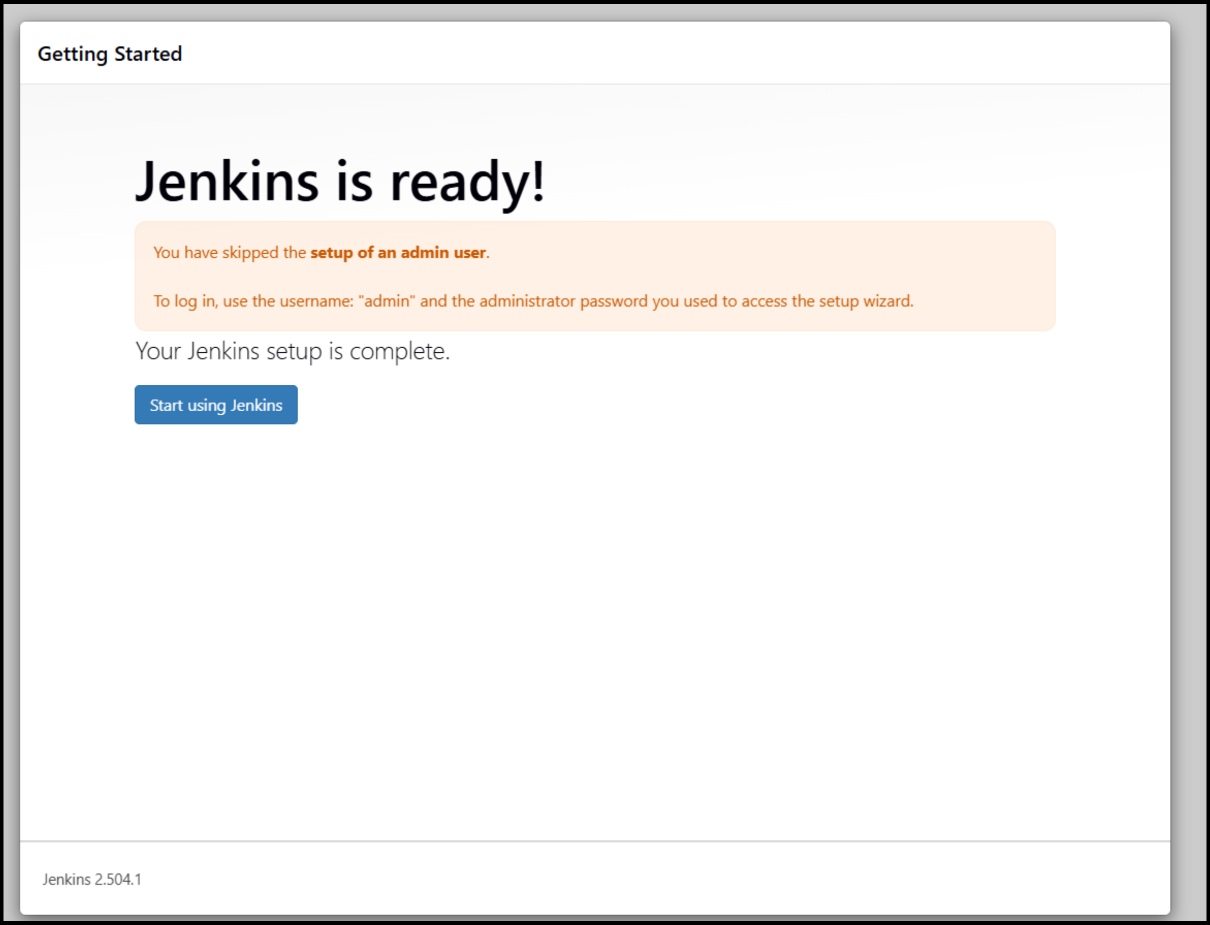
Instance Configuration

Jenkins URL: http://localhost:8085/

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the `BUILD_URL` environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Jenkins 2.504.1


Getting Started

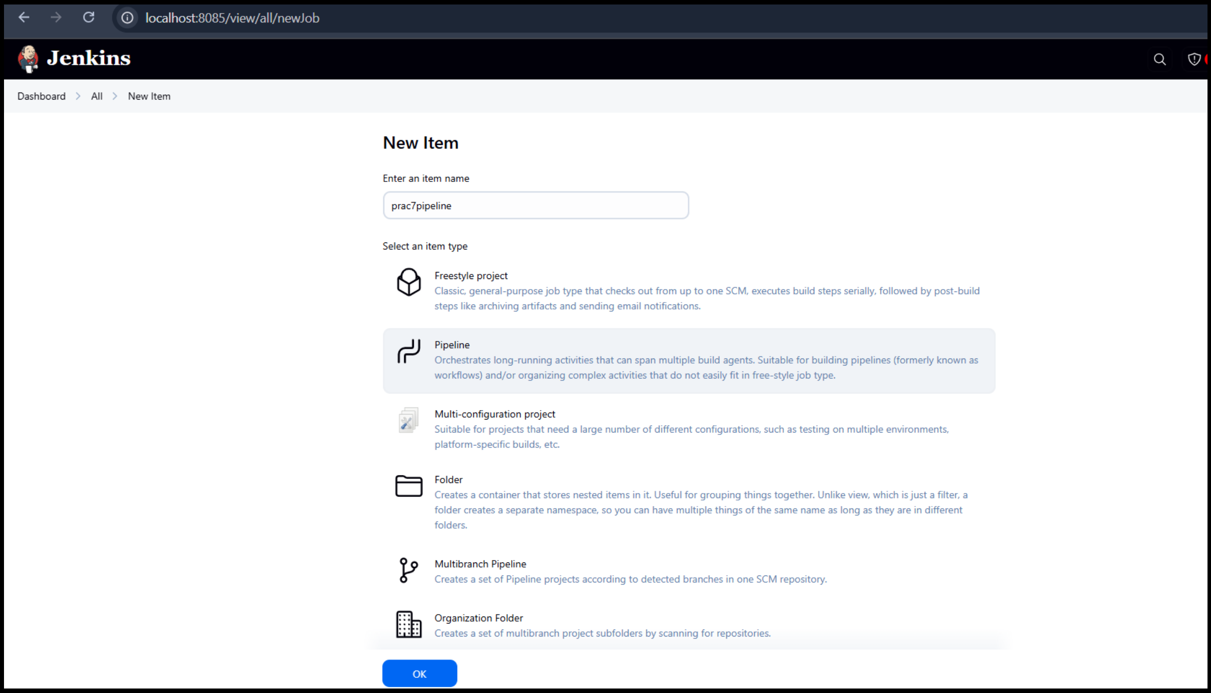
Jenkins is ready!

You have skipped the **setup of an admin user**.

To log in, use the username: "admin" and the administrator password you used to access the setup wizard.

Your Jenkins setup is complete.

Jenkins 2.504.1


localhost:8085/view/all/newJob

Jenkins

Dashboard > All > New Item

New Item

Enter an item name

prac7pipeline

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

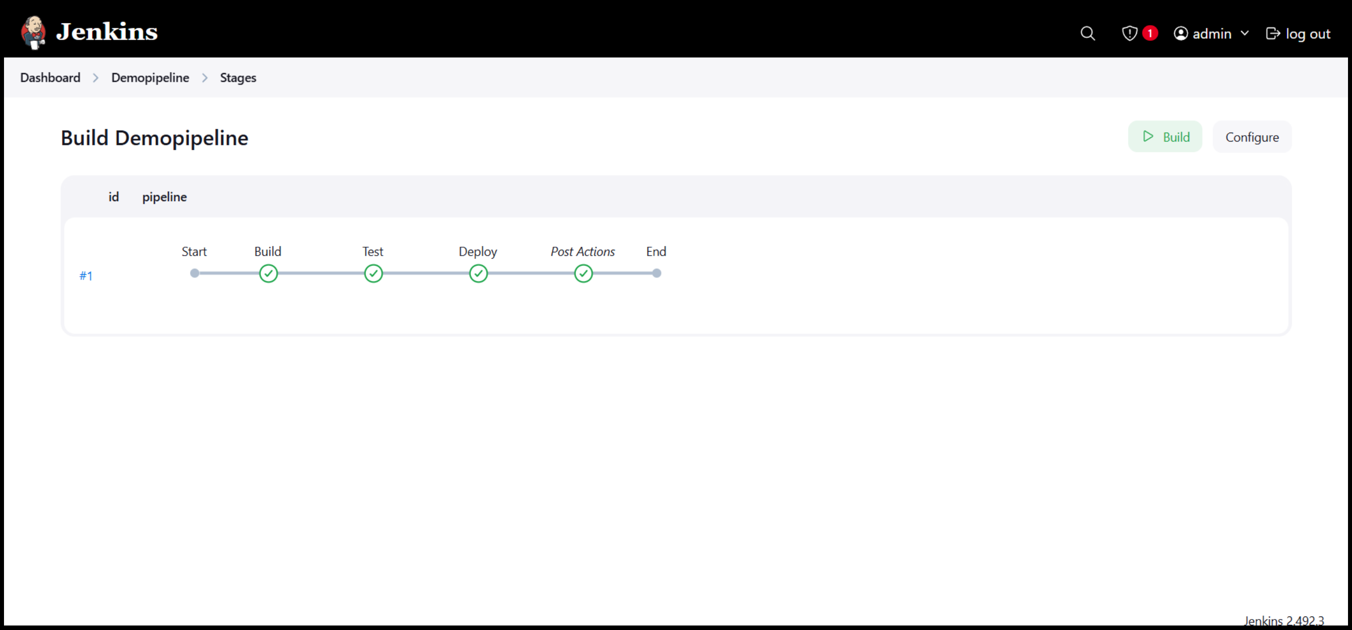
Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.

Organization Folder
Creates a set of multibranch project subfolders by scanning for repositories.

OK


Jenkins

admin log out

Dashboard > Demopipeline > Stages

Build Demopipeline

Build Configure

id pipeline

#1 Start Build Test Deploy *Post Actions* End

Jenkins 2.492.3

Aim : Demonstrate Setting up of a CI/CD pipeline to build add deploy a web application to a local HTTP server

Index.jsp

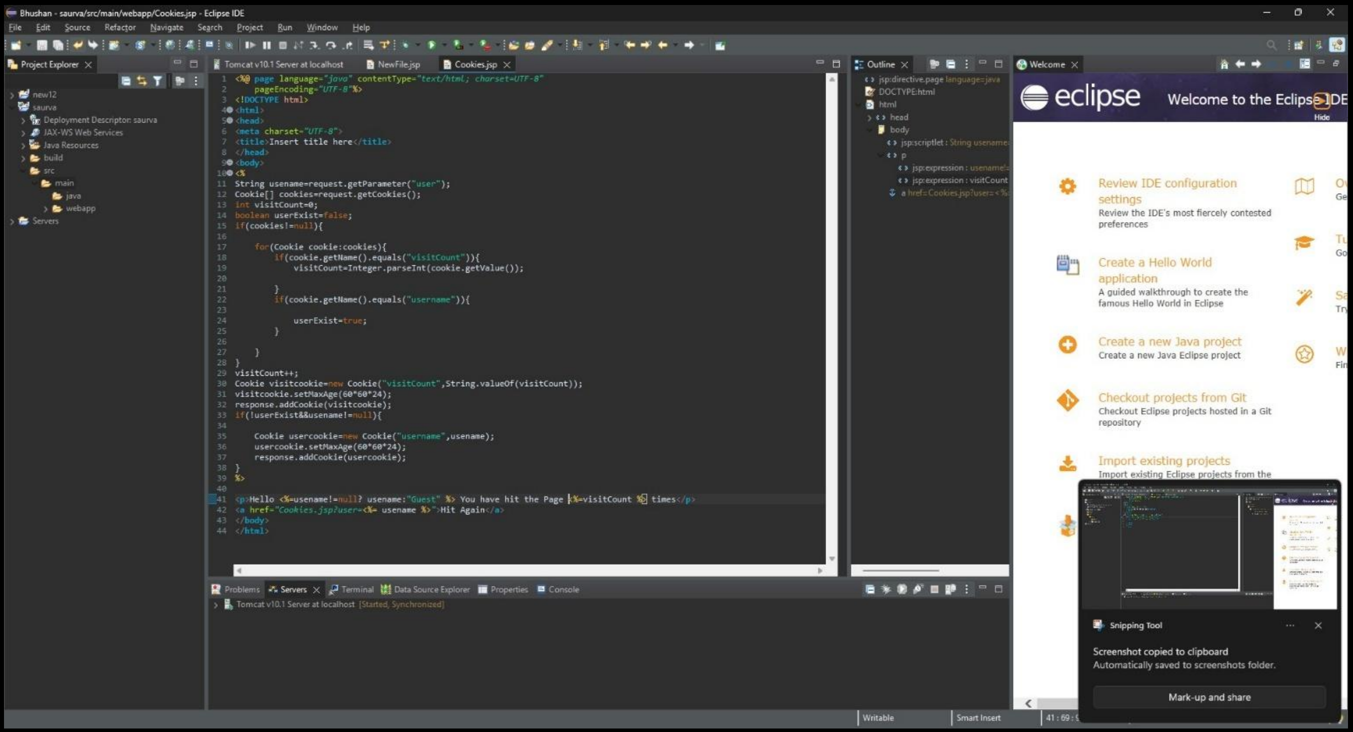
```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Insert title here</title>

</head>

<body>

<form action="Cookies.jsp" method="get"> Name:<input type="text" name="user">

<input type="submit" value="Submit">

</form>

</body>

</html>
```

Cookies.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
```

```
pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
<%
String usename=request.getParameter("user"); Cookie[] cookies=request.getCookies();
int visitCount=0; boolean userExist=false; if(cookies!=null){
for(Cookie cookie:cookies){ if(cookie.getName().equals("visitCount")){
visitCount=Integer.parseInt(cookie.getValue());
}
if(cookie.getName().equals("username")){
userExist=true;
}
}
}
```

```
visitCount++;

Cookie visitcookie=new Cookie("visitCount",String.valueOf(visitCount));
visitcookie.setMaxAge(60*60*24);

response.addCookie(visitcookie); if(!userExist&&usename!=null){


Cookie usercookie=new Cookie("username",usename); usercookie.setMaxAge(60*60*24);
response.addCookie(usercookie);

}

%>

<p>Hello <%=usename!=null? usename:"Guest" %> You have hit the Page <%=visitCount %>
times</p>

<a href="Cookies.jsp?user=<%= usename %>">Hit Again</a>

</body>

</html>
```



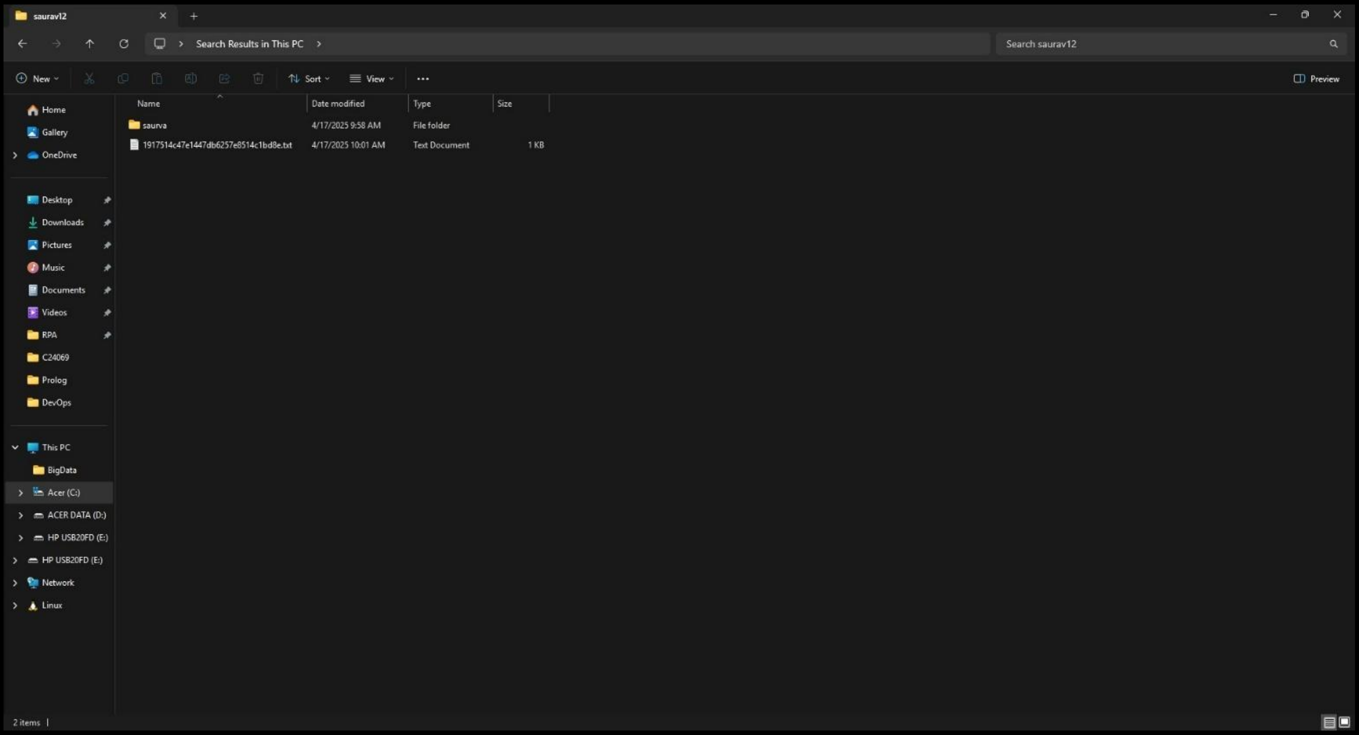
```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
<%
String usename=request.getParameter("user");
Cookie[] cookies=request.getCookies();
int visitCount=0;
boolean userExist=false;
if(cookies!=null){

    for(Cookie cookie:cookies){
        if(cookie.getName().equals("visitCount")){
            visitCount=Integer.parseInt(cookie.getValue());

        }
        if(cookie.getName().equals("username")){

            userExist=true;
        }

    }
}
visitCount++;
Cookie visitcookie=new Cookie("visitCount",String.valueOf(visitCount));
visitcookie.setMaxAge(60*60*24);
response.addCookie(visitcookie);
if(!userExist&&usename!=null){

    Cookie usercookie=new Cookie("username",usename);
    usercookie.setMaxAge(60*60*24);
    response.addCookie(usercookie);
}
%>

<p>Hello <%=usename!=null? usename:"Guest" %> You have hit the Page <%=visitCount %> times</p>
<a href="Cookies.jsp?user=<%= usename %>">Hit Again</a>
</body>
</html>
```

Tomcat v10.1 Server at localhost [Started, Synchronized]

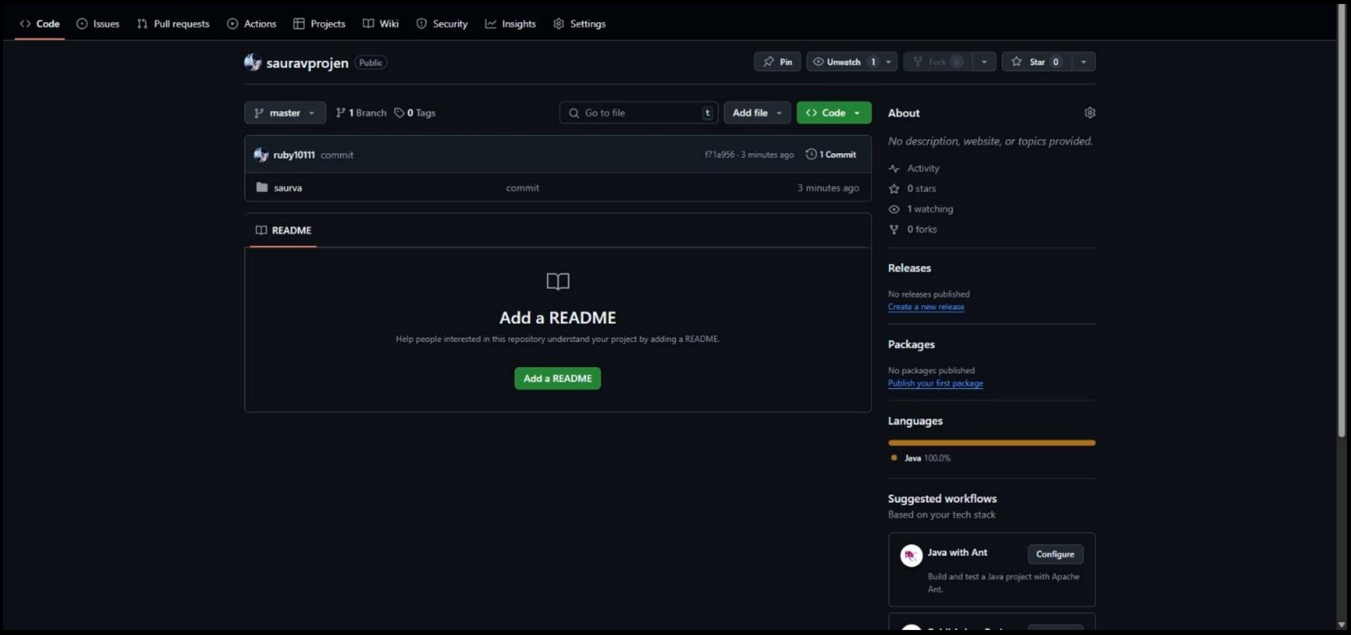
Screenshot copied to clipboard
Automatically saved to screenshots folder.

Bhushan - saurva/src/main/webapp/Cookies.jsp - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
Tomcat v10.1 Server at localhost
NewFile.jsp
Cookies.jsp
Outline
Welcome
Problems Servers Terminal Data Source Explorer Properties Console
Snipping Tool
Mark-up and share
Writable
Smart Insert

Push project on github



Name	Date modified	Type	Size
saurva	4/17/2025 9:58 AM	File folder	
1917514c47e1447db6257e8514c1bd8e.txt	4/17/2025 10:01 AM	Text Document	1 KB



ruby10111 commit f71a956 · 3 minutes ago 1 Commit

saurva commit 3 minutes ago

No description, website, or topics provided.

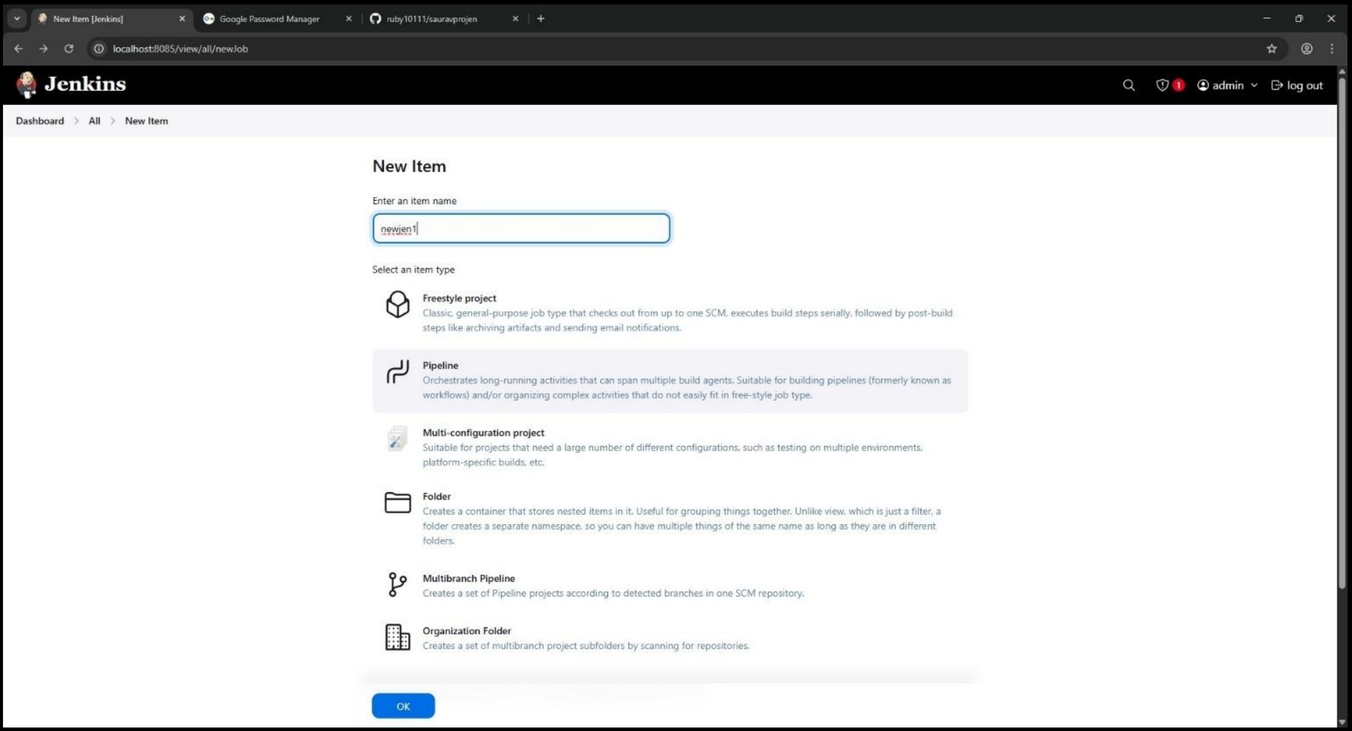
Help people interested in this repository understand your project by adding a README.

No releases published

No packages published

Build and test a Java project with Apache Ant.

Create a pipeline:



New Item [Jenkins] | Google Password Manager | ruby10111/sauravprojen

localhost:8085/view/all/newJob

Jenkins

admin | log out

Dashboard > All > New Item

New Item

Enter an item name

newjen1

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

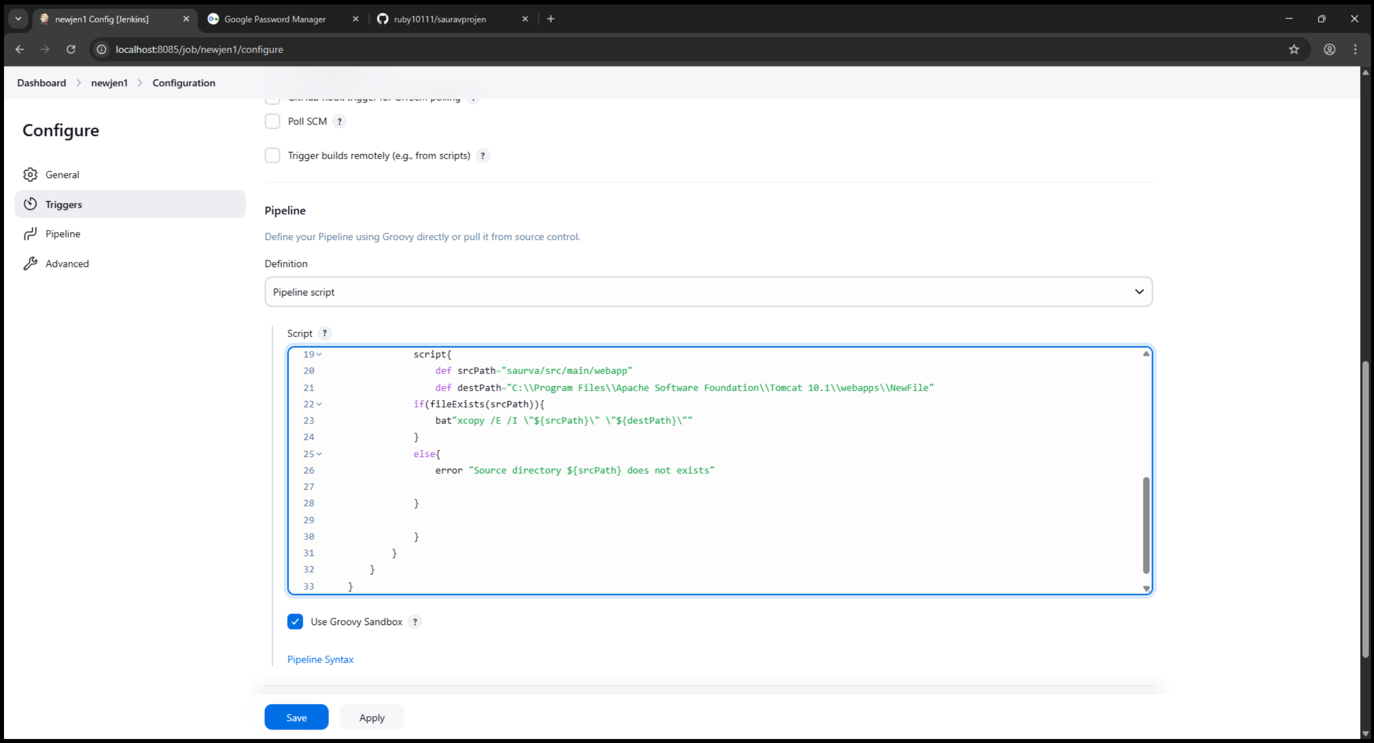
Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.

Organization Folder
Creates a set of multibranch project subfolders by scanning for repositories.

OK

```
pipeline{ agent any
stages{
stage('Checkout Code'){ steps{
script{
git branch: 'master',url:'https://github.com/admin111/devopsprojen'
}
}
}
stage('Verify Files'){ steps{
bat 'dir /S /B'
}
}
stage('Deploy'){ steps{
script{
def srcPath="admin/src/main/webapp"
def destPath="C:\\Program Files\\Apache Software Foundation\\Tomcat 10.1\\webapps\\NewFile"
if(fileExists(srcPath)){
bat"xcopy /E /I \"${srcPath}\" \"${destPath}\""
}
else{
error "Source directory ${srcPath} does not exists"
}
}
}
```



Pipeline

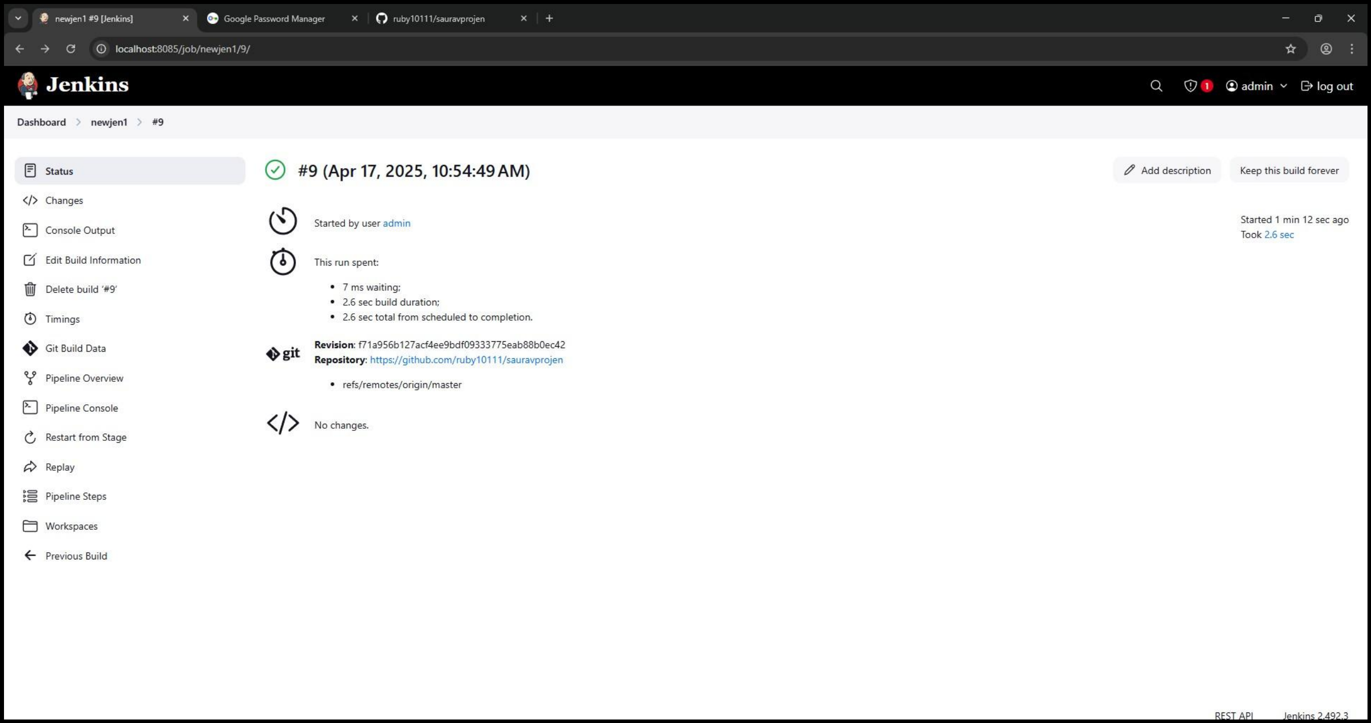
Define your Pipeline using Groovy directly or pull it from source control.

Definition: Pipeline script

Script

```
                script{
                    def srcPath="saurva/src/main/webapp"
                    def destPath="C:\\Program Files\\Apache Software Foundation\\Tomcat 10.1\\webapps\\NewFile"
                if(fileExists(srcPath)){
                    bat"xcopy /E /I \"${srcPath}\" \"${destPath}\""
                }
                else{
                    error "Source directory ${srcPath} does not exists"

                }

                }
            }
        }
    }
```

☑ Use Groovy Sandbox



#9 (Apr 17, 2025, 10:54:49 AM)

Started by user admin

Started 1 min 12 sec ago
Took 2.6 sec

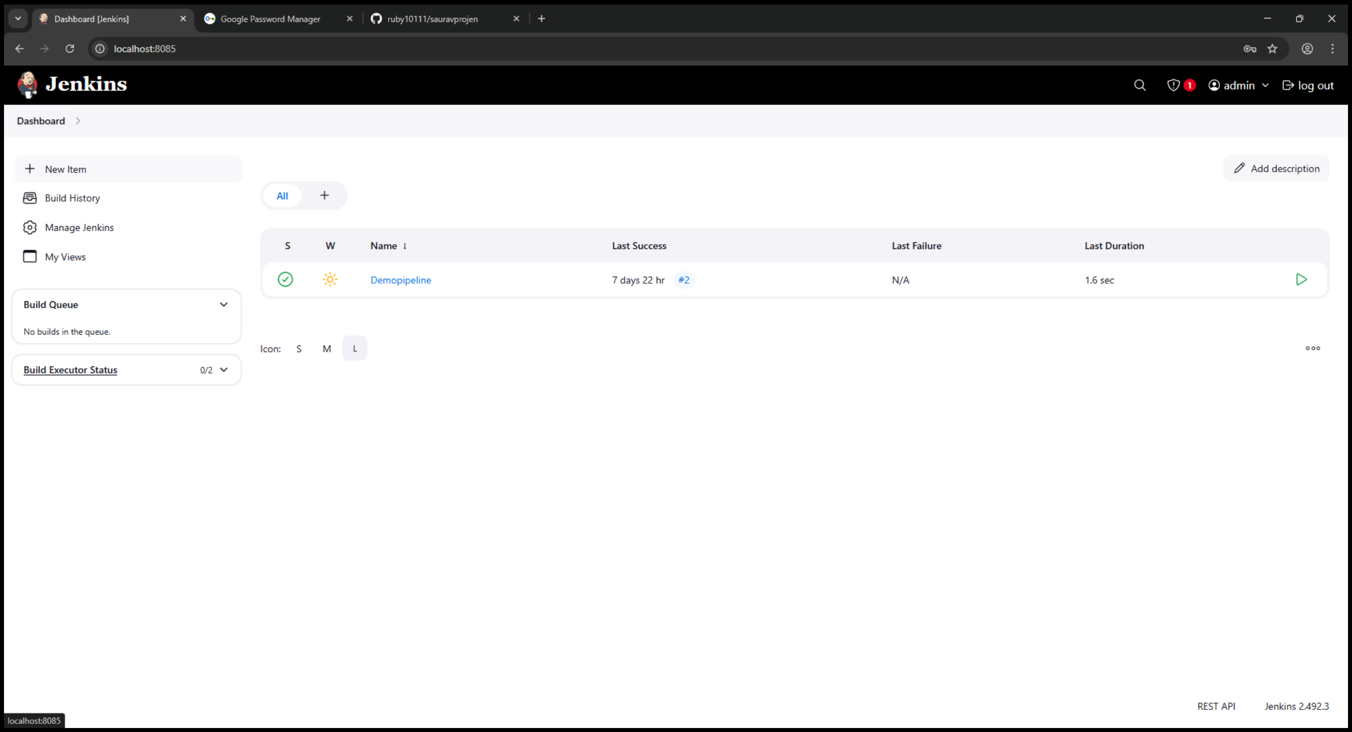
This run spent:

- 7 ms waiting;
- 2.6 sec build duration;
- 2.6 sec total from scheduled to completion.

Revision: f71a956b127acf4ee9bdf09333775eab88b0ec42
Repository: https://github.com/ruby10111/sauravprojen

- refs/remotes/origin/master

No changes.


Dashboard [Jenkins]
Google Password Manager
ruby10111/sauravprojen
localhost:8085

Jenkins

admin
log out

Dashboard

New Item
Build History
Manage Jenkins
My Views

Build Queue
No builds in the queue.

Build Executor Status 0/2

Add description

All +

S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	☀	Demopipeline	7 days 22 hr #2	N/A	1.6 sec

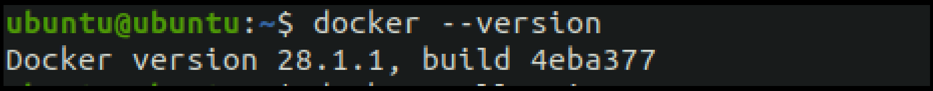
Icon: S M L

REST API
Jenkins 2.492.3

9

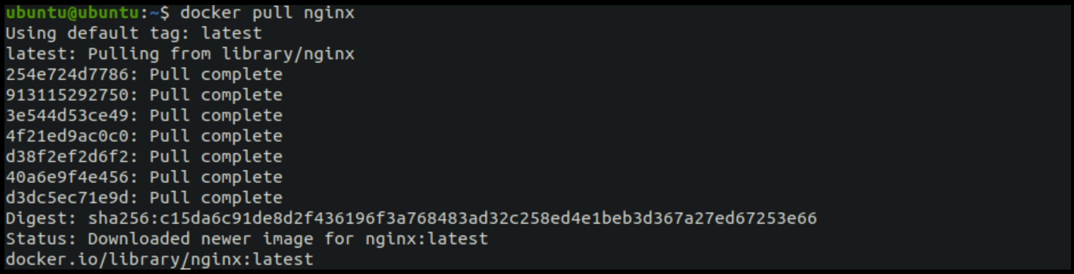
Aim: demonstrate basic Docker commands

1. **Check Docker version docker –version**



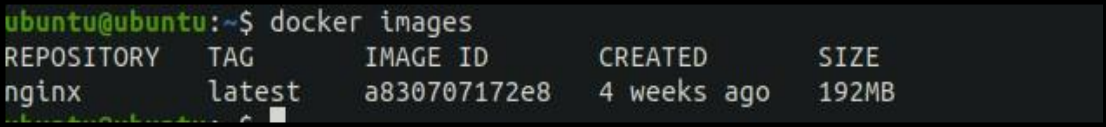
```
ubuntu@ubuntu:~$ docker --version
Docker version 28.1.1, build 4eba377
```

2. **Pull a Docker image from Docker Hub docker pull nginx**



```
ubuntu@ubuntu:~$ docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
254e724d7786: Pull complete
913115292750: Pull complete
3e544d53ce49: Pull complete
4f21ed9ac0c0: Pull complete
d38f2ef2d6f2: Pull complete
40a6e9f4e456: Pull complete
d3dc5ec71e9d: Pull complete
Digest: sha256:c15da6c91de8d2f436196f3a768483ad32c258ed4e1beb3d367a27ed67253e66
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest
```

3. **List all Docker images docker images**

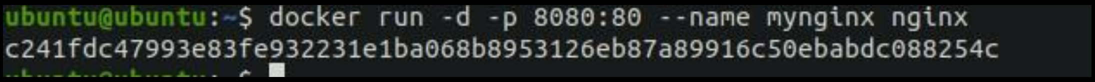


```
ubuntu@ubuntu:~$ docker images
REPOSITORY   TAG       IMAGE ID       CREATED       SIZE
nginx        latest    a830707172e8   4 weeks ago   192MB
```

4. **Run a container from an image**

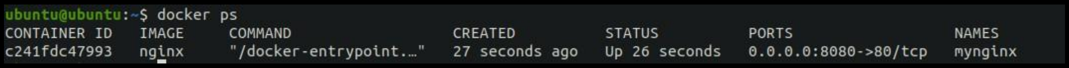
docker run -d -p 8080:80 --name mynginx nginx

This will run the Nginx container and map port 80 (inside the container) to port 8080 (on your host).



```
ubuntu@ubuntu:~$ docker run -d -p 8080:80 --name mynginx nginx
c241fdc47993e83fe932231e1ba068b8953126eb87a89916c50ebabdc088254c
```

5. **List all running containers docker ps**

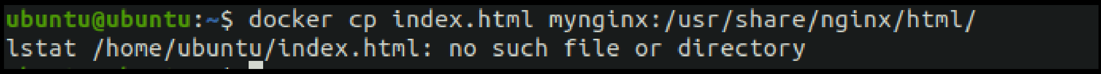


```
ubuntu@ubuntu:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED          STATUS          PORTS                  NAMES
c241fdc47993   nginx     "/docker-entrypoint.…"   27 seconds ago   Up 26 seconds   0.0.0.0:8080->80/tcp   mynginx
```

6. **Copy content from host to container**

docker cp index.html mynginx:/usr/share/nginx/html/

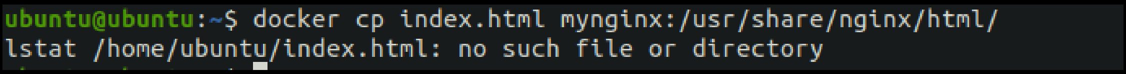
Replace index.html with your actual file. This copies a file into the running container.



```
ubuntu@ubuntu:~$ docker cp index.html mynginx:/usr/share/nginx/html/
lstat /home/ubuntu/index.html: no such file or directory
```

7. **Copy content from container to host**

   docker cp mynginx:/usr/share/nginx/html/index.html .

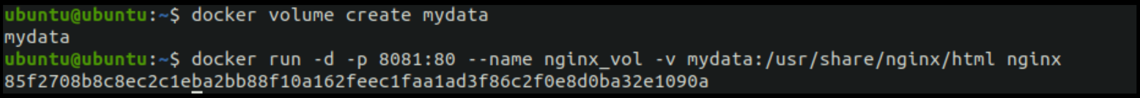


```
ubuntu@ubuntu:~$ docker cp index.html mynginx:/usr/share/nginx/html/
lstat /home/ubuntu/index.html: no such file or directory
```

8. **Create and use Docker volume for persistent content docker volume create mydata**

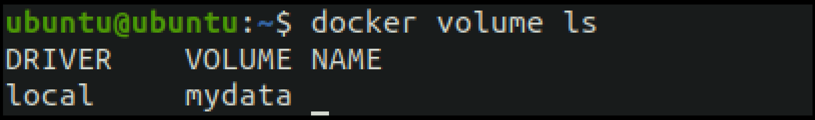
   docker run -d -p 8081:80 --name nginx_vol -v mydata:/usr/share/nginx/html nginx

   Now any data added to the /usr/share/nginx/html inside the container will persist even if the container is removed.



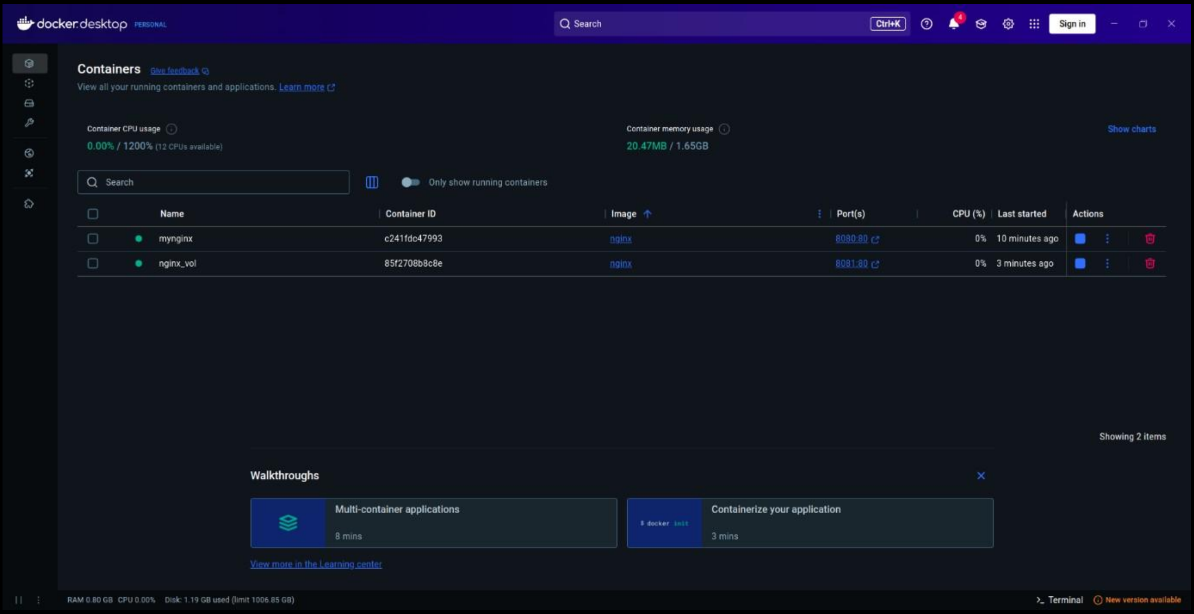
```
ubuntu@ubuntu:~$ docker volume create mydata
mydata
ubuntu@ubuntu:~$ docker run -d -p 8081:80 --name nginx_vol -v mydata:/usr/share/nginx/html nginx
85f2708b8c8ec2c1eba2bb88f10a162feec1faa1ad3f86c2f0e8d0ba32e1090a
```

9. **List Docker volumes docker volume ls**



```
ubuntu@ubuntu:~$ docker volume ls
DRIVER    VOLUME NAME
local     mydata
```

10. **Remove a container docker rm -f mynginx Remove an image docker rmi nginx**



docker desktop PERSONAL
Search
Ctrl+K
Sign in

Containers Give feedback

View all your running containers and applications. Learn more

Container CPU usage: 0.00% / 1200% (12 CPUs available)

Container memory usage: 20.47MB / 1.65GB

Show charts
Search
Only show running containers

Name	Container ID	Image	Port(s)	CPU (%)	Last started	Actions
mynginx	c241fdc47993	nginx	8080:80	0%	10 minutes ago	
nginx_vol	85f2708b8c8e	nginx	8081:80	0%	3 minutes ago	

Showing 2 items

Walkthroughs
Multi-container applications
8 mins
$ docker init
Containerize your application
3 mins
View more in the Learning center

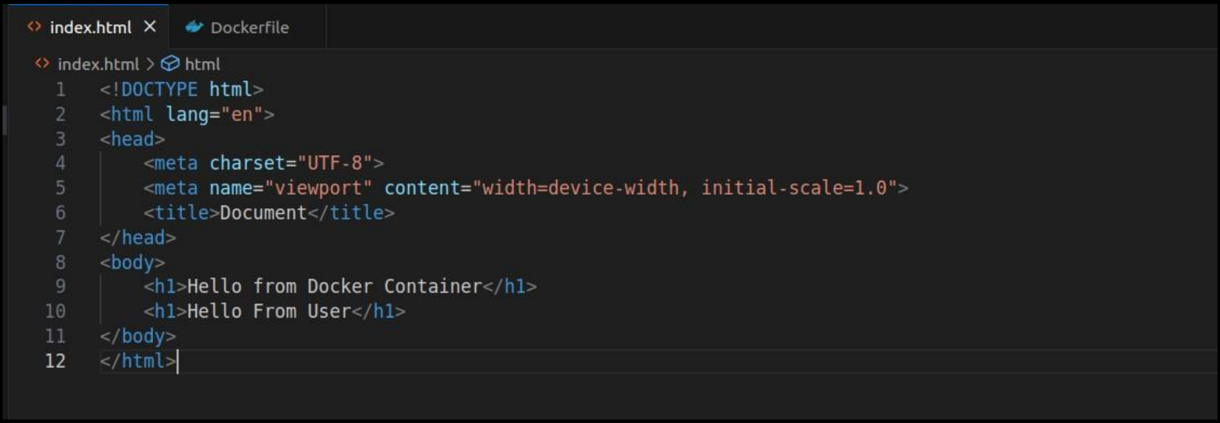
RAM 0.80 GB CPU 0.00% Disk: 1.19 GB used (limit 1006.85 GB)

-10

Aim: Develop a simple containerized application using Docker

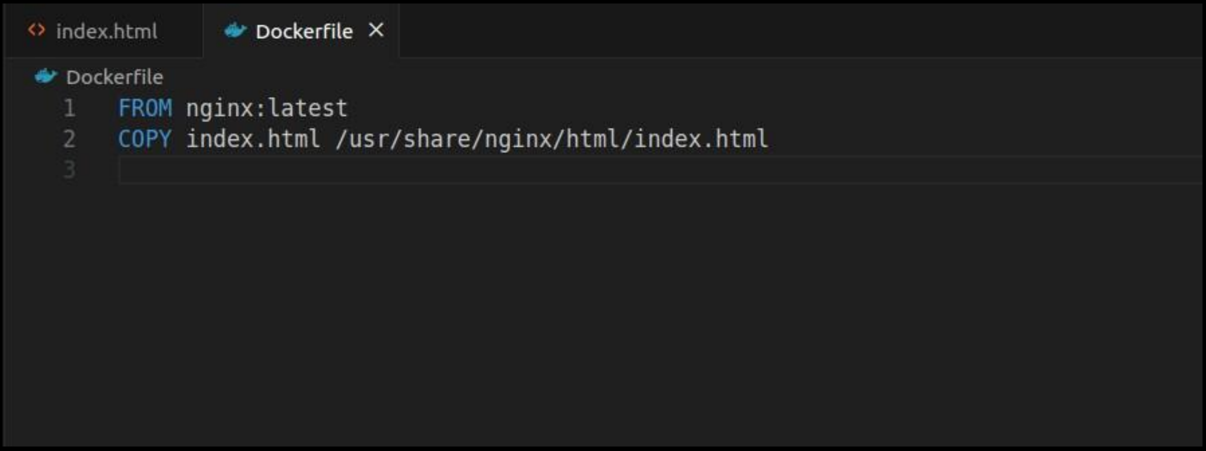
Develop a Simple Containerized Application using Docker

1. **Index.html**



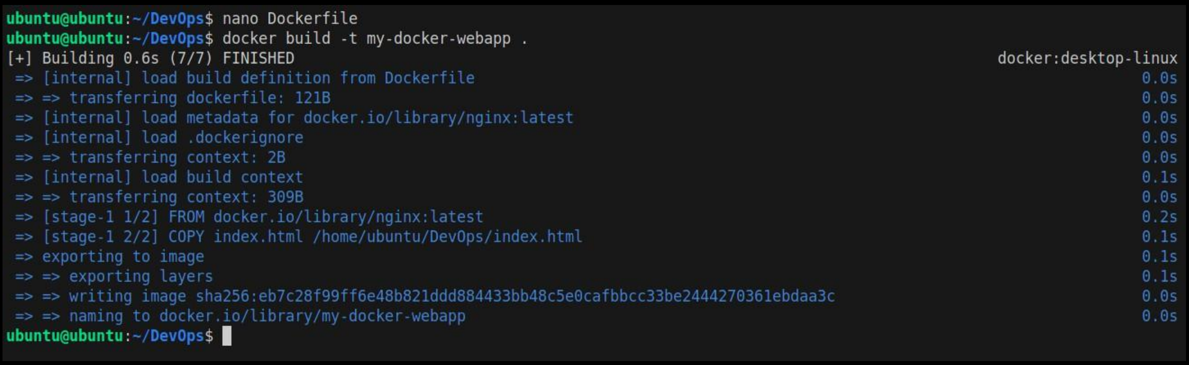
```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <h1>Hello from Docker Container</h1>
    <h1>Hello From User</h1>
</body>
</html>
```

2. **DockerfIl**



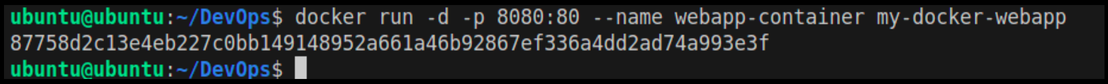
```
FROM nginx:latest
COPY index.html /usr/share/nginx/html/index.html
```

3. **docker build -t my-docker-webapp .**



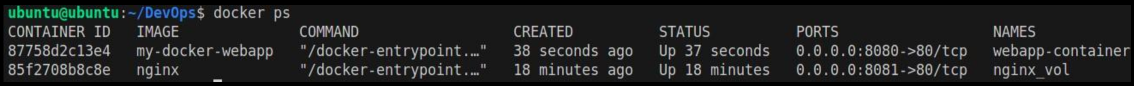
```
ubuntu@ubuntu:~/DevOps$ nano Dockerfile
ubuntu@ubuntu:~/DevOps$ docker build -t my-docker-webapp .
[+] Building 0.6s (7/7) FINISHED                                                                docker:desktop-linux
 => [internal] load build definition from Dockerfile                                                             0.0s
 => => transferring dockerfile: 121B                                                                             0.0s
 => [internal] load metadata for docker.io/library/nginx:latest                                                  0.0s
 => [internal] load .dockerignore                                                                                0.0s
 => => transferring context: 2B                                                                                  0.0s
 => [internal] load build context                                                                                0.1s
 => => transferring context: 309B                                                                                0.0s
 => [stage-1 1/2] FROM docker.io/library/nginx:latest                                                            0.2s
 => [stage-1 2/2] COPY index.html /home/ubuntu/DevOps/index.html                                                 0.1s
 => exporting to image                                                                                           0.1s
 => => exporting layers                                                                                          0.1s
 => => writing image sha256:eb7c28f99ff6e48b821ddd884433bb48c5e0cafbbcc33be2444270361ebdaa3c                     0.0s
 => => naming to docker.io/library/my-docker-webapp                                                              0.0s
ubuntu@ubuntu:~/DevOps$ 
```

4. **docker run -d -p 8080:80 --name webapp-container my-docker-webapp**



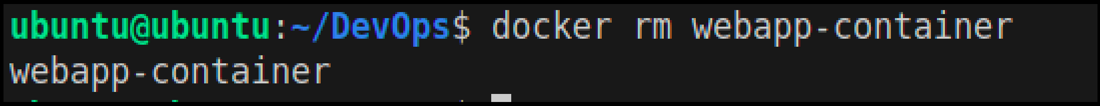
```
ubuntu@ubuntu:~/DevOps$ docker run -d -p 8080:80 --name webapp-container my-docker-webapp
87758d2c13e4eb227c0bb149148952a661a46b92867ef336a4dd2ad74a993e3f
ubuntu@ubuntu:~/DevOps$
```

5. **docker ps**



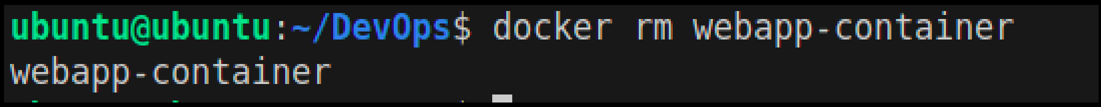
```
ubuntu@ubuntu:~/DevOps$ docker ps
CONTAINER ID   IMAGE              COMMAND                  CREATED          STATUS          PORTS                  NAMES
87758d2c13e4   my-docker-webapp   "/docker-entrypoint.…"   38 seconds ago   Up 37 seconds   0.0.0.0:8080->80/tcp   webapp-container
85f2708b8c8e   nginx              "/docker-entrypoint.…"   18 minutes ago   Up 18 minutes   0.0.0.0:8081->80/tcp   nginx_vol
```

6. **docker stop webapp-container**



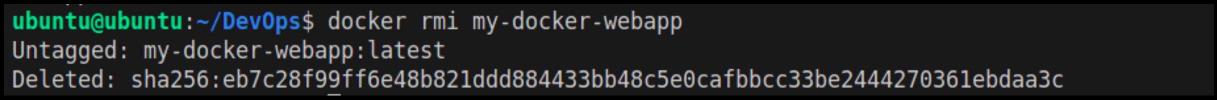
```
ubuntu@ubuntu:~/DevOps$ docker rm webapp-container
webapp-container
```

7. **docker rm webapp-container**

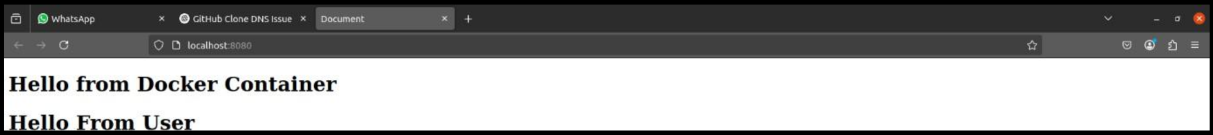


```
ubuntu@ubuntu:~/DevOps$ docker rm webapp-container
webapp-container
```

8. **docker rmi my-docker-webapp**

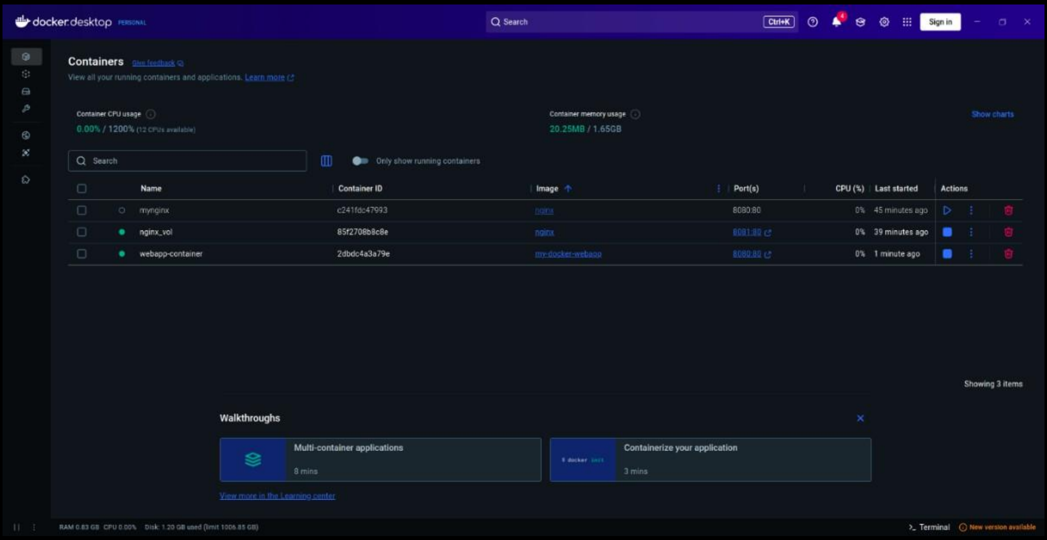


```
ubuntu@ubuntu:~/DevOps$ docker rmi my-docker-webapp
Untagged: my-docker-webapp:latest
Deleted: sha256:eb7c28f99ff6e48b821ddd884433bb48c5e0cafbbcc33be2444270361ebdaa3c
```



Hello from Docker Container

Hello From User



Containers Give feedback

View all your running containers and applications. Learn more

Container CPU usage 0.00% / 1200% (12 CPUs available)

Container memory usage 20.25MB / 1.65GB

Show charts

Search

Only show running containers

	Name	Container ID	Image	Port(s)	CPU (%)	Last started	Actions
☐	○ mynginx	c241fdc47993	nginx	8080:80	0%	45 minutes ago	
☐	● nginx_vol	85f2708b8c8e	nginx	8081:80	0%	39 minutes ago	
☐	● webapp-container	2dbdc4a3a79e	my-docker-webapp	8080:80	0%	1 minute ago	

Showing 3 items

Walkthroughs

Multi-container applications 8 mins

Containerize your application 3 mins

View more in the Learning center

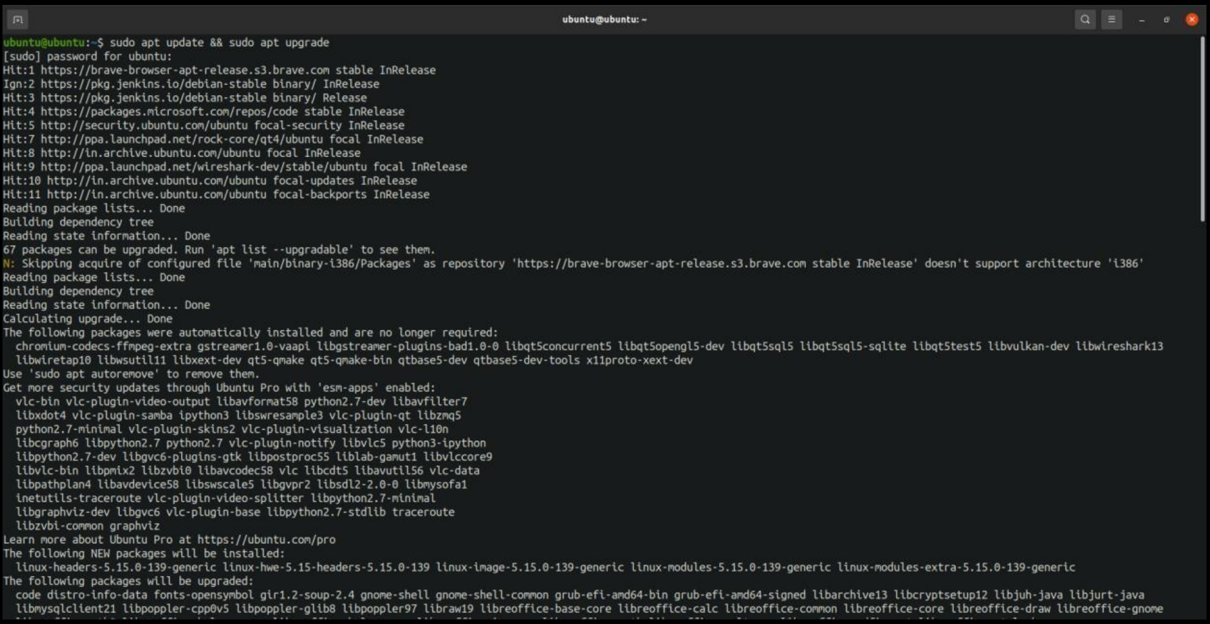
RAM 0.83 GB CPU 0.00% Disk: 1.20 GB used (limit 1006.85 GB)

Terminal New version available

11

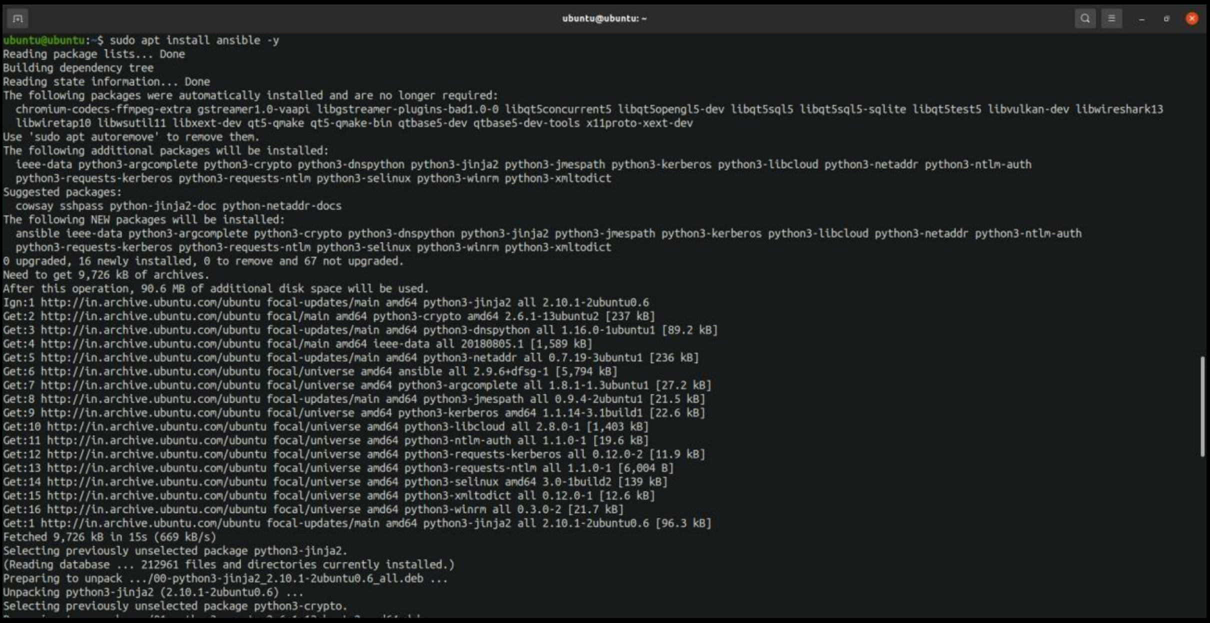
Aim: Demonstrate add-on ansible commands

Step 1: Update your VM



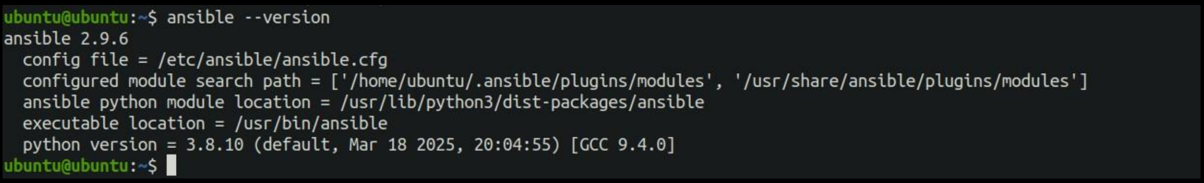
```
ubuntu@ubuntu:~$ sudo apt update && sudo apt upgrade
[sudo] password for ubuntu:
Hit:1 https://brave-browser-apt-release.s3.brave.com stable InRelease
Ign:2 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:3 https://pkg.jenkins.io/debian-stable binary/ Release
Hit:4 https://packages.microsoft.com/repos/code stable InRelease
Hit:5 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:7 http://ppa.launchpad.net/rock-core/qt4/ubuntu focal InRelease
Hit:8 http://in.archive.ubuntu.com/ubuntu focal InRelease
Hit:9 http://ppa.launchpad.net/wireshark-dev/stable/ubuntu focal InRelease
Hit:10 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:11 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
67 packages can be upgraded. Run 'apt list --upgradable' to see them.
N: Skipping acquire of configured file 'main/binary-i386/Packages' as repository 'https://brave-browser-apt-release.s3.brave.com stable InRelease' doesn't support architecture 'i386'
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libgstreamer-plugins-bad1.0-0 libqt5concurrent5 libqt5opengl5-dev libqt5sql5 libqt5sql5-sqlite libqt5test5 libvulkan-dev libwireshark13
  libwiretap10 libwsutil11 libxext-dev qt5-qmake qt5-qmake-bin qtbase5-dev qtbase5-dev-tools x11proto-xext-dev
Use 'sudo apt autoremove' to remove them.
Get more security updates through Ubuntu Pro with 'esm-apps' enabled:
  vlc-bin vlc-plugin-video-output libavformat58 python2.7-dev libavfilter7
  libxdot4 vlc-plugin-samba ipython3 libswresample3 vlc-plugin-qt libzmq5
  python2.7-minimal vlc-plugin-skins2 vlc-plugin-visualization vlc-l10n
  libcgraph6 libpython2.7 python2.7 vlc-plugin-notify libvlc5 python3-ipython
  libpython2.7-dev libgvc6-plugins-gtk libpostproc55 liblab-gamut1 libvlccore9
  libvlc-bin libpmix2 libzvbi0 libavcodec58 vlc libcdt5 libavutil56 vlc-data
  libpathplan4 libavdevice58 libswscale5 libgvpr2 libsdl2-2.0-0 libmysofa1
  inetutils-traceroute vlc-plugin-video-splitter libpython2.7-minimal
  libgraphviz-dev libgvc6 vlc-plugin-base libpython2.7-stdlib traceroute
  libzvbi-common graphviz
Learn more about Ubuntu Pro at https://ubuntu.com/pro
The following NEW packages will be installed:
  linux-headers-5.15.0-139-generic linux-hwe-5.15-headers-5.15.0-139 linux-image-5.15.0-139-generic linux-modules-5.15.0-139-generic linux-modules-extra-5.15.0-139-generic
The following packages will be upgraded:
  code distro-info-data fonts-opensymbol gir1.2-soup-2.4 gnome-shell gnome-shell-common grub-efi-amd64-bin grub-efi-amd64-signed libarchive13 libcryptsetup12 libjuh-java libjurt-java
  libmysqlclient21 libpoppler-cpp0v5 libpoppler-glib8 libpoppler97 libraw19 libreoffice-base-core libreoffice-calc libreoffice-common libreoffice-core libreoffice-draw libreoffice-gnome
```

Step 2: Install Ansible

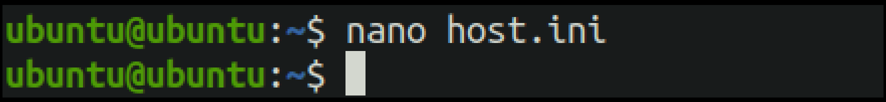


```
ubuntu@ubuntu:~$ sudo apt install ansible -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libgstreamer-plugins-bad1.0-0 libqt5concurrent5 libqt5opengl5-dev libqt5sql5 libqt5sql5-sqlite libqt5test5 libvulkan-dev libwireshark13
  libwiretap10 libwsutil11 libxext-dev qt5-qmake qt5-qmake-bin qtbase5-dev qtbase5-dev-tools x11proto-xext-dev
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  ieee-data python3-argcomplete python3-crypto python3-dnspython python3-jinja2 python3-jmespath python3-kerberos python3-libcloud python3-netaddr python3-ntlm-auth
  python3-requests-kerberos python3-requests-ntlm python3-selinux python3-winrm python3-xmltodict
Suggested packages:
  cowsay sshpass python-jinja2-doc python-netaddr-docs
The following NEW packages will be installed:
  ansible ieee-data python3-argcomplete python3-crypto python3-dnspython python3-jinja2 python3-jmespath python3-kerberos python3-libcloud python3-netaddr python3-ntlm-auth
  python3-requests-kerberos python3-requests-ntlm python3-selinux python3-winrm python3-xmltodict
0 upgraded, 16 newly installed, 0 to remove and 67 not upgraded.
Need to get 9,726 kB of archives.
After this operation, 90.6 MB of additional disk space will be used.
Ign:1 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 python3-jinja2 all 2.10.1-2ubuntu0.6
Get:2 http://in.archive.ubuntu.com/ubuntu focal/main amd64 python3-crypto amd64 2.6.1-13ubuntu2 [237 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 python3-dnspython all 1.16.0-1ubuntu1 [89.2 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu focal/main amd64 ieee-data all 20180805.1 [1,589 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 python3-netaddr all 0.7.19-3ubuntu1 [236 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 ansible all 2.9.6+dfsg-1 [5,794 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-argcomplete all 1.8.1-1.3ubuntu1 [27.2 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 python3-jmespath all 0.9.4-2ubuntu1 [21.5 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-kerberos amd64 1.1.14-3.1build1 [22.6 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-libcloud all 2.8.0-1 [1,403 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-ntlm-auth all 1.1.0-1 [19.6 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-requests-kerberos all 0.12.0-2 [11.9 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-requests-ntlm all 1.1.0-1 [6,004 B]
Get:14 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-selinux amd64 3.0-1build2 [139 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-xmltodict all 0.12.0-1 [12.6 kB]
Get:16 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 python3-winrm all 0.3.0-2 [21.7 kB]
Get:1 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 python3-jinja2 all 2.10.1-2ubuntu0.6 [96.3 kB]
Fetched 9,726 kB in 15s (669 kB/s)
Selecting previously unselected package python3-jinja2.
(Reading database ... 212961 files and directories currently installed.)
Preparing to unpack .../00-python3-jinja2_2.10.1-2ubuntu0.6_all.deb ...
Unpacking python3-jinja2 (2.10.1-2ubuntu0.6) ...
Selecting previously unselected package python3-crypto.
```

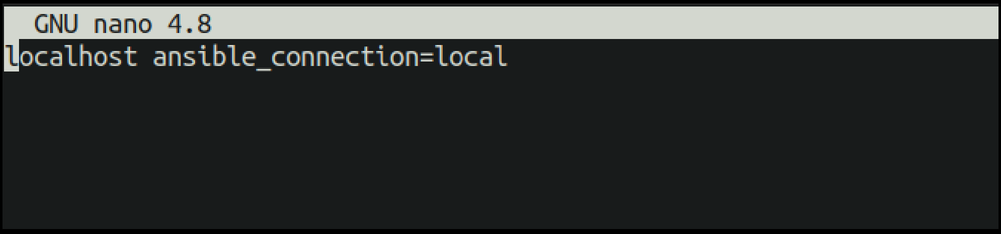
Step 3: Check version:



```
ubuntu@ubuntu:~$ ansible --version
ansible 2.9.6
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/ubuntu/.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 = 3.8.10 (default, Mar 18 2025, 20:04:55) [GCC 9.4.0]
ubuntu@ubuntu:~$
```



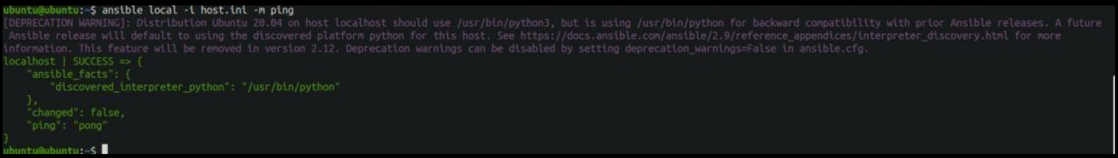
```
ubuntu@ubuntu:~$ nano host.ini
ubuntu@ubuntu:~$ 
```



```
  GNU nano 4.8
localhost ansible_connection=local
```

1. **Ping the remote host**

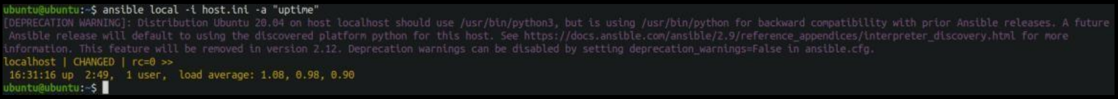
ansible local -i host.ini -m ping



```
ubuntu@ubuntu:~$ ansible local -i host.ini -m ping
[DEPRECATION WARNING]: Distribution Ubuntu 20.04 on host localhost should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future
 Ansible release will default to using the discovered platform python for this host. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more
information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
localhost | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
ubuntu@ubuntu:~$ 
```

2. **Check uptime**

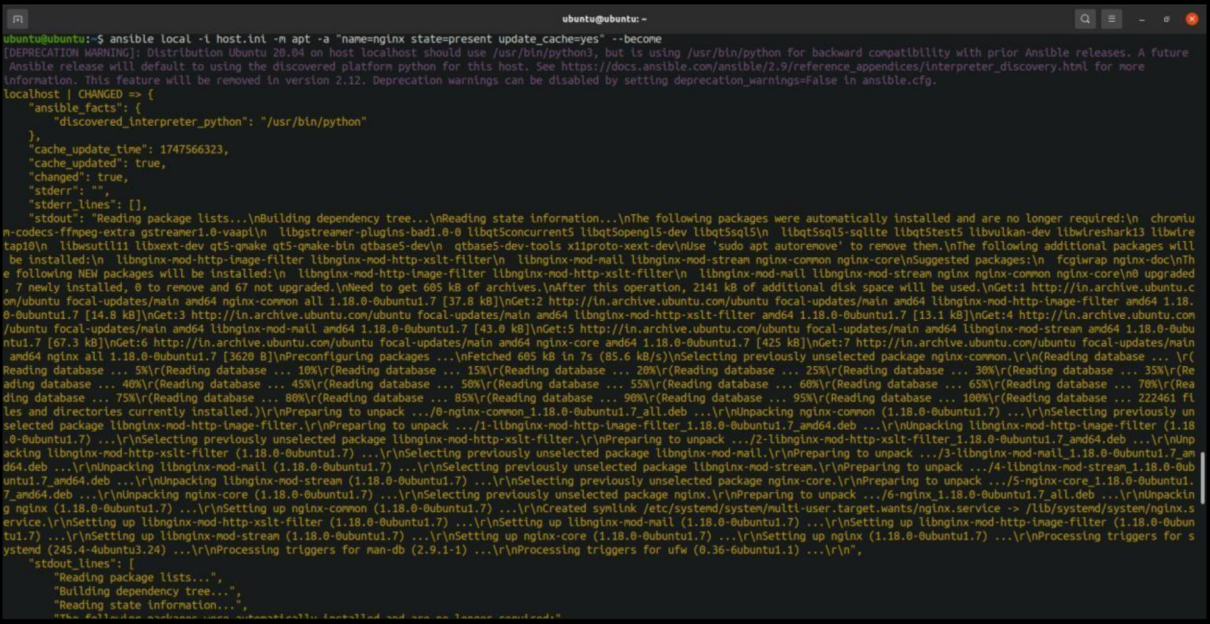
ansible local -i host.ini -a "uptime"



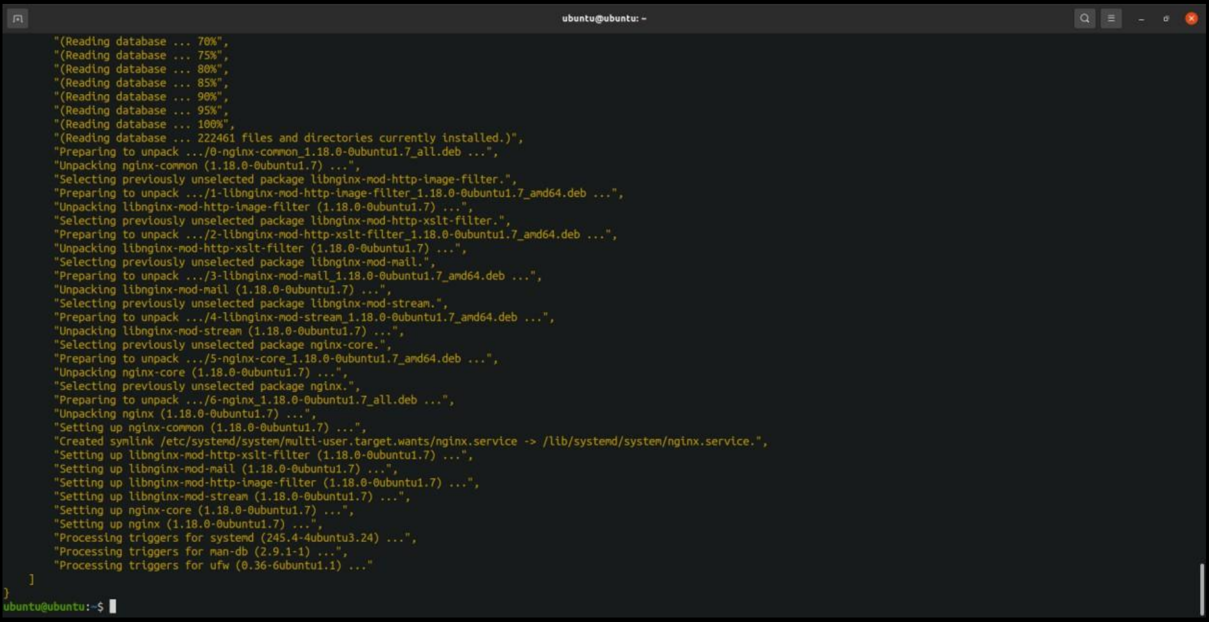
```
ubuntu@ubuntu:~$ ansible local -i host.ini -a "uptime"
[DEPRECATION WARNING]: Distribution Ubuntu 20.04 on host localhost should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future
 Ansible release will default to using the discovered platform python for this host. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more
information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
localhost | CHANGED | rc=0 >>
 16:31:16 up  2:49,  1 user,  load average: 1.08, 0.98, 0.90
ubuntu@ubuntu:~$ 
```

3. **Install a package**

ansible local -i host.ini -m apt -a "name=nginx state=present update_cache=yes" –become



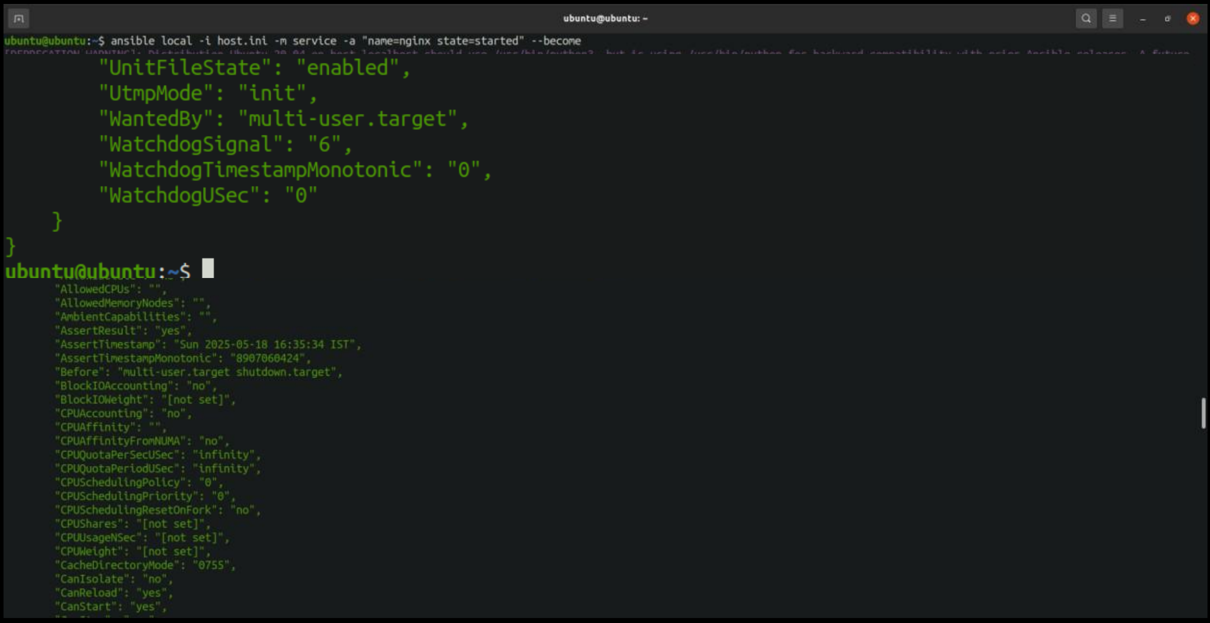
```
ubuntu@ubuntu: ~
ubuntu@ubuntu:~$ ansible local -i host.ini -m apt -a "name=nginx state=present update_cache=yes" --become
[DEPRECATION WARNING]: Distribution Ubuntu 20.04 on host localhost should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future
 Ansible release will default to using the discovered platform python for this host. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more
information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
localhost | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "cache_update_time": 1747566323,
    "cache_updated": true,
    "changed": true,
    "stderr": "",
    "stderr_lines": [],
    "stdout": "Reading package lists...\nBuilding dependency tree...\nReading state information...\nThe following packages were automatically installed and are no longer required:\n  chromiu
m-codecs-ffmpeg-extra gstreamer1.0-vaapi\n  libgstreamer-plugins-bad1.0-0 libqt5concurrent5 libqt5opengl5-dev libqt5sql5\n  libqt5sql5-sqlite libqt5test5 libvulkan-dev libwireshark13 libwire
tap10\n  libwsutil11 libxext-dev qt5-qmake qt5-qmake-bin qtbase5-dev\n  qtbase5-dev-tools x11proto-xext-dev\nUse 'sudo apt autoremove' to remove them.\nThe following additional packages will
 be installed:\n  libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter\n  libnginx-mod-mail libnginx-mod-stream nginx-common nginx-core\nSuggested packages:\n  fcgiwrap nginx-doc\nTh
e following NEW packages will be installed:\n  libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter\n  libnginx-mod-mail libnginx-mod-stream nginx nginx-common nginx-core\n0 upgraded
, 7 newly installed, 0 to remove and 67 not upgraded.\nNeed to get 605 kB of archives.\nAfter this operation, 2141 kB of additional disk space will be used.\nGet:1 http://in.archive.ubuntu.c
om/ubuntu focal-updates/main amd64 nginx-common all 1.18.0-0ubuntu1.7 [37.8 kB]\nGet:2 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 libnginx-mod-http-image-filter amd64 1.18.
0-0ubuntu1.7 [14.8 kB]\nGet:3 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 libnginx-mod-http-xslt-filter amd64 1.18.0-0ubuntu1.7 [13.1 kB]\nGet:4 http://in.archive.ubuntu.com
/ubuntu focal-updates/main amd64 libnginx-mod-mail amd64 1.18.0-0ubuntu1.7 [43.0 kB]\nGet:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 libnginx-mod-stream amd64 1.18.0-0ubu
ntu1.7 [67.3 kB]\nGet:6 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 nginx-core amd64 1.18.0-0ubuntu1.7 [425 kB]\nGet:7 http://in.archive.ubuntu.com/ubuntu focal-updates/main
 amd64 nginx all 1.18.0-0ubuntu1.7 [3620 B]\nPreconfiguring packages ...\nFetched 605 kB in 7s (85.6 kB/s)\nSelecting previously unselected package nginx-common.\r\n(Reading database ... \r(
Reading database ... 5%\r(Reading database ... 10%\r(Reading database ... 15%\r(Reading database ... 20%\r(Reading database ... 25%\r(Reading database ... 30%\r(Reading database ... 35%\r(Re
ading database ... 40%\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(Rea
ding 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 ... 222461 fi
les and directories currently installed.)\r\nPreparing to unpack .../0-nginx-common_1.18.0-0ubuntu1.7_all.deb ...\r\nUnpacking nginx-common (1.18.0-0ubuntu1.7) ...\r\nSelecting previously un
selected package libnginx-mod-http-image-filter.\r\nPreparing to unpack .../1-libnginx-mod-http-image-filter_1.18.0-0ubuntu1.7_amd64.deb ...\r\nUnpacking libnginx-mod-http-image-filter (1.18
.0-0ubuntu1.7) ...\r\nSelecting previously unselected package libnginx-mod-http-xslt-filter.\r\nPreparing to unpack .../2-libnginx-mod-http-xslt-filter_1.18.0-0ubuntu1.7_amd64.deb ...\r\nUnp
acking libnginx-mod-http-xslt-filter (1.18.0-0ubuntu1.7) ...\r\nSelecting previously unselected package libnginx-mod-mail.\r\nPreparing to unpack .../3-libnginx-mod-mail_1.18.0-0ubuntu1.7_am
d64.deb ...\r\nUnpacking libnginx-mod-mail (1.18.0-0ubuntu1.7) ...\r\nSelecting previously unselected package libnginx-mod-stream.\r\nPreparing to unpack .../4-libnginx-mod-stream_1.18.0-0ub
untu1.7_amd64.deb ...\r\nUnpacking libnginx-mod-stream (1.18.0-0ubuntu1.7) ...\r\nSelecting previously unselected package nginx-core.\r\nPreparing to unpack .../5-nginx-core_1.18.0-0ubuntu1.
7_amd64.deb ...\r\nUnpacking nginx-core (1.18.0-0ubuntu1.7) ...\r\nSelecting previously unselected package nginx.\r\nPreparing to unpack .../6-nginx_1.18.0-0ubuntu1.7_all.deb ...\r\nUnpackin
g nginx (1.18.0-0ubuntu1.7) ...\r\nSetting up nginx-common (1.18.0-0ubuntu1.7) ...\r\nCreated symlink /etc/systemd/system/multi-user.target.wants/nginx.service -> /lib/systemd/system/nginx.s
ervice.\r\nSetting up libnginx-mod-http-xslt-filter (1.18.0-0ubuntu1.7) ...\r\nSetting up libnginx-mod-mail (1.18.0-0ubuntu1.7) ...\r\nSetting up libnginx-mod-http-image-filter (1.18.0-0ubun
tu1.7) ...\r\nSetting up libnginx-mod-stream (1.18.0-0ubuntu1.7) ...\r\nSetting up nginx-core (1.18.0-0ubuntu1.7) ...\r\nSetting up nginx (1.18.0-0ubuntu1.7) ...\r\nProcessing triggers for s
ystemd (245.4-4ubuntu3.24) ...\r\nProcessing triggers for man-db (2.9.1-1) ...\r\nProcessing triggers for ufw (0.36-6ubuntu1.1) ...\r\n",
    "stdout_lines": [
        "Reading package lists...",
        "Building dependency tree...",
        "Reading state information...",
```



```
        "(Reading database ... 70%",
        "(Reading database ... 75%",
        "(Reading database ... 80%",
        "(Reading database ... 85%",
        "(Reading database ... 90%",
        "(Reading database ... 95%",
        "(Reading database ... 100%",
        "(Reading database ... 222461 files and directories currently installed.)",
        "Preparing to unpack .../0-nginx-common_1.18.0-0ubuntu1.7_all.deb ...",
        "Unpacking nginx-common (1.18.0-0ubuntu1.7) ...",
        "Selecting previously unselected package libnginx-mod-http-image-filter.",
        "Preparing to unpack .../1-libnginx-mod-http-image-filter_1.18.0-0ubuntu1.7_amd64.deb ...",
        "Unpacking libnginx-mod-http-image-filter (1.18.0-0ubuntu1.7) ...",
        "Selecting previously unselected package libnginx-mod-http-xslt-filter.",
        "Preparing to unpack .../2-libnginx-mod-http-xslt-filter_1.18.0-0ubuntu1.7_amd64.deb ...",
        "Unpacking libnginx-mod-http-xslt-filter (1.18.0-0ubuntu1.7) ...",
        "Selecting previously unselected package libnginx-mod-mail.",
        "Preparing to unpack .../3-libnginx-mod-mail_1.18.0-0ubuntu1.7_amd64.deb ...",
        "Unpacking libnginx-mod-mail (1.18.0-0ubuntu1.7) ...",
        "Selecting previously unselected package libnginx-mod-stream.",
        "Preparing to unpack .../4-libnginx-mod-stream_1.18.0-0ubuntu1.7_amd64.deb ...",
        "Unpacking libnginx-mod-stream (1.18.0-0ubuntu1.7) ...",
        "Selecting previously unselected package nginx-core.",
        "Preparing to unpack .../5-nginx-core_1.18.0-0ubuntu1.7_amd64.deb ...",
        "Unpacking nginx-core (1.18.0-0ubuntu1.7) ...",
        "Selecting previously unselected package nginx.",
        "Preparing to unpack .../6-nginx_1.18.0-0ubuntu1.7_all.deb ...",
        "Unpacking nginx (1.18.0-0ubuntu1.7) ...",
        "Setting up nginx-common (1.18.0-0ubuntu1.7) ...",
        "Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service -> /lib/systemd/system/nginx.service.",
        "Setting up libnginx-mod-http-xslt-filter (1.18.0-0ubuntu1.7) ...",
        "Setting up libnginx-mod-mail (1.18.0-0ubuntu1.7) ...",
        "Setting up libnginx-mod-http-image-filter (1.18.0-0ubuntu1.7) ...",
        "Setting up libnginx-mod-stream (1.18.0-0ubuntu1.7) ...",
        "Setting up nginx-core (1.18.0-0ubuntu1.7) ...",
        "Setting up nginx (1.18.0-0ubuntu1.7) ...",
        "Processing triggers for systemd (245.4-4ubuntu3.24) ...",
        "Processing triggers for man-db (2.9.1-1) ...",
        "Processing triggers for ufw (0.36-6ubuntu1.1) ..."
    ]
}
ubuntu@ubuntu:~$
```

4. **Start a service**

ansible local -i host.ini -m service -a "name=nginx state=started" –become



```
ubuntu@ubuntu:~$ ansible local -i host.ini -m service -a "name=nginx state=started" --become
[DEPRECATION WARNING]: Distribution Ubuntu 20.04 on host localhost should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future
            "UnitFileState": "enabled",
            "UtmpMode": "init",
            "WantedBy": "multi-user.target",
            "WatchdogSignal": "6",
            "WatchdogTimestampMonotonic": "0",
            "WatchdogUSec": "0"
        }
}
ubuntu@ubuntu:~$
        "AllowedCPUs": "",
        "AllowedMemoryNodes": "",
        "AmbientCapabilities": "",
        "AssertResult": "yes",
        "AssertTimestamp": "Sun 2025-05-18 16:35:34 IST",
        "AssertTimestampMonotonic": "8907060424",
        "Before": "multi-user.target shutdown.target",
        "BlockIOAccounting": "no",
        "BlockIOWeight": "[not set]",
        "CPUAccounting": "no",
        "CPUAffinity": "",
        "CPUAffinityFromNUMA": "no",
        "CPUQuotaPerSecUSec": "infinity",
        "CPUQuotaPeriodUSec": "infinity",
        "CPUSchedulingPolicy": "0",
        "CPUSchedulingPriority": "0",
        "CPUSchedulingResetOnFork": "no",
        "CPUShares": "[not set]",
        "CPUUsageNSec": "[not set]",
        "CPUWeight": "[not set]",
        "CacheDirectoryMode": "0755",
        "CanIsolate": "no",
        "CanReload": "yes",
        "CanStart": "yes",
```

-12

Aim: Demonstrate Ansible Playbooks

Install and Start Nginx

install_nginx.yml:

- name: Install and start Nginx on web servers hosts: webservers

become: true tasks:

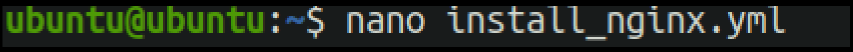
- name: Install Nginx apt:

name: nginx state: present

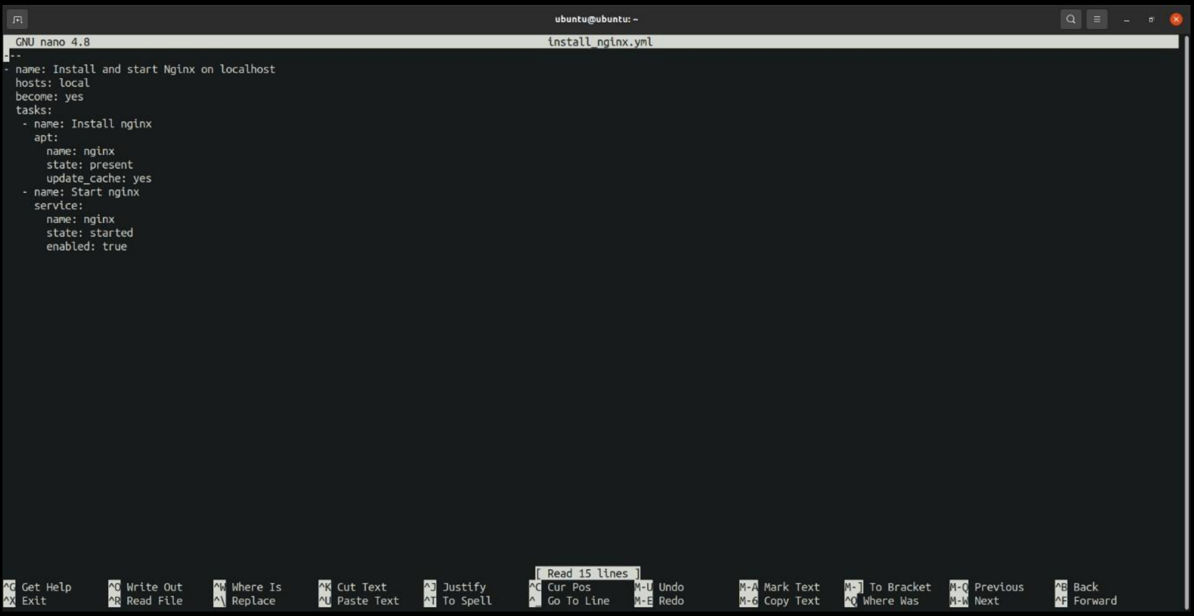
update_cache: yes

- name: Start Nginx service:

name: nginx state: started enabled: true



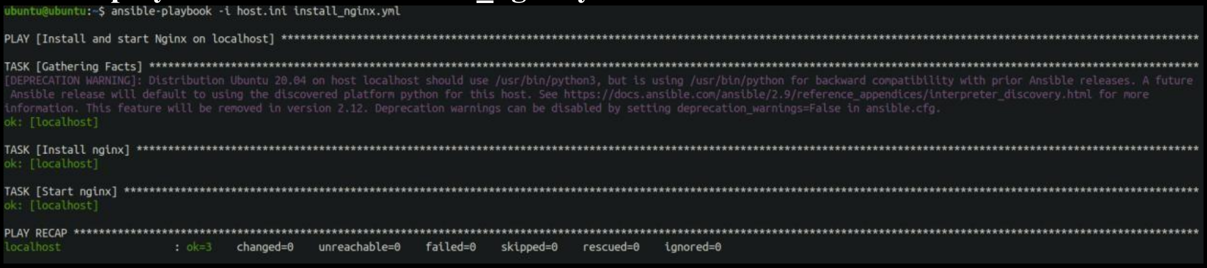
```
ubuntu@ubuntu:~$ nano install_nginx.yml
```



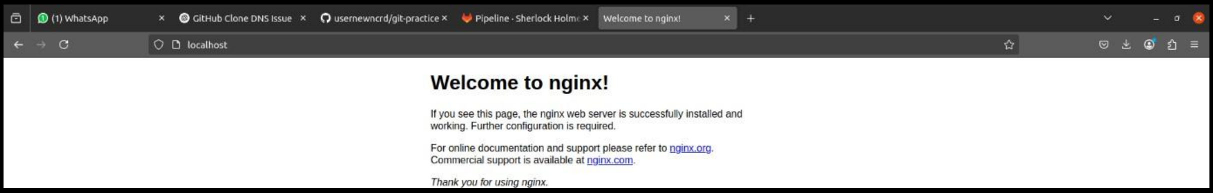
```
 GNU nano 4.8                                 install_nginx.yml
---
- name: Install and start Nginx on localhost
  hosts: local
  become: yes
  tasks:
   - name: Install nginx
     apt:
       name: nginx
       state: present
       update_cache: yes
   - name: Start nginx
     service:
       name: nginx
       state: started
       enabled: true

                                      [ Read 15 lines ]
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text   ^J Justify   ^C Cur Pos    M-U Undo  M-A Mark Text  M-] To Bracket  M-Q Previous  ^B Back
^X Exit      ^R Read File  ^\ Replace   ^U Paste Text ^T To Spell  ^_ Go To Line M-E Redo  M-6 Copy Text  ^Q Where Was    M-W Next      ^F Forward
```

Run the Playbook:

ansible-playbook -i hosts.ini install_nginx.yml



```
ubuntu@ubuntu:~$ ansible-playbook -i host.ini install_nginx.yml

PLAY [Install and start Nginx on localhost] ************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************
[DEPRECATION WARNING]: Distribution Ubuntu 20.04 on host localhost should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future
 Ansible release will default to using the discovered platform python for this host. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more
information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
ok: [localhost]

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

TASK [Start nginx] *************************************************************************************************************************************
ok: [localhost]

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



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.