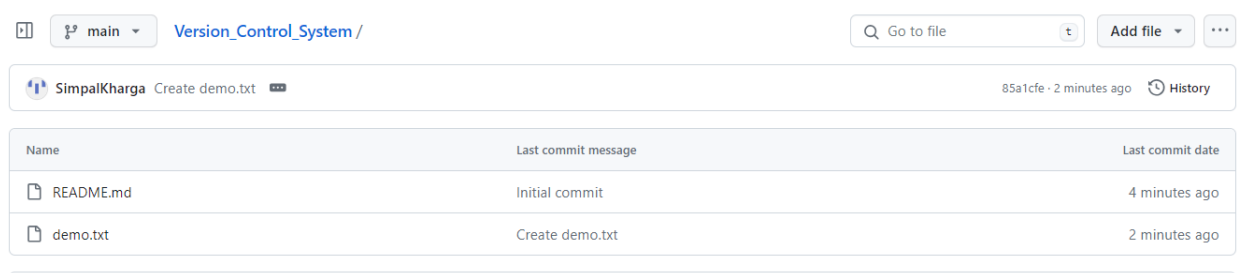


1. Set up a remote "repository" with a project name that holds significance. In the master branch of the remote repository, create a file named demo.txt. After creating the file, clone the repository locally. Within the local repository, create three branches: feature/login, feature/mainline, and release. Add a login.txt file to the feature/login branch and push the branch to the remote repository. Create a PR, approve it, and then merge the feature/login branch into the remote master branch.

ANSWER :-

Below is the creation of local repo Version_Control_System and a file demo.txt .



A)

Already have SSH key i.e pub_key stored so will do the cloning by taking SSH URL and using command `<git clone URL>` .

After cloning check git status `<git status>` and if not initialized, kindly initialize running `<git init>` .

B)

Will create the three branches mentioned above using command:-
`<git checkout -b branch_name>`

Note :- '-b' symbolizes that if the branch is not created create one and go to that branch.

After creating every branch check for the branch you are in using `< git branch >` .

And do not forget to go to main branch after creating every branch as we need to create sub-branch of main branch.

using `< git checkout main >`

```
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
root@DESKTOP-NJSOG33:Version_Control_System# git checkout -b feature/login
Switched to a new branch 'feature/login'
root@DESKTOP-NJSOG33:Version_Control_System# git branch
* feature/login
  main
root@DESKTOP-NJSOG33:Version_Control_System# git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
root@DESKTOP-NJSOG33:Version_Control_System# git branch
  feature/login
* main
root@DESKTOP-NJSOG33:Version_Control_System# git checkout -b feature/mainline
Switched to a new branch 'feature/mainline'
root@DESKTOP-NJSOG33:Version_Control_System# git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
root@DESKTOP-NJSOG33:Version_Control_System# git branch
  feature/login
  feature/mainline
* main
root@DESKTOP-NJSOG33:Version_Control_System# git checkout -b release
Switched to a new branch 'release'
root@DESKTOP-NJSOG33:Version_Control_System# git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
root@DESKTOP-NJSOG33:Version_Control_System# git branch -l
  feature/login
  feature/mainline
* main
  release
root@DESKTOP-NJSOG33:Version_Control_System# |
```

C)

Pushing the branch to local repository:-

using <git push origin repo_name> nad by going to trhe individual branch individually.

Below I will explain how we can push the branch we created on remote repo using one of the branch names “release”.

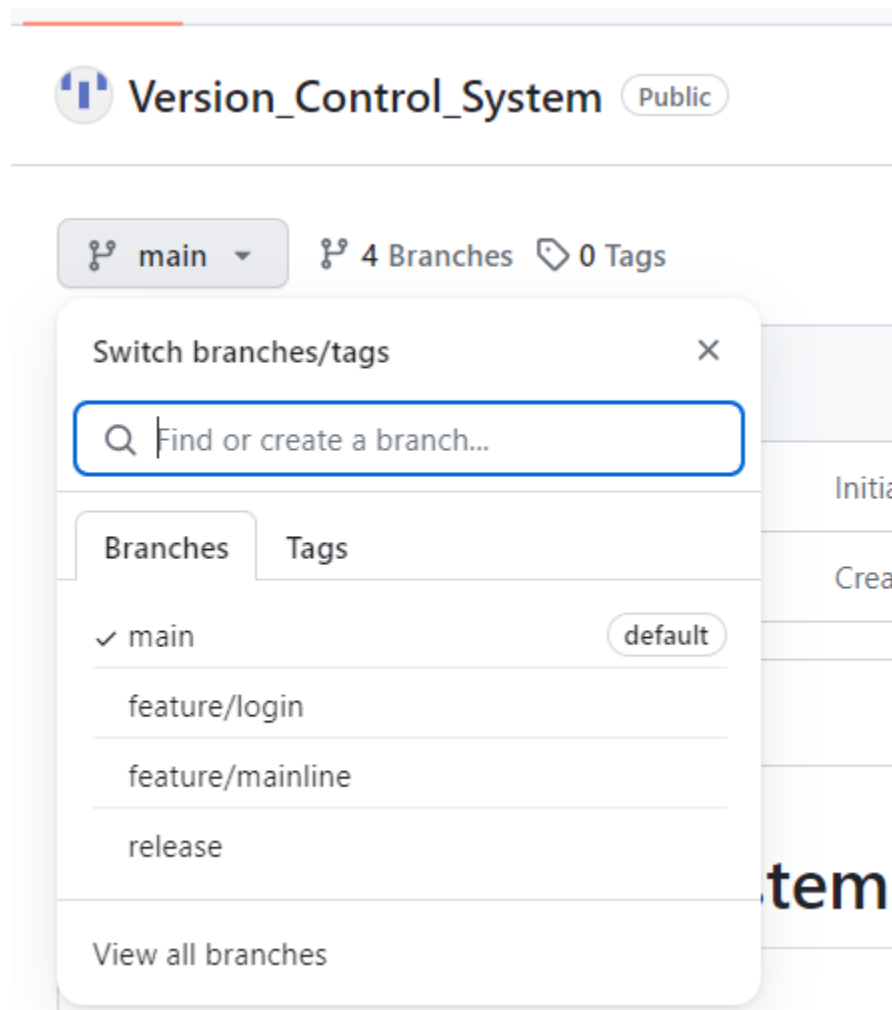
```
root@DESKTOP-NJSOG33:Version_Control_System# git checkout release
Switched to branch 'release'
root@DESKTOP-NJSOG33:Version_Control_System# git push origin
fatal: The current branch release has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin release

root@DESKTOP-NJSOG33:Version_Control_System# git push --set-upstream origin release
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'release' on GitHub by visiting:
remote:   https://github.com/SimpalKharga/Version_Control_System/pull/new/release
remote:
To github.com:SimpalKharga/Version_Control_System.git
 * [new branch]      release -> release
Branch 'release' set up to track remote branch 'release' from 'origin'.
```

D)

Below is the screen scot of how all the branches has been added under main branch:-



=====

2. Populate the local repository's feature/mainline branch with files and push that branch to the remote repository. Add additional files to the feature/mainline remote branch through the UI. Fetch the latest changes on the local feature/mainline using the Fetch and Pull commands.

ANSWER :-

Populate the local repository's feature/mainline branch with files and push that branch to the remote repository:-

```
Your branch is up to date with 'origin/feature/mainline'.
root@DESKTOP-NJS0G33:Version_Control_System# git branch
  feature/login
* feature/mainline
  main
  release
root@DESKTOP-NJS0G33:Version_Control_System# touch main{01..04}.txt
root@DESKTOP-NJS0G33:Version_Control_System# ll
total 0
drwxrwxrwx 1 simpal simpal 4096 Jan  4 14:28 ./
drwxrwxrwx 1 simpal simpal 4096 Jan  4 13:49 ../
drwxrwxrwx 1 simpal simpal 4096 Jan  4 14:27 .git/
-rwxrwxrwx 1 simpal simpal   24 Jan  4 13:49 README.md*
-rwxrwxrwx 1 simpal simpal    1 Jan  4 13:49 demo.txt*
-rwxrwxrwx 1 simpal simpal    0 Jan  4 14:28 main01.txt*
-rwxrwxrwx 1 simpal simpal    0 Jan  4 14:28 main02.txt*
-rwxrwxrwx 1 simpal simpal    0 Jan  4 14:28 main03.txt*
```

feature/mainline

4 Branches

0 Tags

Go to file

+

Code

This branch is 1 commit behind main.

SimpalKharga









third file adee to mainline

415976c · 30 minutes ago

5 Commits

README.md	Initial commit	2 hours ago
demo.txt	Create demo.txt	1 hour ago
main01.txt	added 1st file	1 hour ago
main02.txt	second file added	31 minutes ago
main03.txt	third file adee to mainline	30 minutes ago

Add additional files to the feature/mainline remote branch through the UI:-

 SimpalKharga Created main10.txt using UI	ab38acb · now	 6 Commits
 README.md	Initial commit	2 hours ago
 demo.txt	Create demo.txt	2 hours ago
 main01.txt	added 1st file	1 hour ago
 main02.txt	second file added	34 minutes ago
 main03.txt	third file added to mainline	33 minutes ago
 main10.txt	Created main10.txt using UI	now

Fetch the latest changes on the local feature/mainline using the Fetch and Pull commands.

```

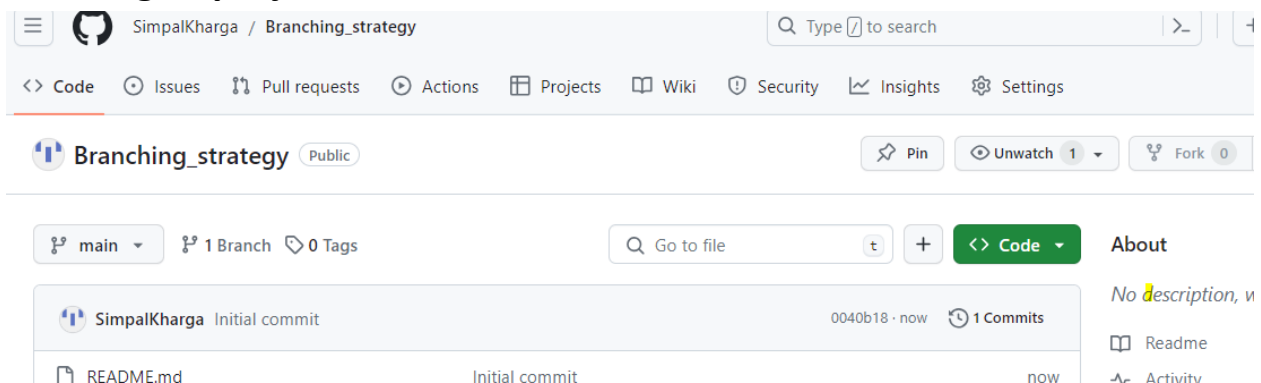
root@DESKTOP-NJSOG33:Version_Control_System# git branch
feature/login
* feature/mainline
main
release
root@DESKTOP-NJSOG33:Version_Control_System# git fetch
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (4/4), 1.27 KiB | 87.00 KiB/s, done.
From github.com:SimpalKharga/Version_Control_System
  415976c..ab38acb  feature/mainline -> origin/feature/mainline
  85a1cfe..f14282e  main             -> origin/main
root@DESKTOP-NJSOG33:Version_Control_System# git pull origin feature/mainline
From github.com:SimpalKharga/Version_Control_System
  * branch             feature/mainline -> FETCH_HEAD
Updating 415976c..ab38acb
Fast-forward
 main10.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 main10.txt

```

3. Establish a remote "repository" for a dashboard application with a meaningful project name. Create the following branches: master, release, hotfix, feature/login, feature/submit, and feature/dashboard. Clone the repository locally. Create a local branch named after you, add files, commit them locally, and then push that branch to the remote repository. Create a PR and merge your branch into the respective branch.

ANSWER:-

Establish a remote "repository" for a dashboard application with a meaningful project name.



Create the following branches: master, release, hotfix, feature/login, feature/submit, and feature/dashboard:-

Branching_strategy Public

main 6 Branches 0 Tags

Switch branches/tags

Branches

Tags

✓ main

Hotfix

Release

feature/Dashboard

feature/login

feature/submit

default

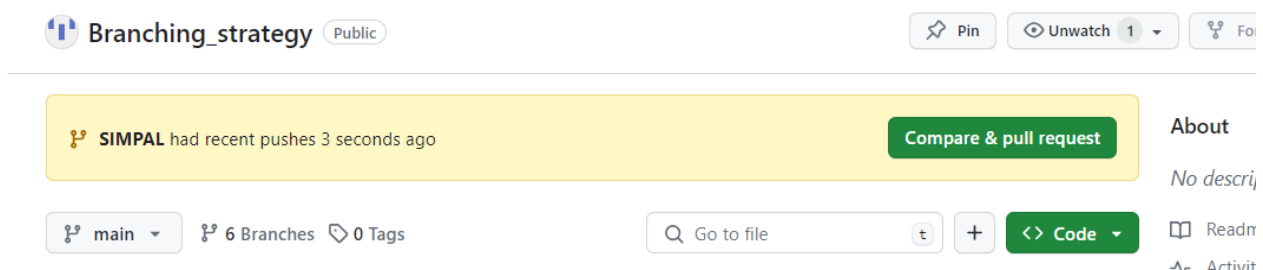
Clone the repository locally.

```
root@DESKTOP-NJSOG33:GIT_asgnmnt_1# git clone git@github.com:SimpalKharga/Branching_strategy.git
Cloning into 'Branching_strategy'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
root@DESKTOP-NJSOG33:GIT_asgnmnt_1# ll
total 0
drwxrwxrwx 1 simpal simpal 4096 Jan  4 16:11 ./
drwxrwxrwx 1 simpal simpal 4096 Jan  4 12:19 ../
drwxrwxrwx 1 simpal simpal 4096 Jan  4 16:11 Branching_strategy/
drwxrwxrwx 1 simpal simpal 4096 Jan  4 13:13 DevOp_pipeline/
drwxrwxrwx 1 simpal simpal 4096 Jan  4 16:11 Version_Control_System/
drwxrwxrwx 1 simpal simpal 4096 Jan  4 13:35 learn_linux/
root@DESKTOP-NJSOG33:GIT_asgnmnt_1#
```


Create a local branch named after you, add files, commit them locally, and then push that branch to the remote repository:-

```
drwxrwxrwx 1 simpal simpal 4096 Jan  4 16:17 ./
drwxrwxrwx 1 simpal simpal 4096 Jan  4 16:11 ../
drwxrwxrwx 1 simpal simpal 4096 Jan  4 16:18 .git/
-rwxrwxrwx 1 simpal simpal  20 Jan  4 16:11 README.md*
-rwxrwxrwx 1 simpal simpal  62 Jan  4 16:17 branch01.txt*
-rwxrwxrwx 1 simpal simpal   0 Jan  4 16:16 branch02.txt*
-rwxrwxrwx 1 simpal simpal   0 Jan  4 16:16 branch03.txt*
root@DESKTOP-NJSOG33:Branching_strategy# git checkout SIMPAL
Switched to branch 'SIMPAL'
root@DESKTOP-NJSOG33:Branching_strategy# git add branch01.txt
root@DESKTOP-NJSOG33:Branching_strategy# git commit -m "first file added"
[SIMPAL 471d8a1] first file added
 1 file changed, 1 insertion(+)
 create mode 100644 branch01.txt
root@DESKTOP-NJSOG33:Branching_strategy# vi branch02.txt
root@DESKTOP-NJSOG33:Branching_strategy# git add branch02.txt
root@DESKTOP-NJSOG33:Branching_strategy# git commit -m "second file added"
[SIMPAL 7cb70b7] second file added
 1 file changed, 1 insertion(+)
 create mode 100644 branch02.txt
root@DESKTOP-NJSOG33:Branching_strategy# git push origin SIMPAL
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 612 bytes | 204.00 KiB/s, done.
Total 6 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
remote:
remote: Create a pull request for 'SIMPAL' on GitHub by visiting:
remote:   https://github.com/SimpalKharga/Branching_strategy/pull/new/SIMPAL
remote:
To github.com:SimpalKharga/Branching_strategy.git
 * [new branch]      SIMPAL -> SIMPAL
```

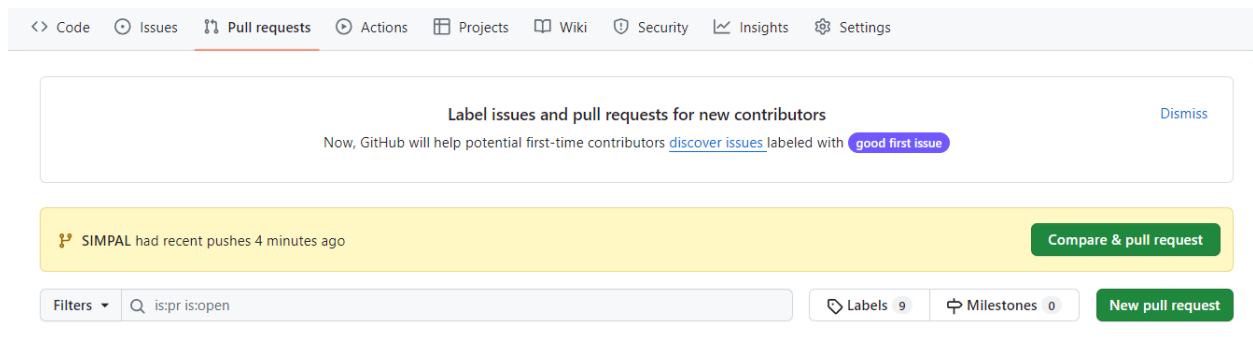
Create a PR and merge your branch into the respective branch.



The screenshot shows the GitHub interface for a repository named 'Branching_strategy'. At the top, there's a header with the repository name, a 'Public' badge, and buttons for 'Pin', 'Unwatch' (with a count of 1), and 'Fork'. Below this, a yellow banner indicates that the 'SIMPAL' branch has recent pushes 3 seconds ago, with a green button labeled 'Compare & pull request'. The main content area shows the 'main' branch selected, with 6 branches and 0 tags. There's a search bar for files, a '+ Code' button, and a 'Readme' link. On the right side, there's an 'About' section with a 'No description' message and a 'Activity' link.

From here we need to create a PR (pull request)

For that click on pull requests on your dashboard and there click on New pull request.

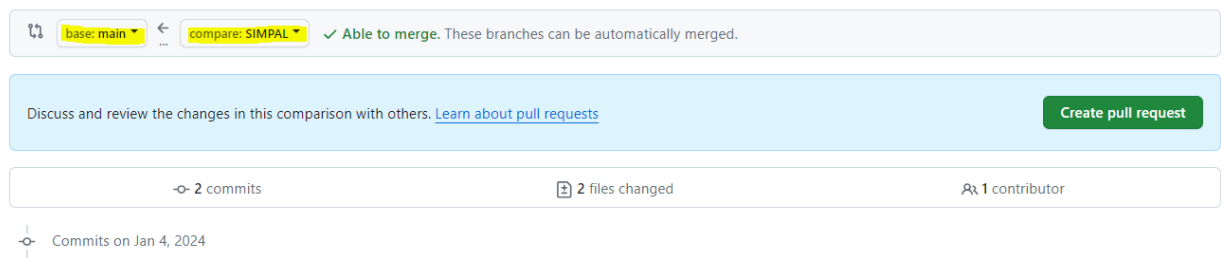


Then check for the Highlighted portion and chose the desired branch according to your need.

In here, we are merging the main “branch” with the branch “Simpal”. Then click on “create pull request”

Comparing changes


Choose two branches to see what's changed or to start a new pull request. If you need to, you can also [compare across forks](#) or [learn more about diff comparisons](#).




Then it will take you to a page , check the page thoroughly and again click on “create pull request”.

This will direct to the merge page as shown below:-


Add more commits by pushing to the [SIMPAL](#) branch on [SimpalKharga/Branching_strategy](#).




**Require approval from specific reviewers before merging**

Add rule ×

[Rulesets](#) ensure specific people approve pull requests before they're merged.

**Continuous integration has not been set up**

[GitHub Actions](#) and [several other apps](#) can be used to automatically catch bugs and enforce style.

**This branch has no conflicts with the base branch**

Merging can be performed automatically.

Merge pull request ▾

You can also [open this in GitHub Desktop](#) or view [command line instructions](#).


Above, we can see as there is no conflicts with the branch base so click on “Merge pull request”.

(for conflicts there is an another method to solve the conflicts and and then merge)

And at last click on “confirm merge”.


Below the final output “merged”.

Simpal #1

 Merged


SimpalKharga merged 2 commits into [main](#) from [SIMPAL](#) 1 minute ago


 Conversation 0


 Commits 2

 Checks 0

 Files changed 2


 SIMPAL

 7 Branches  0 Tags

 Go to file

 t

+

 Code


This branch is 1 commit behind [main](#).

 Contribute



Simpalkharga second file added

7cb70b7 · 16 minutes ago

 3 Commits



README.md

Initial commit

32 minutes ago



branch01.txt

first file added

18 minutes ago



branch02.txt

second file added

16 minutes ago