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FSD Lab 01

Problem Statement: Created a public git repository for your team and submit the repo URL as a solution to this assignment, Learn Git concept of Local and Remote Repository, Push, Pull, Merge and Branch.

Aim: Version control with Git.
Objectives:
1. To introduce the concepts and software behind version control, using the example of Git.
2. To understand the use of 'version control' in the context of a coding project.
3. To learn Git version control with Clone, commit to, and push, pull from a git repository.

Theory:
1. What is Git? What is Version Control?
Ans: Git is a software for version control that allows you to keep track of changes you made to a project over time. It works by recoding the changes you have made, storing them, then allows you to reference them as needed. VCS is basically software designed to record changes within one or more files over time. It allows us to undo or to cancel all made or pending changes within one or more files. If we're working on a project with many files, VCS enables us to control the whole project.

2. How to use Git for version controlling?
ANS: To use Git we need to have a project that we want to version control. This can either be a new project or an existing project. If it is a new project, then we need to create a new project folder (hint: we can use the mkdir command) and then navigate into that project folder in the terminal.

FAQ:

1. What is branching in Git?

Ans: A branch represents an independent line of development. Branches serve as an abstraction for the edit/stage/commit process. You can think of them as a way to request a brand new working directory, staging area, and project history.

2. How to create and merge branches in Git? Write the commands used.

Ans : The git branch command can be used to create a new branch. When you want to start a new feature, you create a new branch off main using git branch new_branch . Once created you can then use git checkout new_branch to switch to that branch.

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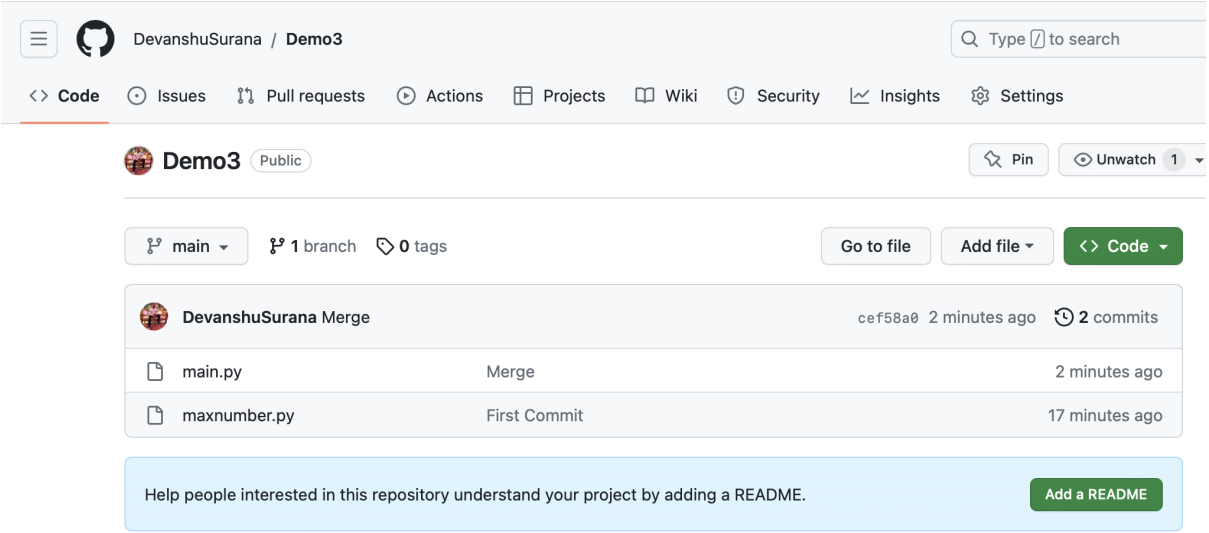
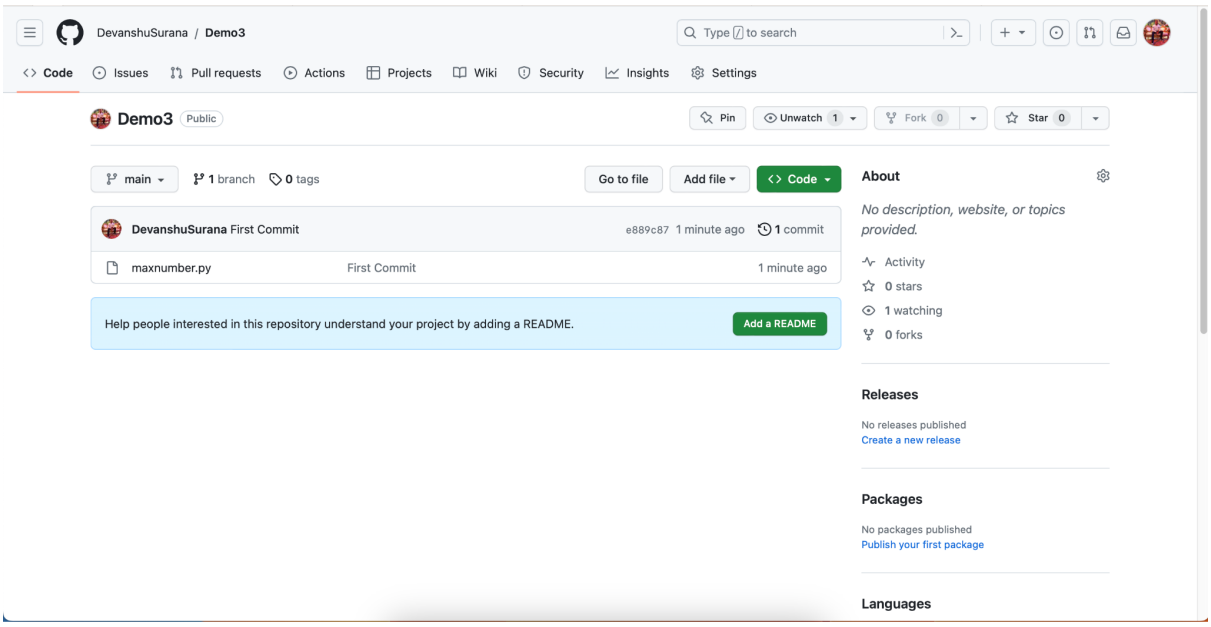
OUTPUT:

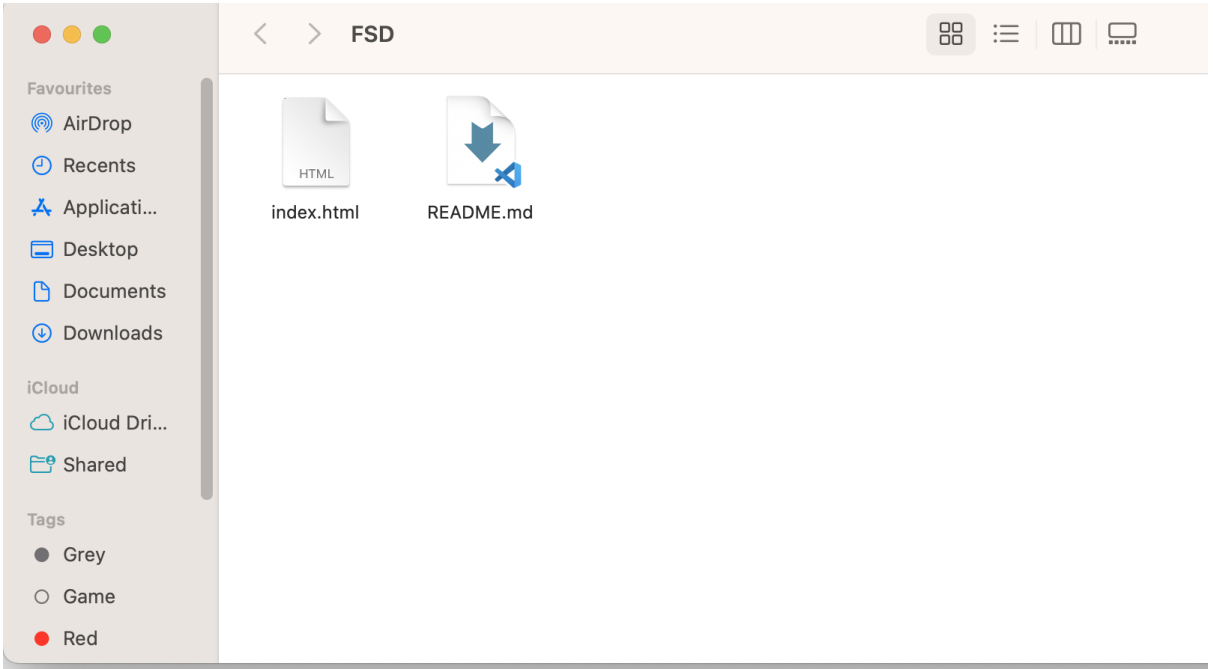
```
git init
git add README.md
git commit -m "first commit"
git branch -M main
git remote add origin https://github.com/DevanshuSurana/Demo3.git
git push -u origin main
```

```
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git add main.py
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git commit -m "Merge"
[new-feature cef58a0] Merge
 1 file changed, 51 insertions(+)
 create mode 100644 main.py
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git merge new-feature
Updating e889c87..cef58a0
Fast-forward
 main.py | 51 +++++++++++++++++++++++++++++++++++++++++++++++++++
 1 file changed, 51 insertions(+)
 create mode 100644 main.py
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git branch -d new-feature
Deleted branch new-feature (was cef58a0).
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git add maxnumber.py
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git checkout main
Already on 'main'
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git push --all
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 651 bytes | 651.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/DevanshuSurana/Demo3.git
   e889c87..cef58a0  main -> main
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git merge new-feature
merge: new-feature - not something we can merge
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git checkout -b new-feature main
Switched to a new branch 'new-feature'
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git merge new-feature
Already up to date.
devanshusurana@Devanshus-MacBook-Pro DEMO 3 %
```



```
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git init
Reinitialized existing Git repository in /Users/devanshusurana/Desktop/DEMO 3/.git/
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        maxnumber.py

nothing added to commit but untracked files present (use "git add" to track)
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git add .
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   maxnumber.py

devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git commit -m "First Commit"
[master (root-commit) e889c87] First Commit
 1 file changed, 5 insertions(+)
 create mode 100644 maxnumber.py
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git remote add origin https://github.com/DevanshuSurana/Demo3.git
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git branch -M main
devanshusurana@Devanshus-MacBook-Pro DEMO 3 % git push -u origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 386 bytes | 386.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/DevanshuSurana/Demo3.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
devanshusurana@Devanshus-MacBook-Pro DEMO 3 %
```






```
devanshusurana@Devanshus-MacBook-Pro FSD % git pull https://github.com/DevanshuSurana/Ful
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 7 (delta 0), reused 4 (delta 0), pack-reused 0
Unpacking objects: 100% (7/7), 924 bytes | 154.00 KiB/s, done.
From https://github.com/DevanshuSurana/FullStackDevelopment
 * branch            main       -> FETCH_HEAD
devanshusurana@Devanshus-MacBook-Pro FSD %
```

LINK : https://github.com/DevanshuSurana/Demo3.git