

## Full Stack Development: Experiment 1

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PROGRESS WITH PURPOSE

### FSD EXPERIMENT - 01

AIM: Version control with Git.

OBJECTIVES: (1) To introduce the concepts & 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, & push, pull from a Git repository.

#### THEORY:

Q1) What is Git, What's version control?

→ Git is a distributed version control system used to track changes in code or files, enabling collaboration & history tracking. It allows developers to manage projects, branch, merge & revert changes efficiently.

→ Version Control is a system that records changes to files over time, allowing users to revisit & manage past versions, collaborate seamlessly & prevent conflicts in a collaborative work.

Q2) How to use Git for version controlling?

Ans: ① Install Git

② Initialize a repository

↳ Create a new repository : `git init`

↳ Clone an existing one : `git clone <repository-url>`

③ Track changes

↳ Add files : `git add <file>` or `git add`.

↳ Commit changes : `git commit -m "message"`.

↳ View changes :

↳ Check status : `git status`

↳ View history : `git log`

5) Branching :

↳ Create branch : `git branch <branch-name>`

↳ Switch : `git checkout <branch-name>` or `git switch <branch-name>`.

6) Collaborate :

↳ Pull changes : `git pull`

↳ Push changes : `git push`

7) Merge branches with : `git merge`

8) Resolve

FAQ :

Q1) What is branching in Git?

→ Branching in Git allows us to create independent lines of development within a repository. It enables you to work on features, fixes/experiments separately without affecting the main codebase & later merge changes back when ready.

Q2) How to create & merge branches in Git? Write the commands used.

→ To create a branch : `git branch <branch-name>`

• To merge a branch :

↳ Switch to the branch you want to merge into using `git checkout main`

↳ Merge the branch using `git merge branch_name`.

—x—

← → ↻ github.com/new

New repository

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk (\*).

Owner \* chinmayeeshahane17 / Repository name \* Chinmayee\_FSD\_assignment1

Chinmayee\_FSD\_assignment1 is available.

Great repository names are short and memorable. Need inspiration? How about [upgraded-guide](#) ?

Description (optional)

☒ Public Anyone on the internet can see this repository. You choose who can commit.

☐ Private You choose who can see and commit to this repository.

Initialize this repository with:

☐ Add a README file This is where you can write a long description for your project. [Learn more about READMEs.](#)

```
Microsoft Windows [Version 10.0.26100.2894]
(c) Microsoft Corporation. All rights reserved.

C:\Users\archa>git clone https://github.com/chinmayeeshahane17/Chinmayee_FSD_assignment1.git
Cloning into 'Chinmayee_FSD_assignment1'...
warning: You appear to have cloned an empty repository.

C:\Users\archa>cd Chinmayee_FSD_assignment1

C:\Users\archa\Chinmayee_FSD_assignment1>echo "Initial commit" > GIT-Asg1.txt

C:\Users\archa\Chinmayee_FSD_assignment1>git add
Nothing specified, nothing added.
hint: Maybe you wanted to say 'git add .'
hint: Disable this message with "git config advice.addEmptyPaths false"

C:\Users\archa\Chinmayee_FSD_assignment1>git add .

C:\Users\archa\Chinmayee_FSD_assignment1>git config --global user.email "chinmayeeshahane17@gmail.com"

C:\Users\archa\Chinmayee_FSD_assignment1>git config --global user.name "Chinmayee Shahane"

C:\Users\archa\Chinmayee_FSD_assignment1>git config --global --list
user.email=chinmayeeshahane17@gmail.com
user.name=Chinmayee Shahane

C:\Users\archa\Chinmayee_FSD_assignment1>git commit -m "Initial commit"
[main (root-commit) a89ef1b] Initial commit
1 file changed, 1 insertion(+)
create mode 100644 GIT-Asg1.txt

C:\Users\archa\Chinmayee_FSD_assignment1>git remote set-url origin https://chinmayeeshahane17@github.com/chinmayeeshahane17/Chinmayee_FSD_assignment1.git

C:\Users\archa\Chinmayee_FSD_assignment1>git push origin main
info: please complete authentication in your browser...

C:\Users\archa\Chinmayee_FSD_assignment1>git push origin main
info: please complete authentication in your browser...
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 244 bytes | 244.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/chinmayeeshahane17/Chinmayee_FSD_assignment1.git
 * [new branch]      main -> main

C:\Users\archa\Chinmayee_FSD_assignment1>git checkout -b feature_branch
Switched to a new branch 'feature_branch'

C:\Users\archa\Chinmayee_FSD_assignment1>echo "Working on a feature" >> feature.txt

C:\Users\archa\Chinmayee_FSD_assignment1>git add feature.txt

C:\Users\archa\Chinmayee_FSD_assignment1>git commit -m "Added feature"
[feature_branch 7ccec08] Added feature
1 file changed, 1 insertion(+)
create mode 100644 feature.txt
```

```
Command Prompt
C:\Users\archa\Chinmayee_FSD_assignment1>git push origin feature_branch
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 313 bytes | 313.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature_branch' on GitHub by visiting:
remote:   https://github.com/chinmayeeshahane17/Chinmayee_FSD_assignment1/pull/new/feature_branch
remote:
To https://github.com/chinmayeeshahane17/Chinmayee_FSD_assignment1.git
 * [new branch]      feature_branch -> feature_branch

C:\Users\archa\Chinmayee_FSD_assignment1>git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

C:\Users\archa\Chinmayee_FSD_assignment1>git pull origin main
From https://github.com/chinmayeeshahane17/Chinmayee_FSD_assignment1
 * branch            main       -> FETCH_HEAD
Already up to date.

C:\Users\archa\Chinmayee_FSD_assignment1>git merge feature_branch
Updating a89ef1b..7ccec08
Fast-forward
 feature.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 feature.txt
```

