FSD Laboratory 01

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Problem Statement:

Create 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?

Git is a distributed version control system that allows multiple developers to work on a project simultaneously without interfering with each other's work. It tracks changes to files and directories, enabling developers to collaborate, manage code versions, and maintain a history of changes. Git is widely used in software development due to its speed, reliability, and flexibility.

Version Control is a system that records changes to a file or set of files over time so that you can recall specific versions later. It enables multiple developers to work on the same project simultaneously, helps manage project changes, and allows for reverting to previous states in case of errors. There are two main types of version control systems: centralized (e.g., SVN) and distributed (e.g., Git).

2. How to use Git for version controlling?

Using Git for version control typically involves the following steps:

1. **Initialize a Repository:**
   - `git init`: Initializes a new Git repository in your project directory.
2. **Clone an Existing Repository:**
   - `git clone <repository-url>`: Clones an existing repository from a remote server.
3. **Make Changes and Track Files:**
   - `git add <file>`: Adds a file to the staging area.

- `git add .`: Adds all changed files in the directory to the staging area.

4. **Commit Changes:**
   - `git commit -m "Commit message"`: Commits the changes in the staging area with a descriptive message.
5. **Push Changes to Remote Repository:**
   - `git push origin <branch-name>`: Pushes the committed changes to the specified branch of the remote repository.
6. **Pull Updates from Remote Repository:**
   - `git pull origin <branch-name>`: Fetches and merges changes from the remote repository to your local branch.

FAQ:

1. What is branching in Git?

Branching in Git is a powerful feature that allows you to create independent lines of development within a repository. Think of a branch as a separate environment where you can work on a new feature, fix a bug, or experiment without affecting the main codebase (commonly known as the `main` or `master` branch).

For example, when you're developing a new feature, you can create a new branch, make all the changes you need, and test them thoroughly. Once you're satisfied with your changes, you can merge this branch back into the main branch. This workflow ensures that the main branch always contains stable code, while development work happens in isolated branches.

Branching enables collaboration, parallel development, and safe experimentation, making it easier to manage and maintain complex projects.

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

Creating a Branch:

- `git branch <branch-name>`: Creates a new branch with the specified name.
- `git checkout -b <branch-name>`: Creates and switches to the new branch in one command.

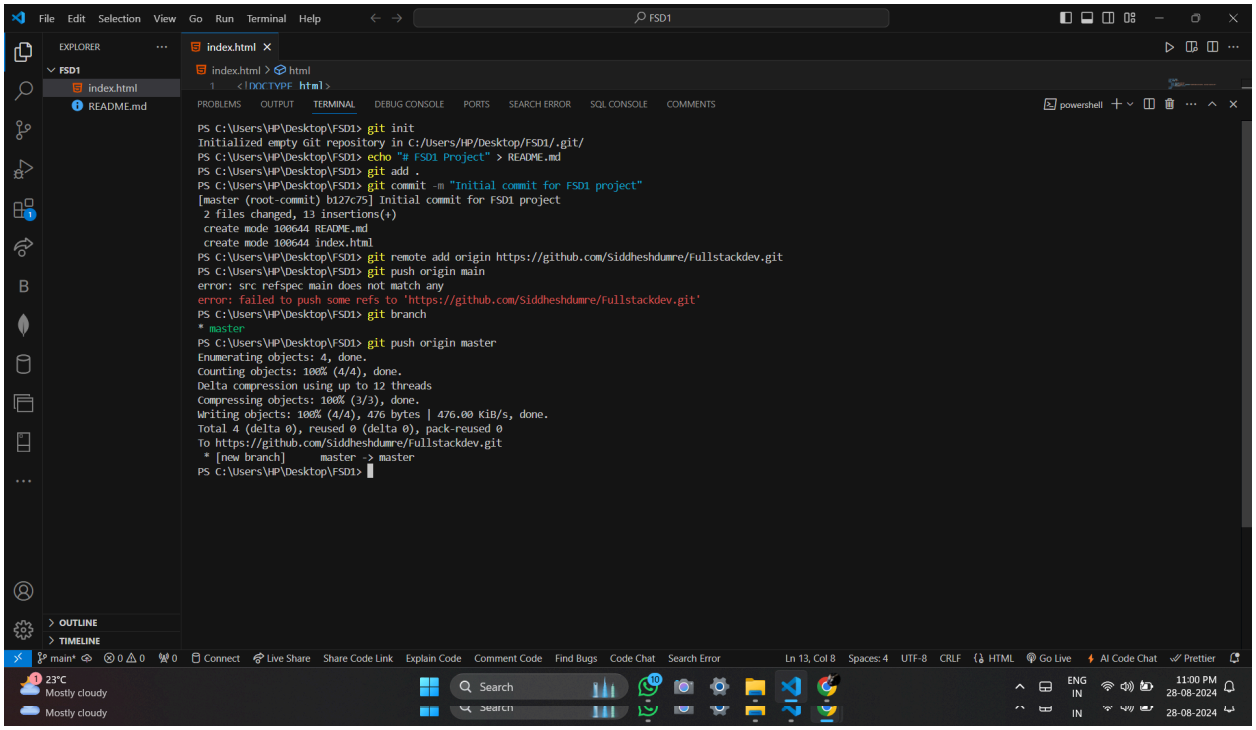
Switching to a Branch:

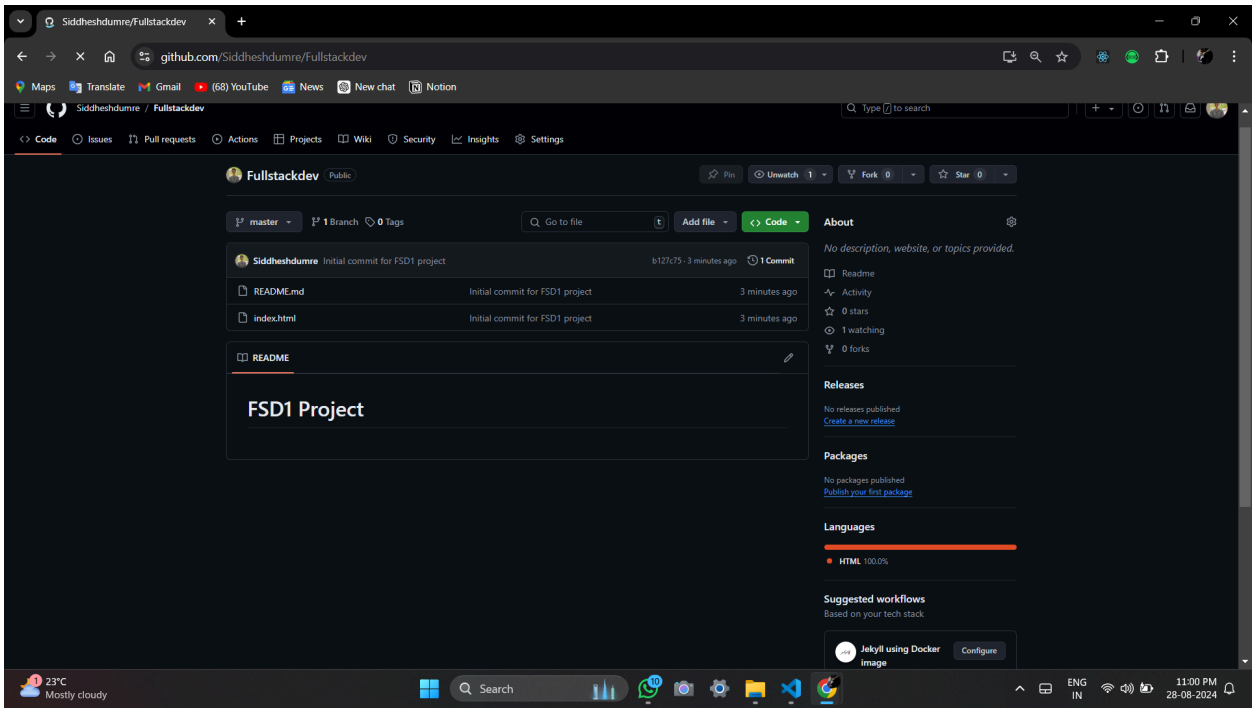
- `git checkout <branch-name>`: Switches to the specified branch.

Merging Branches:

- `git checkout <branch-name-to-merge-into>`: Switches to the branch where you want to merge changes (e.g., `main`).
- `git merge <branch-name-to-merge-from>`: Merges the specified branch into the current branch.

Output: Screenshots of the output to be attached.




Siddheshdumre/Fullstackdev
github.com/Siddheshdumre/Fullstackdev
Fullstackdev
master
1 Branch
0 Tags
Add file
Code
Siddheshdumre Initial commit for FSD1 project
1 Commit
README.md
index.html
Initial commit for FSD1 project
3 minutes ago
README
FSD1 Project
About
No description, website, or topics provided.
Releases
Packages
Languages
HTML 100.0%
Suggested workflows
Jekyll using Docker image
Configure