ARCHIS GOKHALE
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TY - CSE BTECH
PANEL I-2 (52)

FSD Laboratory 01

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 created by Linus Torvalds in 2005. It's designed for fast and efficient handling of projects, both small and large.

Key Features:

- Distributed: Every developer has a full copy of the repository.
- Speed: Optimized for quick operations like commits and merges.
- Branching: Easy to create and manage branches for different features.
- Integrity: Ensures data integrity with SHA-1 hashing.
- Staging: Allows reviewing changes before committing.

2. How to use Git for version controlling?

What is Version Control?

Version control is a system that records changes to files over time, allowing you to recall specific versions later. It facilitates collaboration and tracks changes.

Types:

1. Local: Simple databases on the local disk.
2. Centralized (CVCS): Single central repository (e.g., SVN).
3. Distributed (DVCS): Each user has a full repository copy (e.g., Git).

Benefits:

- Collaboration: Multiple people can work simultaneously.
- History: Tracks changes and allows reversion.
- Branching: Separate branches for features, easily merged.
- Backup: Acts as a backup system.
- Traceability: Clear project evolution record.

Git is a powerful version control tool, perfect for managing project files and team collaboration efficiently.

FAQ:

1. What is branching in Git?

Branching in Git is a fundamental concept that allows you to diverge from the main line of development and continue to work without affecting that main line. It enables multiple developers to work on different features or bug fixes simultaneously in a collaborative environment.

Branches: A branch in Git is essentially a lightweight movable pointer to one of these commits. The default branch name in Git is `master` (now often renamed to `main`). When you start making commits, you're given a `master` branch that points to the last commit you made. Every time you commit, the `master` branch pointer moves forward automatically.

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

Creating and Merging Branches in Git

1. Creating a Branch

To create a new branch, use the `git branch` command followed by the name of the branch.

```
git branch new-branch
```

2. Switching to a Branch

Or using the newer `git switch` command:

```
git switch new-branch
```

3. Merging a Branch

To merge a branch into your current branch, first switch to the branch you want to merge into (usually `main` or `master`), then use the `git merge` command:

```
git switch main
git merge new-branch
```

4. Deleting a Branch

If the branch hasn't been merged yet and you want to force delete it:

```
git branch -D new-branch
```

Example Workflow

1. Create and switch to a new branch:

```
git checkout -b feature-branch
```

2. Work on your changes and commit them:

```
git add .
git commit -m "Add new feature"
```

3. Switch back to the main branch:

```
git checkout main
```

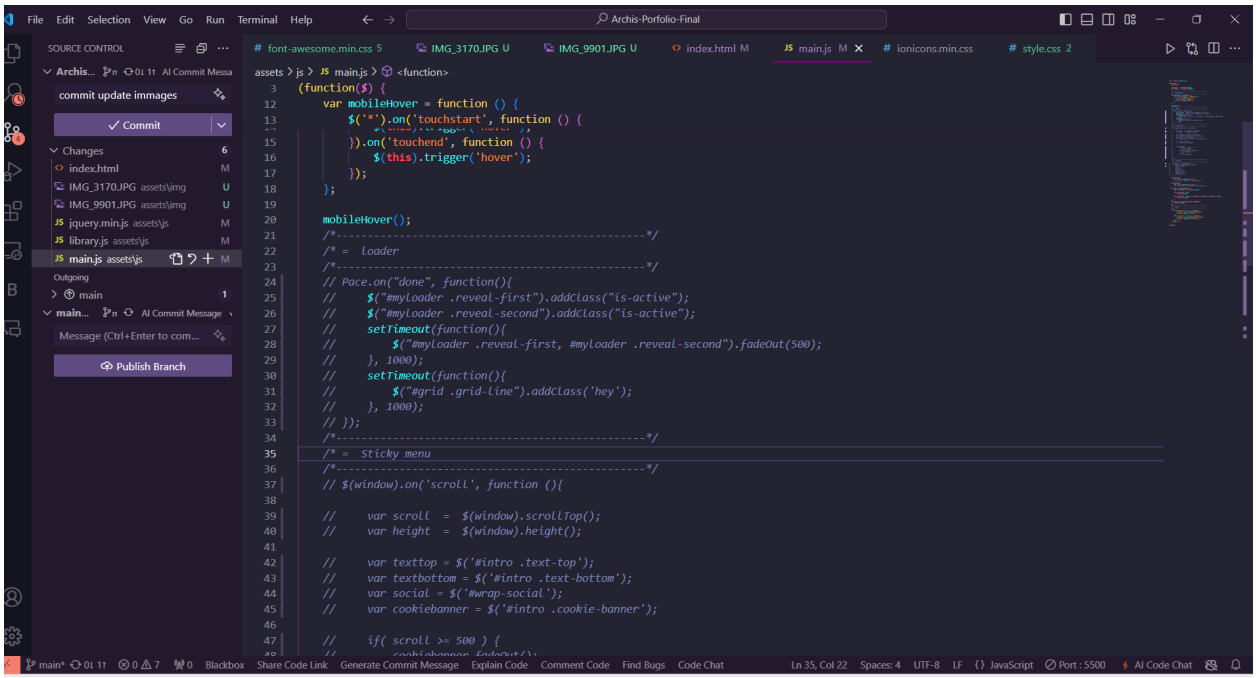
4. Merge the feature branch into the main branch:

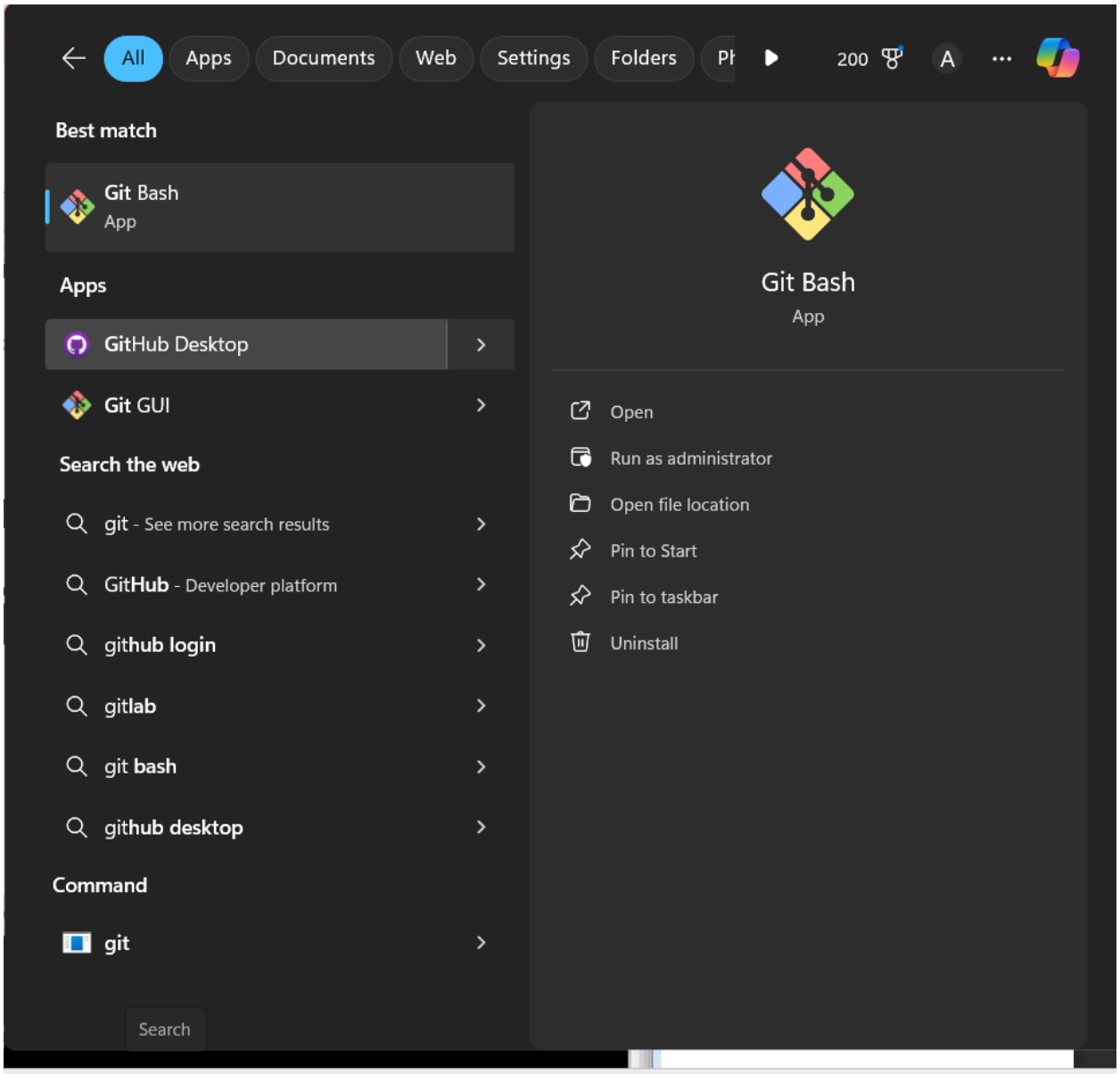
```
git merge feature-branch
```

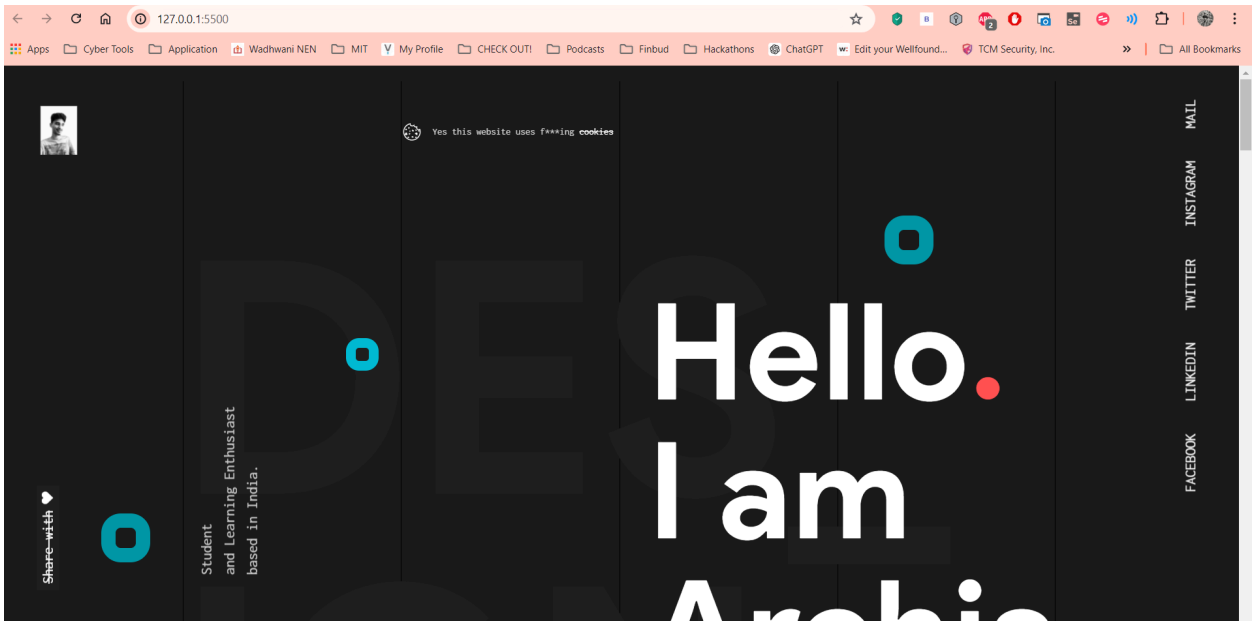
5. Delete the feature branch:

```
git branch -d feature-branch
```

Output: Screenshots of the output to be attached.

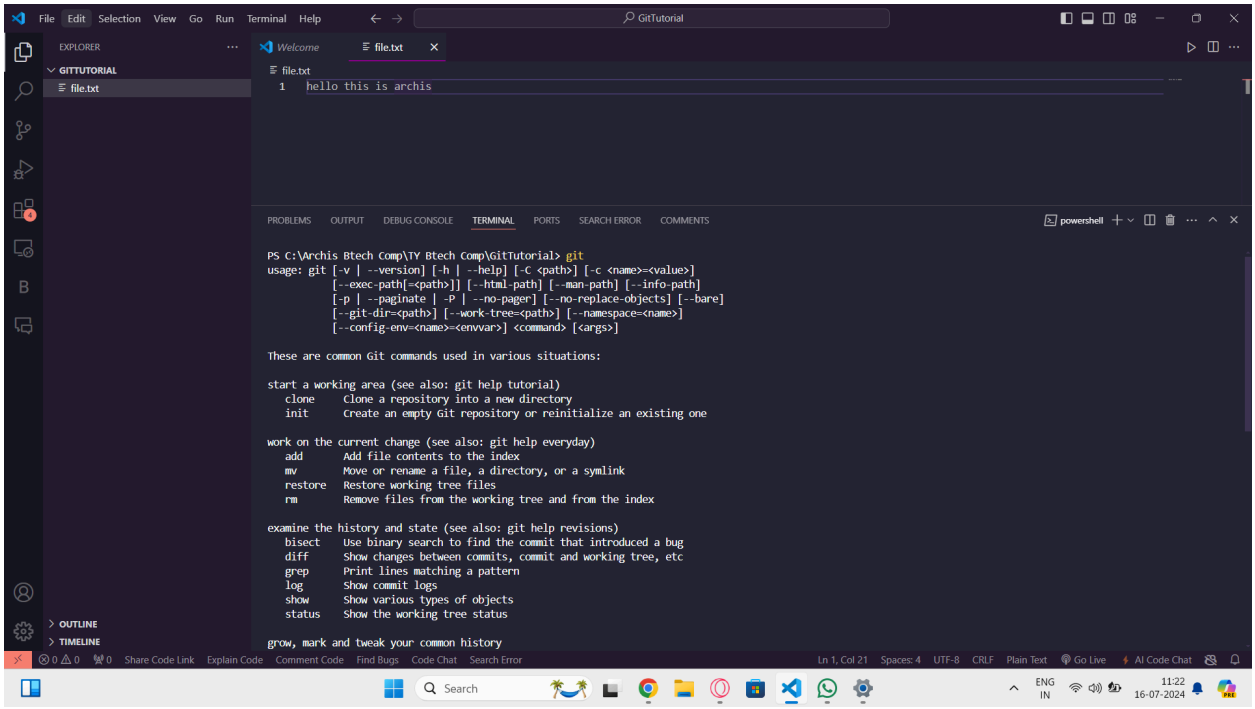

File Edit Selection View Go Run Terminal Help
Archis-Porfolio-Final
SOURCE CONTROL
commit update immages
Commit
Changes 6
index.html M
IMG_3170.JPG assets\img U
IMG_9901.JPG assets\img U
jquery.min.js assets\js M
library.js assets\js M
main.js assets\js M
Outgoing
main 1
Message (Ctrl+Enter to com...
Publish Branch
font-awesome.min.css 5
IMG_3170.JPG U
IMG_9901.JPG U
index.html M
main.js M
ionicons.min.css
style.css 2
assets > js > main.js > <function>
(function($) {
var mobileHover = function () {
$('*').on('touchstart', function () {
}).on('touchend', function () {
$(this).trigger('hover');
});
};
mobileHover();
/* = Loader
/* = Sticky menu
Ln 35, Col 22 Spaces: 4 UTF-8 LF JavaScript Port : 5500 AI Code Chat

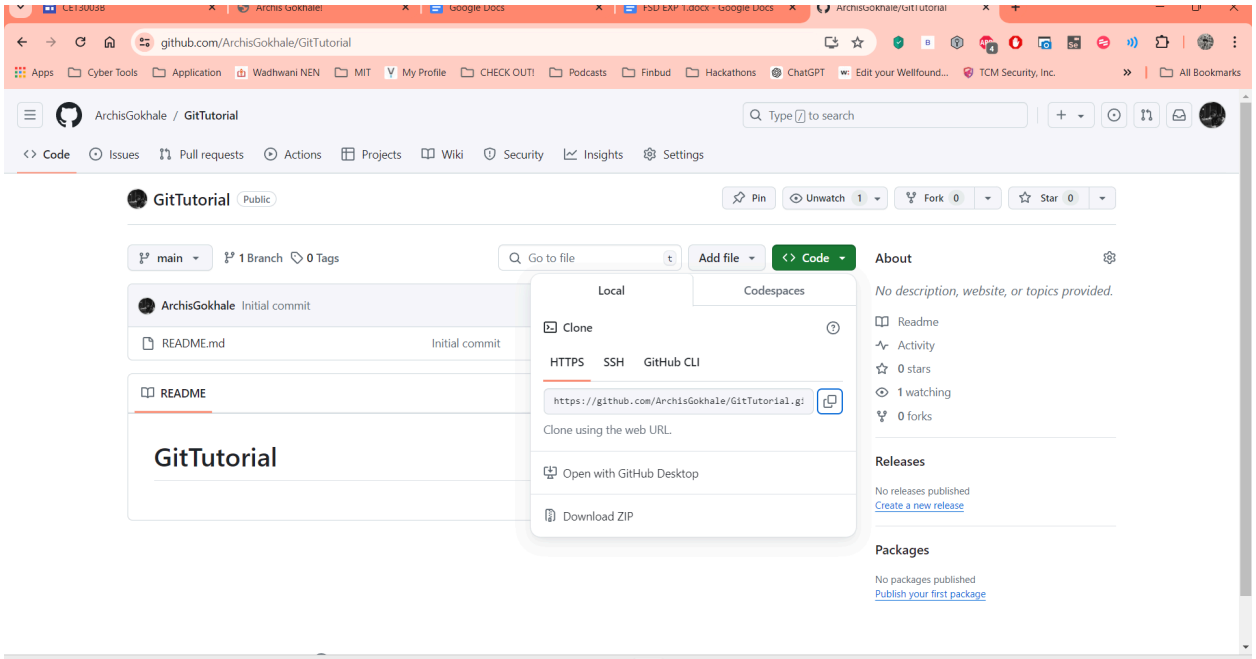

All
Apps
Documents
Web
Settings
Folders
200
A
Best match
Git Bash
App
Apps
GitHub Desktop
Git GUI
Search the web
git - See more search results
GitHub - Developer platform
github login
gitlab
git bash
github desktop
Command
git
Search
Git Bash
App
Open
Run as administrator
Open file location
Pin to Start
Pin to taskbar
Uninstall

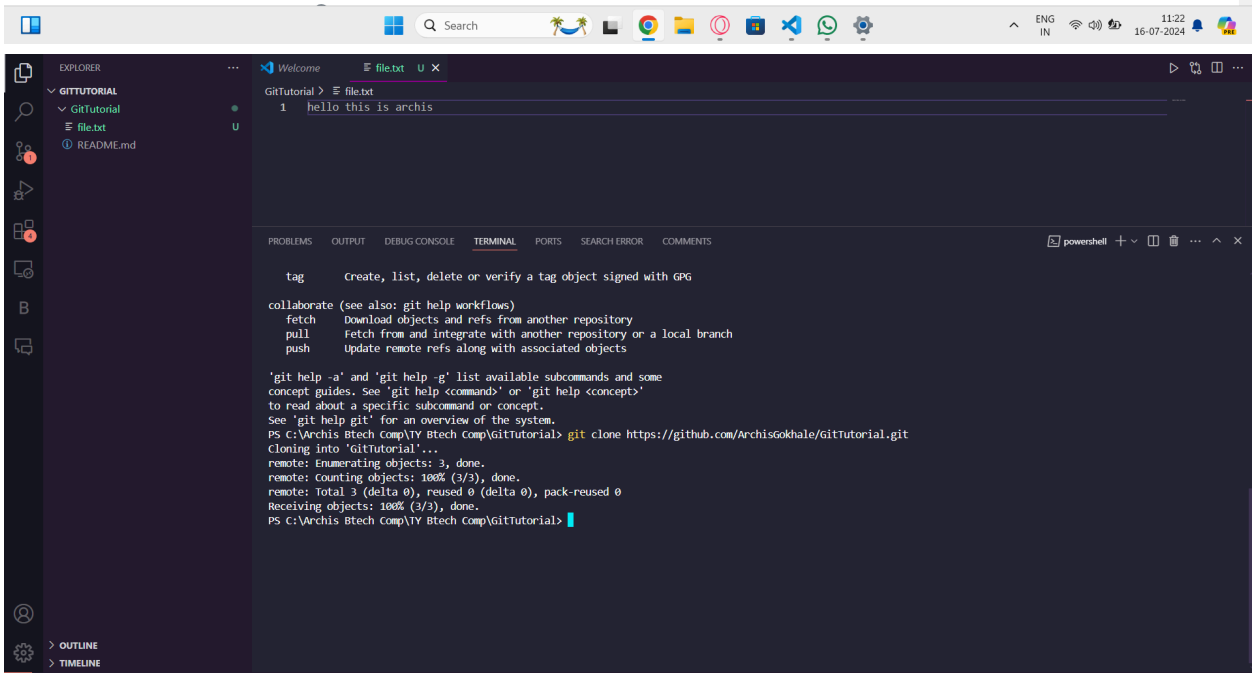


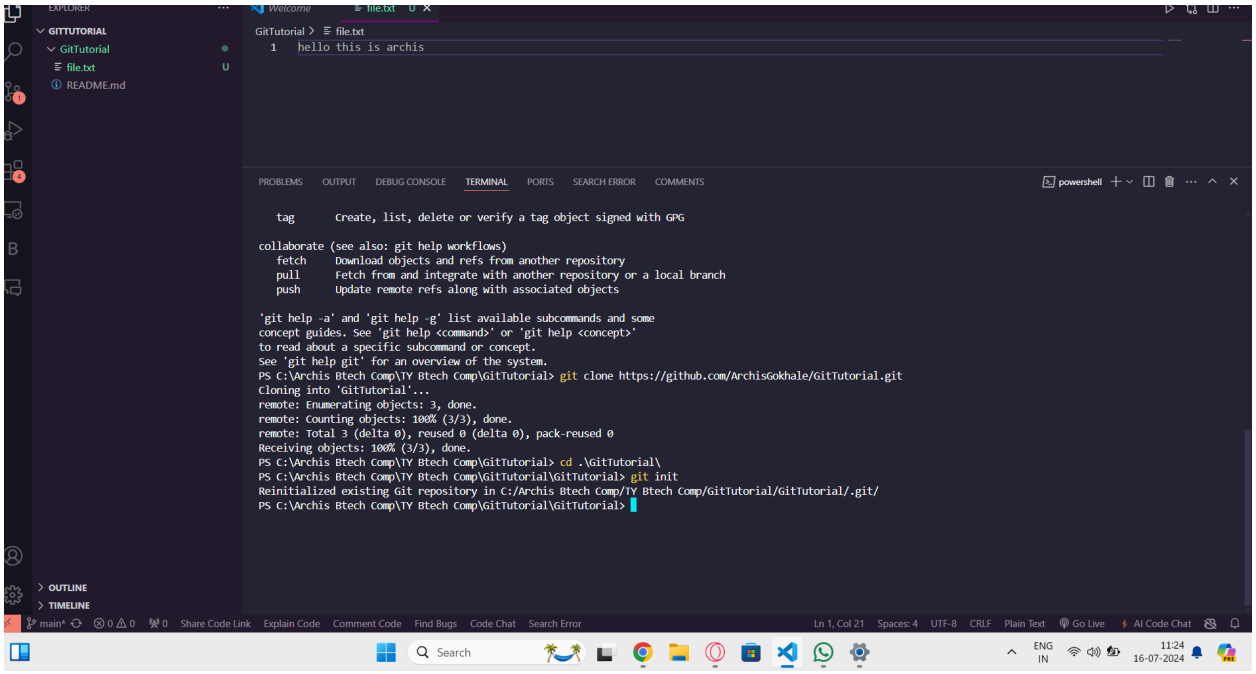
Problem Statement:

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.




github.com/ArchisGokhale/GitTutorial
ArchisGokhale / GitTutorial
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
GitTutorial
Public
Pin
Unwatch 1
Fork 0
Star 0
main
1 Branch
0 Tags
Go to file
Add file
Code
ArchisGokhale Initial commit
README.md Initial commit
README
GitTutorial
Local
Codespaces
Clone
HTTPS
SSH
GitHub CLI
https://github.com/ArchisGokhale/GitTutorial.g
Clone using the web URL.
Open with GitHub Desktop
Download ZIP
About
No description, website, or topics provided.
Readme
Activity
0 stars
1 watching
0 forks
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package

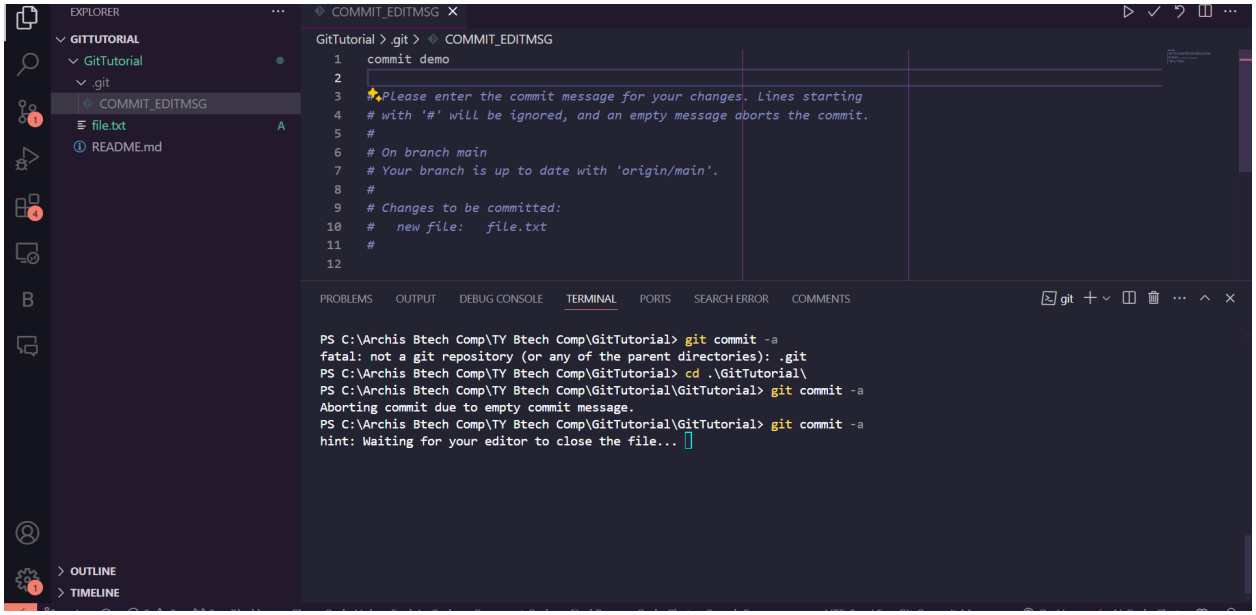

EXPLORER
GITTUTORIAL
GitTutorial
file.txt
README.md
Welcome
file.txt
GitTutorial > file.txt
1 hello this is archis
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SEARCH ERROR
COMMENTS
powershell
tag Create, list, delete or verify a tag object signed with GPG
collaborate (see also: git help workflows)
fetch Download objects and refs from another repository
pull Fetch from and integrate with another repository or a local branch
push Update remote refs along with associated objects
'git help -a' and 'git help -g' list available subcommands and some
concept guides. See 'git help <command>' or 'git help <concept>'
to read about a specific subcommand or concept.
See 'git help git' for an overview of the system.
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial> git clone https://github.com/ArchisGokhale/GitTutorial.git
Cloning into 'GitTutorial'...
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.
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial>
OUTLINE
TIMELINE



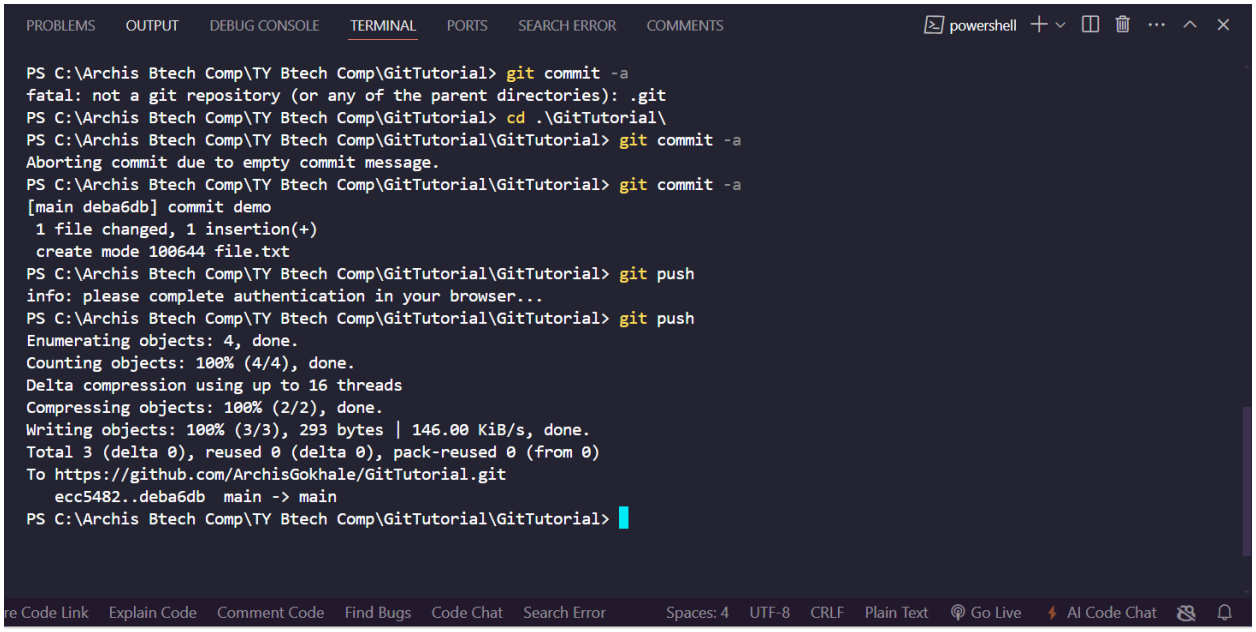
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR COMMENTS

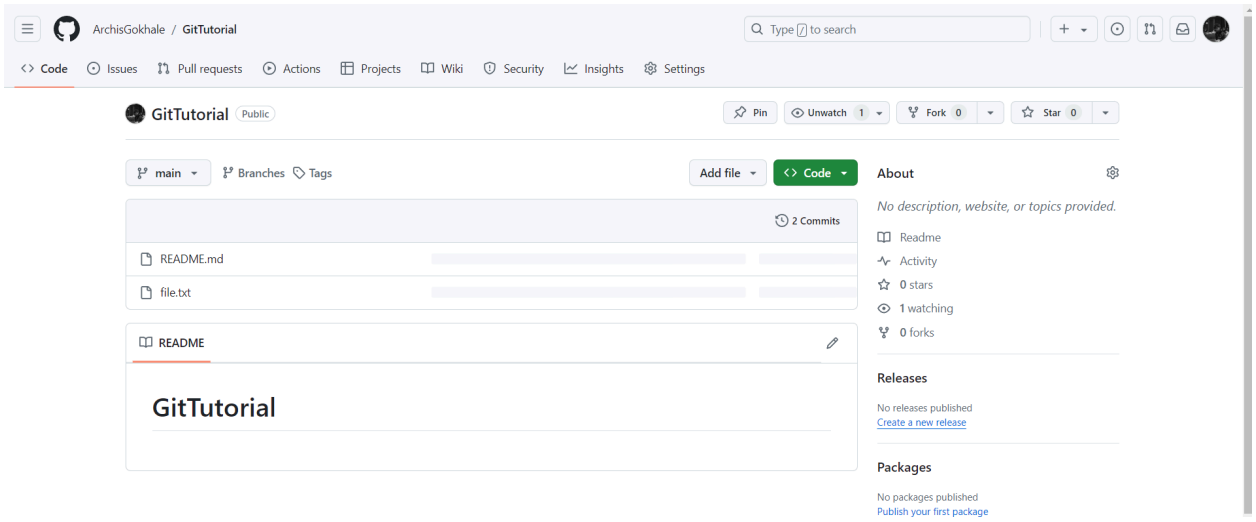
```
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial> cd .\GitTutorial\
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git init
Reinitialized existing Git repository in C:/Archis Btech Comp/TY Btech Comp/GitTutorial/GitT
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git statu
git: 'statu' is not a git command. See 'git --help'.

The most similar commands are
        status
        stage
        stash
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git status
On branch main
Your branch is up to date with 'origin/main'.

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

nothing added to commit but untracked files present (use "git add" to track)
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial>
```

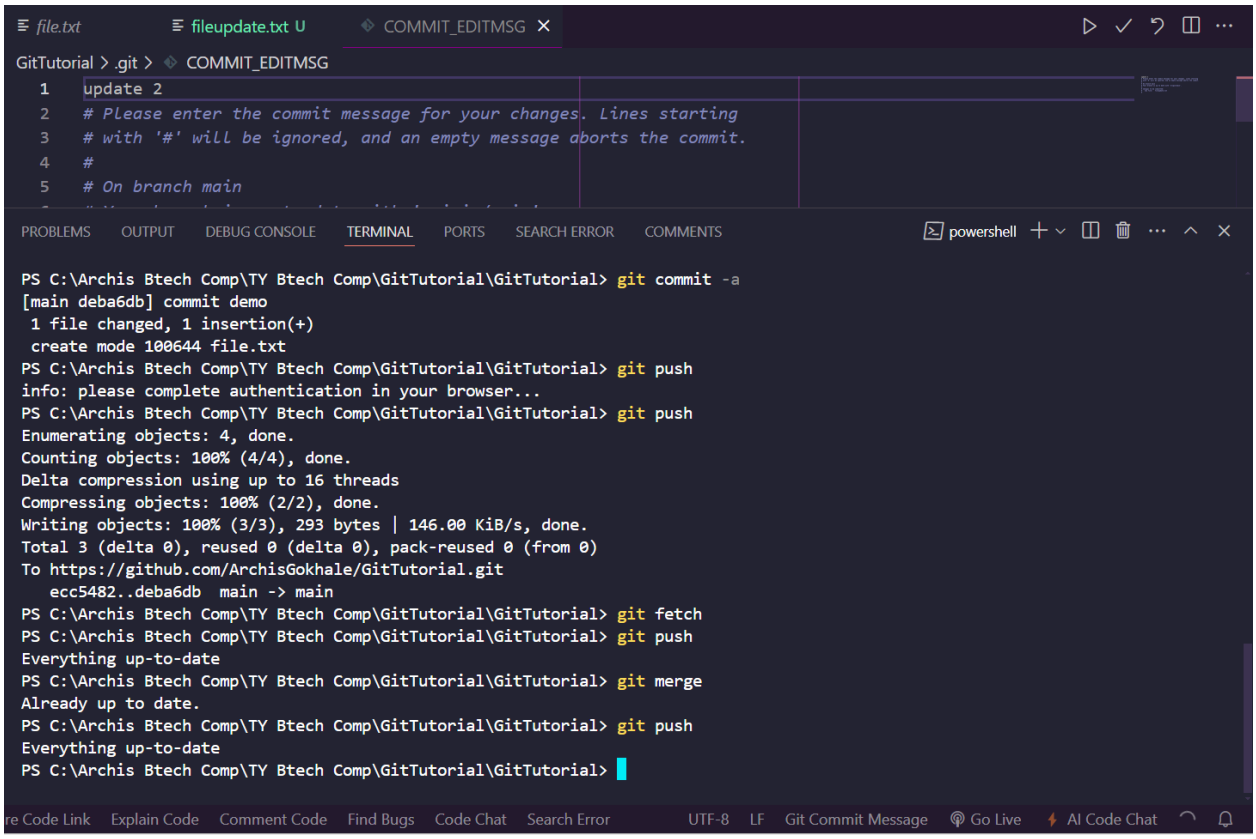
```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  SEARCH ERROR  COMMENTS        powershell

PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git config --global user.name "ArchisGokhale"
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git config --global user.gmail "archisgokhale001@gmail.com"
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git add file.txt
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   file.txt

PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git commit -A
error: unknown switch `A'
usage: git commit [-a | --interactive | --patch] [-s] [-v] [-u<mode>] [--amend]
                  [--dry-run] [(-c | -C | --squash) <commit> | --fixup [(amend|reword):]<commit>)]
                  [-F <file> | -m <msg>] [--reset-author] [--allow-empty]
                  [--allow-empty-message] [--no-verify] [-e] [--author=<author>]
                  [--date=<date>] [--cleanup=<mode>] [--[no-]status]
                  [-i | -o] [--pathspec-from-file=<file> [--pathspec-file-nul]]
                  [(--trailer <token>[(=|:)<value>])...] [-S[<keyid>]]
                  [--] [<pathspec>...]
```

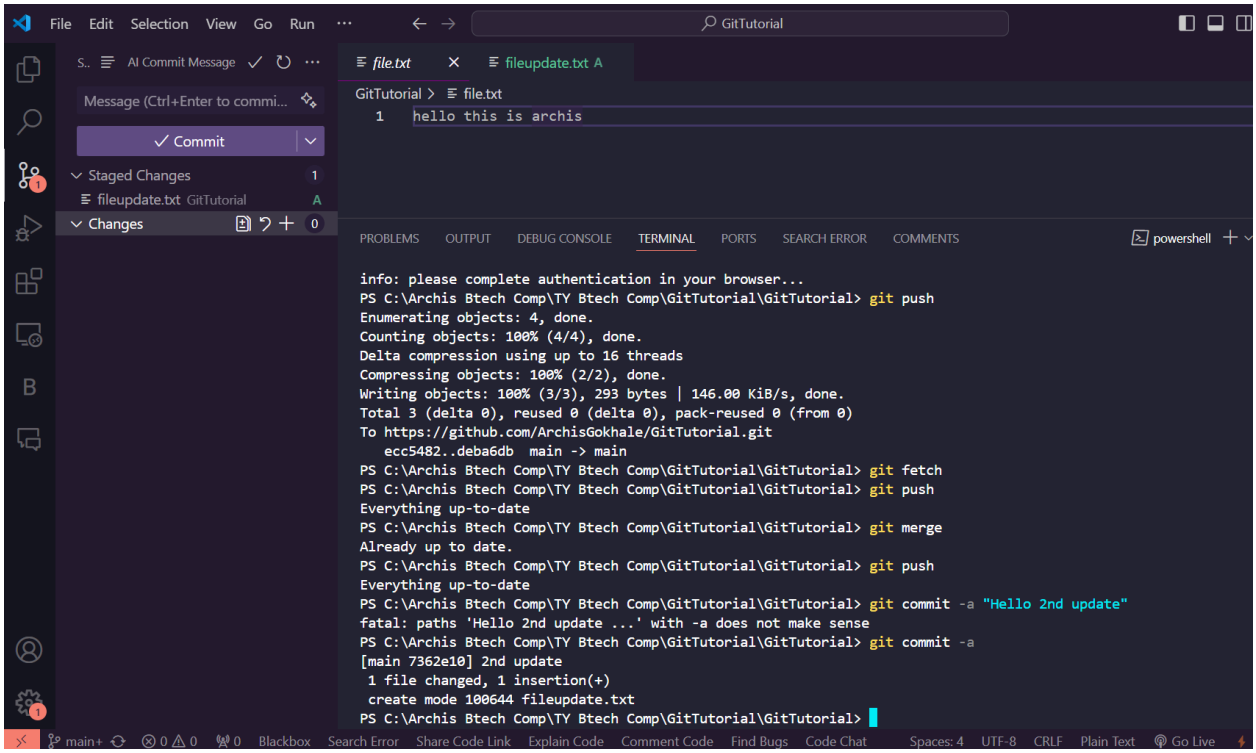


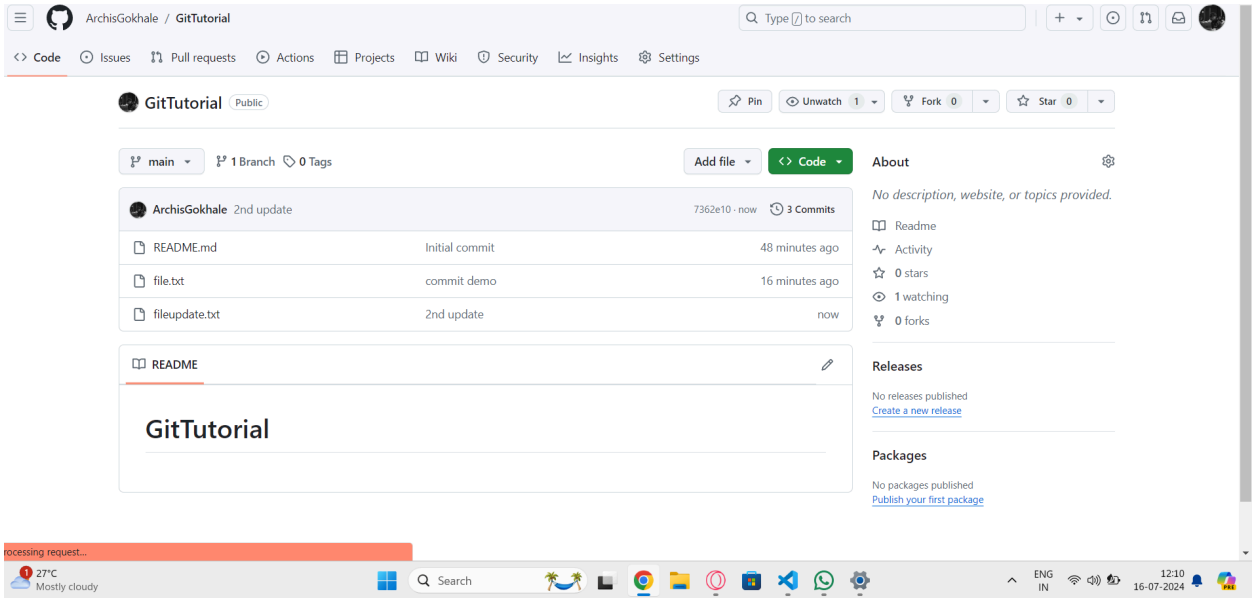

```
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git commit -a
[main deba6db] commit demo
 1 file changed, 1 insertion(+)
 create mode 100644 file.txt
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial>
```

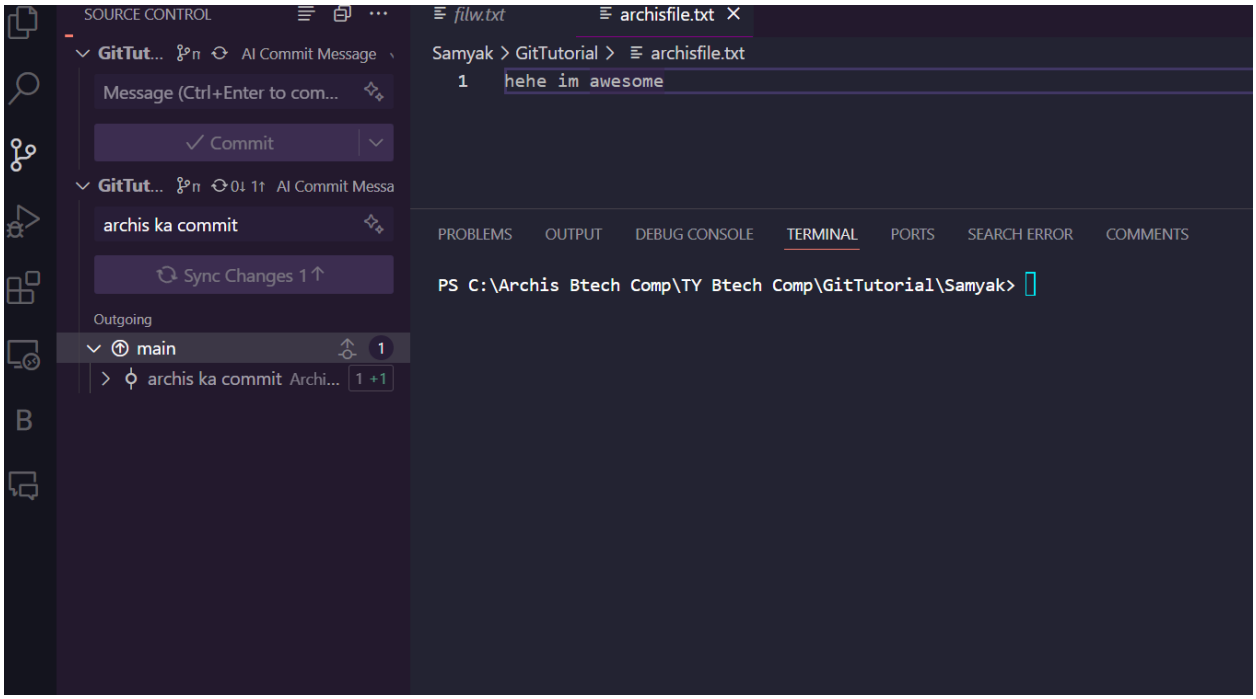

PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SEARCH ERROR
COMMENTS
powershell
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial> git commit -a
fatal: not a git repository (or any of the parent directories): .git
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial> cd .\GitTutorial\
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git commit -a
Aborting commit due to empty commit message.
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git commit -a
[main deba6db] commit demo
1 file changed, 1 insertion(+)
create mode 100644 file.txt
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
info: please complete authentication in your browser...
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 16 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 293 bytes | 146.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/ArchisGokhale/GitTutorial.git
ecc5482..deba6db main -> main
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial>
re Code Link
Explain Code
Comment Code
Find Bugs
Code Chat
Search Error
Spaces: 4
UTF-8
CRLF
Plain Text
Go Live
AI Code Chat

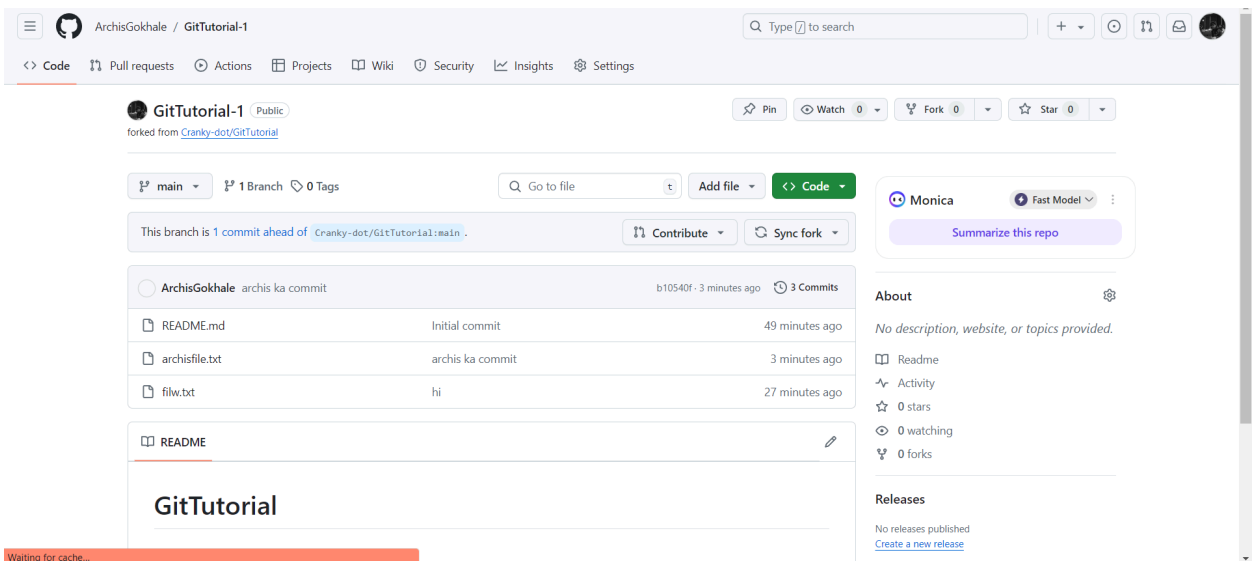

ArchisGokhale / GitTutorial
Type / to search
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
GitTutorial
Public
Pin
Unwatch 1
Fork 0
Star 0
main
Branches
Tags
Add file
Code
About
No description, website, or topics provided.
2 Commits
README.md
file.txt
README
GitTutorial
Readme
Activity
0 stars
1 watching
0 forks
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package

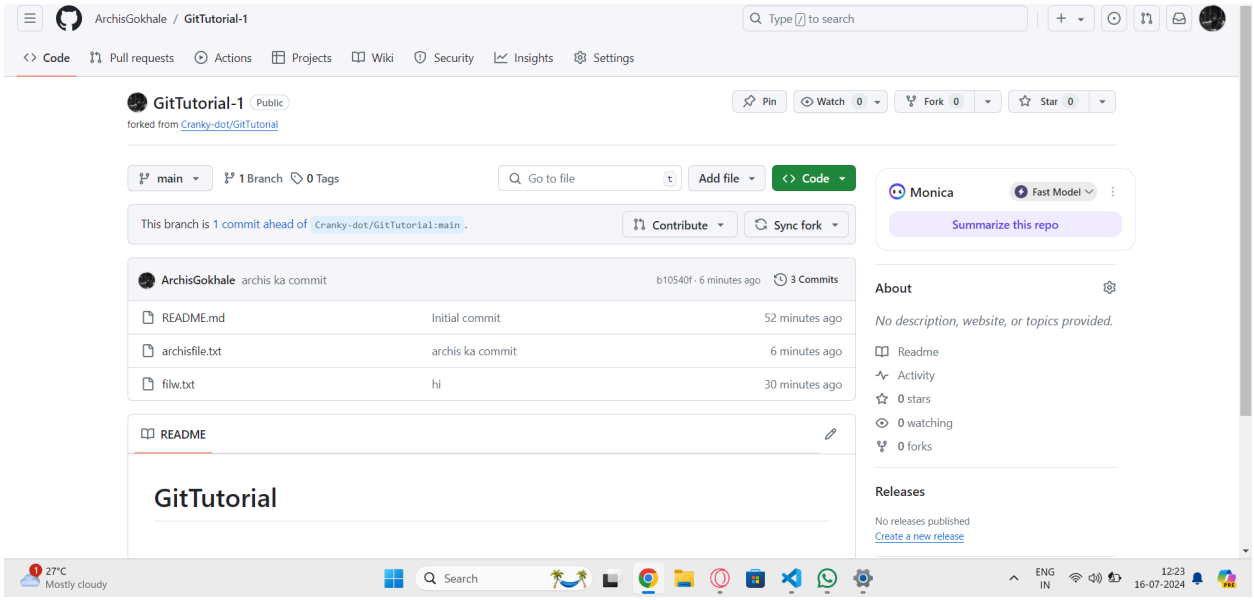

file.txt
fileupdate.txt U
COMMIT_EDITMSG
GitTutorial > .git > COMMIT_EDITMSG
1 update 2
2 # Please enter the commit message for your changes. Lines starting
3 # with '#' will be ignored, and an empty message aborts the commit.
4 #
5 # On branch main
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR COMMENTS
powershell
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git commit -a
[main deba6db] commit demo
1 file changed, 1 insertion(+)
create mode 100644 file.txt
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
info: please complete authentication in your browser...
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 16 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 293 bytes | 146.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/ArchisGokhale/GitTutorial.git
ecc5482..deba6db main -> main
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git fetch
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
Everything up-to-date
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git merge
Already up to date.
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
Everything up-to-date
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial>
Code Link Explain Code Comment Code Find Bugs Code Chat Search Error
UTF-8 LF Git Commit Message Go Live AI Code Chat


File Edit Selection View Go Run
GitTutorial
AI Commit Message
Message (Ctrl+Enter to commi...
Commit
Staged Changes 1
fileupdate.txt GitTutorial A
Changes 0
file.txt
fileupdate.txt A
GitTutorial > file.txt
1 hello this is archis
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR COMMENTS
powershell
info: please complete authentication in your browser...
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 16 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 293 bytes | 146.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/ArchisGokhale/GitTutorial.git
ecc5482..deba6db main -> main
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git fetch
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
Everything up-to-date
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git merge
Already up to date.
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git push
Everything up-to-date
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git commit -a "Hello 2nd update"
fatal: paths 'Hello 2nd update ...' with -a does not make sense
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial> git commit -a
[main 7362e10] 2nd update
1 file changed, 1 insertion(+)
create mode 100644 fileupdate.txt
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\GitTutorial>
main+ Blackbox Search Error Share Code Link Explain Code Comment Code Find Bugs Code Chat
Spaces: 4 UTF-8 CRLF Plain Text Go Live


ArchisGokhale / GitTutorial
Type / to search
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
GitTutorial
Public
Pin
Unwatch 1
Fork 0
Star 0
main
1 Branch
0 Tags
Add file
Code
ArchisGokhale 2nd update
7362e10 · now
3 Commits
README.md
Initial commit
48 minutes ago
file.txt
commit demo
16 minutes ago
fileupdate.txt
2nd update
now
README
GitTutorial
About
No description, website, or topics provided.
Readme
Activity
0 stars
1 watching
0 forks
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package
rocessing request...
27°C
Mostly cloudy
Search
ENG
IN
12:10
16-07-2024


SOURCE CONTROL
GitTut...
AI Commit Message
Message (Ctrl+Enter to com...
Commit
GitTut...
AI Commit Messa
archis ka commit
Sync Changes 1
Outgoing
main
archis ka commit Archi...
filw.txt
archisfile.txt
Samyak > GitTutorial > archisfile.txt
1 hehe im awesome
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SEARCH ERROR
COMMENTS
PS C:\Archis Btech Comp\TY Btech Comp\GitTutorial\Samyak>


ArchisGokhale / GitTutorial-1
Code
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
GitTutorial-1
Public
forked from Cranky-dot/GitTutorial
Pin
Watch 0
Fork 0
Star 0
main
1 Branch
0 Tags
Go to file
Add file
Code
This branch is 1 commit ahead of Cranky-dot/GitTutorial:main.
Contribute
Sync fork
ArchisGokhale archis ka commit
b10540f · 3 minutes ago
3 Commits
README.md
Initial commit
49 minutes ago
archisfile.txt
archis ka commit
3 minutes ago
filw.txt
hi
27 minutes ago
README
GitTutorial
Monica
Fast Model
Summarize this repo
About
No description, website, or topics provided.
Readme
Activity
0 stars
0 watching
0 forks
Releases
No releases published
Create a new release


ArchisGokhale / GitTutorial-1
Type / to search
Code
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
GitTutorial-1
Public
forked from Cranky-dot/GitTutorial
Pin
Watch 0
Fork 0
Star 0
main
1 Branch
0 Tags
Go to file
t
Add file
Code
This branch is 1 commit ahead of Cranky-dot/GitTutorial:main.
Contribute
Sync fork
ArchisGokhale archis ka commit
b10540f · 6 minutes ago
3 Commits
README.md
Initial commit
52 minutes ago
archisfile.txt
archis ka commit
6 minutes ago
filw.txt
hi
30 minutes ago
README
GitTutorial
Monica
Fast Model
Summarize this repo
About
No description, website, or topics provided.
Readme
Activity
0 stars
0 watching
0 forks
Releases
No releases published
Create a new release
27°C
Mostly cloudy
Search
ENG
IN
12:23
16-07-2024