Before we use git first time we have to follow the below commands

PS F:\java\Git\FIRSTPROJECT> git status

fatal: not a git repository (or any of the parent directories): .git

PS F:\java\Git\FIRSTPROJECT> git init -b main // -b is the branch and (main) is the name of the branch

Initialized empty Git repository in F:/java/Git/FIRSTPROJECT/.git/

PS F:\java\Git\FIRSTPROJECT> git status // after main see the status of the git with name (main

)

On branch main

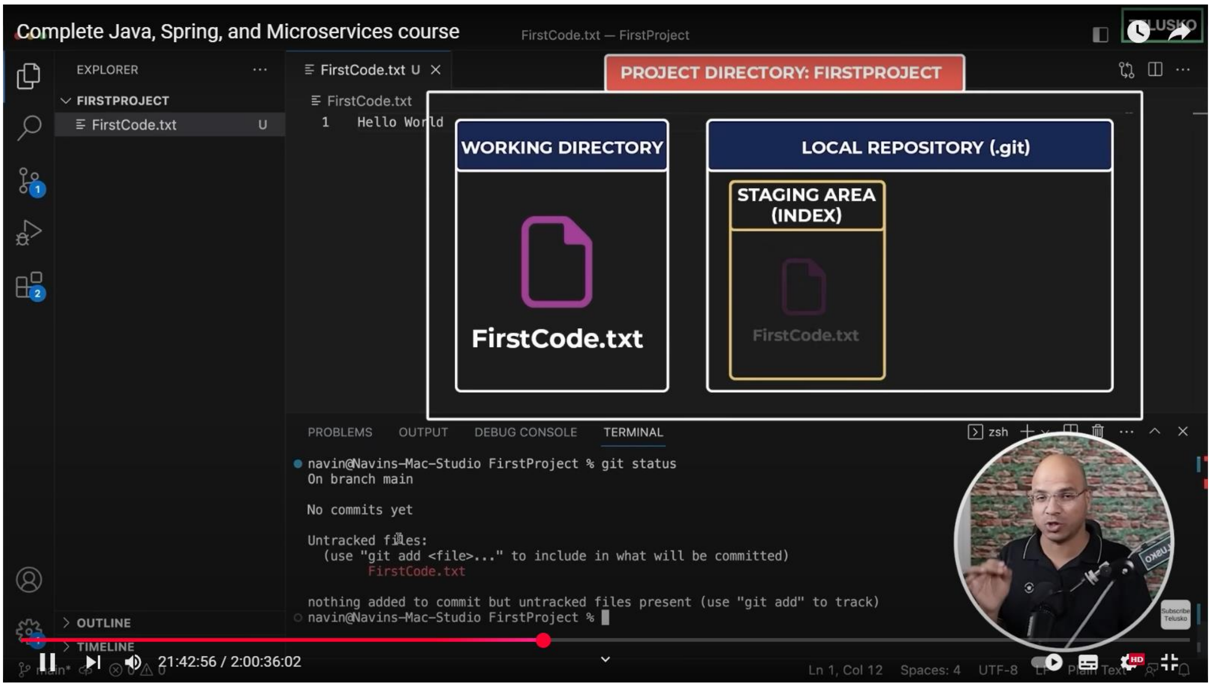
No commits yet

nothing to commit (create/copy files and use "git add" to track)

PS F:\java\Git\FIRSTPROJECT>

// create the file in FIRSTPROJECT folder (FirstCode.txt)

We will send that file to the staging area of the git to tack care of it if we use the git status without adding it shows the error likr include what is commit



```
navin@Navins-Mac-Studio FirstProject % git status
On branch main

No commits yet

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

nothing added to commit but untracked files present (use "git add" to track)
navin@Navins-Mac-Studio FirstProject %
```

```
PS F:\java\Git\FIRSTPROJECT> git status
On branch main


No commits yet


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


nothing added to commit but untracked files present (use "git add" to track)
PS F:\java\Git\FIRSTPROJECT>
```

// code to add the file in git

```
PS F:\java\Git\FIRSTPROJECT> git add FirstCode.txt   (git add <filename>)
```

We are just sending that file to the statging environment but it is not commit yet

```
PS F:\java\Git\FIRSTPROJECT> git status
On branch main


No commits yet


Changes to be committed:
  (use "git rm --cached <file>..." to unstage)   / to unstage that file
        new file:   FirstCode.txt


PS F:\java\Git\FIRSTPROJECT>


PS F:\java\Git\FIRSTPROJECT> git log  // used to view all the commits commits means all the updates we done
fatal: your current branch 'main' does not have any commits yet
PS F:\java\Git\FIRSTPROJECT>
PS F:\java\Git\FIRSTPROJECT> git commit  // hae to save that file in git using coming but we have to type message

hint: Waiting for your editor to close the file... unix2dos: converting file F:/java/Git/FIRSTPROJECT/.git/COMMIT_EDITMSG to DOS format...

dos2unix: converting file F:/java/Git/FIRSTPROJECT/.git/COMMIT_EDITMSG to Unix format...

Aborting commit due to empty commit message.

PS F:\java\Git\FIRSTPROJECT> git commit -m "this is my first commit"   // like this we enter the message for that file while commiting

[main (root-commit) d071705] this is my first commit  // d071705 this is check summit the get function know any changes has completed or not ?

 1 file changed, 1 insertion(+)

 create mode 100644 FirstCode.txt

PS F:\java\Git\FIRSTPROJECT> git status

On branch main

nothing to commit, working tree clean

PS F:\java\Git\FIRSTPROJECT>
```

We can also wee the log of the commit

```
PS F:\java\Git\FIRSTPROJECT> git log

commit d07170527016a0a3d90d836949739a7037b0b264 (HEAD -> main)

Author: phani <batthulaphanindrakumar123@gmail.com>

Date:   Mon Jan 20 13:17:33 2025 +0530


    this is my first commit

PS F:\java\Git\FIRSTPROJECT>
```

NOW WE HAVE TO MAKE SOME CHANGES IN FILE then again we have to add that to the staging using the git add file name

```
PS F:\java\Git\FIRSTPROJECT> git add FirstCode.txt
```

And we have to commit it

```
PS F:\java\Git\FIRSTPROJECT> git commit -m "this is my second  commit"

[main 19be76a] this is my second  commit
```

```
 1 file changed, 1 insertion(+), 1 deletion(-)
PS F:\java\Git\FIRSTPROJECT>
```

we can see the log now

```
PS F:\java\Git\FIRSTPROJECT> git log
commit 19be76a676b583fa63cdecadd0fa1dcecbed2d93 (HEAD -> main)
Author: phani <batthulaphanindrakumar123@gmail.com>
Date:   Mon Jan 20 13:28:46 2025 +0530

    this is my second  commit

commit d07170527016a0a3d90d836949739a7037b0b264
Author: phani <batthulaphanindrakumar123@gmail.com>
Date:   Mon Jan 20 13:17:33 2025 +0530

    this is my first commit
:
```

We can modify file again and without staging also we can perform comit

```
PS F:\java\Git\FIRSTPROJECT> git commit -a -m "this is my third  commit"                  //  (-a   -m)
[main 4a5ef6b] this is my third  commit
 1 file changed, 1 insertion(+), 1 deletion(-)
PS F:\java\Git\FIRSTPROJECT> git log // note to see the previous commits continusly click o enter
```

TO SEE THE WHAT ARE THE CHANGES WE MADE GOT THAT WE CAN SE THE COMMAD (git diff)

```
PS F:\java\Git\FIRSTPROJECT> git diff
diff --git a/FirstCode.txt b/FirstCode.txt
index 5902a57..5b11030 100644
--- a/FirstCode.txt
```

```
+++ b/FirstCode.txt
@@ -1 +1,3 @@
-Hello World !!!  // previous file
\ No newline at end of file
+Hello World !!!
+take input from user    // changed things
+add the values
\ No newline at end of file
```

// NOTE : IF WE MAKE THAT FILE STAGING WE CANT THE DIFFERENCE git diff command will not work

// to view the difference after we do file staging using (git diff –staged)

```
PS F:\java\Git\FIRSTPROJECT> git add FirstCode.txt
PS F:\java\Git\FIRSTPROJECT> git diff
PS F:\java\Git\FIRSTPROJECT> git diff --staged
diff --git a/FirstCode.txt b/FirstCode.txt
index 5902a57..5b11030 100644
--- a/FirstCode.txt
+++ b/FirstCode.txt
@@ -1 +1,3 @@
-Hello World !!!
\ No newline at end of file
+Hello World !!!
+take input from user
+add the values
\ No newline at end of file
:
```

Now we create the multiple files like credit.txt and Readme.md

// ADDING ALL THE FIES TO THE STAGING using (git add .)

```
PS F:\java\Git\FIRSTPROJECT> git add .

PS F:\java\Git\FIRSTPROJECT> git status

On branch main

Changes to be committed:

  (use "git restore --staged <file>..." to unstage)

        modified:   FirstCode.txt

        new file:   Readme.md

        new file:   credits.txt


PS F:\java\Git\FIRSTPROJECT>
```

// removing the file from git repostry using (git rm --cached filename)

//AFTER THE ABOVE COMMAND DELETE THAT FILE IN WORK ENVIRONMENT VS CODE

```
PS F:\java\Git> git commit -m "the credits.txt is deleted"
```

//PUSHING THE LOCAL GIT TO GITHUB

1: CREATE A ACCOUNT IN GIT HUB

2: AND CREATE NEW RPOSITRY

3: TO CONNECT OUR LOCAL GIT TO REMOTE GIT GITHUB USE THIS COMMAND IN THE SAME FOLDER (ssh-keygen –o) ONCE IT IS COMPLETED OPEN FILE MANAGER AND GO TO THE BELOW PATH (C:\Users\PHANI) AND OPEN IT WITH VS CODE AND YOU CAN ABLE TO SEE THE FOLDER (.ssh) and ENTER THE BELOW COMMAND (cd.ssh) in id_rsa.pub

File the key wil there fallow the below commands

```
PS C:\Users\PHANI> cd .ssh

PS C:\Users\PHANI\.ssh> ls


    Directory: C:\Users\PHANI\.ssh
```

```
Mode            LastWriteTime       Length Name

----            -------------       ------ ----

-a----      21-01-2025    11:07         1831 id_rsa

-a----      21-01-2025    11:07          404 id_rsa.pub
```

```
PS C:\Users\PHANI\.ssh> cat id_rsa.pub

ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAABAQCvtsSD/MNMy29tVPr9Lh+eQN6Ed7GOP1zTJCSmg4xM/mwo0dDR
qA1odsR3c8Obh3kzOREjVl1De08s4+A1qsIGb4rwGNdUTSeSGlR2QXOc29JP/ri0CECCfs2BXElyfqvmbT1g6Kon
Kl6F5W533HzQ+yHgIHP5Qd54i6zCCrxU8Sdtisjx7O62iFmqWEJ/4LbM7ipryvFcUAcwWapVsDk9ZI99ancNPcD
KZVowkcvgMb0LczeBlEYJRFjONhUly2bvycwMy/WA1K7g4LdFlq8N0CCyKB97sxDuyNnHjmFjZZiTWdUYcDYOj
kCtdpL5d2At+64nF20+tVYAJ7KOPJtV phani@DESKTOP-UVJTQ6C
```

// like above we can able to see the key copy it compltly and open github and click on settings and open SSH and GPG keys and click on new ssh and give the name and paste the key and click on save

And after that navigate to the folder of our project (Git-code)

AFTER THAT USE THE BELOW COMMAND

```
PS F:\java\Git\git-course> git remote add origin git@github.com:phanindhrakuma/Git-code.git
```

// THE ABOVE LINK WILL BE SEE IN THE GIT HUB THE REPOSTRY WE CREATED THAT IS BELONGS TO (ssh)

```
PS F:\java\Git\git-course> git push -u origin main

The authenticity of host 'github.com (20.207.73.82)' can't be established.

ED25519 key fingerprint is SHA256:+DiY3wvvV6TuJJhbpZisF/zLDA0zPMSvHdkr4UvCOqU.

This key is not known by any other names.

Are you sure you want to continue connecting (yes/no/[fingerprint])? y

Please type 'yes', 'no' or the fingerprint: yes

Warning: Permanently added 'github.com' (ED25519) to the list of known hosts.

Enumerating objects: 6, done.

Counting objects: 100% (6/6), done.
```

```
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (6/6), 539 bytes | 53.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:phanindhrakuma/Git-code.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
PS F:\java\Git\git-course>
3
+
```

// we can know the origen te link we enter

```
git remote -v
origin  git@github.com:phanindhrakuma/Git-code.git (fetch)
origin  git@github.com:phanindhrakuma/Git-code.git (push)
PS F:\java\Git\git-course>
```

// we can also do tagging

```
PS F:\java\Git\git-course> git tag -a v1.0 -m "the first released"
```

// we can view the tags

```
PS F:\java\Git\git-course> git tag
v1.0
```

// we can see the info of that tag using show like below

```
PS F:\java\Git\git-course> git show v1.0
tag v1.0
Tagger: phani <batthulaphanindrakumar123@gmail.com>
Date:   Tue Jan 21 12:20:38 2025 +0530
```

```
the first released

commit 48ac8878d87112659c0cccb1df1a429f3bc21893 (HEAD -> main, tag: v1.0, origin/main)
Author: phani <batthulaphanindrakumar123@gmail.com>
Date:   Tue Jan 21 10:52:49 2025 +0530

    userservice is created
```

// PUSHING OF THE TAG ALSO

```
PS F:\java\Git\git-course> git tag v1.1 -m "21 jan 2025 realeased "
PS F:\java\Git\git-course> git tag
v1.0
v1.1
PS F:\java\Git\git-course> git push origin v1.0
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Writing objects: 100% (1/1), 173 bytes | 173.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:phanindhrakuma/Git-code.git
 * [new tag]         v1.0 -> v1.0
PS F:\java\Git\git-course>
```

// WE CAN EDIT THE FILE AND WE CAN SEND THAT TO GITHUG

```
PS F:\java\Git\git-course> git add USERSERVICE.txt
PS F:\java\Git\git-course> git commit -m "processing new data text"
PS F:\java\Git\git-course> git push origin main
Enumerating objects: 5, done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
```

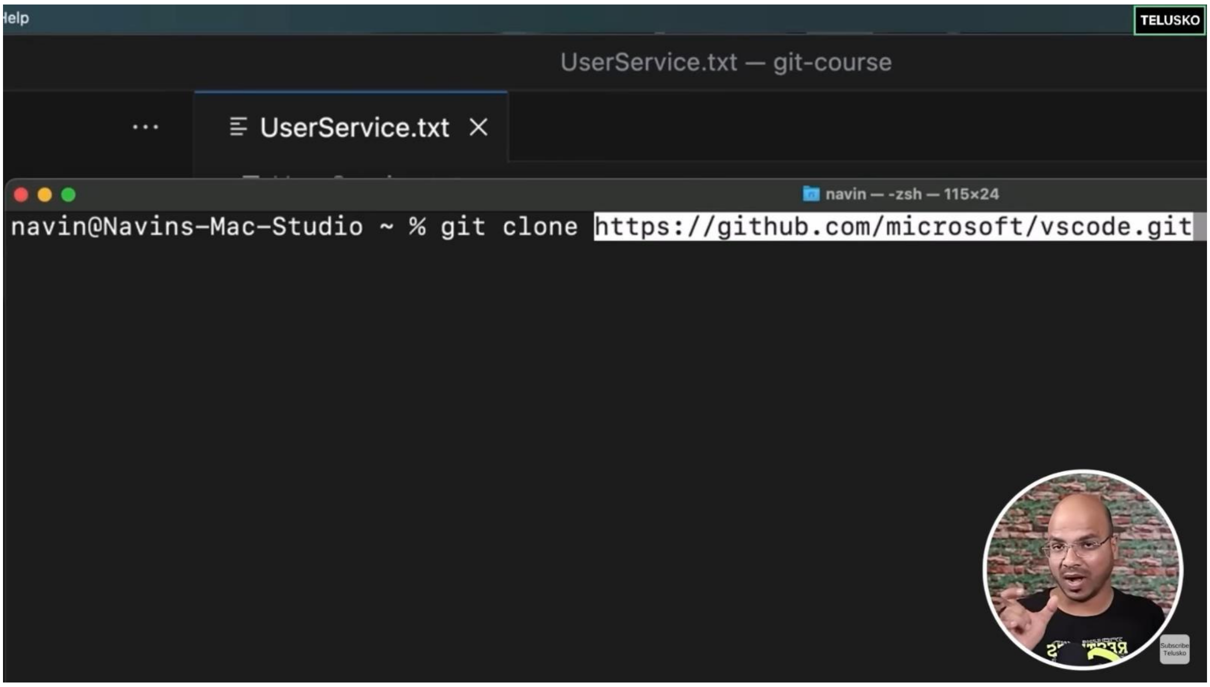
Writing objects: 100% (3/3), 334 bytes | 11.00 KiB/s, done.

Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)

To github.com:phanindhrakuma/Git-code.git

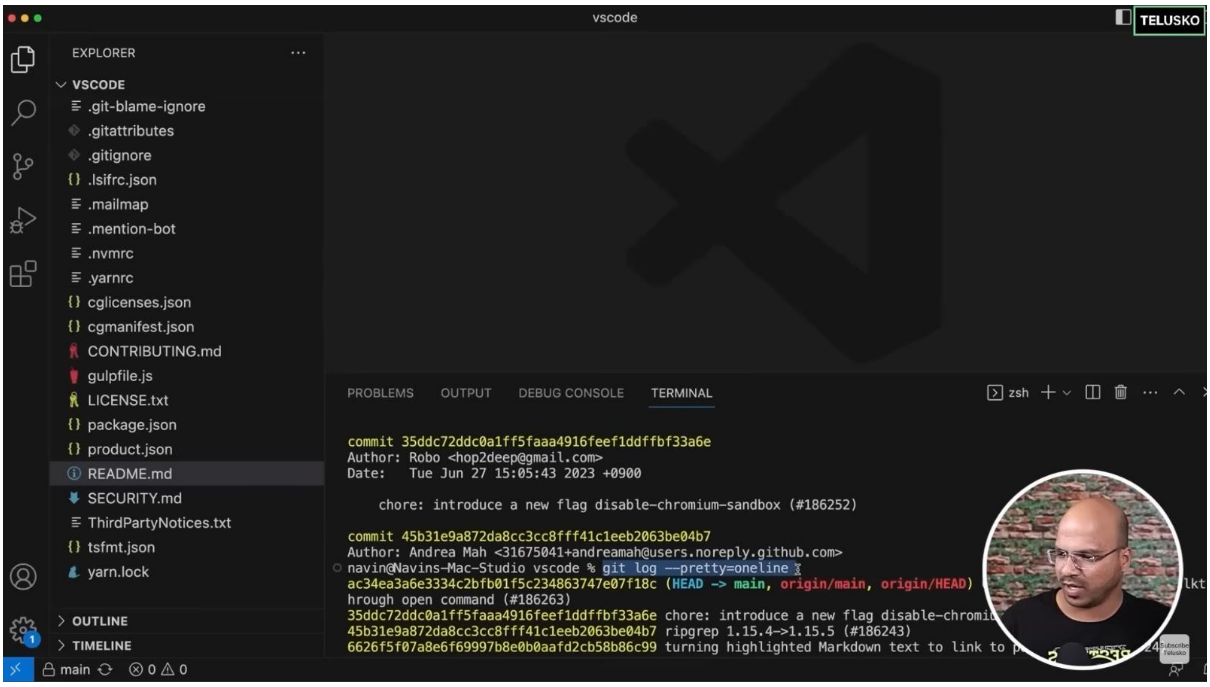
   48ac887..685d794 main -> main

// WE CAN DOWNLOAD THE CODE IN GITHUB (COP THE HTTS)



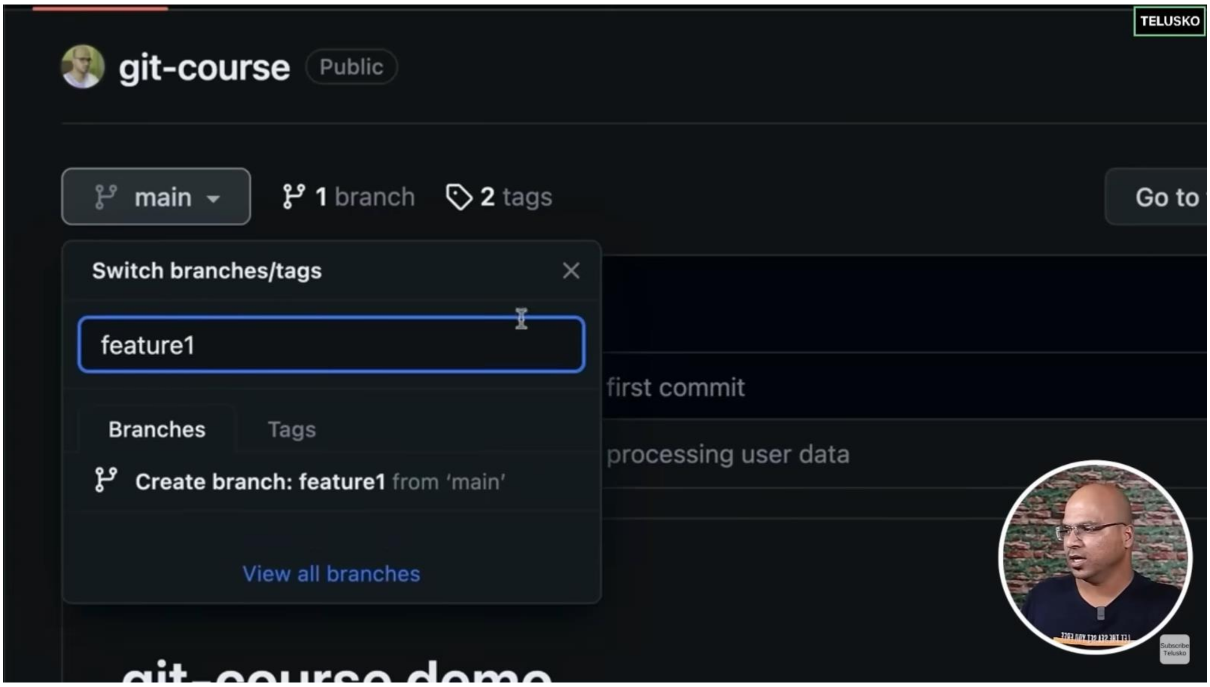
```
navin@Navins-Mac-Studio ~ % git clone https://github.com/microsoft/vscode.git
```

We only see that commits and messages on one line



```
commit 35ddc72ddc0a1ff5faaa4916feef1ddffbf33a6e
Author: Robo <hop2deep@gmail.com>
Date:   Tue Jun 27 15:05:43 2023 +0900

    chore: introduce a new flag disable-chromium-sandbox (#186252)

commit 45b31e9a872da8cc3cc8fff41c1eeb2063be04b7
Author: Andrea Mah <31675041+andreamah@users.noreply.github.com>
navin@Navins-Mac-Studio vscode % git log --pretty=oneline
ac34ea3a6e3334c2bfb01f5c234863747e07f18c (HEAD -> main, origin/main, origin/HEAD)                lkt
hrough open command (#186263)
35ddc72ddc0a1ff5faaa4916feef1ddffbf33a6e chore: introduce a new flag disable-chromi
45b31e9a872da8cc3cc8fff41c1eeb2063be04b7 ripgrep 1.15.4->1.15.5 (#186243)
6626f5f07a8e6f69997b8e0b0aafd2cb58b86c99 turning highlighted Markdown text to link to p                 24
```

:w ca create the branch in the github



// we can also create branch using the command

```
PS F:\java\Git\git-course> git status

On branch main

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



nothing to commit, working tree clean

PS F:\java\Git\git-course> git checkout -b feature1

Switched to a new branch 'feature1'
```

// seeing the branches

```
PS F:\java\Git\git-course> git branch

* feature1  // star is there in the left side so  this branch is active

  main

PS F:\java\Git\git-course>
```

Make the changes in the file and save it and follow the below because of the feature1 branch is active so the changes we made will not effect another branch (main)

On branch main

```
Your branch is up to date with 'origin/main'.
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   USERSERVICE.txt

no changes added to commit (use "git add" and/or "git commit -a")
PS F:\java\Git\git-course> git add USERSERVICE.txt
PS F:\java\Git\git-course> git commit -m "processing new data text"
PS F:\java\Git\git-course> git push origin main
Enumerating objects: 5, done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 334 bytes | 11.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:phanindhrakuma/Git-code.git
   48ac887..685d794  main -> main
PS F:\java\Git\git-course> git tag
v1.0
v1.1
PS F:\java\Git\git-course> git push origin v1.0
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
PS F:\java\Git\git-course> git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
PS F:\java\Git\git-course> git checkout -b feature1
Switched to a new branch 'feature1'
```

```
  main
PS F:\java\Git\git-course> git status
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
        modified:   USERSERVICE.txt

no changes added to commit (use "git add" and/or "git commit -a")
PS F:\java\Git\git-course> git add USERSERVICE.txt
PS F:\java\Git\git-course> git commit -m " experimenting user "
[feature1 e1d7346]  experimenting user
 1 file changed, 3 insertions(+), 1 deletion(-)
PS F:\java\Git\git-course> git status
On branch feature1
nothing to commit, working tree clean
PS F:\java\Git\git-course> git log
commit e1d7346bb1ce361106ca41ac5924474510468b4e (HEAD -> feature1)
Author: phani <batthulaphanindrakumar123@gmail.com>
Date:   Tue Jan 21 13:22:51 2025 +0530

     experimenting user

commit 685d794eb4e5da79fc62db911bd1697a8da0e5f2 (tag: v1.1, origin/main, main)
Author: phani <batthulaphanindrakumar123@gmail.com>
Date:   Tue Jan 21 12:27:00 2025 +0530

    processing new data text

commit 48ac8878d87112659c0cccb1df1a429f3bc21893 (tag: v1.0)
Author: phani <batthulaphanindrakumar123@gmail.com>
Date:   Tue Jan 21 10:52:49 2025 +0530
```

```
    userservice is created

commit 3b96452d87883317e195bf9e7311daf5bc6b63d0
Author: phani <batthulaphanindrakumar123@gmail.com>
Date:   Tue Jan 21 10:49:36 2025 +0530

    this is my first git commit git-course
(END)
```

// we can swich the branches like below

```
PS F:\java\Git\git-course> git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
PS F:\java\Git\git-course> git switch feature1
Switched to branch 'feature1'
PS F:\java\Git\git-course>
```

// WE SWITCHING THE BRANCHES THOSE WILL BECAME ACTIVE

```
PS F:\java\Git\git-course> git switch feature1
Switched to branch 'feature1'
PS F:\java\Git\git-course> git branch
* feature1
  main
PS F:\java\Git\git-course> git switch main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
PS F:\java\Git\git-course> git branch
  feature1
* main
```

```
PS F:\java\Git\git-course>
```

// CREATING THENNEW BRANCHES USING ANOTHER COMMAND

```
PS F:\java\Git\git-course> git switch -c feature2

Switched to a new branch 'feature2'

PS F:\java\Git\git-course> git switch -c feature3

Switched to a new branch 'feature3'

PS F:\java\Git\git-course>
```

// WE CAN SEE ALL BRANCHES PRESENT IS LOCAL AND REMOTE BRANCH

```
PS F:\java\Git\git-course> git branch --all

  feature1

  feature2

* feature3

  remotes/origin/main

Switched to branch 'feature2'
```

// WE CAN O=MOVE TO BREVIOUS BRANCH USING T=BELOW COMMAND

```
PS F:\java\Git\git-course> git switch -

Switched to branch 'feature3'

PS F:\java\Git\git-course> git witch feature1

git: 'witch' is not a git command. See 'git --help'.


The most similar command is

        Switch
```

// WE CAN DIRECTLY SWITCH TO THE BRANCH ALSO WITH NAME

```
PS F:\java\Git\git-course> git switch feature1

Switched to branch 'feature1'
```

PS F:\java\Git\git-course> git branch

* feature1

  feature2

  feature3

  main

PS F:\java\Git\git-course>

// DELETING THE BRANCH

PS F:\java\Git\git-course> git branch -d feature3

Deleted branch feature3 (was e1d7346).

PS F:\java\Git\git-course> git branch

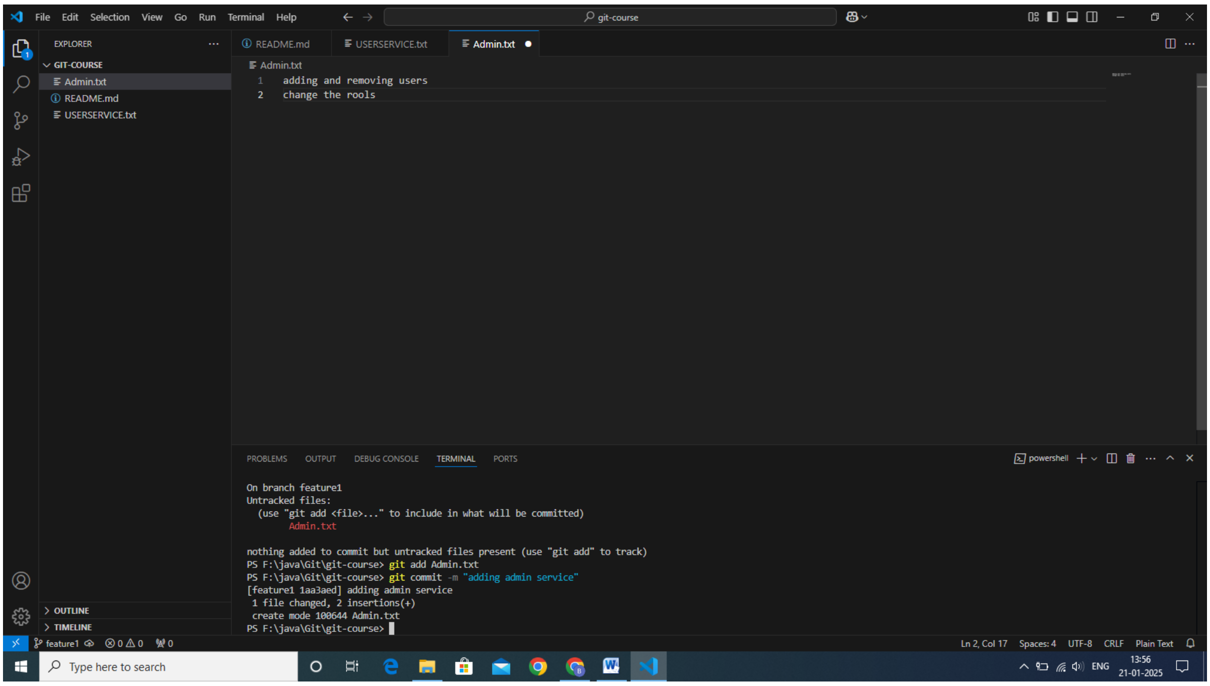
* feature1

  feature2

  main

PS F:\java\Git\git-course>

//CREATING THE NEW FILE IN FEATURE1 BRANCH ADMIN.TXT IN VS CODE



Admin.txt

```
adding and removing users
change the rools
```

```
On branch feature1
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Admin.txt

nothing added to commit but untracked files present (use "git add" to track)
PS F:\java\Git\git-course> git add Admin.txt
PS F:\java\Git\git-course> git commit -m "adding admin service"
[feature1 1aa3aed] adding admin service
 1 file changed, 2 insertions(+)
 create mode 100644 Admin.txt
PS F:\java\Git\git-course>
```

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

PS F:\java\Git\git-course> git switch feature1

* feature1

  main

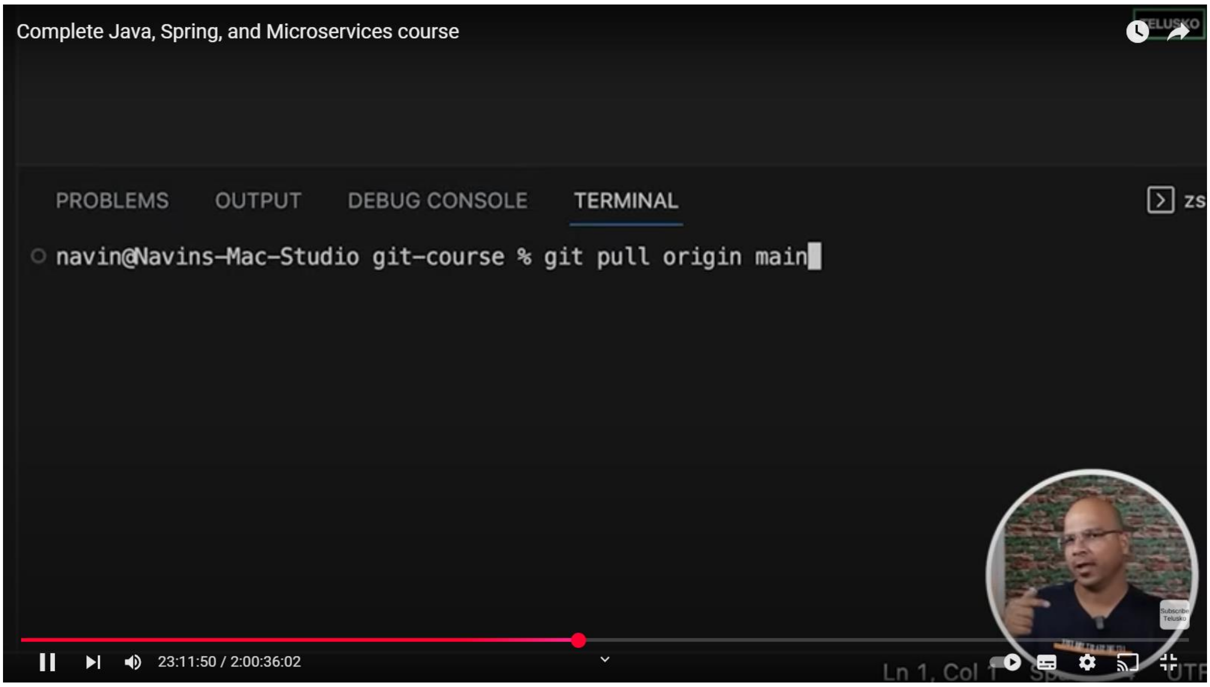
```
PS F:\java\Git\git-course> git status
On branch feature1
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Admin.txt

nothing added to commit but untracked files present (use "git add" to track)
PS F:\java\Git\git-course> git add Admin.txt
PS F:\java\Git\git-course> git commit -m "adding admin service"
[feature1 1aa3aed] adding admin service
 1 file changed, 2 insertions(+)
 create mode 100644 Admin.txt
PS F:\java\Git\git-course>
```

// pushing the branch

```
PS F:\java\Git\git-course> git switch feature1
Switched to branch 'feature1'
PS F:\java\Git\git-course> git push origin feature1
Enumerating objects: 8, done.
Delta compression using up to 8 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 680 bytes | 680.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature1' on GitHub by visiting:
remote:      https://github.com/phanindhrakuma/Git-code/pull/new/feature1
remote:
To github.com:phanindhrakuma/Git-code.git
 * [new branch]      feature1 -> feature1
```

//MERGING THE BRANCHES // merging o feature1 in main branch

// before merging we have to pull the main branch



```
navin@Navins-Mac-Studio git-course % git pull origin main
```

// FIRST WE HAVE TO SWITCH TO THE MAIN BRANCH THEN ONLY WE MERGE

```
PS F:\java\Git\git-course> git branch

* feature1

  main

PS F:\java\Git\git-course> git switch main

Switched to branch 'main'

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

PS F:\java\Git\git-course> git branch

  feature1

* main
```

// COMMAND TO MERGE THE BRANCH

```
PS F:\java\Git\git-course> git merge feature1

Updating 685d794..1aa3aed

Fast-forward

 Admin.txt       | 2 ++

 USERSERVICE.txt | 4 +++-

 2 files changed, 5 insertions(+), 1 deletion(-)

 create mode 100644 Admin.txt

PS F:\java\Git\git-course>
```

// pushing to the remote server from local

```
PS F:\java\Git\git-course> git status
On branch main
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
PS F:\java\Git\git-course> git push origin main
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:phanindhrakuma/Git-code.git
   685d794..1aa3aed  main -> main
PS F:\java\Git\git-course>
```