

Version Control System (VCS), Git Session | Date – 10/02/2021

Spring AU 2021 – February (Batch – 2)

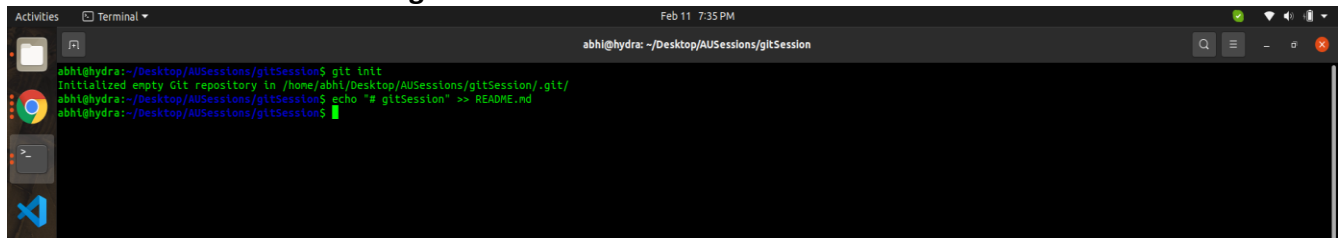
Name – Abhinav Sharma

Email – abhinav.sharma@accolitedigital.com

Git repository : - <https://github.com/abhinav629/gitSession>

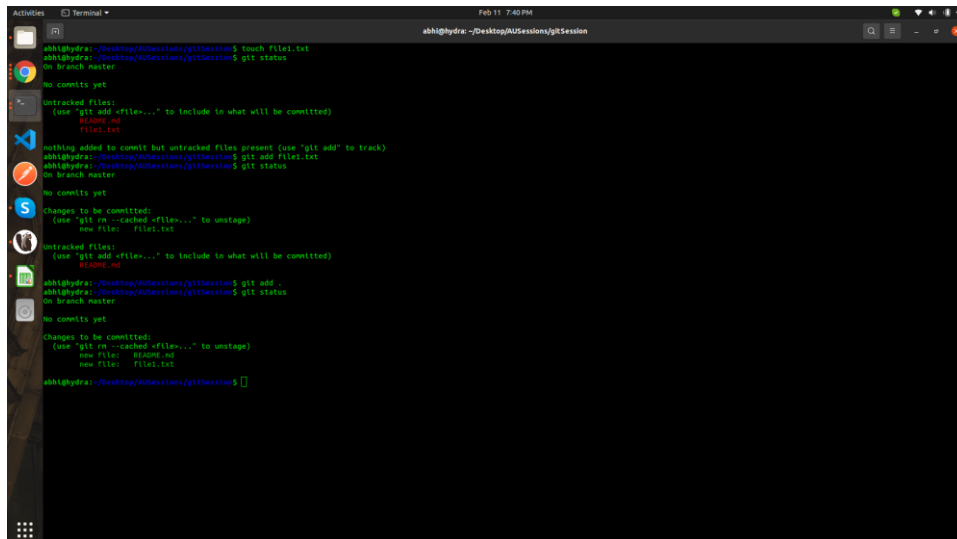
Screenshots of the Work :-

1. Git Initialization and creating Readme file

A terminal window titled 'Terminal' with the path 'abhi@hydra: ~/Desktop/AUSessions/gitSession'. The user has executed the following commands: 'git init', 'git status', and 'echo "# gitSession" >> README.md'. The output shows an initialized empty Git repository and the creation of the README.md file.

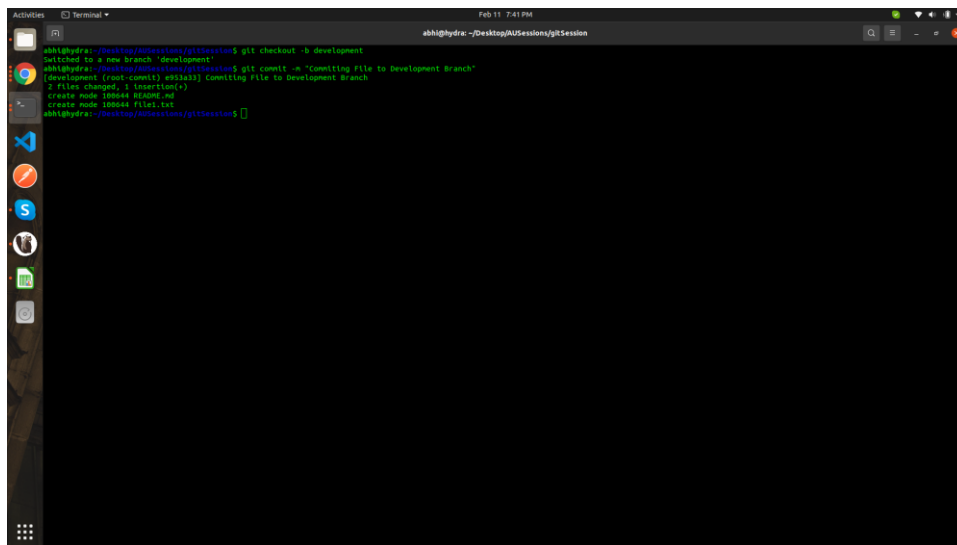
```
abhi@hydra:~/Desktop/AUSessions/gitSession$ git init
Initialized empty Git repository in /home/abhi/Desktop/AUSessions/gitSession/.git/
abhi@hydra:~/Desktop/AUSessions/gitSession$ git status
abhi@hydra:~/Desktop/AUSessions/gitSession$ echo "# gitSession" >> README.md
```

2. Adding Files using both add. and add <file_name>

A terminal window showing the process of adding files to a Git repository. The user runs 'touch file1.txt', 'git status', 'git add file1.txt', and 'git status' again. Then, they run 'git add .' to add all files, followed by 'git status'. The output shows the files being tracked and the commit process.

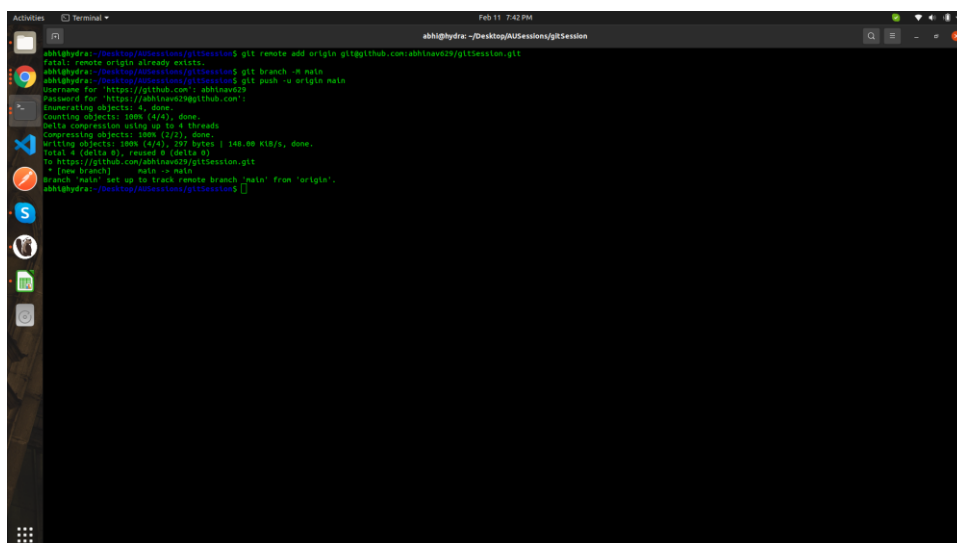
```
abhi@hydra:~/Desktop/AUSessions/gitSession$ touch file1.txt
abhi@hydra:~/Desktop/AUSessions/gitSession$ git status
On branch master
No commits yet
Untracked files:
  (use "git add <file>..." to include in what will be committed)
  README.md
  file1.txt
nothing added to commit but untracked files present (use "git add" to track)
abhi@hydra:~/Desktop/AUSessions/gitSession$ git add file1.txt
abhi@hydra:~/Desktop/AUSessions/gitSession$ git status
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
  new file:   file1.txt
Untracked files:
  (use "git add <file>..." to include in what will be committed)
  README.md
abhi@hydra:~/Desktop/AUSessions/gitSession$ git add .
abhi@hydra:~/Desktop/AUSessions/gitSession$ git status
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
  new file:   README.md
  new file:   file1.txt
abhi@hydra:~/Desktop/AUSessions/gitSession$
```

3. Creating and switching to a branch and committing the changes



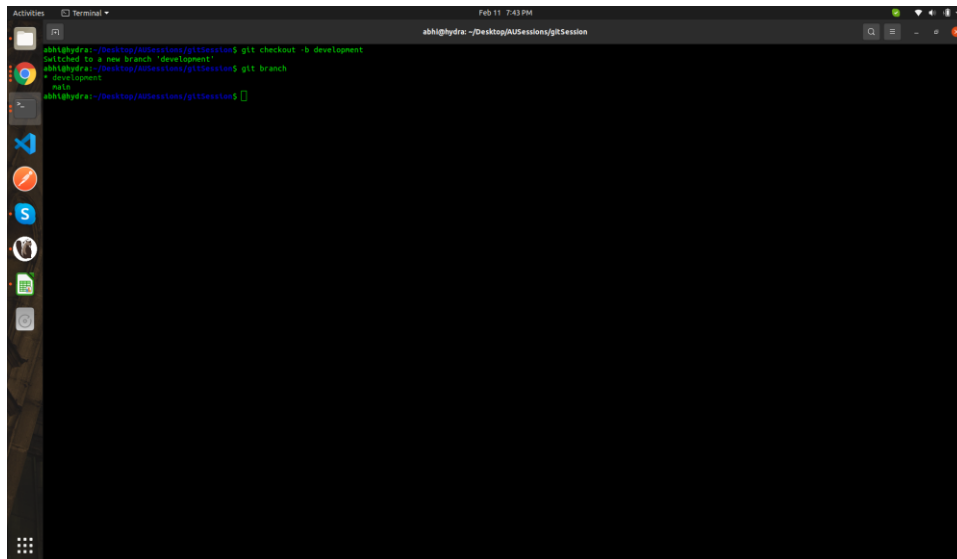
```
abhi@hydra:~/Desktop/Admissions/gitSession$ git checkout -b development
Switched to a new branch 'development'
abhi@hydra:~/Desktop/Admissions/gitSession$ git commit -m "Committing File to Development Branch"
[development (root-commit) 6b1a5d3] Committing File to Development Branch
 2 files changed, 1 insertion(+), 1 deletion(-)
 create mode 100644 README.md
 create mode 100644 file.txt
abhi@hydra:~/Desktop/Admissions/gitSession$
```

4. Setting remote origin and pushing it to the remote repository



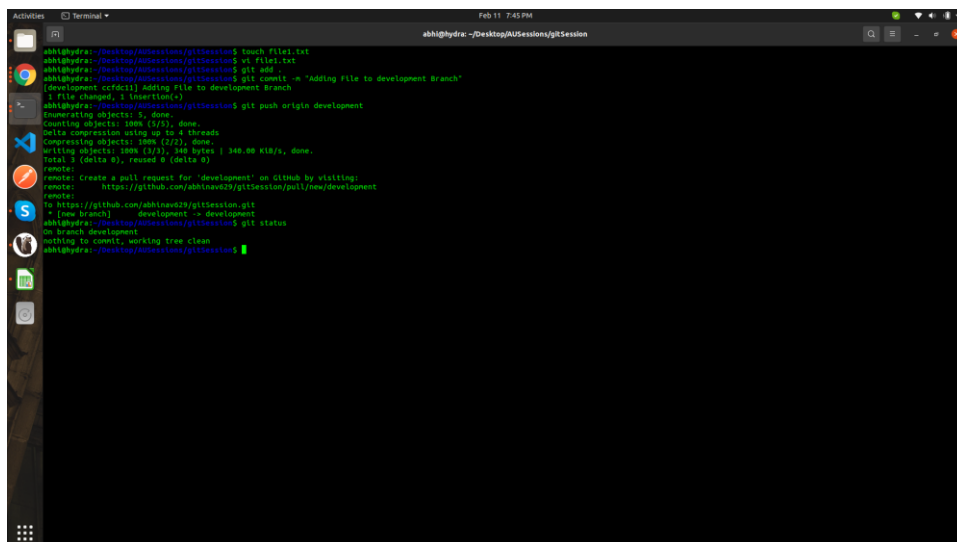
```
abhi@hydra:~/Desktop/Admissions/gitSession$ git remote add origin git@github.com:abhinav29/gitSession.git
fatal: remote origin already exists.
abhi@hydra:~/Desktop/Admissions/gitSession$ git branch -M main
abhi@hydra:~/Desktop/Admissions/gitSession$ git push -u origin main
Username for 'https://github.com': abhinav29
Password for 'https://abhinav29@github.com':
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% (4/4) 287 bytes | 148.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0)
To https://github.com:abhinav29/gitSession.git
 * [new branch]      main -> main
branch 'main' set up to track remote branch 'main' from 'origin'.
abhi@hydra:~/Desktop/Admissions/gitSession$
```

5. Seeing All Git Branches



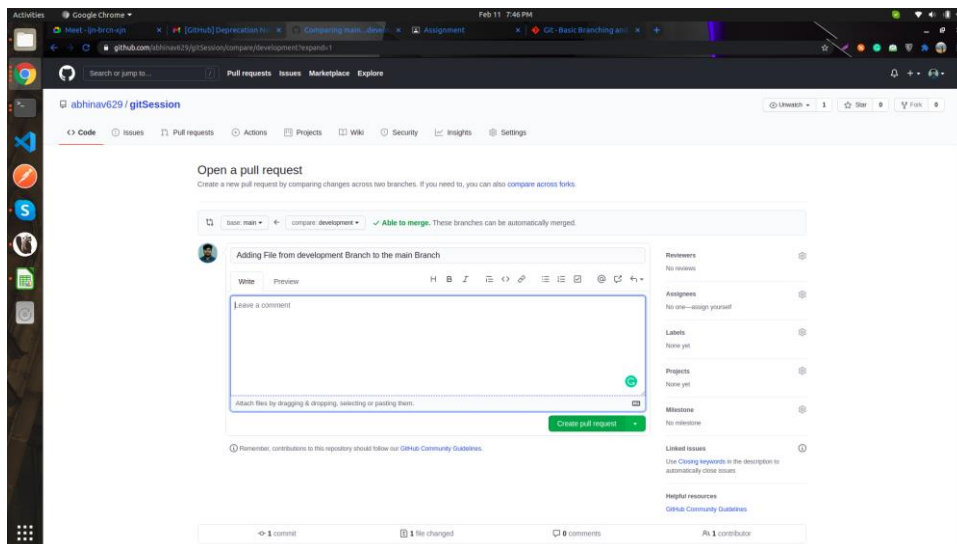
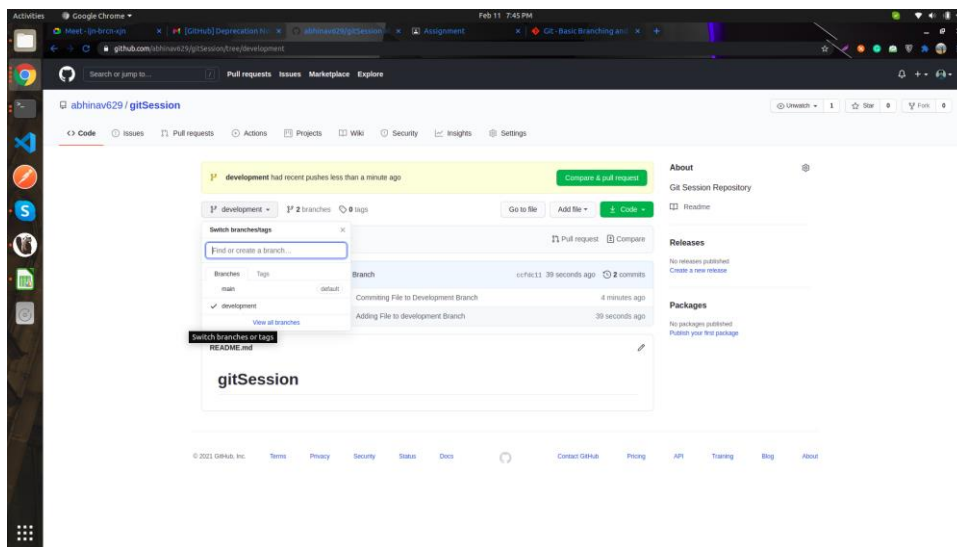
```
abhi@hydra:~/Desktop/AUSessions/gitSession$ git checkout -b development
Switched to a new branch 'development'
abhi@hydra:~/Desktop/AUSessions/gitSession$ git branch
* development
main
abhi@hydra:~/Desktop/AUSessions/gitSession$
```

6. Pushing to a particular branch

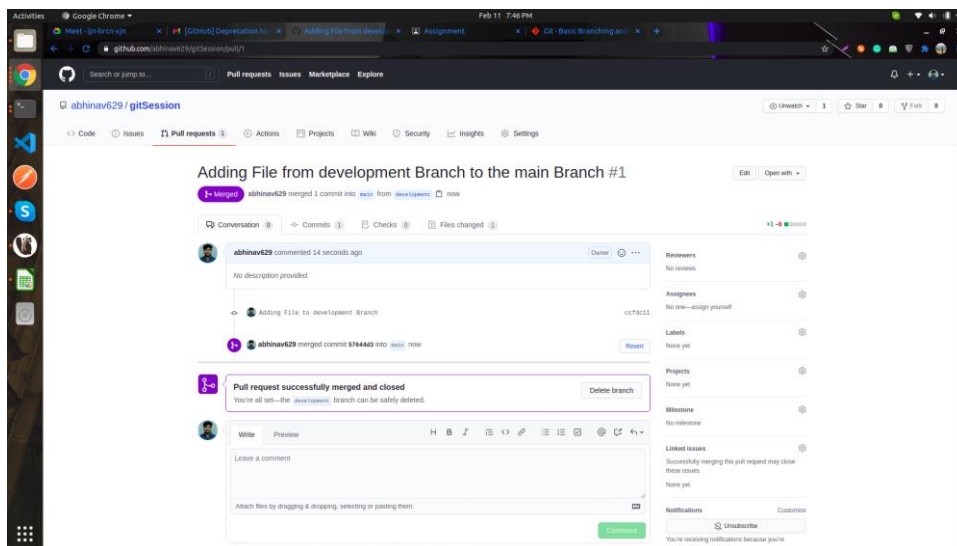
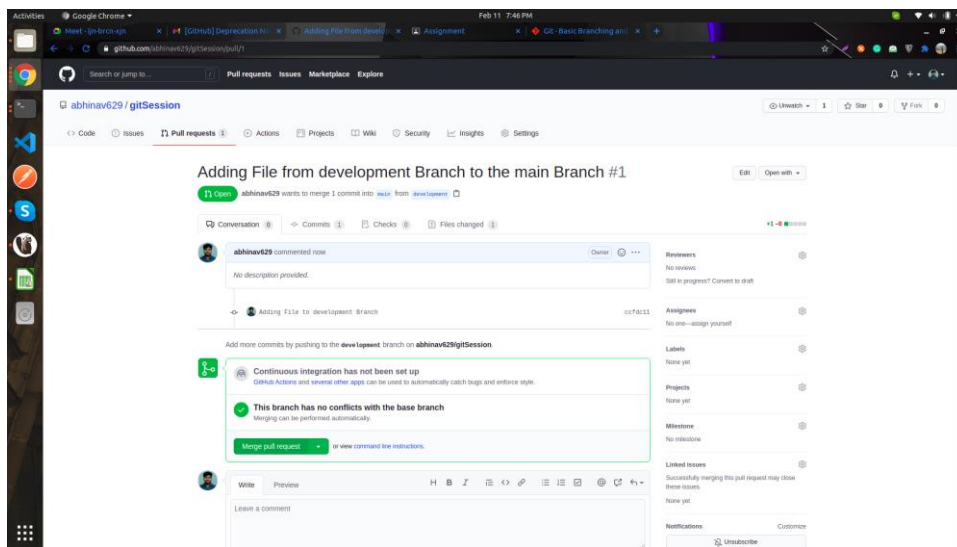


```
abhi@hydra:~/Desktop/AUSessions/gitSession$ touch file.txt
abhi@hydra:~/Desktop/AUSessions/gitSession$ git add .
abhi@hydra:~/Desktop/AUSessions/gitSession$ git commit -m "Adding File to development Branch"
[development c9dc11] Adding File to development Branch
1 file changed, 1 insertion(+)
abhi@hydra:~/Desktop/AUSessions/gitSession$ git push origin development
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 348 bytes | 348.00 KiB/s, done.
Total 3 (Delta 8), reused 0 (Delta 0)
remote: Create a pull request for 'development' on GitHub by visiting:
remote:   https://github.com/abhinav07/gitSession/pull/new/development
remote:
To https://github.com/abhinav07/gitSession.git
 * [new branch]      development -> development
abhi@hydra:~/Desktop/AUSessions/gitSession$ git status
nothing to commit, working tree clean
abhi@hydra:~/Desktop/AUSessions/gitSession$
```

7. Creating pull request



8. Merging the request



9. Resetting Changes made

```
abhi@hydra:~/Desktop/Admissions/gitSession$ git add .
abhi@hydra:~/Desktop/Admissions/gitSession$ git status
On branch development
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   files.txt
        new file:   files.txt

abhi@hydra:~/Desktop/Admissions/gitSession$ git reset
Unstaged changes after reset:
        modified:   files.txt
abhi@hydra:~/Desktop/Admissions/gitSession$ git status
On branch development
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:   files.txt

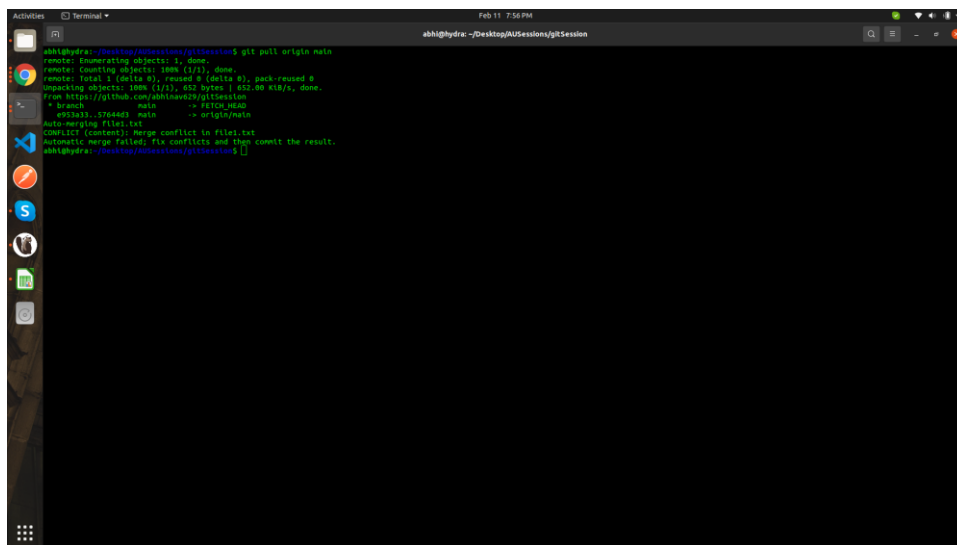
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        files.txt

no changes added to commit (use "git add" and/or "git commit -a")
abhi@hydra:~/Desktop/Admissions/gitSession$
```

10. Case in which the remote branch is ahead of our local repository branch

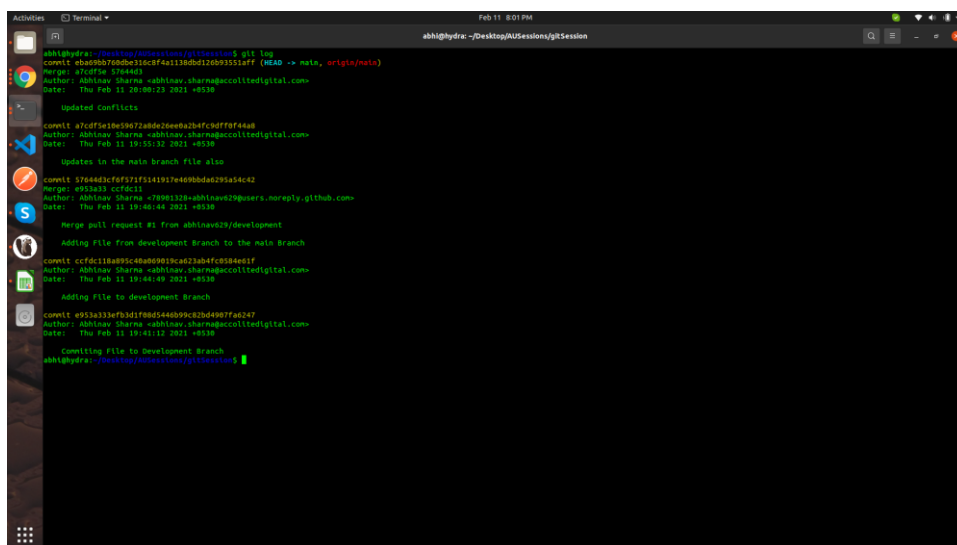
```
abhi@hydra:~/Desktop/Admissions/gitSession$ git push origin main
To https://github.com/abhinav29/gitSession.git
! [rejected]        main -> main (fetch first)
error: failed to push some refs to https://github.com/abhinav29/gitSession.git
hint: Updates were rejected because the remote contains work that you do
hint: not have locally. This is usually caused by another repository pushing
hint: to the same ref. You may want to first integrate the remote changes
hint: (e.g., "git pull" before pushing again).
hint: See the "Note about fast-forward" in 'git push --help' for details.
abhi@hydra:~/Desktop/Admissions/gitSession$
```

11. Pulling changes to get both branches even by updating the local repository branch



```
abhi@hydra:~/Desktop/Admissions/gitSession$ git pull origin main
remote: Enumerating objects: 1, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (1/1), 632 bytes | 632.00 KiB/s, done.
From https://github.com/abhinav629/gitSession
+ branch main -> FETCH_HEAD
e953a33..57644d3 main -> origin/main
Merge: 1 file changed
CONFLICT (content): Merge conflict in file1.txt
Automatic merge failed; fix conflicts and then commit the result.
abhi@hydra:~/Desktop/Admissions/gitSession$
```

12. Git log- for getting logs



```
abhi@hydra:~/Desktop/Admissions/gitSession$ git log
commit eba99b760db51c6f4a118dd126b9351aff (HEAD -> main, origin/main)
Merge: a7c0f5e 57644d3
Author: Abhinav Sharma <abhinav.sharmagaccollidedigital.com>
Date: Thu Feb 11 20:09:23 2021 +0530

    Updated Conflicts

commit a7c0f5e19e59672a86e26e0a2b4fcddff0f44a8
Author: Abhinav Sharma <abhinav.sharmagaccollidedigital.com>
Date: Thu Feb 11 19:55:32 2021 +0530

    Updates to the main branch file also

commit 37644d3c0f52f3f5141917e469bda6295a54c42
Merge: e953a33 ccfdc31
Author: Abhinav Sharma <abhinav.sharmagaccollidedigital.com>
Date: Thu Feb 11 19:44:49 2021 +0530

    Merge pull request #1 from abhinav629/development

    Adding File from development Branch to the main Branch

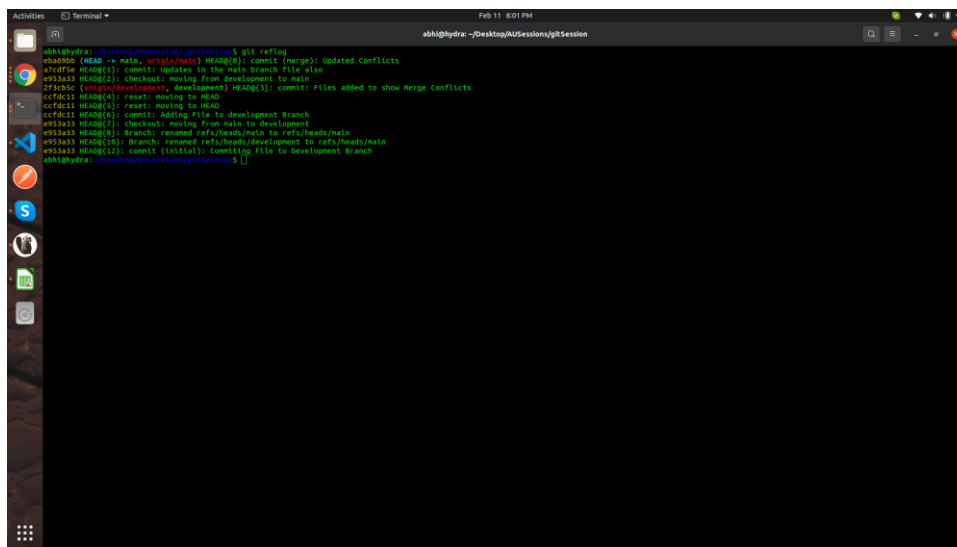
commit ccfdc318a9954b9a9039c212abfc4984e51f
Author: Abhinav Sharma <abhinav.sharmagaccollidedigital.com>
Date: Thu Feb 11 19:44:49 2021 +0530

    Adding File to development Branch

commit e953a33e7b7bd1f0bd5440b99c82bd4907fae247
Author: Abhinav Sharma <abhinav.sharmagaccollidedigital.com>
Date: Thu Feb 11 19:41:12 2021 +0530

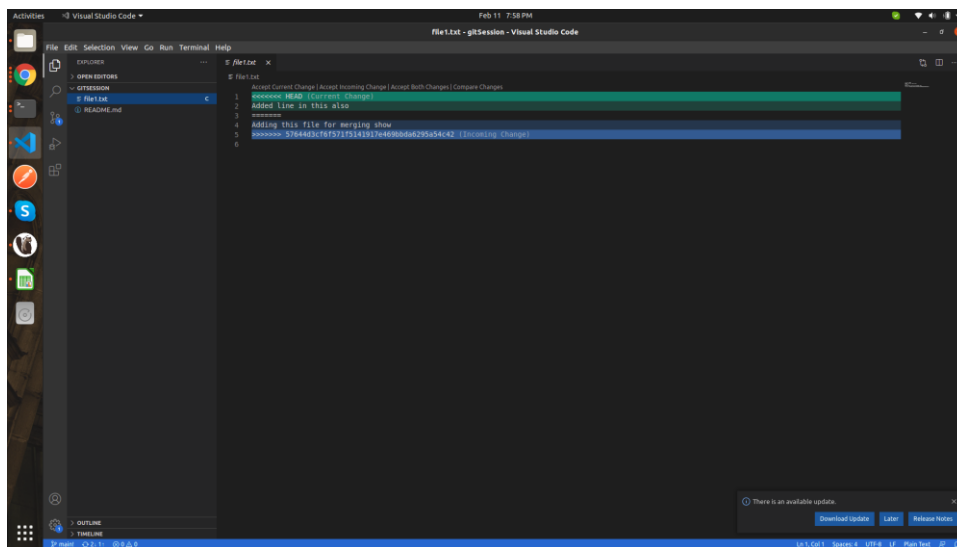
    Committing File to Development Branch
abhi@hydra:~/Desktop/Admissions/gitSession$
```

13. Git relog – For all logs including all change and other details

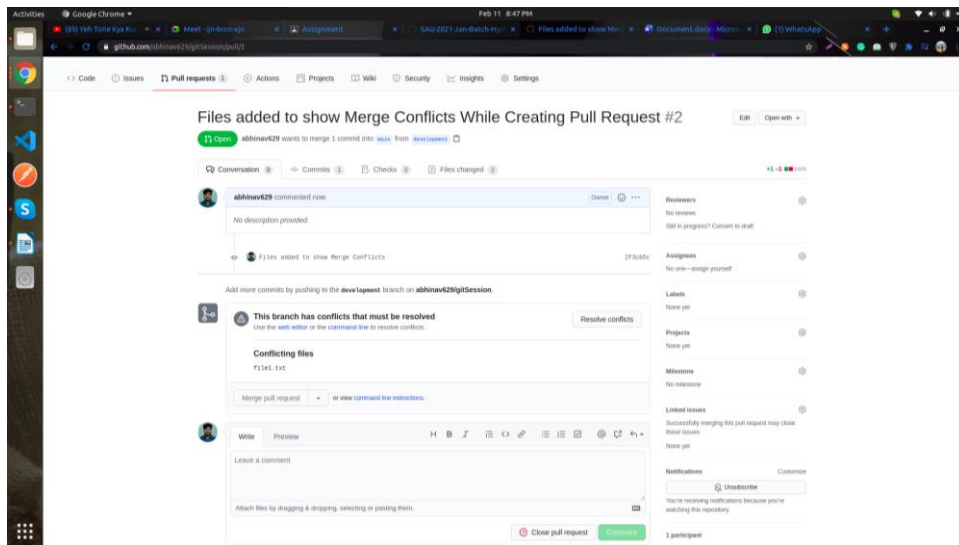


```
abhi@hydra: ~/Desktop/ABSessions/gitSession$ git relog
cb4096 HEAD -> main, origin/main HEAD(6): commit (merge): Updated Conflicts
a7c0f9c HEAD(1): commit: updates in the main branch file also
e913a19 HEAD(2): checkout: moving from development to main
7f5b35c (origin/development, development) HEAD(3): commit: Files added to show Merge Conflicts
ccf6c11 HEAD(4): reset: moving to HEAD
ccf6c11 HEAD(5): reset: moving to HEAD
e913a19 HEAD(6): commit: Adding File to development Branch
e913a19 HEAD(7): checkout: moving from main to development
e913a19 HEAD(8): Branch: renamed refs/heads/main to refs/heads/main
e913a19 HEAD(9): Branch: renamed refs/heads/development to refs/heads/main
e913a19 HEAD(10): commit (initial): commiting file to development Branch
abhi@hydra:~/Desktop/ABSessions/gitSession$
```

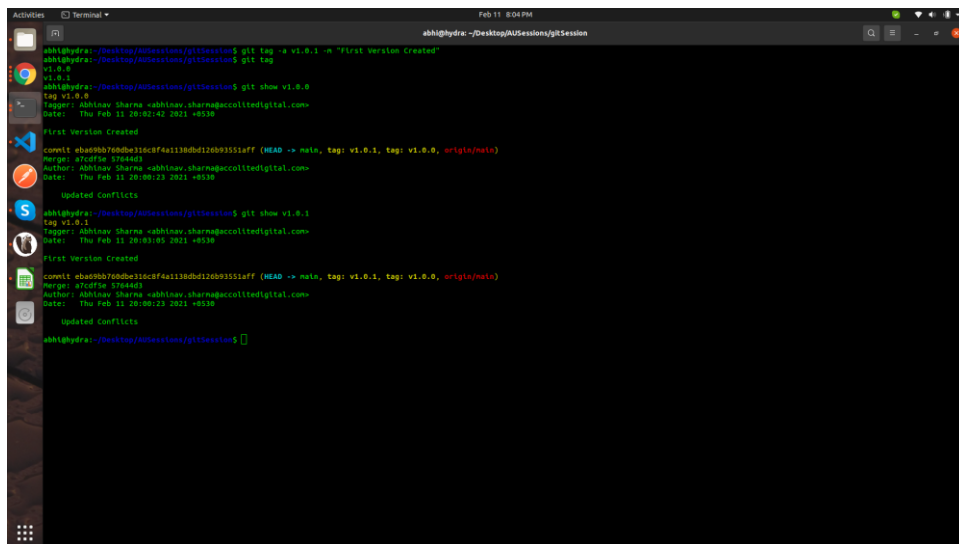
14. Tackling Merge Conflicts – both from terminal as well as github



```
File.txt - gitSession - Visual Studio Code
1 Accept Current Change | Accept Incoming Change | Accept Both Changes | Compare Changes
2
3 1: Remove HEAD (Current Changes)
4 2: Added line in this also
5 =====
6 Adding this file for merging show
7 3: Remove HEAD (Incoming Change)
8
```

15. Tags Create and Listing



16. Creating second version

```
Activities Terminal Feb 11 8:05 PM abhi@hydra: ~/Desktop/NUSSession/gitSession
Date: Thu Feb 11 20:00:23 2021 +0530
Updated Conflicts
abhi@hydra:~/Desktop/NUSSession/gitSession$ git show v1.0.1
tag v1.0.1
Tagger: Abhinav Sharma <abhinav.sharma@collidedigital.com>
Date: Thu Feb 11 20:03:05 2021 +0530
First Version Created
commit eb490b70bd0a31cccf8a118dd120b9351aff (HEAD -> main, tag: v1.0.1, tag: v1.0.0, origin/main)
Merge: a7c0f5e 57644d3
Author: Abhinav Sharma <abhinav.sharma@collidedigital.com>
Date: Thu Feb 11 20:00:23 2021 +0530
Updated Conflicts
abhi@hydra:~/Desktop/NUSSession/gitSession$ touch file3.txt
abhi@hydra:~/Desktop/NUSSession/gitSession$ git add.
abhi@hydra:~/Desktop/NUSSession/gitSession$ git commit -m "Adding file3 for adding new tag"
[main web1a7d] Adding file3 for adding new tag
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 file3.txt
abhi@hydra:~/Desktop/NUSSession/gitSession$ git push origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 328 bytes | 328.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/abhinav29/gitSession.git
eb490b..web1a7d main -> main
abhi@hydra:~/Desktop/NUSSession/gitSession$ git tag -a v1.0.2 -m "Second Version Created"
abhi@hydra:~/Desktop/NUSSession/gitSession$ git tag
v1.0.0
v1.0.1
v1.0.2
abhi@hydra:~/Desktop/NUSSession/gitSession$ git show v1.0.2
tag v1.0.2
Tagger: Abhinav Sharma <abhinav.sharma@collidedigital.com>
Date: Thu Feb 11 20:05:11 2021 +0530
Second Version Created
commit web1a7dfac38127f0d4578eae9f6a2a59707187 (HEAD -> main, tag: v1.0.2, origin/main)
Author: Abhinav Sharma <abhinav.sharma@collidedigital.com>
Date: Thu Feb 11 20:04:41 2021 +0530
Adding file3 for adding new tag
diff --git a/file3.txt b/file3.txt
new file mode 100644
index 0000000..a58dc29
abhi@hydra:~/Desktop/NUSSession/gitSession$
```

17. Using mv for updating fileName

```
Activities Terminal Feb 11 8:08 PM abhi@hydra: ~/Desktop/NUSSession/gitSession
abhi@hydra:~/Desktop/NUSSession/gitSession$ touch file4.txt
abhi@hydra:~/Desktop/NUSSession/gitSession$ git add file4.txt
abhi@hydra:~/Desktop/NUSSession/gitSession$ git commit -m "Added file4"
[main 1c3b4d] Added file4
2 files changed, 0 insertions(+), 0 deletions(-)
create mode 100644 file4.txt
create mode 100644 updatedFile4.txt
abhi@hydra:~/Desktop/NUSSession/gitSession$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
Use 'git push' to publish your local commits.

nothing to commit, working tree clean
abhi@hydra:~/Desktop/NUSSession/gitSession$ git mv file4.txt updatedNameForFile4.txt
abhi@hydra:~/Desktop/NUSSession/gitSession$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
Use 'git push' to publish your local commits.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        file4.txt -> updatedNameForFile4.txt
        renamed: file4.txt -> updatedNameForFile4.txt (100%)
abhi@hydra:~/Desktop/NUSSession/gitSession$ git add updatedNameForFile4.txt
abhi@hydra:~/Desktop/NUSSession/gitSession$ git commit -m "Added new name file"
[main 1c3b4d] Added new name file
1 file changed, 0 insertions(+), 0 deletions(-)
rename file4.txt -> updatedNameForFile4.txt (100%)
abhi@hydra:~/Desktop/NUSSession/gitSession$ git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 4 threads
Compressing objects: 100% (1/1), done.
Writing objects: 100% (1/1), 328 bytes | 328.00 KiB/s, done.
Total 4 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), done.
To https://github.com/abhinav29/gitSession.git
eb490b..1c3b4d main -> main
abhi@hydra:~/Desktop/NUSSession/gitSession$
```

18. Using rm to remove cached changes and reverting the changes

```
abhi@hydra:~/Desktop/Admissions/gitSession$ touch file1.txt
abhi@hydra:~/Desktop/Admissions/gitSession$ 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)
  file1.txt

nothing added to commit but untracked files present (use "git add" to track)
abhi@hydra:~/Desktop/Admissions/gitSession$ git add .
abhi@hydra:~/Desktop/Admissions/gitSession$ git commit -m "Added Files"
[main 3173cd8] Added Files
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 file1.txt
abhi@hydra:~/Desktop/Admissions/gitSession$ git rm --cached file1.txt
rm 'file1.txt'
abhi@hydra:~/Desktop/Admissions/gitSession$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
  deleted:    file1.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)
  file1.txt
abhi@hydra:~/Desktop/Admissions/gitSession$
```

19. Using git stash – push, apply and pop commands

```
abhi@hydra:~/Desktop/Admissions/gitSession$ touch newfile.txt
abhi@hydra:~/Desktop/Admissions/gitSession$ git add .
abhi@hydra:~/Desktop/Admissions/gitSession$ 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:   newfile.txt

abhi@hydra:~/Desktop/Admissions/gitSession$ git stash
Saved working directory and index state WIP on main: 4a3bd77 Saving new files for showing more functionalities
abhi@hydra:~/Desktop/Admissions/gitSession$ git stash list
stash@0: WIP on main: 4a3bd77 Saving new files for showing more functionalities
stash@1: WIP on main: 3173cd8 Added Files
stash@2: WIP on main: 3173cd8 Added Files
abhi@hydra:~/Desktop/Admissions/gitSession$ git stash apply
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:   newfile.txt

abhi@hydra:~/Desktop/Admissions/gitSession$ git stash
Saved working directory and index state WIP on main: 4a3bd77 Saving new files for showing more functionalities
abhi@hydra:~/Desktop/Admissions/gitSession$ git stash list
stash@0: WIP on main: 4a3bd77 Saving new files for showing more functionalities
stash@1: WIP on main: 4a3bd77 Saving new files for showing more functionalities
stash@2: WIP on main: 3173cd8 Added Files
stash@3: WIP on main: 3173cd8 Added Files
abhi@hydra:~/Desktop/Admissions/gitSession$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
abhi@hydra:~/Desktop/Admissions/gitSession$ git stash pop
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:   newfile.txt

abhi@hydra:~/Desktop/Admissions/gitSession$ 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:   newfile.txt
abhi@hydra:~/Desktop/Admissions/gitSession$
```