

NAME: AMAN AGRAWAL
ROLL NO: G24AIT172
SUB: ML-OPs
TASK : ASSIGNMENT-1

GitHub Repository link :- <https://github.com/Aman007Agg/MLOps-Jan2025>

Report Structure for GitHub Assignment:

1. Introduction:

"This assignment involves using Git and GitHub to manage source code repositories, handle merge conflicts, and practice basic Git commands for version control."

2. Steps Followed:

- **Step 1:** Created a new public repository MLOps-Jan2025 on GitHub.
- **Step 2:** Cloned the repository to my local system using the command `git clone git@github.com:Aman007Agg/MLOps-Jan2025.git`.
- **Step 3:** Created a new file `example.txt` and committed the changes with the message "Added example.txt file".
- **Step 4:** Created two branches (G24AIT171 and G24AIT173), made changes to `example.txt` on each branch.
- **Step 5:** Merged branches and handled merge conflicts.
- **Step 6:** Deleting the branch (`git branch -d <branch_name>`).
- **Step 7:** Recovering the branch using `git reflog` and `git checkout -b`.
- **Step 8:** Tagging the commit and pushing it using `git push --tags`.

3. Screenshots:

- Screenshot 1: `git log --graph --oneline` before the merge (showing your commit history).
- Screenshot 2: After resolving the merge conflict (showing the final commit history).
- Screenshot 3: Push confirmation after pushing the resolved changes to GitHub.

4. Challenges Faced:

- "I initially encountered a merge conflict while merging the G24AIT171 branch into main, which required manual conflict resolution."
- "Another challenge was ensuring the correct branch was checked out before committing changes."

5. Solutions:

- "I resolved the merge conflict by manually editing `example.txt` and committing the resolved file."

- "I double-checked my branch before committing and pushed all changes to GitHub successfully."

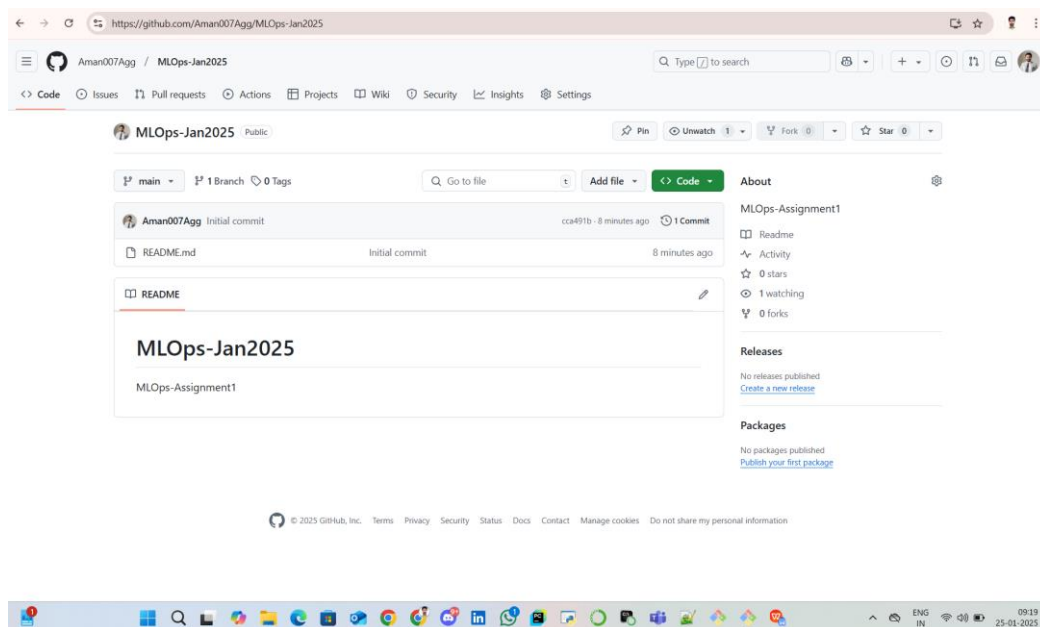
6. Conclusion:

- "Through this assignment, I gained hands-on experience with using Git for version control, including branching, merging, conflict resolution, and pushing changes to GitHub."

7. GitHub Repository Link:

- GitHub repository link: <https://github.com/Aman007Agg/MLOps-Jan2025>

A. You need to create a new public repository on GitHub, named **MLOps-Jan2025**.



B. Clone this repository to your local system.

```
aman0@AMANAGRAWAL MINGW64 ~
$ git config --global user.name
Aman007Agg

aman0@AMANAGRAWAL MINGW64 ~
$ git config --global user.email
g24ait172@iitj.ac.in

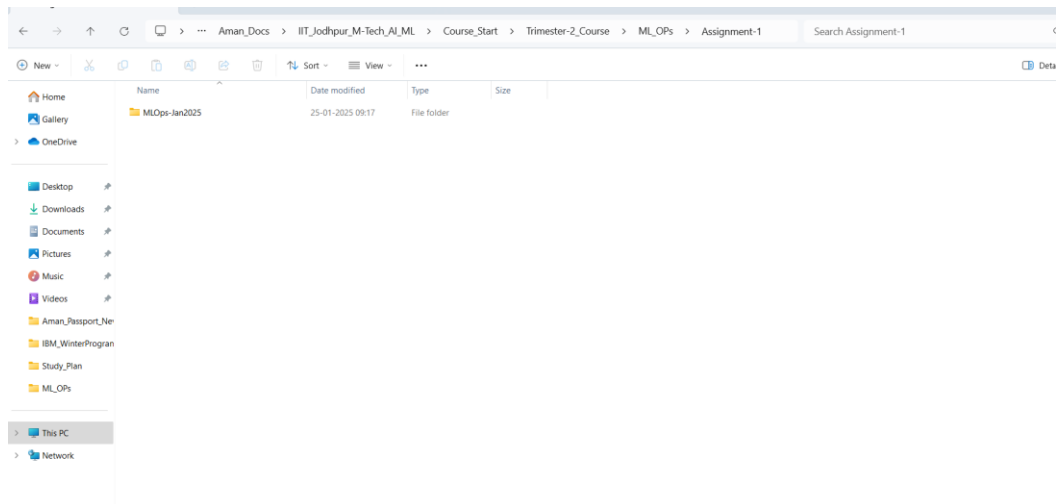
aman0@AMANAGRAWAL MINGW64 ~
$ cd C:\Aman_Docs\IIT_Jodhpur_M-Tech_AI_ML\Course_Start\Trimester-2_Course\ML_Ops\Assignment-1
bash: cd: C:\Aman_Docs\IIT_Jodhpur_M-Tech_AI_ML\Course_Start\Trimester-2_Course\ML_Ops\Assignment-1: No such file or directory

aman0@AMANAGRAWAL MINGW64 ~
$ cd /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1
$ git clone https://github.com/Aman007Agg/MLOps-Jan2025.git
Cloning into 'MLOps-Jan2025'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1
$ cd MLOps-Jan2025/

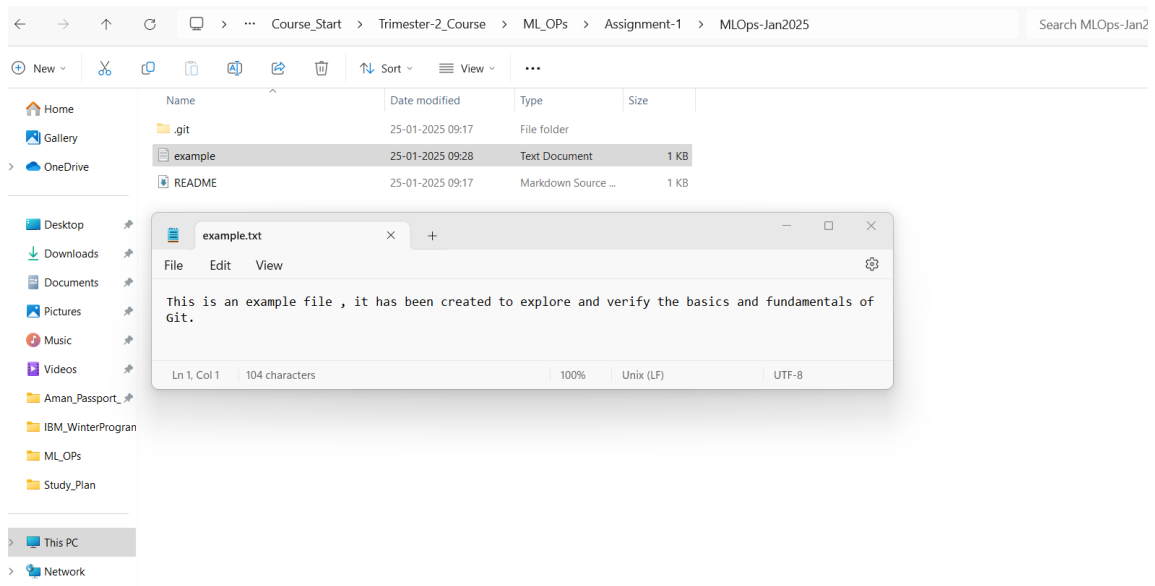
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1/MLOps-Jan2025 (main)
$ |
```



C. Add a file named **example.txt** to the repository, and commit the changes with a proper commit message.

1. Create a new file named `example.txt`:

```
aman@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1
$ cd ML_Ops-Jan2025/
aman@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ echo "This is an example file , it has been created to explore and verify the basics and fundamentals of Git." > example.txt
```



2. Stage the file for commit, and Commit the file with a proper message, and Push the changes to GitHub.

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1
$ cd ML_Ops-Jan2025/

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ echo "This is an example file , it has been created to explore and verify the basics and fundamentals of Git." > example.txt

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git add example.txt
warning: in the working copy of 'example.txt', LF will be replaced by CRLF the next time Git touches it

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ 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:   example.txt

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git commit -m "Added example.txt file"
[main 7301f1f] Added example.txt file
1 file changed, 1 insertion(+)
create mode 100644 example.txt

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git push origin main
info: please complete authentication in your browser...
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 22 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 372 bytes | 372.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/Aman007Agg/ML_Ops-Jan2025.git
   cca491b..7301f1f  main -> main

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git log
commit 7301f1fdfeb1ec31de0762fe56ea31b8886fa148 (HEAD -> main, origin/main, origin/HEAD)
Author: Aman007Agg <G24ait172@iitj.ac.in>
Date: Sat Jan 25 09:38:00 2025 +0530

    Added example.txt file

commit cca491bdh2d09d0321c6b44f518db37d6487ba7e
Author: Aman Agrawal <G24ait172@iitj.ac.in>
Date: Sat Jan 25 09:10:34 2025 +0530

    Initial commit
```

D. Create two new branches. If your roll number is M__X, name one branch M__X-1 and the other M__X+1 (e.g., for roll number M__001, you would create branches M__000 and M__002).

Roll Number - G24AIT172

Two branches have been created * G24AIT171

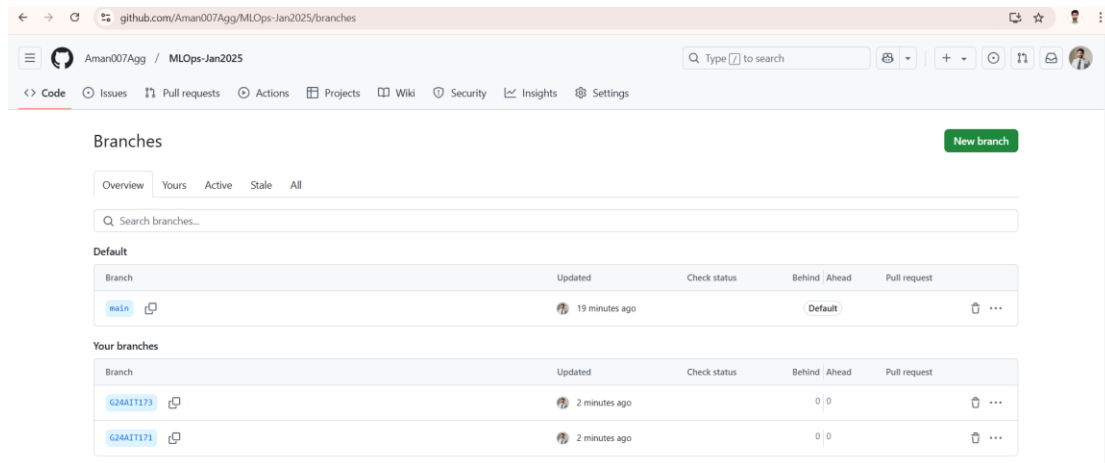
* G24AIT173

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git branch G24AIT171

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git branch G24AIT173

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git push origin G24AIT171
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'G24AIT171' on GitHub by visiting:
remote:   https://github.com/Aman007Agg/ML_Ops-Jan2025/pull/new/G24AIT171
remote:
To https://github.com/Aman007Agg/ML_Ops-Jan2025.git
 * [new branch]      G24AIT171 -> G24AIT171

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/ML_Ops-Jan2025 (main)
$ git push origin G24AIT173
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'G24AIT173' on GitHub by visiting:
remote:   https://github.com/Aman007Agg/ML_Ops-Jan2025/pull/new/G24AIT173
remote:
To https://github.com/Aman007Agg/ML_Ops-Jan2025.git
 * [new branch]      G24AIT173 -> G24AIT173
```



E. In the X+1 branch, modify the content of the existing file. In the X-1 branch, replace the content entirely. Commit these changes, then take a screenshot of the output of the following command: `git log --graph --oneline` and include it in your report.

1. Switch to the G24AIT173 branch, Modify example.txt, and Commit the changes, and Push the changes

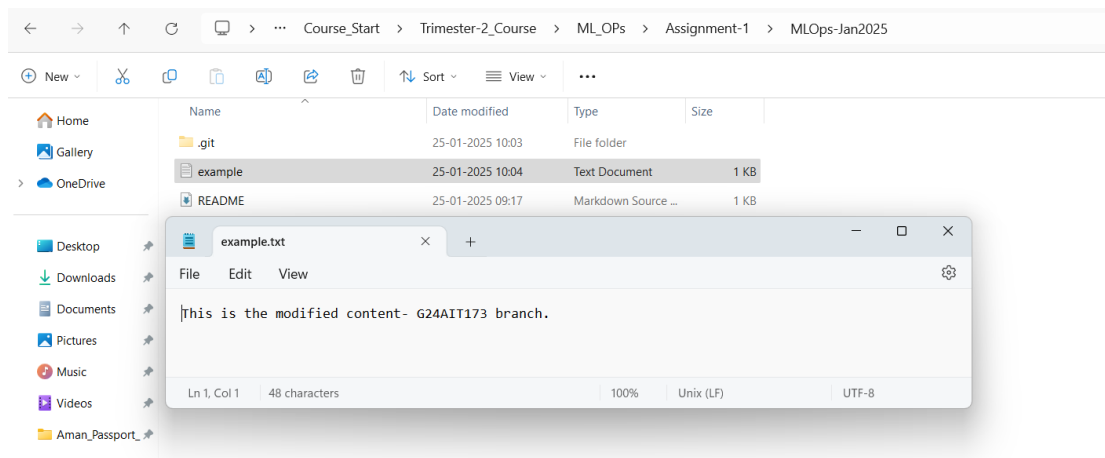
```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git checkout G24AIT173
Switched to branch 'G24AIT173'

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (G24AIT173)
$ echo "This is the modified content- G24AIT173 branch." > example.txt

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (G24AIT173)
$ git add example.txt
warning: in the working copy of 'example.txt', LF will be replaced by CRLF the next time Git touches it

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (G24AIT173)
$ git commit -m "Modified content- G24AIT173 branch"
[G24AIT173 a45b202] Modified content- G24AIT173 branch
1 file changed, 1 insertion(+), 1 deletion(-)

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (G24AIT173)
$ git push origin G24AIT173
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 22 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 346 bytes | 346.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/Aman007Agg/MLOps-Jan2025.git
7301f1f..a45b202 G24AIT173 -> G24AIT173
```



The screenshot shows the GitHub interface for the repository 'MLOps-Jan2025'. The selected branch is 'G24AIT173', which is 1 commit ahead of 'main'. The commit history shows two commits: 'Initial commit' for README.md and 'Modified content- G24AIT173 branch' for example.txt. The README file content is 'MLOps-Jan2025' and 'MLOps-Assignment1'.

In the X-1 (G24AIT171) branch , replace the content entirely. Commit these changes

Switch to the G24AIT171 branch ,Replace the content of example.txt entirely, Commit the changes,and Push the changes:

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1/MLOps-Jan2025 (G24AIT173)
$ git checkout G24AIT171
Switched to branch 'G24AIT171'

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1/MLOps-Jan2025 (G24AIT171)
$ echo "This si the new content added in the G24AIT171 branch." > example.txt

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1/MLOps-Jan2025 (G24AIT171)
$ git add example.txt
warning: in the working copy of 'example.txt', LF will be replaced by CRLF the next time Git touches it

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1/MLOps-Jan2025 (G24AIT171)
$ git commit -m "Replaced content in G24AIT171 branch"
[g24AIT171 23027d5] Replaced content in G24AIT171 branch
1 file changed, 1 insertion(+), 1 deletion(-)

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_Ops/Assignment-1/MLOps-Jan2025 (G24AIT171)
$ git push origin G24AIT171
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 22 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 353 bytes | 353.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/Aman007Agg/MLOps-Jan2025.git
 7301f1f..23027d5  G24AIT171 -> G24AIT171
```

The screenshot shows the GitHub interface for the repository 'MLOps-Jan2025'. The selected branch is 'G24AIT171', which is 1 commit ahead of 'main'. The commit history shows two commits: 'Initial commit' for README.md and 'Replaced content in G24AIT171 branch' for example.txt. The README file content is 'MLOps-Jan2025' and 'MLOps-Assignment1'.

take a screenshot of the output of the following command: `git log --graph --oneline` and include it in your report

Switch back to the main branch, and View the commit graph

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (G24AIT173)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main)
$ git log --graph --oneline
* 7301f1f (HEAD -> main, origin/main, origin/HEAD) Added example.txt file
* cca491b Initial commit

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main)
$ git log --graph --oneline
* 7301f1f (HEAD -> main, origin/main, origin/HEAD) Added example.txt file
* cca491b Initial commit

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main)
$ git branch
  G24AIT171
  G24AIT173
* main

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main)
$ git branch -r
  origin/G24AIT171
  origin/G24AIT173
  origin/HEAD -> origin/main
  origin/main

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main)
$ git fetch

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main)
$ git log --graph --oneline --all
* 23027d5 (origin/G24AIT171, G24AIT171) Replaced content in G24AIT171 branch
/* a45b202 (origin/G24AIT173, G24AIT173) Modified content- G24AIT173 branch
/* 7301f1f (HEAD -> main, origin/main, origin/HEAD) Added example.txt file
* cca491b Initial commit
```

F. Merge both branches into the main branch, resolving any conflicts if they arise. Take another screenshot of the output of the command: `git log --graph --oneline` and add it to your report.

Merge G24AIT173 into main

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main)
$ git merge G24AIT173
Updating 7301f1f..a45b202
Fast-forward
 example.txt | 2 +-
 1 file changed, 1 insertion(+), 1 deletion(-)
```

Merge G24AIT171 into main

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main)
$ git merge G24AIT171
Auto-merging example.txt
CONFLICT (content): Merge conflict in example.txt
Automatic merge failed; fix conflicts and then commit the result.
```

Note: Merge Failed - Merge conflict occurred

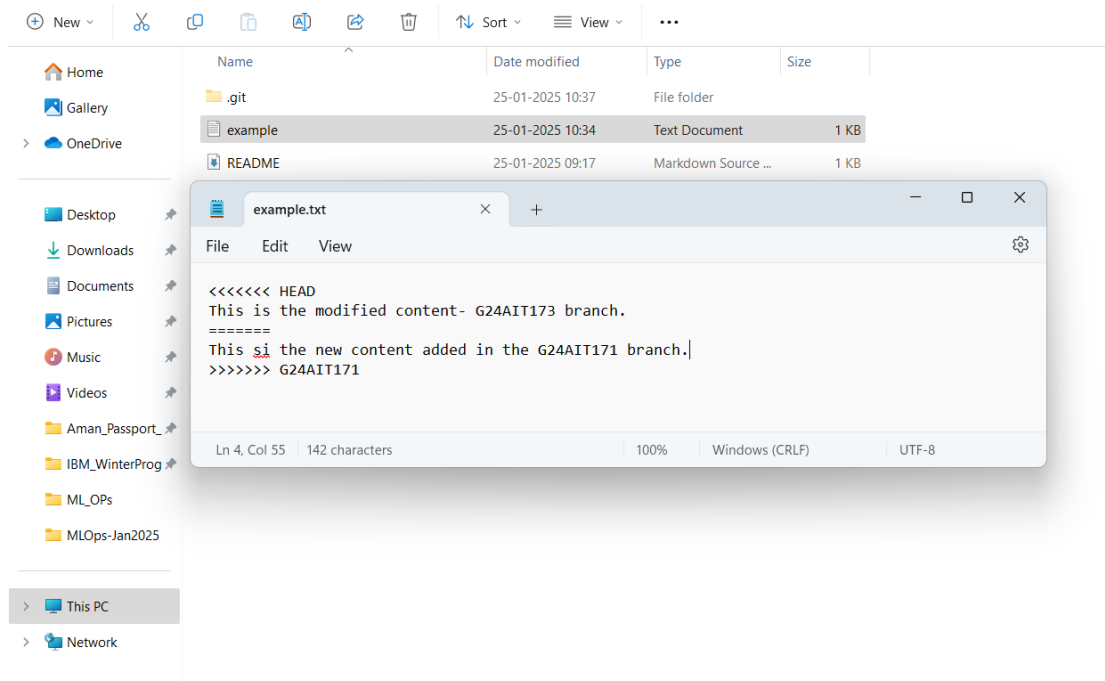
Merge Conflict Occurred when trying to merge Branch G24AIT171 to main:

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLops-Jan2025 (main|MERGING)
$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

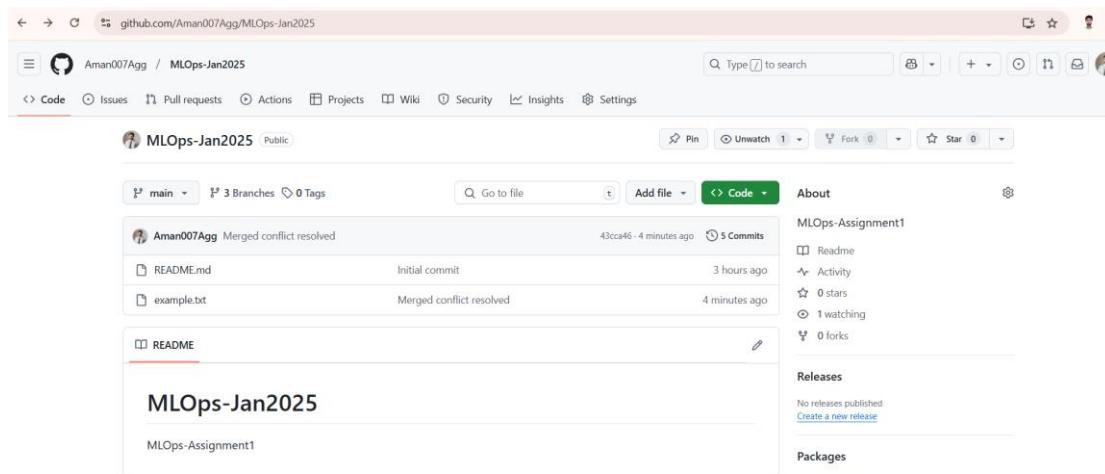
You have unmerged paths.
  (fix conflicts and run "git commit")
  (use "git merge --abort" to abort the merge)

Unmerged paths:
  (use "git add <file>..." to mark resolution)
    both modified:   example.txt

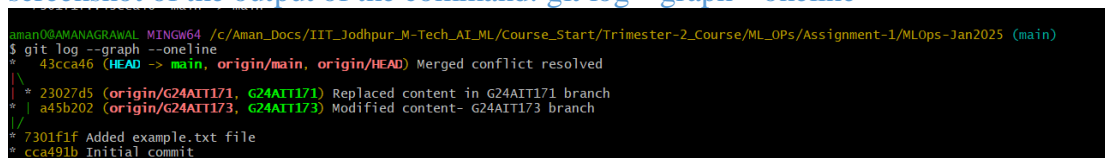
no changes added to commit (use "git add" and/or "git commit -a")
```



Resolve the merge conflict - manually editing the text file, it is on you what changes you want to keep, you keep either of the changes or both as you wish, I will keep content from both the branches.



screenshot of the output of the command: `git log --graph --oneline`



G. Push all changes to your GitHub repository

```
Initial commit
aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git push origin main
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 22 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 390 bytes | 390.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/Aman007Agg/MLOps-Jan2025.git
 7301f1f..43cca46  main -> main
```

H. Deleting a Branch- G24AIT171 :

Note: “First, make sure you’re on the main branch (or another branch, but not the one you’re deleting).”

"I deleted the G24AIT171 branch using the command `git branch -d G24AIT171`. The branch was successfully removed, as shown in the screenshot."

```
aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git checkout main
Already on 'main'
Your branch is up to date with 'origin/main'.

aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git branch
  G24AIT171
  G24AIT173
* main

aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git branch -d G24AIT171
Deleted branch G24AIT171 (was 23027d5).

aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git branch
  G24AIT173
* main
```

I. Recovering the Deleted Branch- G24AIT171:

If you want to recover the deleted branch, you can use the `reflog` to find the commit hash from the branch before it was deleted.

```
aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git branch
  G24AIT171
  G24AIT173
* main

aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git branch -d G24AIT171
Deleted branch G24AIT171 (was 23027d5).

aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git branch
  G24AIT173
* main

aman08@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git reflog
43cca46 (HEAD -> main, origin/main, origin/HEAD) HEAD@{0}: checkout: moving from main to main
43cca46 (HEAD -> main, origin/main, origin/HEAD) HEAD@{1}: commit (merge): Merged conflict resolved
a45b202 (origin/G24AIT173, G24AIT173) HEAD@{2}: merge G24AIT173: Fast-forward
7301f1f HEAD@{3}: checkout: moving from G24AIT173 to main
a45b202 (origin/G24AIT173, G24AIT173) HEAD@{4}: checkout: moving from G24AIT171 to G24AIT173
23027d5 (origin/G24AIT171) HEAD@{5}: checkout: moving from main to G24AIT171
7301f1f HEAD@{6}: checkout: moving from main to main
7301f1f HEAD@{7}: checkout: moving from G24AIT171 to main
23027d5 (origin/G24AIT171) HEAD@{8}: commit: Replaced content in G24AIT171 branch
7301f1f HEAD@{9}: checkout: moving from G24AIT173 to G24AIT171
a45b202 (origin/G24AIT173, G24AIT173) HEAD@{10}: commit: Modified content- G24AIT173 branch
7301f1f HEAD@{11}: checkout: moving from main to G24AIT173
7301f1f HEAD@{12}: commit: Added example.txt file
cca491b HEAD@{13}: clone: from https://github.com/Aman007Agg/MLOps-Jan2025.git
```

In our case it is point to hash commit

HEAD@{8}: commit: Replaced content in G24AIT171 branch

The commit hash associated with this entry (**23027d5**) is the commit you need to recover the branch.

After finding the commit hash, you can create a new branch from that point.

Action: git checkout -b G24AIT171 23027d5

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git checkout -b G24AIT171 23027d5
Switched to a new branch 'G24AIT171'

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (G24AIT171)
$ git reflog
23027d5 (HEAD -> G24AIT171, origin/G24AIT171) HEAD@{0}: checkout: moving from main to G24AIT171
43cca46 (origin/main, origin/HEAD, main) HEAD@{1}: checkout: moving from main to main
43cca46 (origin/main, origin/HEAD, main) HEAD@{2}: commit (merge): Merged conflict resolved
a45b202 (origin/G24AIT173, G24AIT173) HEAD@{3}: merge G24AIT173: Fast-forward
7301f1f HEAD@{4}: checkout: moving from G24AIT173 to main
a45b202 (origin/G24AIT173, G24AIT173) HEAD@{5}: checkout: moving from G24AIT171 to G24AIT173
23027d5 (HEAD -> G24AIT171, origin/G24AIT171) HEAD@{6}: checkout: moving from main to G24AIT171
7301f1f HEAD@{7}: checkout: moving from main to main
7301f1f HEAD@{8}: checkout: moving from G24AIT171 to main
23027d5 (HEAD -> G24AIT171, origin/G24AIT171) HEAD@{9}: commit: Replaced content in G24AIT171 branch
7301f1f HEAD@{10}: checkout: moving from G24AIT173 to G24AIT171
a45b202 (origin/G24AIT173, G24AIT173) HEAD@{11}: commit: Modified content- G24AIT173 branch
7301f1f HEAD@{12}: checkout: moving from main to G24AIT173
7301f1f HEAD@{13}: commit: Added example.txt file
cca491b HEAD@{14}: clone: from https://github.com/Aman007Agg/MLOps-Jan2025.git
```

The commit hash associated with this entry (**23027d5**) has now been recovered the branch **G24AIT171**

J. Tagging a Commit:

Tagging is useful for marking important commits. To add a tag to the commit you want to mark

add a tag with a message , and push the tags to **GitHub**

```
aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (G24AIT171)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git tag -a v1.0 -m "First version after completing the assignment"

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git tag
v1.0

aman0@AMANAGRAWAL MINGW64 /c/Aman_Docs/IIT_Jodhpur_M-Tech_AI_ML/Course_Start/Trimester-2_Course/ML_OPs/Assignment-1/MLOps-Jan2025 (main)
$ git push --tags
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Writing objects: 100% (1/1), 184 bytes | 184.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/Aman007Agg/MLOps-Jan2025.git
 * [new tag]         v1.0 -> v1.0
```

