

Git Conflict Resolution Assignment

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Objective

The objective of this assignment is to create and resolve a Git conflict using two branches in a GitHub repository. The steps include creating a conflict scenario, resolving the conflict, and documenting the process with screenshots.

Step 1: Create a New Feature Branch and Modify a File

Now, create a new branch to modify a file

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

Open ec2.tf and change the tag name.

Original in main branch

```
Name = "ExampleEC2"
```

Modify in feature-branch

```
Name = "ExampleEC2-1"
```

Save the file and commit the change.

```
git branch
git checkout -b feature-branch
git status
git add ec2.tf
git commit -m 'updated ec2 name'
git push --set-upstream origin feature-branch
git pull --set-upstream origin feature-branch
git push --set-upstream origin feature-branch
```

```
resource "aws_instance" "example" {
  ami           = "ami-0f6c00ba58ae92d6"
  instance_type = "t2.micro"

  tags = {
    Name = "ExampleEC2-1"
  }
}
```

Step 2: Modify the Same File in main

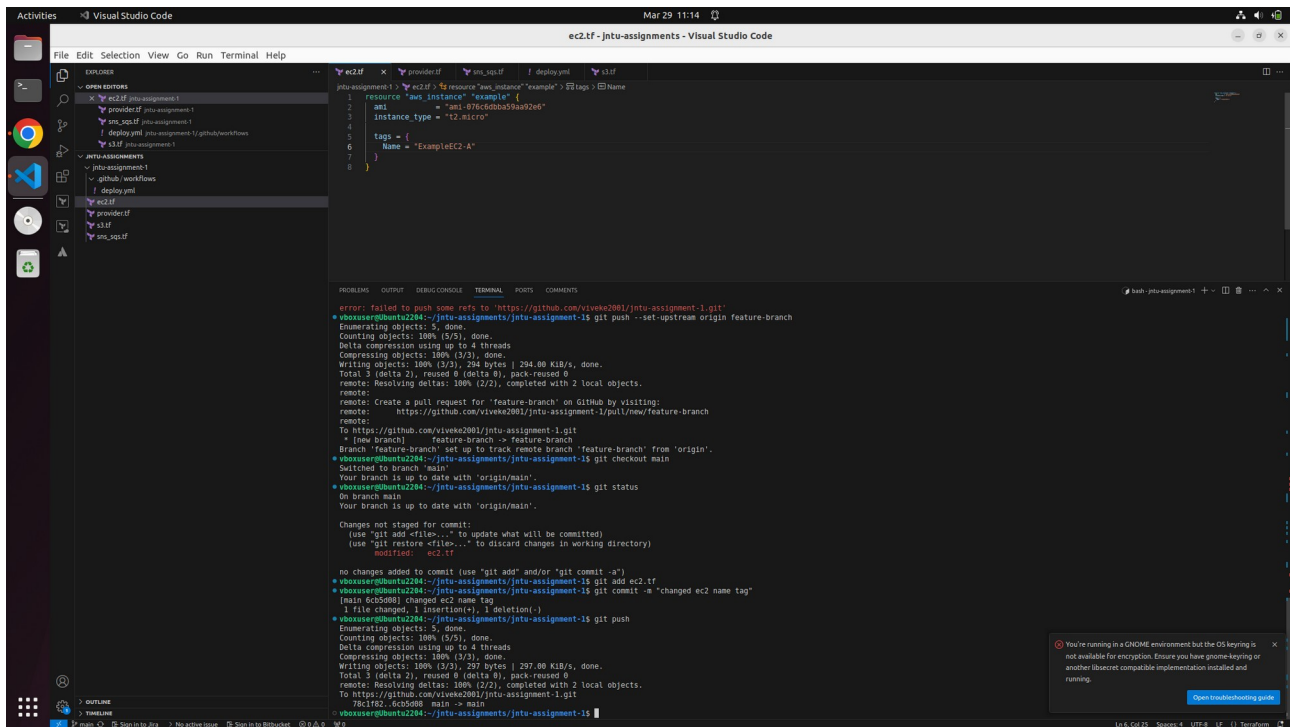
Switch back to `main` and modify the same line in the same file with a different value.

```
$ git checkout main
```

Modify in main branch

```
Name = "ExampleEC2-A"
```

Save the file and commit the change.



```
error: failed to push some refs to 'https://github.com/vivek2001/jtu-assignment-1.git'
vboxuser@buntu2204:~/jtu-assignments/jtu-assignment-1$ git push --set-upstream origin feature-branch
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% (2/2), 244 bytes | 294.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: Create a pull request for 'feature-branch' on GitHub by visiting:
remote:   https://github.com/vivek2001/jtu-assignment-1/pull/new/feature-branch
remote:
To https://github.com/vivek2001/jtu-assignment-1.git
 * [new branch]   feature-branch -> feature-branch
Branch 'feature-branch' set up to track remote branch 'feature-branch' from 'origin'.
vboxuser@buntu2204:~/jtu-assignments/jtu-assignment-1$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
vboxuser@buntu2204:~/jtu-assignments/jtu-assignment-1$ git status
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:   ec2.tf

no changes added to commit (use "git add" and/or "git commit -a")
vboxuser@buntu2204:~/jtu-assignments/jtu-assignment-1$ git add ec2.tf
vboxuser@buntu2204:~/jtu-assignments/jtu-assignment-1$ git commit -m "changed ec2 name tag"
[main 6c5088] changed ec2 name tag
1 file changed, 1 insertion(+), 1 deletion(-)
vboxuser@buntu2204:~/jtu-assignments/jtu-assignment-1$ git push
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% (2/2), 297 bytes | 297.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/vivek2001/jtu-assignment-1.git
 76c1f02..6c5088  main -> main
vboxuser@buntu2204:~/jtu-assignments/jtu-assignment-1$
```

Step 3: Merge and Resolve Conflict

Now, try to merge the feature branch into `main`.

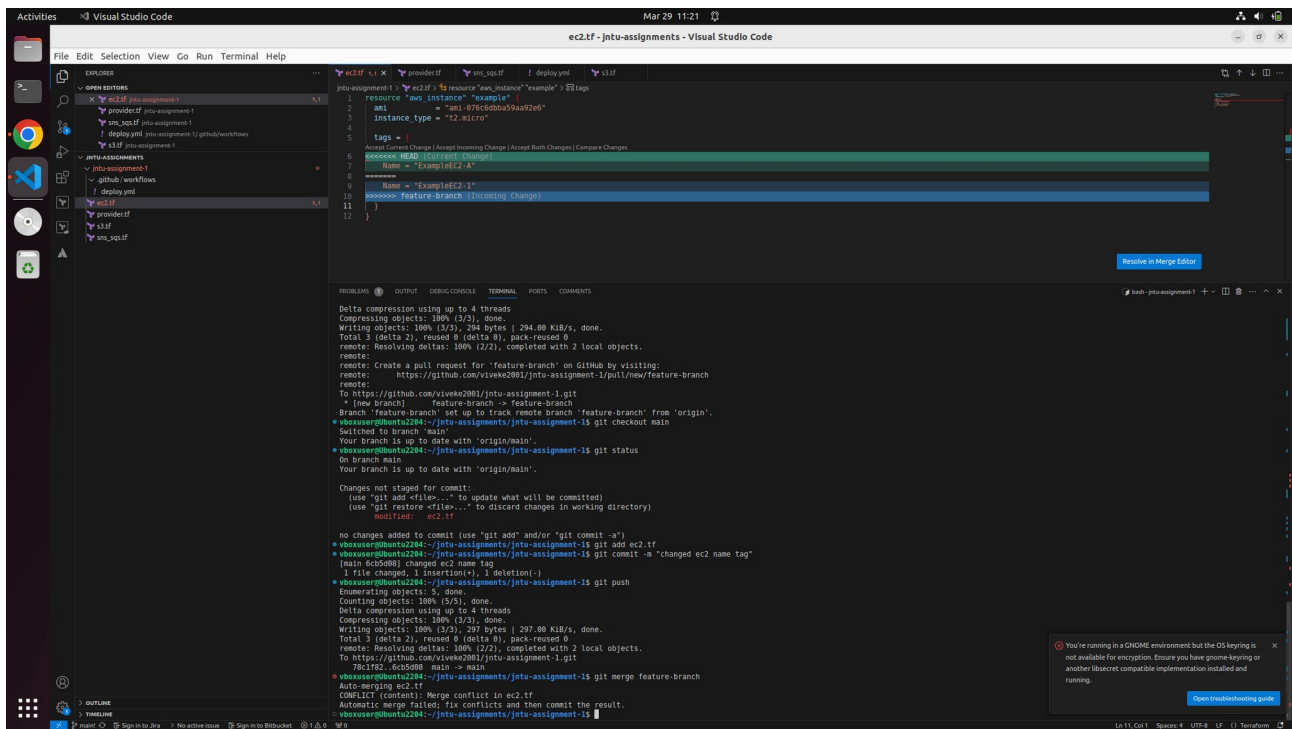
```
$ git merge feature-branch
```

Since both branches modified the same line, Git will detect a merge conflict.

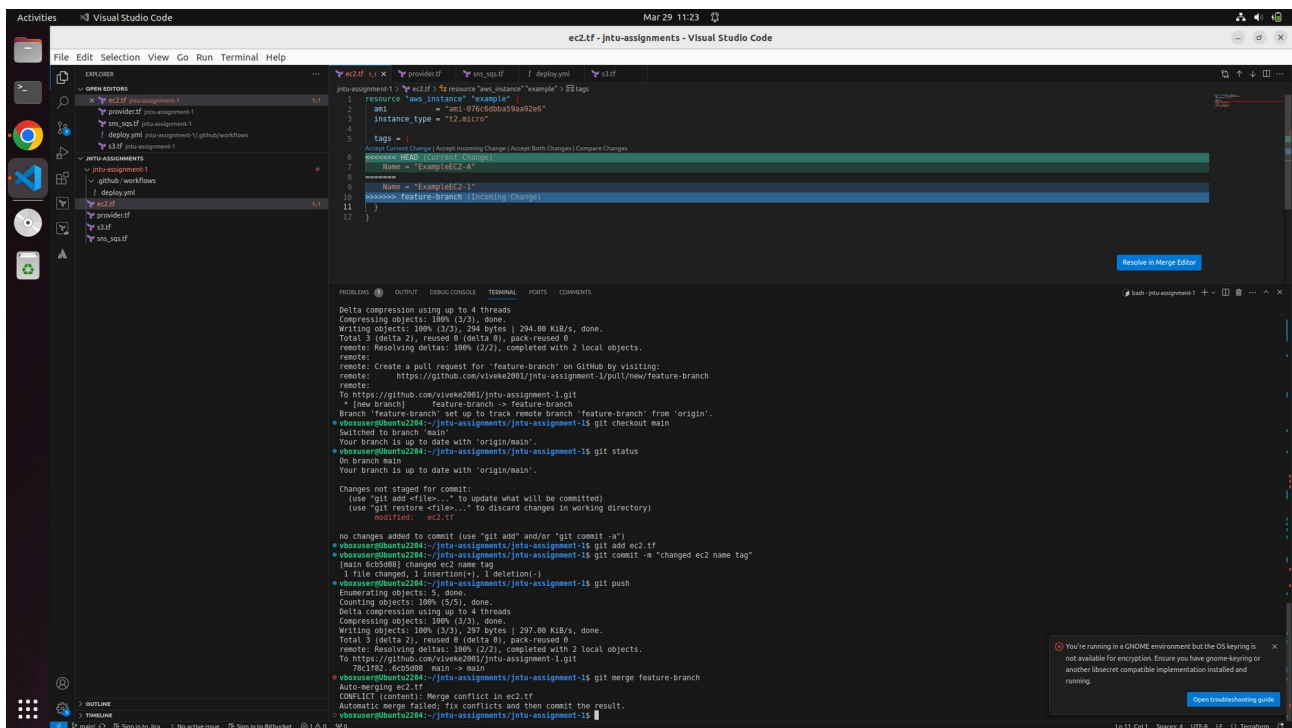
Open `ec2.tf`, and you'll see conflict markers (`<<<<<<<, =====, >>>>>>>`).

Manually resolve the conflict by choosing the correct value:

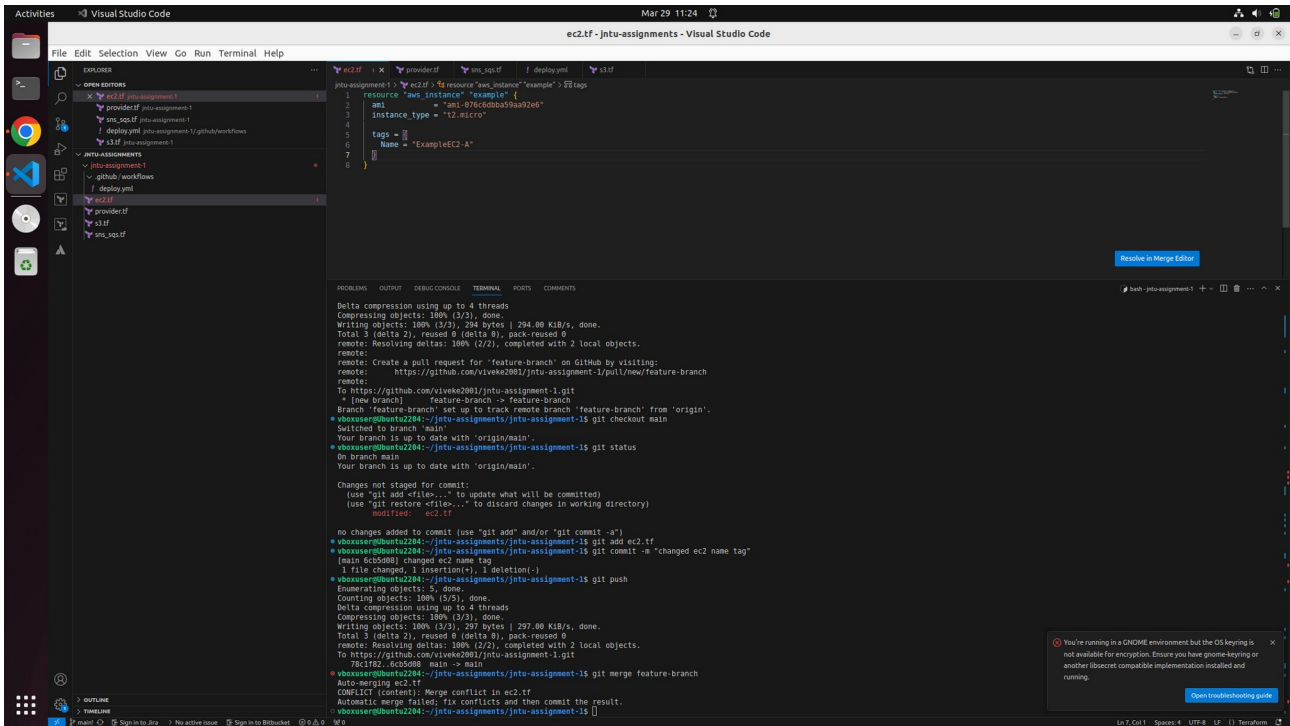
In the below picture there is conflict shown in the terminal after the merge command and even in the `ec2.tf` file.



In this below picture there is a conflict and there are multiple options to go with, those are Accept Current Changes, Accept Incoming Changes, Accept Both Changes and i am going with the current changes and the below picture is before accepting the current changes



And this is what it looks like when the current changes are accepted and we can see the name accepting the current changes inside the tags attribute



```
ec2.tf - jntu-assignments - Visual Studio Code

jntu-assignment-1 > ec2.tf > % resource "aws_instance" "example" > E2 tags
1 resource "aws_instance" "example" {
2   ami           = "ami-07dc60ba58a926e"
3   instance_type = "t2.micro"
4
5   tags = {}
6   Name = "ExampleEC2-A"
7 }
8

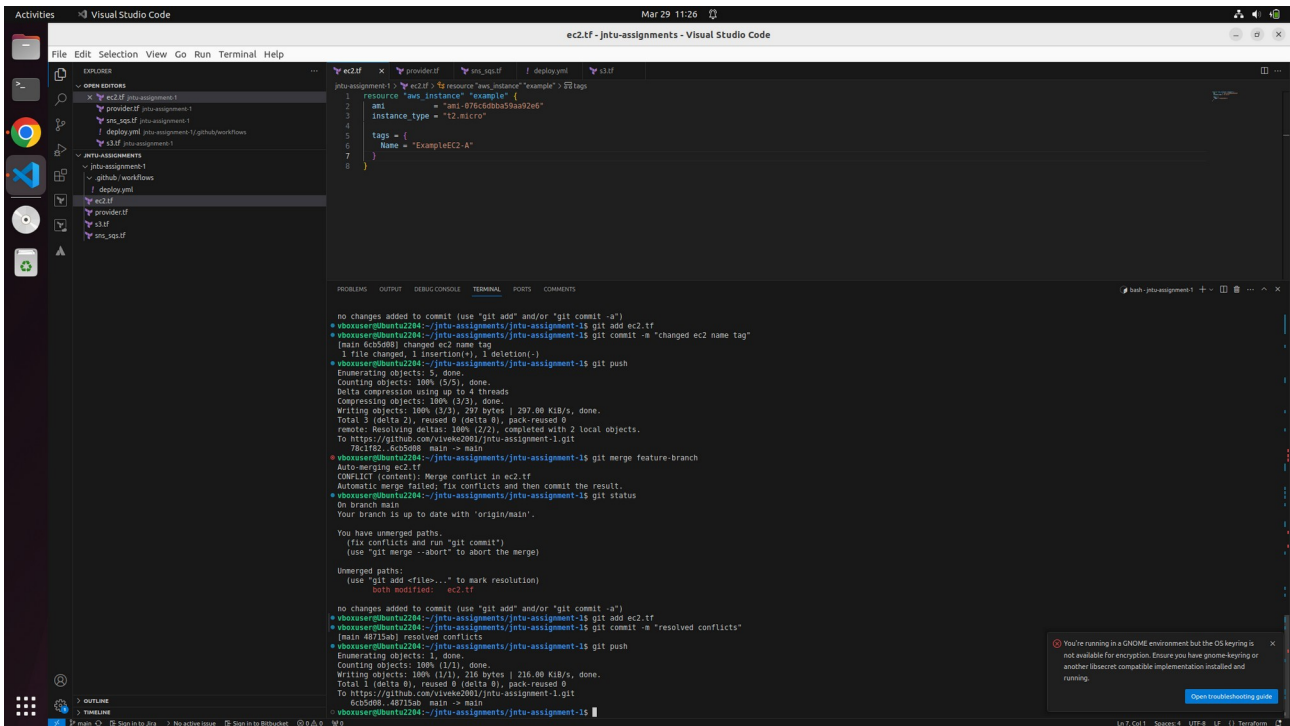
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 294 bytes | 294.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: Create a pull request for 'feature-branch' on GitHub by visiting:
remote:   https://github.com/vivek2001/jntu-assignment-1/pull/new/feature-branch
remote:
To https://github.com/vivek2001/jntu-assignment-1.git
   [new branch]   feature-branch -> feature-branch
Branch 'feature-branch' set up to track remote branch 'feature-branch' from 'origin'.
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git status
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:   ec2.tf

no changes added to commit (use "git add" and/or "git commit -a")
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git add ec2.tf
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git commit -m "changed ec2 name tag"
[main 6c5088] changed ec2 name tag
1 file changed, 1 insertion(+), 1 deletion(-)
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git push
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), 297 bytes | 297.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/vivek2001/jntu-assignment-1.git
   78c1f82..6c5088  main -> main
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git merge feature-branch
Auto-merging ec2.tf
CONFLICT (content): Merge conflict in ec2.tf
Automatic merge failed; fix conflicts and then commit the result.
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$
```

Now commit and push the changes as shown in the below picture



```
ec2.tf - jntu-assignments - Visual Studio Code

jntu-assignment-1 > ec2.tf > % resource "aws_instance" "example" > E2 tags
1 resource "aws_instance" "example" {
2   ami           = "ami-07dc60ba58a926e"
3   instance_type = "t2.micro"
4
5   tags = {}
6   Name = "ExampleEC2-A"
7 }
8

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

no changes added to commit (use "git add" and/or "git commit -a")
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git add ec2.tf
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git commit -m "changed ec2 name tag"
[main 6c5088] changed ec2 name tag
1 file changed, 1 insertion(+), 1 deletion(-)
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git push
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), 297 bytes | 297.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/vivek2001/jntu-assignment-1.git
   78c1f82..6c5088  main -> main
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git merge feature-branch
Auto-merging ec2.tf
CONFLICT (content): Merge conflict in ec2.tf
Automatic merge failed; fix conflicts and then commit the result.
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git status
On branch main
Your branch is up to date with 'origin/main'.

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:   ec2.tf

no changes added to commit (use "git add" and/or "git commit -a")
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git add ec2.tf
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git commit -m "resolved conflicts"
[main 48715ab] resolved conflicts
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$ git push
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Writing objects: 100% (1/1), 216 bytes | 216.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/vivek2001/jntu-assignment-1.git
   6c5088..48715ab  main -> main
vboxuser@buntu2204:~/jntu-assignments/jntu-assignment-1$
```

Run the command to verify the merge history

```
$ git log --oneline --graph --all
```

