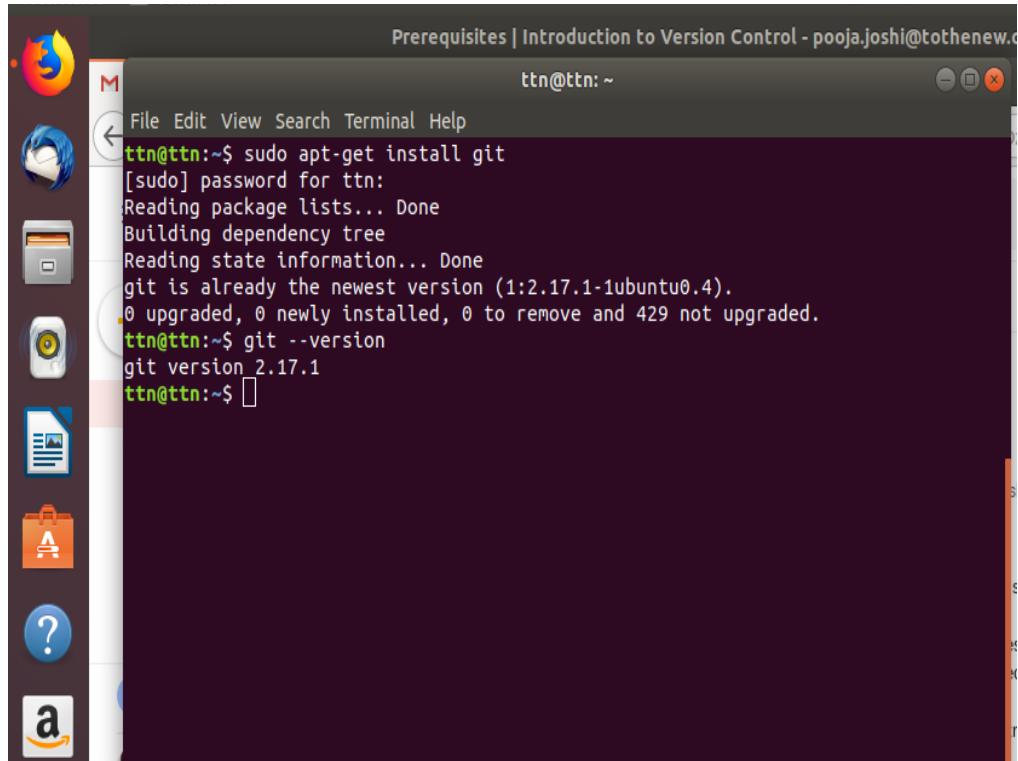


Introduction To Version Control

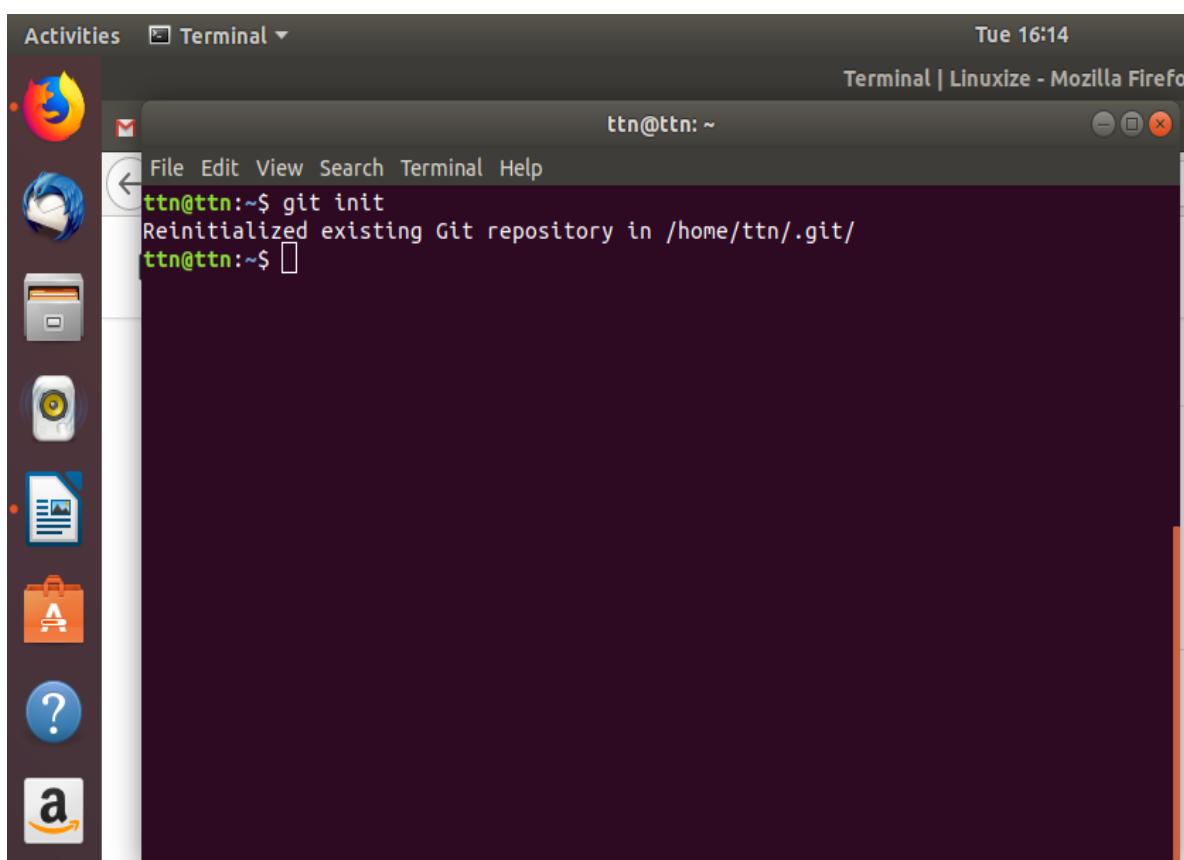
Q1) Git Setup <https://confluence.atlassian.com>.



A screenshot of an Ubuntu desktop environment. On the left is a vertical dock with icons for various applications like the Dash, Home, and System Settings. In the center is a terminal window titled "Prerequisites | Introduction to Version Control - pooja.joshi@tothenew.o...". The terminal shows the command "sudo apt-get install git" being run, followed by the output of the package manager, which indicates that git is already the newest version (1:2.17.1-1ubuntu0.4). The command "git --version" is then run, showing the git version as 2.17.1.

```
ttn@ttn:~$ sudo apt-get install git
[sudo] password for ttn:
Reading package lists... Done
Building dependency tree
Reading state information... Done
git is already the newest version (1:2.17.1-1ubuntu0.4).
0 upgraded, 0 newly installed, 0 to remove and 429 not upgraded.
ttn@ttn:~$ git --version
git version 2.17.1
ttn@ttn:~$ 
```

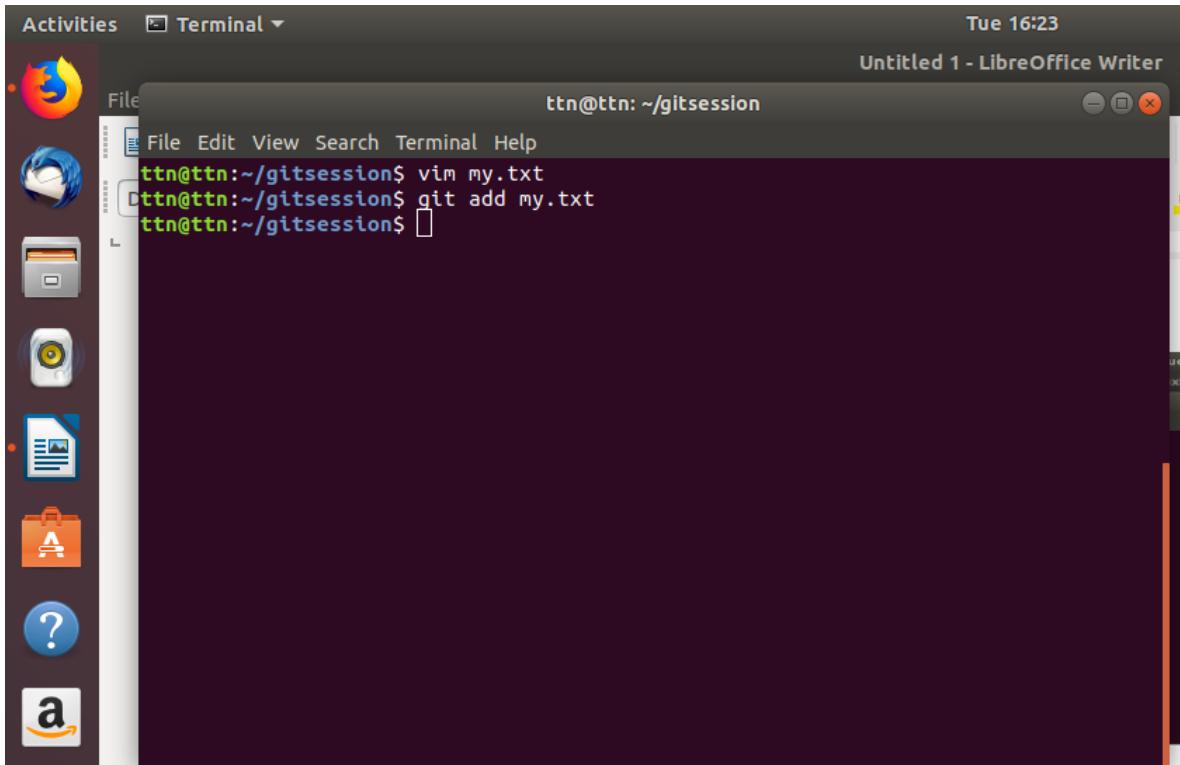
Q 2) Initialize a Git Repository



A screenshot of an Ubuntu desktop environment. On the left is a vertical dock with icons for various applications like the Dash, Home, and System Settings. In the center is a terminal window titled "Terminal | Linuxize - Mozilla Firefox". The terminal shows the command "git init" being run, followed by the output "Reinitialized existing Git repository in /home/ttn/.git/". The command "git status" is then run, showing the repository is now empty.

```
ttn@ttn:~$ git init
Reinitialized existing Git repository in /home/ttn/.git/
ttn@ttn:~$ 
```

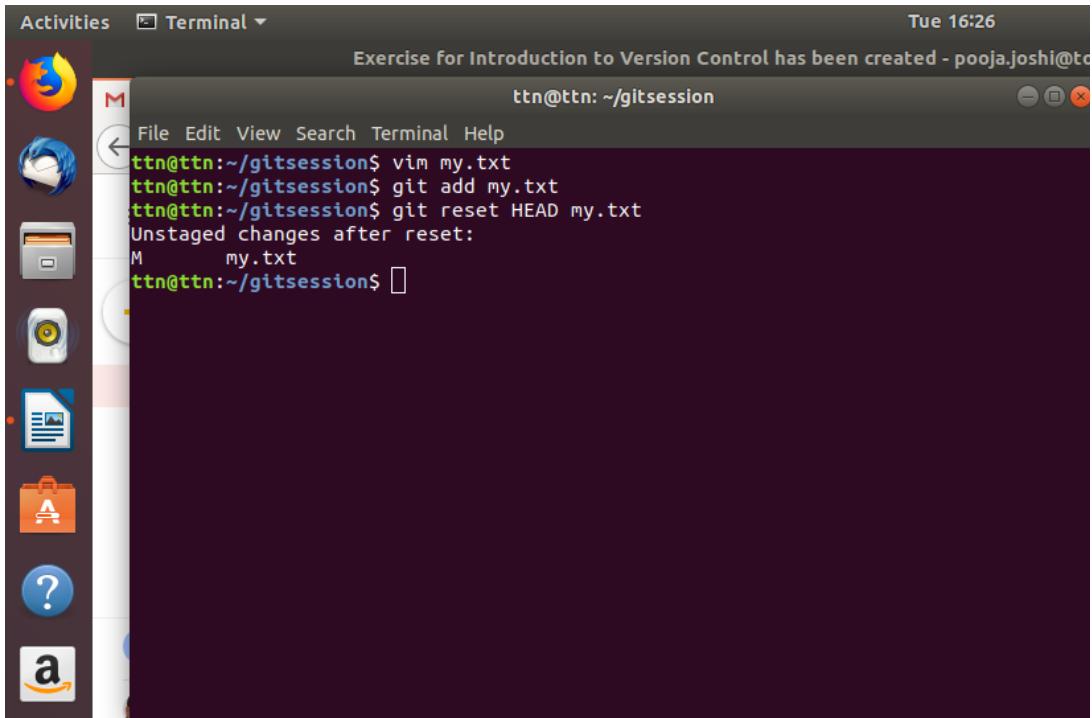
Q 3) Add files to the repository



A screenshot of an Ubuntu desktop environment. On the left is a vertical dock with icons for various applications: Mozilla Firefox, Evolution, Nautilus, GIMP, LibreOffice Writer, Help, and Amazon. A terminal window titled "Terminal" is open in the dock, showing the command line interface. The terminal window has a dark background and white text. It displays the following commands:

```
ttn@ttn:~/gitsession$ vim my.txt
ttn@ttn:~/gitsession$ git add my.txt
ttn@ttn:~/gitsession$
```

Q 4) Unstage 1 file

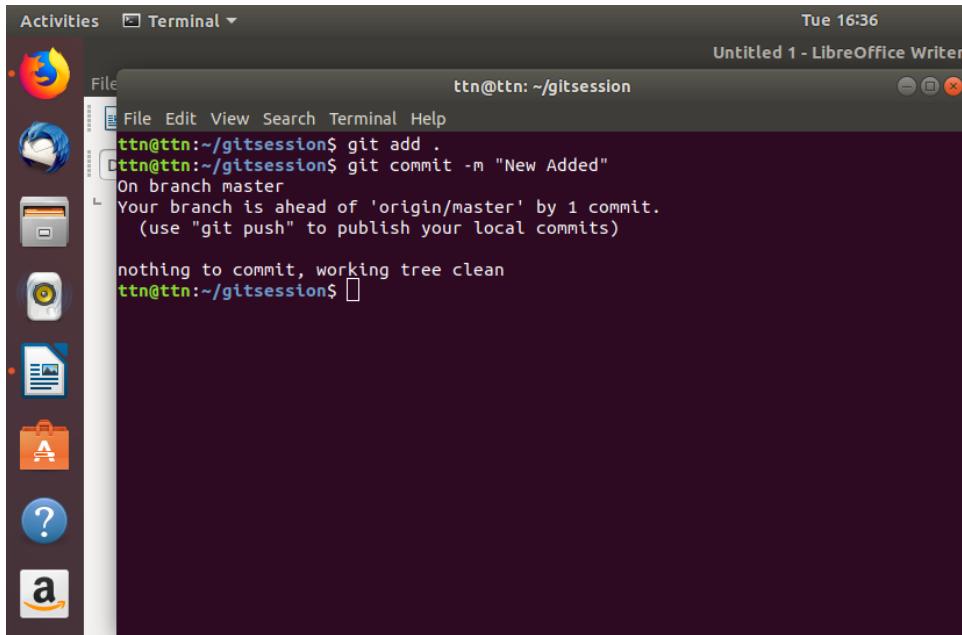


A screenshot of an Ubuntu desktop environment. The dock on the left shows the same set of icons as the previous image. A terminal window titled "Terminal" is open, showing the command line interface. The terminal window has a dark background and white text. It displays the following commands and a message:

```
ttn@ttn:~/gitsession$ vim my.txt
ttn@ttn:~/gitsession$ git add my.txt
ttn@ttn:~/gitsession$ git reset HEAD my.txt
Unstaged changes after reset:
M      my.txt
ttn@ttn:~/gitsession$
```

The message "Exercise for Introduction to Version Control has been created - pooja.joshi@t" is displayed above the terminal window title bar.

Q 5) Commit the file

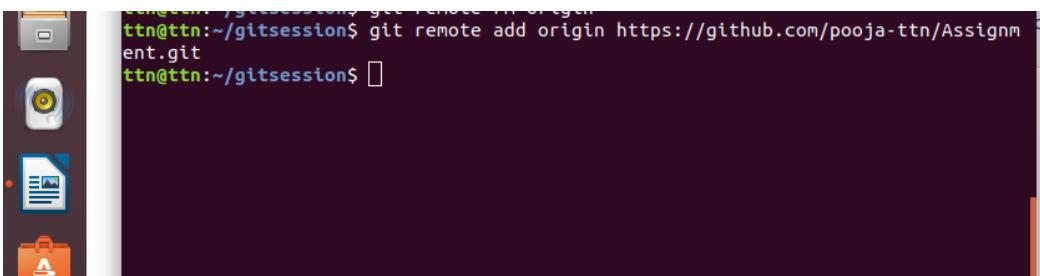


A screenshot of an Ubuntu desktop environment. On the left is a vertical dock with icons for various applications like the Dash, Home, and System Settings. In the center is a terminal window titled "Untitled 1 - LibreOffice Writer". The terminal shows the following command-line session:

```
ttn@ttn:~/gitsession$ git add .
ttn@ttn:~/gitsession$ git commit -m "New Added"
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
ttn@ttn:~/gitsession$
```

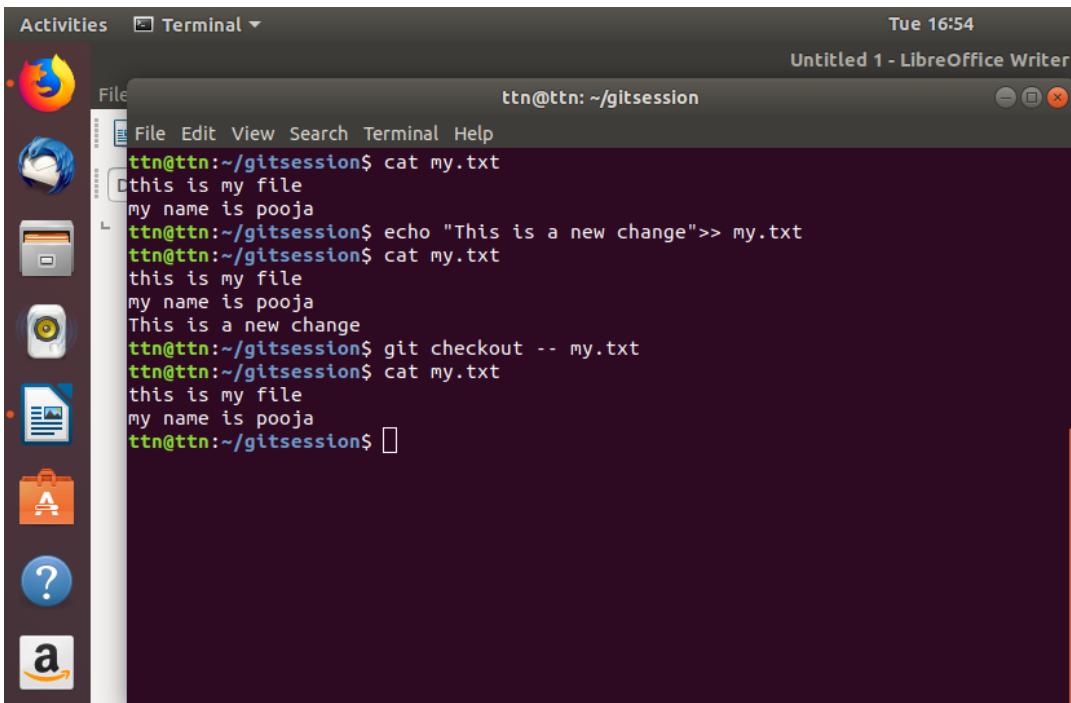
Q 6) Add a remote



A screenshot of an Ubuntu desktop environment. On the left is a vertical dock with icons for various applications like the Dash, Home, and System Settings. In the center is a terminal window showing the following command-line session:

```
ttn@ttn:~/gitsession$ git remote rm origin
ttn@ttn:~/gitsession$ git remote add origin https://github.com/pooja-ttn/Assignment.git
ttn@ttn:~/gitsession$
```

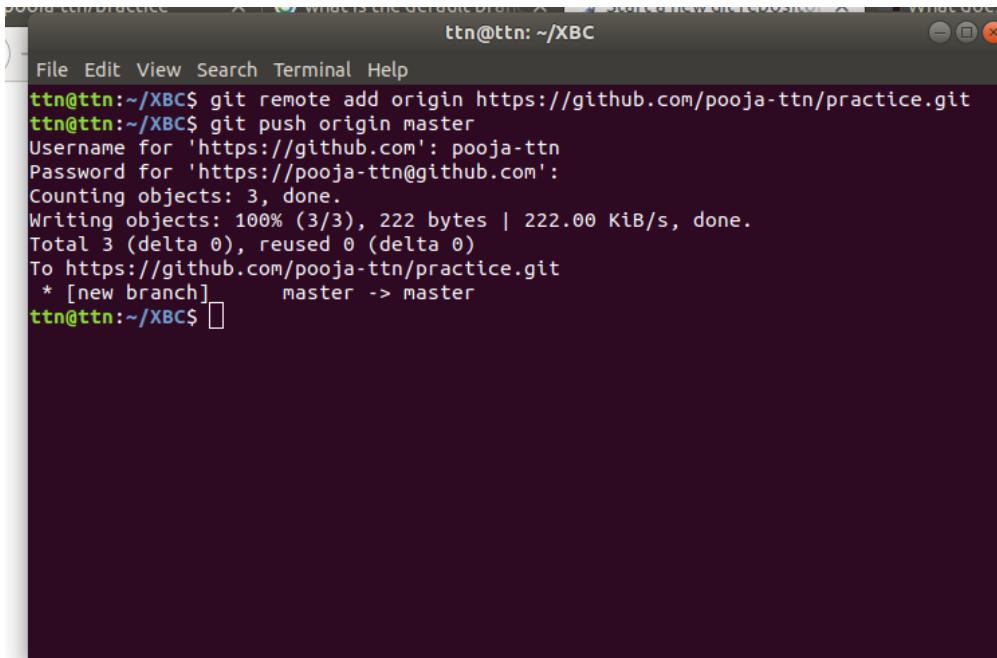
Q 7) Undo changes to a particular file



A screenshot of an Ubuntu desktop environment. On the left is a vertical dock with icons for various applications like the Dash, Home, and System Settings. In the center is a terminal window titled "Untitled 1 - LibreOffice Writer". The terminal shows the following command-line session:

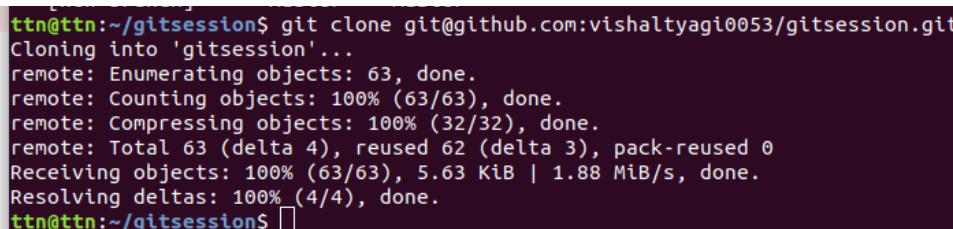
```
ttn@ttn:~/gitsession$ cat my.txt
this is my file
my name is pooja
ttn@ttn:~/gitsession$ echo "This is a new change">>> my.txt
ttn@ttn:~/gitsession$ cat my.txt
this is my file
my name is pooja
This is a new change
ttn@ttn:~/gitsession$ git checkout -- my.txt
ttn@ttn:~/gitsession$ cat my.txt
this is my file
my name is pooja
ttn@ttn:~/gitsession$
```

Q 8) Push changes to Github



```
ttn@ttn:~/XBC$ git remote add origin https://github.com/pooja-ttn/practice.git
ttn@ttn:~/XBC$ git push origin master
Username for 'https://github.com': pooja-ttn
Password for 'https://pooja-ttn@github.com':
Counting objects: 3, done.
Writing objects: 100% (3/3), 222 bytes | 222.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/pooja-ttn/practice.git
 * [new branch]      master -> master
ttn@ttn:~/XBC$
```

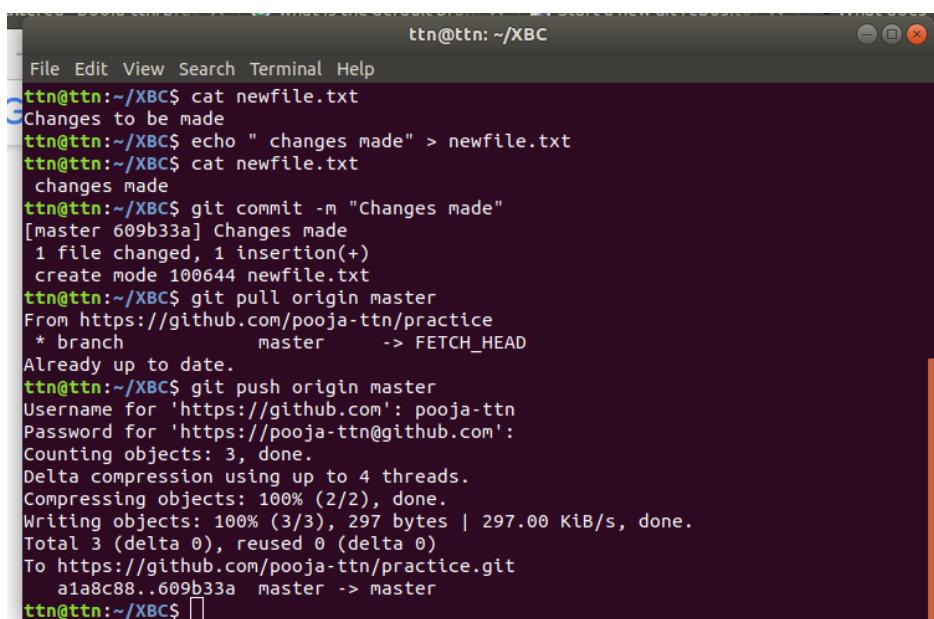
Q 9) Clone the repository:



```
ttn@ttn:~/gitsession$ git clone git@github.com:vishalyagi0053/gitsession.git
Cloning into 'gitsession'...
remote: Enumerating objects: 63, done.
remote: Counting objects: 100% (63/63), done.
remote: Compressing objects: 100% (32/32), done.
remote: Total 63 (delta 4), reused 62 (delta 3), pack-reused 0
Receiving objects: 100% (63/63), 5.63 KiB | 1.88 MiB/s, done.
Resolving deltas: 100% (4/4), done.
ttn@ttn:~/gitsession$
```

Q 10) Add changes to one of the copies and pull the changes in the other.

1) Changes made to directory- XBC and push



```
ttn@ttn:~/XBC$ cat newfile.txt
Changes to be made
ttn@ttn:~/XBC$ echo " changes made" > newfile.txt
ttn@ttn:~/XBC$ cat newfile.txt
 changes made
ttn@ttn:~/XBC$ git commit -m "Changes made"
[master 609b33a] Changes made
 1 file changed, 1 insertion(+)
 create mode 100644 newfile.txt
ttn@ttn:~/XBC$ git pull origin master
From https://github.com/pooja-ttn/practice
 * branch            master    -> FETCH_HEAD
Already up to date.
ttn@ttn:~/XBC$ git push origin master
Username for 'https://github.com': pooja-ttn
Password for 'https://pooja-ttn@github.com':
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 297 bytes | 297.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/pooja-ttn/practice.git
 a1a8c88..609b33a  master -> master
ttn@ttn:~/XBC$
```

2) Pull in copy ABC

```
ttn@ttn: ~/ABC
File Edit View Search Terminal Tabs Help
ttn@ttn: ~/XBC x ttn@ttn: ~/ABC x + ▾
ttn@ttn:~/ABC$ git remote add origin https://github.com/pooja-ttn/practice.git
ttn@ttn:~/ABC$ git pull origin master
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 6 (delta 0), reused 6 (delta 0), pack-reused 0
Unpacking objects: 100% (6/6), done.
From https://github.com/pooja-ttn/practice
 * branch            master      -> FETCH_HEAD
 * [new branch]      master      -> origin/master
ttn@ttn:~/ABC$ ls -ll
total 12
-rw-r--r-- 1 ttn ttn 12 Feb  6 04:21 item.txt
-rw-r--r-- 1 ttn ttn 19 Feb  6 04:21 newfile.txt
drwxr-xr-x 3 ttn ttn 4096 Feb  6 04:11 practice
ttn@ttn:~/ABC$ cat newfile.txt
Changes to be made
ttn@ttn:~/ABC$
```

Q 11) Check differences between a file and its staged version

- Unstaged newfile.txt

```
ttn@ttn: ~/ABC
File Edit View Search Terminal Tabs Help
ttn@ttn: ~/XBC x ttn@ttn: ~/ABC x + ▾
ttn@ttn:~/ABC$ vim newfile.txt
ttn@ttn:~/ABC$ git commit -m "This to check the stage"
On branch pooja-branch
Changes not staged for commit:
  modified:   newfile.txt

Untracked files:
  practice/

no changes added to commit
ttn@ttn:~/ABC$ git log
commit 609b33ab054ba7d313cd321cf9def4e924580dc (HEAD --> pooja-branch, origin/master)
Author: pooja-ttn <pooja.joshi@tothenew.com>
Date:   Wed Feb 6 04:07:42 2019 +0530

  Changes made

commit a1a8c88c95f070905247306118efc61ebb933d6b
Author: pooja-ttn <pooja.joshi@tothenew.com>
Date:   Wed Feb 6 03:23:02 2019 +0530

  Entered
```

- Staged newfile.txt

```
ttn@ttn:~/ABC$ git stage newfile.txt
ttn@ttn:~/ABC$ git status
On branch pooja-branch
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    modified:   newfile.txt

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

    practice/

ttn@ttn:~/ABC$ git diff
ttn@ttn:~/ABC$ git diff --staged
diff --git a/newfile.txt b/newfile.txt
index 2aecb6b..9b42a34 100644
--- a/newfile.txt
+++ b/newfile.txt
@@ -1 +1,3 @@
 Changes to be made
+
+Ready to commit
ttn@ttn:~/ABC$
```

Q 12) Ignore a few files to be checked in-

- java.class file will be ignore in vcs using .gitignore

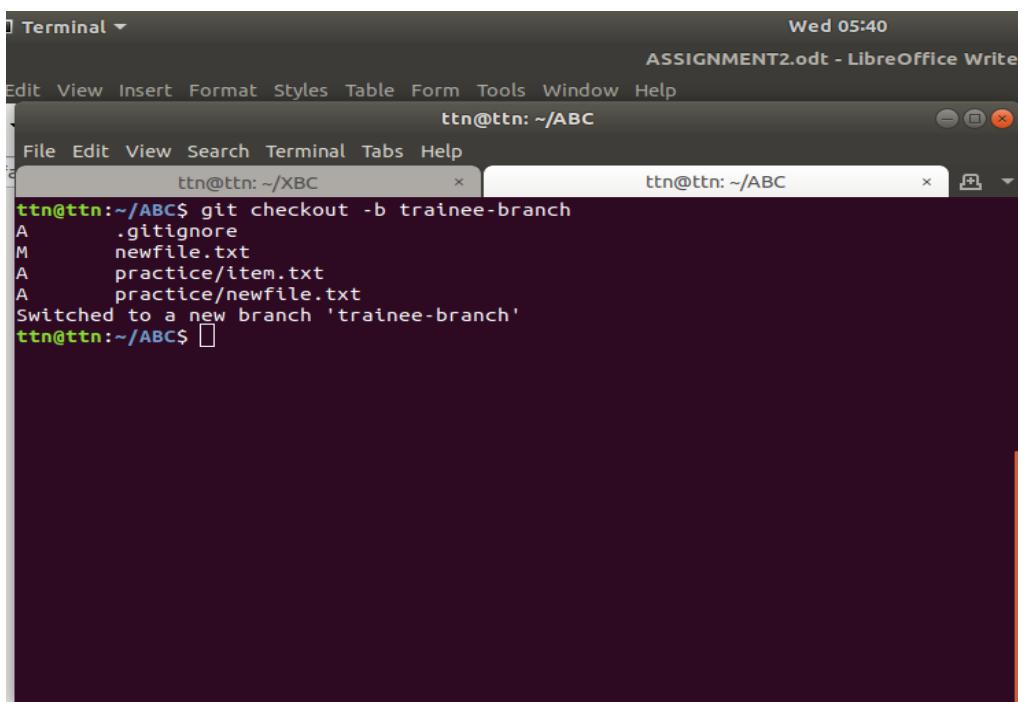
```
ttn@ttn:~/ABC$ vim .gitignore
ttn@ttn:~/ABC$ touch java1.class
ttn@ttn:~/ABC$ git add .
ttn@ttn:~/ABC$ ls
item.txt  java1.class  newfile.txt  practice
ttn@ttn:~/ABC$ git status
On branch pooja-branch
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    new file:   .gitignore
    modified:   newfile.txt
    new file:   practice/item.txt
    new file:   practice/newfile.txt

ttn@ttn:~/ABC$
```

Q 13) Create a new branch.

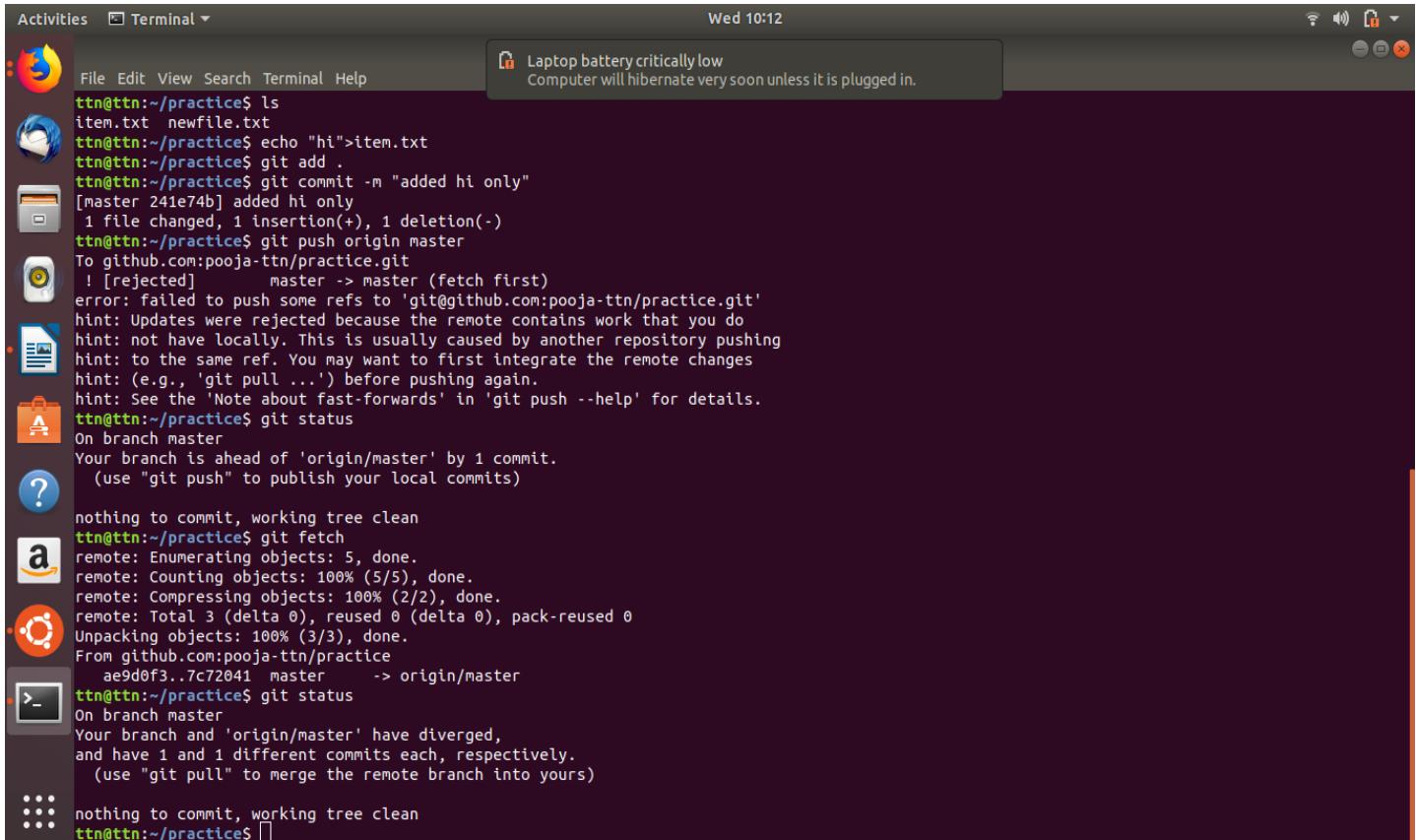
- Creating a new trainee-branch



The screenshot shows a terminal window with two tabs. The active tab is titled 'ttn@ttn: ~/ABC' and displays the command 'git checkout -b trainee-branch'. The output shows the status of files (.gitignore, newfile.txt, practice/item.txt, practice/newfile.txt) and the message 'Switched to a new branch 'trainee-branch''. The second tab is titled 'ttn@ttn: ~/XBC'.

```
ttn@ttn:~/ABC$ git checkout -b trainee-branch
A .gitignore
M newfile.txt
A practice/item.txt
A practice/newfile.txt
Switched to a new branch 'trainee-branch'
ttn@ttn:~/ABC$
```

Q 14) Diverge them with commits-



A screenshot of a Linux desktop environment (Ubuntu) showing a terminal window. The terminal window title is "Activities Terminal". The terminal content shows a sequence of git commands:

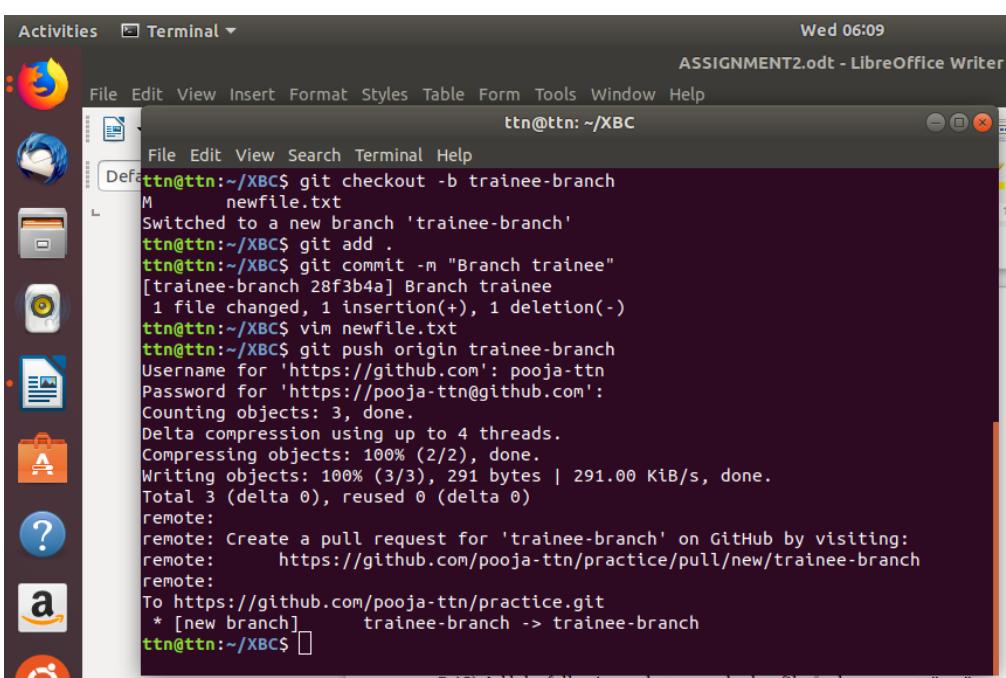
```
ttn@ttn:~/practice$ ls
item.txt newfile.txt
ttn@ttn:~/practice$ echo "hi">item.txt
ttn@ttn:~/practice$ git add .
ttn@ttn:~/practice$ git commit -m "added hi only"
[master 241e74b] added hi only
 1 file changed, 1 insertion(+), 1 deletion(-)
ttn@ttn:~/practice$ git push origin master
To github.com:pooja-ttn/practice.git
 ! [rejected]      master -> master (fetch first)
error: failed to push some refs to 'git@github.com:pooja-ttn/practice.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-forwards' in 'git push --help' for details.
ttn@ttn:~/practice$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
ttn@ttn:~/practice$ git fetch
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
From github.com:pooja-ttn/practice
  ae9d0f3..7c72041  master    -> origin/master
ttn@ttn:~/practice$ git status
On branch master
Your branch and 'origin/master' have diverged,
and have 1 and 1 different commits each, respectively.
  (use "git pull" to merge the remote branch into yours)

nothing to commit, working tree clean
ttn@ttn:~/practice$
```

Q 15) Edit the same file at the same line on both branches and commit

- Editing newfile.txt via trainee-branch



A screenshot of a Linux desktop environment (Ubuntu) showing a LibreOffice Writer window and a terminal window. The LibreOffice window title is "ASSIGNMENT2.odt - LibreOffice Writer". The terminal window title is "Activities Terminal". The terminal content shows a sequence of git commands:

```
ttn@ttn:~/XBC$ git checkout -b trainee-branch
M     newfile.txt
Switched to a new branch 'trainee-branch'
ttn@ttn:~/XBC$ git add .
ttn@ttn:~/XBC$ git commit -m "Branch trainee"
[trainee-branch 28f3b4a] Branch trainee
 1 file changed, 1 insertion(+), 1 deletion(-)
ttn@ttn:~/XBC$ vim newfile.txt
ttn@ttn:~/XBC$ git push origin trainee-branch
Username for 'https://github.com': pooja-ttn
Password for 'https://pooja-ttn@github.com':
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 291 bytes | 291.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'trainee-branch' on GitHub by visiting:
remote:   https://github.com/pooja-ttn/practice/pull/new/trainee-branch
remote:
To https://github.com/pooja-ttn/practice.git
 * [new branch]      trainee-branch -> trainee-branch
ttn@ttn:~/XBC$
```

A screenshot of an Ubuntu desktop environment. On the left is a vertical dock with icons for various applications: Firefox, Dash, Nautilus, System Settings, Activities Overview, Dash Home, and Help. A terminal window titled 'ASSIGNMENT2.odt - LibreOffice Write' is open, showing the command 'vim newfile.txt'. The terminal output shows the file being created and edited:

```
File Edit View Insert Format Styles Table Form Tools Window Help
ttn@ttn: ~/XBC
File Edit View Search Terminal Help
Default changes made
"newfile.txt" 1L, 14C
1.9 All
```

- Editing file newfile.txt via master branch at the same line.

A screenshot of an Ubuntu desktop environment. The dock on the left includes icons for Firefox, Dash, Nautilus, System Settings, Activities Overview, Dash Home, and Help. A terminal window titled 'ASSIGNMENT2.odt - LibreOffice Write' is open, showing the command 'git checkout master'. The terminal output shows the user is already on the 'master' branch and has edited the 'newfile.txt' file:

```
File Edit View Insert Format Styles Table Form Tools Window Help
ttn@ttn: ~/XBC
File Edit View Search Terminal Help
ttn@ttn:~/XBC$ git checkout master
M      newfile.txt
Already on 'master'
ttn@ttn:~/XBC$ vim newfile.txt
ttn@ttn:~/XBC$
```

A screenshot of a terminal window titled "Terminal". The window has a dark background and a light-colored title bar. The title bar shows the word "Terminal" and the system time "Wed 06:26". Below the title bar is a menu bar with options: Edit, View, Insert, Format, Styles, Table, Form, Tools, Window, and Help. The main area of the terminal shows the command "ttn@ttn: ~/XBC" followed by a list of files starting with "Changes" and "hadde". The bottom status bar displays the file name "newfile.txt", its size "1L, 13C", and the current line and character counts "1,8" and "All".

Q 16) Try merging and resolve merge conflicts

- While merging the two files conflict occurred .

Activities Terminal ▾ Wed 07:00

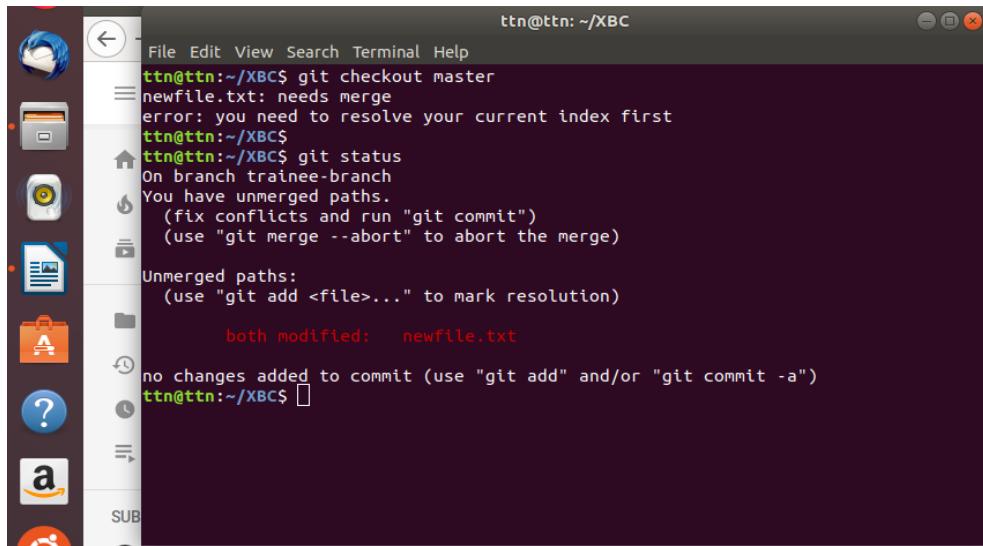
how to resolve a merge conflict git cmd - YouTube

Exercise for Introduction | Introduction to Version Control | Git - git-stage Document | Git - GitHub

ttn@ttn: ~/XBC

```
ttn@ttn:~/XBC$ git add .
ttn@ttn:~/XBC$ git commit -m "Merge"
[master b875b91] Merge
 1 file changed, 1 insertion(+), 1 deletion(-)
ttn@ttn:~/XBC$ git checkpoint trainee-branch
git: 'checkpoint' is not a git command. See 'git --help'.
ttn@ttn:~/XBC$ git checkout trainee-branch
Switched to branch 'trainee-branch'
ttn@ttn:~/XBC$ git add .
ttn@ttn:~/XBC$ git commit -m "Trainee merge"
On branch trainee-branch
nothing to commit, working tree clean
ttn@ttn:~/XBC$ ls
item.txt newfile.txt practice
ttn@ttn:~/XBC$ git merge master
Auto-merging newfile.txt
CONFLICT (content): Merge conflict in newfile.txt
Automatic merge failed; fix conflicts and then commit the result.
ttn@ttn:~/XBC$ clear
```

Resolving the merge conflict- Checking the file in which conflict occurred.



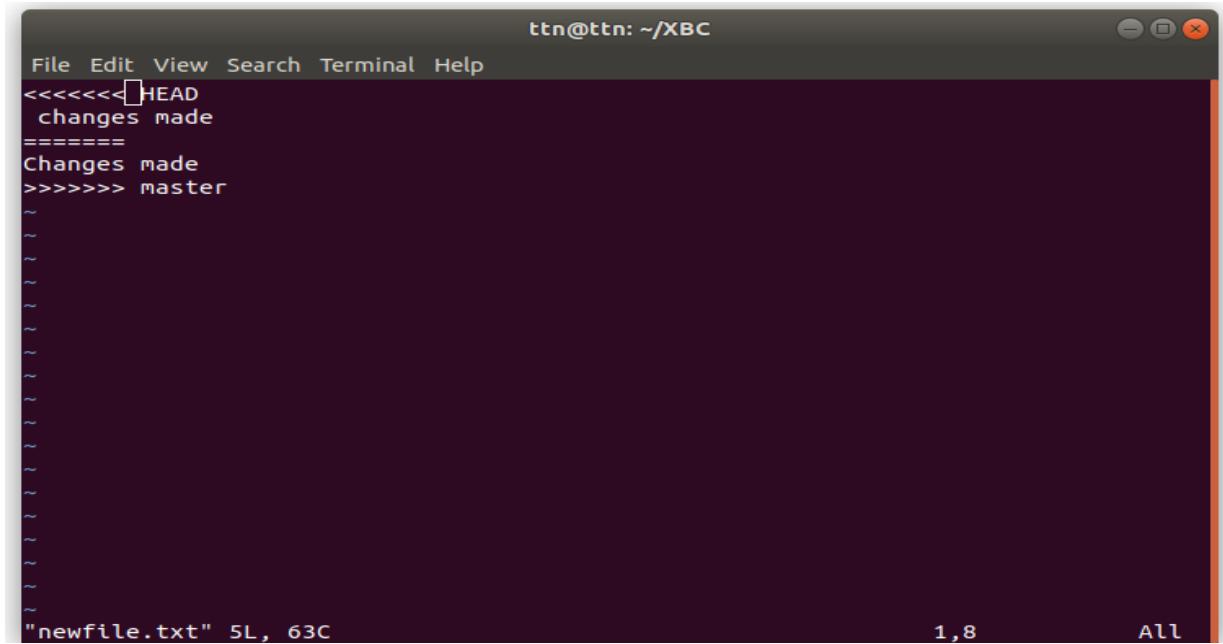
A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window titled "ttn@ttn: ~/XBC". The terminal displays the following command-line session:

```
ttn@ttn:~/XBC$ git checkout master
newfile.txt: needs merge
error: you need to resolve your current index first
ttn@ttn:~/XBC$ git status
On branch trainee-branch
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:  newfile.txt

no changes added to commit (use "git add" and/or "git commit -a")
ttn@ttn:~/XBC$
```

- Editing the newfile.txt-



A screenshot of a Linux desktop environment, likely Ubuntu, showing a code editor window titled "ttn@ttn: ~/XBC". The code editor displays the content of the "newfile.txt" file, which contains a merge conflict. The conflict is shown with the following markers:

```
<<<<< HEAD
changes made
=====
Changes made
>>>>> master
~
```

The file has 5 lines and 63 characters in total. The status bar at the bottom right shows "1,8" and "All".

- Conflict resolved-

```
ttn@ttn: ~/XBC
File Edit View Search Terminal Help
ttn@ttn:~/XBC$ git commit -m "CONFLICT RSOLVED FILE"
[trainee-branch 166cc2d] CONFLICT RSOLVED FILE
ttn@ttn:~/XBC$ git checkout master
Switched to branch 'master'
ttn@ttn:~/XBC$ git add .
ttn@ttn:~/XBC$ git commit -m "MASTER RSOLVED FILE"
On branch master
nothing to commit, working tree clean
ttn@ttn:~/XBC$ git merge trainee-branch
Updating b875b91..166cc2d
Fast-forward
 newfile.txt      | 2 ++
 newfile_BACKUP_5635.txt | 5 ++++++
 newfile_BASE_5635.txt   | 1 +
 newfile_LOCAL_5635.txt  | 1 +
 newfile_REMOTE_5635.txt | 1 +
 5 files changed, 10 insertions(+)
 create mode 100644 newfile_BACKUP_5635.txt
 create mode 100644 newfile_BASE_5635.txt
 create mode 100644 newfile_LOCAL_5635.txt
 create mode 100644 newfile_REMOTE_5635.txt
ttn@ttn:~/XBC$ cat newfile.txt
changes made
```

Q 17) Stash the changes and pop them-

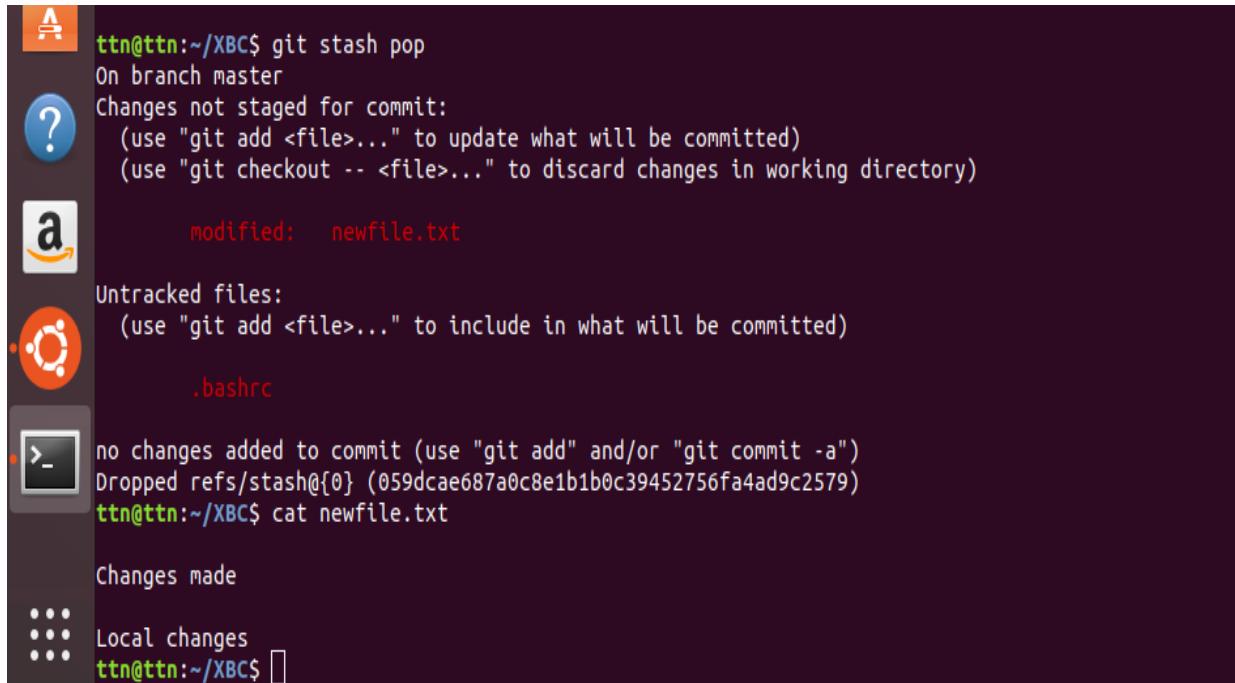
- Changing the newfile.txt and then using git stash-

```
Q Search mail
ttn@ttn: ~/XBC
File Edit View Search Terminal Help
ttn@ttn:~/XBC$ vim newfile.txt
ttn@ttn:~/XBC$ cat newfile.txt
Changes made

ttn@ttn:~/XBC$ echo "Local changes" >> newfile.txt
ttn@ttn:~/XBC$ cat newfile.txt
Changes made

Local changes
ttn@ttn:~/XBC$ git stash
Saved working directory and index state WIP on master: 166cc2d CONFLICT RSOLVED
FILE
ttn@ttn:~/XBC$ cat newfile.txt
changes made
```

- git stash pop-



```
ttn@ttn:~/XBC$ git stash pop
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   newfile.txt

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

        .bashrc

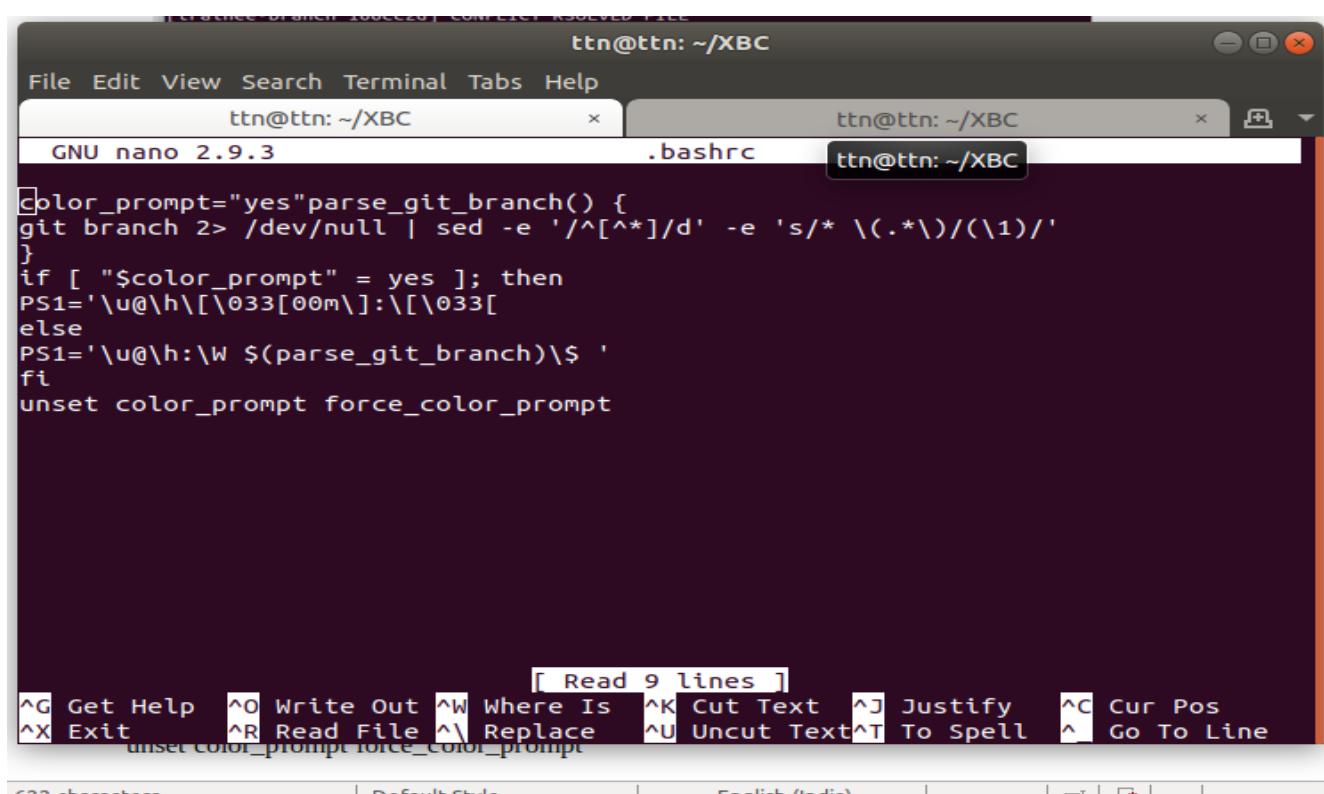
no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (059dcae687a0c8e1b1b0c39452756fa4ad9c2579)
ttn@ttn:~/XBC$ cat newfile.txt

Changes made

Local changes
ttn@ttn:~/XBC$
```

Q 18) Add the following code to your .bashrc file :

```
color_prompt="yes"parse_git_branch() {
git branch 2> /dev/null | sed -e '/^[*]/d' -e 's/* \(.*)/(\1)/'
}
if [ "$color_prompt" = yes ]; then
PS1='\u@\h[\033[00m]:[\033[
else
PS1='\u@\h:\W $(parse_git_branch)$ '
fi
unset color_prompt force_color_prompt
```



The screenshot shows a terminal window with two tabs open: ".bashrc" and "ttn@ttn: ~/XBC". The ".bashrc" tab is active, displaying the script code from the previous step. The terminal window has a dark background and a light-colored text area. At the bottom, there is a menu bar with File, Edit, View, Search, Terminal, Tabs, Help. Below the menu is a toolbar with icons for Get Help, Write Out, Where Is, Cut Text, Justify, Cur Pos, Exit, Read File, Replace, Uncut Text, To Spell, and Go To Line. The status bar at the bottom shows "622 characters" and "Default Style English (India)".