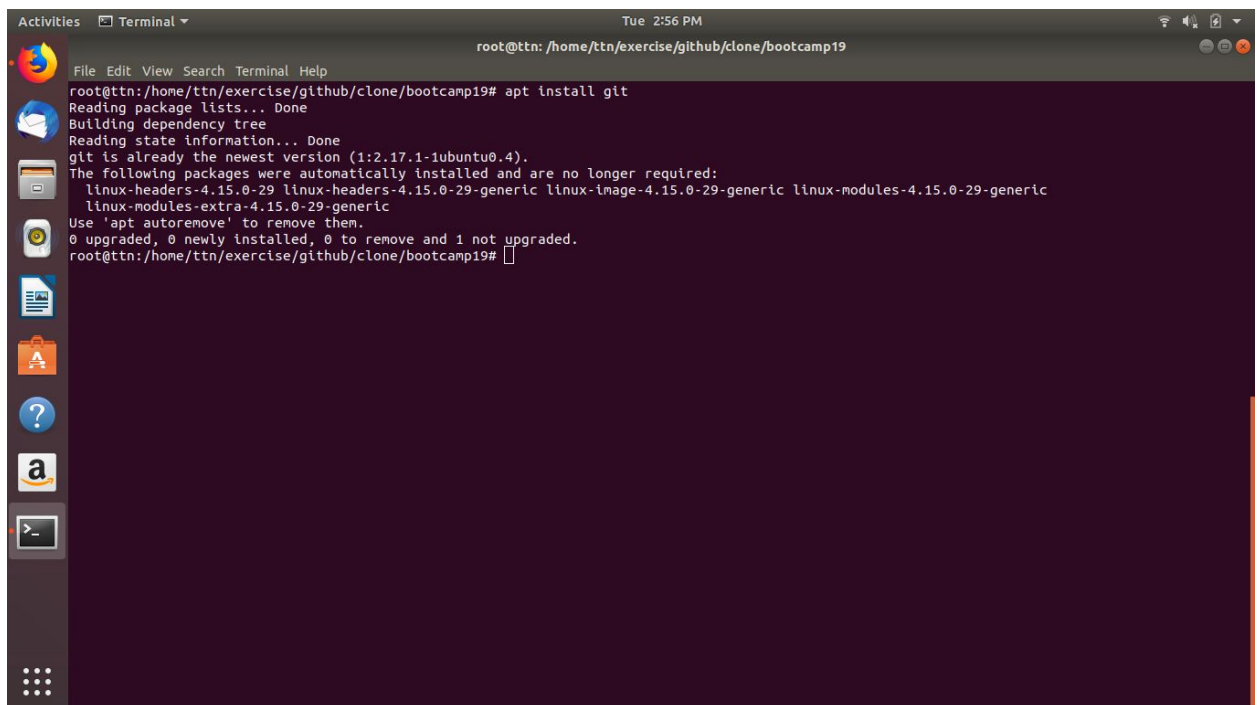


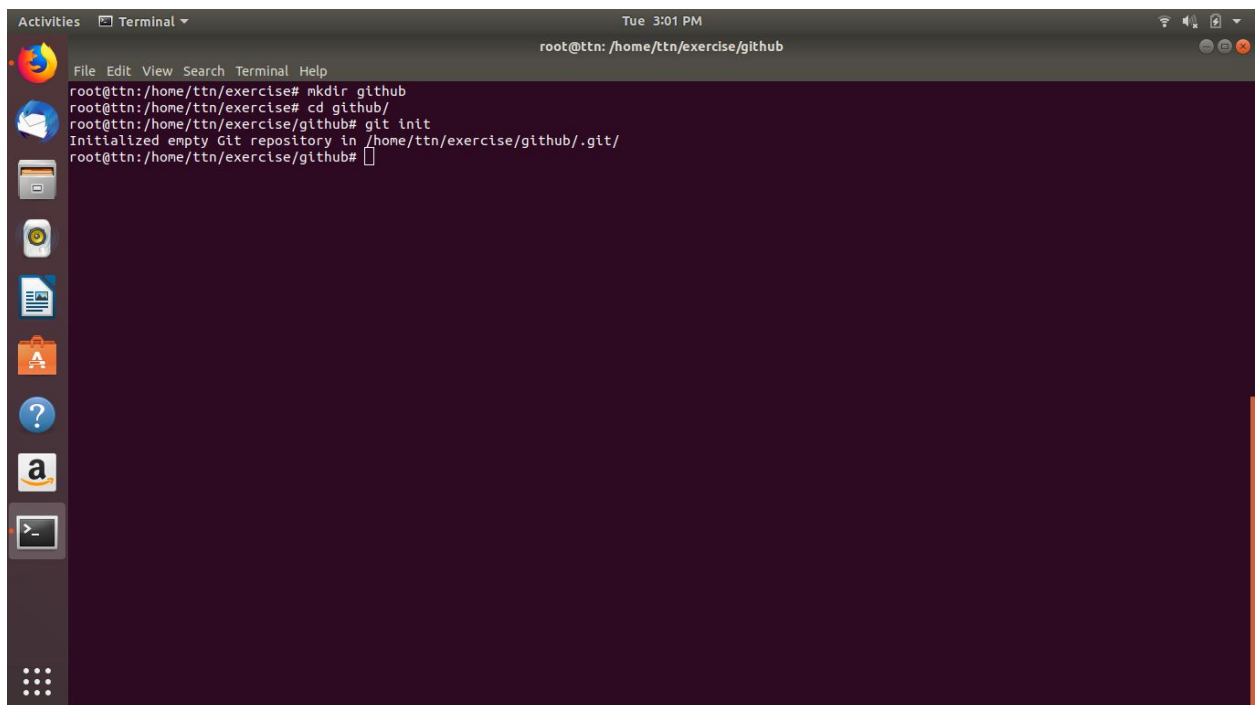
1. Git Setup <https://confluence.atlassian.com/bitbucket/set-up-git-744723531.html>



A terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Tue 2:56 PM, root@ttn: /home/ttn/exercise/github/clone/bootcamp19). The terminal shows the command 'apt install git' being executed. The output indicates that git is already installed at version 1:2.17.1-1ubuntu0.4. It also lists several packages that were automatically installed and are no longer required: linux-headers-4.15.0-29, linux-headers-4.15.0-29-generic, linux-image-4.15.0-29-generic, and linux-modules-extra-4.15.0-29-generic. The terminal suggests using 'apt autoremove' to remove them. The final status is '0 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.' The prompt returns to 'root@ttn: /home/ttn/exercise/github/clone/bootcamp19# '.

```
root@ttn:/home/ttn/exercise/github/clone/bootcamp19# apt install git
Reading package lists... Done
Building dependency tree
Reading state information... Done
git is already the newest version (1:2.17.1-1ubuntu0.4).
The following packages were automatically installed and are no longer required:
  linux-headers-4.15.0-29 linux-headers-4.15.0-29-generic linux-image-4.15.0-29-generic linux-modules-extra-4.15.0-29-generic
Use 'apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.
root@ttn:/home/ttn/exercise/github/clone/bootcamp19#
```

2. Initialize a Git Repository



A terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Tue 3:01 PM, root@ttn: /home/ttn/exercise/github). The terminal shows the following commands and output: 'mkdir github' creates the directory; 'cd github/' changes to the directory; 'git init' initializes the repository. The output for 'git init' is 'Initialized empty Git repository in /home/ttn/exercise/github/.git/'. The prompt returns to 'root@ttn: /home/ttn/exercise/github# '.

```
root@ttn:/home/ttn/exercise# mkdir github
root@ttn:/home/ttn/exercise# cd github/
root@ttn:/home/ttn/exercise/github# git init
Initialized empty Git repository in /home/ttn/exercise/github/.git/
root@ttn:/home/ttn/exercise/github#
```

3. Add files to the repository

```
Activities Terminal Tue 3:08 PM
root@ttn: /home/ttn/exercise/github
File Edit View Search Terminal Help
root@ttn: /home/ttn/exercise/github# git remote add origin git@github.com:annol-duggal/test_repo.git
root@ttn: /home/ttn/exercise/github# ls
root@ttn: /home/ttn/exercise/github# git pull origin master
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 7 (delta 0), reused 4 (delta 0), pack-reused 0
Unpacking objects: 100% (7/7), done.
From github.com:annol-duggal/test_repo
* branch master -> FETCH_HEAD
* [new branch] master -> origin/master
root@ttn: /home/ttn/exercise/github# ls
test
root@ttn: /home/ttn/exercise/github# cd test
-su: cd: test: Not a directory
root@ttn: /home/ttn/exercise/github# cat test
initialize
root@ttn: /home/ttn/exercise/github# vim newfile
root@ttn: /home/ttn/exercise/github# git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)

        newfile

nothing added to commit but untracked files present (use "git add" to track)
root@ttn: /home/ttn/exercise/github# git add newfile
root@ttn: /home/ttn/exercise/github# git commit -m "New file added"
[master 8f91ad0] New file added
 1 file changed, 1 insertion(+)
   create mode 100644 newfile
root@ttn: /home/ttn/exercise/github# git push origin master
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 281 bytes | 281.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To github.com:annol-duggal/test_repo.git
```

4. Unstage 1 file

```
Activities Terminal Tue 3:14 PM
root@ttn: /home/ttn/exercise/github
File Edit View Search Terminal Help
root@ttn: /home/ttn/exercise/github# vim file1.txt
root@ttn: /home/ttn/exercise/github# git status
On branch master
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)
root@ttn: /home/ttn/exercise/github# git add file1.txt
root@ttn: /home/ttn/exercise/github# git status
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

        new file:   file1.txt

root@ttn: /home/ttn/exercise/github# git checkout file1.txt
root@ttn: /home/ttn/exercise/github# git status
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

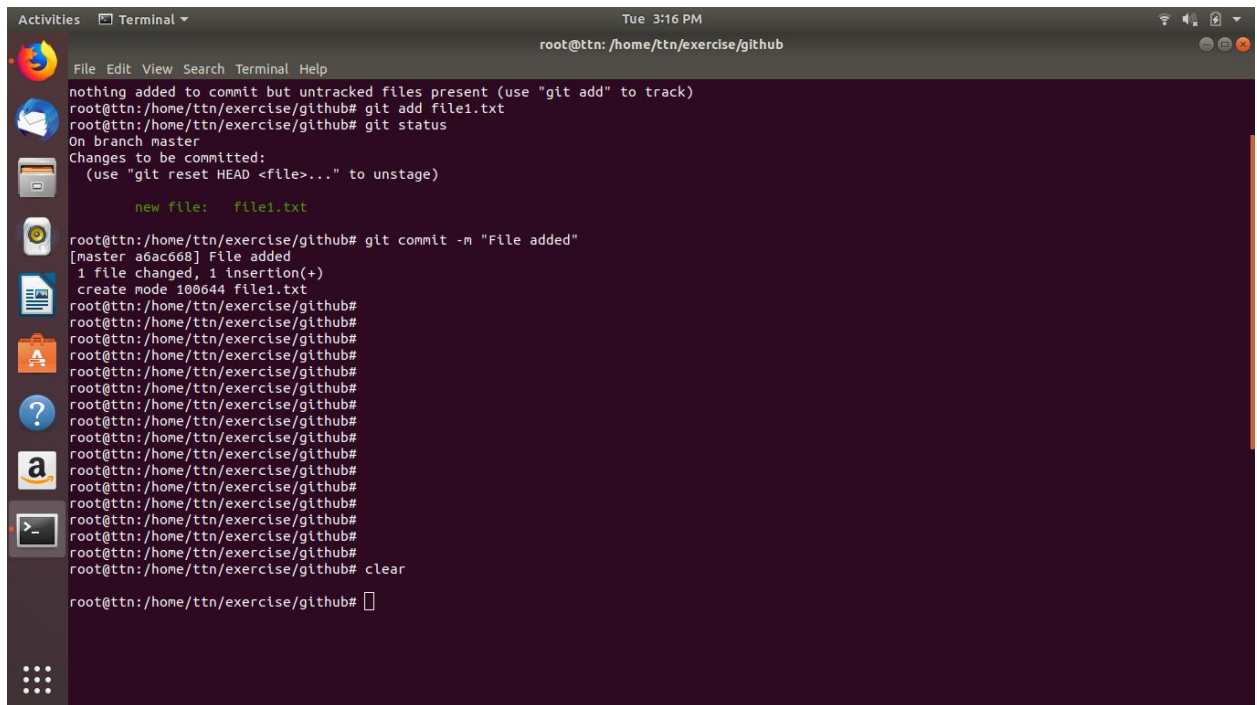
        new file:   file1.txt

root@ttn: /home/ttn/exercise/github# git reset HEAD file1.txt
root@ttn: /home/ttn/exercise/github# git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)

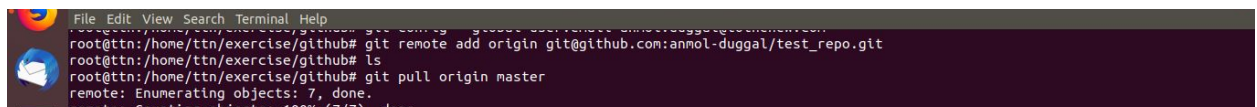
        file1.txt

nothing added to commit but untracked files present (use "git add" to track)
root@ttn: /home/ttn/exercise/github#
```

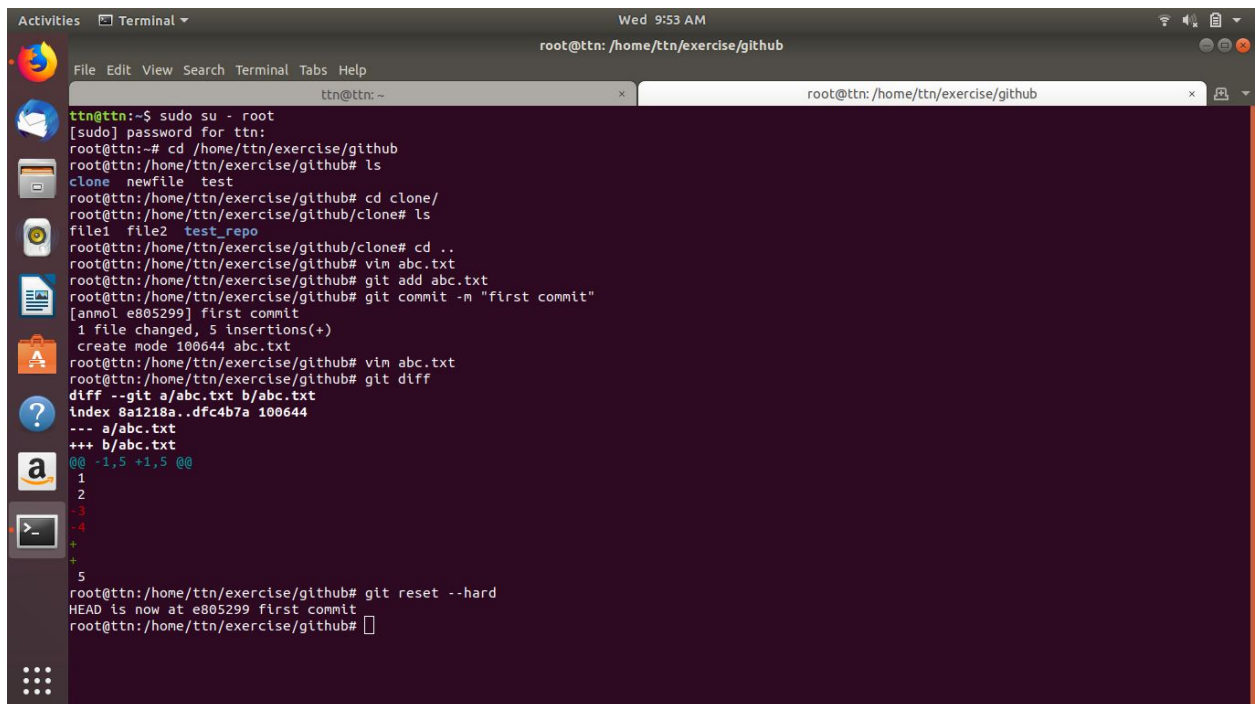
5. Commit the file

A terminal window titled 'root@ttn: /home/ttn/exercise/github' showing the process of committing a file. The user runs 'git add file1.txt', 'git status' (showing 'On branch master' and 'Changes to be committed: (use "git reset HEAD <file>..." to unstage)' with 'new file: file1.txt'), and 'git commit -m "File added"'. The commit is successful, showing '[master a6ac668] File added' and '1 file changed, 1 insertion(+)'.

6. Add a remote

A terminal window showing the addition of a remote repository. The user runs 'git remote add origin git@github.com:annol-duggal/test_repo.git'. The output shows 'remote: Enumerating objects: 7, done.' and 'remote: Compressing objects: 100% (5/5) done.'

7. Undo changes to a particular file

A terminal window showing the process of undoing changes. The user clones a repository, creates a file 'abc.txt', and commits it with the message 'first commit'. They then use 'git diff' to see the changes. Finally, they run 'git reset --hard', which reverts the changes and sets the HEAD to the first commit.

8. Push changes to Github

```
root@ttn:/home/ttn/exercise/github# git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)

        newFile

nothing added to commit but untracked files present (use "git add" to track)
root@ttn:/home/ttn/exercise/github# git add newfile
root@ttn:/home/ttn/exercise/github# git commit -m "New file added"
[master 8f91ad8] New file added
 1 file changed, 1 insertion(+)
 create mode 100644 newfile
root@ttn:/home/ttn/exercise/github# git push origin master
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 281 bytes | 281.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To github.com:annol-duggal/test_repo.git
```

9. Clone the repository

```
Activities  Terminal  Tue 3:30 PM
root@ttn: /home/ttn/exercise/github/clone

File Edit View Search Terminal Help
root@ttn:/home/ttn/exercise/github# mkdir clone
root@ttn:/home/ttn/exercise/github# cd clone/
root@ttn:/home/ttn/exercise/github/clone# git clone git@github.com:annol-duggal/test_repo.git
Cloning into 'test_repo'...
remote: Enumerating objects: 14, done.
remote: Counting objects: 100% (14/14), done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 14 (delta 1), reused 10 (delta 0), pack-reused 0
Receiving objects: 100% (14/14), done.
Resolving deltas: 100% (1/1), done.
root@ttn:/home/ttn/exercise/github/clone#
```


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

```
Activities Terminal Tue 5:01 PM
root@ttn: /home/ttn/exercise/github/clone/test_repo

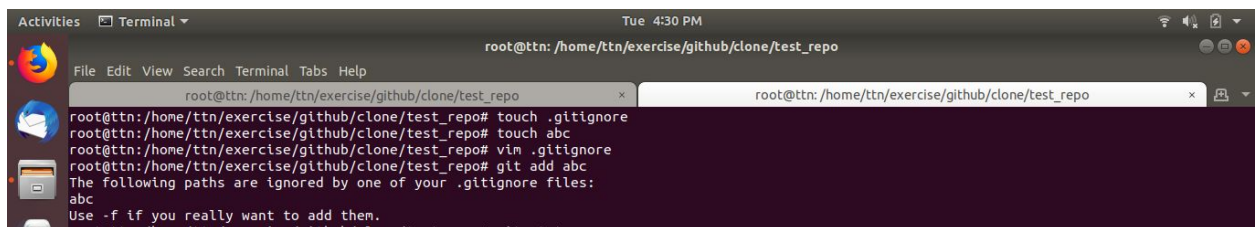
root@ttn:/home/ttn/exercise/github/clone/test_repo# vim xyz
root@ttn:/home/ttn/exercise/github/clone/test_repo# git add xyz
root@ttn:/home/ttn/exercise/github/clone/test_repo# git commit -m "file added"
[annol 890051d] file added
1 file changed, 1 insertion(+)
create mode 100644 xyz
root@ttn:/home/ttn/exercise/github/clone/test_repo# git push origin annol
Counting objects: 15, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (10/10), done.
Writing objects: 100% (15/15), 1.27 KiB | 1.27 MiB/s, done.
Total 15 (delta 2), reused 1 (delta 0)
remote: Resolving deltas: 100% (2/2), done.
remote:
remote: Create a pull request for 'annol' on GitHub by visiting:
remote:   https://github.com/annol-duggal/test_repo/pull/new/annol
remote:
To github.com:annol-duggal/test_repo.git
 * [new branch] annol -> annol
root@ttn:/home/ttn/exercise/github/clone/test_repo# git checkout master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 2 commits.
(use 'git push' to publish your local commits)
root@ttn:/home/ttn/exercise/github/clone/test_repo# git pull origin annol
From github.com:annol-duggal/test_repo
 * branch annol -> FETCH_HEAD
Updating 8916e91..890051d
Fast-forward
 .gitignore | 1 +
 file      | 6 ++++-
 xyz       | 1 +
 3 files changed, 7 insertions(+), 1 deletion(-)
create mode 100644 .gitignore
create mode 100644 xyz
root@ttn:/home/ttn/exercise/github/clone/test_repo# vim xyz
root@ttn:/home/ttn/exercise/github/clone/test_repo#
```

11. Check differences between a file and its staged version

```
Activities Terminal Tue 5:05 PM
root@ttn: /home/ttn/exercise/github/clone/test_repo

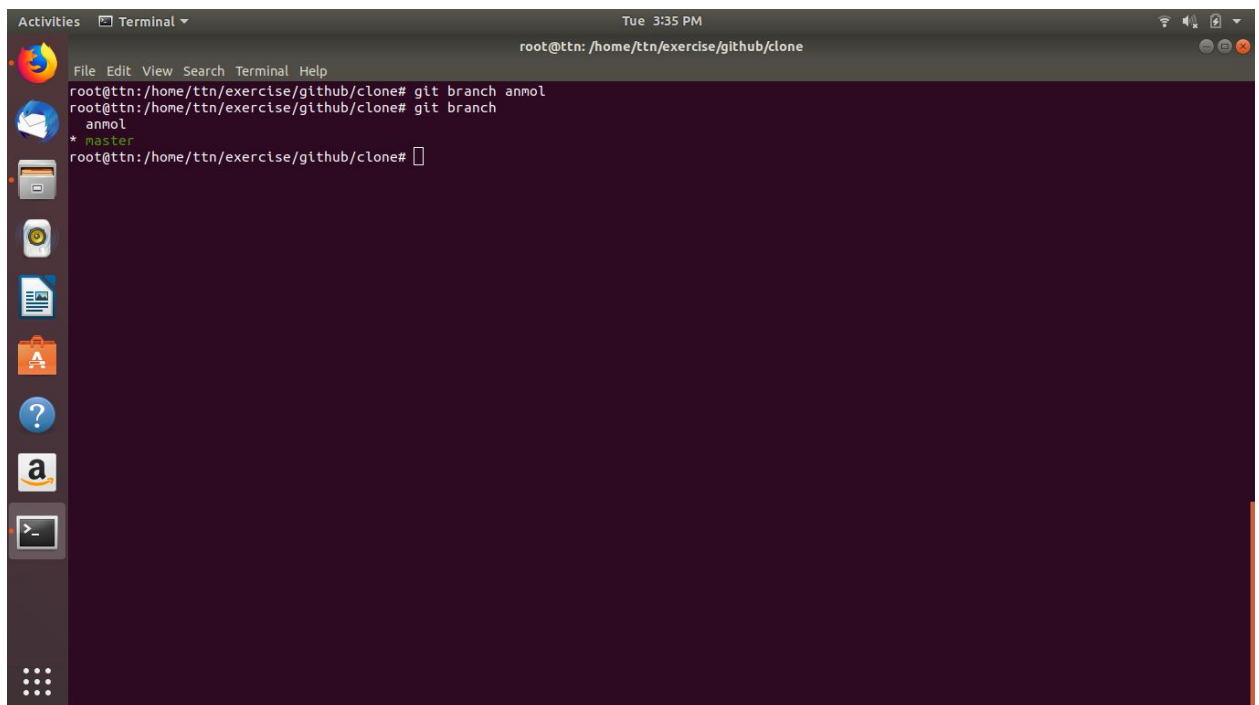
root@ttn:/home/ttn/exercise/github/clone/test_repo# git branch
* master
root@ttn:/home/ttn/exercise/github/clone/test_repo# vim check_diff
root@ttn:/home/ttn/exercise/github/clone/test_repo# git add check_diff
root@ttn:/home/ttn/exercise/github/clone/test_repo# git commit
Aborting commit due to empty commit message.
root@ttn:/home/ttn/exercise/github/clone/test_repo# git commit -m "file added"
[master 849ac57] file added
1 file changed, 5 insertions(+)
create mode 100644 check_diff
root@ttn:/home/ttn/exercise/github/clone/test_repo# vim check_diff
root@ttn:/home/ttn/exercise/github/clone/test_repo# git diff
diff --git a/check_diff b/check_diff
index 8a1218a..e5fbc24 100644
--- a/check_diff
+++ b/check_diff
@@ -1,5 +1,5 @@
1
2
3
-4
+5
+
diff --git a/xyz b/xyz
index 45b983b..e720fc7 100644
--- a/xyz
+++ b/xyz
@@ -1 +1,2 @@
hi
+
root@ttn:/home/ttn/exercise/github/clone/test_repo#
```

12. Ignore a few files to be checked in

A terminal window titled 'root@ttn: /home/ttn/exercise/github/clone/test_repo' showing the creation of a .gitignore file. The user runs 'touch .gitignore', opens it with 'vim .gitignore', and adds 'abc' as an ignored file. A message indicates that 'abc' is ignored by the .gitignore files.

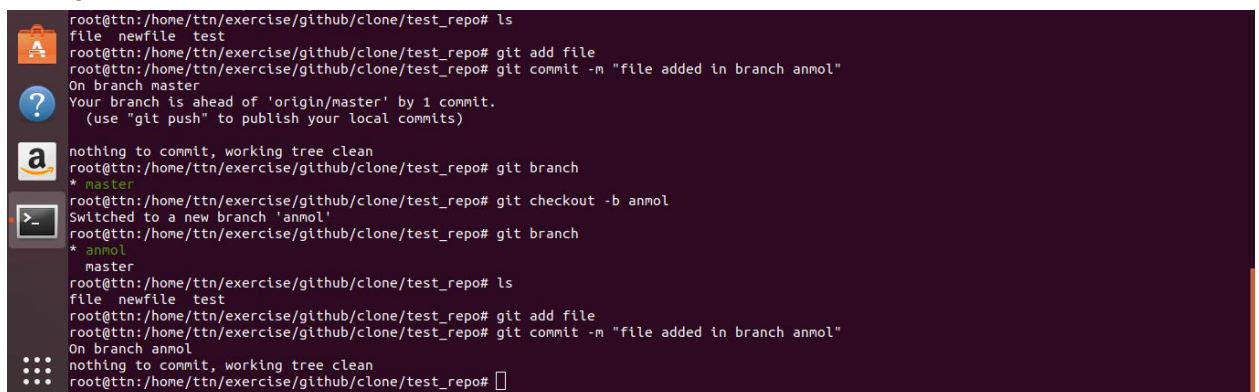
```
root@ttn: /home/ttn/exercise/github/clone/test_repo# touch .gitignore
root@ttn: /home/ttn/exercise/github/clone/test_repo# vim .gitignore
root@ttn: /home/ttn/exercise/github/clone/test_repo# git add abc
The following paths are ignored by one of your .gitignore files:
abc
Use -f if you really want to add them.
```

13. Create a new branch.

A terminal window titled 'root@ttn: /home/ttn/exercise/github/clone' showing the creation of a new branch named 'anmol'. The user runs 'git branch anmol', and the output shows 'anmol' as a new branch created from 'master'. The prompt returns to the root user.

```
root@ttn: /home/ttn/exercise/github/clone# git branch anmol
root@ttn: /home/ttn/exercise/github/clone# git branch
* master
anmol
root@ttn: /home/ttn/exercise/github/clone#
```

14. Diverge them with commits

A terminal window titled 'root@ttn: /home/ttn/exercise/github/clone/test_repo' showing the process of creating a new branch 'anmol' from 'master' and making a commit. The user runs 'ls', 'git add file', 'git commit -m "file added in branch anmol"', and 'git branch'. The output shows the new branch 'anmol' and the commit message. The user then runs 'git checkout -b anmol', and the output shows the switch to the new branch. Finally, the user runs 'ls', 'git add file', 'git commit -m "file added in branch anmol"', and 'git branch', showing the new branch 'anmol' and the commit message.

```
root@ttn: /home/ttn/exercise/github/clone/test_repo# ls
file newfile test
root@ttn: /home/ttn/exercise/github/clone/test_repo# git add file
root@ttn: /home/ttn/exercise/github/clone/test_repo# git commit -m "file added in branch anmol"
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
root@ttn: /home/ttn/exercise/github/clone/test_repo# git branch
* master
anmol
root@ttn: /home/ttn/exercise/github/clone/test_repo# git checkout -b anmol
Switched to a new branch 'anmol'
root@ttn: /home/ttn/exercise/github/clone/test_repo# git branch
* anmol
master
root@ttn: /home/ttn/exercise/github/clone/test_repo# ls
file newfile test
root@ttn: /home/ttn/exercise/github/clone/test_repo# git add file
root@ttn: /home/ttn/exercise/github/clone/test_repo# git commit -m "file added in branch anmol"
On branch anmol
nothing to commit, working tree clean
root@ttn: /home/ttn/exercise/github/clone/test_repo#
```

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

```
Activities Terminal Tue 4:20 PM
root@ttn: /home/ttn/exercise/github/clone/test_repo
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
root@ttn: /home/ttn/exercise/github/clone/test_repo# git branch
root@ttn: /home/ttn/exercise/github/clone/test_repo# git checkout -b annol
Switched to a new branch 'annol'
root@ttn: /home/ttn/exercise/github/clone/test_repo# git branch
  master
root@ttn: /home/ttn/exercise/github/clone/test_repo# ls
file newfile test
root@ttn: /home/ttn/exercise/github/clone/test_repo# git add file
root@ttn: /home/ttn/exercise/github/clone/test_repo# git commit -m "file added to branch annol"
On branch annol
nothing to commit, working tree clean
root@ttn: /home/ttn/exercise/github/clone/test_repo# git branch
  master
  annol
root@ttn: /home/ttn/exercise/github/clone/test_repo# vim file
root@ttn: /home/ttn/exercise/github/clone/test_repo# git commit -ma "edited the file"
root@ttn: /home/ttn/exercise/github/clone/test_repo# git checkout master
Switched to branch 'master'
root@ttn: /home/ttn/exercise/github/clone/test_repo# git pull
Your branch is up to date with 'origin/master'.
root@ttn: /home/ttn/exercise/github/clone/test_repo# vim file
root@ttn: /home/ttn/exercise/github/clone/test_repo# git commit -ma file
[master 81e5c1] 1 file changed, 1 insertion(+)
```

16. Try merging and resolve merge conflicts

```
root@ttn:/home/ttn/exercise/github/clone/test_repo# git branch
* annmol
master
root@ttn:/home/ttn/exercise/github/clone/test_repo# vim file
root@ttn:/home/ttn/exercise/github/clone/test_repo# git commit -ma "edited the file"
error: pathspec 'edited the file' did not match any file(s) known to git.
root@ttn:/home/ttn/exercise/github/clone/test_repo# git commit -ma file
[annmol b8876f7] a
1 file changed, 1 insertion(+)
root@ttn:/home/ttn/exercise/github/clone/test_repo# git checkout master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)
root@ttn:/home/ttn/exercise/github/clone/test_repo# vim file
root@ttn:/home/ttn/exercise/github/clone/test_repo# git commit -ma file
[master 8916e91] a
1 file changed, 1 insertion(+)
root@ttn:/home/ttn/exercise/github/clone/test_repo# git branch
annmol
* master
root@ttn:/home/ttn/exercise/github/clone/test_repo# git checkout annmol
Switched to branch 'annmol'
root@ttn:/home/ttn/exercise/github/clone/test_repo# git merge master
Auto-merging file
CONFLICT (content): Merge conflict in file
Automatic merge failed; fix conflicts and then commit the result.
root@ttn:/home/ttn/exercise/github/clone/test_repo# vim file
root@ttn:/home/ttn/exercise/github/clone/test_repo# git merge master
```

The screenshot shows a Linux desktop environment. On the left is a vertical sidebar containing several application icons: a web browser, a mail client, a file manager, a terminal, a music player, a document viewer, a shopping bag, a question mark, an Amazon logo, and a terminal icon. The main area of the screen is a terminal window titled "Terminal". The terminal's title bar includes "Activities", "Terminal", and system status icons (Wi-Fi, battery, time). The terminal's menu bar lists "File", "Edit", "View", "Search", "Terminal", "Tabs", and "Help". The terminal's address bar shows the current directory: "root@ttn: /home/ttn/exercise/github/clone/test_repo". The terminal's content area displays the following text:

```

root@ttn: /home/ttn/exercise/github/clone/test_repo
<<<<<< HEAD
hello
=====
EDITED!!
>>>>>> master

```

At the bottom of the terminal window, there is a status bar showing the file name "file", the size "5L, 52C", and the page number "1,9". The bottom right corner of the desktop shows the text "ALL".

17. Stash the changes and pop them

```
Saved working directory and index state WIP on boot2: 82b7590 Branch data pushed.
ttn@ttn: ~/bootcamp/clonebootcamp/bootcamp$ git stash pop
On branch boot2
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:   test1.m

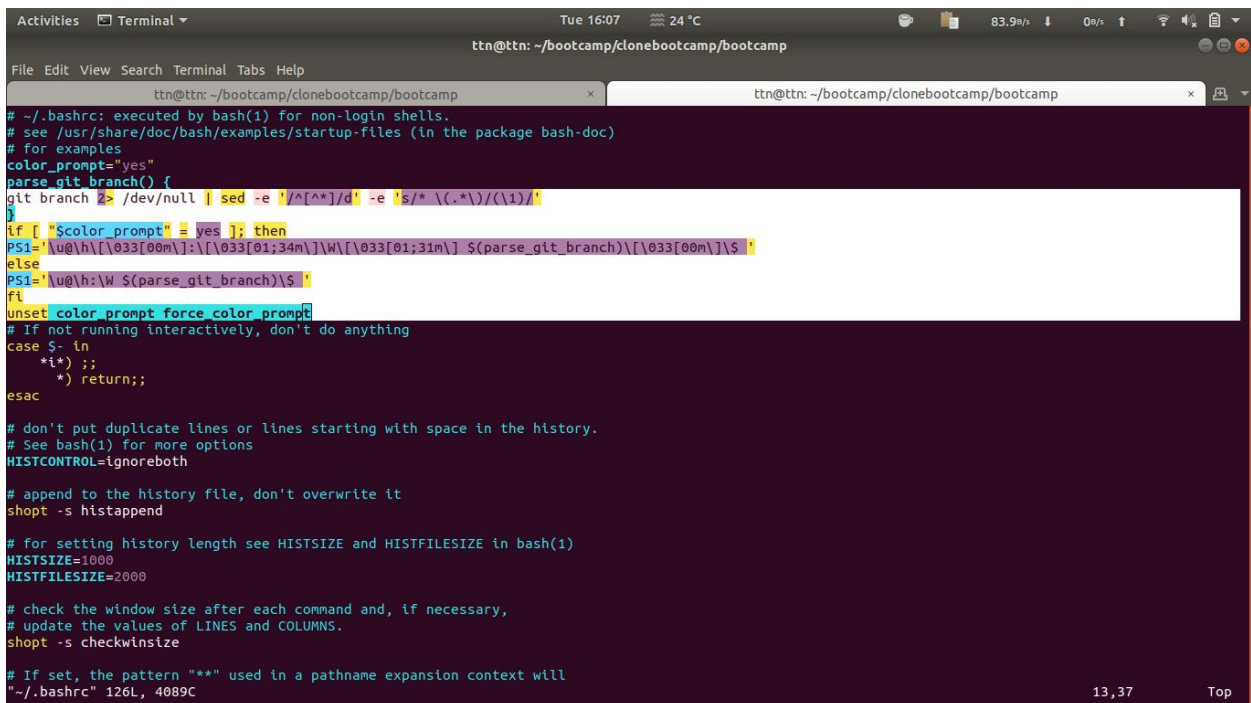
no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (e14193026791b13cee4417a29d25e8b0ff399b18)
ttn@ttn: ~/bootcamp/clonebootcamp/bootcamp$ git status
On branch boot2
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   test1.m

no changes added to commit (use "git add" and/or "git commit -a")
ttn@ttn: ~/bootcamp/clonebootcamp/bootcamp$ vim test1.m
```

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]:\[\033[01;34m\]\W[\033[01;31m\]
$(parse_git_branch)\[\033[00m\]]$ '
else
    PS1='\u@\h:\W $(parse_git_branch)\$ '
fi
unset color_prompt force_color_prompt
```



```
Activities Terminal Tue 16:07 24°C
ttn@ttn: ~/bootcamp/clonebootcamp/bootcamp

ttn@ttn: ~/bootcamp/clonebootcamp/bootcamp
# ~/.bashrc: executed by bash(1) for non-login shells.
# see /usr/share/doc/bash/examples/startup-files (in the package bash-doc)
# for examples
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]:\[\033[01;34m\]\W[\033[01;31m\] $(parse_git_branch)\[\033[00m\]]$ '
else
    PS1='\u@\h:\W $(parse_git_branch)\$ '
fi
unset color_prompt force_color_prompt
# If not running interactively, don't do anything
case $- in
    *i*) ;;
    *) return;;
esac
# don't put duplicate lines or lines starting with space in the history.
# See bash(1) for more options
HISTCONTROL=ignoreboth
# append to the history file, don't overwrite it
shopt -s histappend
# for setting history length see HISTSIZE and HISTFILESIZE in bash(1)
HISTSIZE=1000
HISTFILESIZE=2000
# check the window size after each command and, if necessary,
# update the values of LINES and COLUMNS.
shopt -s checkwinsize
# If set, the pattern "*" used in a pathname expansion context will
"~/.bashrc" 126L, 4089C
13,37 Top
```