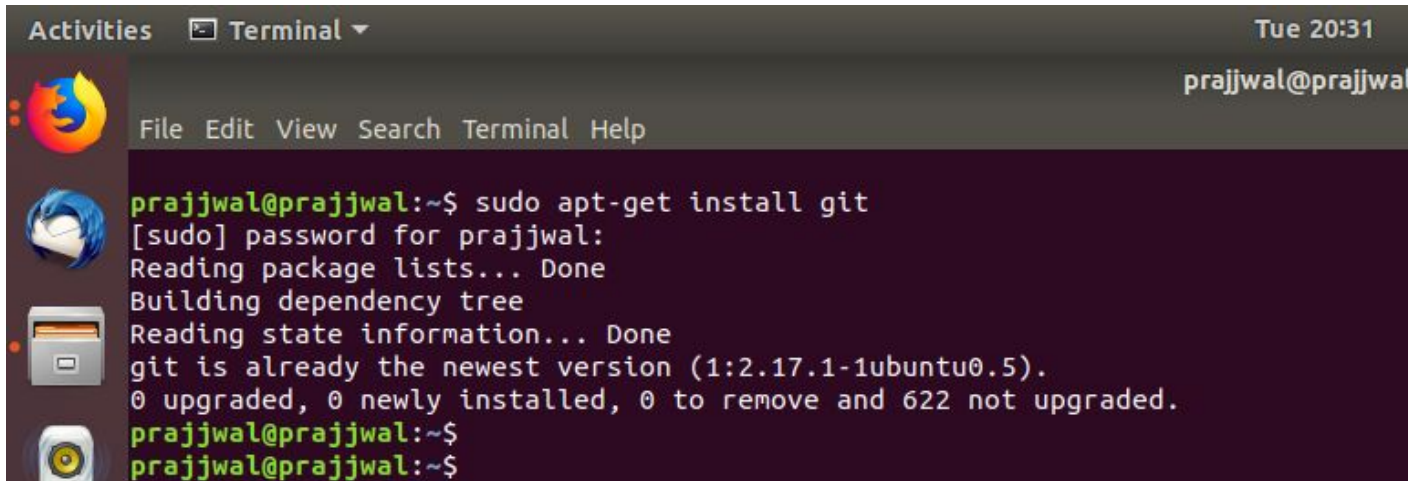


## EXERCISE OF GIT

### 1-Git Setup

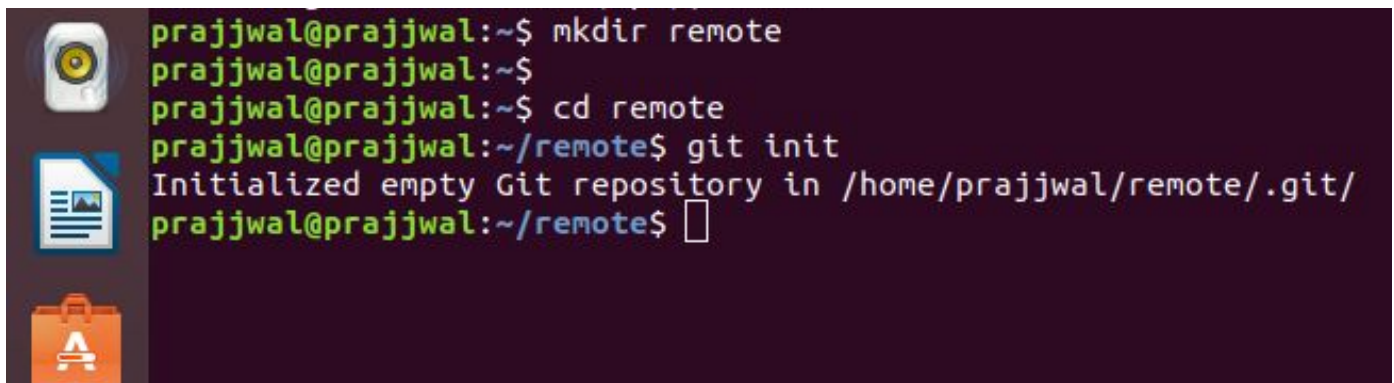


```
Activities Terminal ▾ Tue 20:31 prajjwal@prajjwal
```

File Edit View Search Terminal Help

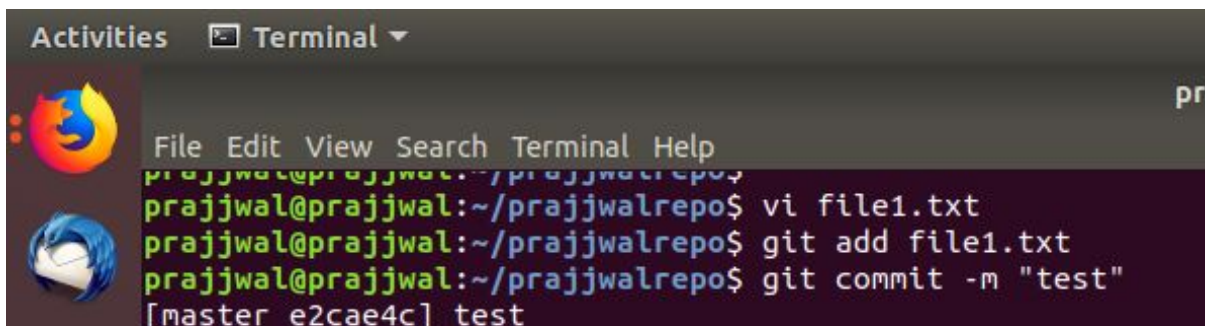
```
prajjwal@prajjwal:~$ sudo apt-get install git
[sudo] password for prajjwal:
Reading package lists... Done
Building dependency tree
Reading state information... Done
git is already the newest version (1:2.17.1-1ubuntu0.5).
0 upgraded, 0 newly installed, 0 to remove and 622 not upgraded.
prajjwal@prajjwal:~$
prajjwal@prajjwal:~$
```

### 2-Initialize a Git Repository



```
prajjwal@prajjwal:~$ mkdir remote
prajjwal@prajjwal:~$
prajjwal@prajjwal:~$ cd remote
prajjwal@prajjwal:~/remote$ git init
Initialized empty Git repository in /home/prajjwal/remote/.git/
prajjwal@prajjwal:~/remote$
```

### 3-Add files to the repository

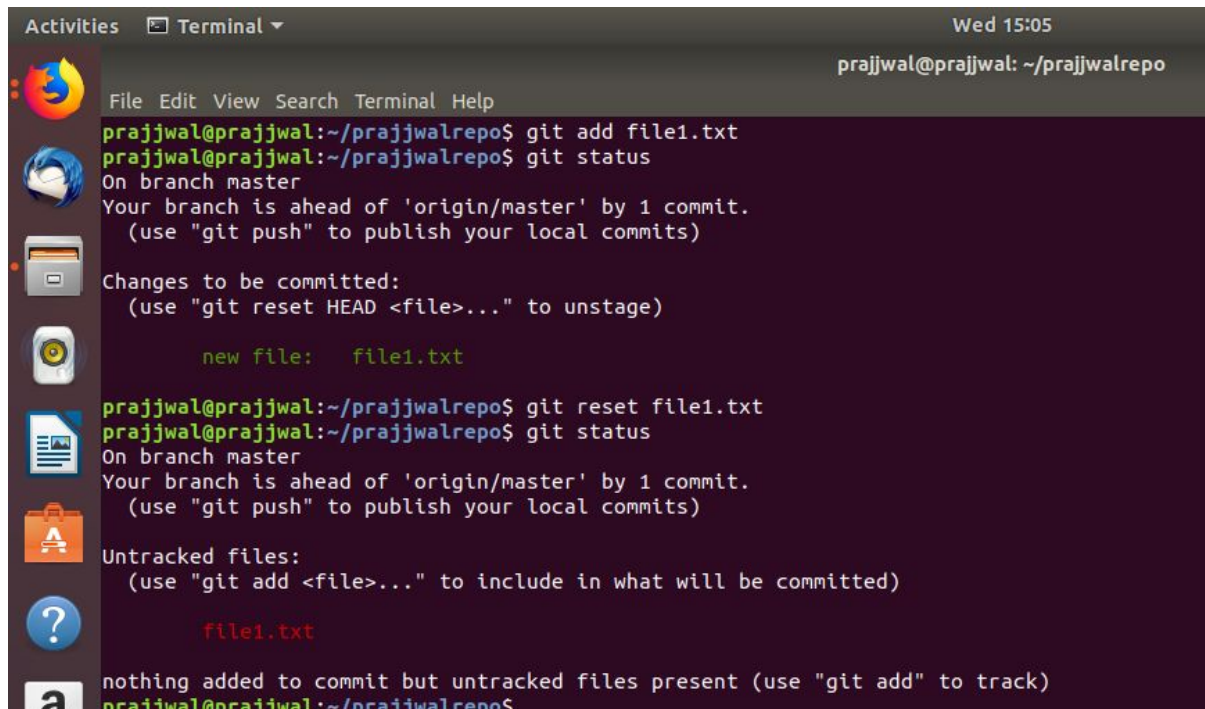


```
Activities Terminal ▾ prajjwal@prajjwal
```

File Edit View Search Terminal Help

```
prajjwal@prajjwal:~/prajjwalrepo$ vi file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git commit -m "test"
[master e2cae4c] test
```

#### 4-Unstage 1 file



A terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Wed 15:05, prajjwal@prajjwal: ~/prajjwalrepo). The terminal shows the following commands and output:

```
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)

Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

        new file:   file1.txt

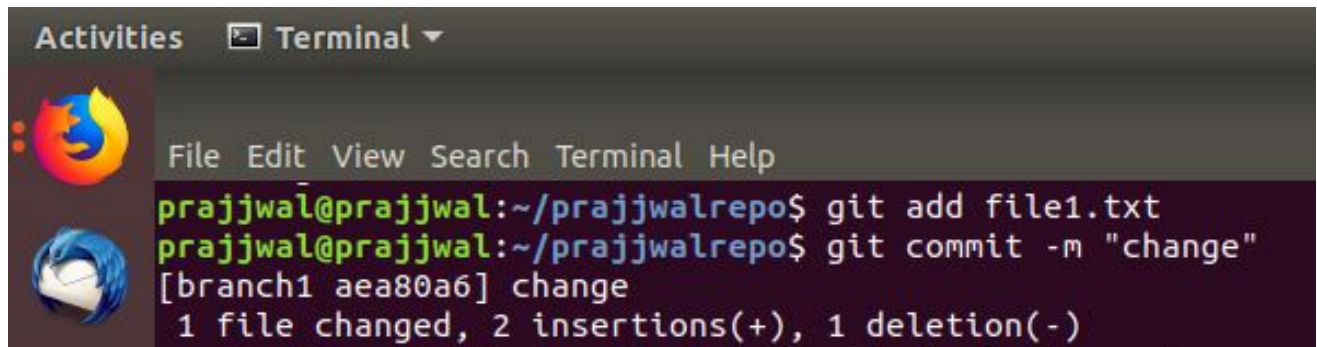
prajjwal@prajjwal:~/prajjwalrepo$ git reset file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)

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)
prajjwal@prajjwal:~/prajjwalrepo$
```

#### 5-Commit the file



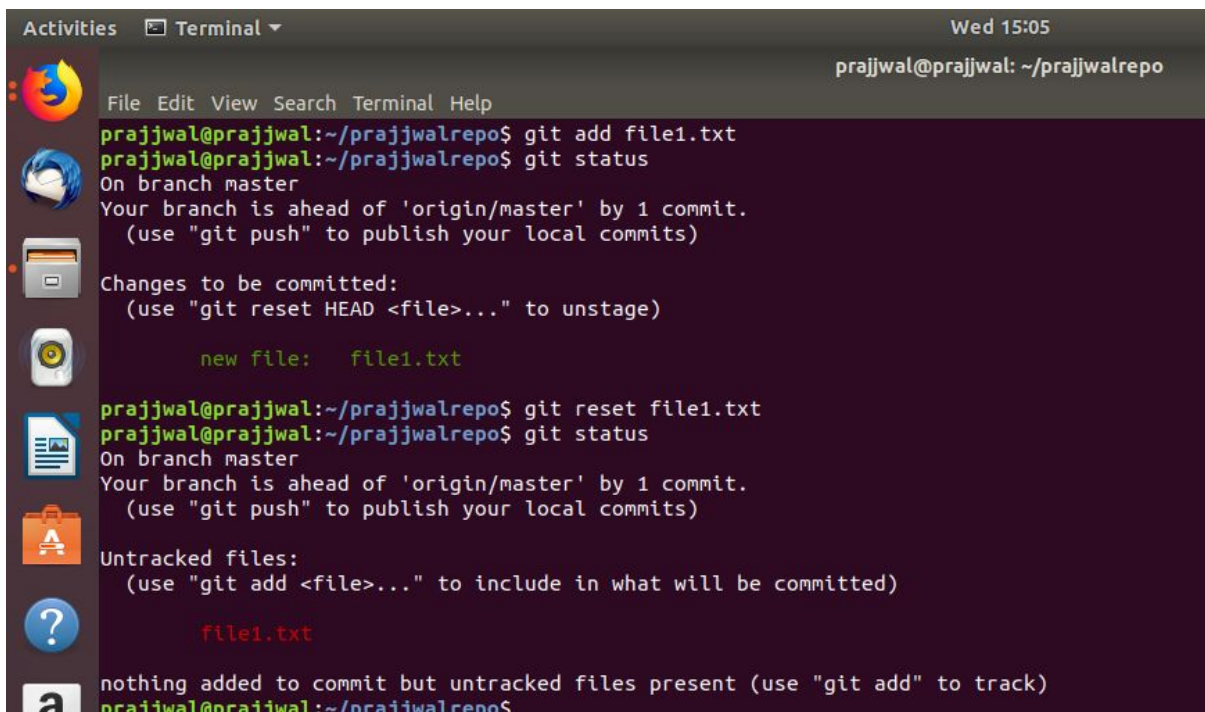
A terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Wed 15:05, prajjwal@prajjwal: ~/prajjwalrepo). The terminal shows the following commands and output:

```
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git commit -m "change"
[branch1 aea80a6] change
1 file changed, 2 insertions(+), 1 deletion(-)
```

## 6-Add a remote

```
prajjwal@prajjwal:~/prajjwalrepo$ mkdir repo
prajjwal@prajjwal:~/prajjwalrepo$ cd repo
prajjwal@prajjwal:~/prajjwalrepo/repo$ git init
Initialized empty Git repository in /home/prajjwal/prajjwalrepo/repo/.git/
prajjwal@prajjwal:~/prajjwalrepo/repo$ git remote add origin git@github.com:pandeYtn/prajjwalrepo.git
prajjwal@prajjwal:~/prajjwalrepo/repo$
```

## 7-Undo changes to a particular file



The screenshot shows a terminal window with the following content:

```
Activities  Terminal  Wed 15:05
prajjwal@prajjwal: ~/prajjwalrepo

File Edit View Search Terminal Help
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)

Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    new file:   file1.txt

prajjwal@prajjwal:~/prajjwalrepo$ git reset file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)

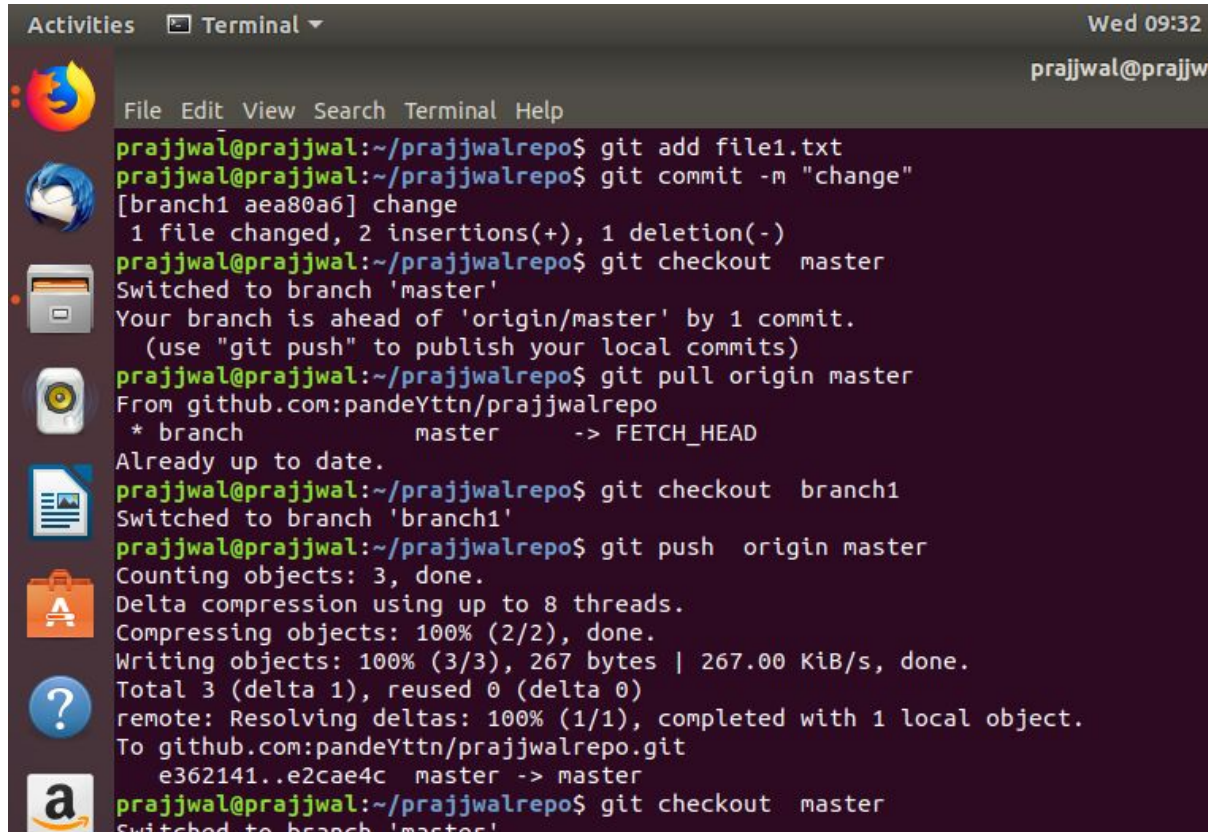
Untracked files:
  (use "git add <file>..." to include in what will be committed)

    file1.txt

nothing added to commit but untracked files present (use "git add" to track)
prajjwal@prajjwal:~/prajjwalrepo$
```



## 8-Push changes to Github



A terminal window titled 'Terminal' with a dark background and light text. The window shows a series of git commands and their outputs. The user is working in a directory named ~/prajjwalrepo. The commands and outputs are as follows:

```
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git commit -m "change"
[branch1 aea80a6] change
1 file changed, 2 insertions(+), 1 deletion(-)
prajjwal@prajjwal:~/prajjwalrepo$ 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)
prajjwal@prajjwal:~/prajjwalrepo$ git pull origin master
From github.com:pandeyttn/prajjwalrepo
* branch      master      -> FETCH_HEAD
Already up to date.
prajjwal@prajjwal:~/prajjwalrepo$ git checkout branch1
Switched to branch 'branch1'
prajjwal@prajjwal:~/prajjwalrepo$ git push origin master
Counting objects: 3, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 267 bytes | 267.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To github.com:pandeyttn/prajjwalrepo.git
   e362141..e2cae4c  master -> master
prajjwal@prajjwal:~/prajjwalrepo$ git checkout master
Switched to branch 'master'
```

## 9-Clone the repository

```
Activities Terminal ▾ Wed 09:28 prajjwal@prajjwal: ~
File Edit View Search Terminal Help
prajjwal@prajjwal:~$ git clone git@github.com:pandeYttN/prajjwalrepo.git
Cloning into 'prajjwalrepo'...
remote: Enumerating objects: 17, done.
remote: Counting objects: 100% (17/17), done.
remote: Compressing objects: 100% (11/11), done.
remote: Total 17 (delta 3), reused 13 (delta 1), pack-reused 0
Receiving objects: 100% (17/17), 54.02 KiB | 72.00 KiB/s, done.
Resolving deltas: 100% (3/3), done.
prajjwal@prajjwal:~$
prajjwal@prajjwal:~$
prajjwal@prajjwal:~$
```

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

```
Activities Terminal ▾ prajjwal
File Edit View Search Terminal Help
prajjwal@prajjwal:~/prajjwalrepo$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
prajjwal@prajjwal:~/prajjwalrepo$ git pull origin master
From github.com:pandeYttN/prajjwalrepo
* branch                master      -> FETCH_HEAD
```

11-Check differences between a file and its staged version

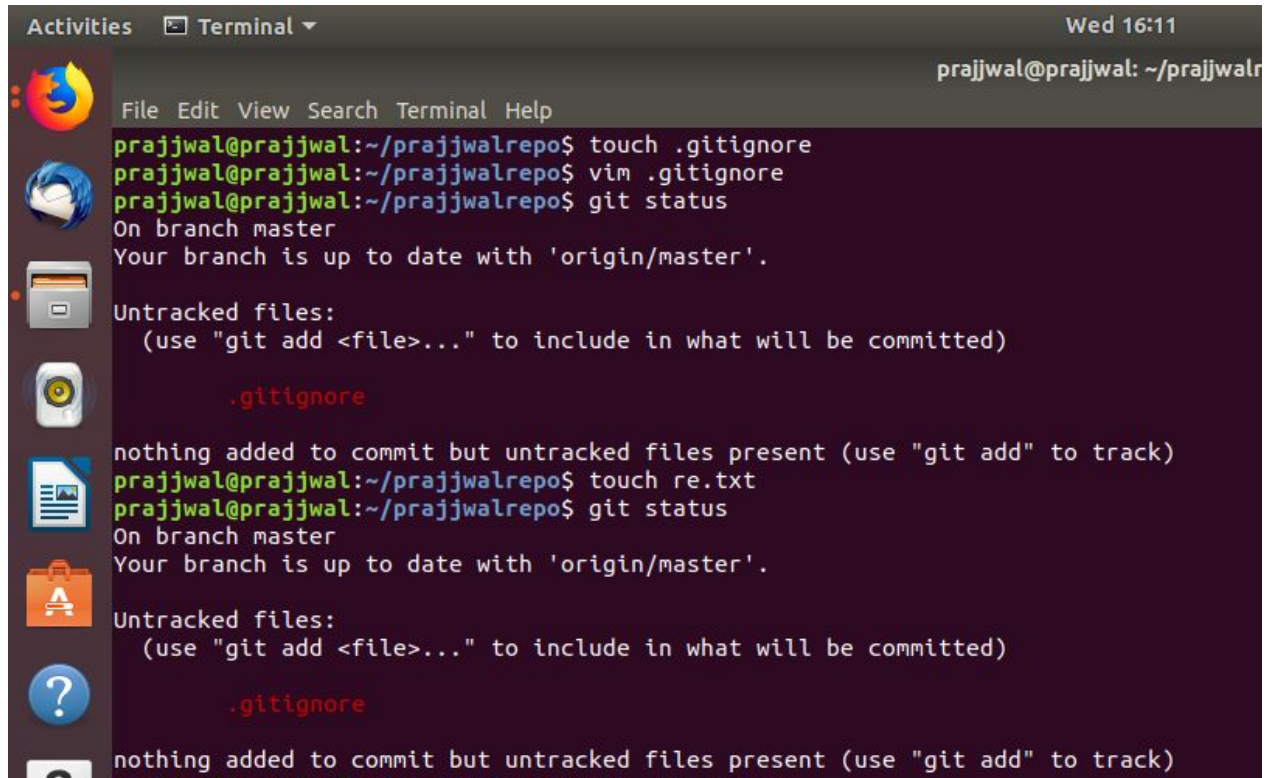
```
Activities Terminal ▾ Wed 14:54 prajjwal@prajjwal: ~/prajjwalrepo
File Edit View Search Terminal Help
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)

Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    new file:   file1.txt

prajjwal@prajjwal:~/prajjwalrepo$ cat >> file1.txt
changeprajjwal@prajjwal:~/prajjwalrepo$ git diff
diff --git a/file1.txt b/file1.txt
index 8412796..ccdd5ae 100644
--- a/file1.txt
+++ b/file1.txt
@@ -1,3 +1,4 @@
 this is change
+change
\ No newline at end of file
```

12-Ignore a few files to be checked in

A screenshot of a Linux terminal window titled 'Terminal'. The window shows a series of commands and their outputs. The user is in a directory named ~/prajjwalrepo. The commands executed are: 'touch .gitignore', 'vim .gitignore', 'git status', 'touch re.txt', and another 'git status'. The output of 'git status' shows that the branch is up to date with 'origin/master' and lists untracked files: '.gitignore' and 're.txt'. The terminal interface includes a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The status bar at the top right shows the date and time as 'Wed 16:11' and the user's location as 'prajjwal@prajjwal: ~/prajjwalr'. The left sidebar of the terminal window displays various application icons.

```
prajjwal@prajjwal:~/prajjwalrepo$ touch .gitignore
prajjwal@prajjwal:~/prajjwalrepo$ vim .gitignore
prajjwal@prajjwal:~/prajjwalrepo$ git status
On branch master
Your branch is up to date with 'origin/master'.

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

        .gitignore

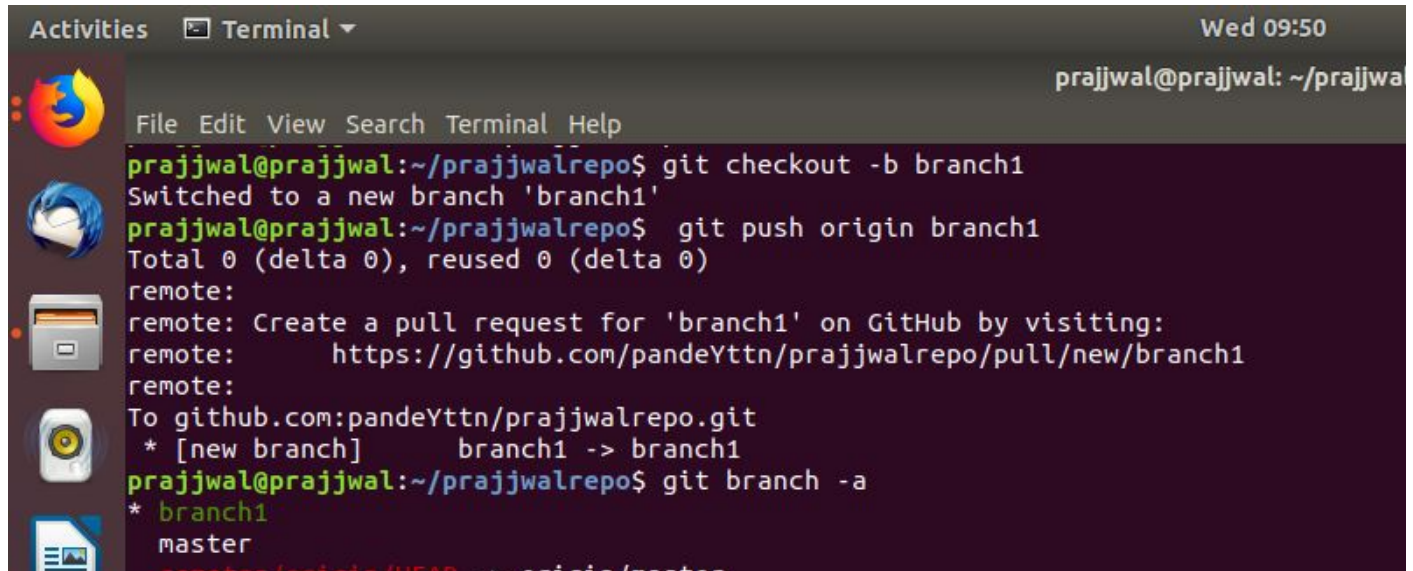
nothing added to commit but untracked files present (use "git add" to track)
prajjwal@prajjwal:~/prajjwalrepo$ touch re.txt
prajjwal@prajjwal:~/prajjwalrepo$ git status
On branch master
Your branch is up to date with 'origin/master'.

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

        .gitignore
        re.txt

nothing added to commit but untracked files present (use "git add" to track)
```

13-Create a new branch.



A terminal window titled 'Terminal' with a dark background. The window shows the execution of several git commands. The first command is 'git checkout -b branch1', which results in 'Switched to a new branch 'branch1''. The second command is 'git push origin branch1', which results in 'Total 0 (delta 0), reused 0 (delta 0)' and a message to create a pull request on GitHub. The third command is 'git branch -a', which lists the branches 'branch1' and 'master'. The terminal window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The status bar at the top right shows 'Wed 09:50' and the user's location 'prajjwal@prajjwal: ~/prajjwa'.

```
prajjwal@prajjwal:~/prajjwalrepo$ git checkout -b branch1
Switched to a new branch 'branch1'
prajjwal@prajjwal:~/prajjwalrepo$ git push origin branch1
Total 0 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'branch1' on GitHub by visiting:
remote:   https://github.com/pandeYttn/prajjwalrepo/pull/new/branch1
remote:
To github.com:pandeYttn/prajjwalrepo.git
 * [new branch]      branch1 -> branch1
prajjwal@prajjwal:~/prajjwalrepo$ git branch -a
* branch1
master
```

14-Diverge them with commits



Activities Terminal ▾

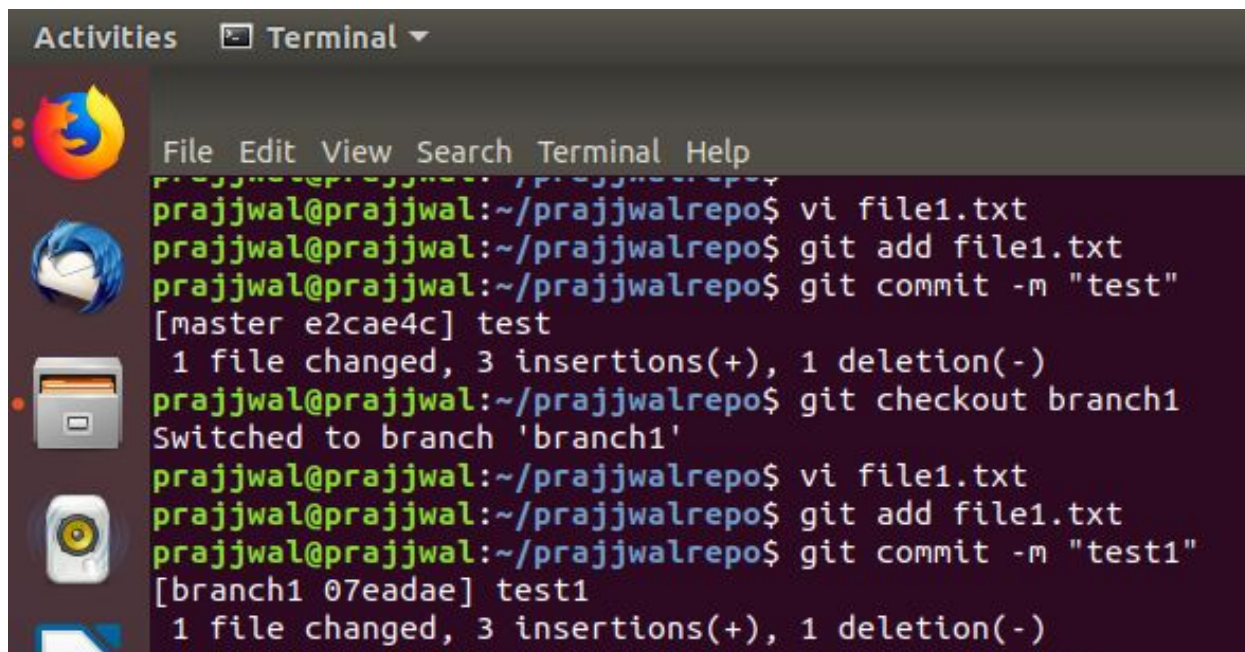


File Edit View Search Terminal Help

```
prajjwal@prajjwal:~/prajjwalrepo$ git checkout branch1
Switched to branch 'branch1'
Your branch is ahead of 'origin/branch1' by 1 commit.
(use "git push" to publish your local commits)
prajjwal@prajjwal:~/prajjwalrepo$ cat > xyz.txt
hiiprajjwal@prajjwal:~/prajjwalrepo$ git checkout master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 4 commits.
(use "git push" to publish your local commits)
prajjwal@prajjwal:~/prajjwalrepo$ git checkout branch1
Switched to branch 'branch1'
Your branch is ahead of 'origin/branch1' by 1 commit.
(use "git push" to publish your local commits)
prajjwal@prajjwal:~/prajjwalrepo$
prajjwal@prajjwal:~/prajjwalrepo$ git add xyz.txt
prajjwal@prajjwal:~/prajjwalrepo$ git commit -m "hello"
[branch1 cb6afeb] hello
1 file changed, 1 insertion(+)
create mode 100644 xyz.txt
prajjwal@prajjwal:~/prajjwalrepo$ git checkout master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 4 commits.
(use "git push" to publish your local commits)
prajjwal@prajjwal:~/prajjwalrepo$ git merge branch1
Merge made by the 'recursive' strategy.
xyz.txt | 1 +
1 file changed, 1 insertion(+)
create mode 100644 xyz.txt
```

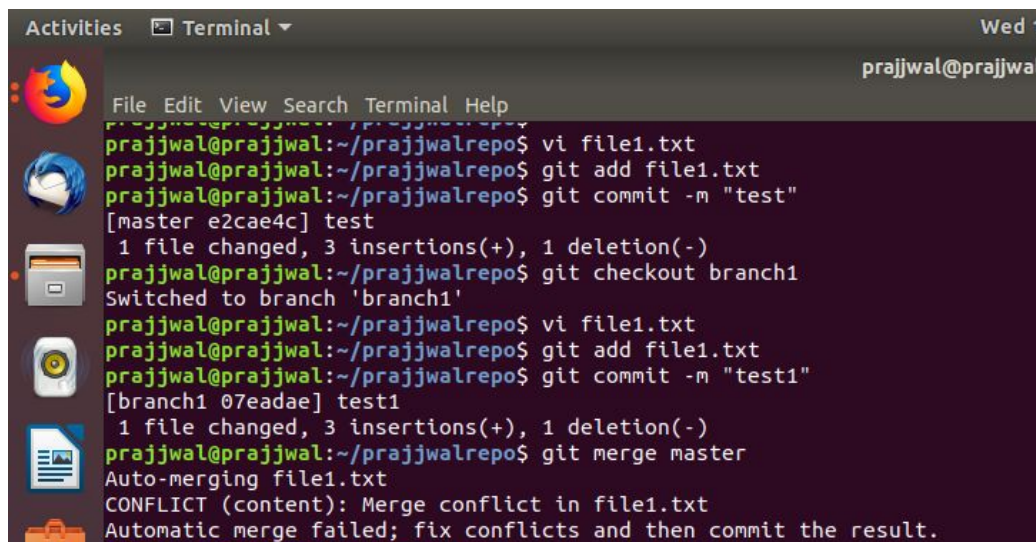


15-Edit the same file at the same line on both branches and commit

A terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help). The user 'prajjwal' is in the directory '~/prajjwalrepo'. The commands and output are: 1. 'vi file1.txt' (no output). 2. 'git add file1.txt' (no output). 3. 'git commit -m "test"' (output: '[master e2cae4c] test', '1 file changed, 3 insertions(+), 1 deletion(-)'). 4. 'git checkout branch1' (output: 'Switched to branch \'branch1\''). 5. 'vi file1.txt' (no output). 6. 'git add file1.txt' (no output). 7. 'git commit -m "test1"' (output: '[branch1 07eadae] test1', '1 file changed, 3 insertions(+), 1 deletion(-)').

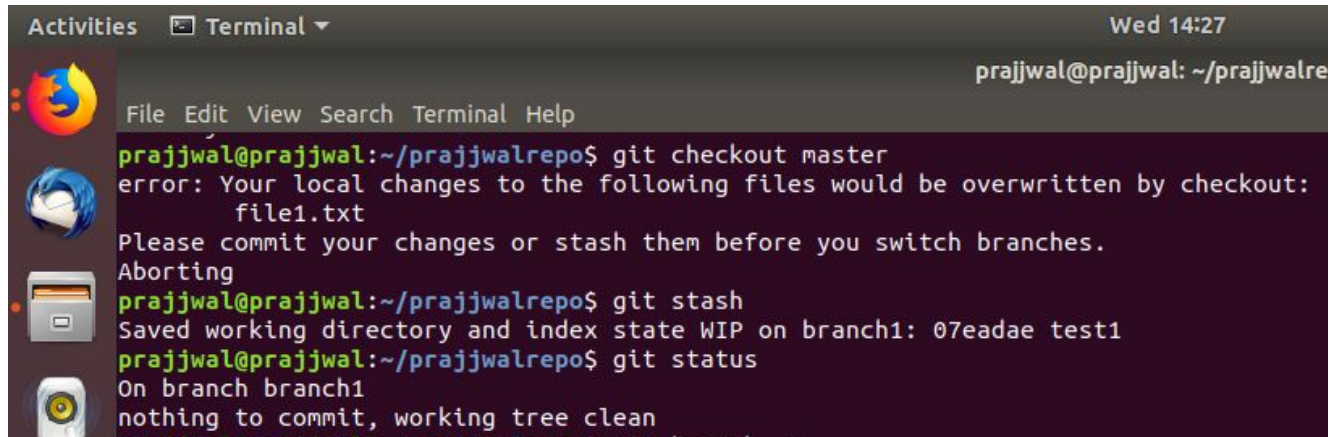
```
prajjwal@prajjwal:~/prajjwalrepo$ vi file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git commit -m "test"
[master e2cae4c] test
1 file changed, 3 insertions(+), 1 deletion(-)
prajjwal@prajjwal:~/prajjwalrepo$ git checkout branch1
Switched to branch 'branch1'
prajjwal@prajjwal:~/prajjwalrepo$ vi file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git commit -m "test1"
[branch1 07eadae] test1
1 file changed, 3 insertions(+), 1 deletion(-)
```

16-Try merging

A terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help). The user 'prajjwal' is in the directory '~/prajjwalrepo'. The commands and output are: 1. 'vi file1.txt' (no output). 2. 'git add file1.txt' (no output). 3. 'git commit -m "test"' (output: '[master e2cae4c] test', '1 file changed, 3 insertions(+), 1 deletion(-)'). 4. 'git checkout branch1' (output: 'Switched to branch \'branch1\''). 5. 'vi file1.txt' (no output). 6. 'git add file1.txt' (no output). 7. 'git commit -m "test1"' (output: '[branch1 07eadae] test1', '1 file changed, 3 insertions(+), 1 deletion(-)'). 8. 'git merge master' (output: 'Auto-merging file1.txt', 'CONFLICT (content): Merge conflict in file1.txt', 'Automatic merge failed; fix conflicts and then commit the result.').

```
prajjwal@prajjwal:~/prajjwalrepo$ vi file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git commit -m "test"
[master e2cae4c] test
1 file changed, 3 insertions(+), 1 deletion(-)
prajjwal@prajjwal:~/prajjwalrepo$ git checkout branch1
Switched to branch 'branch1'
prajjwal@prajjwal:~/prajjwalrepo$ vi file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git add file1.txt
prajjwal@prajjwal:~/prajjwalrepo$ git commit -m "test1"
[branch1 07eadae] test1
1 file changed, 3 insertions(+), 1 deletion(-)
prajjwal@prajjwal:~/prajjwalrepo$ git merge master
Auto-merging file1.txt
CONFLICT (content): Merge conflict in file1.txt
Automatic merge failed; fix conflicts and then commit the result.
```


17-Stash the changes and pop them

A screenshot of a Linux terminal window. The title bar shows 'Activities', 'Terminal', and 'Wed 14:27'. The user is 'prajjwal@prajjwal' in the directory '~/prajjwalrepo'. The terminal shows the following commands and output:

```
prajjwal@prajjwal:~/prajjwalrepo$ git checkout master
error: Your local changes to the following files would be overwritten by checkout:
      file1.txt
Please commit your changes or stash them before you switch branches.
Aborting
prajjwal@prajjwal:~/prajjwalrepo$ git stash
Saved working directory and index state WIP on branch1: 07eadae test1
prajjwal@prajjwal:~/prajjwalrepo$ git status
On branch branch1
nothing to commit, working tree clean
```

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 ▾

File Edit View Search Terminal Help

```
prajjwal@prajjwal:~$ vim ~/.bashrc
prajjwal@prajjwal:~$
prajjwal@prajjwal:~$
```

```
? # sources /etc/bash.bashrc).
a if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi
>_ 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
-- INSERT --
```

Activities  Terminal ▾

File Edit View Search Terminal Help

```
welcome
prajjwal@prajjwal:~ (master)$
```