

Introduction to Version Control 05-Feb-2019

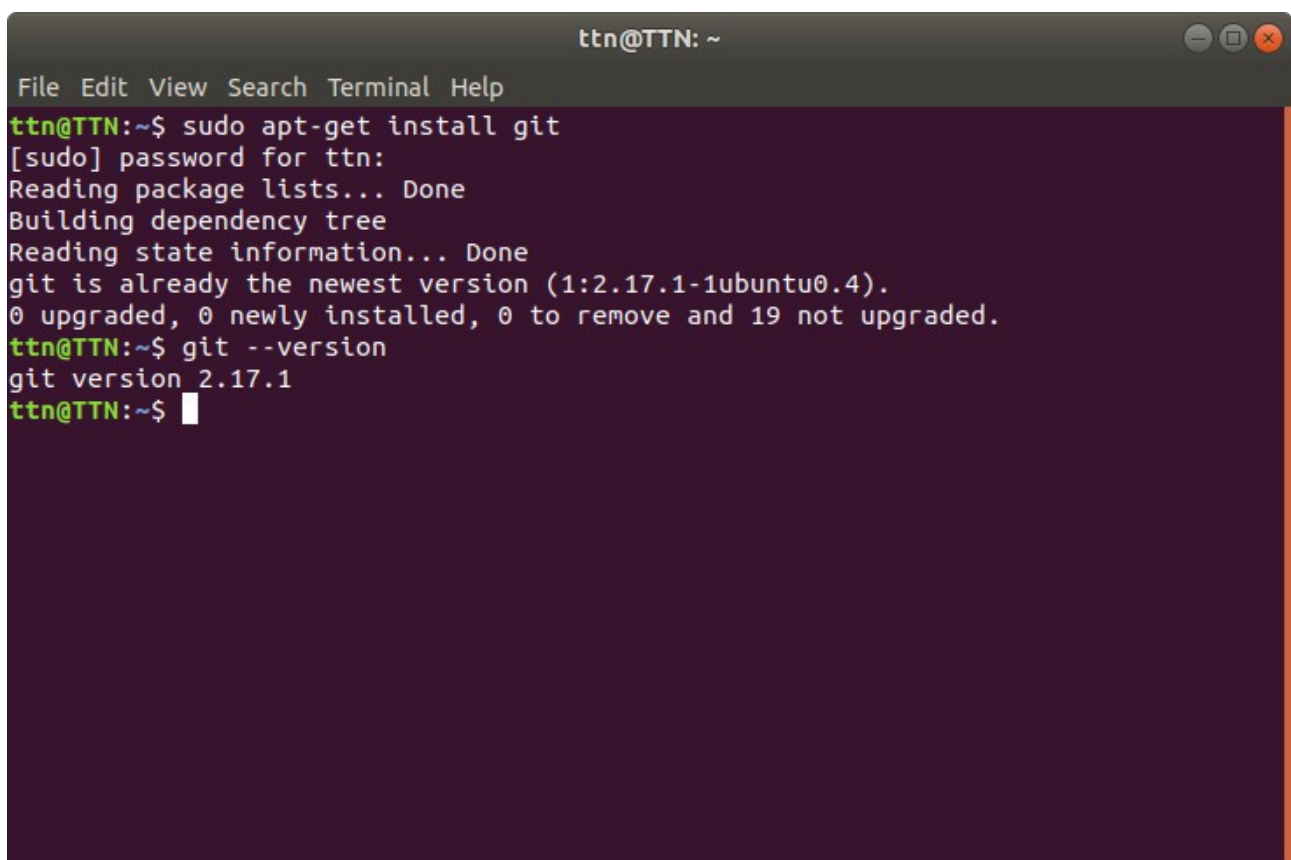
Q1.

To install git

```
sudo apt-get install git
```

To check version of git

```
git --version
```

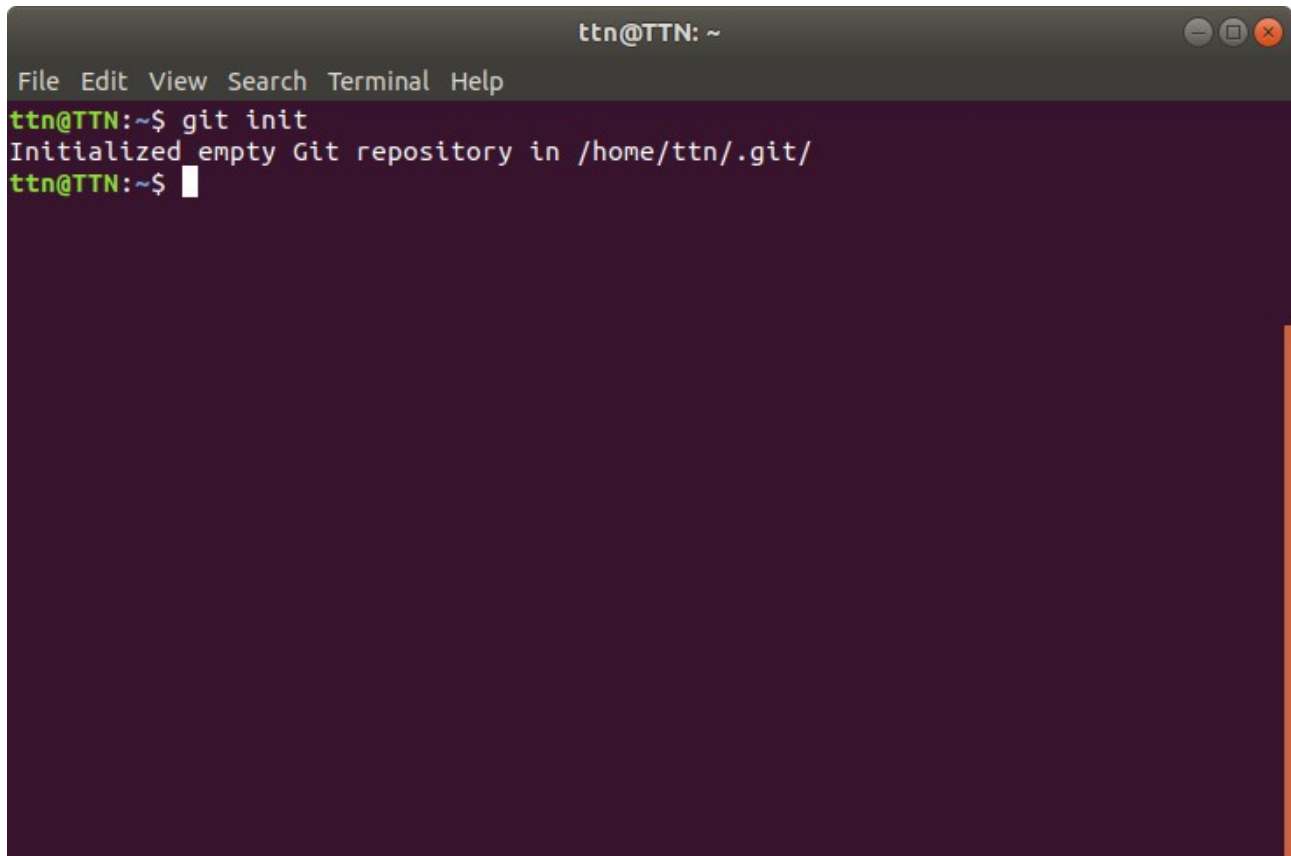
A terminal window titled 'ttn@TTN: ~' with standard Ubuntu window controls. The terminal shows the command 'sudo apt-get install git' being executed. The output indicates that git is already the newest version (1:2.17.1-1ubuntu0.4) and that 0 packages were upgraded, 0 newly installed, 0 to be removed, and 19 not upgraded. The user then runs 'git --version', which outputs 'git version 2.17.1'.

```
ttn@TTN: ~  
File Edit View Search Terminal Help  
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 19 not upgraded.  
ttn@TTN:~$ git --version  
git version 2.17.1  
ttn@TTN:~$
```

Q2.

To initialise git

git init

A terminal window titled 'ttn@TTN: ~' with standard window controls. The menu bar includes 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal shows the command 'git init' being executed, followed by the output 'Initialized empty Git repository in /home/ttn/.git/'. The prompt 'ttn@TTN:~\$' is shown again with a cursor.

```
ttn@TTN: ~  
File Edit View Search Terminal Help  
ttn@TTN:~$ git init  
Initialized empty Git repository in /home/ttn/.git/  
ttn@TTN:~$
```

Q3.

Add the files in your new local repository

firstly create a file

touch file1

add Command

git add file1

```
root@TTN:/temp/projects/VCassignment# touch file1
root@TTN:/temp/projects/VCassignment# ll
total 12
drwxr-xr-x 3 root root 4096 Feb  5 17:23 ./
drwxr-xr-x 4 root root 4096 Feb  5 17:22 ../
-rw-r--r-- 1 root root    0 Feb  5 17:23 file1
drwxr-xr-x 7 root root 4096 Feb  5 17:22 .git/
root@TTN:/temp/projects/VCassignment# git add file1
root@TTN:/temp/projects/VCassignment# git staus
git: 'staus' is not a git command. See 'git --help'.

The most similar command is
    status
root@TTN:/temp/projects/VCassignment# git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

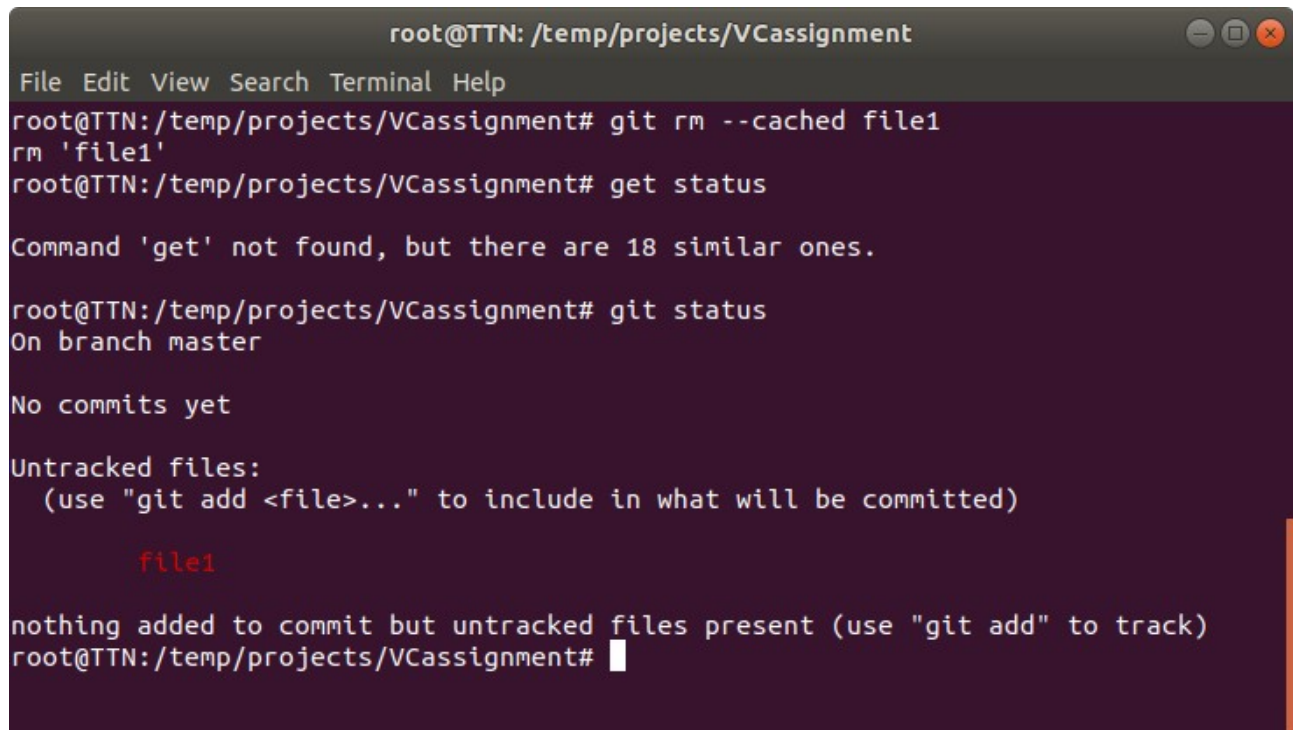
        new file:   file1

root@TTN:/temp/projects/VCassignment#
```

Q4.

command

git rm --cached file1

A terminal window titled 'root@TTN: /temp/projects/VCassignment' with standard window controls. The terminal shows the execution of 'git rm --cached file1', which successfully removes the file. Then, 'get status' is entered, resulting in an error message: 'Command 'get' not found, but there are 18 similar ones.' Finally, 'git status' is entered, showing the current state on the 'master' branch with no commits yet. It lists 'file1' as an untracked file and provides instructions on how to track it using 'git add'.

```
root@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
root@TTN:/temp/projects/VCassignment# git rm --cached file1
rm 'file1'
root@TTN:/temp/projects/VCassignment# get status

Command 'get' not found, but there are 18 similar ones.

root@TTN:/temp/projects/VCassignment# git status
On branch master

No commits yet

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

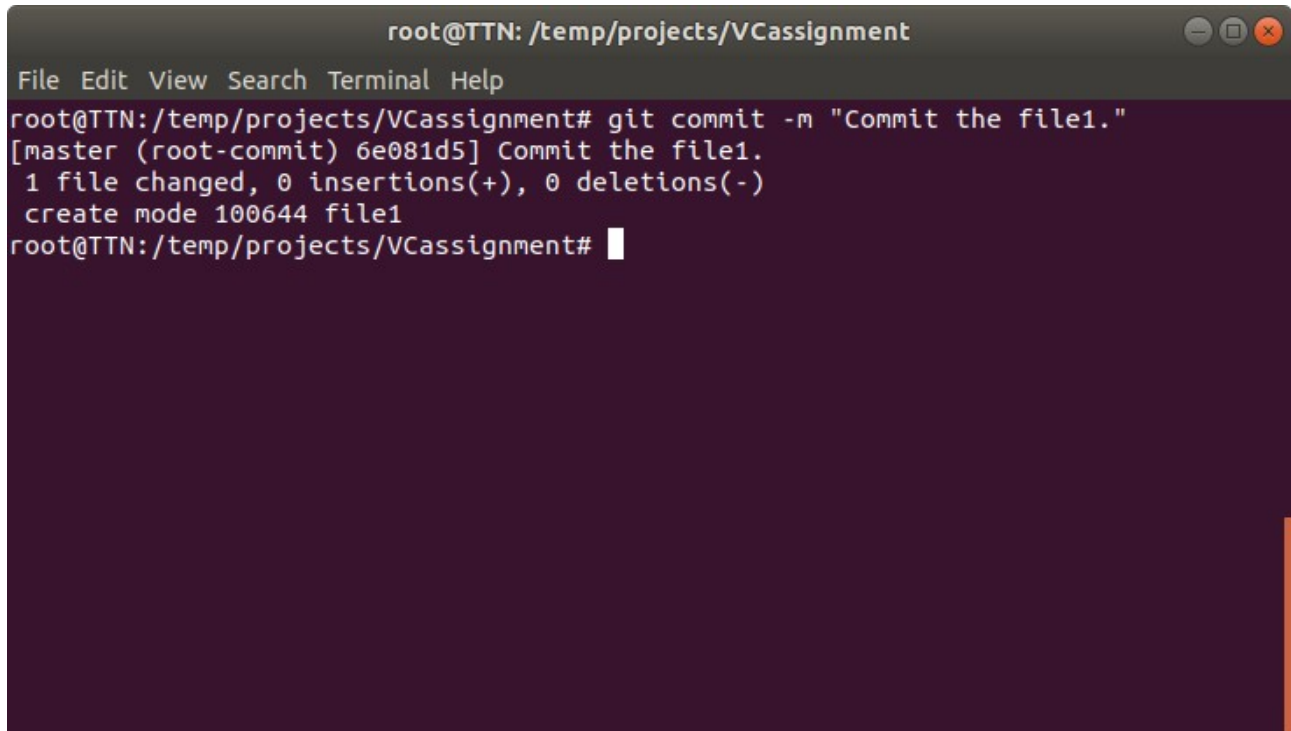
        file1

nothing added to commit but untracked files present (use "git add" to track)
root@TTN:/temp/projects/VCassignment#
```

Q5.

command for localhost

git commit -m "Message"

A screenshot of a terminal window titled 'root@TTN: /temp/projects/VCassignment'. The terminal has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The command 'git commit -m "Commit the file1."' has been executed. The output shows the commit was successful on the 'master' branch with hash '6e081d5', indicating 1 file changed with 0 insertions and 0 deletions. The file 'file1' was created with mode '100644'. The prompt returns to 'root@TTN: /temp/projects/VCassignment#'.

```
root@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
root@TTN:/temp/projects/VCassignment# git commit -m "Commit the file1."
[master (root-commit) 6e081d5] Commit the file1.
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 file1
root@TTN:/temp/projects/VCassignment#
```

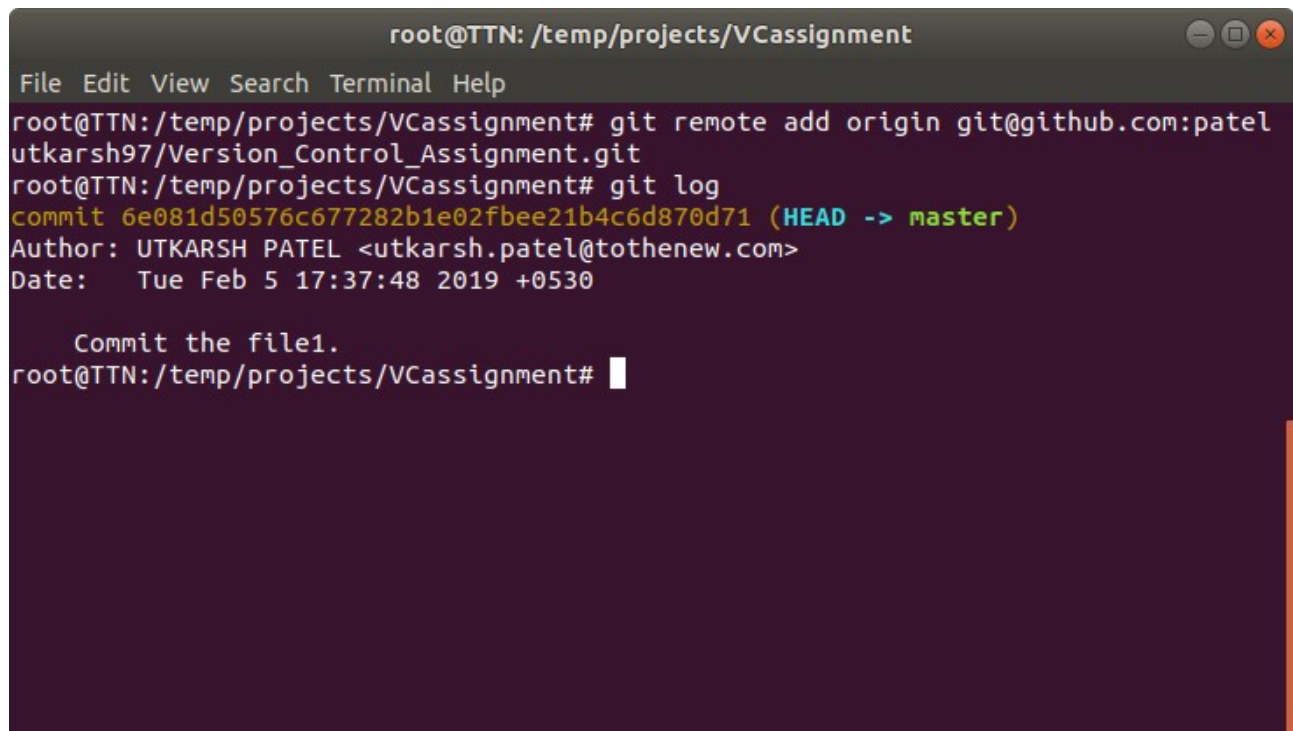
command for server

git remote add/set-url remote repo

Q6.

command

git remote add origin git@github.com:patelutkarsh97/Version_Control_Assignment.git

A terminal window titled 'root@TTN: /temp/projects/VCassignment' with standard window controls. The terminal shows the execution of 'git remote add origin git@github.com:patelutkarsh97/Version_Control_Assignment.git', followed by 'git log' which displays a commit hash and message. Then, 'git commit' is run, showing the commit hash, author 'UTKARSH PATEL', and date. A prompt 'Commit the file1.' appears, and the prompt returns to the shell.

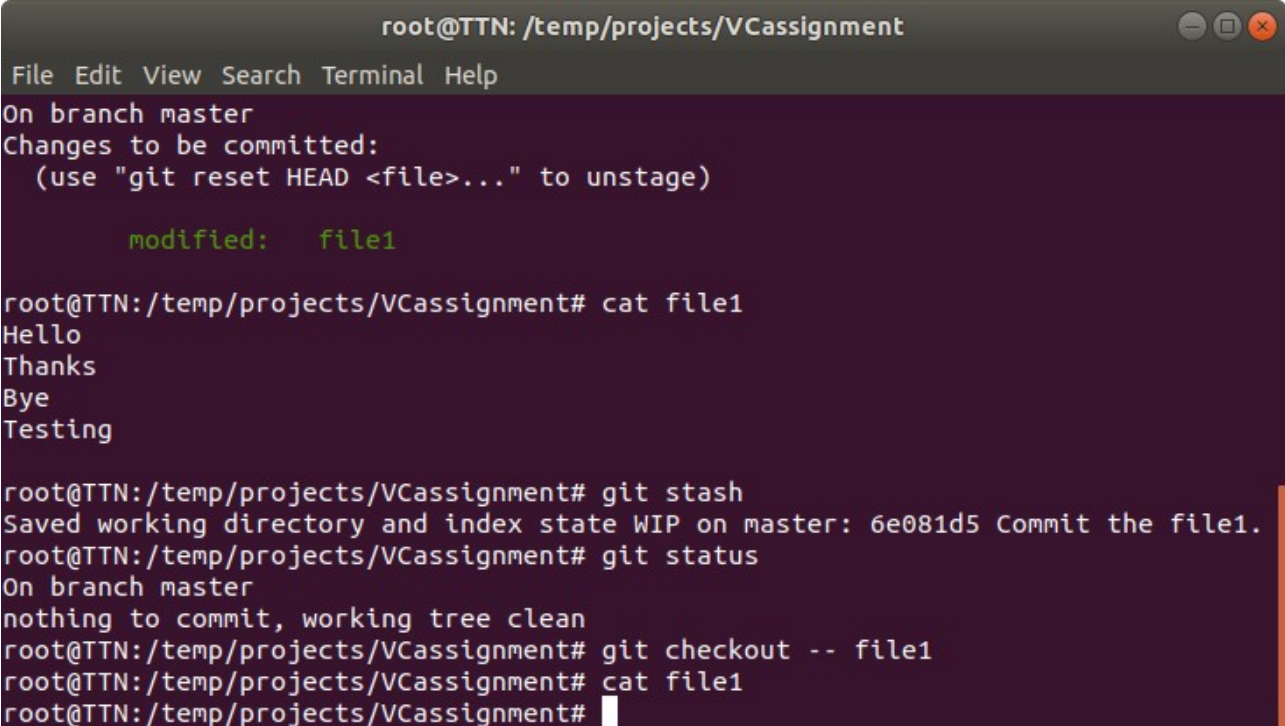
```
root@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
root@TTN:/temp/projects/VCassignment# git remote add origin git@github.com:patel
utkarsh97/Version_Control_Assignment.git
root@TTN:/temp/projects/VCassignment# git log
commit 6e081d50576c677282b1e02fbee21b4c6d870d71 (HEAD -> master)
Author: UTKARSH PATEL <utkarsh.patel@tothenew.com>
Date: Tue Feb 5 17:37:48 2019 +0530

    Commit the file1.
root@TTN:/temp/projects/VCassignment#
```

Q7.

command

git checkout -- file1

A terminal window titled 'root@TTN: /temp/projects/VCassignment' with standard window controls. The terminal shows the output of a git checkout command. It starts with 'On branch master' and 'Changes to be committed:'. A message indicates that 'file1' has been modified. The user then runs 'cat file1', which outputs 'Hello', 'Thanks', 'Bye', and 'Testing'. Next, the user runs 'git stash', which saves the working directory and index state. Then, the user runs 'git status', which shows 'nothing to commit, working tree clean'. Finally, the user runs 'git checkout -- file1', and the terminal shows the command being executed. The prompt 'root@TTN: /temp/projects/VCassignment#' is visible at the end of the line.

```
root@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

        modified:   file1

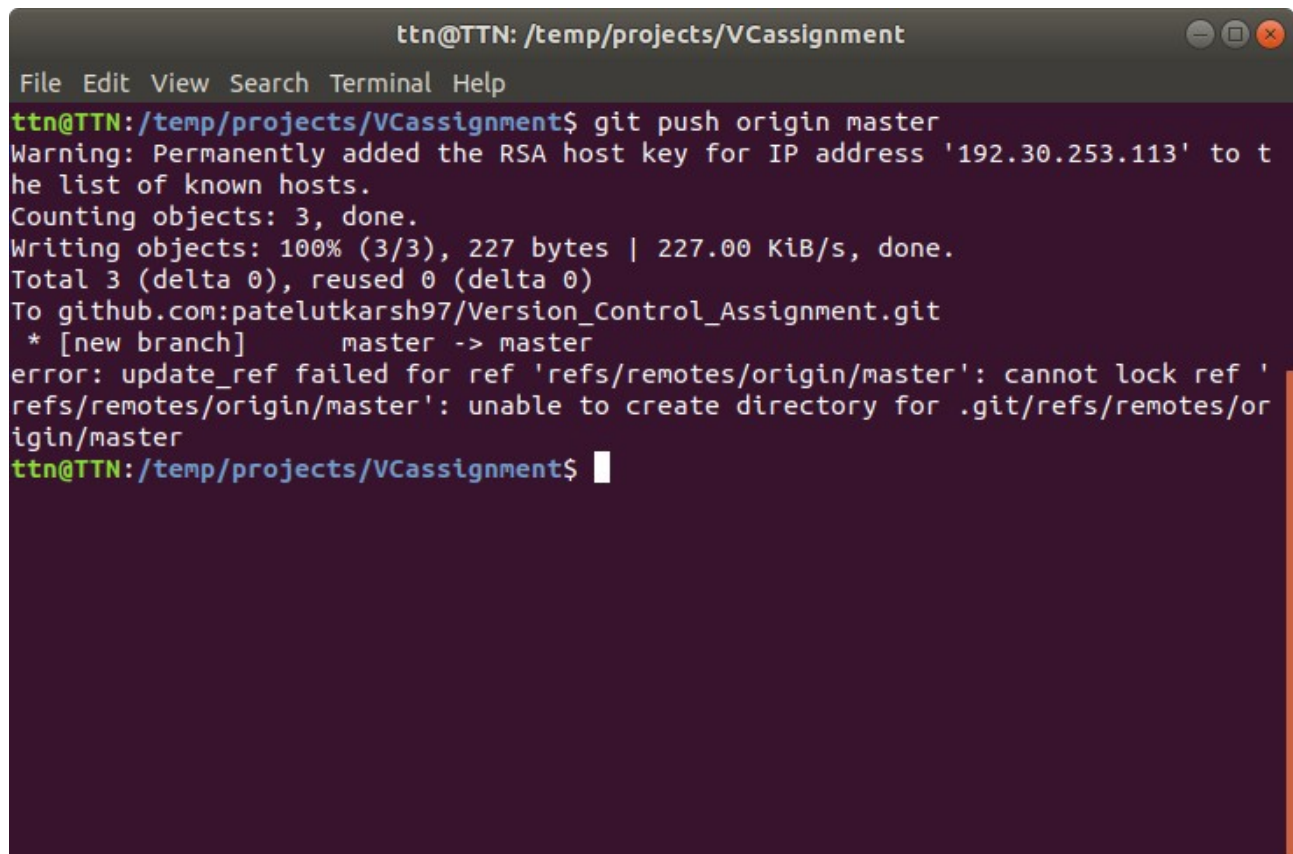
root@TTN: /temp/projects/VCassignment# cat file1
Hello
Thanks
Bye
Testing

root@TTN: /temp/projects/VCassignment# git stash
Saved working directory and index state WIP on master: 6e081d5 Commit the file1.
root@TTN: /temp/projects/VCassignment# git status
On branch master
nothing to commit, working tree clean
root@TTN: /temp/projects/VCassignment# git checkout -- file1
root@TTN: /temp/projects/VCassignment# cat file1
root@TTN: /temp/projects/VCassignment#
```

Q8.

command

git push origin master

A terminal window titled 'ttn@TTN: /temp/projects/VCassignment' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal output shows the command 'git push origin master' being executed. It displays a warning about an RSA host key, progress for counting and writing objects, and the target repository 'github.com:patelutkarsh97/Version_Control_Assignment.git'. The push fails with the error: 'error: update_ref failed for ref 'refs/remotes/origin/master': cannot lock ref 'refs/remotes/origin/master': unable to create directory for .git/refs/remotes/origin/master'. The prompt returns to 'ttn@TTN: /temp/projects/VCassignment\$'.

```
ttn@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
ttn@TTN:/temp/projects/VCassignment$ git push origin master
Warning: Permanently added the RSA host key for IP address '192.30.253.113' to t
he list of known hosts.
Counting objects: 3, done.
Writing objects: 100% (3/3), 227 bytes | 227.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To github.com:patelutkarsh97/Version_Control_Assignment.git
 * [new branch]      master -> master
error: update_ref failed for ref 'refs/remotes/origin/master': cannot lock ref '
refs/remotes/origin/master': unable to create directory for .git/refs/remotes/or
igin/master
ttn@TTN:/temp/projects/VCassignment$
```


Q9.

command

git clone git@github.com:patelutkarsh97/Version_Control_Assignment.git

```
ttn@TTN:/temp/projects/VCassignment$ git clone git@github.com:patelutkarsh97/Version_Control_Assignment.git
Cloning into 'Version_Control_Assignment'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
ttn@TTN:/temp/projects/VCassignment$
```

Q10.

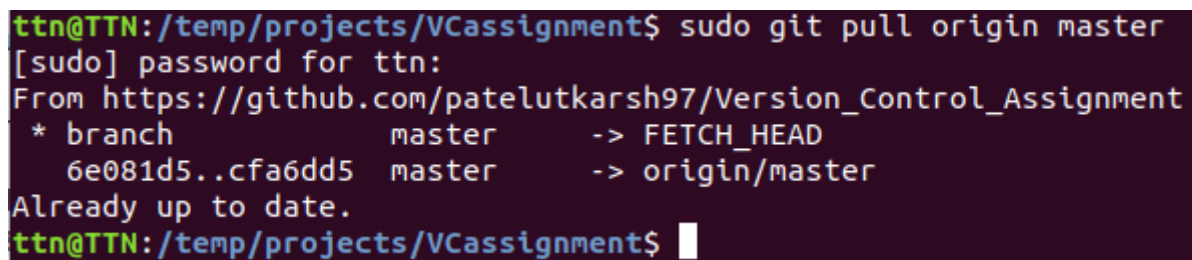
Command

`mkdir -p newfolder`

`git clone git@github.com:patelutkarsh97/Version_Control_Assignment.git`

now go to original (Vcassignment) folder and pull all the changes

`git pull origin master`

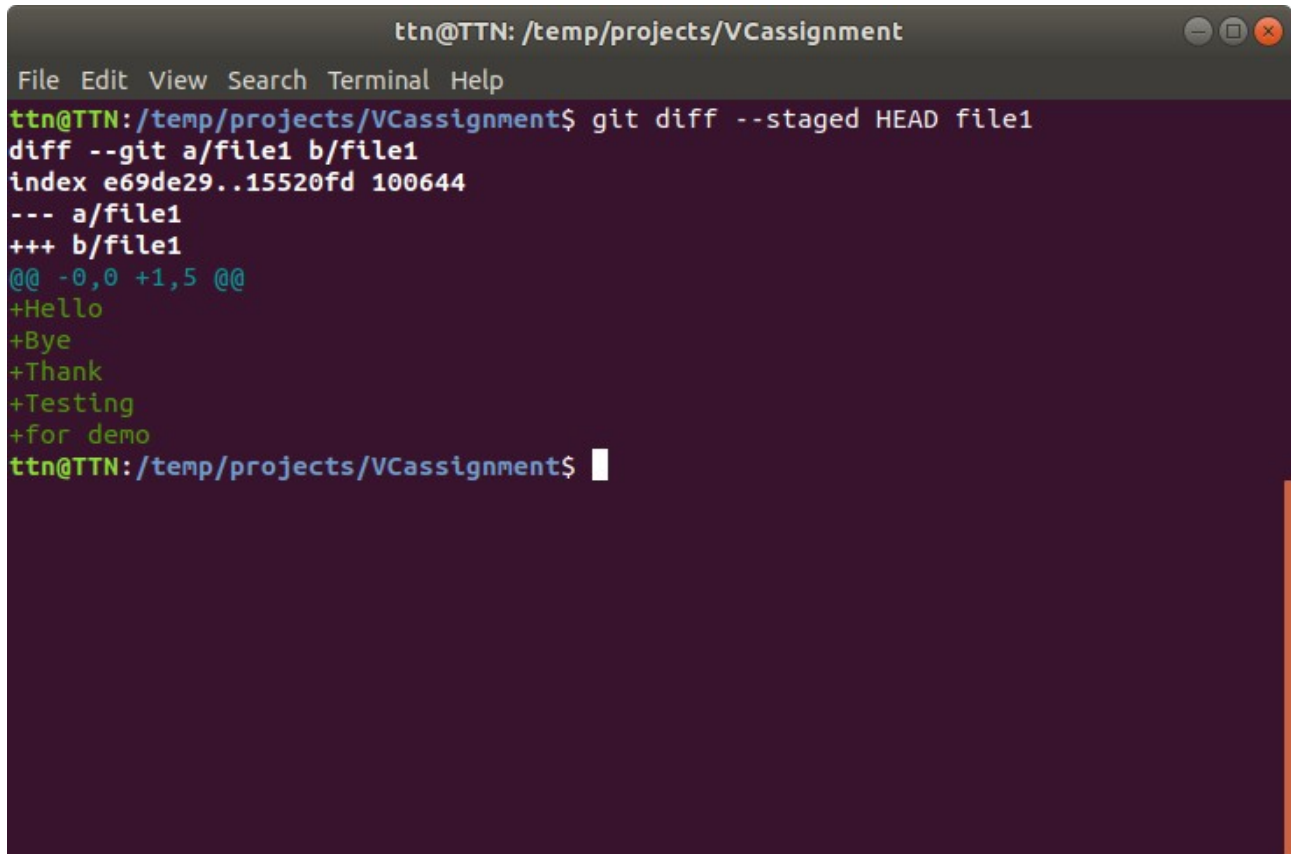
A terminal window screenshot with a dark purple background. The prompt is 'ttn@TTN:/temp/projects/VCassignment\$'. The command 'sudo git pull origin master' is entered. It prompts for a password '[sudo] password for ttn:'. Then it shows the source 'From https://github.com/patelutkarsh97/Version_Control_Assignment'. A diff summary follows: '* branch master -> FETCH_HEAD' and '6e081d5..cfa6dd5 master -> origin/master'. The output is 'Already up to date.' and the prompt returns to 'ttn@TTN:/temp/projects/VCassignment\$' with a cursor.

```
ttn@TTN:/temp/projects/VCassignment$ sudo git pull origin master
[sudo] password for ttn:
From https://github.com/patelutkarsh97/Version_Control_Assignment
 * branch          master      -> FETCH_HEAD
    6e081d5..cfa6dd5  master      -> origin/master
Already up to date.
ttn@TTN:/temp/projects/VCassignment$
```

Q11.

Command

git diff --staged HEAD file1

A screenshot of a terminal window titled 'ttn@TTN: /temp/projects/VCassignment'. The terminal shows the command 'git diff --staged HEAD file1' being executed. The output displays the diff for file1, showing changes from the index (e69de29..15520fd) to the working directory (100644). The diff shows five lines of new content: '+Hello', '+Bye', '+Thank', '+Testing', and '+for demo'. The terminal has a dark purple background and a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'.

```
ttn@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
ttn@TTN:/temp/projects/VCassignment$ git diff --staged HEAD file1
diff --git a/file1 b/file1
index e69de29..15520fd 100644
--- a/file1
+++ b/file1
@@ -0,0 +1,5 @@
+Hello
+Bye
+Thank
+Testing
+for demo
ttn@TTN:/temp/projects/VCassignment$
```

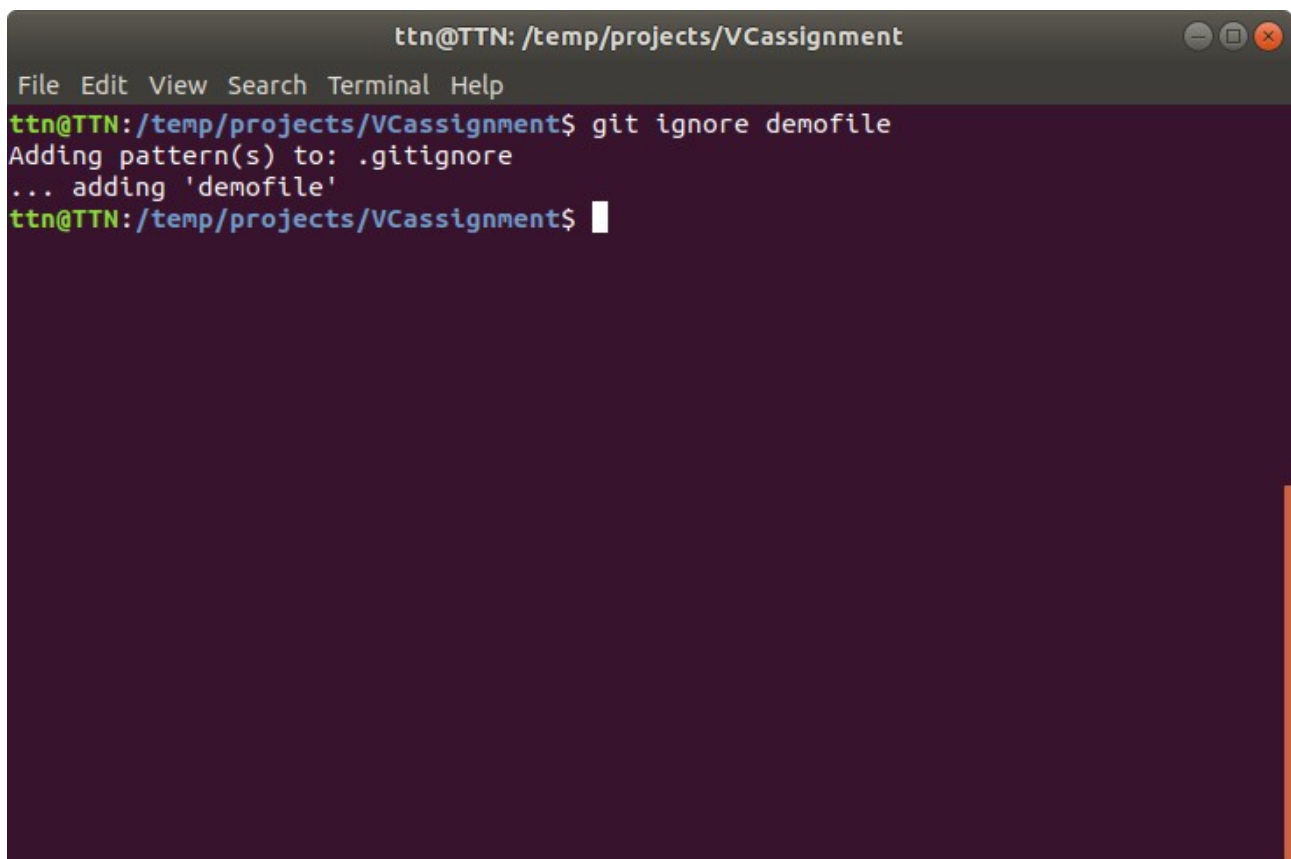
Q12.

Prerequisites

```
sudo apt-get install git-extras
```

Command

```
git ignore filename
```

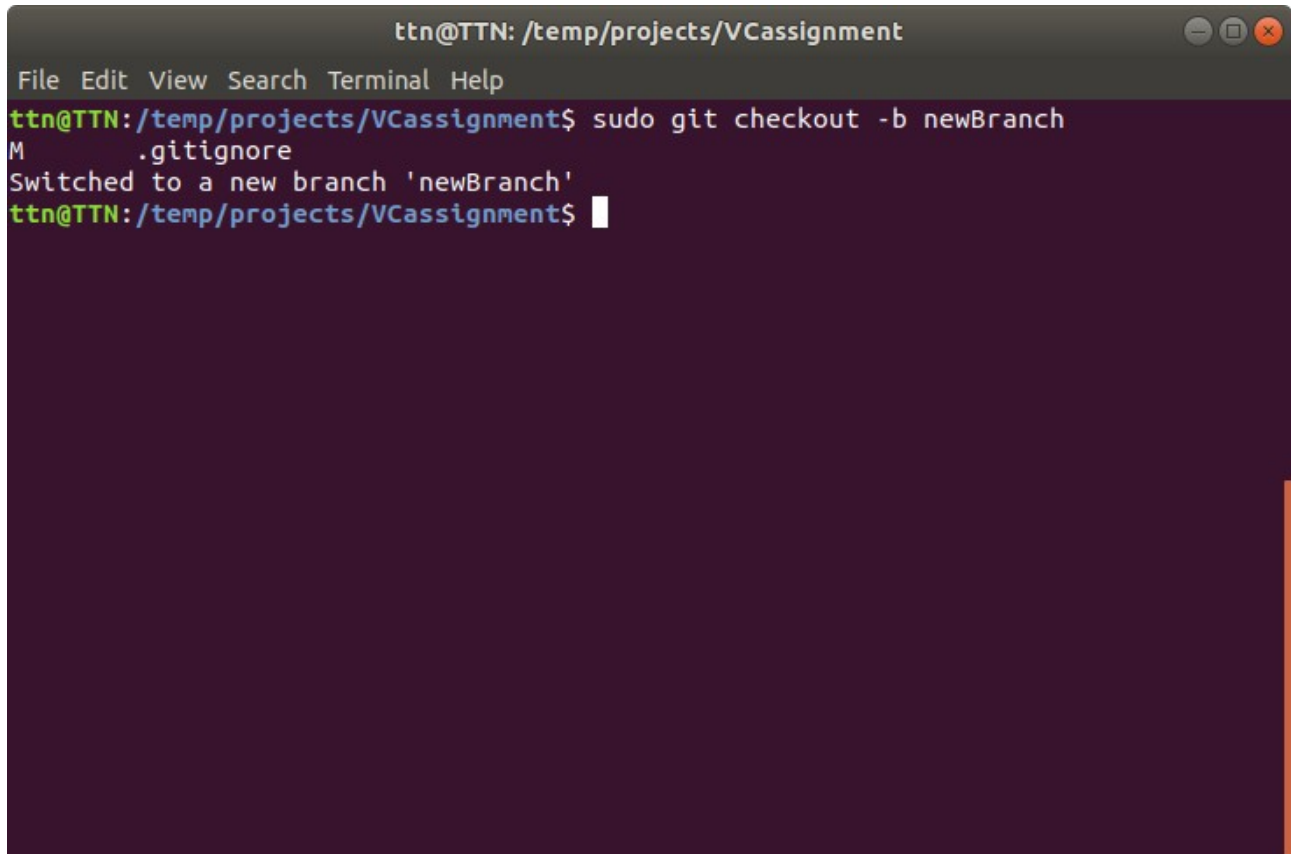
A terminal window with a dark purple background and a grey title bar. The title bar contains the text 'ttn@TTN: /temp/projects/VCassignment' and three window control buttons (minimize, maximize, close). The terminal has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The command prompt shows 'ttn@TTN:/temp/projects/VCassignment\$' followed by the command 'git ignore demofile'. The output shows 'Adding pattern(s) to: .gitignore' and '... adding 'demofile''. The prompt returns to 'ttn@TTN:/temp/projects/VCassignment\$' with a white cursor.

```
ttn@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
ttn@TTN:/temp/projects/VCassignment$ git ignore demofile
Adding pattern(s) to: .gitignore
... adding 'demofile'
ttn@TTN:/temp/projects/VCassignment$
```

Q13.

Command

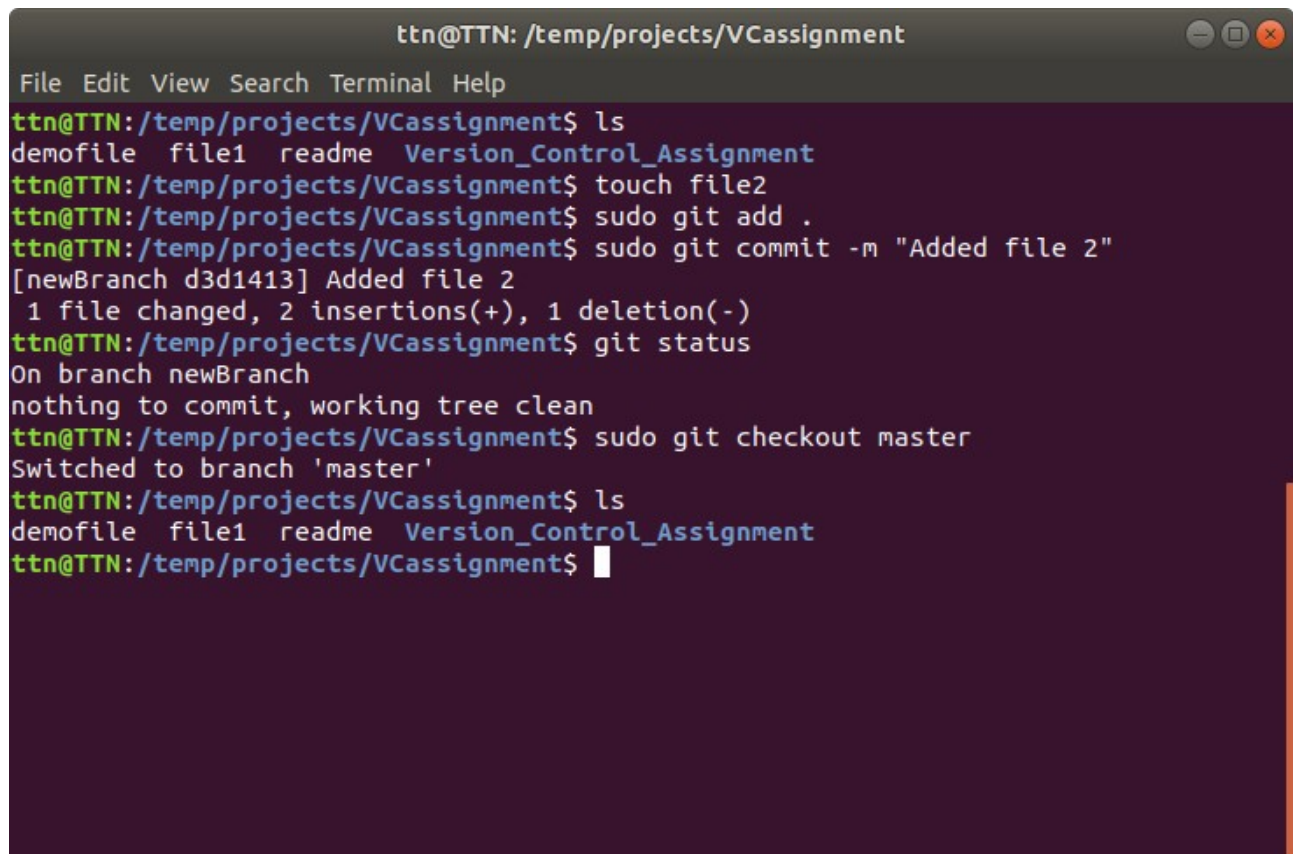
git checkout -b [name_of_new_branch]

A screenshot of a terminal window titled "ttn@TTN: /temp/projects/VCassignment". The terminal has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The command "git checkout -b newBranch" is entered and executed. The output shows "M .gitignore" and "Switched to a new branch 'newBranch'". The prompt "ttn@TTN: /temp/projects/VCassignment\$" is visible at the bottom.

```
ttn@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
ttn@TTN:/temp/projects/VCassignment$ sudo git checkout -b newBranch
M .gitignore
Switched to a new branch 'newBranch'
ttn@TTN:/temp/projects/VCassignment$
```

Q14.

adding file2 in newbranch and then checking the master branch



```
ttn@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
ttn@TTN:/temp/projects/VCassignment$ ls
demofile  file1  readme  Version_Control_Assignment
ttn@TTN:/temp/projects/VCassignment$ touch file2
ttn@TTN:/temp/projects/VCassignment$ sudo git add .
ttn@TTN:/temp/projects/VCassignment$ sudo git commit -m "Added file 2"
[newBranch d3d1413] Added file 2
 1 file changed, 2 insertions(+), 1 deletion(-)
ttn@TTN:/temp/projects/VCassignment$ git status
On branch newBranch
nothing to commit, working tree clean
ttn@TTN:/temp/projects/VCassignment$ sudo git checkout master
Switched to branch 'master'
ttn@TTN:/temp/projects/VCassignment$ ls
demofile  file1  readme  Version_Control_Assignment
ttn@TTN:/temp/projects/VCassignment$
```

Q15.

Follow the command on terminal

```
ttn@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
ttn@TTN:/temp/projects/VCassignment$ vim file2
ttn@TTN:/temp/projects/VCassignment$ sudo git add .
ttn@TTN:/temp/projects/VCassignment$ sudo git commit -m "Updated file2"
[master f500eeb] Updated file2
 2 files changed, 4 insertions(+)
 create mode 100644 demofile
 create mode 100644 file2
ttn@TTN:/temp/projects/VCassignment$ sudo git push origin newBranch
Username for 'https://github.com': patelutkarsh97@rediffmail.com
Password for 'https://patelutkarsh97@rediffmail.com@github.com':
Counting objects: 12, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (9/9), done.
Writing objects: 100% (12/12), 1.10 KiB | 564.00 KiB/s, done.
Total 12 (delta 3), reused 0 (delta 0)
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
remote:
remote: Create a pull request for 'newBranch' on GitHub by visiting:
remote:   https://github.com/patelutkarsh97/Version_Control_Assignment/pull/new/newBranch
remote:
To https://github.com/patelutkarsh97/Version_Control_Assignment
 * [new branch]      newBranch -> newBranch
ttn@TTN:/temp/projects/VCassignment$
```

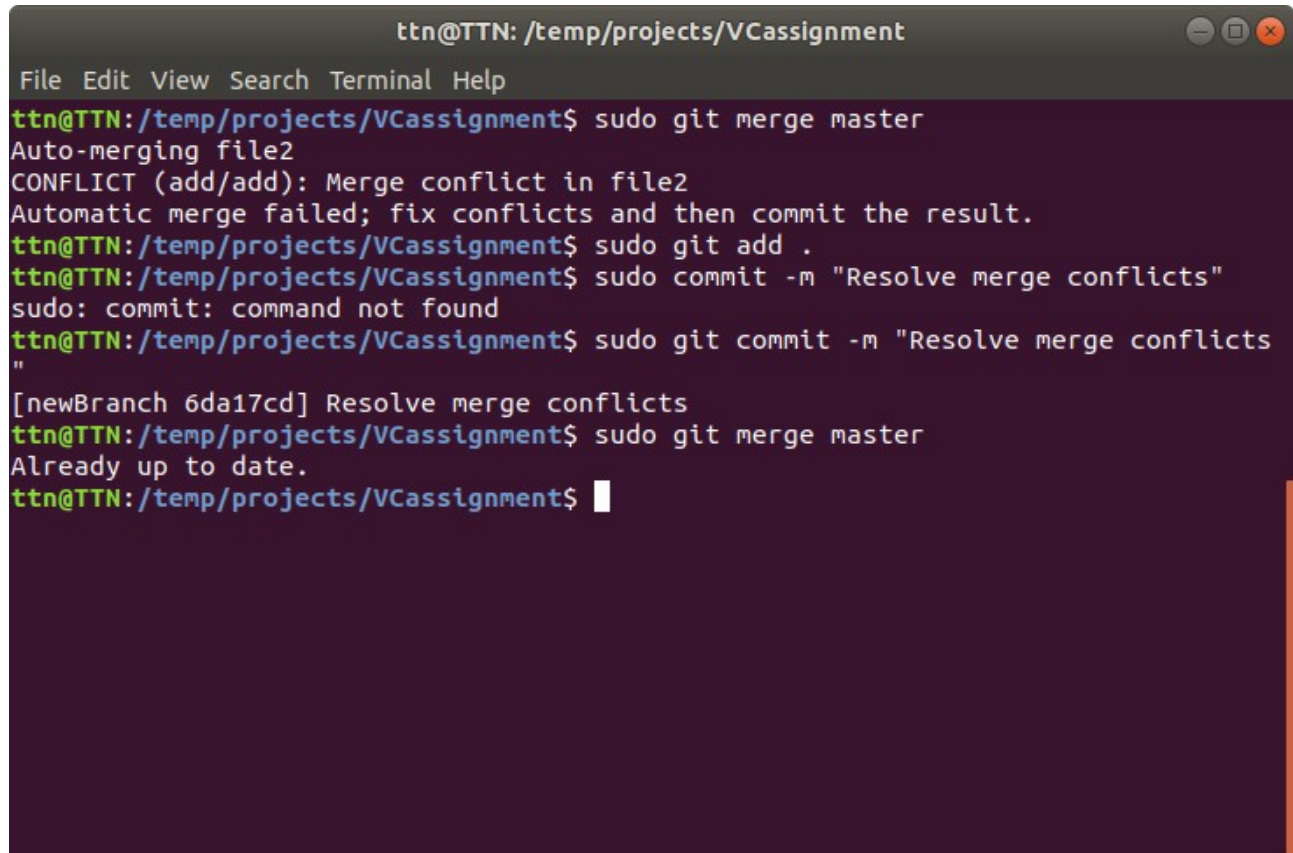
```
ttn@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
To https://github.com/patelutkarsh97/Version_Control_Assignment
 * [new branch]      newBranch -> newBranch
ttn@TTN:/temp/projects/VCassignment$ sudo git checkout master
Already on 'master'
ttn@TTN:/temp/projects/VCassignment$ sudo git checkout newBranch
Switched to branch 'newBranch'
ttn@TTN:/temp/projects/VCassignment$ vim file2
ttn@TTN:/temp/projects/VCassignment$ sudo git add .
ttn@TTN:/temp/projects/VCassignment$ sudo git commit -m "Updated file 2"
[newBranch 7b044c6] Updated file 2
 1 file changed, 2 insertions(+)
ttn@TTN:/temp/projects/VCassignment$ sudo git push origin newBranch\
>
Username for 'https://github.com': patelutkarsh97@rediffmail.com
Password for 'https://patelutkarsh97@rediffmail.com@github.com':
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 287 bytes | 287.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/patelutkarsh97/Version_Control_Assignment
 d3d1413..7b044c6  newBranch -> newBranch
ttn@TTN:/temp/projects/VCassignment$
```


Q16.

Try to merge using command

git merge master

and then resolve the conflict

A terminal window titled 'ttn@TTN: /temp/projects/VCassignment' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
ttn@TTN:/temp/projects/VCassignment$ sudo git merge master
Auto-merging file2
CONFLICT (add/add): Merge conflict in file2
Automatic merge failed; fix conflicts and then commit the result.
ttn@TTN:/temp/projects/VCassignment$ sudo git add .
ttn@TTN:/temp/projects/VCassignment$ sudo commit -m "Resolve merge conflicts"
sudo: commit: command not found
ttn@TTN:/temp/projects/VCassignment$ sudo git commit -m "Resolve merge conflicts"
[newBranch 6da17cd] Resolve merge conflicts
ttn@TTN:/temp/projects/VCassignment$ sudo git merge master
Already up to date.
ttn@TTN:/temp/projects/VCassignment$
```


Q17.

Firstly modify any file to create conflict
then check the

git status

then put the conflicting file into stash using command

git stash save -u

after that drop the stash using command

git stash pop

```
ttn@TTN:/temp/projects/VCassignment$ sudo vim demofile
ttn@TTN:/temp/projects/VCassignment$ git status
On branch newBranch
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:   demofile

no changes added to commit (use "git add" and/or "git commit -a")
ttn@TTN:/temp/projects/VCassignment$ sudo git stash save -u
Saved working directory and index state WIP on newBranch: 6da17cd Resolve merge conflicts
ttn@TTN:/temp/projects/VCassignment$ git status
On branch newBranch
nothing to commit, working tree clean
ttn@TTN:/temp/projects/VCassignment$ sudo git stash pop
On branch newBranch
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:   demofile

no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (315691aed80d9b9cb104e3d2215f7d490a35e8bc)
ttn@TTN:/temp/projects/VCassignment$
```

Q18.

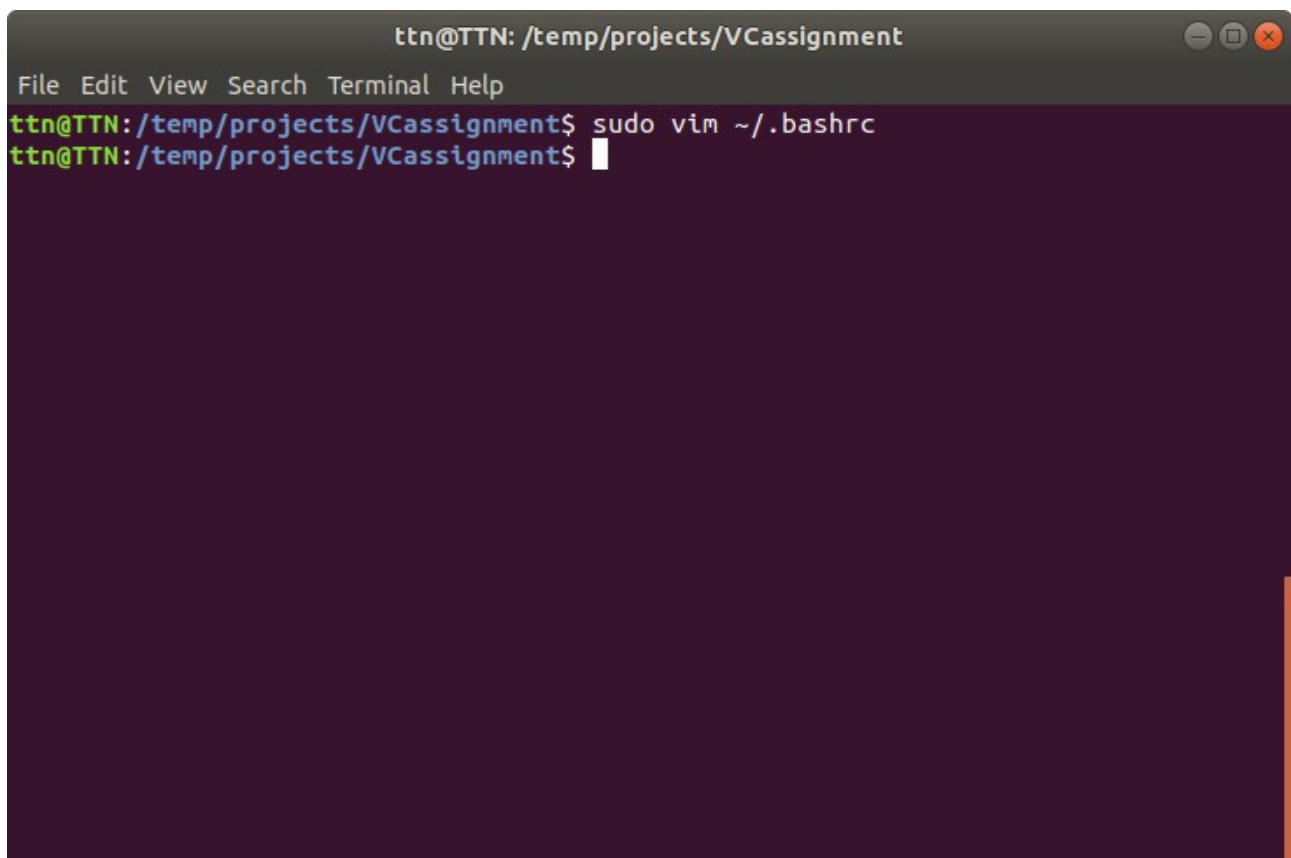
Command to edit .bashrc file using vim

vim ~/.bashrc

then to insert press *i*

and to save and quit vim press

ESC :wq

A terminal window titled 'ttn@TTN: /temp/projects/VCassignment' with standard window controls. The terminal shows a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. Two lines of command history are visible: 'ttn@TTN:/temp/projects/VCassignment\$ sudo vim ~/.bashrc' and 'ttn@TTN:/temp/projects/VCassignment\$' followed by a cursor. The terminal background is dark purple.

```
ttn@TTN: /temp/projects/VCassignment
File Edit View Search Terminal Help
ttn@TTN:/temp/projects/VCassignment$ sudo vim ~/.bashrc
ttn@TTN:/temp/projects/VCassignment$
```