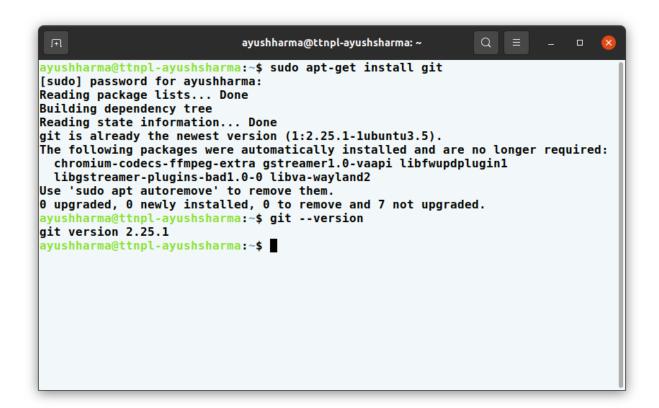
Introduction to version Control Assignment Solutions Ayush Sharma

1. Git Setup

https://confluence.atlassian.com/bitbucket/set-up-git-744723531.html



2. Initialize a Git Repository

```
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo
ayushharma@ttnpl-ayushsharma:~/Documents$ mkdir Demorepo
ayushharma@ttnpl-ayushsharma:~/Documents$ cd Demorepo/
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git init
Initialized empty Git repository in /home/ayushharma/Documents/Demorepo/.git/
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ ls -al
total 12
drwxrwxr-x 3 ayushharma ayushharma 4096 Sep 22 07:01 .
drwxrwxr-x 4 ayushharma ayushharma 4096 Sep 22 07:01 .
drwxrwxr-x 7 ayushharma ayushharma 4096 Sep 22 07:01 .git
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$
```

3. Add files to the repository

```
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ touch demofile1.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ touch demofile2.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ cat demofile1.txt
version 1.0
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ cat demofile2.txt
Version2.0
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$
```

4. Unstage 1 file

```
ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file: demofile1.txt
        new file: demofile2.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git rm --cached demofilel.txt
rm 'demofile1.txt'
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git status
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file: demofile2.txt
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        demofile1.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$
```

5. Commit the file

6. Add a remote

```
ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo
                                                             Q
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git status
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file: demofile1.txt
        new file:
                   demofile2.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git commit -m "Initial Commit
[master (root-commit) 5dc6dc7] Initial Commit
2 files changed, 2 insertions(+)
create mode 100644 demofile1.txt
create mode 100644 demofile2.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git remote add origin https:/
/github.com/ayushttn007/Demorepo.git
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git remote -v
origin https://github.com/ayushttn007/Demorepo.git (fetch)
origin https://github.com/ayushttn007/Demorepo.git (push)
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$
```

7. Undo changes to a particular file

```
ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo
           a@ttnpl-ayushsharma:~/Documents/Demorepo$ cat demofile2.txt
Version2.0
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ vim demofile2.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ cat demofile2.txt
Version2.1 demo file2
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git add
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git commit -m "changes to de
mofile2.txt"
[detached HEAD a740127] changes to demofile2.txt
2 files changed, 2 insertions(+), 2 deletions(-)
                        shsharma:~/Documents/Demorepo$ cat demofile2.txt
Version2.1 demo file2
                    -ayushsharma:~/Documents/Demorepo$ git log
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git
commit a7401278170bd6fa76b74582ac1f59ea74d15099 (HEAD)
Author: AyushSharma <ayush.sharma2@tothenew.com>
Date: Thu Sep 22 07:17:09 2022 +0530
    changes to demofile2.txt
commit 5dc6dc7ecd76aed57848afca62ffdeb8fc618b36 (master)
Author: AyushSharma <ayush.sharma2@tothenew.com>
Date: Thu Sep 22 07:08:01 2022 +0530
```

```
ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo
                                                             Q
    changes to demofile2.txt
commit 5dc6dc7ecd76aed57848afca62ffdeb8fc618b36 (master)
Author: AyushSharma <ayush.sharma2@tothenew.com>
       Thu Sep 22 07:08:01 2022 +0530
Date:
    Initial Commit
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git checkout 5dc6dc7ecd76aed
57848afca62ffdeb8fc618b36
Warning: you are leaving 1 commit behind, not connected to
any of your branches:
  a740127 changes to demofile2.txt
If you want to keep it by creating a new branch, this may be a good time
to do so with:
 git branch <new-branch-name> a740127
HEAD is now at 5dc6dc7 Initial Commit
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ cat demofile2.txt
Version2.0
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$
```

8. Push changes to Github

9. Clone the repository

```
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepoclone
ayushharma@ttnpl-ayushsharma:~/Documents$ mkdir Demorepoclone/
ayushharma@ttnpl-ayushsharma:~/Documents$ cd Demorepoclone/
ayushtana@ttnpl-ayushsharma:~/Documents/Demorepoclone$ git clone https://github.com/ayushttn007/Demorepo.git
Cloning into 'Demorepo'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 4 (delta 0), reused 4 (delta 0), pack-reused 0
Unpacking objects: 100% (4/4), 262 bytes | 87.00 KiB/s, done.
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepoclone$
```

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

```
Terminal
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ ls -la
total 24
drwxrwxr-x 3 ayushharma ayushharma 4096 Sep 22 07:50
drwxr-xr-x 5 ayushharma ayushharma 4096 Sep 22 11:06
                                         64 Sep 22 07:50 demofile1.txt
-rw-rw-r-- 1 ayushharma ayushharma
-rw-rw-r-- 1 ayushharma ayushharma
                                           11 Sep 22 07:17 demofile2.txt
drwxrwxr-x 8 ayushharma ayushharma 4096 Sep 22 07:58 .gi
-rw-rw-r-- 1 ayushharma ayushharma 40 Sep 22 07:32 .gitignore
-rw-rw-r-- 1 ayushharma ayushharma
                                            0 Sep 22 07:29 Ignorefiledemol.txt
-rw-rw-r-- 1 ayushharma ayushharma
                                            0 Sep 22 07:29 Ignorefiledemo2.txt
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile2.txt
Version2.0
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git pull origin master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0 Unpacking objects: 100% (3/3), 316 bytes | 158.00 KiB/s, done. From https://github.com/ayushttn007/Demorepo
   branch master
5dc6dc7..01fc8bd master
                                 -> FETCH_HEAD
-> origin/master
 * branch
Merge made by the 'recursive' strategy.
 demofile2.txt | 1 +
 1 file changed, 1 insertion(+)
```

```
Terminal
                                                                           -rw-rw-r-- 1 ayushharma ayushharma
                                     64 Sep 22 07:50 demofile1.txt
-rw-rw-r-- 1 ayushharma ayushharma
                                     11 Sep 22 07:17 demofile2.txt
drwxrwxr-x 8 ayushharma ayushharma 4096 Sep 22 07:58 .git
-rw-rw-r-- 1 ayushharma ayushharma
                                     40 Sep 22 07:32 .gitignore
-rw-rw-r-- 1 ayushharma ayushharma
                                      0 Sep 22 07:29 Ignorefiledemol.txt
-rw-rw-r-- 1 ayushharma ayushharma
                                      0 Sep 22 07:29 Ignorefiledemo2.txt
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile2.txt
Version2.0
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git pull origin master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 316 bytes | 158.00 KiB/s, done.
From https://github.com/ayushttn007/Demorepo
                                -> FETCH_HEAD
* branch
                     master
   5dc6dc7..01fc8bd master
                                -> origin/master
Merge made by the 'recursive' strategy.
demofile2.txt | 1 +
1 file changed, 1 insertion(+)
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile2.txt
Version2.0
test change in one copy and pull in other
ayushharma@ttnpl-ayushsharma:Demorepo (master)$
```

```
Terminal
                                                                  Q
ayushharma@ttnpl-ayushsharma:demorepoclone (master)$ 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
ayushharma@ttnpl-ayushsharma:demorepoclone (master)$ git push origin
Username for 'https://github.com': ayushttn007
Password for 'https://ayushttn007@github.com':
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 336 bytes | 336.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/ayushttn007/Demorepo.git
   5dc6dc7..01fc8bd master -> master
ayushharma@ttnpl-ayushsharma:demorepoclone (master)$
```

11. Check differences between a file and its staged version

```
Terminal
test change in one copy and pull in other
ayushharma@ttnpl-ayushsharma:Demorepo (master)$                               vim demofile2.txt
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile2.txt
Version2.0
test change in one copy and pull in other
version 3.0
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git add .
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git diff
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ vim demofile2.txt
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ get diff
Command 'get' not found, but there are 18 similar ones.
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git diff
diff --git a/demofile2.txt b/demofile2.txt
index ca52d30..507be9c 100644
--- a/demofile2.txt
+++ b/demofile2.txt
@@ -1,3 +1,4 @@
Version2.0
 test change in one copy and pull in other
 version 3.0
+version 4.0
avushharma@ttnnl_avushsharma.Nemoreno (master) t
```

12. Ignore a few files to be checked in

```
ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo
drwxrwxr-x 3 ayushharma ayushharma 4096 Sep 22 07:32 .
drwxr-xr-x 5 ayushharma ayushharma 4096 Sep 22 07:25
-rw-rw-r-- 1 ayushharma ayushharma
                                    12 Sep 22 07:17 demofile1.txt
-rw-rw-r-- 1 ayushharma ayushharma
                                    11 Sep 22 07:17 demofile2.txt
drwxrwxr-x 8 ayushharma ayushharma 4096 Sep 22 07:19 .gi
-rw-rw-r-- 1 ayushharma ayushharma
                                    40 Sep 22 07:32 .gitignore
-rw-rw-r-- 1 ayushharma ayushharma
                                      0 Sep 22 07:29 Ignorefiledemo1.txt
-rw-rw-r-- 1 ayushharma ayushharma
                                      0 Sep 22 07:29 Ignorefiledemo2.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git status
On branch 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)
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git add .gitignore
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git commit -m "Gitignorefile
[master 307b37e] Gitignorefiles
1 file changed, 2 insertions(+)
create mode 100644 .gitignore
yushharma@ttnpl-ayushsharma:~/Documents/Demorepo$
```

13. Create a new branch.



14. Diverge them with commits

```
a ≡
                                        Terminal
                                                                               ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git branch
  branch-two
 master
ayushharma@ttnpl-ayushsharma:Demorepo (master)$                               vim demofile1.txt
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile1.txt
version 1.0
version master
version branch-two
version demofile1
demo diverge them with commits
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git add .
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git commit -m "change demofile1
[master 175c264] change demofile1
2 files changed, 2 insertions(+)
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git status
On branch master
nothing to commit, working tree clean
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git checkout branch-two
Switched to branch 'branch-two'
ayushharma@ttnpl-ayushsharma:Demorepo (branch-two)$                          vim demofile1.txt
ayushharma@ttnpl-ayushsharma:Demorepo (branch-two)$ git add .
ayushharma@ttnpl-ayushsharma:Demorepo (branch-two)$ git commit -m "change demofi
1.txt"
```

```
Terminal
                                                              Q
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ vim demofile1.txt
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile1.txt
version 1.0
version master
version branch-two
version demofile1
demo diverge them with commits
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git add .
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git commit -m "change demofilel
[master 175c264] change demofile1
2 files changed, 2 insertions(+)
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git status
On branch master
nothing to commit, working tree clean
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git checkout branch-two
Switched to branch 'branch-two'
ayushharma@ttnpl-ayushsharma:Demorepo (branch-two)$ vim demofile1.txt
ayushharma@ttnpl-ayushsharma:Demorepo (branch-two)$ git add
ayushharma@ttnpl-ayushsharma:Demorepo (branch-two)$ git commit -m "change demofi
1.txt"
[branch-two cfee580] change demofil.txt
1 file changed, 2 insertions(+)
ayushharma@ttnpl-ayushsharma:Demorepo (branch-two)$
```

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

```
Q = - -
                                   ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo
  ushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git checkout -b branch-two
Switched to a new branch 'branch-two'
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ ls -al
total 24
drwxrwxr-x 3 ayushharma ayushharma 4096 Sep 22 07:32
drwxr-xr-x 5 ayushharma ayushharma 4096 Sep 22 07:25
-rw-rw-r-- 1 ayushharma ayushharma 12 Sep 22 07:17 demofile1.txt
-rw-rw-r-- 1 ayushharma ayushharma 11 Sep 22 07:17 demofile2.txt
drwxrwxr-x 8 ayushharma ayushharma 4096 Sep 22 07:34 .gi
-rw-rw-r-- 1 ayushharma ayushharma 40 Sep 22 07:32 .gitignore
                                        0 Sep 22 07:29 Ignorefiledemo1.txt
0 Sep 22 07:29 Ignorefiledemo2.txt
-rw-rw-r-- 1 ayushharma ayushharma
-rw-rw-r-- 1 ayushharma ayushharma
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ vim demofilel.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git status
On branch branch-two
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: demofile1.txt
no changes added to commit (use "git add" and/or "git commit -a")
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git add demofile1.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git commit -m "modified demofile1 from branch-two"
```

```
ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo
yushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git checkout master
Switched to branch 'master'
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ ls -al
total 24
drwxrwxr-x 3 ayushharma ayushharma 4096 Sep 22 07:39
drwxr-xr-x 5 ayushharma ayushharma 4096 Sep 22 07:25
-rw-rw-r-- 1 ayushharma ayushharma 12 Sep 22 07:39 demofile1.txt
-rw-rw-r-- 1 ayushharma ayushharma 11 Sep 22 07:17 demofile2.txt
drwxrwxr-x 8 ayushharma ayushharma 4096 Sep 22 07:39 .git
-rw-rw-r-- 1 ayushharma ayushharma 40 Sep 22 07:32 .gitignore
                                       0 Sep 22 07:29 Ignorefiledemol.txt
-rw-rw-r-- 1 ayushharma ayushharma
-rw-rw-r-- 1 ayushharma ayushharma
                                        0 Sep 22 07:29 Ignorefiledemo2.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ vim demofile1.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git add demofile1.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified: demofile1.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git commit -m "modified demofilel from master"
[master a92add9] modified demofile1 from master
1 file changed, 1 insertion(+)
```

16. Try merging and resolve merge conflicts

```
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git branch branch-two
* master
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ git merge --no-ff branch-two
Auto-merging demofilel.txt
CONFLICT (content): Merge conflict in demofile1.txt
Automatic merge failed; fix conflicts and then commit the result.
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$ vim demofile1.txt
ayushharma@ttnpl-ayushsharma:~/Documents/Demorepo$
```

```
ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo

version 1.0

<<<<<< HEAD
version branch-two
>>>>>>> branch-two
>

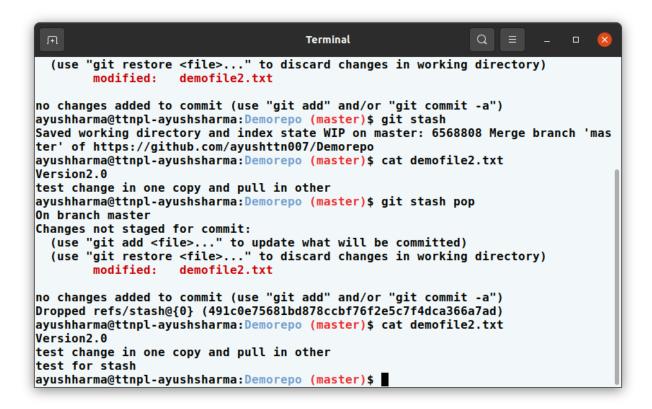
"demofile1.txt" 6L, 86C

2,12

All
```

17. Stash the changes and pop them

```
Terminal
                                                             Q
                                                                           ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile2.txt
Version2.0
test change in one copy and pull in other
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ vim demofile2.txt
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile2.txt
Version2.0
test change in one copy and pull in other
test for stash
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git status
On branch master
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:
                  demofile2.txt
no changes added to commit (use "git add" and/or "git commit -a")
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git stash
Saved working directory and index state WIP on master: 6568808 Merge branch 'mas
ter' of https://github.com/ayushttn007/Demorepo
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ cat demofile2.txt
Version2.0
test change in one copy and pull in other
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git stash pop
On branch master
```



```
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
```

```
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ vim ~/.bashrc
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ source ~/.bashrc
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git status

On branch master
nothing to commit, working tree clean
ayushharma@ttnpl-ayushsharma:Demorepo (master)$ git branch
branch-two
* master
ayushharma@ttnpl-ayushsharma:Demorepo (master)$
```

```
Q ≡
                               ayushharma@ttnpl-ayushsharma: ~/Documents/Demorepo
# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
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
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 --
                                                                                    129,1
                                                                                                   Bot
```