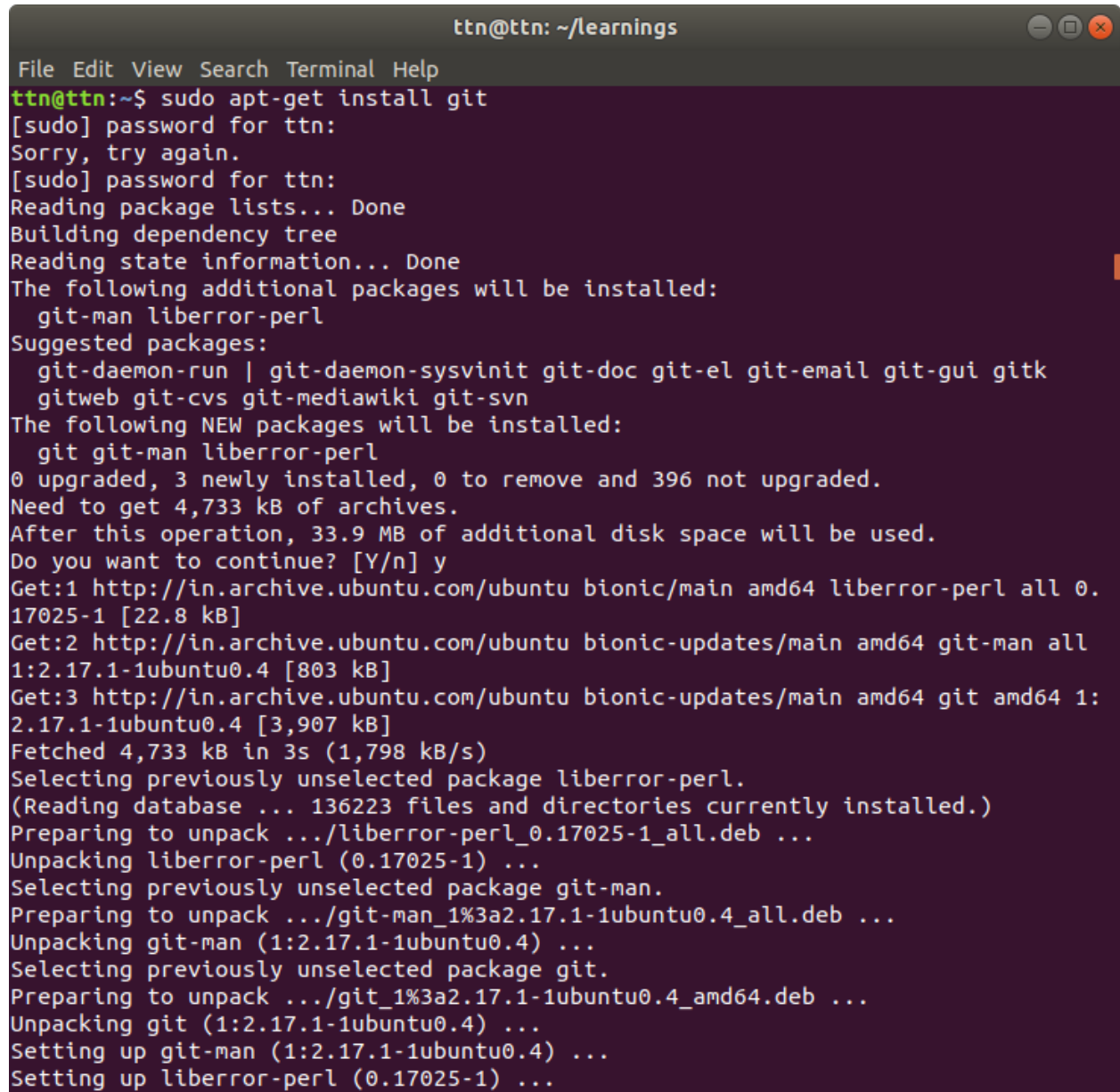


## 1. Git Setup

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

A terminal window titled 'ttn@ttn: ~/learnings' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the command 'sudo apt-get install git' being executed. It prompts for a password, which is entered twice. The system then reads package lists, builds a dependency tree, and reads state information. It lists additional packages to be installed (git-man, liberror-perl) and suggested packages (git-daemon-run, git-daemon-sysvinit, git-doc, git-el, git-email, git-gui, gitk, gitweb, git-cvs, git-mediawiki, git-svn). It shows the disk space requirements and asks for confirmation to continue. The installation proceeds, fetching packages from the Ubuntu repository and unpacking them. The terminal output is as follows:

```
ttn@ttn:~$ sudo apt-get install git
[sudo] password for ttn:
Sorry, try again.
[sudo] password for ttn:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk
  gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 396 not upgraded.
Need to get 4,733 kB of archives.
After this operation, 33.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 liberror-perl all 0.17025-1 [22.8 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git-man all 1:2.17.1-1ubuntu0.4 [803 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git amd64 1:2.17.1-1ubuntu0.4 [3,907 kB]
Fetched 4,733 kB in 3s (1,798 kB/s)
Selecting previously unselected package liberror-perl.
(Reading database ... 136223 files and directories currently installed.)
Preparing to unpack .../liberror-perl_0.17025-1_all.deb ...
Unpacking liberror-perl (0.17025-1) ...
Selecting previously unselected package git-man.
Preparing to unpack .../git-man_1%3a2.17.1-1ubuntu0.4_all.deb ...
Unpacking git-man (1:2.17.1-1ubuntu0.4) ...
Selecting previously unselected package git.
Preparing to unpack .../git_1%3a2.17.1-1ubuntu0.4_amd64.deb ...
Unpacking git (1:2.17.1-1ubuntu0.4) ...
Setting up git-man (1:2.17.1-1ubuntu0.4) ...
Setting up liberror-perl (0.17025-1) ...
```

## 2. Initialize a Git Repository

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

### 3. Add files to the repository

```
ttn@ttn:~/exercise$ touch hello.txt
ttn@ttn:~/exercise$ echo "hello world" > hello.txt
ttn@ttn:~/exercise$ git status
On branch master

No commits yet

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

        hello.txt

nothing added to commit but untracked files present (use "git add" to track)
ttn@ttn:~/exercise$ git add hello.txt
ttn@ttn:~/exercise$ git status
On branch master

No commits yet

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

        new file:   hello.txt
```

### 4. Unstage 1 file

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/exercise$ git rm --cached hello.txt
rm 'hello.txt'
ttn@ttn:~/exercise$ git status
On branch master

No commits yet

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

        hello.txt

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

## 5. Commit the file

```
ttn@ttn:~/exercise$ git add hello.txt
ttn@ttn:~/exercise$ git commit -m "hello: Initial commit"

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: unable to auto-detect email address (got 'ttn@ttn.(none)')
```

## 6. Add a remote

```
ttn@ttn:~/exercise$ git remote add hello git@github.com:ravi97garg/someRandomCodes.git
```

## 7. Undo changes to a particular file

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/exercise$ cat hello.txt
this is day 2
ttn@ttn:~/exercise$ git status
On branch master
nothing to commit, working tree clean
ttn@ttn:~/exercise$ echo "welcome" >> hello.txt
ttn@ttn:~/exercise$ cat hello.txt
this is day 2
welcome
ttn@ttn:~/exercise$ git checkout -- hello.txt
ttn@ttn:~/exercise$ cat hello.txt
this is day 2
```

## 8. Push changes to Github

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/exercise$ git pull hello master --allow-unrelated-histories
From github.com:ravi97garg/someRandomCodes
* branch          master      -> FETCH_HEAD
Merge made by the 'recursive' strategy.
 .idea/inspectionProfiles/profiles_settings.xml | 7 ++
 .idea/misc.xml                                | 4 +
 .idea/modules.xml                             | 8 ++
 .idea/recover.iml                             | 11 ++
 .idea/workspace.xml                           | 135 +++++
 CCPCoDeToDownloadQuesstionares.py              | 65 +++++
6 files changed, 230 insertions(+)
create mode 100644 .idea/inspectionProfiles/profiles_settings.xml
create mode 100644 .idea/misc.xml
create mode 100644 .idea/modules.xml
create mode 100644 .idea/recover.iml
create mode 100644 .idea/workspace.xml
create mode 100644 CCPCoDeToDownloadQuesstionares.py
ttn@ttn:~/exercise$ git push hello master
Counting objects: 13, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (6/6), done.
Writing objects: 100% (13/13), 1.12 KiB | 1.12 MiB/s, done.
Total 13 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To github.com:ravi97garg/someRandomCodes.git
 e798501..b7c90de  master -> master
```

## 9. Clone the repository

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~$ mkdir clonedrepository
ttn@ttn:~$ cd clonedrepository/
ttn@ttn:~/clonedrepository$ git clone git@github.com:shobhitttn/learnings.git
Cloning into 'learnings'...
remote: Enumerating objects: 2, done.
remote: Counting objects: 100% (2/2), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 253 (delta 0), reused 1 (delta 0), pack-reused 251
Receiving objects: 100% (253/253), 22.60 KiB | 3.23 MiB/s, done.
Resolving deltas: 100% (100/100), done.
```

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

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/clonedrepository$ echo "newersworld is here" >> hello.txt
ttn@ttn:~/clonedrepository$ git add hello.txt
fatal: not a git repository (or any parent up to mount point /)
Stopping at filesystem boundary (GIT_DISCOVERY_ACROSS_FILESYSTEM not set).
ttn@ttn:~/clonedrepository$ git init
Initialized empty Git repository in /home/ttn/clonedrepository/.git/
ttn@ttn:~/clonedrepository$ git add hello.txt
ttn@ttn:~/clonedrepository$ git commit -m "changes done at hello.txt"
[master (root-commit) f788839] changes done at hello.txt
1 file changed, 1 insertion(+)
create mode 100644 hello.txt
```

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/clonedrepository$ git push hello master
Counting objects: 6, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 625 bytes | 625.00 KiB/s, done.
Total 6 (delta 2), reused 0 (delta 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To github.com:shobhitttn/learnings.git
   6806ecb..94b6732  master -> master
ttn@ttn:~/clonedrepository$ cat hello.txt
<<<<<< HEAD
newersworld is here
=====
<<<<<< HEAD
hell ya
=====

< HEAD
kuch kuch. kuch aur changes.
by Harshdeep
hello
sidisuyiudyusiydiuysiudyiusyid
uysdtustyudtyusudytsd
=====
Hello

>>>>>> f15254c73e2627ade0c4f0f4279287c534ad19d8
>>>>>> 6806ecbaa466fa99609599d82f0bcde7664f3f22
```

```
ttn@ttn: ~/Desktop/learning
File Edit View Search Terminal Help
ttn@ttn:~/Desktop/learning$ git pull origin master
remote: Enumerating objects: 34, done.
remote: Counting objects: 100% (34/34), done.
remote: Compressing objects: 100% (14/14), done.
remote: Total 84 (delta 25), reused 22 (delta 18), pack-reused 50
Unpacking objects: 100% (84/84), done.
From github.com:shobhitttn/learnings
 * branch          master      -> FETCH_HEAD
 * [new branch]     master      -> origin/master
ttn@ttn:~/Desktop/learning$ ls
file1      harshdeep.txt  learnings    rahul1.txt  tt.txt
file_srish hello.txt      qwerty2.txt  ravi.txt    xyz.txt
ttn@ttn:~/Desktop/learning$ tail hello.txt
Hello

>>>>>> f15254c73e2627ade0c4f0f4279287c534ad19d8
>>>>>> 6806ecbaa466fa99609599d82f0bcde7664f3f22
ttn@ttn:~/Desktop/learning$ cat hello.txt
```

```
ttn@ttn: ~/Desktop/learning
File Edit View Search Terminal Help
ttn@ttn:~/Desktop/learning$ cat hello.txt
<<<<<<< HEAD
newersworld is here
=====
<<<<<<< HEAD
hell ya
=====
< HEAD
kuch kuch. kuch aur changes.
by Harshdeep
hello
sidisuyiudyusiydiuysiudyiusyid
uysdtustyudtyusudytsd
=====
Hello

>>>>>> f15254c73e2627ade0c4f0f4279287c534ad19d8
```

11. Check differences between a file and its staged version



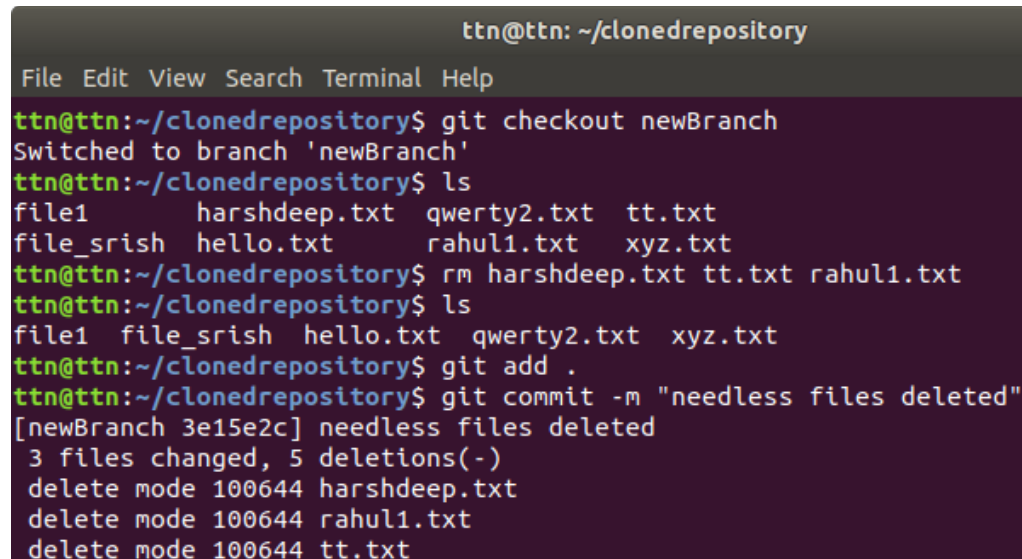


```
ttn@ttn:~/clonedrepository$ ls
file1      harshdeep.txt  qwerty2.txt  tt.txt
file_srish hello.txt      rahul1.txt   xyz.txt
ttn@ttn:~/clonedrepository$ echo "hello world" >> qwerty2.txt
ttn@ttn:~/clonedrepository$ git status
On branch master
nothing to commit, working tree clean
```

13. Create a new branch.

```
ttn@ttn:~/clonedrepository$ git branch newBranch
ttn@ttn:~/clonedrepository$ git branch
* master
  newBranch
```

14. Diverge them with commits



```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/clonedrepository$ git checkout newBranch
Switched to branch 'newBranch'
ttn@ttn:~/clonedrepository$ ls
file1      harshdeep.txt  qwerty2.txt  tt.txt
file_srish hello.txt      rahul1.txt   xyz.txt
ttn@ttn:~/clonedrepository$ rm harshdeep.txt tt.txt rahul1.txt
ttn@ttn:~/clonedrepository$ ls
file1 file_srish hello.txt  qwerty2.txt  xyz.txt
ttn@ttn:~/clonedrepository$ git add .
ttn@ttn:~/clonedrepository$ git commit -m "needless files deleted"
[newBranch 3e15e2c] needless files deleted
3 files changed, 5 deletions(-)
delete mode 100644 harshdeep.txt
delete mode 100644 rahul1.txt
delete mode 100644 tt.txt
```

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

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/clonedrepository$ cat hello.txt
ruler
welcome java
ttn@ttn:~/clonedrepository$ git commit -m "hello java added at line 2"
[newBranch 9a2a462] hello java added at line 2
1 file changed, 1 insertion(+)
ttn@ttn:~/clonedrepository$ git push hello newBranch
Counting objects: 17, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (13/13), done.
Writing objects: 100% (17/17), 1.37 KiB | 1.38 MiB/s, done.
Total 17 (delta 6), reused 0 (delta 0)
remote: Resolving deltas: 100% (6/6), completed with 1 local object.
remote:
remote: Create a pull request for 'newBranch' on GitHub by visiting:
remote:   https://github.com/shobhitttn/learnings/pull/new/newBranch
remote:
To github.com:shobhitttn/learnings.git
* [new branch]      newBranch -> newBranch
ttn@ttn:~/clonedrepository$ git checkout master
Switched to branch 'master'
ttn@ttn:~/clonedrepository$ cat hello.txt
ruler
ttn@ttn:~/clonedrepository$ echo "welcome python" >> hello.txt
ttn@ttn:~/clonedrepository$ cat hello.txt
ruler
welcome python
ttn@ttn:~/clonedrepository$ git add hello.txt
ttn@ttn:~/clonedrepository$ git commit -m "welcome python added in line 2"
[master c8d8c61] welcome python added in line 2
1 file changed, 1 insertion(+)
```

16. Try merging and resolve merge conflicts

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/clonedrepository$ git merge newBranch
Removing tt.txt
Removing rahul1.txt
Auto-merging hello.txt
CONFLICT (content): Merge conflict in hello.txt
Removing harshdeep.txt
Automatic merge failed; fix conflicts and then commit the result.
ttn@ttn:~/clonedrepository$ git status
On branch master
You have unmerged paths.
  (fix conflicts and run "git commit")
  (use "git merge --abort" to abort the merge)

Changes to be committed:

        deleted:      harshdeep.txt
        deleted:      rahul1.txt
        deleted:      tt.txt

Unmerged paths:
  (use "git add <file>..." to mark resolution)

        both modified: hello.txt

ttn@ttn:~/clonedrepository$ vim hello.txt
ttn@ttn:~/clonedrepository$ git add hello.txt
ttn@ttn:~/clonedrepository$ git commit -m "merged succesfully"
[master 74c43a5] merged succesfully
```

17. Stash the changes and pop them

```
ttn@ttn: ~/clonedrepository
File Edit View Search Terminal Help
ttn@ttn:~/clonedrepository$ git stash
Saved working directory and index state WIP on master: 74c43a5 meged succesfully
ttn@ttn:~/clonedrepository$ git pop --help
git: 'pop' is not a git command. See 'git --help'.

The most similar command is
    log
ttn@ttn:~/clonedrepository$ git stash pop --help
ttn@ttn:~/clonedrepository$ cd ..
ttn@ttn:~$ cd clonedrepository/
ttn@ttn:~/clonedrepository$ git branch
* master
  newBranch
ttn@ttn:~/clonedrepository$ git checkout newBranch
Switched to branch 'newBranch'
ttn@ttn:~/clonedrepository$ git checkout master
Switched to branch 'master'
ttn@ttn:~/clonedrepository$ 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:   hello.txt

no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (661c76bcc3b0c0aed81691302dfb818ff8a00c55)
```

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
```

```
Terminal
File Edit View Search Terminal Help
@ [ttn]~ -> ls
a.txt Downloads file1.txt password_backup.tar.gz
clonedrepository emptyFile1 learnings Pictures
Desktop emptyFile2 mozilla.pdf Public
dir1 examples.desktop Music Templates
Documents exercise output.tar.gz Videos
@ [ttn]~ -> cd learnings/
@ [ttn]learnings git:(master|REBASE 1/3) -> git status
On branch hello
Your branch and 'origin/hello' have diverged,
and have 5 and 14 different commits each, respectively.
(use "git pull" to merge the remote branch into yours)

You are currently rebasing branch 'master' on '75e6a59'.
(all conflicts fixed: run "git rebase --continue")

nothing to commit, working tree clean
@ [ttn]learnings git:(master|REBASE 1/3) -> git rebase --continue
Applying: naljbdczjdbf:
No changes - did you forget to use 'git add'?
If there is nothing left to stage, chances are that something else
already introduced the same changes; you might want to skip this patch.

Resolve all conflicts manually, mark them as resolved with
```