

Ques 1. Git Setup

Sol. `sudo apt install git`
`git --version`

```
ttn@ttn: /home
File Edit View Search Terminal Help
ttn@ttn:/home$ sudo 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).
0 upgraded, 0 newly installed, 0 to remove and 430 not upgraded.
ttn@ttn:/home$ git --version
git version 2.17.1
ttn@ttn:/home$
```

Ques 2. Initialize a Git Repository

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

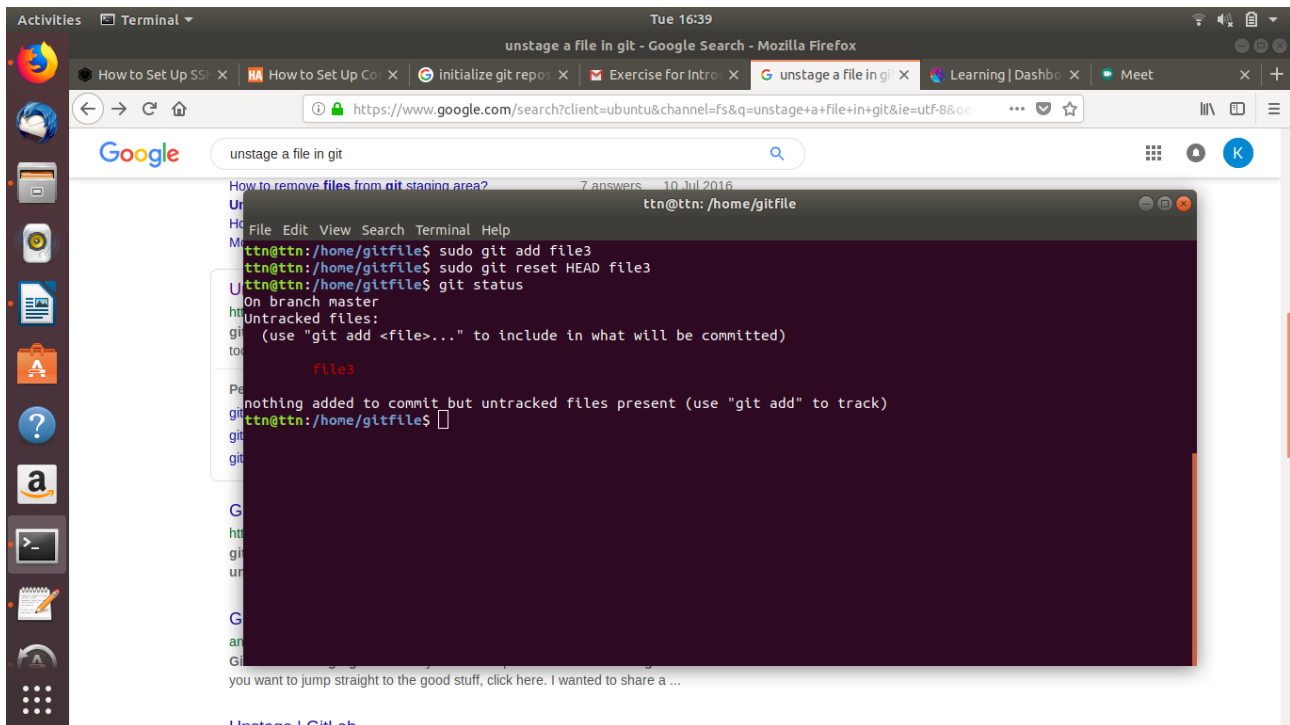
Ques 3. Add files to the repository

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help
ttn@ttn:/home$ cd gitfile/
ttn@ttn:/home/gitfile$ sudo git init
Initialized empty Git repository in /home/gitfile/.git/
ttn@ttn:/home/gitfile$ sudo nano file1
ttn@ttn:/home/gitfile$ sudo nano file2
ttn@ttn:/home/gitfile$ sudo nano file3
ttn@ttn:/home/gitfile$ sudo git add file1
ttn@ttn:/home/gitfile$ sudo git add file2
ttn@ttn:/home/gitfile$ sudo git config --global user.name "Kanchan"
ttn@ttn:/home/gitfile$ sudo git config --global user.email "kanchan.sinha@tothenewcom"
ttn@ttn:/home/gitfile$ sudo git commit -m "file1 and file2 added"
[master (root-commit) 5e3c054] file1 and file2 added
2 files changed, 2 insertions(+)
create mode 100644 file1
create mode 100644 file2
ttn@ttn:/home/gitfile$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)

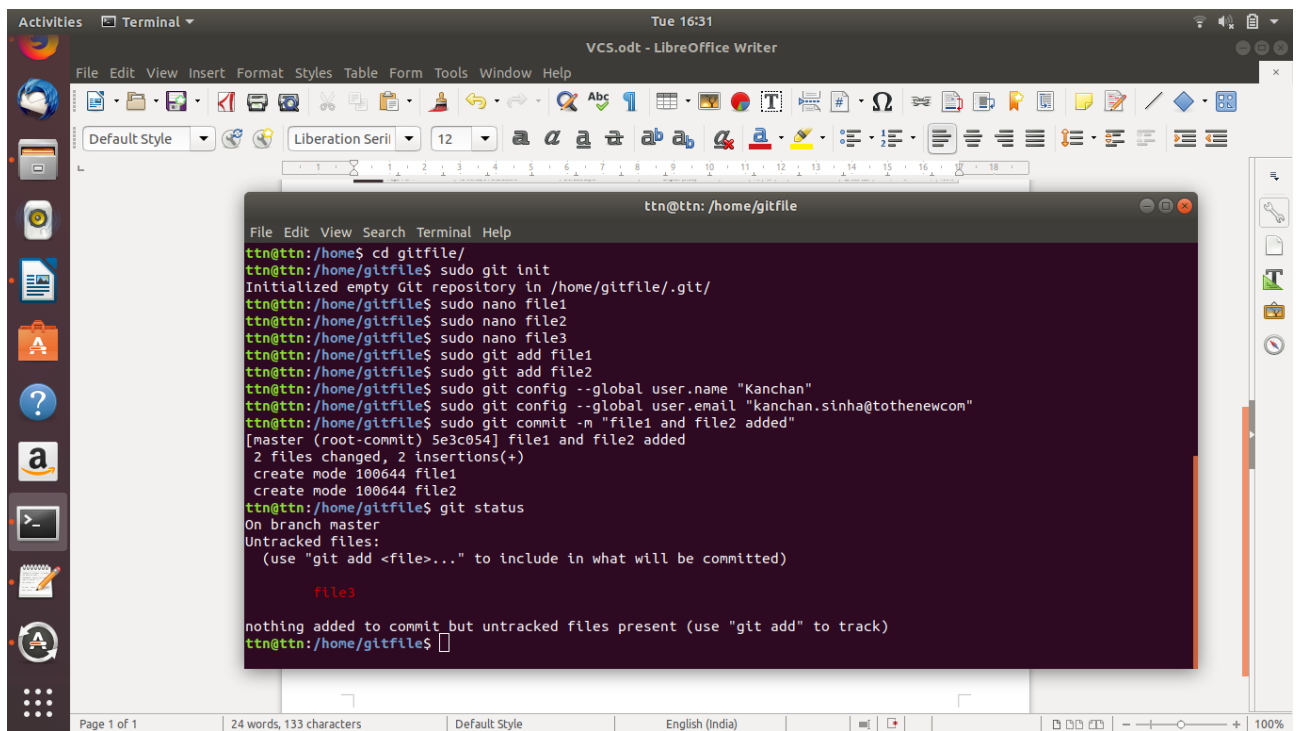
    file3

nothing added to commit but untracked files present (use "git add" to track)
ttn@ttn:/home/gitfile$
```

Ques 4. Unstage 1 file



Ques 5. Commit the file



Ques 6. Add a remote.

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help
ttn@ttn:/home/gitfile$ git remote add origin https://github.com/kanch08/git-class.git
error: could not lock config file .git/config: Permission denied
fatal: could not set 'remote.origin.url' to 'https://github.com/kanch08/git-class.git'
ttn@ttn:/home/gitfile$ sudo git remote add origin https://github.com/kanch08/git-class.git
ttn@ttn:/home/gitfile$ git remote -v
origin https://github.com/kanch08/git-class.git (fetch)
origin https://github.com/kanch08/git-class.git (push)
ttn@ttn:/home/gitfile$
```

Ques 7. Undo changes to a particular file

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help
ttn@ttn:/home/gitfile$ sudo gedit file3
** (gedit:4525): WARNING **: 21:01:42.149: Set document metadata failed: Setting
attribute metadata::gedit-spell-language not supported
** (gedit:4525): WARNING **: 21:01:42.149: Set document metadata failed: Setting
attribute metadata::gedit-encoding not supported
** (gedit:4525): WARNING **: 21:01:43.315: Set document metadata failed: Setting
attribute metadata::gedit-position not supported
ttn@ttn:/home/gitfile$ sudo git add .
ttn@ttn:/home/gitfile$ sudo git status
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

        modified:   file3

ttn@ttn:/home/gitfile$ cat file3
Live once in a life

ttn@ttn:/home/gitfile$ sudo git reset --hard
HEAD is now at e323aaf all files committed
ttn@ttn:/home/gitfile$ cat file3
Live once
```

Ques 8. Push changes to Github

```
ttn@ttn:/home/gitfile$ cd git-class/
ttn@ttn:/home/gitfile/git-class$ sudo git push origin master
Username for 'https://github.com': kanch08
Password for 'https://kanch08@github.com':
Everything up-to-date
ttn@ttn:/home/gitfile/git-class$
```

Ques 9 Clone a repository

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help
ttn@ttn:~$ cd /home
ttn@ttn:/home$ ls
abc exercise gitfile intro_to_git lost+found test ttn
ttn@ttn:/home$ cd gitfile/
ttn@ttn:/home/gitfile$ sudo git clone https://github.com/kanch08/git-class.git
Cloning into 'git-class'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
ttn@ttn:/home/gitfile$ ls
file1 file2 file3 git-class
ttn@ttn:/home/gitfile$ sudo git push file2
fatal: invalid gitfile format: file2
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.
ttn@ttn:/home/gitfile$
```

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

```
ttn@ttn: /home/gitfile/git-class
File Edit View Search Terminal Help
ttn@ttn:/home/gitfile/git-class$ sudo git checkout -b data_feature
Switched to a new branch 'data_feature'
ttn@ttn:/home/gitfile/git-class$ ls
README.md
ttn@ttn:/home/gitfile/git-class$ sudo nano file4
ttn@ttn:/home/gitfile/git-class$ sudo git add file4
ttn@ttn:/home/gitfile/git-class$ sudo git commit -m "easy adding"
[data_feature 919b64f] easy adding
1 file changed, 2 insertions(+)
create mode 100644 file4
ttn@ttn:/home/gitfile/git-class$ sudo git config --global push.default simple
ttn@ttn:/home/gitfile/git-class$ sudo git push origin data_feature
Username for 'https://github.com': kanch08
Password for 'https://kanch08@github.com':
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 298 bytes | 298.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'data_feature' on GitHub by visiting:
remote:   https://github.com/kanch08/git-class/pull/new/data_feature
remote:
To https://github.com/kanch08/git-class.git
 * [new branch]      data_feature -> data_feature
ttn@ttn:/home/gitfile/git-class$

sudo: pull: command not found
ttn@ttn:/home/gitfile/git-class$ sudo git pull origin master
From https://github.com/kanch08/git-class
 * branch            master       -> FETCH_HEAD
Already up to date.
ttn@ttn:/home/gitfile/git-class$
```


Ques 11. Check differences between a file and its staged version

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help
ttn@ttn:/home/gitfile$ sudo git add file7
ttn@ttn:/home/gitfile$ sudo git diff file7
ttn@ttn:/home/gitfile$ git diff --staged
diff --git a/file5 b/file5
new file mode 100644
index 0000000..9528f15
--- /dev/null
+++ b/file5
@@ -0,0 +1,2 @@
+Live free
+
diff --git a/file7 b/file7
new file mode 100644
index 0000000..388ecc6
--- /dev/null
+++ b/file7
@@ -0,0 +1 @@
+welcome Rajat
ttn@ttn:/home/gitfile$ ls
file1 file2 file3 file5 file7 file8
ttn@ttn:/home/gitfile$
```

Ques 12. Ignore a few files to be checked in.

```
ttn@ttn:/home/gitfile$ sudo touch .gitignore
ttn@ttn:/home/gitfile$ sudo git rm --cached file7
rm 'file7'
ttn@ttn:/home/gitfile$ sudo git rm --cached file5
rm 'file5'
ttn@ttn:/home/gitfile$ sudo touch .gitignore
```

Ques 13. Create a new branch.

The screenshot shows a terminal window titled 'ttn@ttn: /home/gitfile' with the following content:

```
File Edit View Search Terminal Help
-d, --delete delete fully merged branch
-D delete branch (even if not merged)
-m, --move move/rename a branch and its reflog
-M move/rename a branch, even if target exists
-c, --copy copy a branch and its reflog
-C copy a branch, even if target exists
--list list branch names
-l, --create-reflog create the branch's reflog
--edit-description edit the description for the branch
-f, --force force creation, move/rename, deletion
--merged <commit> print only branches that are merged
--no-merged <commit> print only branches that are not merged
--column[=<style>] list branches in columns
--sort <key> field name to sort on
--points-at <object> print only branches of the object
-i, --ignore-case sorting and filtering are case insensitive
--format <format> format to use for the output

ttn@ttn:/home/gitfile$ sudo git branch master_temp
ttn@ttn:/home/gitfile$ sudo checkout master_temp
sudo: checkout: command not found
ttn@ttn:/home/gitfile$ sudo git checkout master_temp
Switched to branch 'master_temp'
ttn@ttn:/home/gitfile$
```

In the background, a web browser window is open showing a Gmail inbox. The terminal window is also overlaid on a terminal application window titled 'Exercise for Introduction to Version Control has been created - kanchan.sinha@tothenew.com - TO THE NEW Mail - Mozilla Firefox'.

Ques 14. Diverge them with commits

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help

ttn@ttn:/home/gitfile$ sudo git branch master_temp
ttn@ttn:/home/gitfile$ sudo checkout master_temp
sudo: checkout: command not found
ttn@ttn:/home/gitfile$ sudo git checkout master_temp
Switched to branch 'master_temp'
ttn@ttn:/home/gitfile$ clear

ttn@ttn:/home/gitfile$ sudo nano file4
ttn@ttn:/home/gitfile$ sudo git add .
ttn@ttn:/home/gitfile$ sudo git commit -m "file4 added"
[master_temp 14251be] file4 added
1 file changed, 1 insertion(+)
create mode 100644 file4
ttn@ttn:/home/gitfile$ sudo nano file4
ttn@ttn:/home/gitfile$ sudo git add .
ttn@ttn:/home/gitfile$ sudo git commit -m "file4 updated"
[master_temp 65dc8ec] file4 updated
1 file changed, 1 insertion(+), 1 deletion(-)
ttn@ttn:/home/gitfile$ git status
On branch master_temp
nothing to commit, working tree clean
ttn@ttn:/home/gitfile$ git log
commit 65dc8ecd386b56053b1ae1d4b64b95c1201b0aba (HEAD -> master_temp)
```

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help

file4 updated

commit 14251befe257072568ad51bcbca5afee3c307710
Author: Kanchan <kanchan.sinha@tothenewcom>
Date: Tue Feb 5 19:46:44 2019 +0530

file4 added

commit 6598596ec434844826aa9ba9d31de69bac15bd33 (master)
Author: Kanchan <kanchan.sinha@tothenewcom>
Date: Tue Feb 5 19:43:28 2019 +0530

first commit
ttn@ttn:/home/gitfile$ git log --decorate --all --graph --oneline
* 65dc8ec (HEAD -> master_temp) file4 updated
* 14251be file4 added
* 6598596 (master) first commit
ttn@ttn:/home/gitfile$ sudo git checkout master
Switched to branch 'master'
ttn@ttn:/home/gitfile$ git log --decorate --all --graph --oneline
* 65dc8ec (master_temp) file4 updated
* 14251be file4 added
* 6598596 (HEAD -> master) first commit
ttn@ttn:/home/gitfile$
```

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

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help

ttn@ttn:/home/gitfile$ git branch
* master
  master_temp
ttn@ttn:/home/gitfile$ sudo checkout master_temp
sudo: checkout: command not found
ttn@ttn:/home/gitfile$ sudo git checkout master_temp
Switched to branch 'master_temp'
ttn@ttn:/home/gitfile$ sudo git branch bar
ttn@ttn:/home/gitfile$ sudo nano file4
sudo: nano: command not found
ttn@ttn:/home/gitfile$ sudo nano file4
ttn@ttn:/home/gitfile$ sudo git add .
ttn@ttn:/home/gitfile$ sudo git commit -m "file4 updated in master_temp"
[master_temp 07aaa4a] file4 updated in master_temp
1 file changed, 1 insertion(+), 1 deletion(-)
ttn@ttn:/home/gitfile$ sudo git checkout bar
Switched to branch 'bar'
ttn@ttn:/home/gitfile$ sudo nano file4
ttn@ttn:/home/gitfile$ sudo git add .
ttn@ttn:/home/gitfile$ sudo git commit -m "file4 updated in bar"
[bar 87ff772] file4 updated in bar
1 file changed, 1 insertion(+), 1 deletion(-)
ttn@ttn:/home/gitfile$
```

Ques 16 Try merging and resolve merge conflicts.

To see the beginning of the merge conflict in your file, search the file for the conflict marker <<<<<<. When you open the file in your text editor, you'll see the changes from the HEAD or base branch after the line <<<<<< HEAD. Next, you'll see =====, which divides your changes from the changes in the other branch, followed by >>>>>> BRANCH-NAME.

Decide if you want to keep only your branch's changes, keep only the other branch's changes, or make a brand new change, which may incorporate changes from both branches. Delete the conflict markers <<<<<<, =====, >>>>>> and make the changes you want in the final merge. In this example, both changes are incorporated into the final merge

```
ttn@ttn: /home/gitfile
File Edit View Search Terminal Help
ttn@ttn:/home/gitfile$ sudo git checkout master_temp
Switched to branch 'master_temp'
ttn@ttn:/home/gitfile$ sudo git merge bar
Auto-merging file4
CONFLICT (content): Merge conflict in file4
Automatic merge failed; fix conflicts and then commit the result.
ttn@ttn:/home/gitfile$ git status
On branch master_temp
You have unmerged paths.
  (fix conflicts and run "git commit")
  (use "git merge --abort" to abort the merge)

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

        both modified:   file4

no changes added to commit (use "git add" and/or "git commit -a")
ttn@ttn:/home/gitfile$ sudo git add .
ttn@ttn:/home/gitfile$ sudo git commit -m "Resolved merge conflicts"
[master_temp cd469a7] Resolved merge conflicts
ttn@ttn:/home/gitfile$
```

Ques 17 Stash the changes and pop them

```
File Edit View Search Terminal Help
ttn@ttn:/home/gitfile$ git status
On branch master_temp
nothing to commit, working tree clean
ttn@ttn:/home/gitfile$ sudo git branch
  bar
  master
* master_temp
ttn@ttn:/home/gitfile$ sudo nano file4
ttn@ttn:/home/gitfile$ sudo nano file5
ttn@ttn:/home/gitfile$ git status
On branch master_temp
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:   file4

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

        file5

no changes added to commit (use "git add" and/or "git commit -a")

ttn@ttn:/home/gitfile$ sudo git checkout master
error: Your local changes to the following files would be overwritten by checkout:
  file4
Please commit your changes or stash them before you switch branches.
Aborting
```



```

ttn@ttn:/home/gitfile$ sudo git stash push file4
Saved working directory and index state WIP on master_temp: cd469a7 Resolved merge conflicts
ttn@ttn:/home/gitfile$ sudo git checkout master
Switched to branch 'master'
ttn@ttn:/home/gitfile$ sudo git checkout master

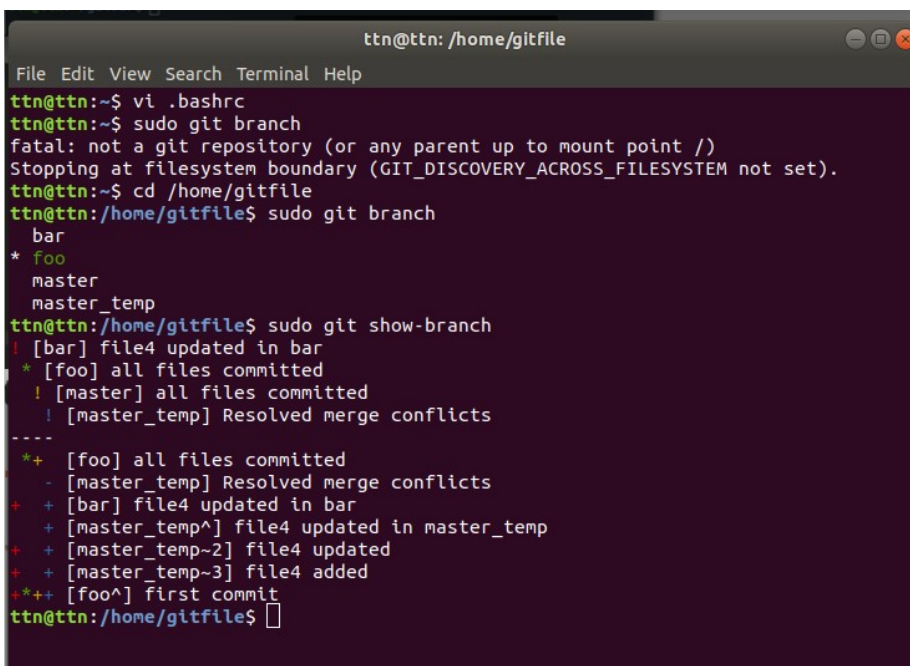
```

Ques 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[
else
PS1="\u@\h:\W $(parse_git_branch)\$ '
fi
unset color_prompt force_color_prompt

```



```

ttn@ttn: /home/gitfile
File Edit View Search Terminal Help
ttn@ttn:~$ vi .bashrc
ttn@ttn:~$ sudo git branch
fatal: not a git repository (or any parent up to mount point /)
Stopping at filesystem boundary (GIT_DISCOVERY_ACROSS_FILESYSTEM not set).
ttn@ttn:~$ cd /home/gitfile
ttn@ttn:/home/gitfile$ sudo git branch
bar
* foo
master
master_temp
ttn@ttn:/home/gitfile$ sudo git show-branch
! [bar] file4 updated in bar
* [foo] all files committed
! [master] all files committed
! [master_temp] Resolved merge conflicts
----
*+ [foo] all files committed
- [master_temp] Resolved merge conflicts
+ + [bar] file4 updated in bar
+ [master_temp^] file4 updated in master_temp
+ + [master_temp~2] file4 updated
+ + [master_temp~3] file4 added
*+*+ [foo^] first commit
ttn@ttn:/home/gitfile$

```