

Git & GitHub - The Basics

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Git - "the stupid content tracker"

"Git is a fast, scalable, distributed revision control system with an unusually rich command set that provides both high-level operations and full access to internals." - github.com/git/git

git status

Displays paths that have differences between the index file and the current HEAD commit, paths that have differences between the working tree and the index file, and paths in the working tree that are not tracked by Git

git status

```
$ git status
On branch master
```

```
Initial commit
```

```
Untracked files:
```

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

```
git-basics.aux
git-basics.log
...
...
```

git add

Updates the index using the current content found in the working tree, to prepare the content staged for the next commit

git add

```
$ git add git-basics.tex git-basics.pdf
```

```
$ git status
```

```
On branch master
```

```
Initial commit
```

```
Changes to be committed:
```

```
(use "git rm --cached <file>..." to unstage)
```

```
new file:   git-basics.pdf
```

```
new file:   git-basics.tex
```

```
Untracked files:
```

```
git-basics.aux
```

```
git-basics.log
```

```
...
```

```
...
```

git commit

Stores the current contents of the index in a new commit along with a log message from the user describing the changes

git commit

```
$ git commit -m "add git-status / git-add slides"
[master (root-commit) d2ab120] add git-status / git-add slides
2 files changed, 98 insertions(+)
create mode 100644 git-basics.pdf
create mode 100644 git-basics.tex
```


git pull

Incorporates changes from a remote repository into the current branch. In its default mode, git pull is shorthand for git fetch followed by git merge FETCH_HEAD

git pull

```
$ git pull cjwfuller master
remote: Counting objects: 4, done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (4/4), done.
From github.com:cjwfuller/git-basics
 * branch                master      -> FETCH_HEAD
 * [new branch]          master      -> cjwfuller/master
Merge made by the 'recursive' strategy.
 LICENSE   | 22 ++++++
 README.md |  1 +
2 files changed, 23 insertions(+)
create mode 100644 LICENSE
create mode 100644 README.md
```

git push

Updates remote refs using local refs, while sending objects necessary to complete the given refs

git push

```
$ git push cjwtfuller master
Counting objects: 7, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 80.63 KiB | 0 bytes/s, done.
Total 6 (delta 0), reused 0 (delta 0)
To git@github.com:cjwtfuller/git-basics.git
   46f9a51..4b14b4b  master -> master
```

git log

git log

```
$ git log
commit 4b14b4bcebeb6a8532d880b190e0d399edf62e99
Merge: d2ab120 46f9a51
Author: Chris Fuller <chris@cjwfuller.com>
Date:   Sat Mar 7 12:55:00 2015 +0000
```

Merge branch 'master' of github.com:cjwfuller/git-basics

```
commit 46f9a51f1f847c84d5570832208ac269cb22bdce
Author: cjwfuller <chris@cjwfuller.com>
Date:   Sat Mar 7 12:54:14 2015 +0000
```

Initial commit

```
commit d2ab120b641731a9cf288dd3a2449c27c4499300
Author: Chris Fuller <chris@cjwfuller.com>
Date:   Sat Mar 7 12:51:24 2015 +0000
```

add git-status / git-add slides

git show

git show

```
$ git show d2ab120b641731a9cf288dd3a2449c27c4499300
commit d2ab120b641731a9cf288dd3a2449c27c4499300
Author: Chris Fuller <chris@cjwfuller.com>
Date: Sat Mar 7 12:51:24 2015 +0000
```

```
    add git-status / git-add slides
```

```
diff --git a/git-basics.pdf b/git-basics.pdf
new file mode 100644
index 0000000..e786890
Binary files /dev/null and b/git-basics.pdf differ
diff --git a/git-basics.tex b/git-basics.tex
new file mode 100644
index 0000000..d0102ae
--- /dev/null
+++ b/git-basics.tex
@@ -0,0 +1,98 @@
+\documentclass{beamer}
+
+\mode<presentation> {
+
+\usetheme{default}
+
+%\usecolortheme{orchid}
+
+}
+
+\usepackage{graphicx} % Allows including images
...
...
```


git diff

git diff

```
$ git diff git-basics.tex
...
...
+On branch master
+Changes to be committed:
+
+      modified:   git-basics.tex
+
+Changes not staged for commit:
+
+      modified:   git-basics.pdf
+
+Untracked files:
+
+      ...
+      ...
```

git checkout

git checkout

```
$ git status
On branch master
Changes not staged for commit:
```

```
modified:   git-basics.pdf
modified:   git-basics.tex
```

```
Untracked files:
```

```
git-basics.aux
git-basics.log
...
...
```

```
$ git checkout git-basics.pdf
$ git status
On branch master
Changes not staged for commit:
```

```
modified:   git-basics.tex
```

```
Untracked files:
```

```
git-basics.aux
git-basics.log
...
...
```

git reset

git reset

```
$ git status
On branch master
Changes not staged for commit:
```

```
modified:   git-basics.pdf
modified:   git-basics.tex
```

```
Untracked files:
```

```
git-basics.aux
git-basics.log
...
```

```
$ git add git-basics.tex
```

```
$ git status
On branch master
Changes to be committed:
```

```
modified:   git-basics.tex
```

```
Changes not staged for commit:
```

```
modified:   git-basics.pdf
```

```
Untracked files:
```

```
git-basics.aux
git-basics.log
...
```

```
$ git reset git-basics.tex
Unstaged changes after reset:
M git-basics.pdf
M git-basics.tex
```