

Git & GitHub - The Basics

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March 7, 2015

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 Repositories

- ▶ Repositories can be
 - ▶ Created or forked
 - ▶ Owned by an individual or an organisation
 - ▶ Private or public
 - ▶ Hosted remotely (e.g. on GitHub) and/or locally (e.g. on a laptop)

git status

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

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

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

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

git push

```
$ git push cjwfuller 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:cjwfuller/git-basics.git
 46f9a51..4b14b4b  master -> master
```

git log

git log

```
$ git log
commit 4b14b4bcebeeb6a8532d880b190e0d399edf62e99
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
```