

Git & GitHub

Schedule

- Introduction
- CLI
- What is Git
- Using Git
- What is GitHub
- Collaboration on GitHub

Introduction

CLI

Command Line Interface

command	description
pwd	Print working directory
ls	List directory contents
cd	Change working directory
touch	Change file access time
mkdir	Make directory
rm	Remove
mv	Move
cp	Copy
cat	Concatenate files
echo	Print

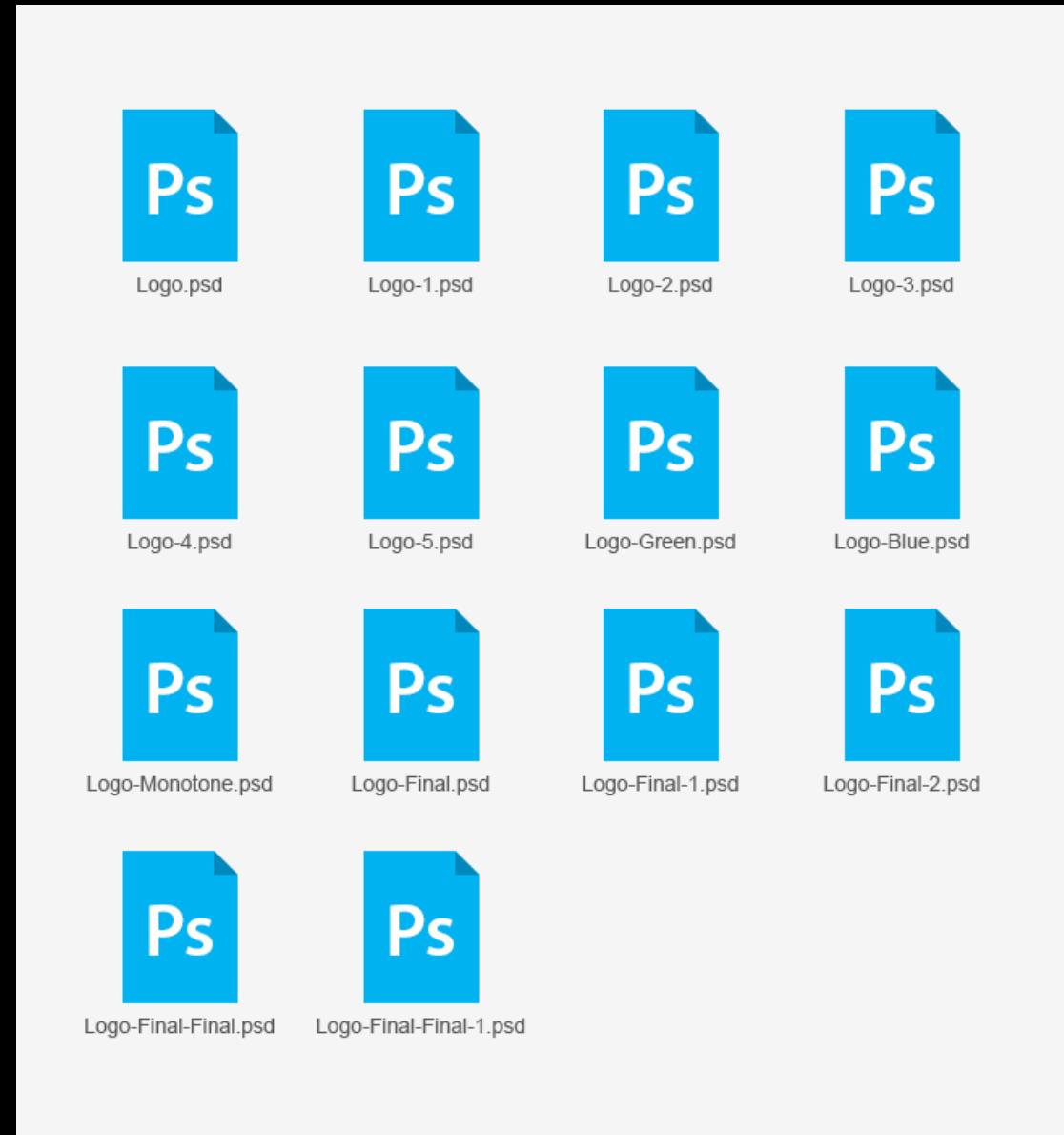
What is Git?

```
$ git init
Initialized empty Git repository in /Users/tilde/projects/oss/examples/.git/
$ echo "Hello World!" > readme.md
$ git add --all
$ git commit --message "Add readme"
[master (root-commit) 0ee1887] Add readme
 1 file changed, 1 insertion(+)
 create mode 100644 readme.md
```

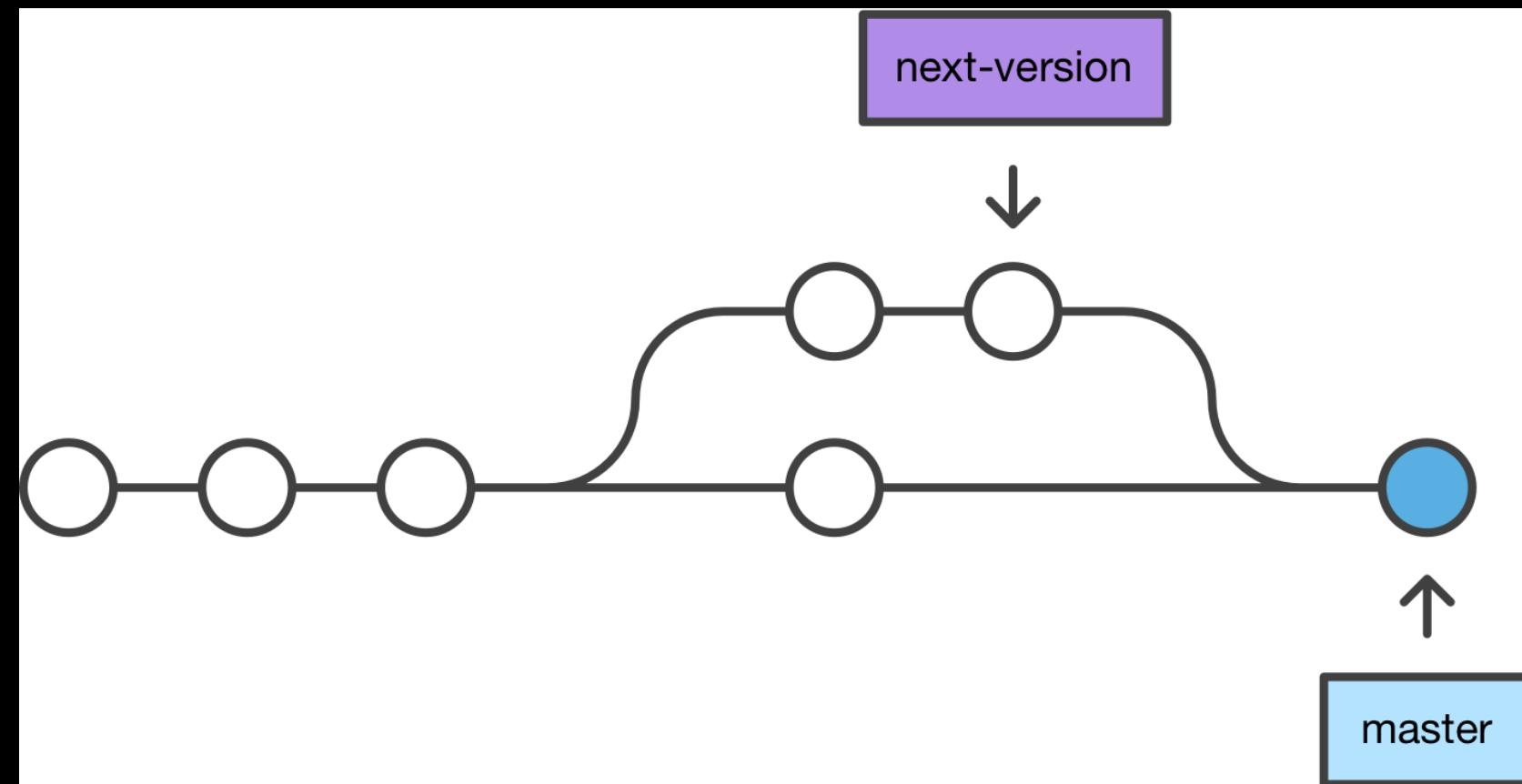
Git is a free and open source distributed **version control system** designed to handle everything from small to very large projects with speed and efficiency.¹

¹ git-scm.com

Version Control



Using Git



(Follow along!)

Create Directory

```
$ mkdir first-repo  
$ cd first-repo
```

Initialize Git Repo

```
$ git init  
Initialized empty Git repository in /Users/Rijk/CodeClub/example/.git/
```

Check status

```
$ git status
```

```
On branch master
```

```
No commits yet
```

```
nothing to commit (create/copy files and use "git add" to track)
```

Change (or add) file

```
$ echo "<h1>Hello World!</h1>" >> index.html  
$ git status  
On branch master
```

No commits yet

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

index.html

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

Stage Change

```
$ git add index.html
```

```
$ git status
```

```
On branch master
```

No commits yet

Changes to be committed:

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

```
new file:   index.html
```

Commit Change

```
$ git commit --message "Add index.html"  
[master (root-commit) 1062d02] Add index.html  
 1 file changed, 0 insertions(+), 0 deletions(-)  
create mode 100644 index.html
```

Progress

```
$ git log  
commit 1062d02bd78ad5623ca8281abcb77eaef56db840 (HEAD -> master)  
Author: rijkvanzanten <rijkvanzanten@me.com>  
Date:   Wed Oct 24 14:18:13 2018 -0400
```

Add index.html

Recap

Command

Description

git init

Create repository

git status

Current state

git add

Track or stage file

git commit

Store changes

git log

Show progress

Create branch & change

```
$ git checkout -b next-version  
Switched to a new branch 'next-version'
```

```
$ echo "<p>How are you doing?</p>" >> index.html  
$ git add index.html  
$ git commit --message "Add paragraph"  
[next-version 03b64c4] Add paragraph  
1 file changed, 1 insertion(+)
```

```
$ git log --oneline  
03b64c4 (HEAD -> next-version) Add paragraph  
1062d02 (master) Add index.html
```

List branches

```
$ git branch  
master  
* next-version
```

Switch branches

```
$ git checkout master  
Switched to branch 'master'
```

```
$ cat index.html  
<h1>Hello World!</h1>
```

```
$ git log --oneline  
1062d02 (HEAD -> master) Add index.html
```

Merge branches

```
$ git merge next-version
```

```
Updating 1062d02..03b64c4
```

```
Fast-forward
```

```
index.html | 1 +
```

```
1 file changed, 1 insertion(+)
```

```
$ cat index.html
```

```
<h1>Hello world</h1>
```

```
<p>How are you doing?</p>
```

```
$ git log --oneline
```

```
03b64c4 (HEAD -> master, next-version) Add heading
```

```
1062d02 Add index.html
```

Remove branches

```
$ git branch -d next-version  
Deleted branch next-version (was 03b64c4).
```

Recap

Command

git checkout -b branch-name

git checkout branch-name

git branch

git merge branch-name

git branch -d branch-name

Description

Create a branch

Switch to a branch

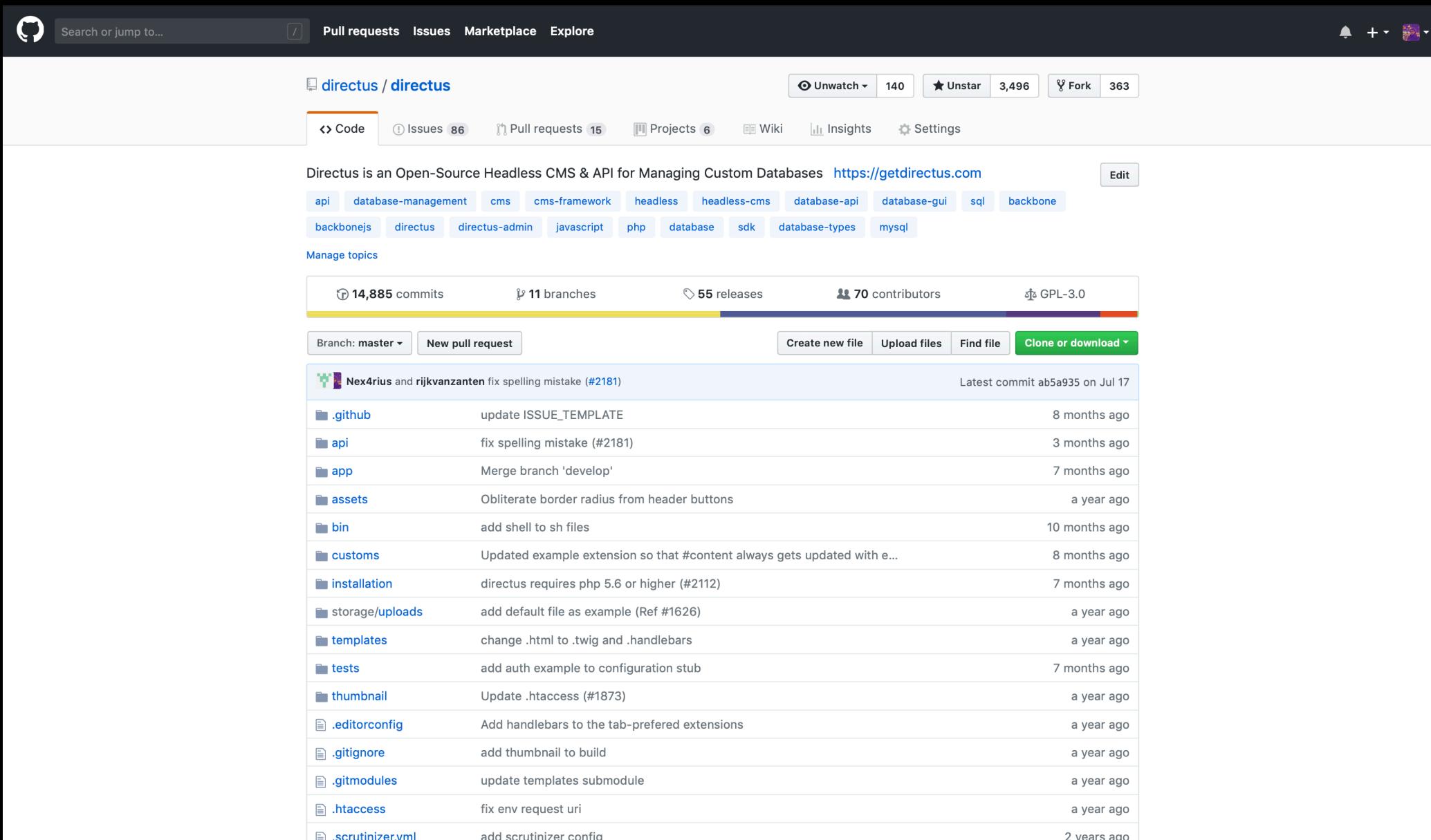
Show branches

Apply changes

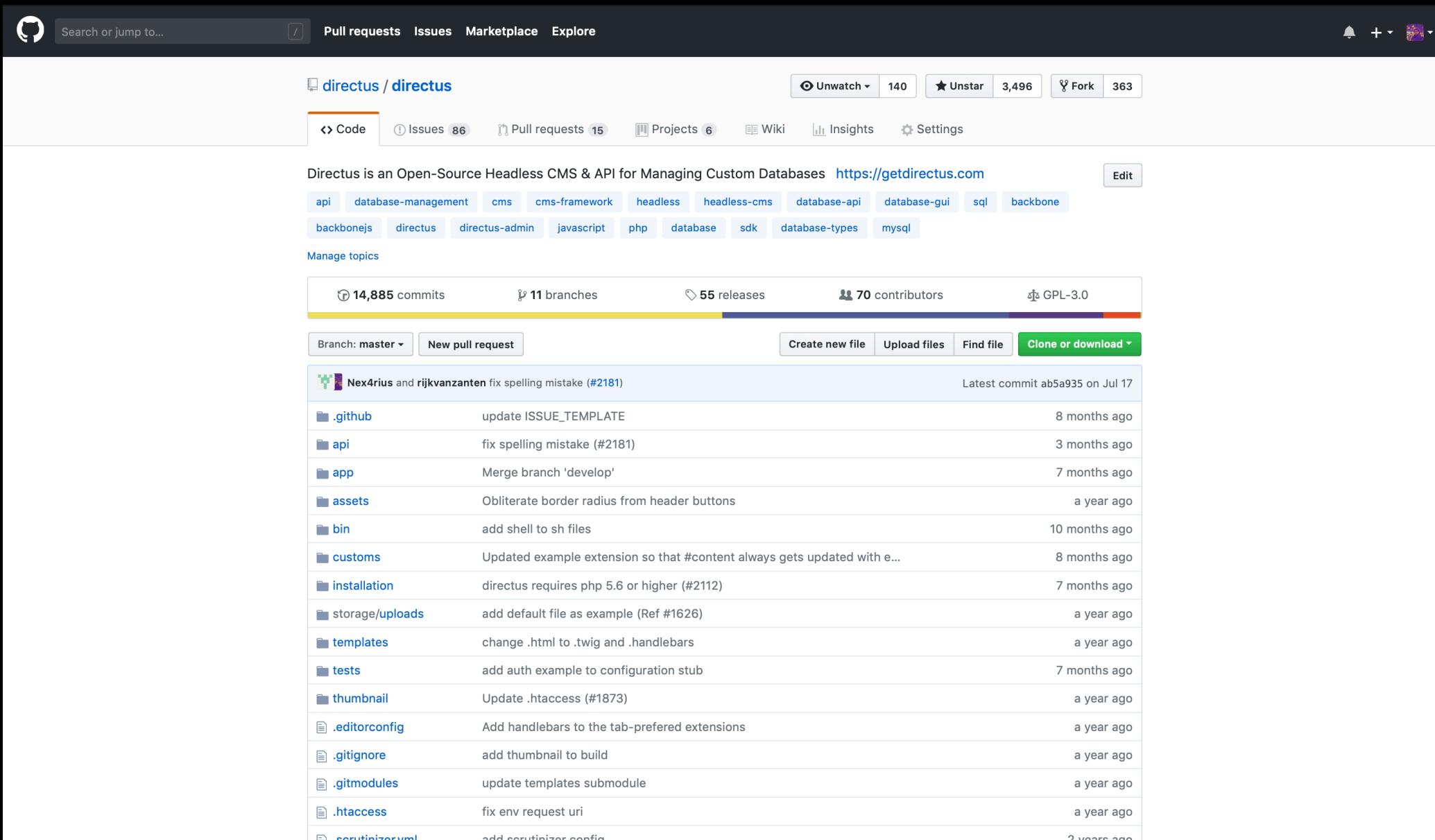
Remove branch

GitHub

This is GitHub



GitHub is a social platform around Git



GitHub is social

The screenshot shows a GitHub profile page for a user named Rijk van Zanten. The profile picture is a colorful, blurred photo of a person with glasses. The bio section includes the name "Rijk van Zanten" and the handle "rjkvanzanten". Below the bio is an "Edit bio" button. The "Activities" section shows contributions for the year 2018, with a total of 2,306 contributions. It includes a heatmap of activity by month and day, and a pie chart showing the distribution of activity types: 30% Commits, 24% Pull requests, 38% Issues, and 8% Code review. The "Contributed to" section lists repositories like "directus/app", "directus/api", and "rjkvanzanten/afstuderenproject". The "Organizations" section shows membership in organizations such as "THE NEW SCHOOL", "code club", and "parsons-codeclub". The top navigation bar includes links for "Pull requests", "Issues", "Marketplace", and "Explore".

Bugs & Questions (issues)

The screenshot shows the GitHub Issues page for the repository `directus/app`. The page displays 194 open issues. The search bar at the top includes the filters `is:issue is:open`. The issues are listed in descending order of creation date. Many issues are tagged with `bug`, `extension`, and `hacktoberfest`. Some issues have labels like `good first issue`. The interface includes standard GitHub navigation elements like `Code`, `Issues`, `Pull requests`, `Projects`, `Insights`, and `Settings`.

Issue Title	Labels	Comments
Many-to-one with only one item	bug, extension, hacktoberfest	1
error when trying to edit a "many-to-many" relationship interface using the new App v7 build version	bug, extension, hacktoberfest	1
SLUG Read Only, and/or exclude from Detail	bug, extension, good first issue, hacktoberfest	1
SLUG doesn't filter out invalid characters	bug, extension, good first issue, hacktoberfest	1
Settings: Collection Count	enhancement, good first issue, hacktoberfest	1
Hooks documentation	question	1
Editing Collection: name is empty	bug, hacktoberfest, not reproducible	2
Trying to access php version logged as non-admin	bug, good first issue, hacktoberfest	1
Creating a new item the app tries to fetch activity	bug, good first issue, hacktoberfest	1
bug of field length	bug, extension, hacktoberfest	1
Focus in alert input	enhancement, good first issue, hacktoberfest	6
Manage Existing Schema	bug, hacktoberfest, question	1

Bugs & Questions (issues)

The screenshot shows the GitHub Issues page for the repository `directus/app`. The page displays 194 open issues. The search bar at the top is set to `is:issue is:open`. The issues are listed in descending order of creation date. Many issues are tagged with `bug`, `extension`, and `hacktoberfest`. Some issues have labels like `enhancement`, `good first issue`, and `question`. The interface includes filters for `Labels` and `Milestones`, and a `New issue` button.

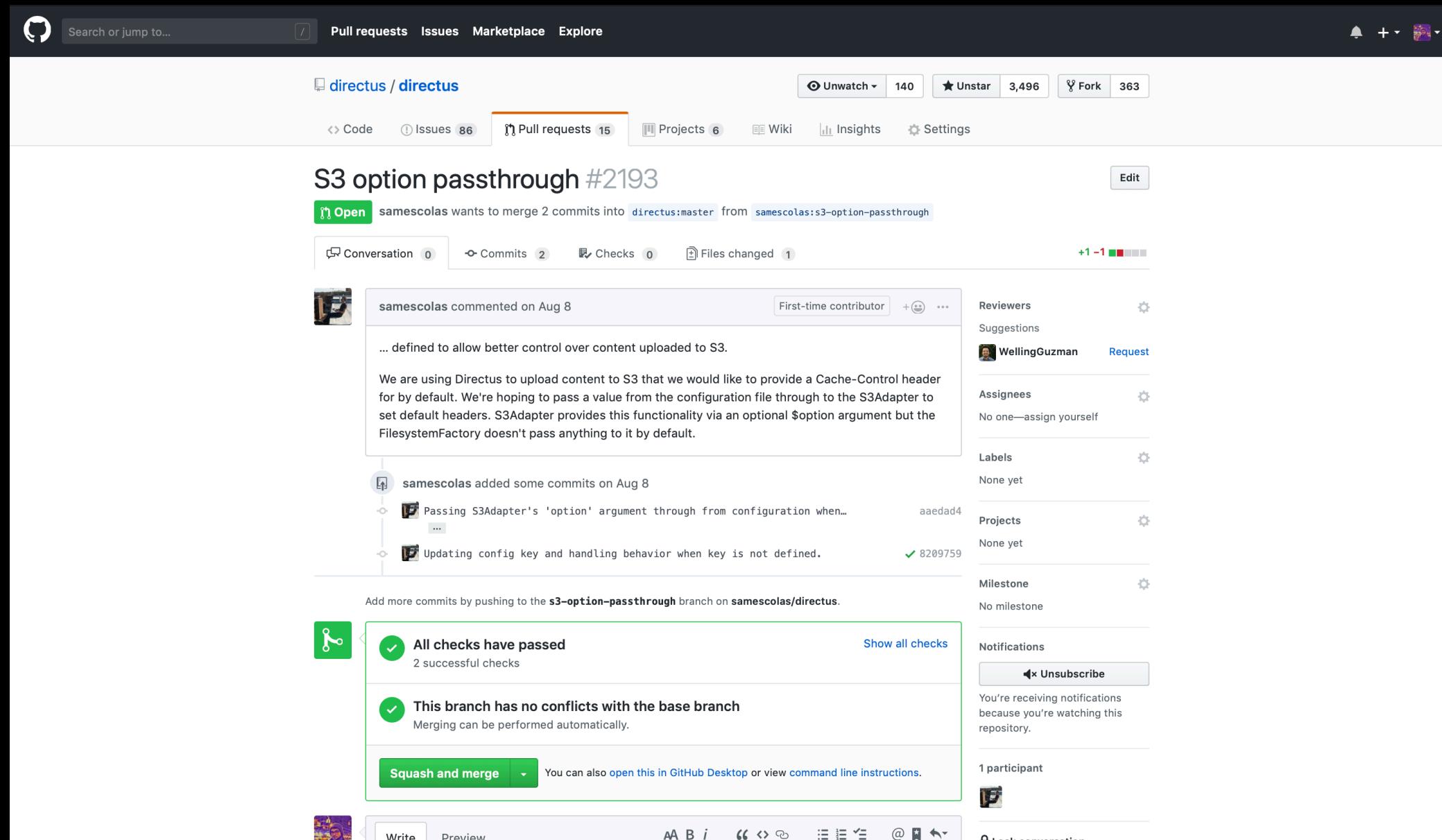
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Features & Fixes (Pull Requests)

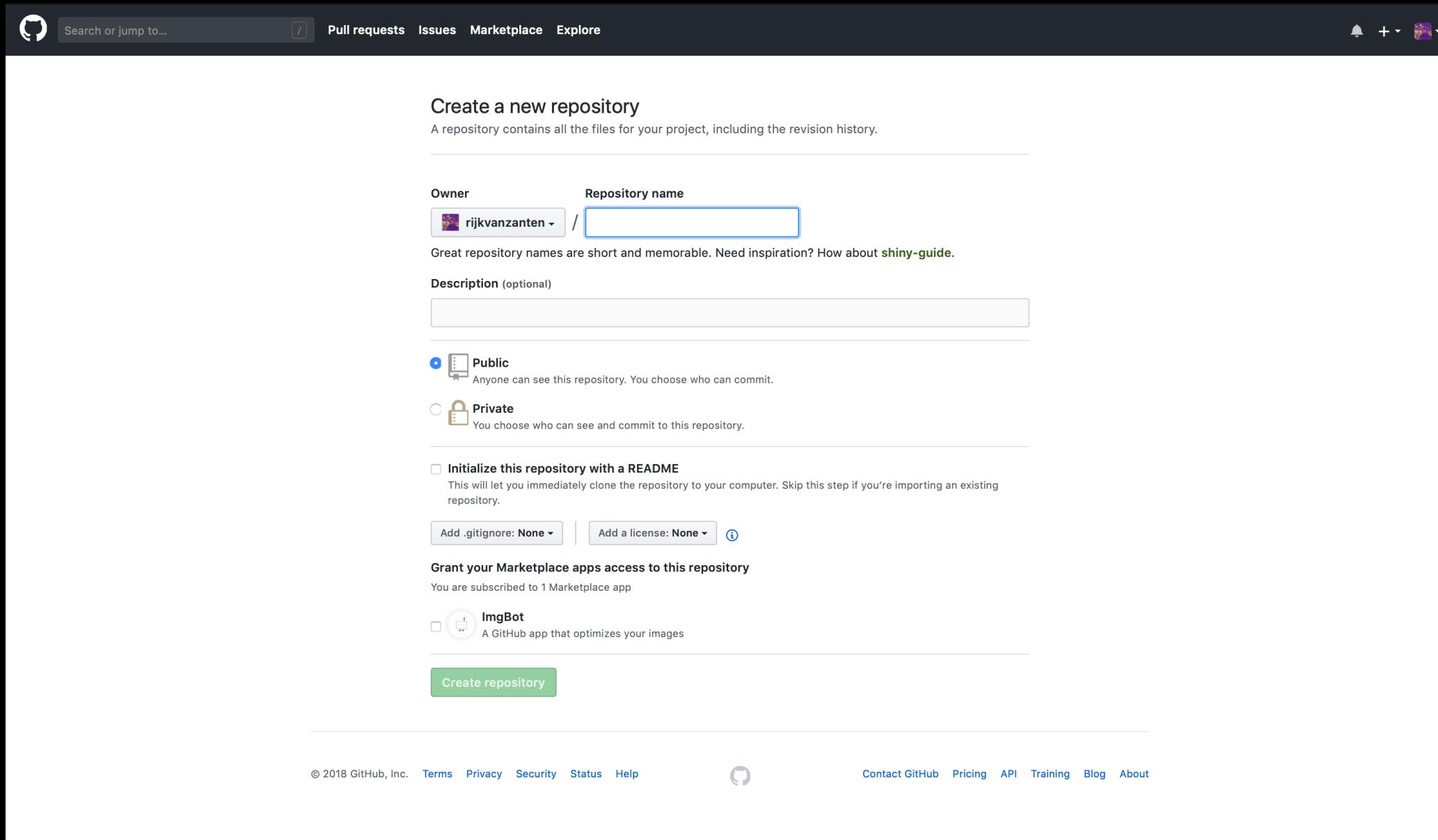
The screenshot shows the GitHub interface for the repository `directus / directus`. The user is viewing the `Pull requests` tab, which displays 15 open pull requests. The search bar at the top includes the filter `is:pr is:open`. The pull requests are listed in descending order of creation date, with the most recent at the bottom. Each pull request is accompanied by its title, a green checkmark icon, and a brief description. The repository has 140 stars, 3,496 forks, and 363 issues.

Index	Title	Author	Opened On	Comments
1	S3 option passthrough ✓	samescolas	Aug 8	3
2	Unnecessary events ✓	scaccogatto	Aug 8	2
3	Added support for Google cloud storage adapter ✓	override2k	Aug 6	12
4	windows directories ✓	scaccogatto	Jul 19	4
5	Adding skip_activity_log param to bulk row updates ✓	bensteers	Jul 11	9
6	Update thumbnail .htaccess ✓	janrop	Jul 4	3
7	Fix check for status=0 parameter in the api ✓	arboehme	May 16	2
8	Fix unnecessary required in the numeric interface ✓	arboehme	May 16	1
9	Added web.configs for IIS Support ✓	Jarwain	Apr 19	1
10	Add Thumbnailer fallback option to configuration_sample ✓	phillepflorence	Mar 19	1
11	Allow fallback to non supported size in /thumbnail/index.php ✓	phillepflorence	Mar 19	1
12	Added cron system to be able to run cron jobs ✓	u12206050	Mar 1	1
13	Fixed issue with comparing string to number ✓	jedimonkey	Dec 16, 2017	1

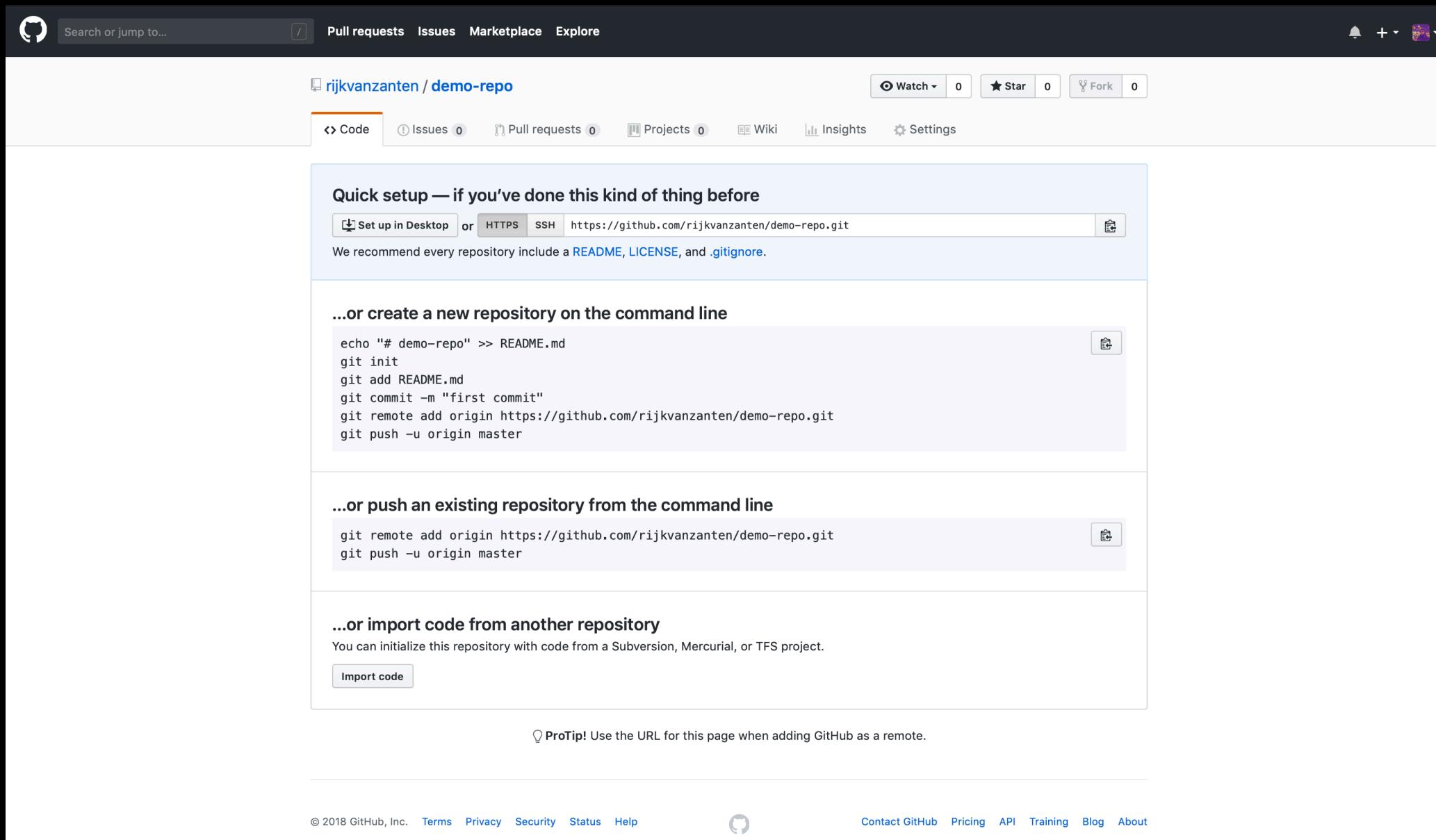
Features & Fixes (Pull Requests)



GitHub hosts Git repositories



GitHub hosts Git repositories



Git is version control

GitHub is a social platform around Git

Keeping Git and GitHub in sync

Add a remote

```
$ git remote add origin https://github.com/rijkvanzanten/demo-repo.git
```

Push changes to remote

```
$ git push origin master
Counting objects: 6, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (6/6), 441 bytes | 441.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'master' on GitHub by visiting:
remote:     https://github.com/rijkvanzanten/demo-repo/pull/new/master
remote:
To github.com:rijkvanzanten/demo-repo.git
 * [new branch]      master -> master
```

Pull changes from remote

(After changes by someone else / on GitHub directly)

```
$ git pull origin master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
From github.com:rijkvanzanten/demo-repo
 * branch           master      -> FETCH_HEAD
   03b64c4..6137287  master      -> origin/master
Updating 03b64c4..6137287
Fast-forward
 index.html | 1 +
 1 file changed, 1 insertion(+)
```

Demo / Practice