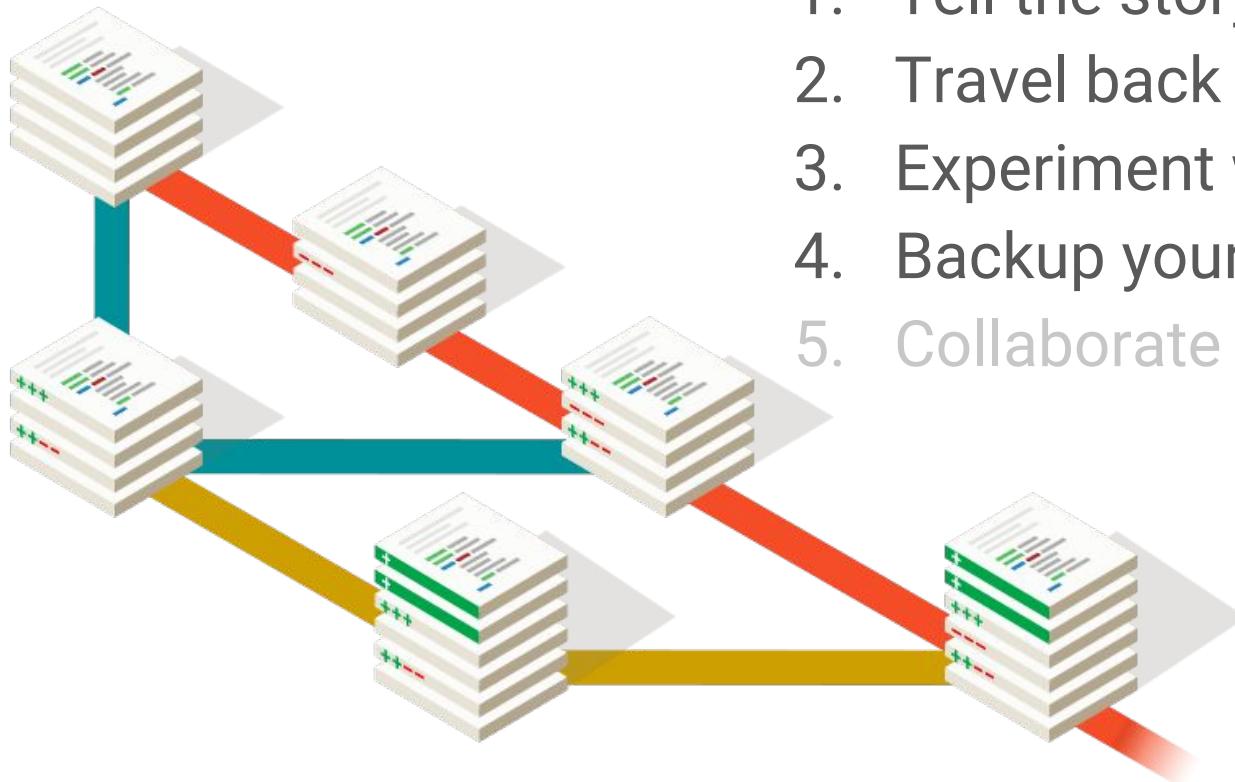


# GitHub

WHAT CODE\* COULD  
BE BENEFICIAL FOR  
OTHERS IN THE TEAM?

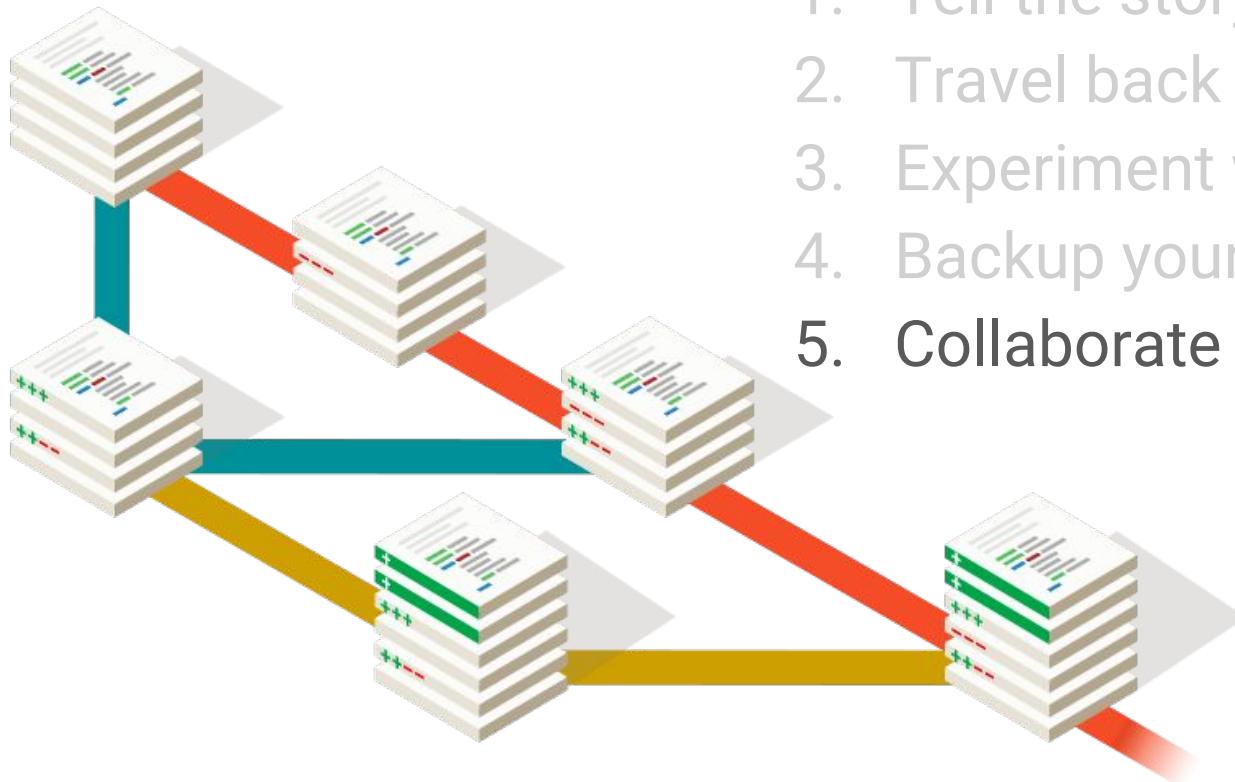
\* COULD BE... PLOT FUNCTION, BASH-TRICK, TEX TEMPLATE .STY, GUIDELINE, MODEL, STATISTICAL ANALYSIS, DATA CLEANING, TIME SERIES FILTERING,...

# Version control...



1. Tell the story of your project 
2. Travel back in time 
3. Experiment with changes 
4. Backup your work  
5. Collaborate on projects  

# Version control...



1. Tell the story of your project
2. Travel back in time
3. Experiment with changes
4. Backup your work
5. Collaborate on projects



The principles explained in the Git part can be further extended towards **collaboration**

Remotes mean other people can access your project and commits tells other people the story of your project

GitHub provides much more functionality than just being a **remote** repository



# Not only for coders!



Showcases · GitHub Person 1

GitHub, Inc. [US] https://github.com/showcases

Personal Open source Business Explore Pricing Blog Support Search GitHub Sign in Sign up

Explore GitHub Showcases Integrations Trending

# Open source showcases

Browse popular repositories based on the topic that interests you most.

Sign up for free to get started

Search showcases

**Science**

Scientists around the world are working together to solve some of the biggest questions in research. Take a look at some of the examples featured here to find out more.

12 repositories 5 languages

**Data visualization**

Data visualization tools for the web.

26 repositories 5 languages

**Open data**

Examples of using GitHub to store, publish, and collaborate on open, machine-readable datasets.

9 repositories 3 languages

# Anatomy of a repository

GitHub - tdwg/abcd: Access to Biological Collection Data

Person 1

← → ⌂ GitHub, Inc. [US] https://github.com/tdwg/abcd

Personal Open source Business Explore Pricing Blog Support This repository Search Sign in Sign up

tdwg / abcd Watch 8 Star 2 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Pulse Graphs

Access to Biological Collection Data [http://tdwg.github.io/abcd/ABCD\\_v206.html](http://tdwg.github.io/abcd/ABCD_v206.html)

8 commits 2 branches 1 release 2 contributors

Branch: master ▾ New pull request Find file Clone or download ▾

DavidFichtmueller committed on GitHub Schema file added ... Latest commit cf213d2 on 8 Sep

ABCD\_2.06.xsd Schema file added 3 months ago

ABCD\_v206.html Migrate download file 2 years ago

README.md Use version instead of release a year ago

README.md

## Access to Biological Collection Data (ABCD)

- Download: [Download](#)
- Status: TDWG current (2005) standard

GitHub - tdwg/abcd: Access to Biological Collection Data

Person 1

← → ⌂ GitHub, Inc. [US] https://github.com/tdwg/abcd

Personal Open source Business Explore Pricing Blog Support This repository Search Sign in Sign up

tdwg / abcd

Code Issues 0 Pull requests 0 Projects 0 Pulse Graphs

Watch 8 Star 2 Fork 0

Access to Biological Collection Data <http://tdwg.github.io/abcd>

8 commits 2 branches

Branch: master ▾ New pull request

Recent Home GitHub abcd

Home Desktop Documents Downloads

DavidFichtmueller committed on GitHub Schema file added ...

Latest commit cf213d2 on 8 Sep

ABCD\_2.06.xsd Schema file added 3 months ago

ABCD\_v206.html Migrate download file 2 years ago

README.md Use version instead of release a year ago

README.md

ABCD\_2.06.xsd

ABCD\_v206.html

README.md

## Access to Biological Collection Data (ABCD)

- Download: [Download](#)
- Status: TDWG current (2005) standard

# Online editing\*

\* commit, pull request,... on the background (GitHub as online webapp)

GitHub - tdwg/abcd: Access to

Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd

This repository Search

Pull requests Issues Gist

Watch 8 Star 2 Fork 1

Code Issues 1 Pull requests 0 Projects 0 Pulse Graphs

Access to Biological Collection Data [http://tdwg.github.io/abcd/ABCD\\_v206.html](http://tdwg.github.io/abcd/ABCD_v206.html)

8 commits 2 branches 1 release 2 contributors

Branch: master New pull request Find file Clone or download

DavidFichtmueller committed on GitHub Schema file added ... Latest commit cf213d2 on 8 Sep

ABCD\_2.06.xsd Schema file added 3 months ago

ABCD\_v206.html Migrate download file 2 years ago

README.md Use version instead of release a year ago

README.md

The screenshot shows a GitHub repository page for 'abcd/README.md' at the 'master' branch. The page includes a header with navigation, search, and repository stats (8 pull requests, 2 stars, 1 fork). Below the header are tabs for Code, Issues (1), Pull requests (0), Projects (0), Wiki, Pulse, and Graphs. The main content area shows the README.md file with a commit by 'peterdesmet' dated 23 Jul 2015. The file contains 23 lines (15 sloc) and is 1.66 KB. There are buttons for Raw, Blame, History, and file download.

abcd/README.md at master

Pull requests Issues Gist

Watch 8 Star 2 Fork 1

Code Issues 1 Pull requests 0 Projects 0 Wiki Pulse Graphs

Branch: master abcd / README.md Find file Copy path

peterdesmet Use version instead of release 6f09f79 on 23 Jul 2015

1 contributor

Edit the file in your fork of this project

23 lines (15 sloc) | 1.66 KB

Raw Blame History

# Access to Biological Collection Data (ABCD)

- Download: [Download](#)
- Status: TDWG current (2005) standard
- Category: Technical specification

Editing abcd/README.md at master

Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/edit/master/README.md

You're editing a file in a project you don't have write access to. Submitting a change to this file will write it to a new branch in your fork stijnvanhoey/abcd, so you can send a pull request.

abcd / README.md or cancel

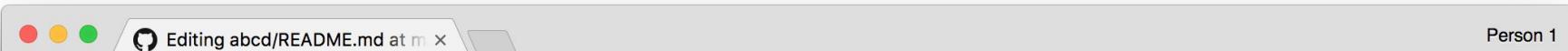
Edit file Preview changes

Spaces

2

Soft wrap

```
1 # Access to Biological Collection Data (ABCD)
2
3 * **Download**: [Download](https://github.com/tdwg/abcd/archive/master.zip)
4 * **Status**: TDWG current (2005) standard
5 * **Category**: Technical specification
6 * **Permanent URL**: http://www.tdwg.org/standards/115
7 * **TDWG task group**: Access to Biological Collections Data
8 * **Date submitted**: 2006-11-24
9 * **Date published**: 2005-09-16
10 * **Last modified**: 2007-08-21
11
12 ## Abstract
13
14 The Access to Biological Collections Data (ABCD) Schema is an evolving comprehensive standard for the access to and exchange of data about specimens and observations (a.k.a. primary biodiversity data).
15
16 The ABCD Schema attempts to be comprehensive and highly structured, supporting data from a wide variety of databases. It is compatible with several existing data standards. Parallel structures exist so that either (or both) atomised data and free-text can be accommodated. Version 1.2 is currently in use with the [GBIF](http://www.gbif.org) (Global Biodiversity Information Facility) and [BioCASE]
```



You're editing a file in a project you don't have write access to. Submitting a change to this file will write it to a new branch in your fork [stijnvanhoey/abcd](#), so you can send a pull request.

abcd

/ README.md



or cancel

[Edit file](#)

[Preview changes](#)

Spaces ▾

2 ▾

Soft wrap ▾

## Abstract

The Access to Biological Collections Data (ABCD) Schema is an evolving comprehensive standard for the access to and exchange of data about specimens and observations (a.k.a. primary biodiversity data).

The ABCD Schema attempts to be comprehensive and highly structured, supporting data from a wide variety of databases. It is compatible with several existing data standards. Parallel structures exist so that either (or both) atomised data and free-text can be accommodated. Version 1.2 is currently in use with the [GBIF](#) (Global Biodiversity Information Facility) and [BioCASEe](#) (Biological Collection Access Service for Europe) networks.

Apart from the GBIF and BioCASEe networks, the potential for the application of ABCD extends to internal networks, or in-house legacy data access (e.g. datasets from external sources that shall not be converted and integrated into an institution's own data, but be kept separately, though easily accessible). By defining relations between terms, ABCD is a step towards an ontology for biological collections.



## Commit changes

Update command line instruction

Add an optional extended description...

- ⚡ Commit directly to the `master` branch.
- 🚧 Create a **new branch** for this commit and start a pull request. [Learn more about pull requests.](#)

**Commit changes**

**Cancel**

YOU ARE OWNER OR  
COLLABORATOR OF  
THIS REPO



## Propose file change

💡 **ProTip!** Great commit summaries are 50 characters or less. Place extra information in the extended description.

Added links to GBIF & BioCASE + correct BioCASE spelling

Add an optional extended description...

**Propose file change**

**Cancel**

YOU PROPOSE AN  
ADAPTATION TO A  
'FOREIGN' REPO

GitHub - tdwg/abcd: Access to  Person 1

GitHub, Inc. [US] | <https://github.com/tdwg/abcd>

This repository Search Pull requests Issues Gist

Watch 8 Star 2 Fork 1

Code Issues 1 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

abcd /

Drag files here to add them to your repository  
Or choose your files

Uploading 1 of 1 files

# Issues

Issues · tdwg/abcd

Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/issues

This repository Search

Pull requests Issues Gist

Watch 8 Star 2 Fork 0

Code Issues 1 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

Filters is:issue is:open Labels Milestones New issue

1 Open  2 Closed Author ▾ Labels ▾ Milestones ▾ Assignee ▾ Sort ▾

ⓘ Links to rs.tdwg.org/abcd return 404 #4 opened 43 minutes ago by stijnvanhoey

💡 ProTip! What's not been updated in a month: updated:<2016-11-01.

© 2016 GitHub, Inc. Terms Privacy Security Status Help

Contact GitHub API Training Shop Blog About

Links to rs.tdwg.org/abcd return 404 return 404

Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/issues/4

This repository Search Pull requests Issues Gist

tdwg / abcd Watch 8 Star 2 Fork 0

Code Issues 1 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

# Links to rs.tdwg.org/abcd return 404 #4

Open stijnvanhoeuy opened this issue 43 minutes ago · 0 comments

stijnvanhoeuy commented 43 minutes ago

Contributor +

On [http://tdwg.github.io/abcd/ABCD\\_v206.html](http://tdwg.github.io/abcd/ABCD_v206.html) I clicked the first link (<http://rs.tdwg.org/abcd/>) and noticed it returns a 404. Does http://rs.tdwg.org/abcd still exist?

Projects None yet

Labels None yet

Milestone No milestone

Assignees No one—assign yourself

Write Preview

Leave a comment

Links to rs.tdwg.org/abcd return 404 x Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/issues/4

This repository Search Pull requests Issues Gist Watch 8 Star 2 Fork 0

tdwg / abcd

Code Issues 1 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

## Links to rs.tdwg.org/abcd return 404 #4

Open stijnvanhoeys opened this issue 43 minutes ago · 0 comments

stijnvanhoeys commented 43 minutes ago

Contributor +

On [http://tdwg.github.io/abcd/ABCD\\_v206.html](http://tdwg.github.io/abcd/ABCD_v206.html) I clicked the first link (<http://rs.tdwg.org/abcd/>) and noticed it returns a 404. Does http://rs.tdwg.org/abcd still exist?

Write Preview

AA B i “ “ “ “ @

Seems like a task for the @tdwg/inf

tdwg/infrastructure TDWG infrastructure  
tdwg/bii Biodiversity Information Initiatives contributors  
tdwg/curriculum Biodiversity Informatics Curriculum interest group  
tdwg/delta Description Language for Taxonomy contributors

Attach files by dragging & dr

Projects None yet

Labels None yet

Milestone No milestone

Assignees No one—assign yourself

1 participant

Links to rs.tdwg.org/abcd return 404 #4

GitHub, Inc. [US] | https://github.com/tdwg/abcd/issues/4

This repository Search Pull requests Issues Gist

tdwg / abcd Watch 8 Star 2 Fork 0

Code Issues 1 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

**stijnvanhoe** opened this issue 44 minutes ago · 1 comment

**stijnvanhoe** commented 44 minutes ago

On [http://tdwg.github.io/abcd/ABCD\\_v206.html](http://tdwg.github.io/abcd/ABCD_v206.html) I clicked the first link (<http://rs.tdwg.org/abcd/>) and noticed it returns a 404. Does http://rs.tdwg.org/abcd still exist?

**peterdesmet** commented just now

Seems like a task for the @tdwg/infrastructure!

Write Preview AA B i “ < > Leave a comment

Projects None yet Labels

Apply labels to this issue

Filter labels

bug

duplicate

enhancement

help wanted

Links to rs.tdwg.org/abcd return 404

Person 1

← → ⌂ GitHub, Inc. [US] https://github.com/tdwg/abcd/issues/4

stijnvanhoeij commented 44 minutes ago

Contributor + 🎨 🖊

On [http://tdwg.github.io/abcd/ABCD\\_v206.html](http://tdwg.github.io/abcd/ABCD_v206.html) I clicked the first link (<http://rs.tdwg.org/abcd/>) and noticed it returns a 404. Does http://rs.tdwg.org/abcd still exist?

peterdesmet commented just now

Member + 🎨 🖊 ✎

Seems like a task for the @tdwg/infrastructure!

peterdesmet added the bug label just now

bug

Assignees

Assign up to 10 people to this issue

mdoe

✓ mdoering Markus Döring

Notifications

Unsubscribe

You're receiving notifications because you're on a team that was mentioned.

Lock conversation

Write Preview

AA B i “ < > ↵

Leave a comment

Attach files by dragging & dropping, [selecting them](#), or pasting from the clipboard.

Styling with Markdown is supported

Close issue Comment

Labels · tdwg/abcd Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/labels

This repository Search

Pull requests Issues Gist

Watch 8 Star 2 Fork 0

Code Issues 1 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

New label

quick-to-fix #fbca04 Cancel Create label

7 labels Sort ▾

Label	Issues	Actions
bug	0 open issues	Edit Delete
duplicate	0 open issues	Edit Delete
enhancement	0 open issues	Edit Delete
help wanted	0 open issues	Edit Delete



**MARKDOWN?!?**



```
1 # Header 1
2 ## header 2
3 ### header 3
4 #### header 4
5
6 Bullet points:
7
8 * first element
9 * second element
10 * ...
11
12 Source code:
13
14 ````r
15 library(dplyr)
16 data %>%
17   mutate(...) %>%
18   groupby()
19   count()|
```

# Header 1

## header 2

### header 3

#### header 4

Bullet points:

- first element
- second element
- ...

Source code:

```
library(dplyr)
data %>%
  mutate(...) %>%
  groupby()
  count()
```

To learn the syntax, check [mastering-markdown...](#)

**GitHub** - remote *with benefits*

**issues** - report todos to yourself/team

# Working together on code\*



\* code in a broad: also guidelines, latex documents, markdown...

Working at the same time with multiple people on the same code requires workflows to avoid conflicts

Many **workflows** are possible, we will focus on two of them, based on the so-called *GitHub workflow*

1. You, within your team
2. You, contributing to open source

# 1. Small team collaboration





personal  
computer



**GitHub**

remote



calculation  
cluster  
university



Consider the  
personal workflow  
with a cluster



personal  
computer  
Peter

---



GitHub

---

remote



personal  
computer  
Stijn

---



We can  
interchange the  
cluster with a  
second team  
member

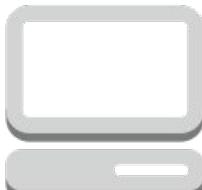


personal  
computer  
Peter



GitHub

remote



personal  
computer  
Stijn



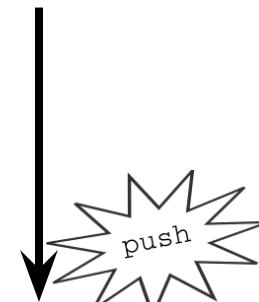
Both members are  
working on the  
(same) code



personal  
computer  
Peter



remote



personal  
computer  
Stijn





personal  
computer  
Peter

---



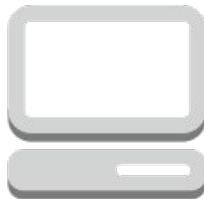
GitHub

---

remote

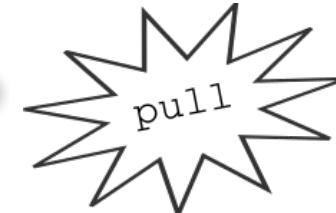


RISK FOR  
FILE  
CONFLICTS!



personal  
computer  
Stijn

---



We want to minimize the risk of conflicts



personal  
computer  
Peter



remote



personal  
computer  
Stijn



storm-selection

Always work on a  
**branch**, based on  
the latest version  
of the master



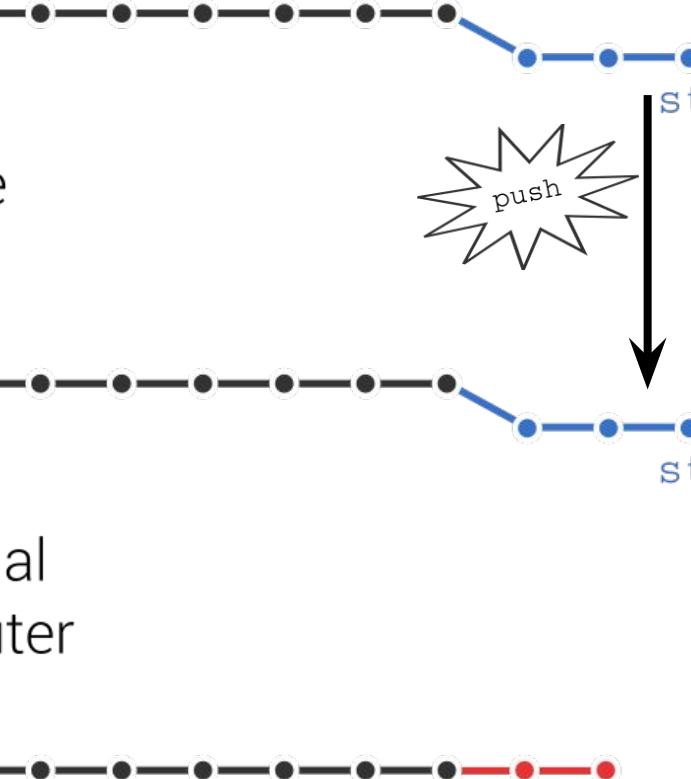
personal  
computer  
Peter



remote



personal  
computer  
Stijn



storm-selection

storm-selection

Push the **branch** to  
the remote



personal  
computer  
Peter



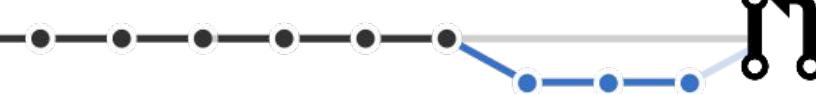
remote



personal  
computer  
Stijn



storm-selection



storm-selection

Peter wants to  
suggest his code for  
remote master





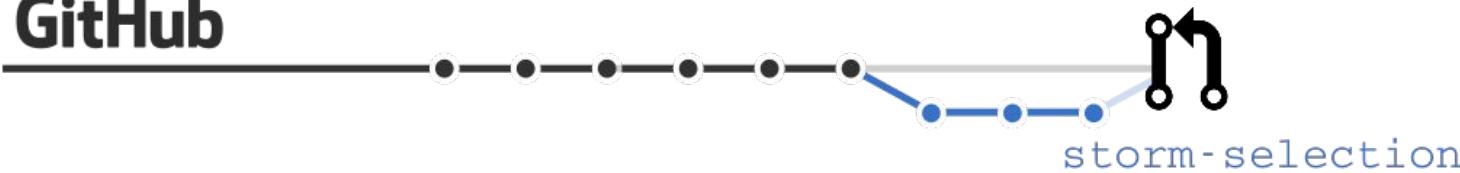
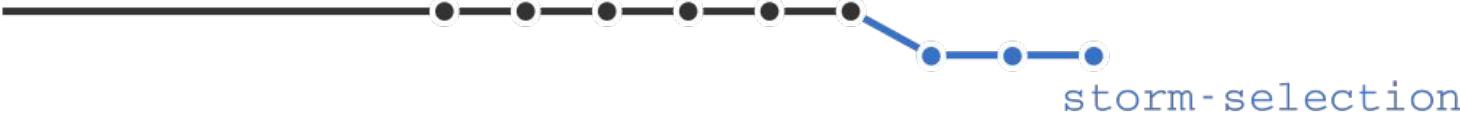
personal  
computer  
Peter



remote



personal  
computer  
Stijn



This is a **pull  
request**

Your recently pushed branches:

⚡ new-file (less than a minute ago)

↳ Compare & pull request



⚡ branch: master ▾

Spoon-Knife /

This branch is 0 commits ahead and 0 commits behind master

↗ Pull Request

↗ Compare

Adding a brand new file

GitHub asks you automatically...

Comparing tdwg:master...stijnvanhoey:patch-1 Person 1

← → ⌂ GitHub, Inc. [US] https://github.com/tdwg/abcd/compare/master...stijnvanhoey:patch-1 ⋮

## Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#).

base fork: **tdwg/abcd** ▾ base: **master** ▾ ... head fork: **stijnvanhoey/abcd** ▾ compare: **patch-1** ▾

✓ Able to merge. These branches can be automatically merged.

 **Added links to GBIF & BioCASE + correct BioCASE spelling**

Write Preview AA B i “ “ <> @

Leave a comment

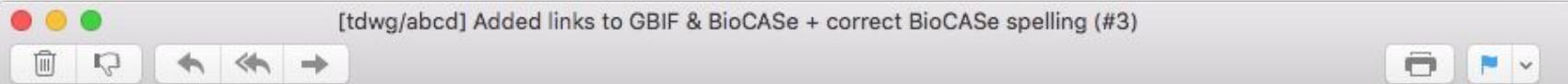
Attach files by dragging & dropping, [selecting them](#), or pasting from the clipboard.

Allow edits from maintainers. [Learn more](#)

**Create pull request**

1 commit 1 file changed 0 commit comments 1 contributor

# Handling pull requests



Stijn Van Hoey

Yesterday at 14:34

SV

To: tdwg/abcd

Reply-To: tdwg/abcd

[tdwg/abcd] Added links to GBIF & BioCASE + correct BioCASE spelling (#3)

---

You can view, comment on, or merge this pull request online at:

<https://github.com/tdwg/abcd/pull/3>

### Commit Summary

- Added links to GBIF & BioCASE + correct BioCASE spelling

### File Changes

- M [README.md](#) (4)

### Patch Links:

- <https://github.com/tdwg/abcd/pull/3.patch>
- <https://github.com/tdwg/abcd/pull/3.diff>

---

You are receiving this because you are subscribed to this thread.  
Reply to this email directly, [view it on GitHub](#), or [mute the thread](#).

Added links to GBIF & BioCASe x Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/pull/3

# Added links to GBIF & BioCASe + correct BioCASe spelling #3

Edit

 Open stijnvanhoeey wants to merge 1 commit into `tdwg:master` from `stijnvanhoeey:patch-1`

Conversation 0

Commits 1

Files changed 1

+2 -2



stijnvanhoeey commented an hour ago



No description provided.

Added links to GBIF & BioCASe + correct BioCASe spelling

b55cfe9

Add more commits by pushing to the `patch-1` branch on `stijnvanhoeey/abcd`.



This branch has no conflicts with the base branch

Merging can be performed automatically.

Merge pull request



You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

## Projects

None yet

## Labels

None yet

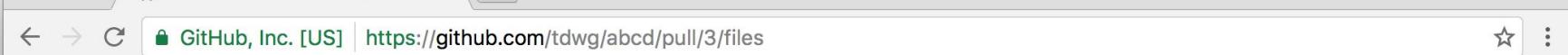
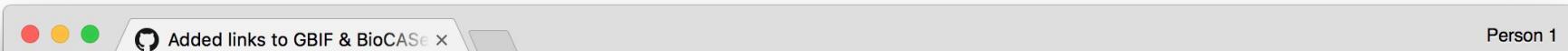
## Milestone

No milestone

## Assignees

No one—assign yourself

1 participant



# Added links to GBIF & BioCASe + correct BioCASe spelling

## #3

**Open** stijnvanhoeij wants to merge 1 commit into `tdwg:master` from `unknown repository`

Conversation 0

Commits 1

Files changed 1

Changes from all commits ▾ 1 file ▾

+2 -2

Unified

Split

Review changes ▾

4		README.md	View	Code	Diff	Copy
		@@ -13,9 +13,9 @@				
13	13					
14	14	The Access to Biological Collections Data (ABCD) Schema is an evolving comprehensive standard for the access to and exchange of data about specimens and observations (a.k.a. primary biodiversity data).				
15	15					
16		-The ABCD Schema attempts to be comprehensive and highly structured, supporting data from a wide variety of databases. It is compatible with several existing data standards. Parallel structures exist so that either (or both) atomised data and free-text can be accommodated. Version 1.2 is currently in use with the GBIF (Global Biodiversity Information Facility) and BioCASE (Biological Collection Access Service for Europe) networks.				
16		+The ABCD Schema attempts to be comprehensive and highly structured, supporting data from a wide variety of databases. It is compatible with several existing data standards. Parallel structures exist so that either (or both) atomised data and free-text can be accommodated. Version 1.2 is currently in use with the GBIF (Global Biodiversity Information Facility) and BioCASE (Biological Collection Access Service for Europe) networks.				

Added links to GBIF & BioCASe x Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/pull/3/files?diff=split

# Added links to GBIF & BioCASe + correct BioCASe spelling #3

Edit

 Open stijnvanhoeij wants to merge 1 commit into `tdwg:master` from `unknown repository`

Conversation 0

Commits 1

Files changed 1

Changes from all commits ▾ 1 file ▾ +2 -2 ████ █ █ █

Unified

Split

Review changes ▾

Viewing diff in split mode



4 ████ █ █ █ README.md	
	@@ -13,9 +13,9 @@
13	
14	The Access to Biological Collections Data (ABCD) Schema is an evolving comprehensive standard for the access to and exchange of data about specimens and observations (a.k.a. primary biodiversity data).
15	
16	-The ABCD Schema attempts to be comprehensive and highly structured, supporting data from a wide variety of databases. It is compatible with several existing data standards. Parallel structures exist so that either (or both) atomised data and
16	+The ABCD Schema attempts to be comprehensive and highly structured, supporting data from a wide variety of databases. It is compatible with several existing data standards. Parallel structures exist so that either (or both) atomised data and

Added links to GBIF & BioCASe x Person 1

← → C GitHub, Inc. [US] | https://github.com/tdwg/abcd/pull/3/files?diff=split&short\_path=04c6e90#diff-04c6e90faac2675aa89e2176d2... ☆ :

# Added links to GBIF & BioCASe + correct BioCASe spelling

## #3

 Open stijnvanhoeij wants to merge 1 commit into `tdwg:master` from `unknown repository`

Conversation 0

Commits 1

Files changed 1

Changes from all commits ▾ 1 file ▾ +2 -2 ████ █ █ █ █

Unified

Split

Review changes ▾

Display the rich diff



View



4 ████ █ █ README.md



## Abstract

The Access to Biological Collections Data (ABCD) Schema is an evolving comprehensive standard for the access to and exchange of data about specimens and observations (a.k.a. primary biodiversity data).

The ABCD Schema attempts to be comprehensive and highly structured, supporting data from a wide variety of databases. It is compatible with several existing data standards. Parallel structures exist so that either (or both) atomised data and

Added links to GBIF & BioCASe x Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/pull/3/files?diff=split

# Added links to GBIF & BioCASe + correct BioCASe spelling #3

Edit

 Open stijnvanhoeij wants to merge 1 commit into `tdwg:master` from `unknown repository`

Conversation 0

Commits 1

Files changed 1

Changes from all commits ▾ 1 file ▾ +2 -2 ████ █ █ █ █

Unified

Split

Review changes ▾

Viewing diff in split mode



4 ████ README.md



@@ -13,9 +13,9 @@

13

14 The Access to Biological Collections Data (ABCD) Schema is an  
evolving comprehensive standard for the access to and exchange  
of data about specimens and observations (a.k.a. primary  
biodiversity data).

15

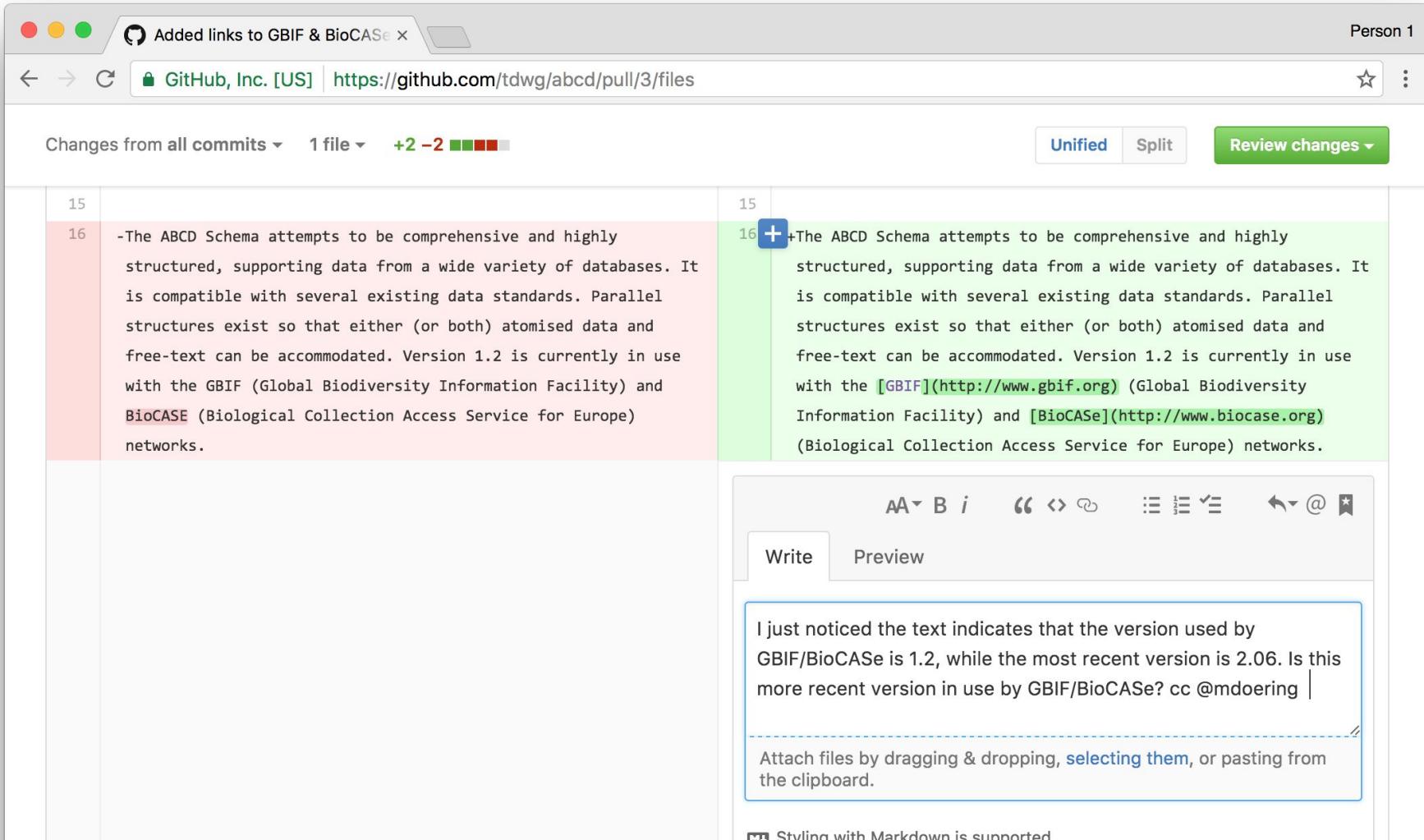
16 -The ABCD Schema attempts to be comprehensive and highly  
structured, supporting data from a wide variety of databases. It  
is compatible with several existing data standards. Parallel  
structures exist so that either (or both) atomised data and

13

14 The Access to Biological Collections Data (ABCD) Schema is an  
evolving comprehensive standard for the access to and exchange  
of data about specimens and observations (a.k.a. primary  
biodiversity data).

15

16 +The ABCD Schema attempts to be comprehensive and highly  
structured, supporting data from a wide variety of databases. It  
is compatible with several existing data standards. Parallel  
structures exist so that either (or both) atomised data and



Added links to GBIF & BioCASe x Person 1

GitHub, Inc. [US] https://github.com/tdwg/abcd/pull/3

# Added links to GBIF & BioCASe + correct BioCASe spelling

## #3

 Open

stijnvanhoeuy wants to merge 1 commit into `tdwg:master` from `unknown repository`

 Conversation 1

 Commits 1

 Files changed 1

+2 -2 



stijnvanhoeuy commented an hour ago



*No description provided.*

 Added links to GBIF & BioCASe + correct BioCASe spelling

b55cfe9



 peterdesmet reviewed 36 seconds ago

[View changes](#)

README.md

...	...	@@ -13,9 +13,9 @@
13	13	
14	14	The Access to Biological Collections Data (ABCD) Schema is an evolving

Projects

None yet

Labels

None yet

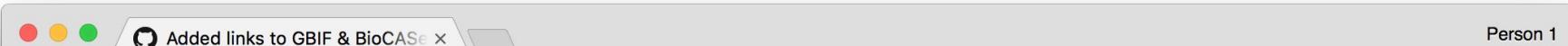
Milestone

No milestone

Assignees

No one—assign yourself

2 participants



### This branch has no conflicts with the base branch

Merging can be performed automatically.

**Merge pull request**

You can also [open this in GitHub Desktop](#) or view [command line instructions](#).



Write

Preview

AA B i

“ ‘ ◀ ▶ ↻

≡ ≡ ≡

↶ ↽

@



Anyway, my comment should not stop this pull request. I will accept it. Thanks @stij

**stijnvanhoey Stijn Van Hoey**

Unsubscribe

receiving notifications  
use you commented.

Lock conversation

Added links to GBIF & BioCASE x

Person 1

GitHub, Inc. [US] | <https://github.com/tdwg/abcd/pull/3>

Reply...

peterdesmet commented just now

Member + 😊 ✎ ✕

Anyway, my comment should not stop this pull request. I will accept it. Thanks @stijnvanhoeij

Merge pull request #3 from stijnvanhoeij/patch-1

Added links to GBIF & BioCASE + correct BioCASE spelling

Confirm merge Cancel

Write Preview AA B i “ ‘ ↵ ↶ @ ★

Leave a comment

Projects None yet

Labels None yet

Milestone No milestone

Assignees No one—assign yourself

2 participants

Notifications

Unsubscribe You're receiving notifications because you commented.

Lock conversation

Added links to GBIF & BioCASe x

Person 1

GitHub, Inc. [US] | https://github.com/tdwg/abcd/pull/3

This repository Search

Pull requests Issues Gist

tdwg / abcd

Watch 8 Star 2 Fork 0

Code Issues 1 Pull requests 1 Projects 0 Wiki Pulse Graphs Settings

# Added links to GBIF & BioCASe + correct BioCASe spelling

## #3

Merged peterdesmet merged 1 commit into `tdwg:master` from `unknown repository` just now

Conversation 1 Commits 1 Files changed 1 +2 -2

stijnvanhoeij commented an hour ago  
No description provided.

Projects None yet

Labels None yet

Milestone

Added links to GBIF & BioCASe + correct BioCASe spelling b55cfe9

When collaborating on a project, you  
ALWAYS **merge** local additions  
**online\***, this is done with a **pull**  
**request**

\* remember, we keep the `master` clean !

A pull request is the moment to  
revise and discuss the code with  
your colleagues



personal  
computer  
Peter



remote



personal  
computer  
Stijn



Stijn is now behind  
with his branch



personal  
computer  
Peter



## storm-selection



remote

# GitHub



He wants to  
integrate these  
changes



personal  
computer  
Stijn





personal  
computer  
Peter



remote  
**GitHub**



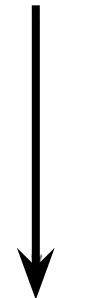
personal  
computer  
Stijn



storm-selection



This is done by  
a **merge\*** of the  
remote work to  
the local branch



\* rebase would be a valid option as well,  
but INBO policy is to merge



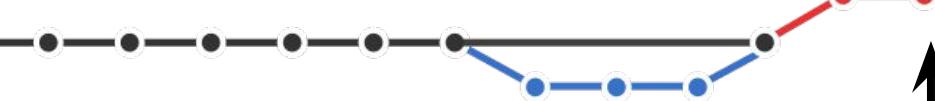
personal  
computer  
Peter



remote



personal  
computer  
Stijn



Stijn can **push**,  
and **pull request**  
without conflicts



Still, during a **merge\*** of the remote changes into a **local branch**,  
**conflicts** can appear



KEEP  
CALM  
AND  
RESOLVE  
CONFLICT

# COMMANDMENTS

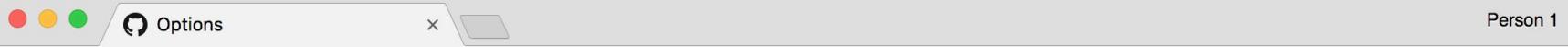
- Keep master in sync with the remote master
- Never commit to master, always on a branch
- Only branch off master
- Branch often, branch for each feature, each bug-fix\*
- Never merge into master locally

\* branches are cheap

**pull request** - tell others about changes you've pushed  
**merge\*** (remote commits into local branch) - update your  
local branch from online merges

\***rebase** is doing exactly the same, but the git history will have other esthetics...

# Inviting collaborators



## Settings

### Repository name

abcd

[Rename](#)

## Features

### Wikis

GitHub Wikis is a simple way to let others contribute content. Any GitHub user can create and edit pages to use for documentation, examples, support, or anything you wish.

### Restrict editing to users in teams with push access only.

Public wikis will still be readable by everyone.

### Issues

GitHub Issues adds lightweight issue tracking tightly integrated with your repository. Add issues to milestones, label



## tdwg / abcd

Watch ▾ 8

Star 2

Fork 0

Code

Issues 0

Pull requests 0

Projects 0

Wiki

Pulse

Graphs

Settings

## Options

## Collaborators &amp; teams

## Branches

## Webhooks

## Integrations &amp; services

## Deploy keys

## Teams

+ Create new team

## Admin

4 members

Admin ▾



## ABCD

Access to Biological Collection Data c...

Admin ▾



6 members

Add a team: Select team ▾

## Collaborators

This repository doesn't have any collaborators yet. Use the form below to add a collaborator.

Search by username, full name, or email address

Person 1

ABCD · Biodiversity Information Standards (TDWG)

GitHub, Inc. [US] | https://github.com/orgs/tdwg/teams/abcd

This organization Search Pull requests Issues Gist

Biodiversity Information Standards (TDWG)

Repositories People 49 Teams 23 Projects 0 Settings

## ABCD

Access to Biological Collection Data contributors — Edit

6 MEMBERS	2 REPOSITORIES
-----------	----------------

[Join](#) [Settings](#)

1 pending invitation

mdoering Team maintainer  
Markus Döring

DavidFichtmueller David Fichtmueller

gdadade

jholetschek Jörg Holetschek

Add a person

Biological Collection Data

Person 1

ABCD · Biodiversity Information

GitHub, Inc. [US] | https://github.com/orgs/tdwg/teams/abcd

This organization Search

Pull requests Issues Gist

Biodiversity Information Standards (TDWG)

Repositories People 49 Teams 22 Projects 0 Settings

## ABCD

Access to Biological Collection Data contributors — Edit

6 MEMBERS	2 REPOSITORIES
-----------	----------------

Join Settings

Use @tdwg/abcd to mention this team in comments.

Team members Repositories

1 pending invitation

 **mdoering** Team maintainer  
Markus Döring

 **DavidFichtmueller**  
David Fichtmueller

 **gdadade**

 **jholetschek**  
Jörga Holetschek

stijnvanhoeij

 **stijnvanhoeij** Stijn Van Hoey  
Invite to this organization and team +


ABCD · Biodiversity Information

Person 1

GitHub, Inc. [US] https://github.com/orgs/tdwg/teams/abcd/repositories

This organization Search

Pull requests Issues Gist

Biodiversity Information Standards (TDWG)

Repositories People 49 Teams 22 Projects 0 Settings

**ABCD**

Access to Biological Collection Data  
contributors — Edit

6 MEMBERS	2 REPOSITORIES
--------------	-------------------

Join Settings

tdwg/abcd Admin Remove

tdwg/abcddna Admin Remove

Add repositories

Use @tdwg/abcd to mention this team in comments.

The screenshot shows a GitHub organization page for 'ABCD · Biodiversity Information'. The top navigation bar includes links for 'Pull requests', 'Issues', and 'Gist'. Below the header, there's a search bar and a 'This organization' button. The main content area features a section for 'Biodiversity Information Standards (TDWG)' with tabs for 'Repositories', 'People', 'Teams', 'Projects', and 'Settings'. The 'Teams' tab is selected, showing '22' teams. A sidebar on the left provides summary statistics: 6 members and 2 repositories. At the bottom, there are 'Join' and 'Settings' buttons. The 'Repositories' tab is active under the 'Teams' section, listing two repositories: 'tdwg/abcd' and 'tdwg/abcddna', each with an 'Admin' dropdown and a 'Remove' button. An 'Add repositories' button is also present. A note at the bottom encourages users to mention the team using the handle '@tdwg/abcd'.

## 2. Open-source contribution



GitHub - tdwg/abcd: Access to Biological Collection Data

Person 1

← → ⌂ GitHub, Inc. [US] | https://github.com/tdwg/abcd

This repository Search Pull requests Issues Gist

tdwg / abcd

Code Issues 0 Pull requests 0 Projects 0 Wiki Pulse

Access to Biological Collection Data [http://tdwg.github.io/abcd/ABCD\\_v206....](http://tdwg.github.io/abcd/ABCD_v206....) — Edit

11 commits 2 branches 1 release

Branch: master ▾ New pull request Create new file

DavidFichtmueller committed on GitHub Schema file added ...

Latest commit cf213d2 on 8 Sep

File	Commit Message	Time
ABCD_2.06.xsd	Schema file added	3 months ago
ABCD_v206.html	Migrate download file	2 years ago
README.md	Use version instead of release	a year ago

README.md

## Access to Biological Collection Data (ABCD)

- Download: [Download](#)

Watch 8 Star 2 Fork 0

Notifications

✓ Not watching  
Be notified when participating or @mentioned.

Watching  
Be notified of all conversations.

Ignoring  
Never be notified.

The main difference is you **can not**  
**directly push** to the repo, since you  
do not have these rights\*

\* raising issues won't be a problem

You have to make your own copy.  
This is called a **fork**



This repository Search

Pull requests Issues Gist



matplotlib / matplotlib

Watch 398

Star 4,910

Fork 2,403

Code

Issues 930

Pull requests 234

Projects 6

Wiki

Pulse

Graphs

matplotlib: plotting with Python <http://matplotlib.org/>

21,200 commits

3 branches

60 releases

568 contributors

Branch: master ▾

New pull request

Create new file

Upload files

Find file

Clone or download ▾

dstansby committed on GitHub Merge pull request #8237 from dstansby/pep8-fix ... Latest commit 8a77cfb 6 hours ago

.github Adjust markdown and text in ISSUE\_TEMPLATE.md 2 months ago

LICENSE LEG: include license for files derived from PIL 5 months ago

ci Merge pull request #8036 from dopplershift/tweak-coverage 16 days ago

doc Merge pull request #8224 from MaartenBaert/faster-legend-loc-best-squ... 14 hours ago

examples Fix pep8 violation 8 hours ago

extern Update qhull to 2015.2 2 months ago

lib Merge pull request #8224 from MaartenBaert/faster-legend-loc-best-squ... 14 hours ago

release/win32/data Merged from main/master 6 years ago

src Implement Path.intersects bbox in C++ to speed up legend positioning. a day ago

[This repository](#)[Search](#)[Pull requests](#) [Issues](#) [Gist](#)

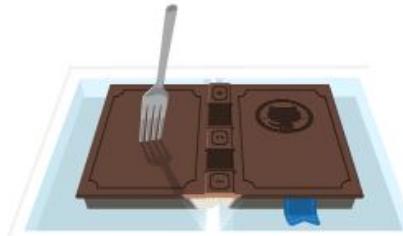
stijnvanhoey / **matplotlib**

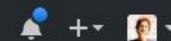
forked from [matplotlib/matplotlib](#)

[Watch](#) [0](#)[Star](#) [0](#)[Fork](#) [2,403](#)[Code](#)[Pull requests 0](#)[Projects 0](#)[Wiki](#)[Pulse](#)[Graphs](#)[Settings](#)

# Forking matplotlib/matplotlib

It should only take a few seconds.

[Refresh](#)

[This repository](#) | [Search](#)[Pull requests](#) [Issues](#) [Gist](#)[stijnvanhoey / matplotlib](#)forked from [matplotlib/matplotlib](#)

Watch

0



Star

0



Fork

2,403

[Code](#)[Pull requests 0](#)[Projects 0](#)[Wiki](#)[Pulse](#)[Graphs](#)[Settings](#)matplotlib: plotting with Python <http://matplotlib.org/>[Edit](#)[New](#) [Add topics](#)

21,200 commits

3 branches

60 releases

568 contributors

Branch: **master** ▾[New pull request](#)[Create new file](#)[Upload files](#)[Find file](#)[Clone or download ▾](#)

This branch is even with matplotlib:master.

[Pull request](#) [Compare](#) **dstansby** committed on GitHub Merge pull request #8237 from dstansby/pep8-fix ...

Latest commit 8a77cfb 6 hours ago

.github

Adjust markdown and text in ISSUE\_TEMPLATE.md

2 months ago

LICENSE

LEG: include license for files derived from PIL

5 months ago

ci

Merge pull request #8036 from dopplershift/tweak-coverage

16 days ago

doc

Merge pull request #8224 from MaartenBaert/faster-legend-loc-best-squ...

14 hours ago

examples

Fix pep8 violation

8 hours ago

extern

Update qhull to 2015.2

2 months ago

lib

Merge pull request #8224 from MaartenBaert/faster-legend-loc-best-squ...

14 hours ago

release/win32/data

Merged from main/master

6 years ago

src

Implement Path.intersects bbox in C++ to speed up legend positioning.

a day ago

So, now you have a personal remote  
and an external remote , typically  
called origin and upstream

You have all the rights towards your  
origin and pull request rights  
towards upstream



remote  
upstream

**GitHub**

---



remote  
origin

**GitHub**

---



personal  
computer



Based on the most recent upstream remote master, commits are added to a new branch



remote  
upstream

**GitHub**

---



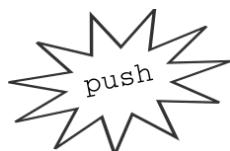
remote  
origin

**GitHub**

---



personal  
computer



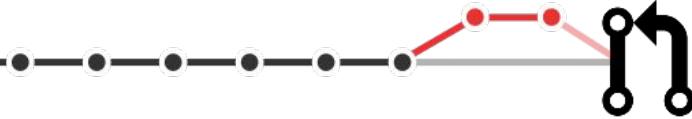
Pushing this  
branch to the  
**origin** remote...



remote  
upstream

GitHub

---



remote  
origin

GitHub

---



personal  
computer



...triggers the  
option for a **pull  
request** towards  
the **upstream**  
remote

All (other) users can now update the local master from the `upstream master`. This is by `fetch`ing the upstream and merge the upstream master to the local master



remote  
upstream

**GitHub**

---



remote  
origin

**GitHub**

---



personal  
computer



**fetch** upstream,  
**merge** upstream  
master

**fork** - a copy of an existing repository

**origin** - the default name for the self-owned remote

**upstream** - the default name for an external remote

**fetch** - download the latest updates from a remote

So far...

GitHub	remote <i>with benefits</i>
issues	report todos to yourself/team
pull request	tell others about changes you've pushed
rebase*	update your local branch from online merges
fork	a copy of an existing repository
origin	the default name for the self-owned remote
upstream	the default name for an external remote
fetch	download the latest updates from a remote

\* similar to `merge` (remote commits into local branch) - update your local branch from online merges

# Version control...



1. Tell the story of your project 
2. Travel back in time 
3. Experiment with changes 
4. Backup your work  
5. Collaborate on projects  





WHAT CODE COULD  
BE BENEFICIAL FOR  
OTHERS IN THE TEAM?

Try to define a few topics/projects to work together on the code (start small)

## Acknowledgements:

- [Andy Hayden](#)
- [Joris Vandenbossche](#)
- [GitHub guides](#)

