

Accessing OSIRIS and using OSIRIS through GitHub

Anton Helm¹

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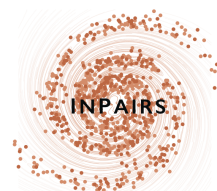
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² UCLA Plasma Simulation Group,
University of California, Los Angeles, U.S.A

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Lisbon, Portugal

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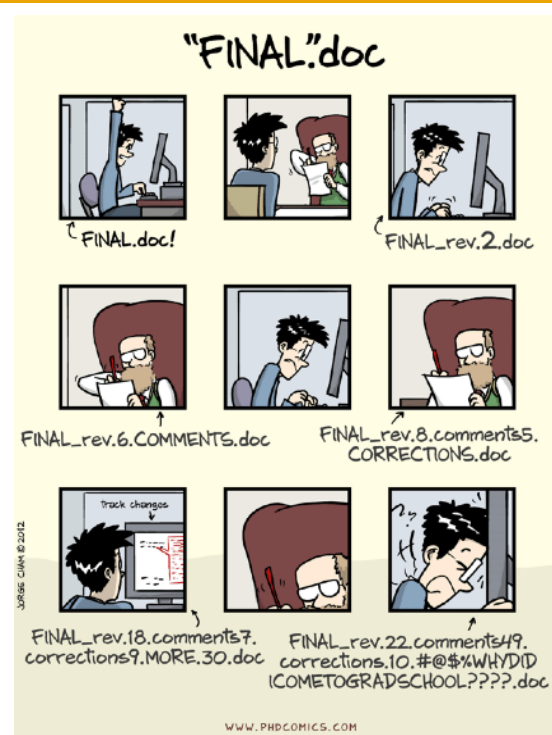
Why should we use a version control system

version control system

collaboration



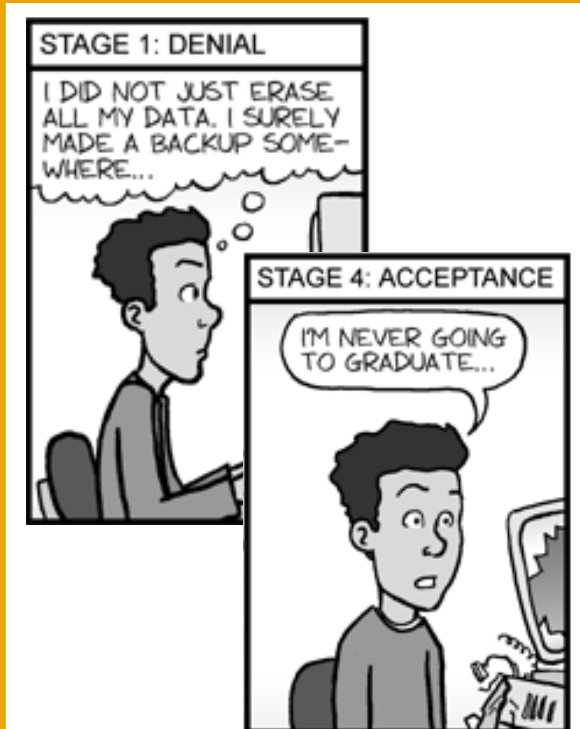
versioning



logging

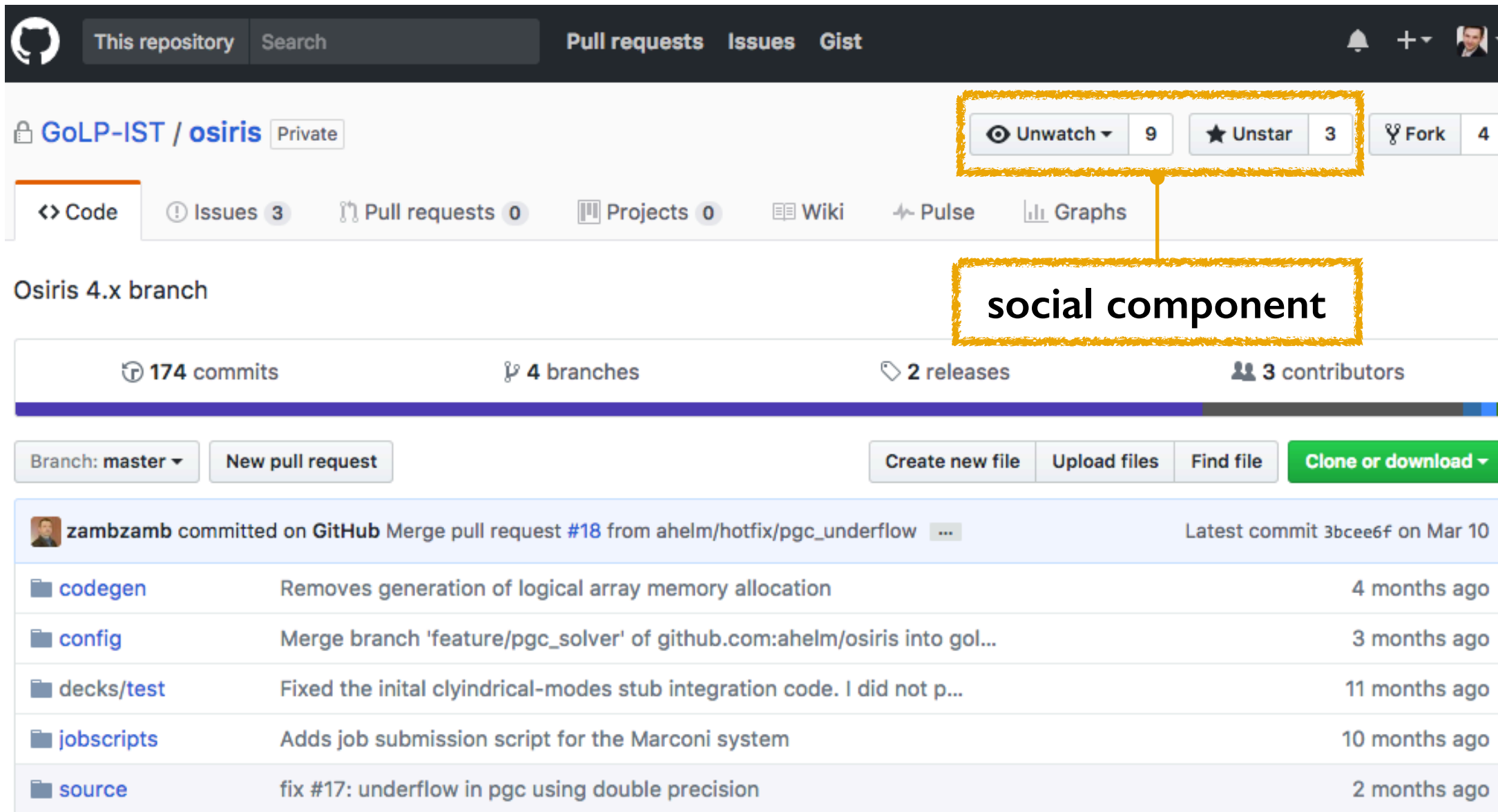


backup



GitHub - social coding

Internet hosting service for git repositories



This repository Search Pull requests Issues Gist

GoLP-IST / osiris Private

Unwatch 9 Unstar 3 Fork 4

Code Issues 3 Pull requests 0 Projects 0 Wiki Pulse Graphs

Osiris 4.x branch

174 commits 4 branches 2 releases 3 contributors

Branch: master New pull request Create new file Upload files Find file Clone or download

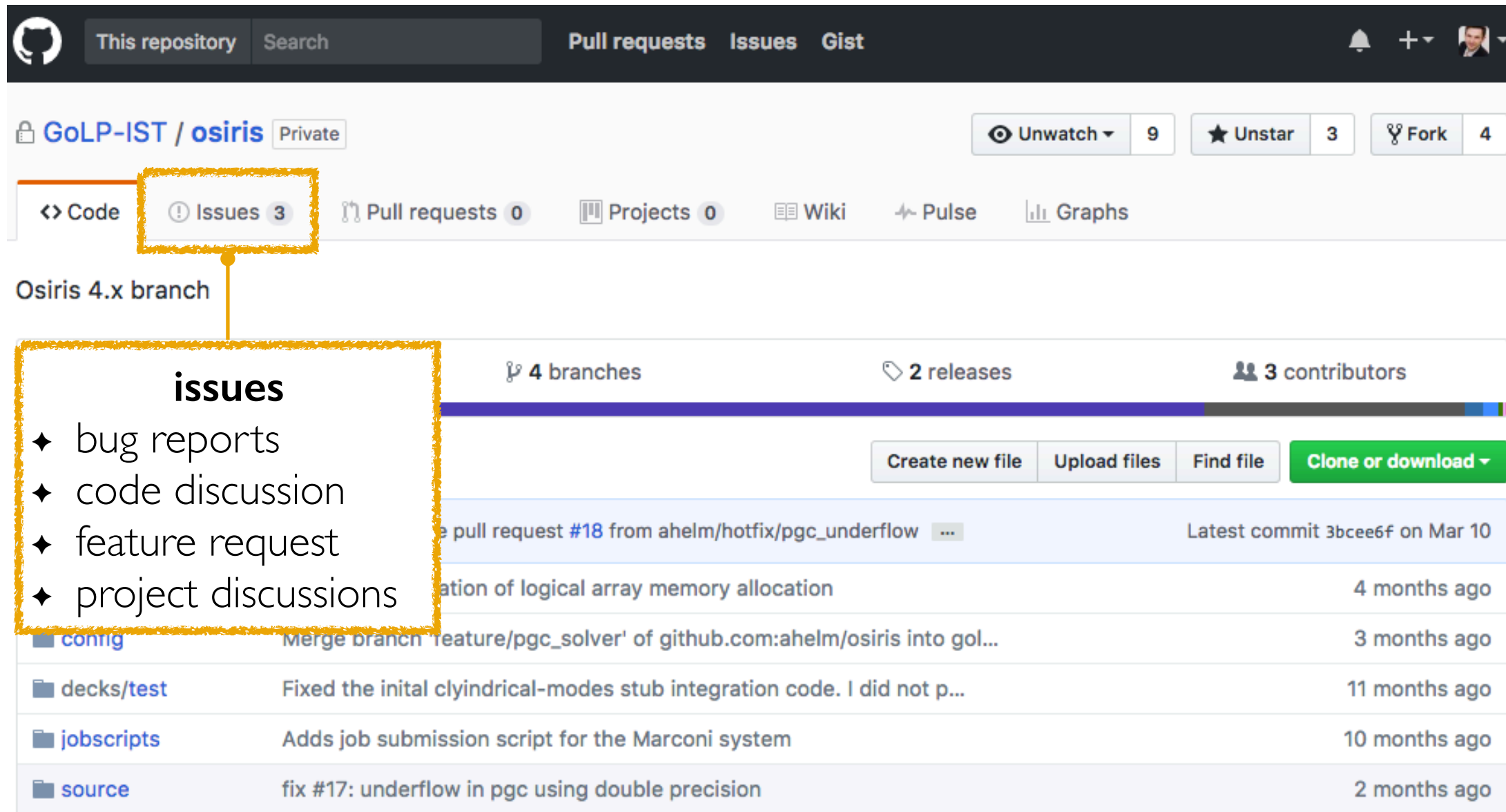
zambzamb committed on GitHub Merge pull request #18 from ahelm/hotfix/pgc_underflow Latest commit 3bcee6f on Mar 10

codegen	Removes generation of logical array memory allocation	4 months ago
config	Merge branch 'feature/pgc_solver' of github.com:ahelm/osiris into gol...	3 months ago
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source	fix #17: underflow in pgc using double precision	2 months ago

access will be granted by us (private repository)

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Osiris 4.x branch

issues

- ♦ bug reports
- ♦ code discussion
- ♦ feature request
- ♦ project discussions

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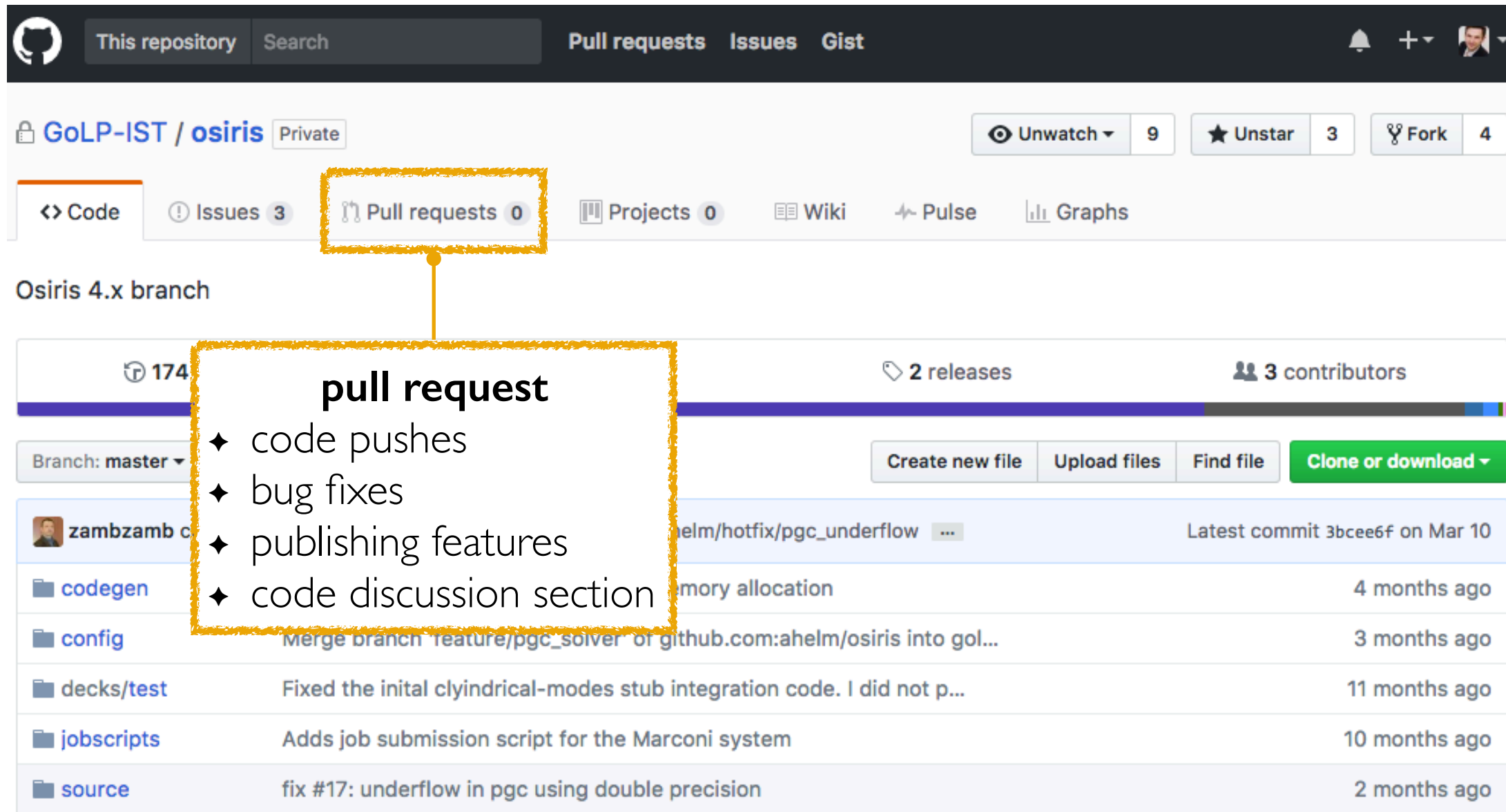
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Osiris 4.x branch

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Branch: master

zambzamb c

- code pushes
- bug fixes
- publishing features
- code discussion section

codegen

config

decks/test

jobscripts

source

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memory allocation 4 months ago

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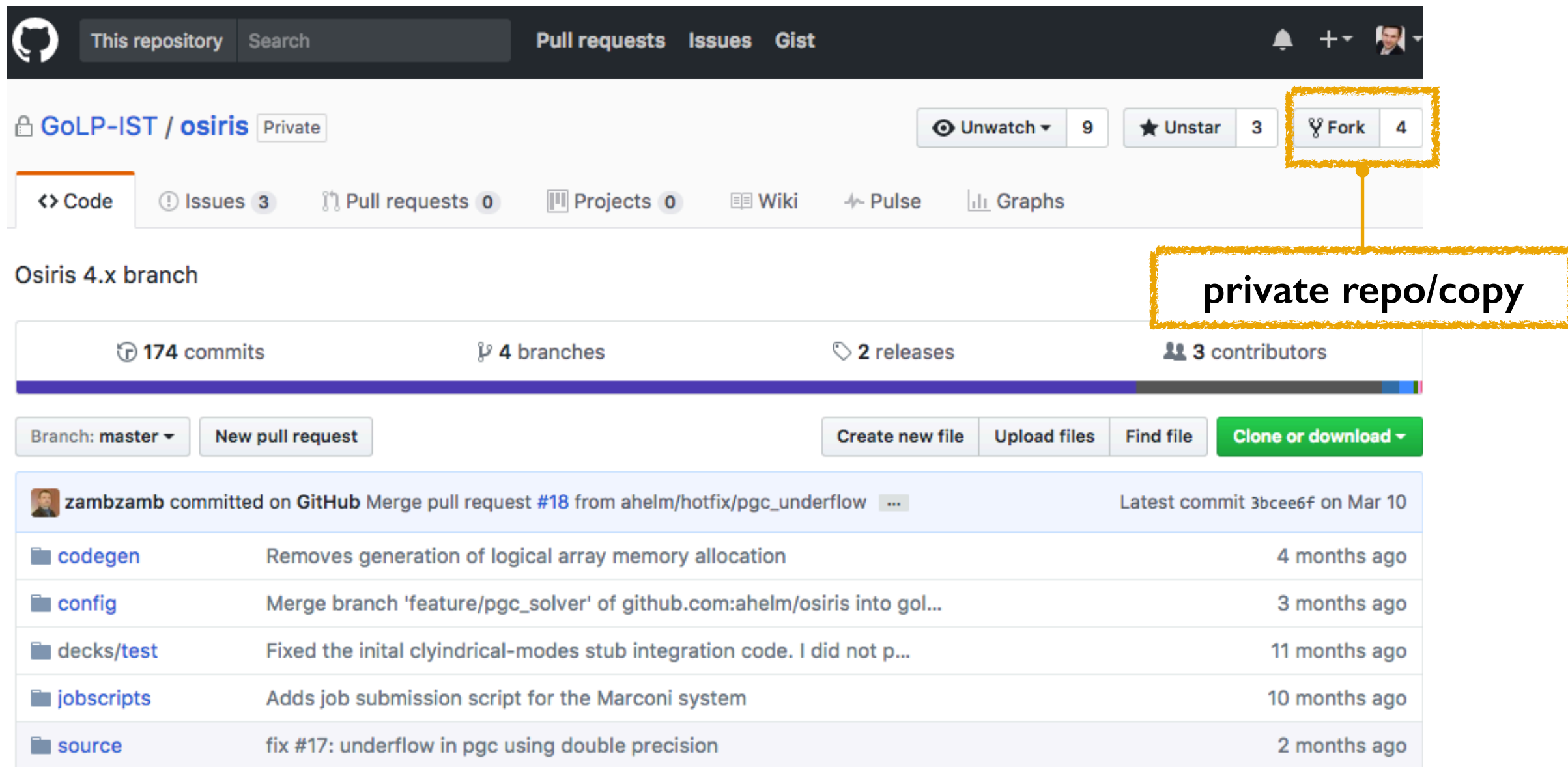
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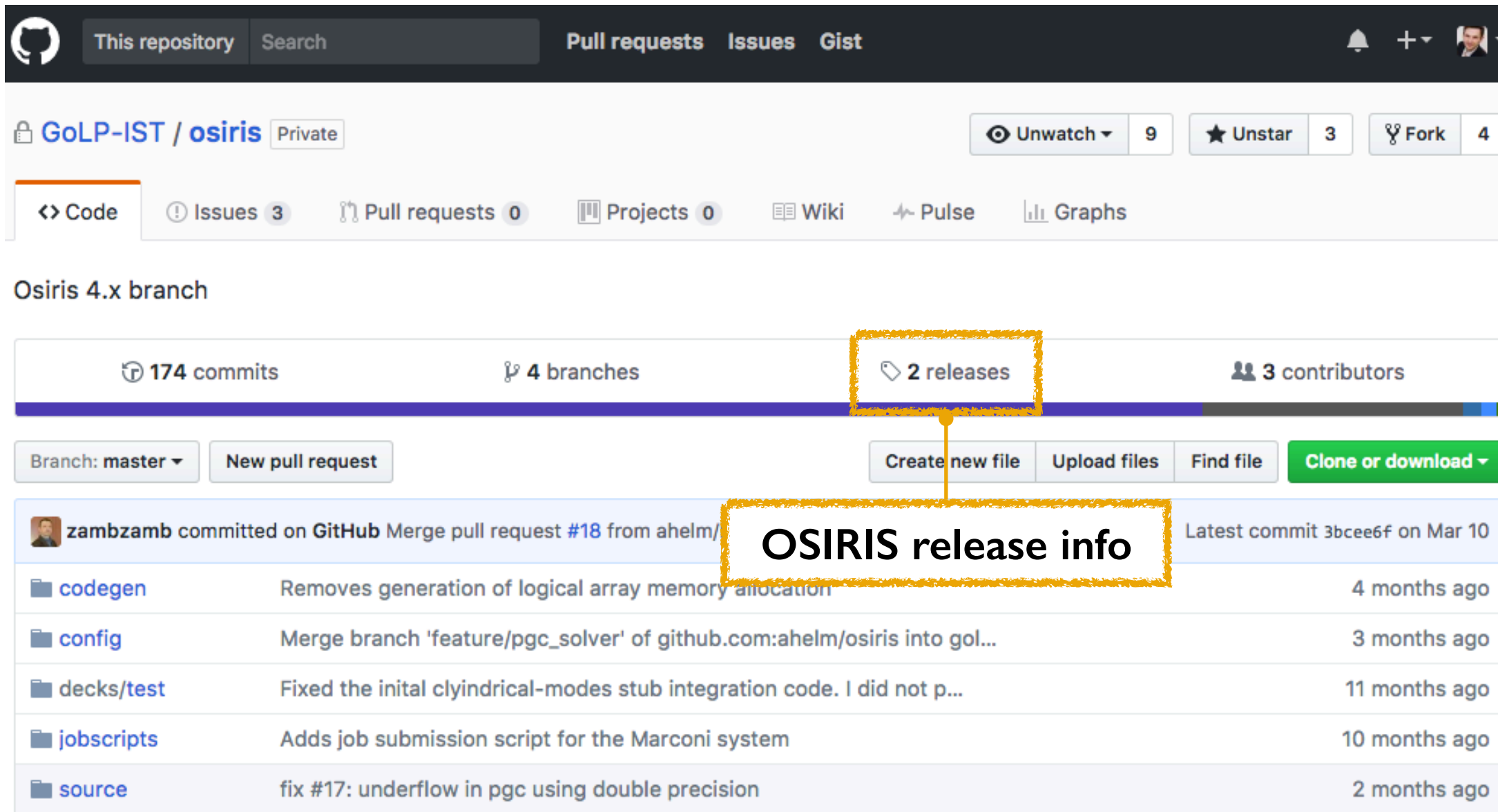
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OSIRIS release info

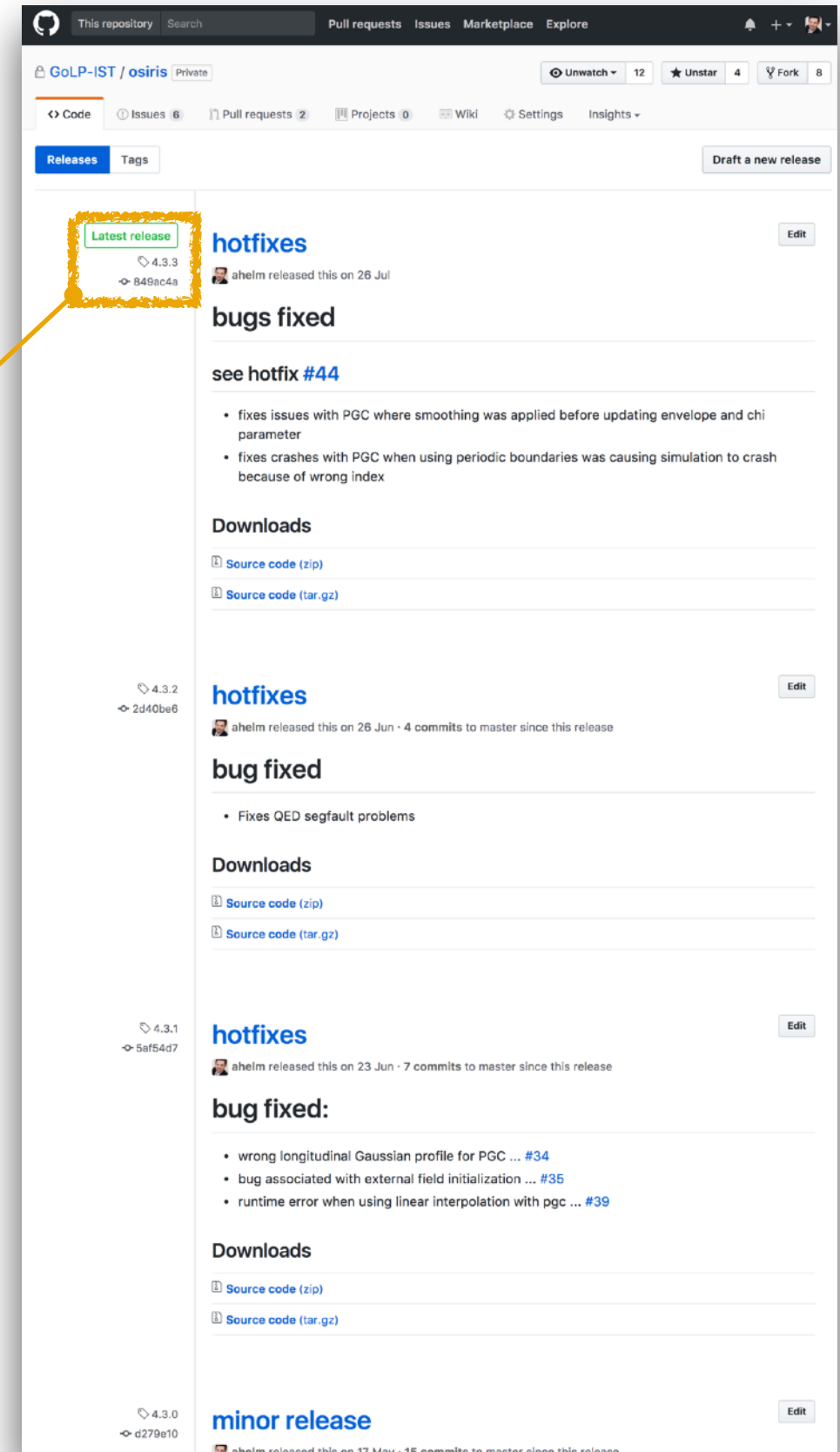
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OSIRIS versioning and changelog

versioning numbering of OSIRIS **A.B.C**:

- ♦ sequence-based software versioning scheme
- ♦ A ... main version of OSIRIS (major rework)
- ♦ B ... minor changes (features and extensions)
- ♦ C ... hot fixes (bugs at runtime/compile time)
- ♦ **each release matches to a tag on master branch**

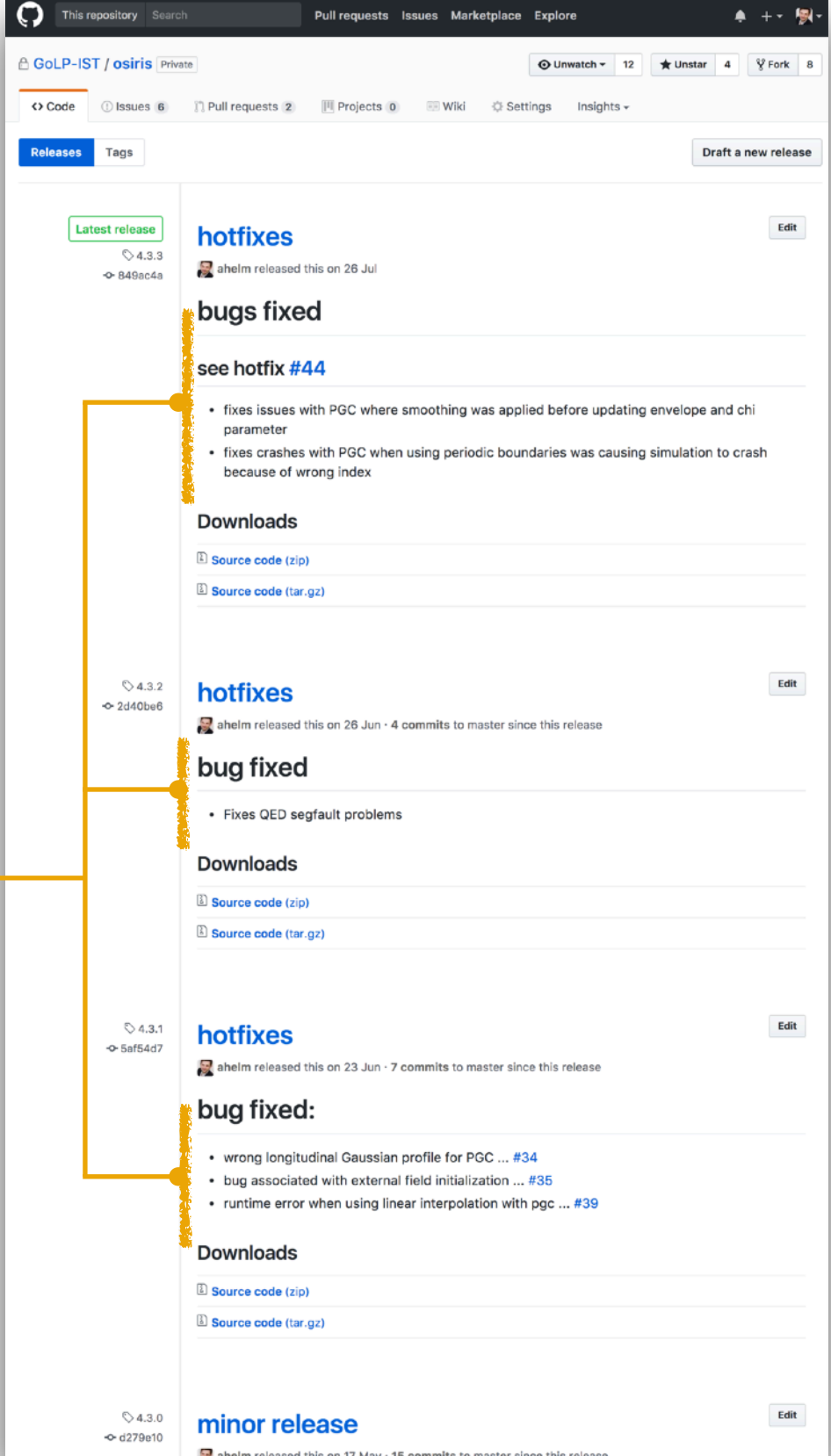


OSIRIS versioning and changelog

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- ♦ changelog for each new release
- ♦ references to pull request and issues



The screenshot displays the GitHub releases page for the repository 'GoLP-IST / osiris'. It shows a vertical list of releases, each with a version number, a commit hash, and a date. The releases are categorized as 'hotfixes' or 'minor release'. Each release entry includes a 'bug fixed' section with a list of issues addressed and a 'Downloads' section with links to source code (zip and tar.gz). A yellow line connects the 'bug fixed' sections of the releases to the corresponding text in the left-hand boxes.

Version	Commit Hash	Date	Commits to Master	Category
4.3.3	849ec4a	26 Jul	1	hotfixes
4.3.2	2d40be6	26 Jun	4	hotfixes
4.3.1	5af54d7	23 Jun	7	hotfixes
4.3.0	d279e10	17 May	15	minor release

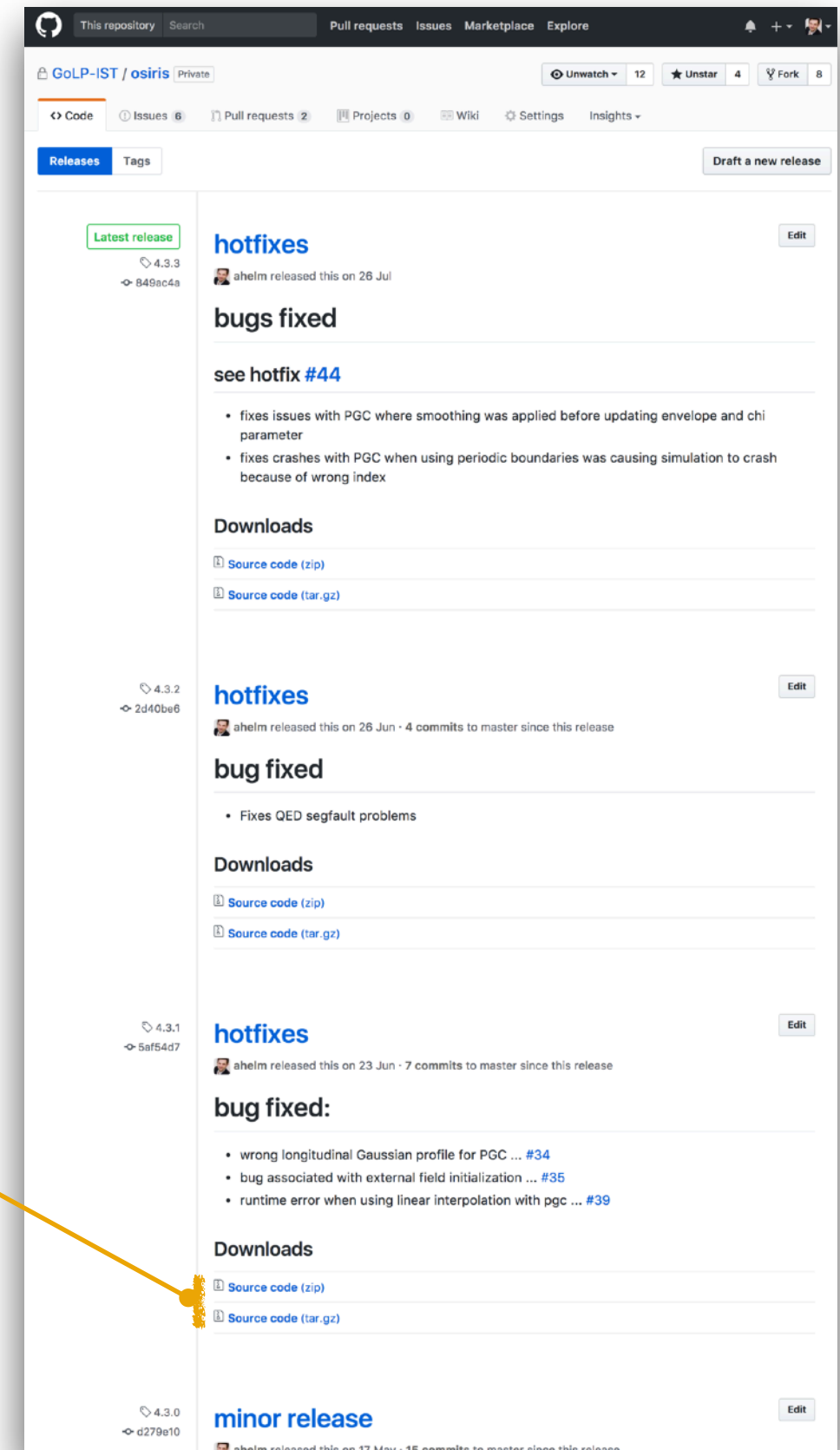
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- ♦ Download source code of OSIRIS
- ♦ **recommended way: use git to obtain OSIRIS**



Branching model for OSIRIS

master branch for using OSIRIS and development branch for extending

master branch

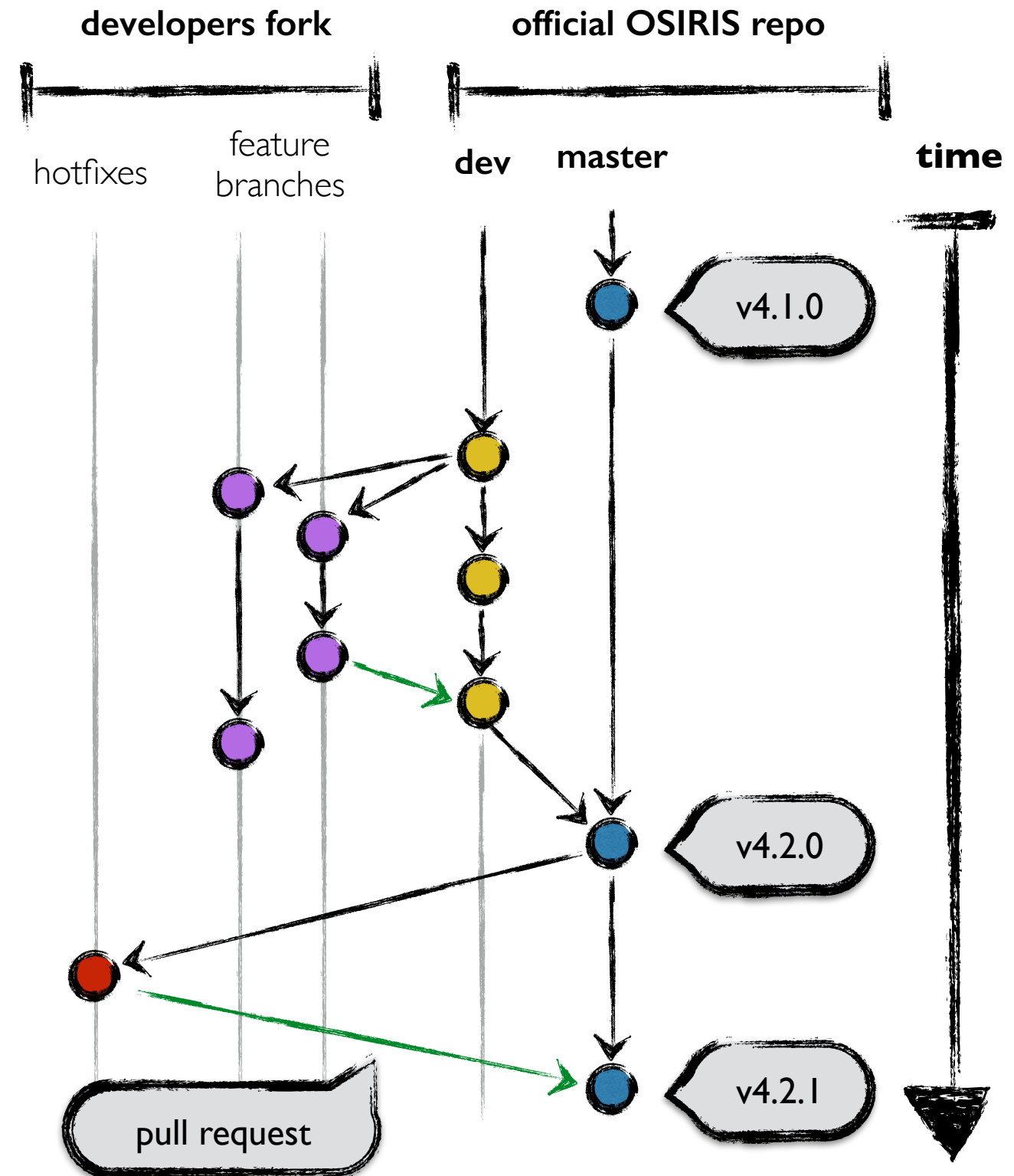
- ♦ stable version with supported features
- ♦ for simulation and for using OSIRIS
- ♦ tags for different versions

dev branch

- ♦ newest features and current development
- ♦ mirror of master but ahead in commits
- ♦ can be unstable to perform simulations

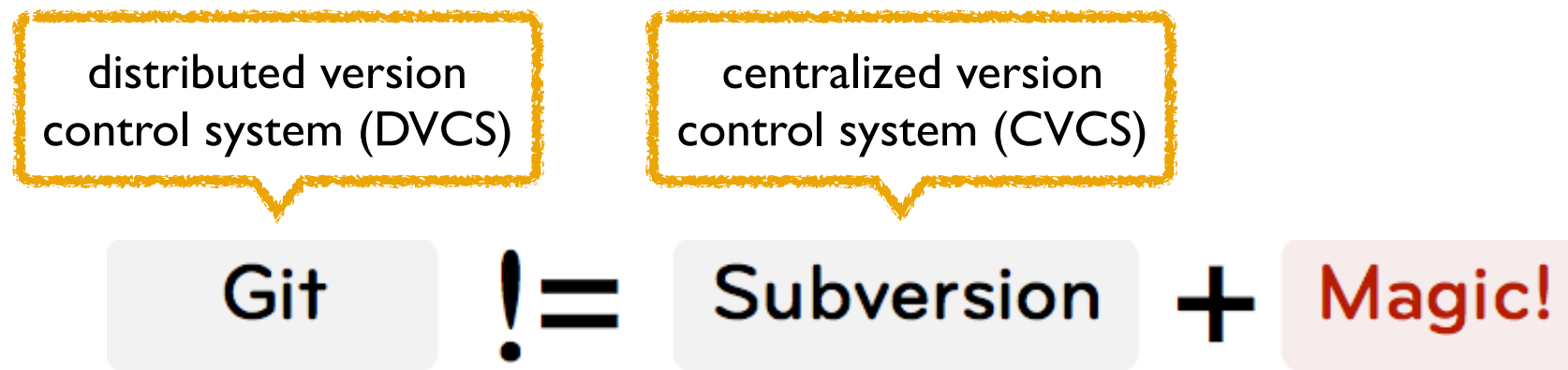
extension and hotfixes

- ♦ adding changes to OSIRIS through pull request
- ♦ pull requests for **features** - **base is dev**
- ♦ pull requests for **hotfixes** - **base is master**



What is git

git is not subversion on steroids



In many ways you can just see git as a filesystem — it's content-addressable, and it has a notion of versioning, but I really really designed it coming at the problem from the viewpoint of a filesystem person (hey, kernels is what I do), and I actually have absolutely zero interest in creating a traditional SCM system.

Linus Torvalds

Installing and setting up git



obtaining git:

<https://git-scm.com/downloads>

make sure git uses your name/email:

```
$ git config --global user.name  
Anton Helm
```

```
$ git config --global user.email  
anton.helm@tecnico.ulisboa.pt
```

otherwise setup git to use your name/email:

```
$ git config --global user.name "Your Name"  
$ git config --global user.email "your_email@somewhere.com"
```


OSIRIS from a user perspective

getting OSIRIS and keep it updated

clone the OSIRIS repository (GitHub credentials required):

```
$ git clone https://github.com/GoLP-IST/osiris.git
```

enter the “osiris” directory and check that you are on master

```
$ cd osiris && git branch
* master
```

show remotes

```
$ git remote -v
origin    https://github.com/GoLP-IST/osiris.git (fetch)
origin    https://github.com/GoLP-IST/osiris.git (push)
```

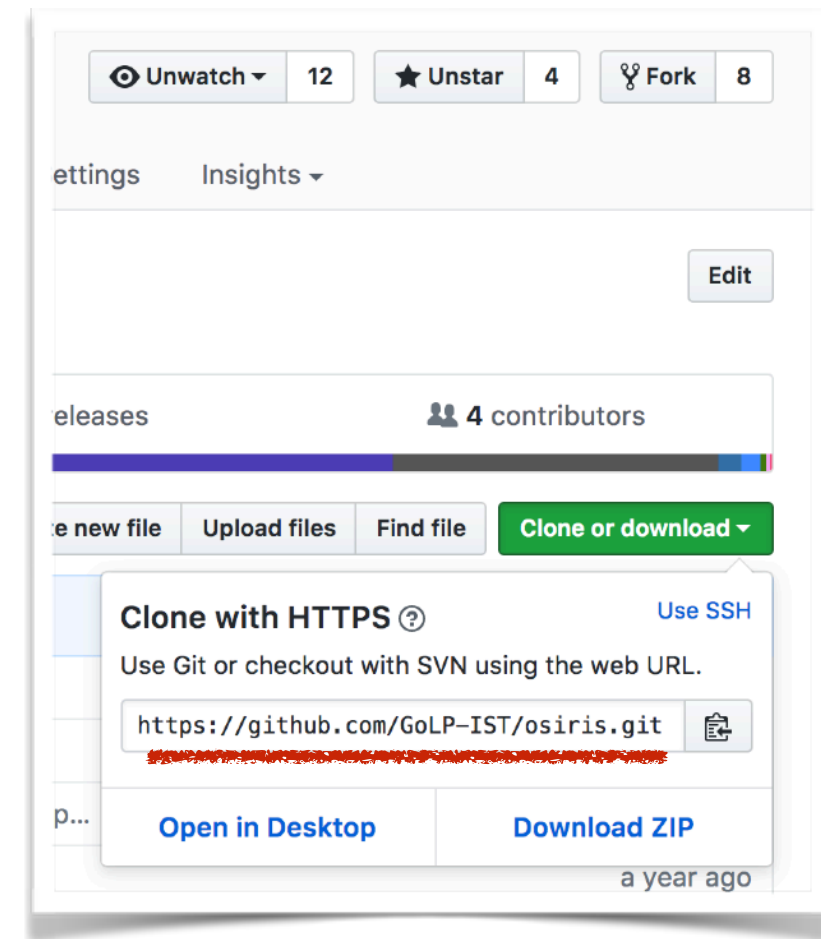
and rename from **origin** to **upstream**

```
$ git remote rename origin upstream && git remote -v
upstream  https://github.com/GoLP-IST/osiris.git (fetch)
upstream  https://github.com/GoLP-IST/osiris.git (push)
```

update master branch to match the official OSIRIS master branch

```
$ git checkout master && git pull --rebase upstream master
```

```
...
Your branch is up-to-date with 'upstream/master'.
...
```



OSIRIS from a user perspective

getting OSIRIS and keep it updated

check for available OSIRIS versions (master branch has tags)

```
$ git tag
```

```
...
```

```
4.2.2
```

```
4.3.0
```

```
4.3.1
```

```
...
```

get a state of OSIRIS at a specific version

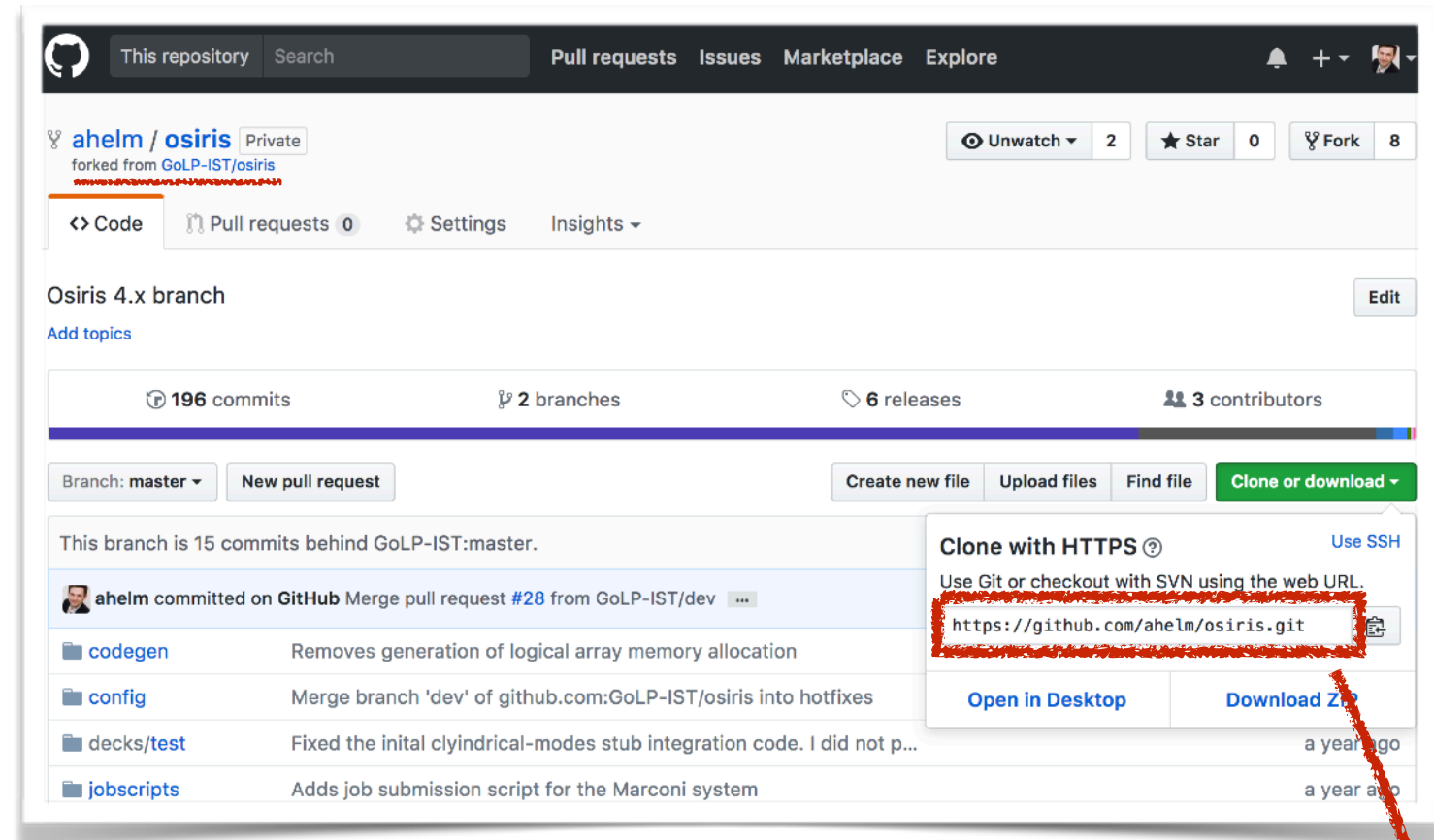
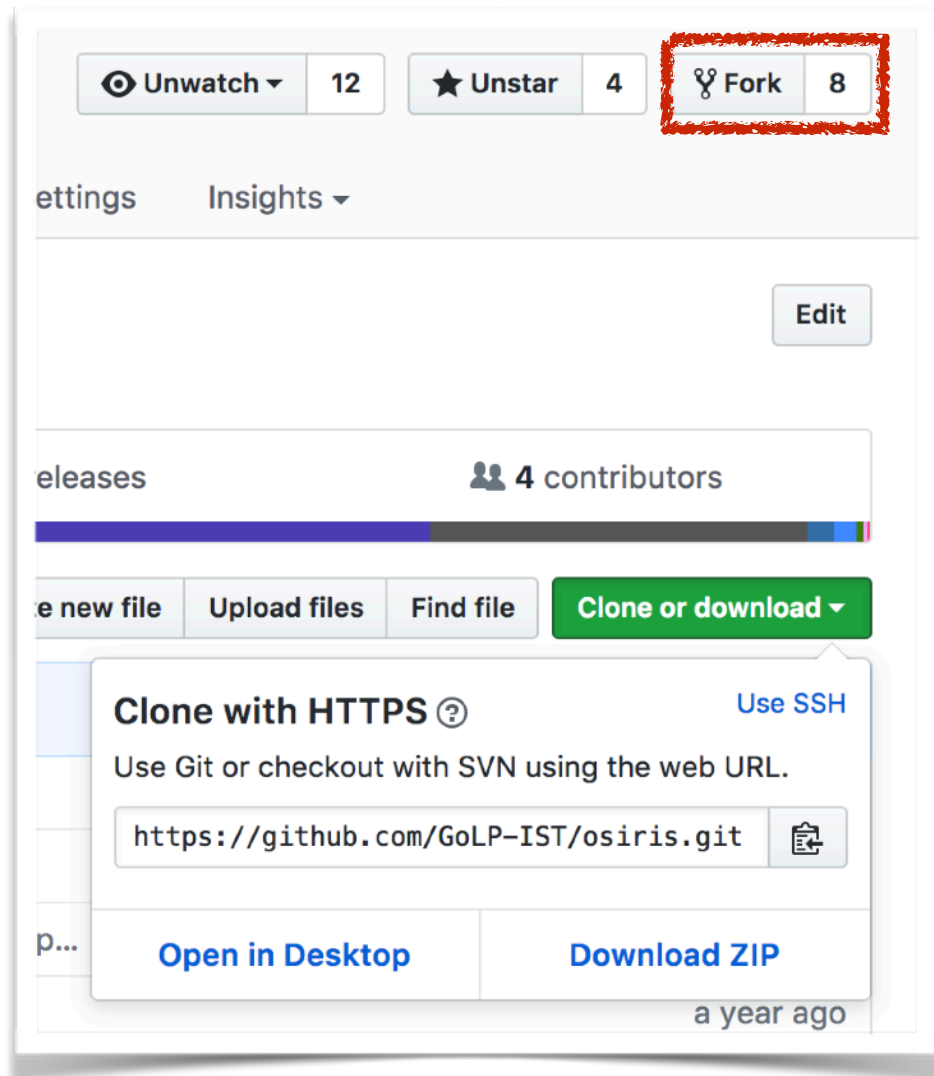
```
$ git checkout 4.2.2
```

get latest version of OSIRIS

```
$ git checkout master
```


developing and contributing to OSIRIS

creating a fork and adding it as a remote to git



fork - private GitHub repo

- ♦ private copy of a project on GitHub
- ♦ can be added as a git remote
- ♦ can be used as a backup
- ♦ can be used to collaborate with others

add your fork to your remotes on local git repository

```
$ git remote add origin \  
https://github.com/ahelm/osiris.git
```

```
$ git remote -v  
origin    https://github.com/ahelm/osiris.git  
origin    https://github.com/ahelm/osiris.git
```


Anton Helm | OSIRIS workshop, UCLA, Los Angeles | Sept 18, 2017

developing and contributing to OSIRIS

basic git commands

list branches (* - currently selected branch)

```
$ git branch
dev
master
* new_feature
```

list changes on working copy (short list)

```
$ git status --short
M source/pgc/os-emf-pgc.f03
?? source/pgc/new_file.f03
```

track changes (specify individual files or all changes with .) and commit

```
$ git add .
$ git commit # pops for a commit msg
```

pull changes from dev branch on new feature - might lead to conflicts

```
$ git pull --no-commit upstream dev
```

push changes to a branch on remote (e.g. your fork set up as “origin”)

```
$ git push <remote_name> <branch> # general example
$ git push origin new_feature
```

create new pull request
with new features

fixing an issue with OSIRIS

taking current stable version of OSIRIS and implementing a fix

create a new branch from official OSIRIS master

```
$ git checkout -b some_hotfix upstream/master
```

implementing the fix (in file os-some-buggy-file.f03)

```
$ git status --short  
M source/os-some-buggy-file.f03
```

track changes and commit

```
$ git add .  
$ git commit # pops for a commit msg
```

pull changes from master branch on hotfix - might lead to conflicts

```
$ git pull --no-commit upstream master
```

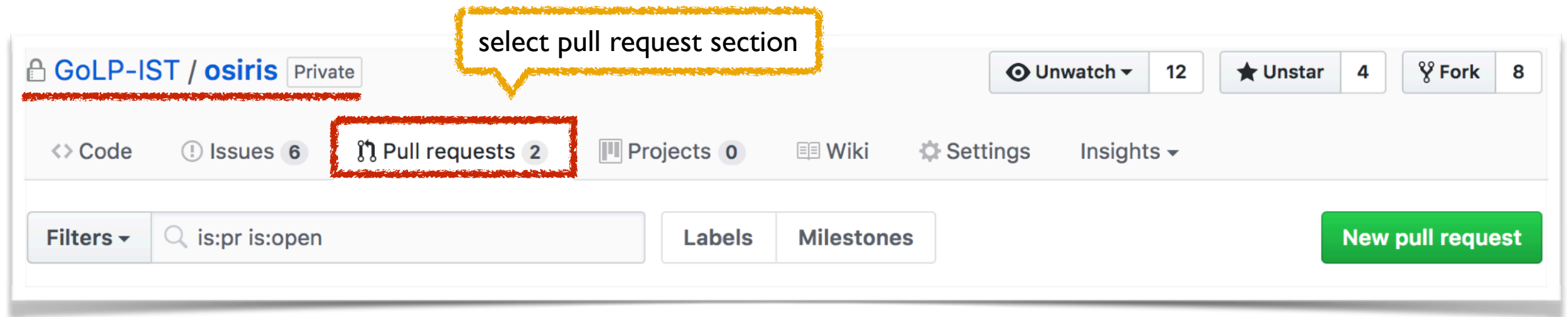
push changes to a branch on remote (e.g. your fork set up as “origin”)

```
$ git push origin some_hotfix
```

create new pull request
with fixed changes

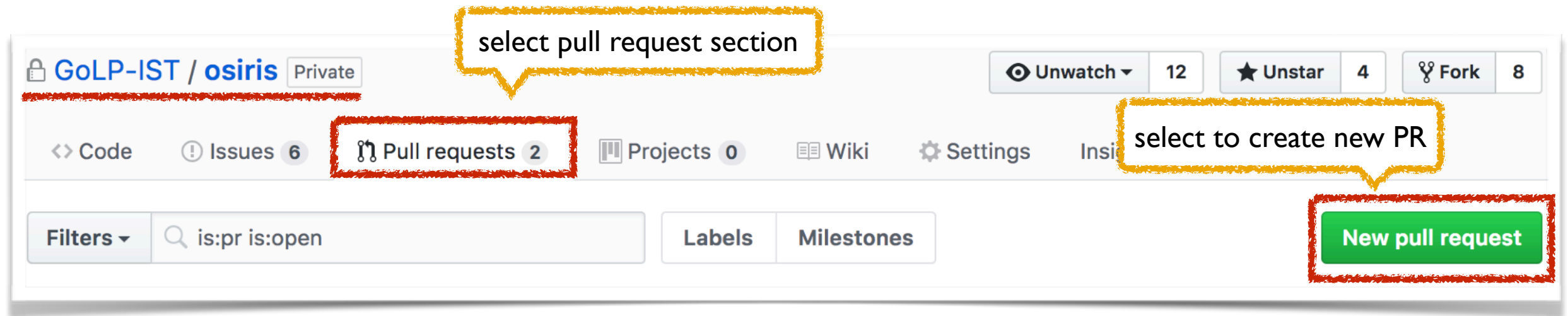
developing and contributing to OSIRIS

create a pull request to add your changes to main OSIRIS repo



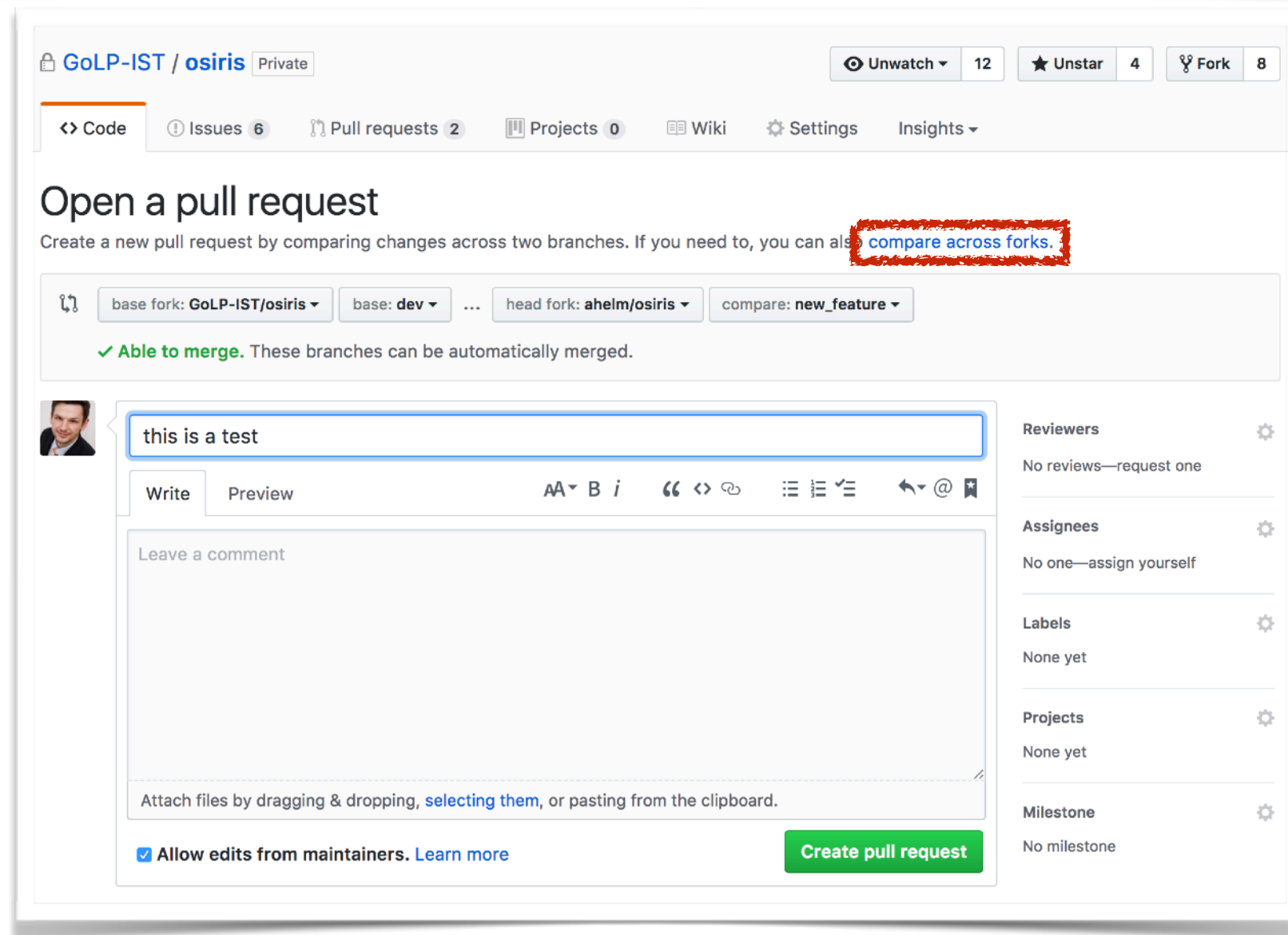
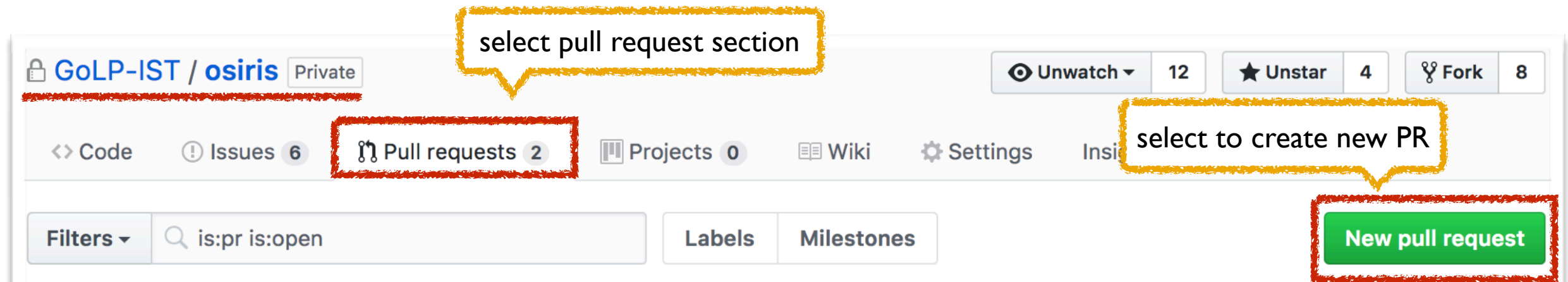
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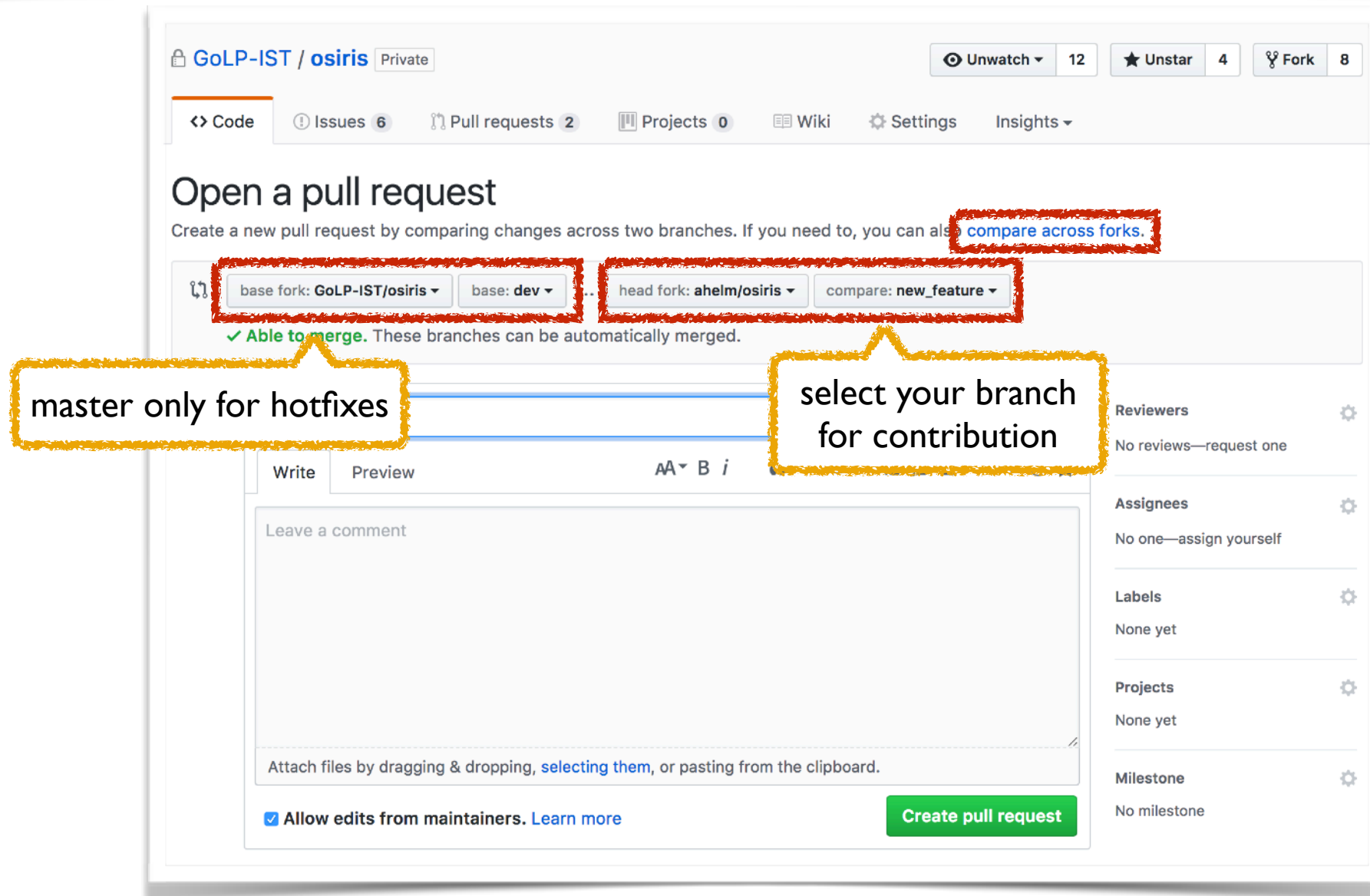
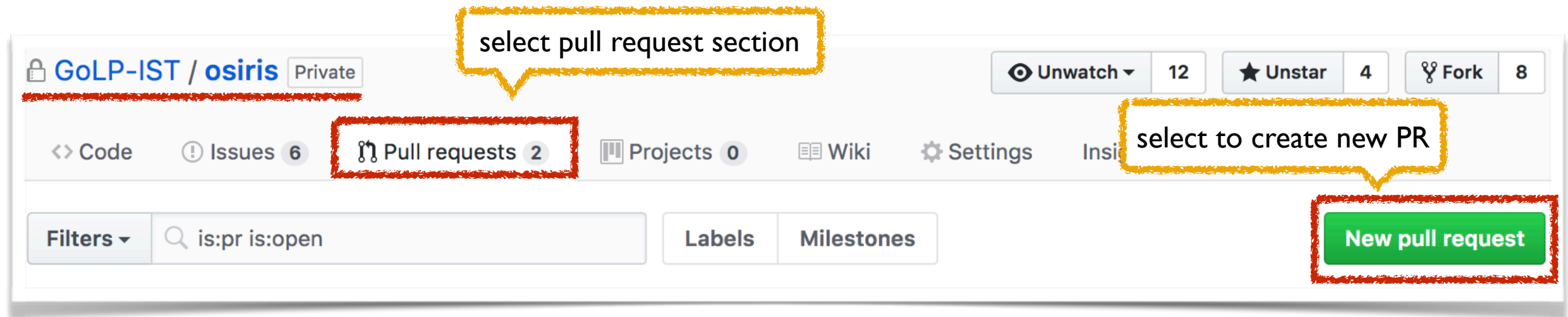
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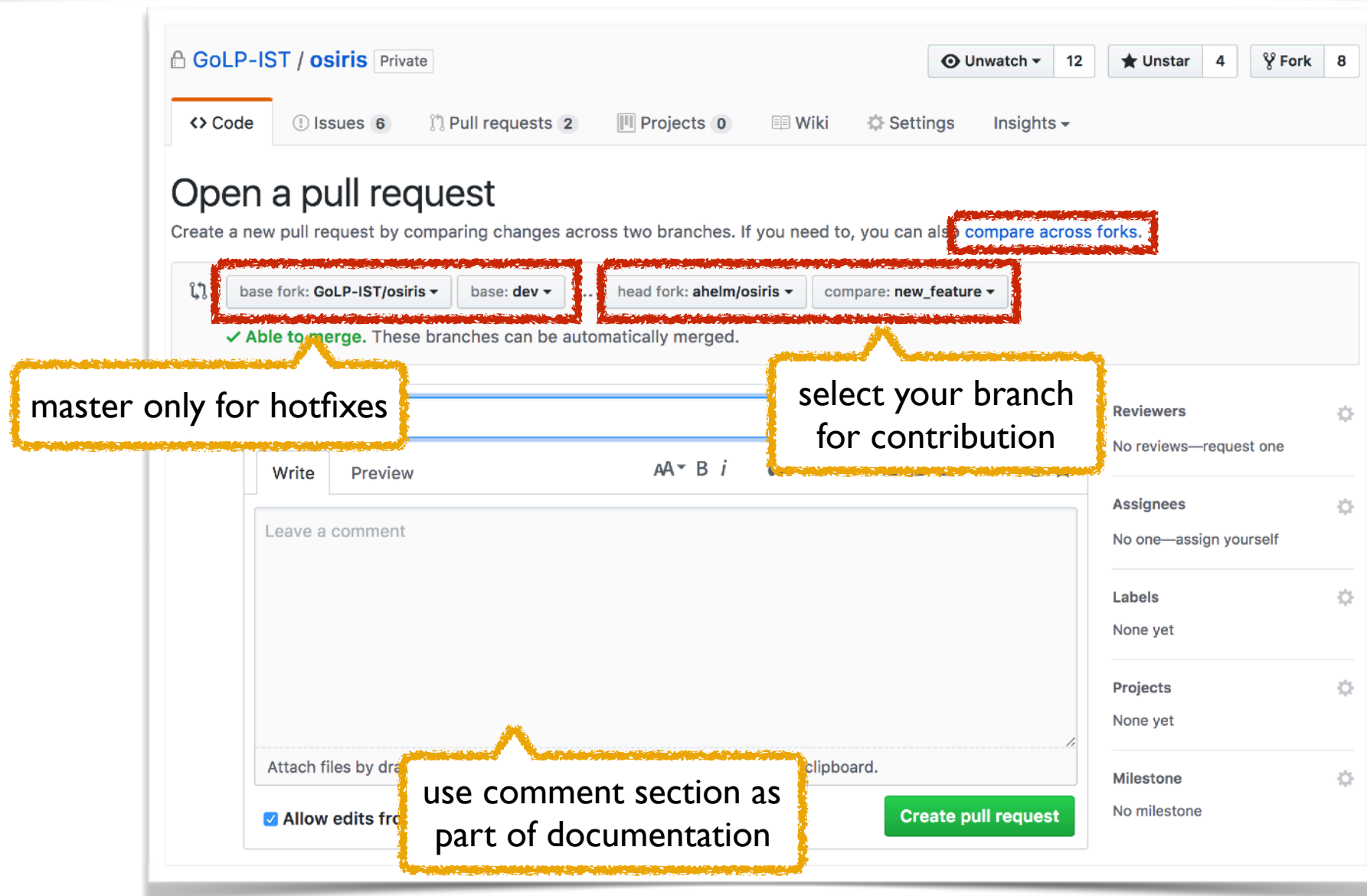
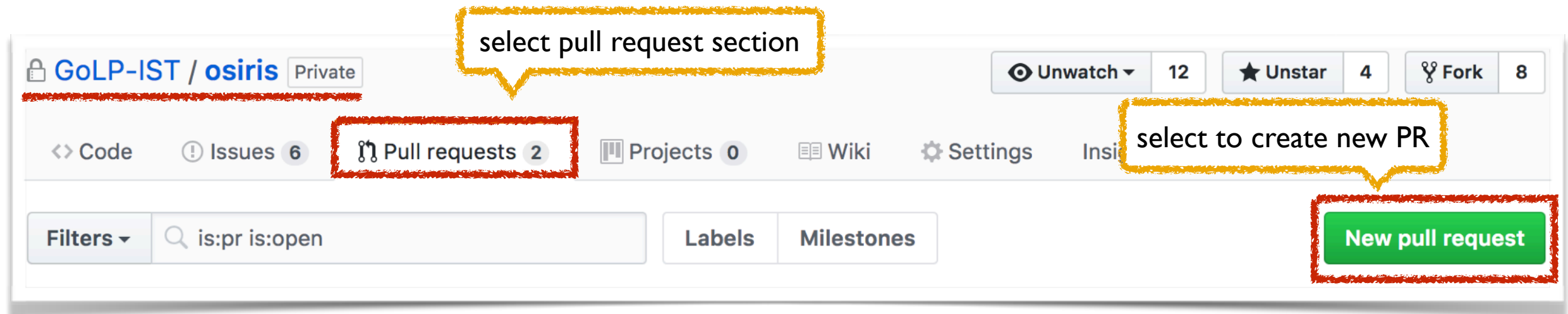
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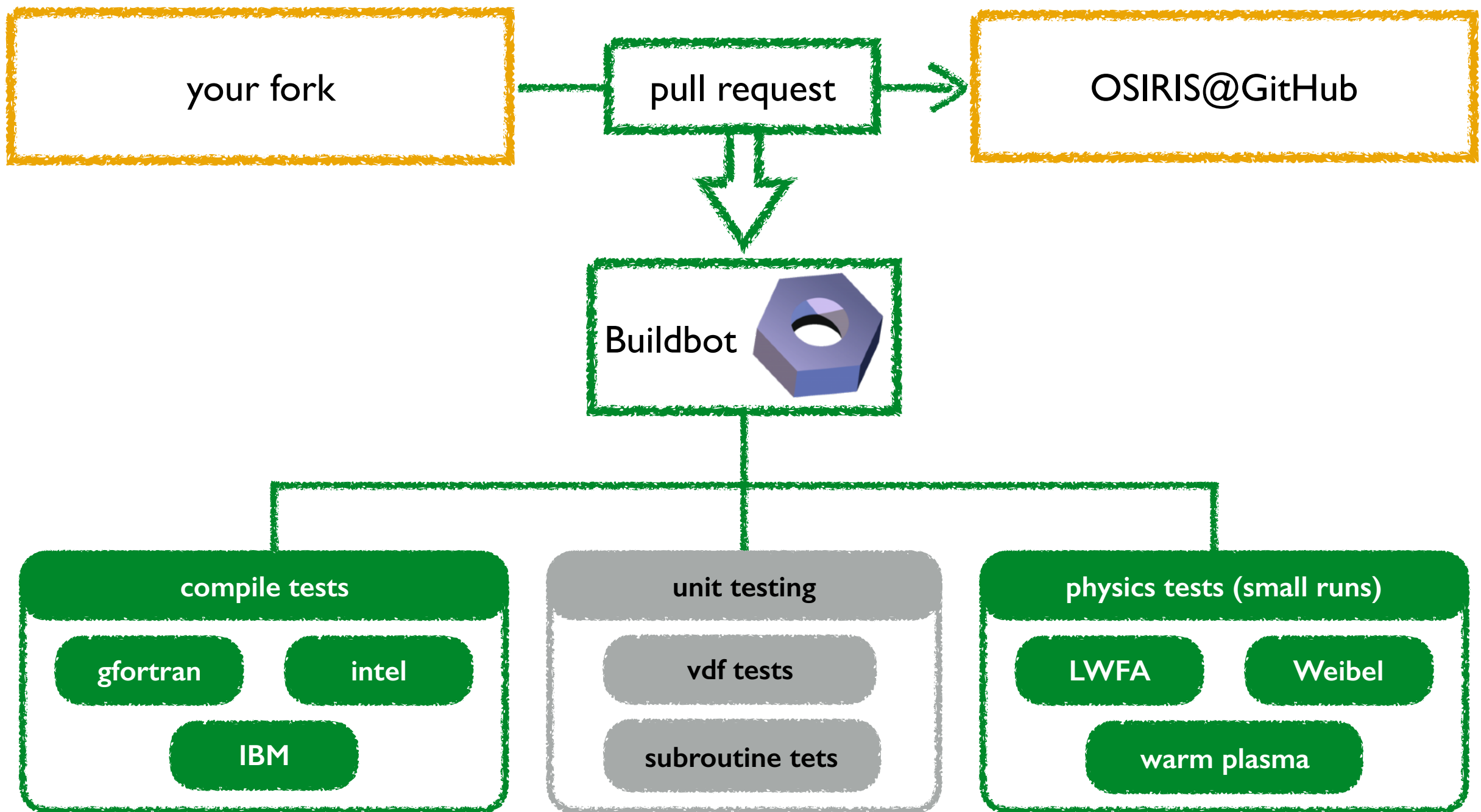
developing and contributing to OSIRIS

create a pull request to add your changes to main OSIRIS repo



Ensuring OSIRIS is stable

continues integration and buildbot



Thank you for attention!

further references

- ♦ good and interactive git tutorial: <http://try.github.com/>
- ♦ collection of git references: <https://gist.github.com/jaseemabid/1321592>
- ♦ good book: <https://github.com/pluralsight/git-internals-pdf>
- ♦ git cheat sheet: <https://www.git-tower.com/blog/git-cheat-sheet/>