You can do open source!



/jameslamb



@_jameslamb



Section 1

wtf is open source?

Open source software (OSS) is more than just a bunch of files on a website!

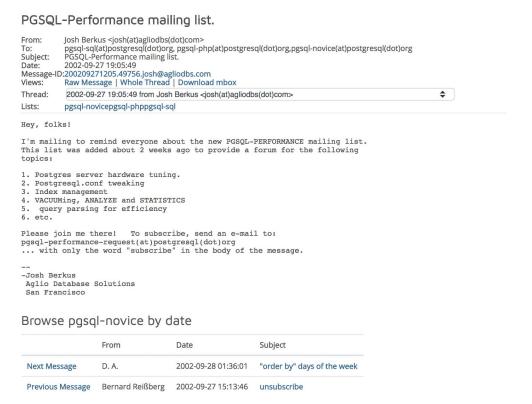
 It's a software development methodology that favors discussing and developing in the open.

 It's a philosophy of software distribution built on the idea that technologies whose inner workings can be viewed and altered by many people develop more quickly than those that are closely guarded.

 It's a philosophy of software creation that acknowledges the fact that software creation is a social activity, not an autonomous task.

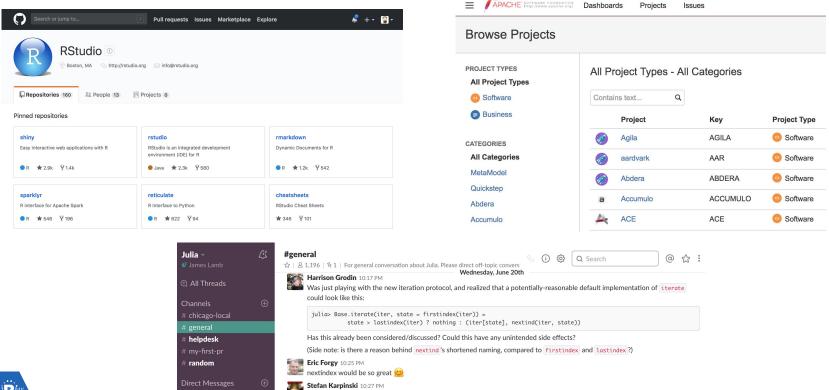


Before hosted source code management tools like Github, open source developers still collaborated...by mailing list!





Today, OSS is commonly developed in the open, with public source code repositories, Slack groups, JIRA boards, and more



nextindex would probably be better; I'm so tired of making changes though



slackbot

OSS is distributed with less restrictive licenses than proprietary software

This is a good blog:

https://writing.kemitchell.com/

Apache License 2.0

- Grants rights that are worldwide and irrevocable
- If you redistribute code, you must give proper credit

BSD 3-Clause

- Very permissive, allows free copying, distribution, and alteration
- Prohibits use of contributor' names as an endorsement of a redistribution or derivative product

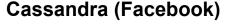
GNU General Public License (GPL)

 A so-called "copyleft" license. If you make modifications, you must release them (also under GPL)



Many popular open source tools were created by for-profit companies, then later released to the world.

Airflow (Airbnb)



Kafka (LinkedIn)











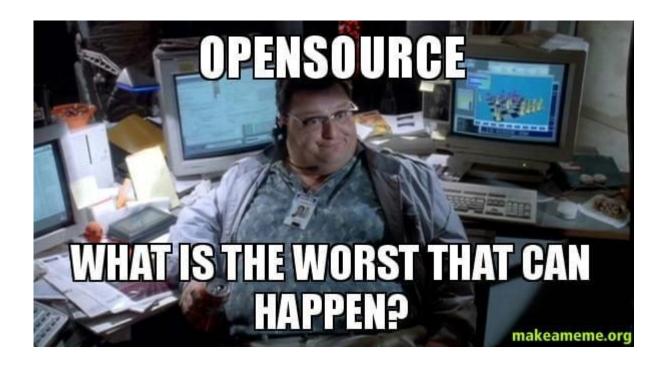




Section 3

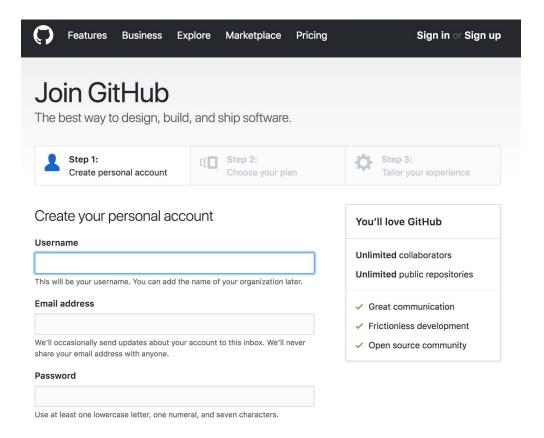
How to contribute to projects on Github

In this section, we'll walk through how to contribute to projects on Github. Are you excited???





If you don't have an account yet, visit github.com/join to get started





Ok, from this point forward, I'm going to assume you have a Github account.





This also assumes that you already have git. If you don't, go to https://git-scm.com/book/en/v2/Getting-Started-Installing-Git

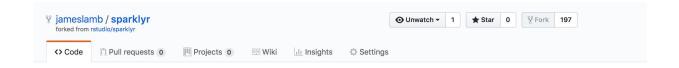


(thanks Jenny Bryan, this is bomb)



Find a project that you're interested in and fork it

"Forking" a project means making an exact copy of a repository under your personal Github account. For this tutorial, we're going to use "sparklyr". Go to https://github.com/rstudio/sparklyr and click "fork" in the top right corner



Forking rstudio/sparklyr It should only take a few seconds.

€ Refresh



Next, clone that project down to your laptop so we can start making

changes!

Clone your fork

git clone https://github.com/jameslamb/sparklyr

Add a new remote for the root project (rstudio/sparklyr)

cd sparklyr

git remote add upstream https://github.com/rstudio/sparklyr

Create a branch to do feature work on

git checkout -b bugfix/misc





Next, make some changes. In this case, I'll take advantage of R's built in spell checker to look for a quick fix in the documentation

```
Console ~/repos/sparklyr/R/ →
> devtools::spell_check()
  WORD
                           FOUND IN
al
                         ml_kmeans.Rd:28,71, ml_lda.Rd:47,49,125,140,150,162
ALS.
                         ml_als.Rd:7,59,65,72,74,94
antitonic
                         ml_isotonic_regression.Rd:19
apache
                         ft_quantile_discretizer.Rd:35.82, ml_evaluator.Rd:51, description:2
                         ml_evaluator.Rd:51, spark_read_csv.Rd:62, spark_read_json.Rd:45, spark_read_parquet.Rd:47,
api
spark_read_text.Rd:40
approxOuantile
                         ft_auantile_discretizer.Rd:35.82
aws
                         spark_read_csv.Rd:59, spark_read_json.Rd:42, spark_read_parquet.Rd:44, spark_read_text.Rd:
37
AWS
                         spark_read_csv.Rd:60, spark_read_json.Rd:43, spark_read_parquet.Rd:45, spark_read_text.Rd:
38
Bahmani
                         ml_kmeans.Rd:28,71
                         ml_multilaver_perceptron_classifier.Rd:38
bfas
bigram
                         ft_ngram.Rd:17
binarize
                         ft_binarizer.Rd:17
binarized
                         ft_r_formula.Rd:63
Binarizer
                         ft bingrizer.Rd:5
Blei
                         ml_lda.Rd:108.140
Bucketizer
                         ft bucketizer.Rd:5
bucketLength
                         ft_lsh.Rd:26
cateaoricalCols
                         ft_feature_hasher.Rd:60
cbind
                         sdf_fast_bind_cols.Rd:5,10
                         ml_als.Rd:53, ml_decision_tree.Rd:70, ml_aradient_boosted_trees.Rd:75, ml_lda.Rd:43, ml_ra
checkpointed
ndom_forest.Rd:75
                         ml lda.Rd:45
checkpointing
ChisaSelector
                         ft_chisa_selector.Rd:21
                         ft_chisq_selector.Rd:5
ChiSaSelector
                         spark-api.Rd:54
classpath
```



Look, I found a bad typo that got copy-pasted through the repo!

```
Results for "tranformation" in ~/repos/sparklyr/R
~/repos/sparklyr/R/ml feature pca.R
       1: #' Feature Tranformation -- PCA (Estimator)
~/repos/sparklyr/R/ml_feature_max_abs_scaler.R
      1: #' Feature Tranformation -- MaxAbsScaler (Estimator)
~/repos/sparklyr/R/ml feature tokenizer.R
       1: #' Feature Tranformation -- Tokenizer (Transformer)
~/repos/sparklyr/R/ml_feature_count_vectorizer.R
       1: #' Feature Tranformation -- CountVectorizer (Estimator)
~/repos/sparklyr/R/ml_feature_min_max_scaler.R
       1: #' Feature Tranformation -- MinMaxScaler (Estimator)
~/repos/sparklyr/R/ml feature string indexer.R
      1: #' Feature Tranformation -- StringIndexer (Estimator)
~/repos/sparklyr/R/ml_feature_idf.R
       1: #' Feature Tranformation -- IDF (Estimator)
~/repos/sparklyr/R/ml feature r formula.R
       1: #' Feature Tranformation -- RFormula (Estimator)
~/repos/sparklyr/R/ml feature standard scaler.R
       1: #' Feature Tranformation -- StandardScaler (Estimator)
~/repos/sparklyr/R/ml_feature_chisq_selector.R
       1: #' Feature Tranformation -- ChiSqSelector (Estimator)
~/repos/sparklyr/R/ml feature stop words remover.R
     28: #' Feature Tranformation -- StopWordsRemover (Transformer)
~/repos/sparklyr/R/ml feature ngram.R
      1: #' Feature Tranformation -- NGram (Transformer)
```



Once you're done making changes, commit them and push them back to YOUR fork of the repo

Add and commit your changes

git add R/*.R git commit -m "fixed minor typos in documentation"

Push to your fork

git push origin bugfix/misc

```
ch-nb-1073:sparklyr jlamb$ git status

On branch master

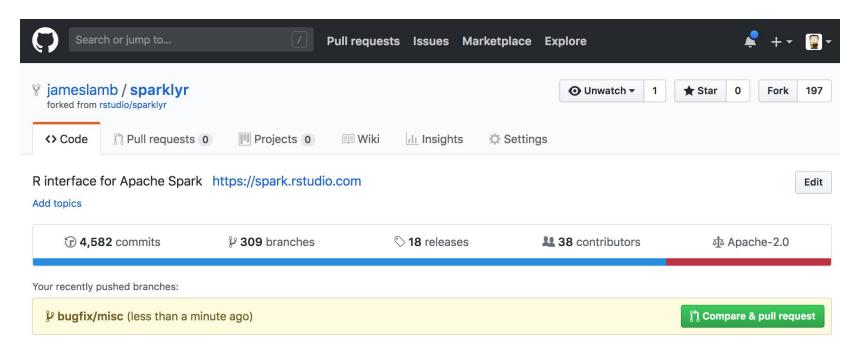
Your branch is up-to-date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified: R/ml_feature_bucketed_random_projection_lsh.R
    modified: R/ml_feature_chisq_selector.R
    modified: R/ml_feature_idf.R
    modified: R/ml_feature_idf.R
    modified: R/ml_feature_max_abs_scaler.R
    modified: R/ml_feature_min_max_scaler.R
    modified: R/ml_feature_min_max_scaler.R
    modified: R/ml_feature_pram.R
    modified: R/ml_feature_pram.R
    modified: R/ml_feature_pram.R
```



Go back to Github in your browser...you should now see a prompt to submit a PR!





Quick digression...let's talk about PRs

A pull request ("PR") is how you can get your code added to someone else's project. When you submit a pull request, you're telling the maintainers of the destination package

"hey, I did some stuff on my copy of your code. Will you consider adding my stuff to the main code base?"

In other words, you're literally <u>requesting</u> that they <u>pull</u> your code into their project.

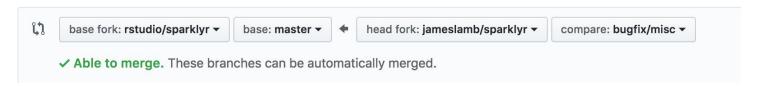




Ok back to work...click "compare and pull request" and let's see what's in there

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.



You'll see this stuff at the top of the page.

The "base" branch is the branch on the target repo that you want your code added on top of.

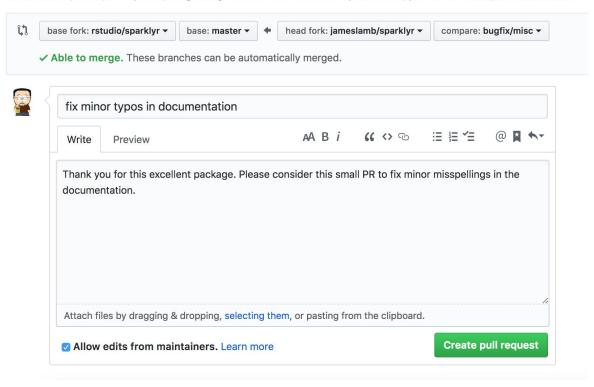
The "compare" branch is the branch (in your repo) with the new code you want added.



Add a short description of what you did in the PR, then click submit!

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.





Once you've submitted your PR, now you'll need to hope it builds!

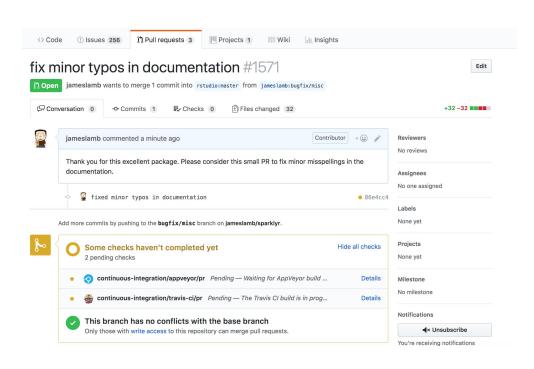
Most projects use one or more "continuous integration" (CI) tools. These run automated tests whenever someone submits a PR.

See that yellow text about "some checks" on the right? That's CI!

Appveyor → testing on Windows
Travis → testing on Linux



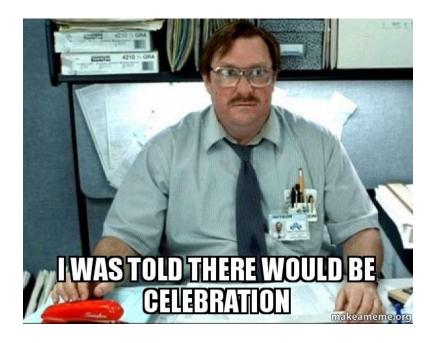






If everything goes well, eventually the maintainers will merge your PR!

Getting "merged" means that the maintainers are happy with the changes you've proposed and agree to make your code a formal part of the main code base. When that happens, it's time to celebrate!





So far we've talked about PRs, but I also want to talk about issues

An issue is a note requesting some action from the maintainers of a project. The name is a little weird, because it's not always something "wrong".

Issues include:

- Bug reports
- Feature requests
- General questions
- Documentation of possible enhancement
- Memes





Github's issue feature is really cool, because it will pick up references in the texts of other issues and PRs (even across projects!) so you follow the discussion around a problem

