Paper PA-04

The Hitchhiker's Guide to Github: SAS Programming Goes Social

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ABSTRACT

Don't Panic! Github is a fantastic way to host, share, and collaborate your codes (of course, SAS included). You will like it: first, it's totally free (for all public repositories); and second, it has an easy use GUI client, Github for Windows if you work in Windows OS and you don't feel comfortable to write Git commands on which Github is based. There is no additional installation and configuration needed to use Github.

In this paper, I will go through Github client set up and how to create a repository, push files online and how to go social by following a user, watch a repository and most important, fork a repository and make pull request.

INTRODUCTION

SAS programmers have pretty much social network systems to play around, such like Linkedin, Facebook and SASCommunity.org, while SAS programs, scatters around SAS-L, blogs, personal websites and conference papers. Recent years, more and more SAS programmers put their piece of codes to online programming collaborative systems and Github, is the most popular one among them.

In a nutshell, Github in the world of online code hosting and version control system is just like Dropbox in file sync service, or Gmail in email. They are all best in their vertical markets. Getting a free account of Github (yes, it's FREE), you then get a web-based hosting service and a Git based version control system. The intriguing part of Github is that you even don't need to know anything about Git commands to begin your social programming journey.

A side story. In October 2012, FDA/PhUSE Standard Script Working Group decided to use Google Code, another online code hosting service (https://code.google.com/p/phuse-scripts/) to distribute "standard scripts for data transformations and analyses across and/or within a therapeutic area and exploratory analysis". Google Code is good, but I hate to say, the group didn't made a good choice. Half a year later, Google Code planned to kill its download services ([3]).

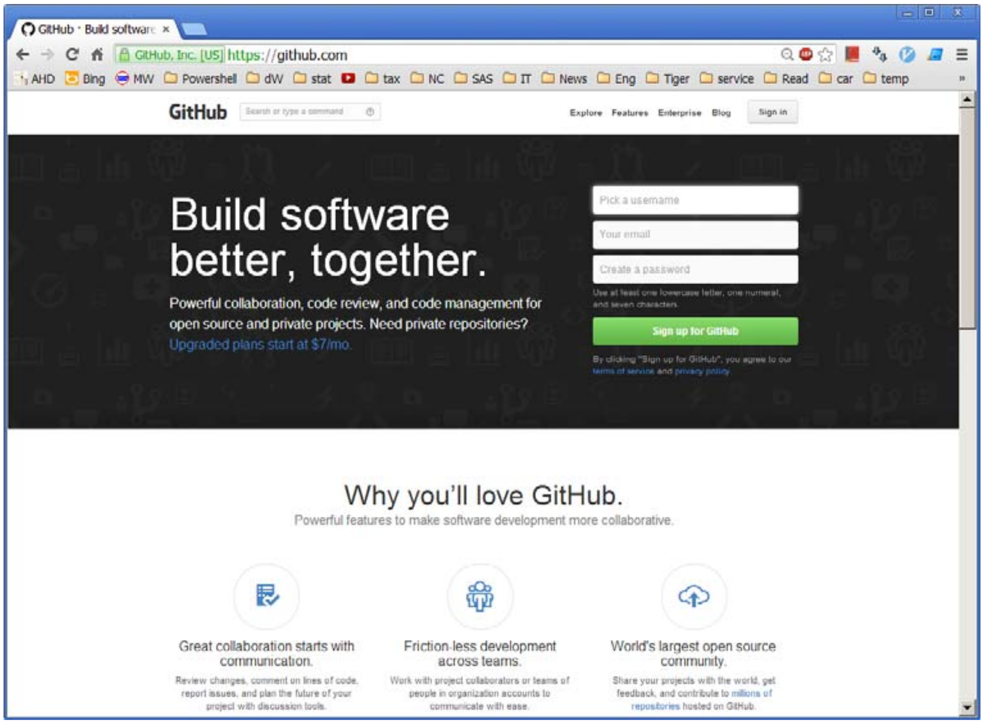
The lesson is, use Github!

A. SET UP

A.1 GET A FREE GITHUB ACCOUNT

To begin with, sign up a free Github account at:

https://github.com/



Build software better, together.

Powerful collaboration, code review, and code management for open source and private projects. Need private repositories? Upgraded plans start at $7/mo.

Use at least one lowercase letter, one numeral, and seven characters.

By clicking "Sign up for GitHub", you agree to our terms of service and privacy policy.

Why you'll love GitHub.

Powerful features to make software development more collaborative.

Great collaboration starts with communication.

Review changes, comment on lines of code, report issues, and plan the future of your project with discussion tools.

Friction-less development across teams.

Work with project collaborators or teams of people in organization accounts to communicate with ease.

World's largest open source community.

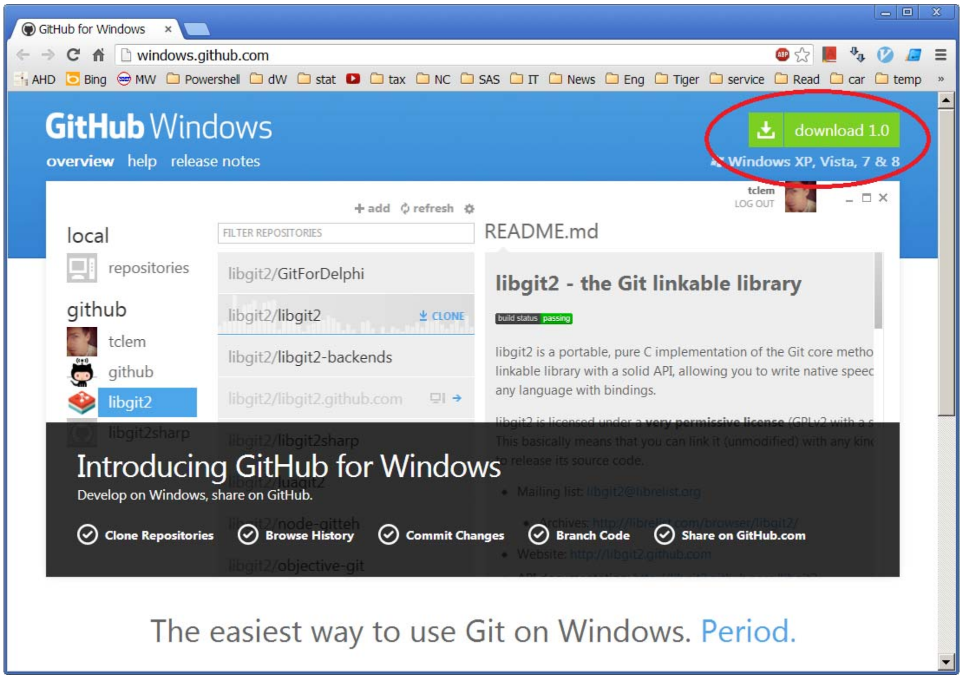
Share your projects with the world, get feedback, and contribute to millions of repositories hosted on GitHub.

A free account can get unlimited public repositories and spaces. You should pay for private repository, but for social programming, the free account is enough (and a MUST somehow).

A.2 SET UP CLIENT

Actually you do not need to install Git software literally to play with Github, also you can forget about SSH, Putty and such (if you don't understand what they mean, just skip them and you're good). Github offers a wonderful clients, "Github for Windows", which is the easiest way to play with Github in Windows machines:

http://windows.github.com/



libgit2 - the Git linkable library

libgit2 is a portable, pure C implementation of the Git core metho linkable library with a solid API, allowing you to write native speec any language with bindings.

libgit2 is licensed under a very permissive license (GPLv2 with a s This basically means that you can link it (unmodified) with any kinc to release its source code.

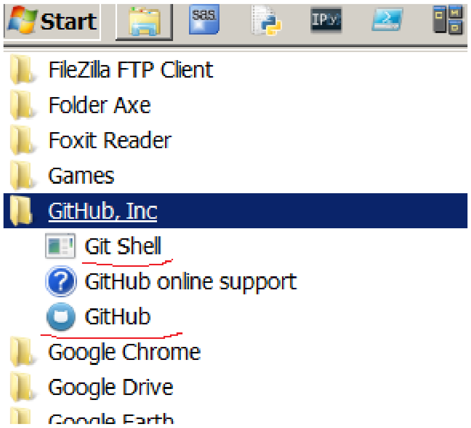
- Mailing list: libgit2@librelist.org
  - Archives: http://librelist.com/browser/libgit2/
- Website: http://libgit2.github.com

Introducing GitHub for Windows

Develop on Windows, share on GitHub.

The easiest way to use Git on Windows. Period.

Download the installer then install it with default options and you're set. You will get two components, a Git Shell (if you want to play cool but not required) and a client (which is what we need to keep move):

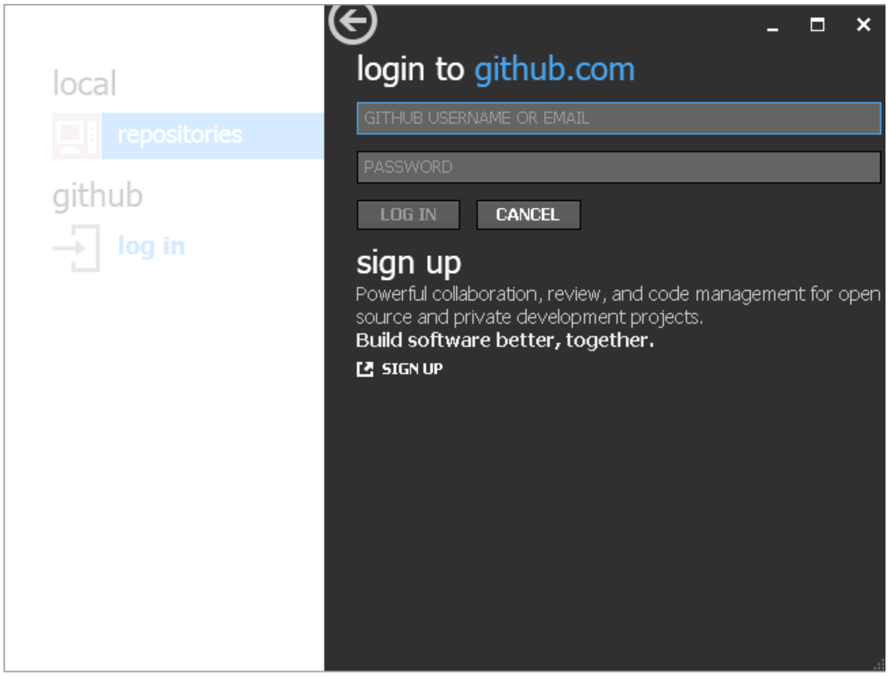


By the way, there is also a bonus by installing "Github for Windows": you will also get a basic Linux shell (anyway, it won't hurt):

B. GET STARTED

B.1 LOG INTO CLIENT

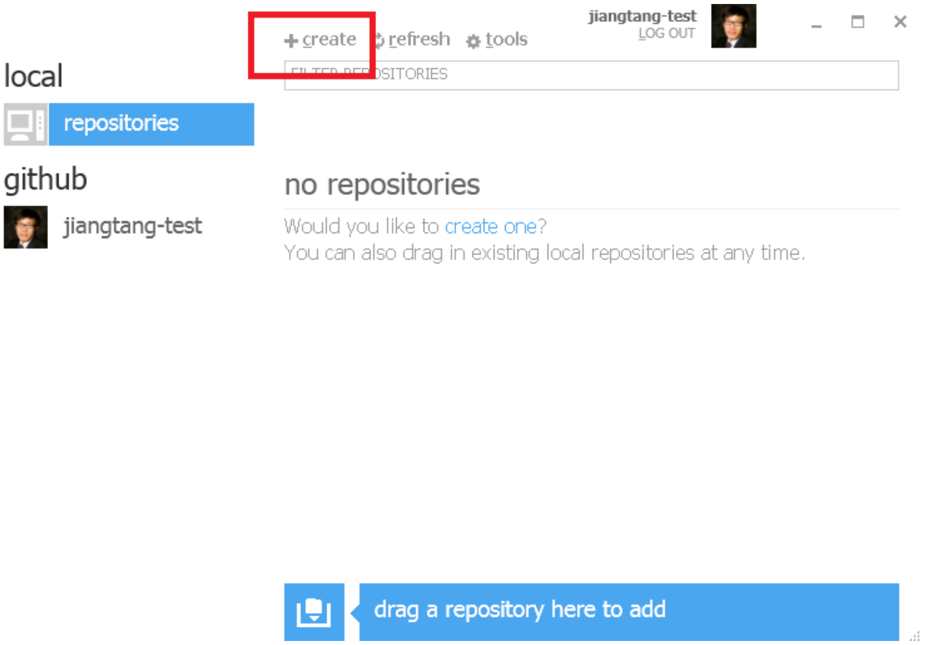
Launch the program "Github" and enter the credentials (your Github account) then hit "LOG IN":



Powerful collaboration, review, and code management for open source and private development projects.
Build software better, together.

B.2 CREATE A REPOSITORY

To start over, create a new repository by clicking "create" (or "add" in old versions):



no repositories

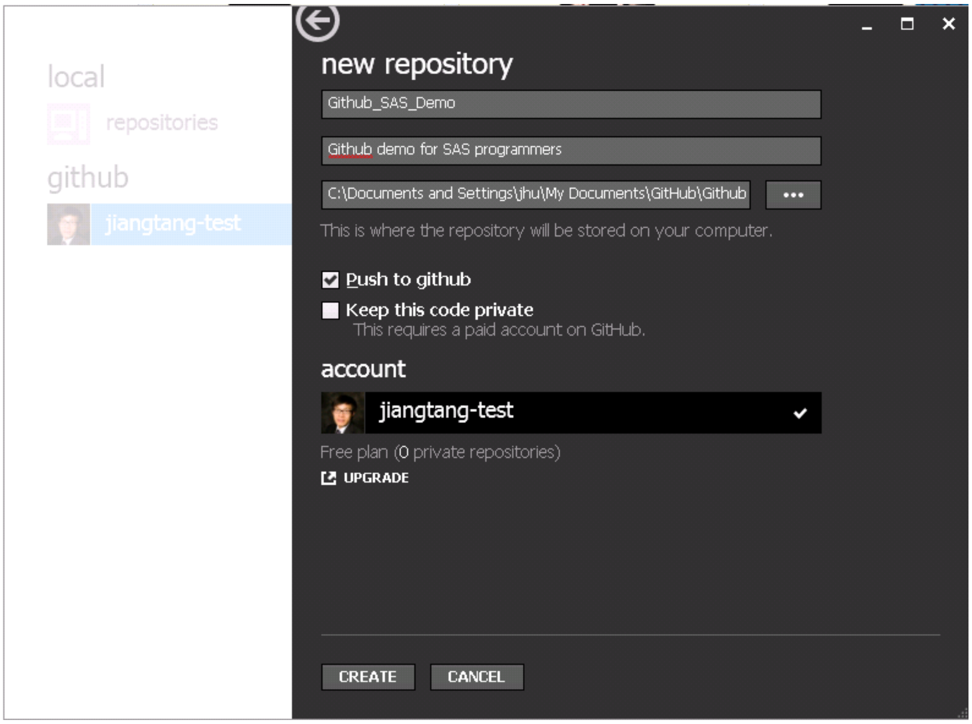
Would you like to create one?
You can also drag in existing local repositories at any time.

Then fill out all the requirements:

NAME: name of the repository (a name for a folder in Windows Explore);

DISCRIPTION: optional;

Directory: Don’t touch; use default.



new repository

Github_SAS_Demo

Github demo for SAS programmers

C:\Documents and Settings\jhu\My Documents\GitHub\Github

This is where the repository will be stored on your computer.

☑ Push to github

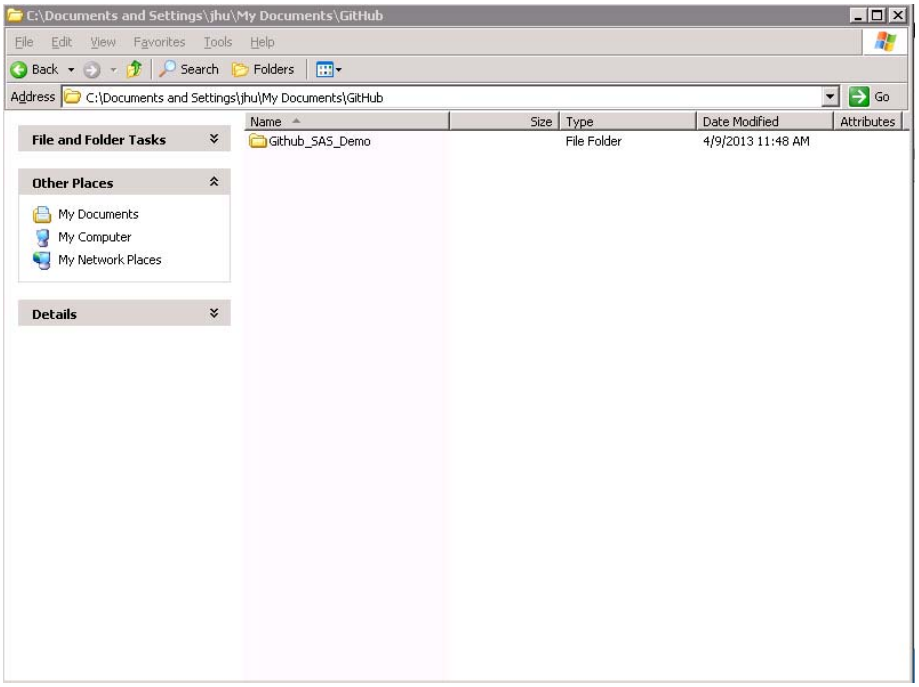
□ Keep this code private
This requires a paid account on GitHub.

account

jiangtang-test ✓

Free plan (0 private repositories)

Return to Windows Explore (C:\Documents and Settings\<YOUR_ID>\My Documents\GitHub\), and you will see a folder was created:

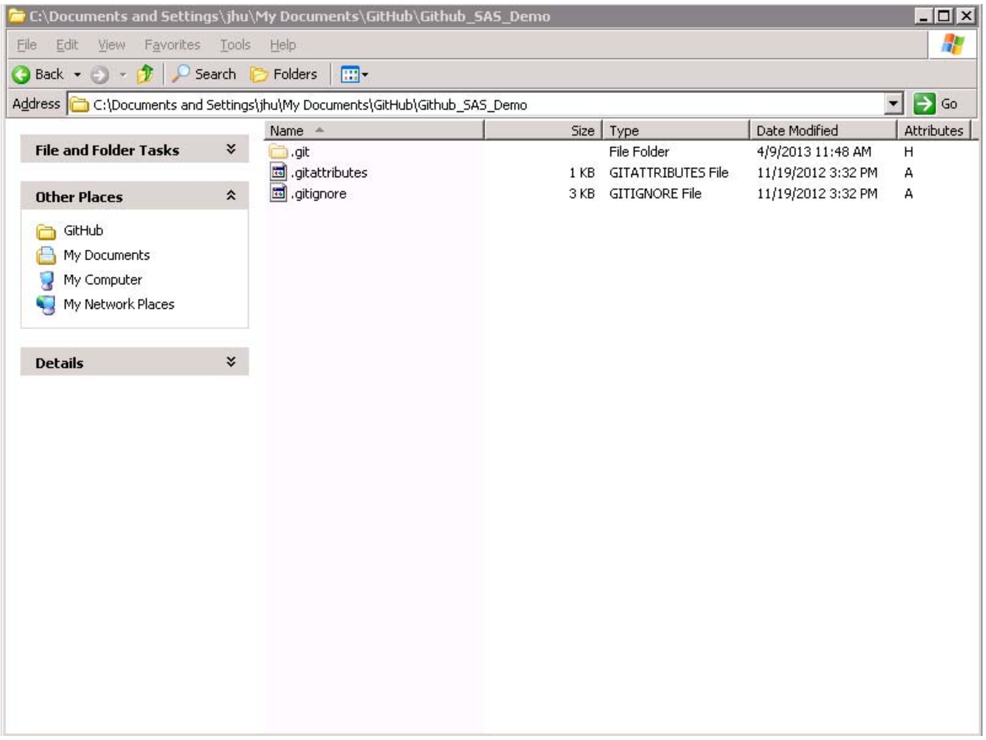


C:\Documents and Settings\jhu\My Documents\GitHub

Address C:\Documents and Settings\jhu\My Documents\GitHub

Name	Size	Type	Date Modified	Attributes
Github_SAS_Demo		File Folder	4/9/2013 11:48 AM	

Open the folder, there are some initial setting files. Ignore them.



C:\Documents and Settings\jhu\My Documents\GitHub\Github_SAS_Demo

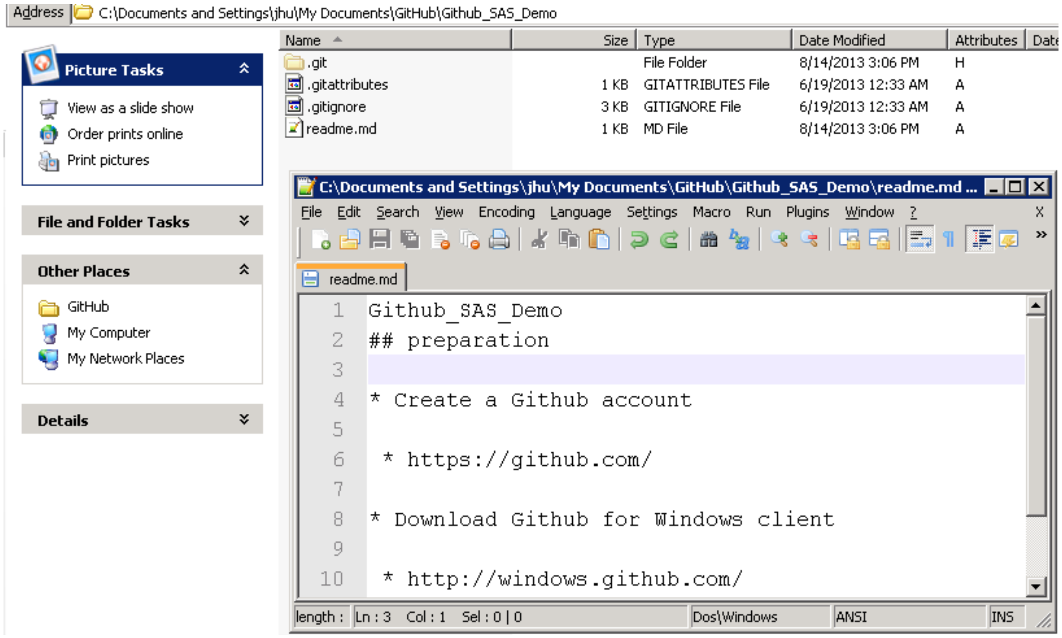
Address C:\Documents and Settings\jhu\My Documents\GitHub\Github_SAS_Demo

Name	Size	Type	Date Modified	Attributes
.git		File Folder	4/9/2013 11:48 AM	H
.gitattributes	1 KB	GITATTRIBUTES File	11/19/2012 3:32 PM	A
.gitignore	3 KB	GITIGNORE File	11/19/2012 3:32 PM	A

B.3 PUSH FIRST FILE

It is conventional to add a “read me” file for your repository to address anything you want your readers know about. Github supports Markdown, so you can simply add a readme.txt or readme.md if you prefer the rich format by Markdown.

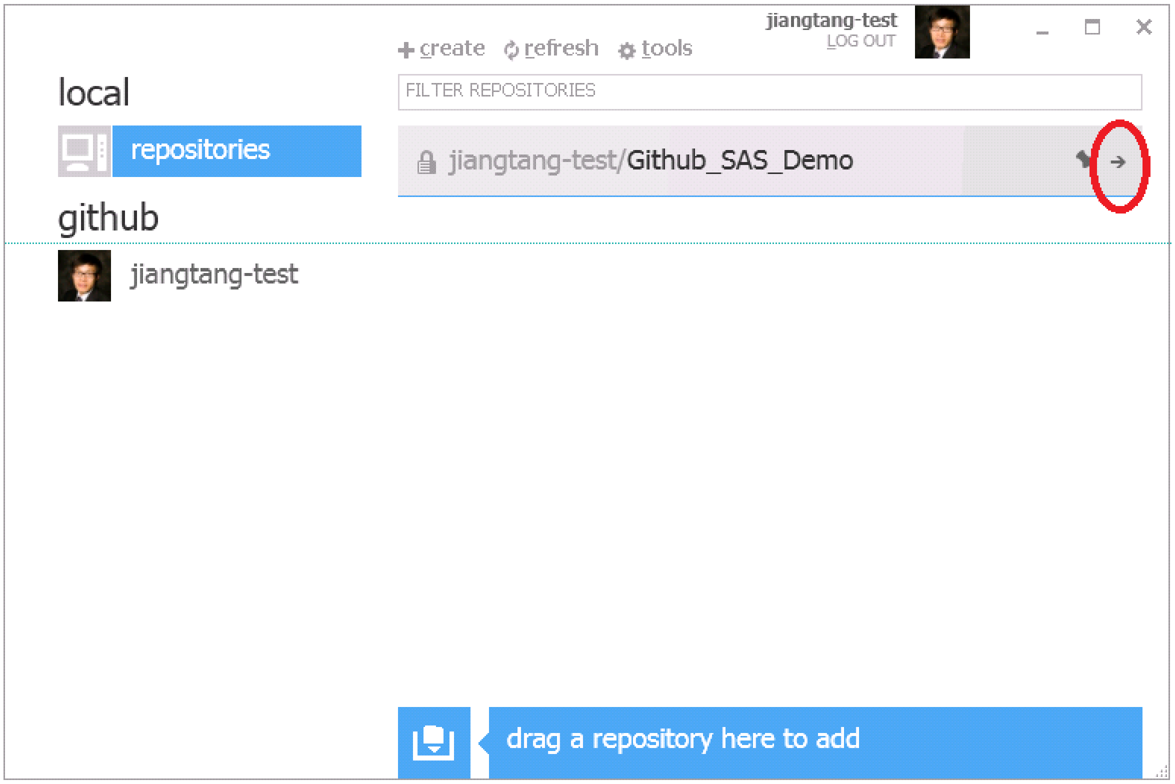
In the following demo, I use my favorite text editor Notepad++ to create a readme.md:


Address
C:\Documents and Settings\jhu\My Documents\GitHub\Github_SAS_Demo
Picture Tasks
View as a slide show
Order prints online
Print pictures
File and Folder Tasks
Other Places
GitHub
My Computer
My Network Places
Details
C:\Documents and Settings\jhu\My Documents\GitHub\Github_SAS_Demo\readme.md ...
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
X
readme.md
length : Ln : 3 Col : 1 Sel : 0 | 0
Dos\Windows
ANSI
INS

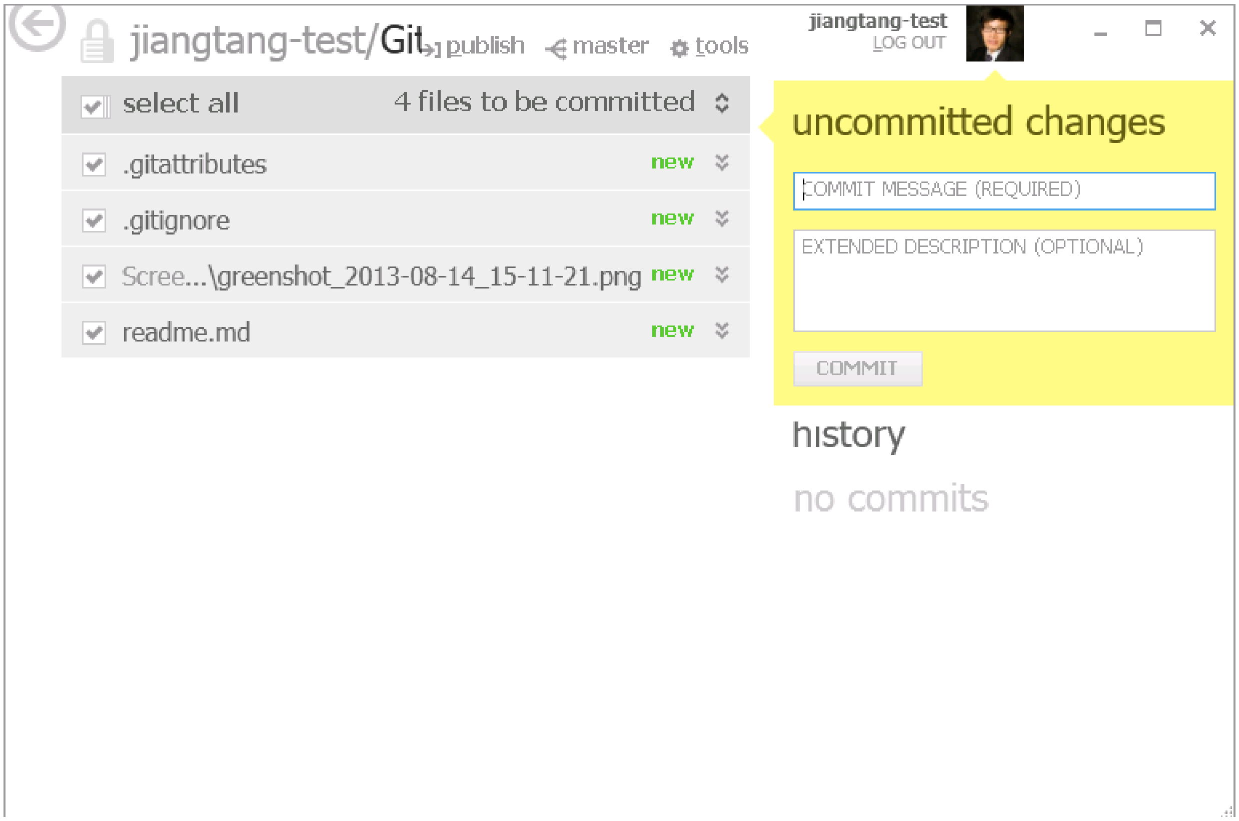
Name	Size	Type	Date Modified	Attributes	Date
.git		File Folder	8/14/2013 3:06 PM	H	
.gitattributes	1 KB	GITATTRIBUTES File	6/19/2013 12:33 AM	A	
.gitignore	3 KB	GITIGNORE File	6/19/2013 12:33 AM	A	
readme.md	1 KB	MD File	8/14/2013 3:06 PM	A	

```
Github_SAS_Demo
## preparation

* Create a Github account

 * https://github.com/

* Download Github for Windows client

 * http://windows.github.com/
```

Then launch the Github client and navigate into the repository:

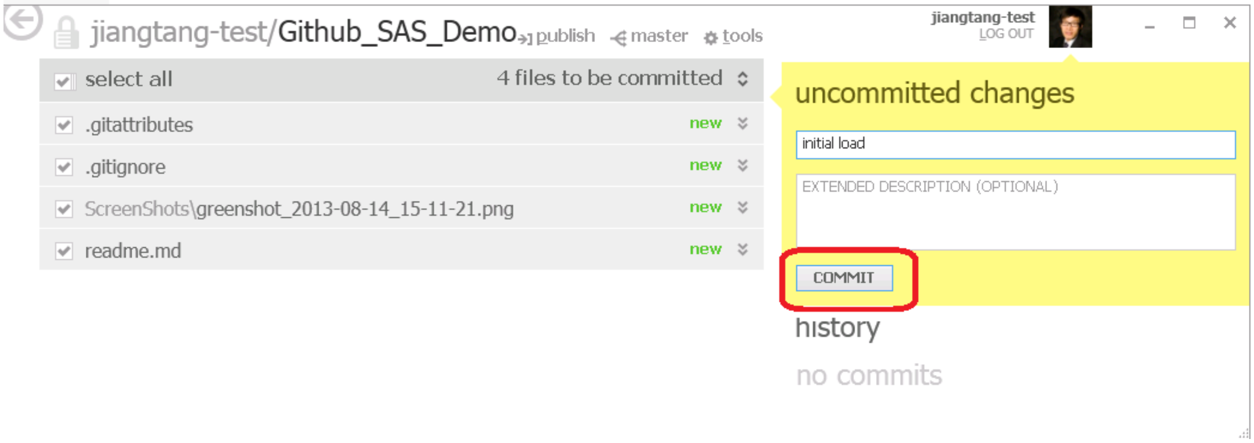


You will see all new files in the local repository are marked as “New” which you are supposed to push to the server:

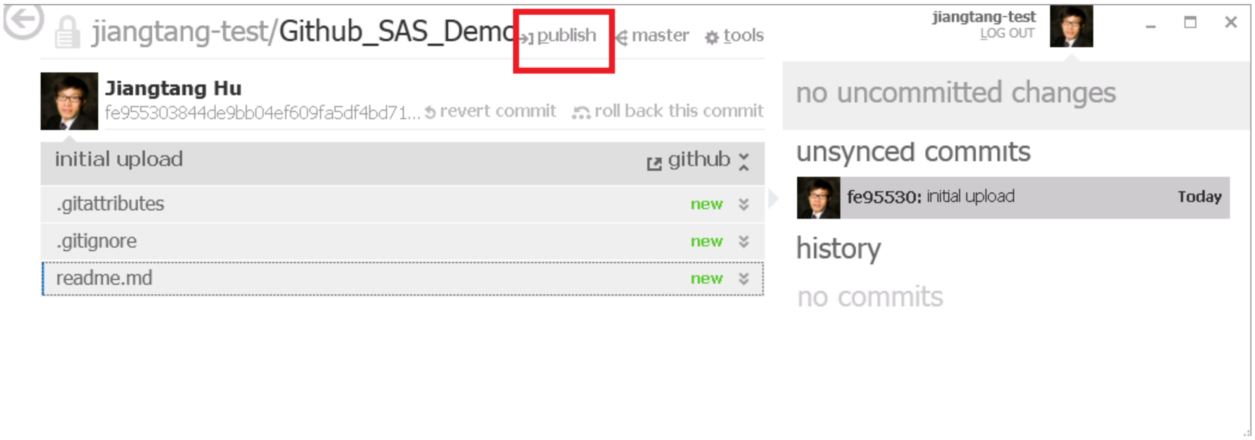


☑ select all	4 files to be committed
☑ .gitattributes	new
☑ .gitignore	new
☑ Scree...\greenshot_2013-08-14_15-11-21.png	new
☑ readme.md	new

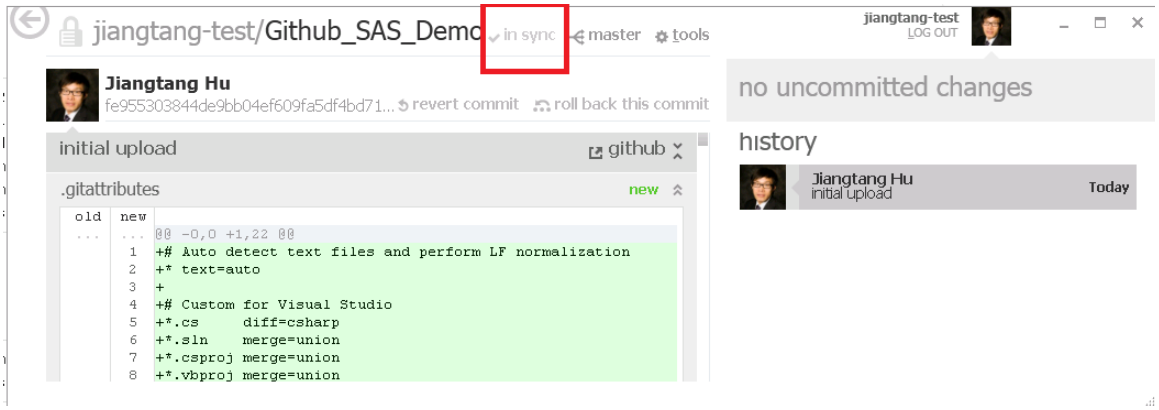
Write something as commit comments and click “COMMIT”:



The “COMMIT” action will keep track your code in the local repository (in your Github folder). To make it universally accessible (in the server, or “remote repository” which you can browse online), click “Publish”:

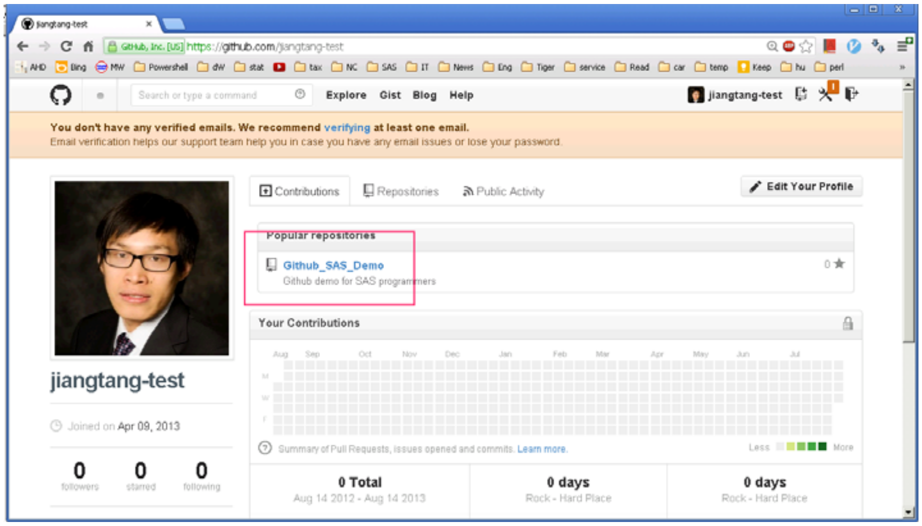


This “Publish” action (after “COMMIT”) will push your locally committed files to the remote repository (which is Github hosted). If all goes well, you will see gray “in sync” indicating your local files are in sync with the server:



```
@@ -0,0 +1,22 @@
+# Auto detect text files and perform LF normalization
+* text=auto
+
+# Custom for Visual Studio
+*.cs     diff=csharp
+*.sln    merge=union
+*.csproj merge=union
+*.vbproj merge=union
```

To check it, open a web browser to navigate to Github.com by supplying your credentials:



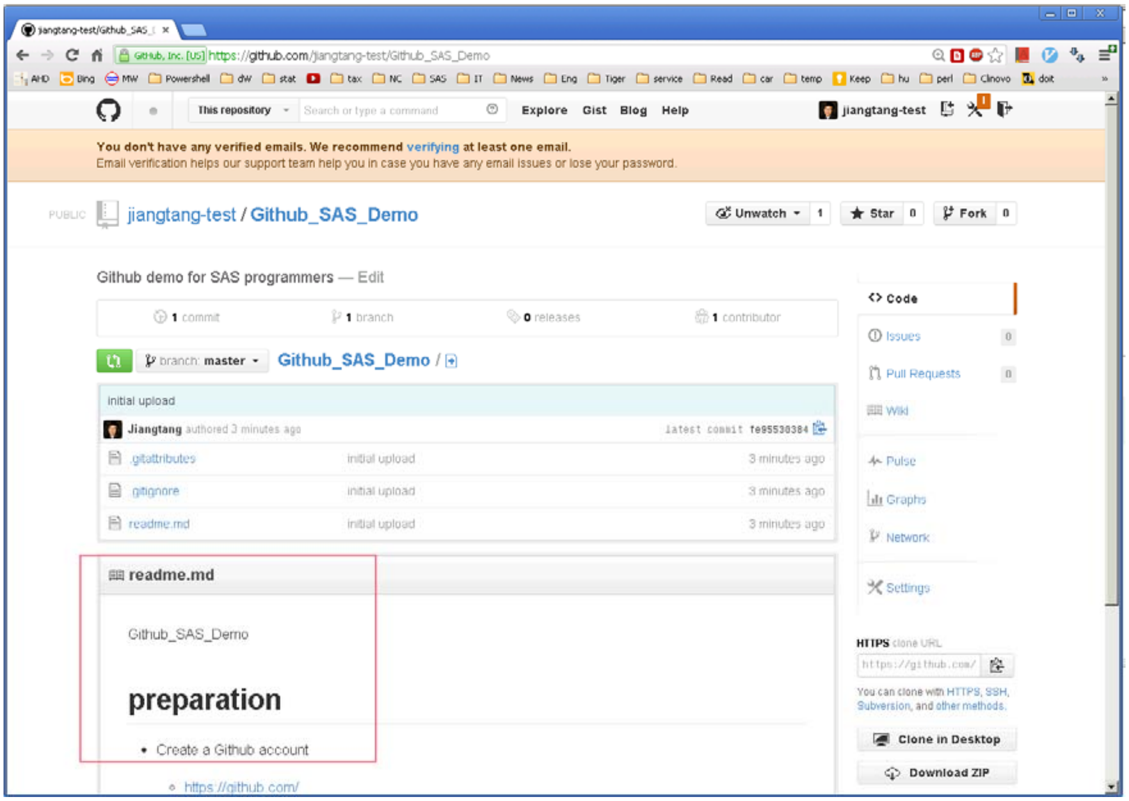
You don't have any verified emails. We recommend verifying at least one email.
Email verification helps our support team help you in case you have any email issues or lose your password.

Joined on Apr 09, 2013

Summary of Pull Requests, issues opened and commits. Learn more.

0 Total	0 days	0 days
Aug 14 2012 - Aug 14 2013	Rock - Hard Place	Rock - Hard Place

Navigate the repository you just created and you will find all your committed files (and the readme.md looks good):



You don't have any verified emails. We recommend verifying at least one email.
Email verification helps our support team help you in case you have any email issues or lose your password.

Github demo for SAS programmers — Edit

initial upload

Jiangtang authored 3 minutes ago latest commit fe95530384

.gitattributes	initial upload	3 minutes ago
.gitignore	initial upload	3 minutes ago
readme.md	initial upload	3 minutes ago

readme.md

Github_SAS_Demo

preparation

- Create a Github account
  - https://github.com/

You can clone with HTTPS, SSH, Subversion, and other methods.

B.4 SUMMARY

If you only need a closed version control and web hosting system, the above is all you needed:

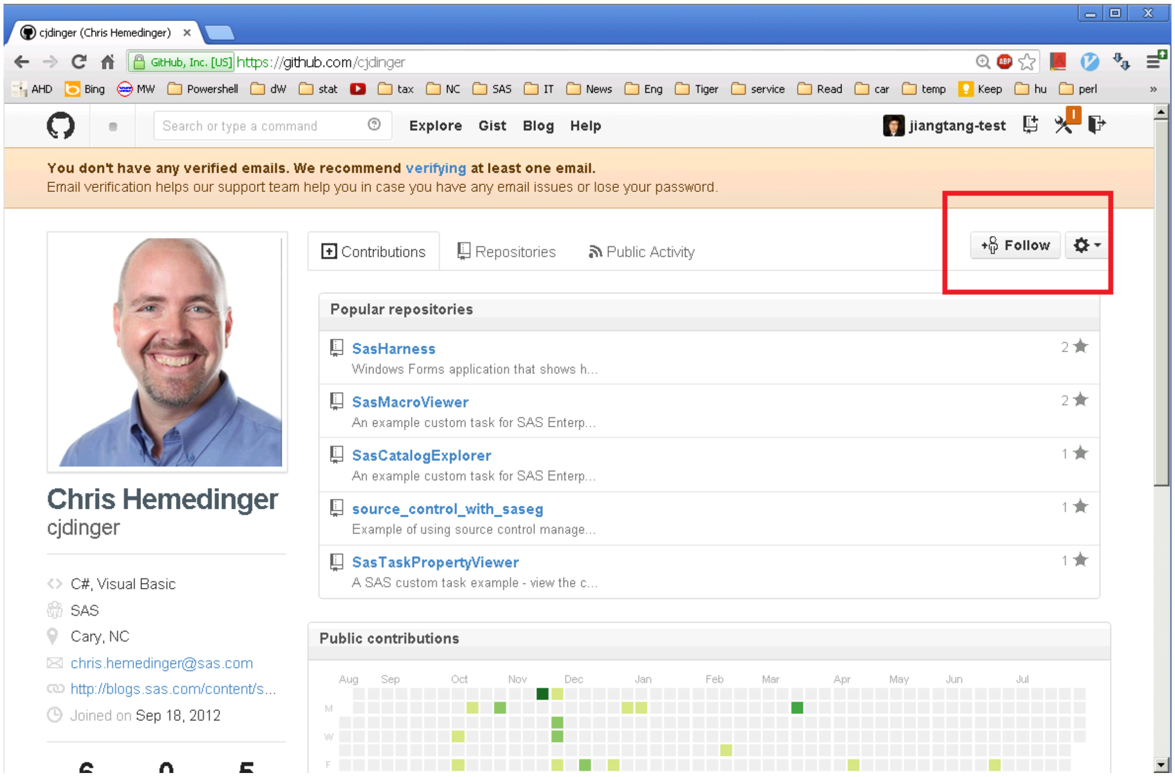
- Create and edit files on your local machine
- If you feel good for the files, launch the Github client, click the following two buttons in sequence
    - o “COMMIT” all modification against the files and then
    - o “Publish” them to the server

C. PLAY AROUND AND BE SOCIAL

If you want to play cool and take the best advantage of Github, you will learn how to interact with other users worldwide. Literally, you can follow a user, watch a repository, clone a repository and, the most exiting (while little ambiguous) action, **fork** a repository (you will get it soon).

C1. FOLLOW A USER

In Github website, find anyone you are interested in and click “Follow” in their Github homepage:



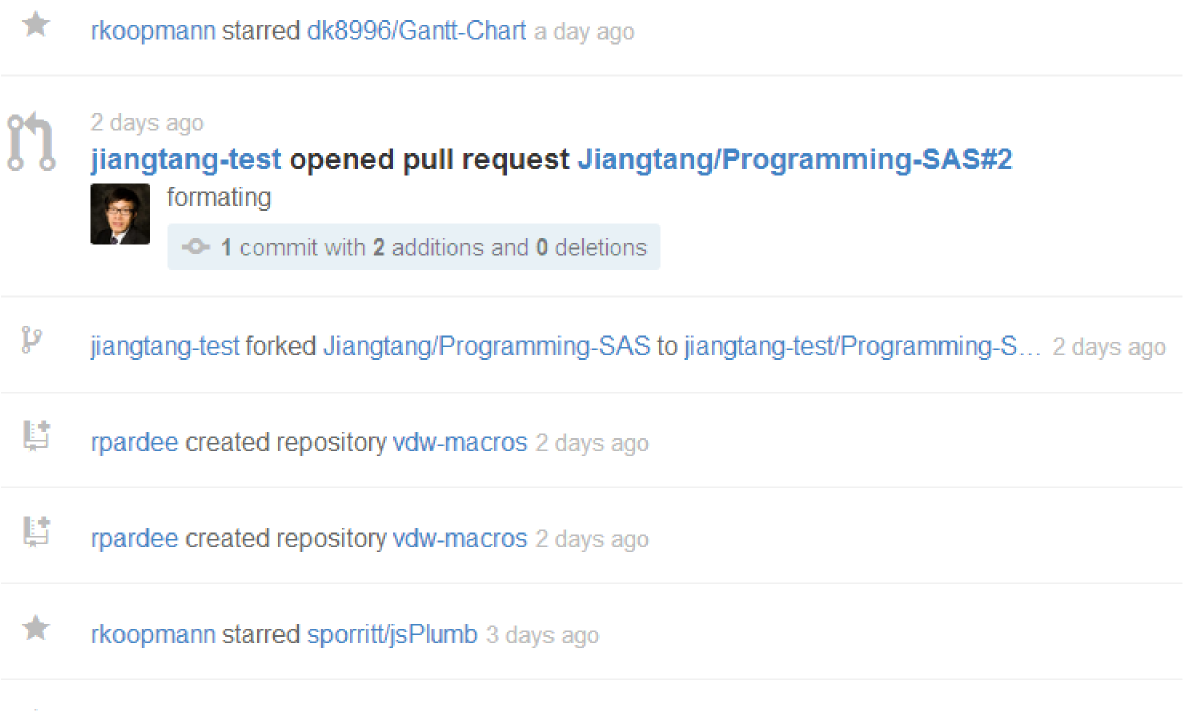
You don't have any verified emails. We recommend verifying at least one email.
Email verification helps our support team help you in case you have any email issues or lose your password.

Chris Hemedinger
cjdinger

C#, Visual Basic
SAS
Cary, NC
chris.hemedinger@sas.com
http://blogs.sas.com/content/s...
Joined on Sep 18, 2012

Popular repositories	
SasHarness Windows Forms application that shows h...	2 ★
SasMacroViewer An example custom task for SAS Enterp...	2 ★
SasCatalogExplorer An example custom task for SAS Enterp...	1 ★
source_control_with_saseg Example of using source control manage...	1 ★
SasTaskPropertyViewer A SAS custom task example - view the c...	1 ★

By following a user, you will get all the notifications about his/her GitHub activities on your online dashboard:



rkoopmann starred dk8996/Gantt-Chart a day ago

2 days ago

jiangtang-test opened pull request Jiangtang/Programming-SAS#2

formating

1 commit with 2 additions and 0 deletions

jiangtang-test forked Jiangtang/Programming-SAS to jiangtang-test/Programming-S… 2 days ago

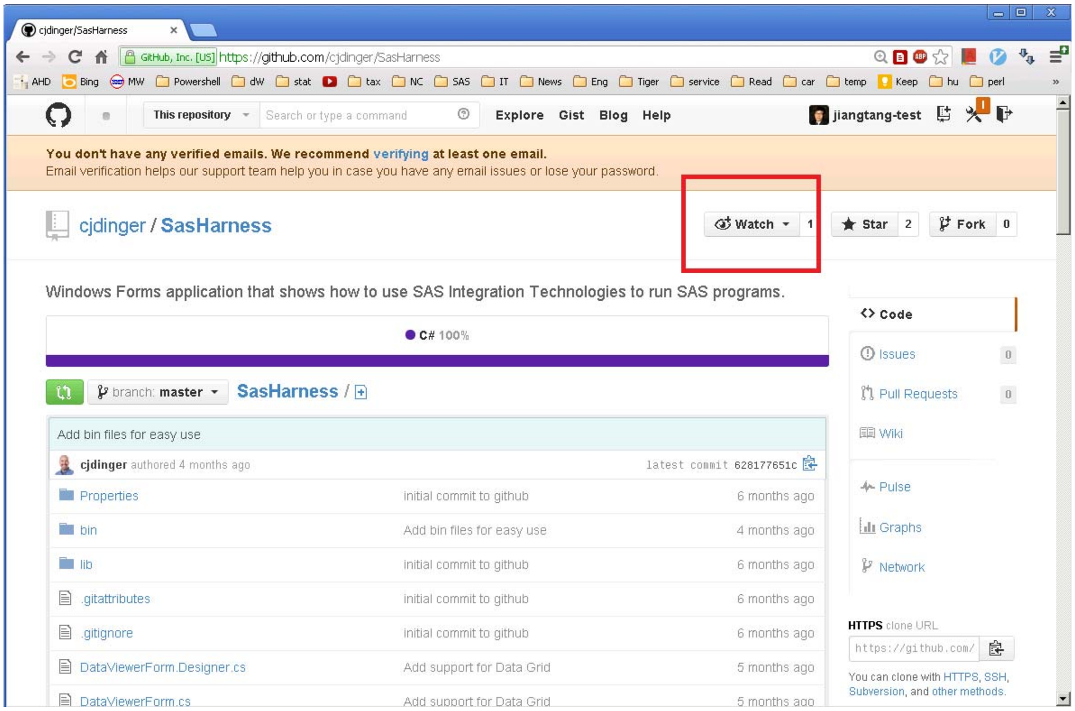
rpardee created repository vdw-macros 2 days ago

rpardee created repository vdw-macros 2 days ago

rkoopmann starred sporritt/jsPlumb 3 days ago

C2. WATCH A REPOSITORY

You can also watch a repository by click “Watch” in a repository page if you want to keep tuned with any activities against a specific project:



cjdinger/SasHarness
GitHub, Inc. [US] https://github.com/cjdinger/SasHarness
AHD Bing MW Powershell dW stat tax NC SAS IT News Eng Tiger service Read car temp Keep hu perl
This repository
Search or type a command
Explore Gist Blog Help
jiangtang-test

You don't have any verified emails. We recommend verifying at least one email.
Email verification helps our support team help you in case you have any email issues or lose your password.

cjdinger / **SasHarness**

Windows Forms application that shows how to use SAS Integration Technologies to run SAS programs.

Add bin files for easy use

cjdinger authored 4 months ago latest commit 628177651c

Properties	initial commit to github	6 months ago
bin	Add bin files for easy use	4 months ago
lib	initial commit to github	6 months ago
.gitattributes	initial commit to github	6 months ago
.gitignore	initial commit to github	6 months ago
DataViewerForm.Designer.cs	Add support for Data Grid	5 months ago
DataViewerForm.cs	Add support for Data Grid	5 months ago

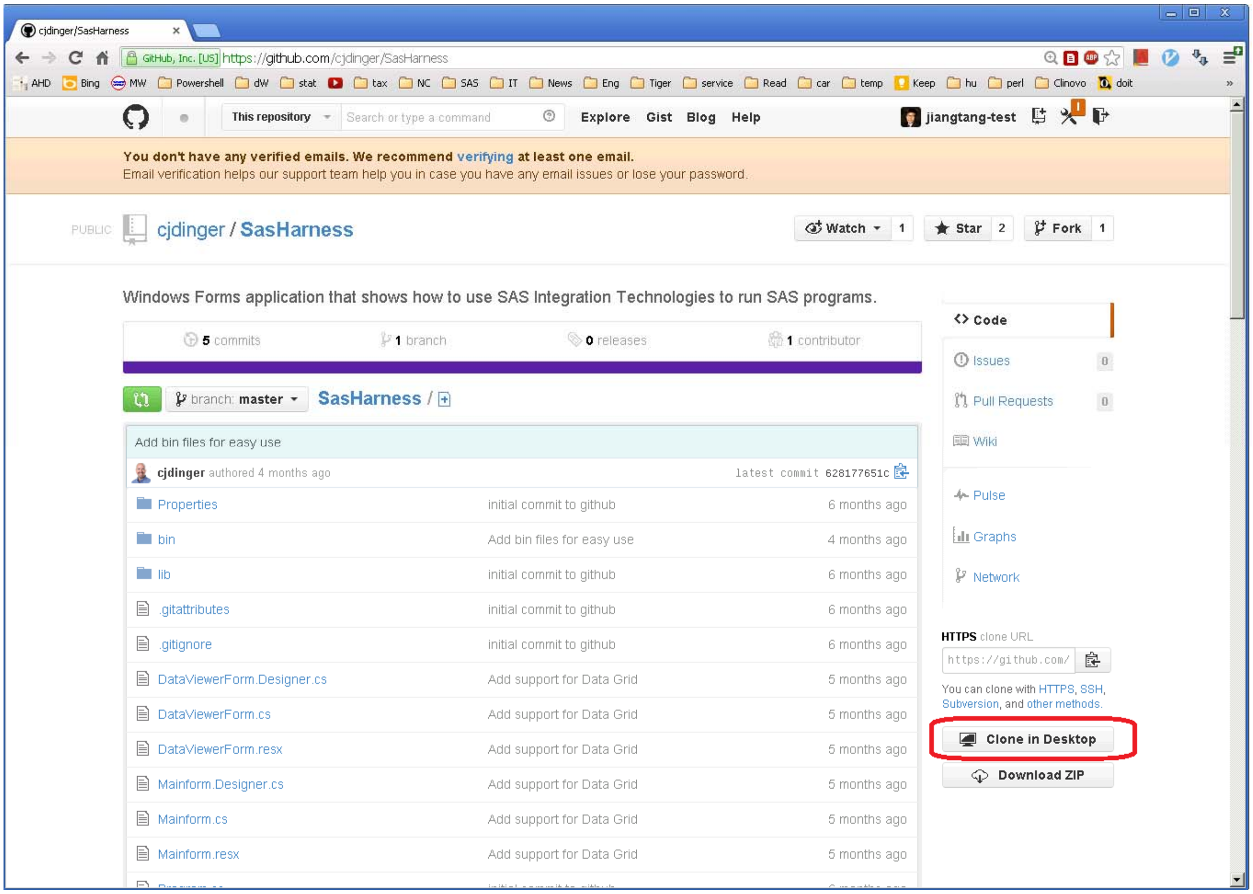
HTTPS clone URL

https://github.com/

You can clone with HTTPS, SSH, Subversion, and other methods.

C3. CLONE A REPOSITORY

You can clone a repository from other user if you need a local copy. Navigate a repository online, click “Clone in desktop”:



You don't have any verified emails. We recommend verifying at least one email.
Email verification helps our support team help you in case you have any email issues or lose your password.

Windows Forms application that shows how to use SAS Integration Technologies to run SAS programs.

You can clone with HTTPS, SSH, Subversion, and other methods.

Add bin files for easy use

cjdinger authored 4 months ago — latest commit 628177651c

Properties	initial commit to github	6 months ago
bin	Add bin files for easy use	4 months ago
lib	initial commit to github	6 months ago
.gitattributes	initial commit to github	6 months ago
.gitignore	initial commit to github	6 months ago
DataViewerForm.Designer.cs	Add support for Data Grid	5 months ago
DataViewerForm.cs	Add support for Data Grid	5 months ago
DataViewerForm.resx	Add support for Data Grid	5 months ago
Mainform.Designer.cs	Add support for Data Grid	5 months ago
Mainform.cs	Add support for Data Grid	5 months ago
Mainform.resx	Add support for Data Grid	5 months ago

If you happen to have used a SVN system, the “Clone” is just like the ”Check out” action. You will get a local copy (with all committed information) in your Github folder (C:\Users\<Your_ID>\Documents\GitHub\).

You can also get a compress file by clicking “Downloaded ZIP”: you just get a local copy in your download folder (like C:\Users\<Your_ID>\Downloads) but without the committed comments.

C4. FORK A REPOSITORY

The heart of Github social programming is the concept of “Fork”. To participate a project through a traditional version control system like CVS and SVN, you server as a collaborator after you get the permissions: you can make modification to the original works or you can make a “Branch” away from the original repository (and if all goes well, you can push your branch back to the original work, again, if you have permissions).

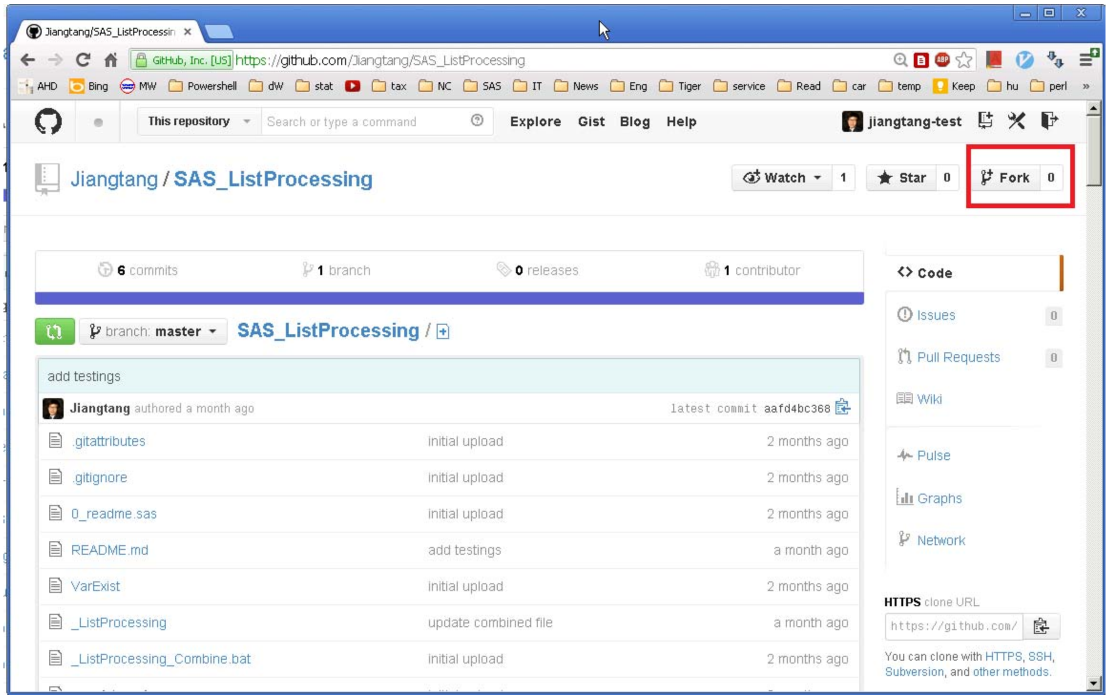
Github can do this way, mostly in private repositories. Here is the modern Web 2.0 way:

1. You “Fork” a repository in a repository homepage by click “Fork”. To fork a repository is like making a “branch” somehow but not exactly the same. You should have permissions to make a branch, but you don’t even need to notice the original owners (but they can get it through dashboard).
2. To fork is to make a connection and to get a remote repository. You still need a local repository. As showed in section C3, you click click “Clone in desktop”.
3. You modify the local copy just like your own files: commit them, publish them (to your own Github page). You can also get synced from the original development.

4. If you feel obligated that the original developer should incorporate some of your modifications, you make a “pull request” online. The owner will see it and if he/she feels good, the modifications will be pushed back to the original work by clicking a “yes” button (the “merge” process).

Here I play with two accounts, “Jiangtang” and “Jiangtang-test”.

User “Jiangtang-test”: navigate to a Jiangtang’s repository and click “Fork”:

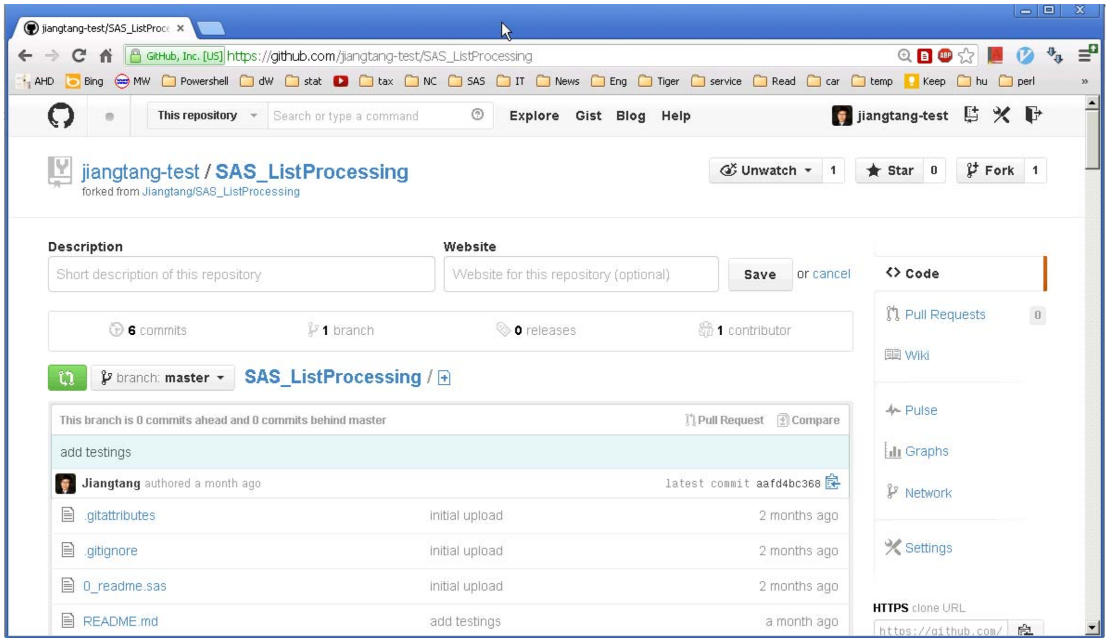

Jiangtang/SAS_ListProcessin
GitHub, Inc. [US] https://github.com/Jiangtang/SAS_ListProcessing
AHD Bing MW Powershell dW stat tax NC SAS IT News Eng Tiger service Read car temp Keep hu perl
This repository
Search or type a command
Explore Gist Blog Help
jiangtang-test
Jiangtang / SAS_ListProcessing
Watch 1
Star 0
Fork 0
6 commits
1 branch
0 releases
1 contributor
branch: master
SAS_ListProcessing / +
Code
Issues 0
Pull Requests 0
Wiki
Pulse
Graphs
Network
HTTPS clone URL
https://github.com/
You can clone with HTTPS, SSH, Subversion, and other methods.

add testings

Jiangtang authored a month ago — latest commit aafd4bc368

.gitattributes	initial upload	2 months ago
.gitignore	initial upload	2 months ago
0_readme.sas	initial upload	2 months ago
README.md	add testings	a month ago
VarExist	initial upload	2 months ago
_ListProcessing	update combined file	a month ago
_ListProcessing_Combine.bat	initial upload	2 months ago

After a while, Jiangtang-test will get a same repository but under his name and it is totally isolated with the original work:


jiangtang-test/SAS_ListProc
GitHub, Inc. [US] https://github.com/jiangtang-test/SAS_ListProcessing
AHD Bing MW Powershell dW stat tax NC SAS IT News Eng Tiger service Read car temp Keep hu perl
This repository
Search or type a command
Explore Gist Blog Help
jiangtang-test
jiangtang-test / SAS_ListProcessing
forked from Jiangtang/SAS_ListProcessing
Unwatch 1
Star 0
Fork 1
Description
Short description of this repository
Website
Website for this repository (optional)
Save or cancel
6 commits
1 branch
0 releases
1 contributor
branch: master
SAS_ListProcessing / +
Pull Request
Compare
Code
Pull Requests 0
Wiki
Pulse
Graphs
Network
Settings
HTTPS clone URL
https://github.com/

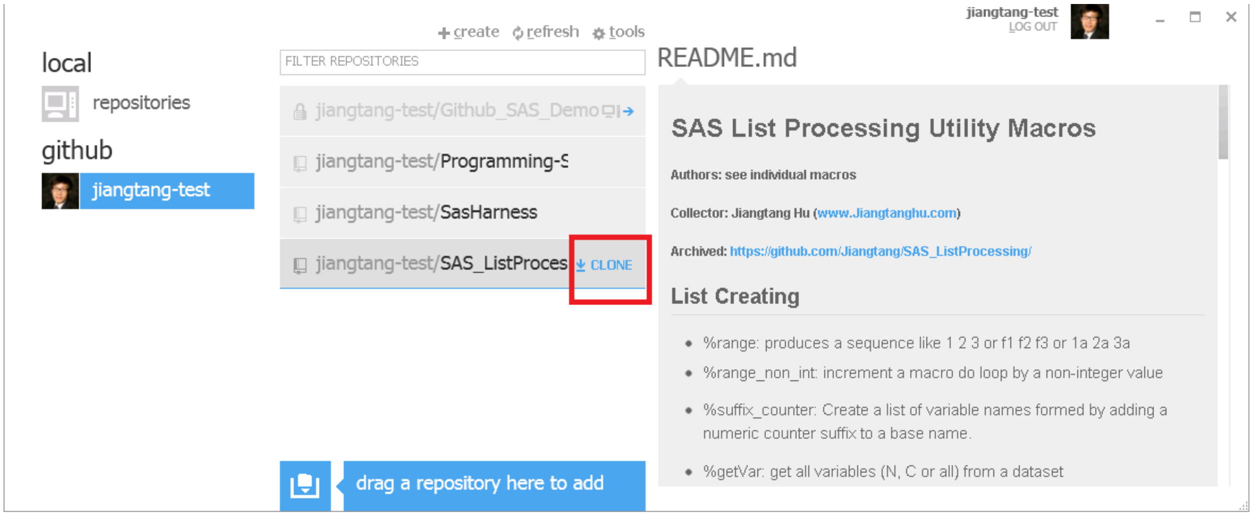
This branch is 0 commits ahead and 0 commits behind master

add testings

Jiangtang authored a month ago — latest commit aafd4bc368

.gitattributes	initial upload	2 months ago
.gitignore	initial upload	2 months ago
0_readme.sas	initial upload	2 months ago
README.md	add testings	a month ago

The forked repository will also be showed up in the Github client. Jiangtang-test can clone it to a local repository by click “CLONE”:


jiangtang-test
LOG OUT
+ create
refresh
tools
local
repositories
github
jiangtang-test
FILTER REPOSITORIES
jiangtang-test/Github_SAS_Demo
jiangtang-test/Programming-S
jiangtang-test/SasHarness
jiangtang-test/SAS_ListProces
CLONE
drag a repository here to add
README.md

SAS List Processing Utility Macros

Authors: see individual macros

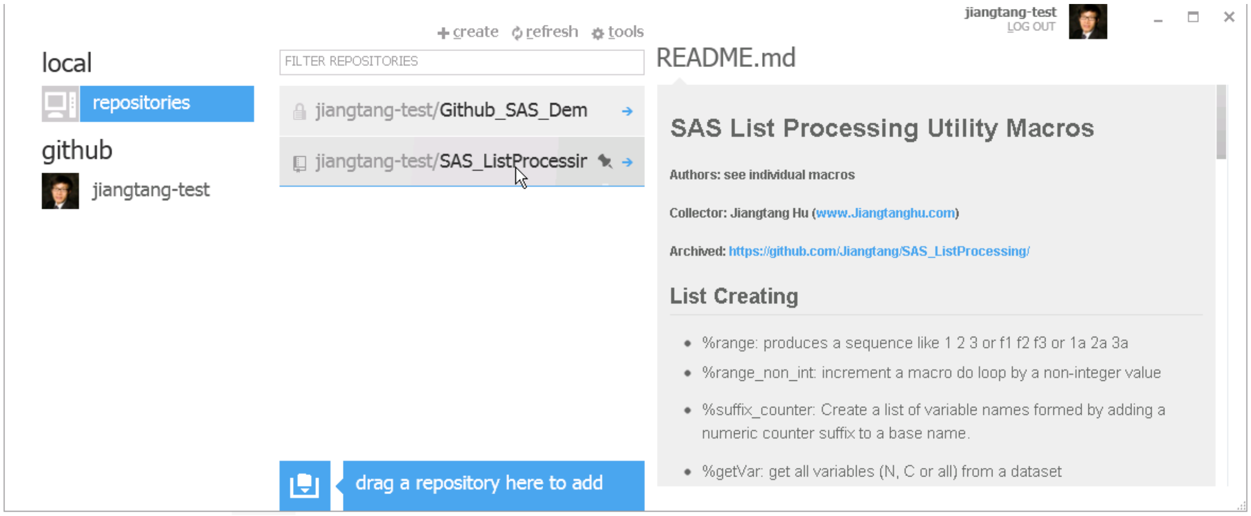
Collector: Jiangtang Hu (www.Jiangtanghu.com)

Archived: https://github.com/Jiangtang/SAS_ListProcessing/

List Creating

- %range: produces a sequence like 1 2 3 or f1 f2 f3 or 1a 2a 3a
- %range_non_int: increment a macro do loop by a non-integer value
- %suffix_counter: Create a list of variable names formed by adding a numeric counter suffix to a base name.
- %getVar: get all variables (N, C or all) from a dataset

Then you will get a local copy:



SAS List Processing Utility Macros

Authors: see individual macros

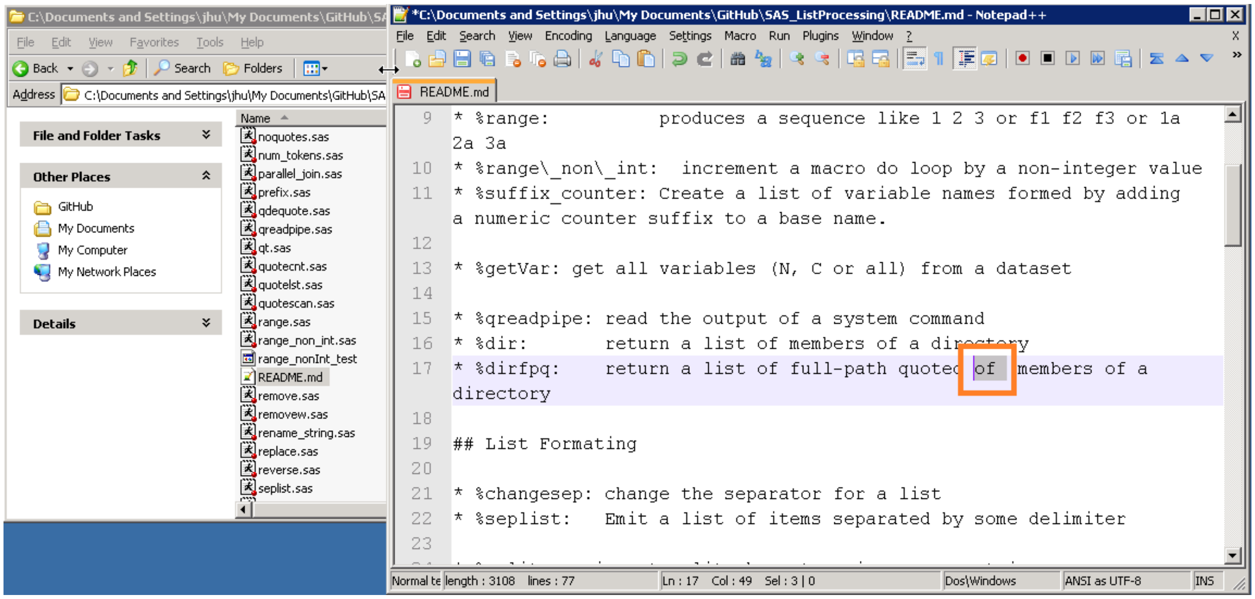
Collector: Jiangtang Hu (www.Jiangtanghu.com)

Archived: https://github.com/Jiangtang/SAS_ListProcessing/

List Creating

- %range: produces a sequence like 1 2 3 or f1 f2 f3 or 1a 2a 3a
- %range_non_int: increment a macro do loop by a non-integer value
- %suffix_counter: Create a list of variable names formed by adding a numeric counter suffix to a base name.
- %getVar: get all variables (N, C or all) from a dataset

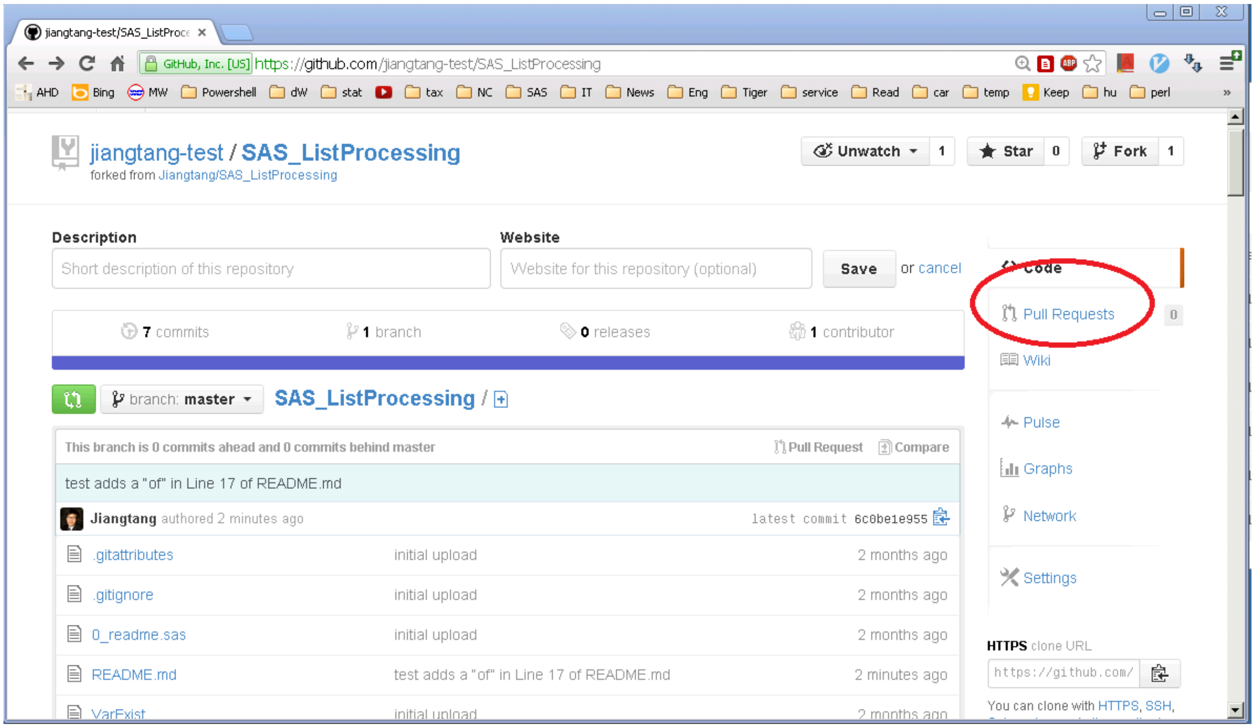
Jiangtang-test adds a “of” in Line 17 of README.md:



```
 9  * %range:         produces a sequence like 1 2 3 or f1 f2 f3 or 1a
    2a 3a
10  * %range\_non\_int:  increment a macro do loop by a non-integer value
11  * %suffix_counter: Create a list of variable names formed by adding
    a numeric counter suffix to a base name.
12
13  * %getVar: get all variables (N, C or all) from a dataset
14
15  * %qreadpipe: read the output of a system command
16  * %dir:       return a list of members of a directory
17  * %dirfpq:    return a list of full-path quoted of members of a
    directory
18
19  ## List Formating
20
21  * %changesep: change the separator for a list
22  * %seplist:   Emit a list of items separated by some delimiter
23
```

Normal te length : 3108 lines : 77 Ln : 17 Col : 49 Sel : 3 | 0 Dos\Windows ANSI as UTF-8 INS

Jiangtang-test then commits it and syncs it with remote repository. After that, he opens this repository in his Github page and want to make this modification available to the original developer (Jiangtang) by clicking “Pull Requests” and then “New pull request”:


jiangtang-test/SAS_ListProc
GitHub, Inc. [US] https://github.com/jiangtang-test/SAS_ListProcessing
AHD Bing MW Powershell dW stat tax NC SAS IT News Eng Tiger service Read car temp Keep hu perl
Unwatch 1
Star 0
Fork 1
Code
Pull Requests 0
Wiki
Pulse
Graphs
Network
Settings

jiangtang-test / SAS_ListProcessing

forked from Jiangtang/SAS_ListProcessing

Description: Short description of this repository

Website: Website for this repository (optional)

Save or cancel

7 commits 1 branch 0 releases 1 contributor

branch: master SAS_ListProcessing / +

This branch is 0 commits ahead and 0 commits behind master Pull Request Compare

test adds a "of" in Line 17 of README.md

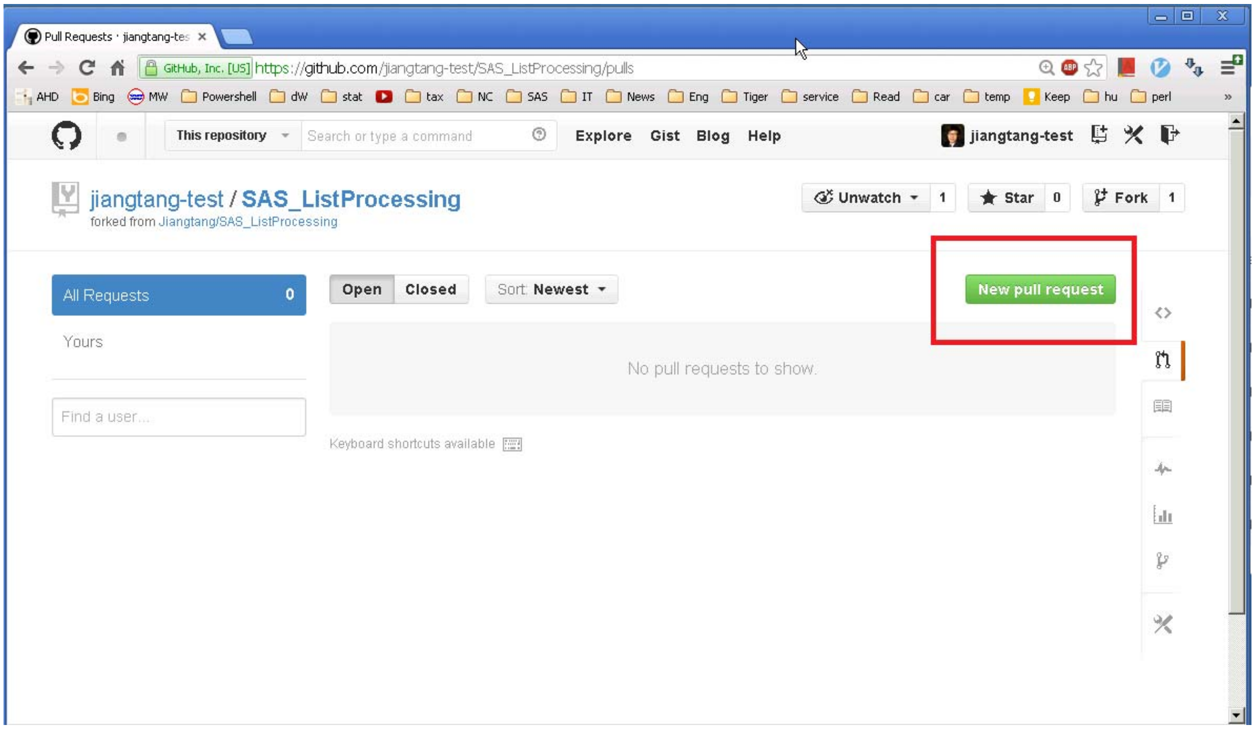
Jiangtang authored 2 minutes ago latest commit 6c0be1e955

.gitattributes	initial upload	2 months ago
.gitignore	initial upload	2 months ago
0_readme.sas	initial upload	2 months ago
README.md	test adds a "of" in Line 17 of README.md	2 minutes ago
VarExist	initial upload	2 months ago

HTTPS clone URL

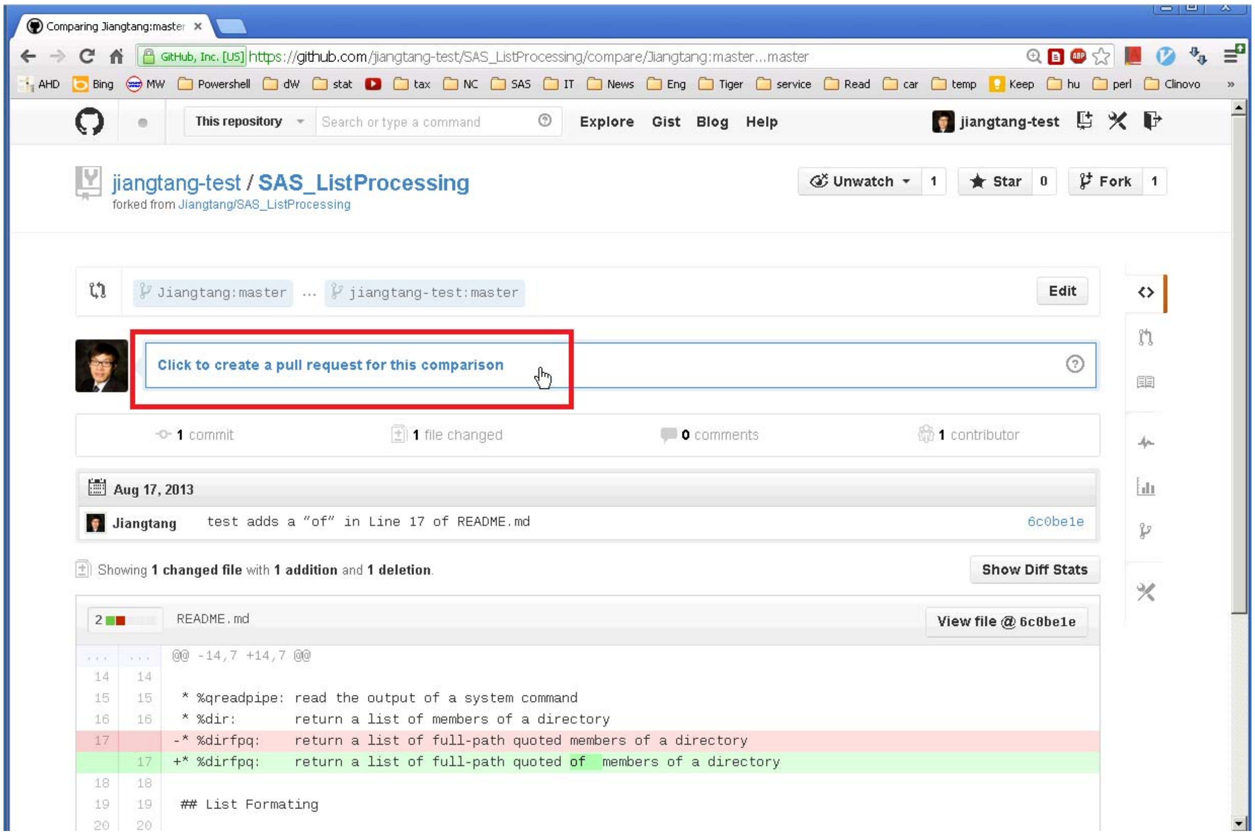
https://github.com/

You can clone with HTTPS, SSH,


Pull Requests · jiangtang-tes
https://github.com/jiangtang-test/SAS_ListProcessing/pulls
This repository
Search or type a command
Explore
Gist
Blog
Help
jiangtang-test
jiangtang-test / SAS_ListProcessing
forked from Jiangtang/SAS_ListProcessing
Unwatch 1
Star 0
Fork 1
All Requests 0
Yours
Find a user...
Open
Closed
Sort: Newest
New pull request
Keyboard shortcuts available

No pull requests to show.

After clicking “New pull request”, Jiangtang-test can take a look at the modification made and then “Click to create a pull request for this comparion”:


Comparing Jiangtang:master
https://github.com/jiangtang-test/SAS_ListProcessing/compare/Jiangtang:master...master
This repository
Search or type a command
Explore
Gist
Blog
Help
jiangtang-test
jiangtang-test / SAS_ListProcessing
forked from Jiangtang/SAS_ListProcessing
Unwatch 1
Star 0
Fork 1
Jiangtang:master ... jiangtang-test:master
Edit
Click to create a pull request for this comparison
1 commit
1 file changed
0 comments
1 contributor
Show Diff Stats
View file @ 6c0be1e

Aug 17, 2013

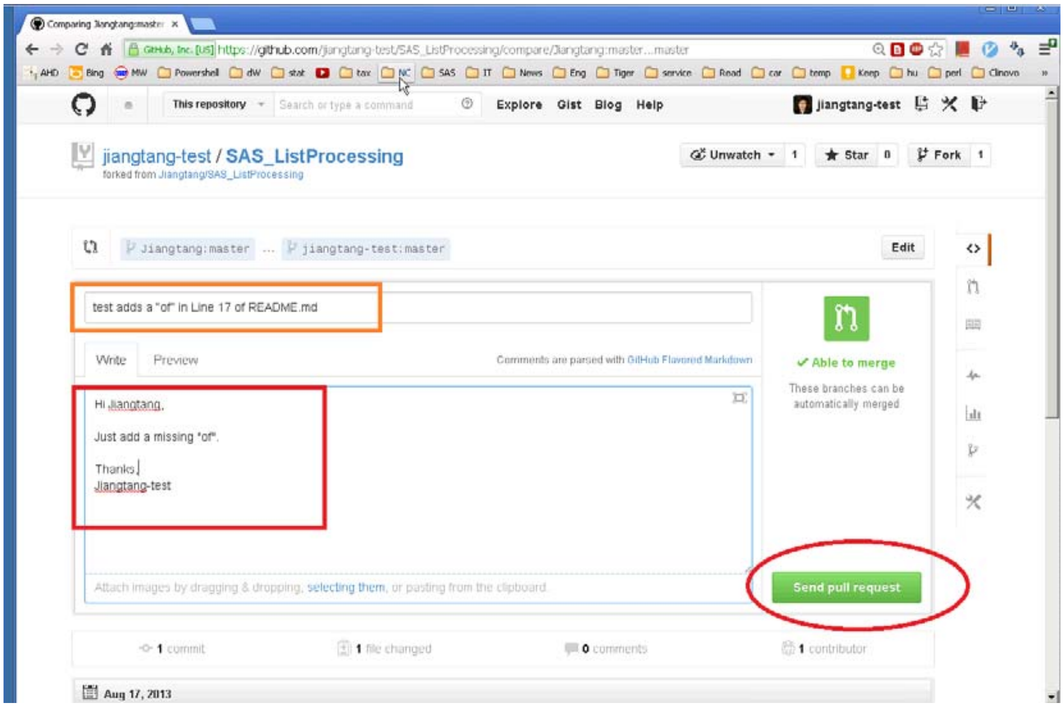
Jiangtang test adds a “of” in Line 17 of README.md 6c0be1e

Showing **1 changed file** with **1 addition** and **1 deletion**.

README.md

```
...  ...  @@ -14,7 +14,7 @@
14   14
15   15    * %qreadpipe: read the output of a system command
16   16    * %dir:       return a list of members of a directory
17        -* %dirfpq:    return a list of full-path quoted members of a directory
     17   +* %dirfpq:    return a list of full-path quoted of members of a directory
18   18
19   19    ## List Formating
20   20
```

After filling out the request form, Jiangtang-test clicks “Send pull request” and wait for Jiangtang’s response:


Comparing Jiangtang:master
https://github.com/jiangtang-test/SAS_ListProcessing/compare/Jiangtang:master...master
This repository
Search or type a command
Explore
Gist
Blog
Help
jiangtang-test
jiangtang-test / SAS_ListProcessing
forked from Jiangtang/SAS_ListProcessing
Unwatch 1
Star 0
Fork 1
Jiangtang:master ... jiangtang-test:master
Edit
Write
Preview
Comments are parsed with GitHub Flavored Markdown
✔ Able to merge
These branches can be automatically merged
Attach images by dragging & dropping, selecting them, or pasting from the clipboard.
Send pull request
1 commit
1 file changed
0 comments
1 contributor
Aug 17, 2013

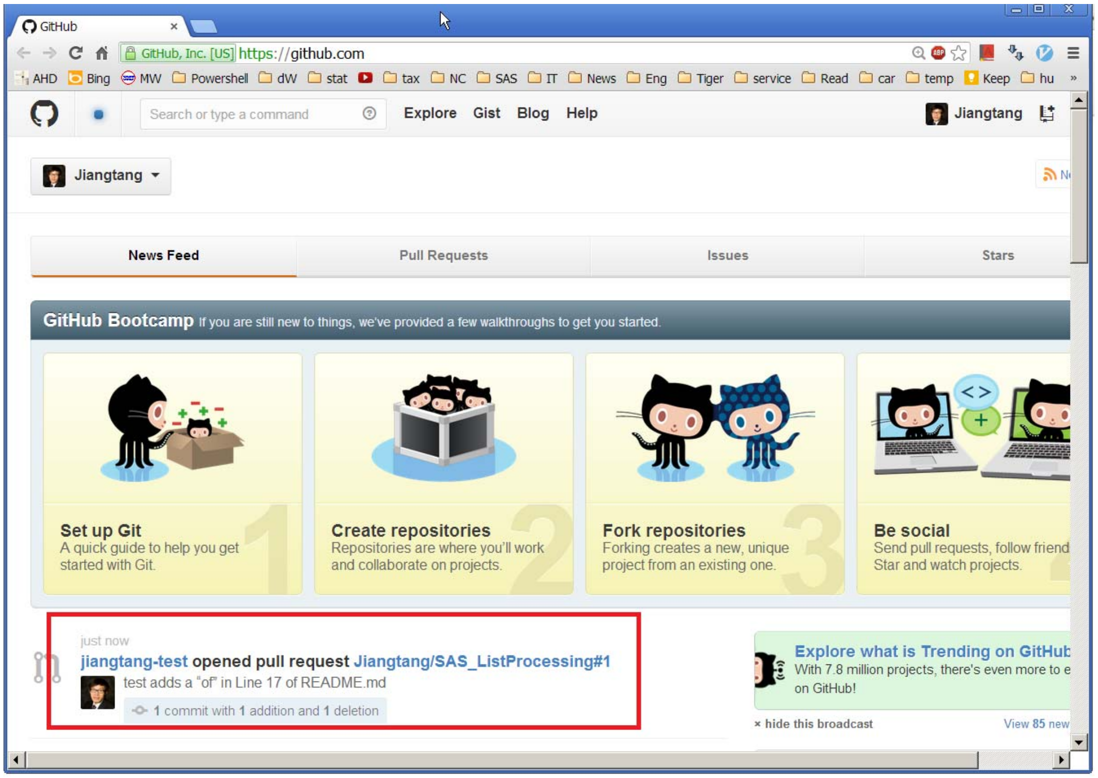
test adds a "of" in Line 17 of README.md

Hi Jiangtang,

Just add a missing "of".

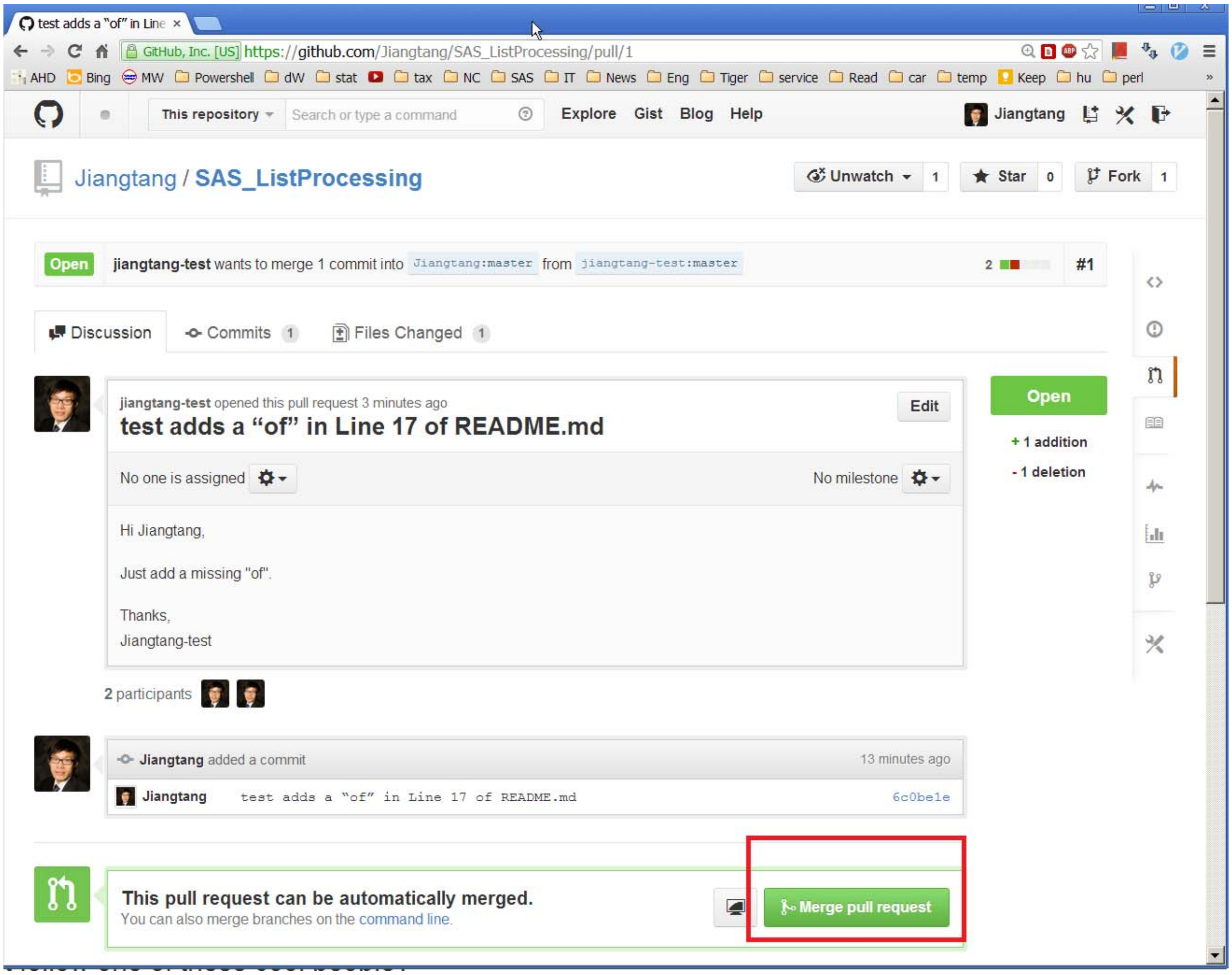
Thanks,
Jiangtang-test

Now Jiangtang’s turn. Jiangtang opens his Github page as usual and gets a notification in the dashboard (also in email) that a pull request is waiting for moderate:


GitHub
https://github.com
Search or type a command
Explore
Gist
Blog
Help
Jiangtang
News Feed
Pull Requests
Issues
Stars
GitHub Bootcamp If you are still new to things, we've provided a few walkthroughs to get you started.
Set up Git
A quick guide to help you get started with Git.
Create repositories
Repositories are where you'll work and collaborate on projects.
Fork repositories
Forking creates a new, unique project from an existing one.
Be social
Send pull requests, follow friend
Star and watch projects.
Explore what is Trending on GitHub
With 7.8 million projects, there's even more to e
on GitHub!
× hide this broadcast
View 85 new

just now
jiangtang-test opened pull request Jiangtang/SAS_ListProcessing#1
test adds a "of" in Line 17 of README.md
1 commit with 1 addition and 1 deletion

Jiangtang opens this thread for details. Jiangtang thinks such modification makes sense then click “Merge pull request” to merge the new edits:



https://github.com/Jiangtang/SAS_ListProcessing/pull/1

Jiangtang / SAS_ListProcessing

Open jiangtang-test wants to merge 1 commit into Jiangtang:master from jiangtang-test:master

jiangtang-test opened this pull request 3 minutes ago

test adds a “of” in Line 17 of README.md

No one is assigned

No milestone

Hi Jiangtang,

Just add a missing "of".

Thanks,
Jiangtang-test

2 participants

Jiangtang added a commit 13 minutes ago

Jiangtang test adds a “of” in Line 17 of README.md 6c0be1e

This pull request can be automatically merged.
You can also merge branches on the command line.

If Jiangtang doesn’t think it’s good, he can just cancel it.

C5. SUMARRY

To clone is to make a local repository.

To fork is to make a remote (online) repository.

To work smoothly, fork then clone. Make modifications on local copies, commit them, and publish them. To participate, make a “pull request” to the original repository.

D. WHAT’S TO DO NEXT

Everything is online and it’s quick and simple. Get a Github account, publish your codes repository, find someone (watch them) and/or some projects interesting (fork them) and you’re all set.

CONCLUSION

As a user, I tried SVN, CVS while Git (via Github) is the most intuitive service I even got. To begin with the wonderful client, Github for Windows, you will the amazing part of Git/Github is that it's uncreditable easy and efficient.

Have fun.

REFERENCES

[1] *An Introduction to Git Version Control for SAS Programmers* by Stephen Philp (WUSS 2012)

[2] Github online help

https://help.github.com/

[3] Google Code planned to kill its download services

http://google-opensource.blogspot.com/2013/05/a-change-to-google-code-download-service.html

ACKNOWLEDGMENTS

Very appreciate the encouragement from Yihui Xie to convince me to get start with Git and Github.

CONTACT INFORMATION

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