

A tutorial on Git, GitHub and Sphinx

Danh-Tai Hoang

9/27/2018

Git

- revision control system
- tool to manage our source code history
- keep track of changes
- save old version
- synchronize code between different peoples

GitHub

hosting service for Git repositories.

Sphinx

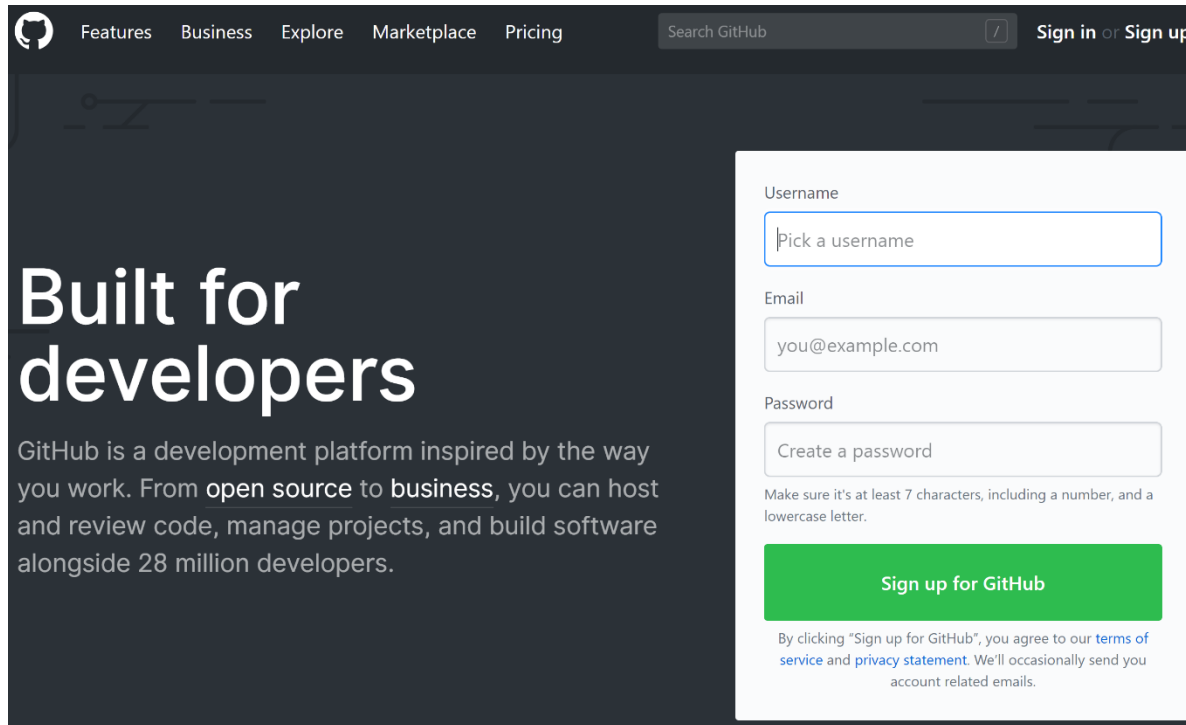
tool to create HTML website from reStructuredText (.rst), Markdown (.md), python (.py), jupyter notebook (.ipynb) files,...

Git and GitHub

1. Install Git:

- Ubuntu: `sudo apt-get install git`
- Centos: `sudo yum install git`
- Mac: download Git at <https://git-scm.com/download/mac>
- Windows: download Git at <https://git-scm.com/download/win>

2. Create a GitHub account at <https://github.com>



The screenshot shows the GitHub website's sign-up interface. On the left, the GitHub logo is in the top left corner, followed by navigation links: Features, Business, Explore, Marketplace, and Pricing. A search bar labeled 'Search GitHub' is on the right. Below the navigation, the text 'Built for developers' is prominently displayed in large white font. Underneath this, a paragraph describes GitHub as a development platform inspired by the way you work, mentioning open source, business, hosting, reviewing code, managing projects, and building software alongside 28 million developers. On the right side of the page, there is a white sign-up form with the following fields: 'Username' with a placeholder 'Pick a username', 'Email' with a placeholder 'you@example.com', and 'Password' with a placeholder 'Create a password'. Below the password field, a note states: 'Make sure it's at least 7 characters, including a number, and a lowercase letter.' A large green button labeled 'Sign up for GitHub' is positioned below the form. At the bottom of the form, a small disclaimer reads: 'By clicking "Sign up for GitHub", you agree to our terms of service and privacy statement. We'll occasionally send you account related emails.'

3. Connect Git and GitHub

git config --global user.name "user_name"

git config --global user.email "email"

git remote add origin https://github.com/danhtaihoang/journal_club.git

4. Download a file/entire repository from GitHub to our computer:

git clone <url>

5. Add a file/entire repository from computer to GitHub:

git add <file_name> (for a specific file)

git add -A (for entire repository)

6. Save the changes to repository as a new version and record a message:

git commit -m "message"

git commit -am "message" (same message for all commits)

7. Show current status of repository

git status

8. Show a history of commits and message

git log

9. Sends committed changes to repository in GitHub

git push origin master

10. Retrieve changes from remote repository

git pull

11. Reset code back to a previous commit

git reset --hard <commit>

12. Revert code back to remote repository version in Github

git reset --hard origin/master

13. Show all branches

git branch

14. Create a branch

git branch <branch_name>

15. Switch to another branch

git checkout <branch_name>

16. Merge a branch with current branch

git merge <branch_name>

17. Delete a branch

git branch -D <branch_name>

1. Install

- anaconda: *conda install sphinx*
- via pip: *sudo pip install -U sphinx*
- Ubuntu: *sudo apt-get install python2-sphinx (for python2)*
sudo apt-get install python3-sphinx (for python 3)
- Centos: *sudo yum install python-sphinx*
- Mac: *brew install sphinx-doc*
- Windows: *pip install -U sphinx*

2. Create sphinx folder

mkdir sphinx

3. In the sphinx folder, use the command line to start sphinx:

sphinx-quickstart

Key files in the sphinx folder

conf.py

index.rst

Makefile

4. Edit index.rst file:

Check layout of .rst file: <http://rst.ninjs.org/>

Use pandoc convert file formats: <https://pandoc.org/try/>

5. Edit the 'conf.py' file:

```
extensions = [  
    'sphinx.ext.autodoc',  
    'sphinx.ext.doctest',  
    'sphinx.ext.intersphinx',  
    'sphinx.ext.autosummary',  
    'sphinx.ext.mathjax',  
    'nbsphinx',  
]  
# Add type of source files  
source_suffix = ['.rst', '.md', '.ipynb']
```

Install nbsphinx extension for jupyter notebook:

```
conda install -c conda-forge nbsphinx
```

6. Create other files (introduction, jupyter notebook, etc.) and edit index.rst file.

7. Build HTML files

make clean

make html

8. Copy all html files to docs folder (with remaining the structure):

cp -a sphinx/_build/html/ docs/*

9. Add to GitHub

git add -A

git commit -am "message"

git push origin master