A tutorial on Git, GitHub and Sphinx

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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

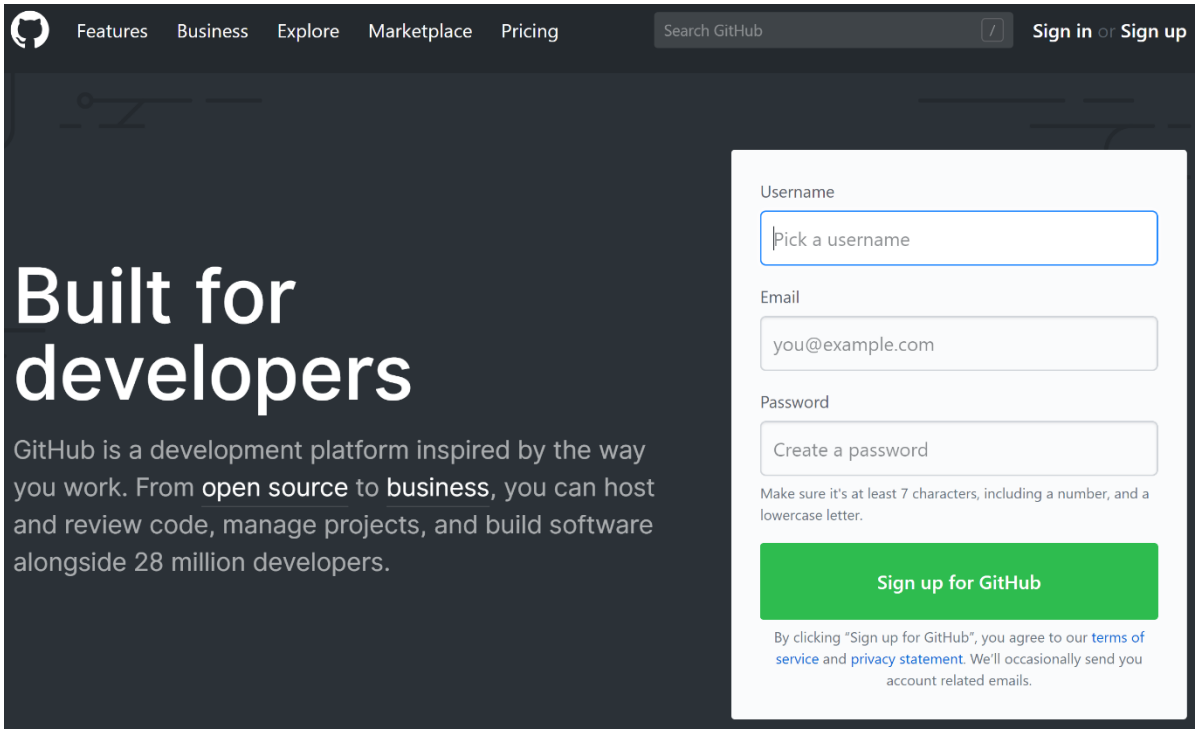
tool to create HTML website from reStructuredText (.rst), Markdown (.md), python (.py), jupyter notebook (.ipynb) files,...

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



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>

Sphinx

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