

Git

Source Code Management System

Microsoft Student Partner

고희원

Contents

Intro

Version Control System, Git, GitHub

Practice Setting

Git Workflow

Git Workflow Practice (1)

Git Workflow Practice (2)

Collaborate with Git Practice – Pull Request

시작하기 전에!

- 1) Linux 기본 Command 알고가기
- 2) 코드 편집기 설치 (Visual Studio Code, Sublime Text, Atom ..)
<https://code.visualstudio.com/download>
- 3) 능동적으로! 개념보다 하나라도 더 따라해보는 게 중요해요!
- 4) 모르는 부분, 막히는 부분이 있으면 조교에게 질문하기!
- 5) https://github.com/HuiwonKo/MSP_Seminar_20180727

 Search or jump to... / Pull requests Issues Marketplace Explore + ⚙️

HuiwonKo / MSP_Seminar_20180727

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

No description, website, or topics provided. [Edit](#)

Add topics

1 commit 1 branch 0 releases 0 contributors

Branch: master ▾ New pull request Create new file Upload files Find file [Clone or download ▾](#)

 Heewon Ko Add git practice source code Latest commit c803683 11 hours ago

 faceapi Add git practice source code 11 hours ago

Help people interested in this repository understand your project by adding a README. [Add a README](#)

 Search or jump to... / Pull requests Issues Marketplace Explore + ⚙ 

HuiwonKo / [MSP_Seminar_20180727](#)  1  1  0

 [Code](#)  [Issues 0](#)  [Pull requests 0](#)  [Projects 0](#)  [Wiki](#)  [Insights](#)  [Settings](#)

No description, website, or topics provided. 

[Add topics](#)

 1 commit  1 branch  0 releases  0 contributors

Branch: master     

 Heewon Ko Add git practice source code

 faceapi Add git practice source code

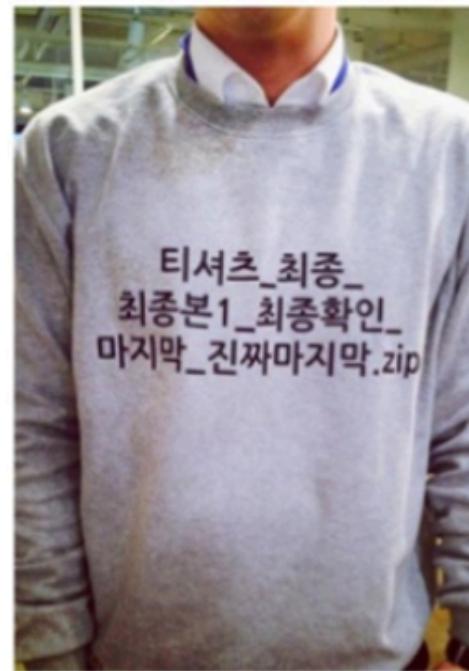
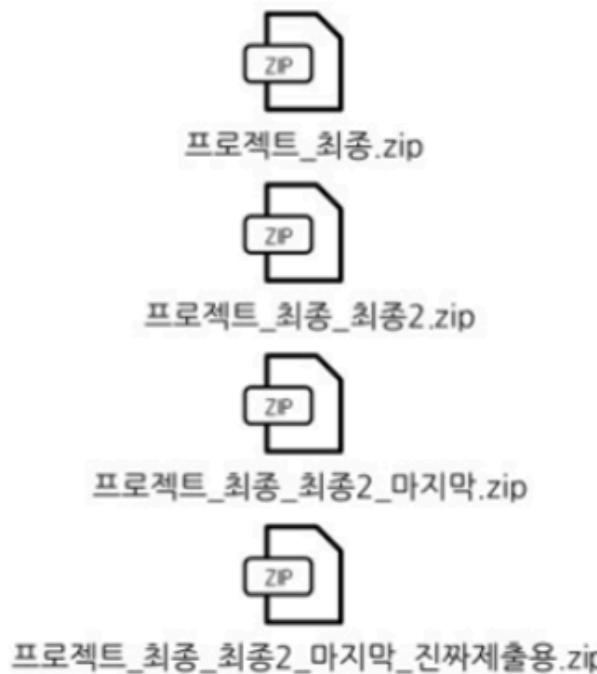
Help people interested in this repository understand your project by adding a README.

Clone with HTTPS 
Use Git or checkout with SVN using the web URL.
https://github.com/HuiwonKo/MSP_Semir 

[Open in Desktop](#) [Download ZIP](#)

Version Control (VCS)

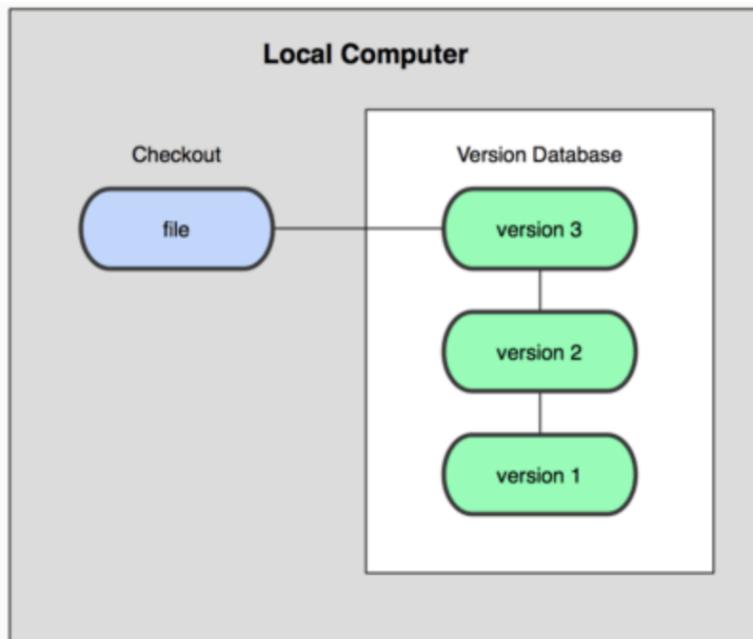
파일의 변화를 시간에 따라 기록하여 과거 특정 시점의 버전을 다시 불러올 수 있는 시스템



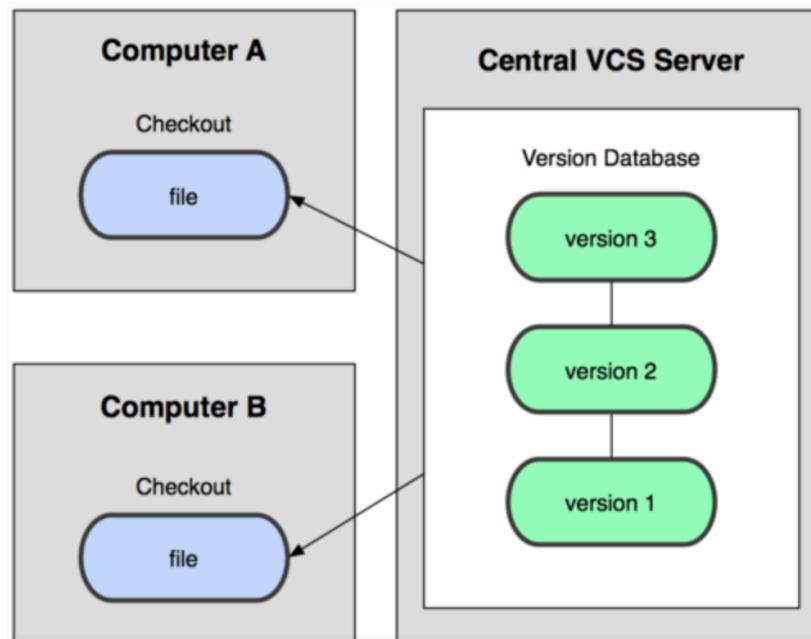
EVERY DESIGNER IN THIS WORLD



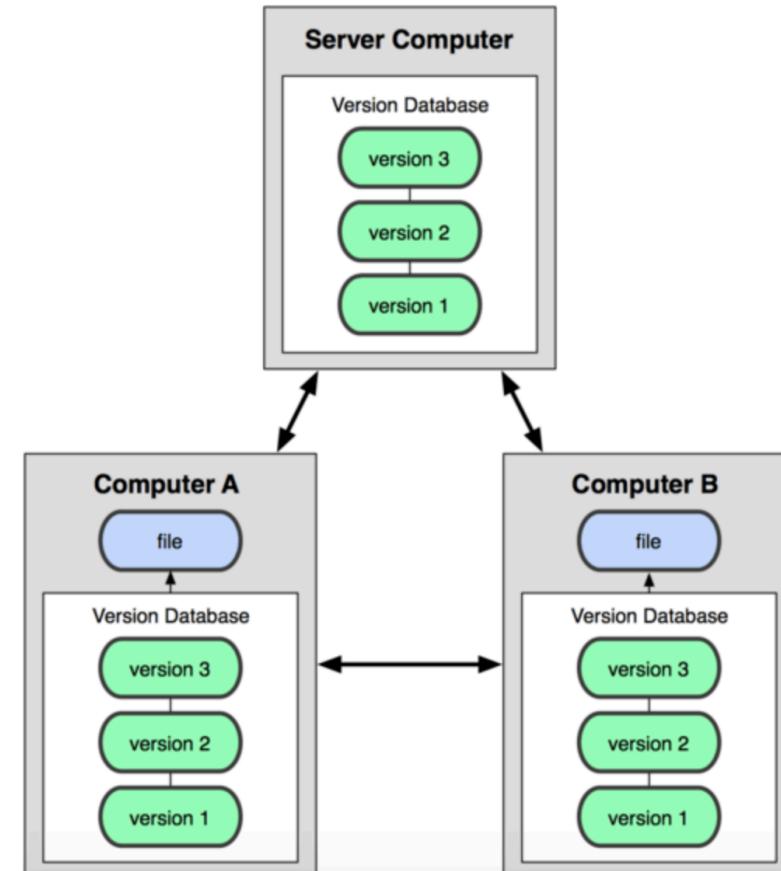
Version Control System(VCS) 의 종류



<local VCS>
ex) Mac OSX 의 RCS



<central VCS>
ex) CVCS, Subversion,
Perforce



<distributed VCS>
ex) Git, Mercurial,
Bazaar



Git 의 정의

- 개발과정, 소스파일 등을 버전별로 관리할 수 있는 도구
- History 관리를 통해 개발 과정, 역사를 시간의 흐름(timeline)을 기준으로 볼 수 있으며 특정 시점으로 복구가 가능
- 분산 버전 관리 시스템



Git 의 장점

- 개별 파일 혹은 프로젝트 전체를 이전 상태로 되돌리거나 시간에 따른 변경 사항 검토 가능
- 문제가 되는 부분을 누가 마지막으로 수정했는지, 누가 언제 이슈를 만들었는지 파악 가능
- 파일을 잃어버리거나 무언가 잘못되어도 쉽게 복구 가능

GitHub



- Git이라는 도구를 응용할 때 필요한 원격 저장소 사이트
- 각종 Remote Repository (원격 저장소)들의 집합

Practice

1. Git 설치

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



git --local-branching-on-the-cheap

About

Documentation

Downloads

GUI Clients

Logos

Community

The entire [Pro Git book](#) written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

Downloads



Mac OS X



Windows



Linux/Unix

Older releases [linux : 리눅스](#) are available and the [Git source repository](#) is on GitHub.

GUI Clients

Git comes with built-in GUI tools ([git-gui](#), [gitk](#)), but there are several third-party tools for users looking for a platform-specific experience.

[View GUI Clients →](#)



Search entire site...



Latest source Release
2.18.0

[Release Notes \(2018-06-21\)](#)

[Download 2.18.0 for Mac](#)

Logos

Various Git logos in PNG (bitmap) and EPS (vector) formats are available for use in online and print projects.

[View Logos →](#)



Microsoft

2-1. GitHub 회원가입

<https://github.com/join/>

The screenshot shows the GitHub 'Join GitHub' page. At the top, there's a navigation bar with links for Features, Platform, Business, Explore, Pricing, Sign in, and Sign up. Below the navigation is the title 'Join GitHub' and the subtitle 'The best way to design, build, and ship software.' There are three steps outlined: Step 1: Create personal account, Step 2: Choose your plan, and Step 3: Tailor your experience.

Create your personal account

Username
This will be your username. You can add the name of your organization later.

Email address
We'll occasionally send updates about your account to this inbox. We'll never share your email address with anyone.

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

By clicking "Create an account" below, you agree to our [terms of service](#) and [privacy statement](#). We'll occasionally send you account related emails.

Create an account

After clicking 'Create an account', the user is redirected to a confirmation screen. It features a GitHub logo, a search bar, and links for Pull requests, Issues, and Gist. A red box highlights the message 'Your email was verified.' with a downward arrow pointing to it.

2-2. 이메일 인증하기

The screenshot shows the GitHub 'Personal settings' page under the 'Account' section, specifically the 'Emails' tab. A red box highlights the 'Emails' tab in the sidebar.

Emails

dreams96@naver.com Primary Visible in emails Receives notifications Delete

Add email address Add

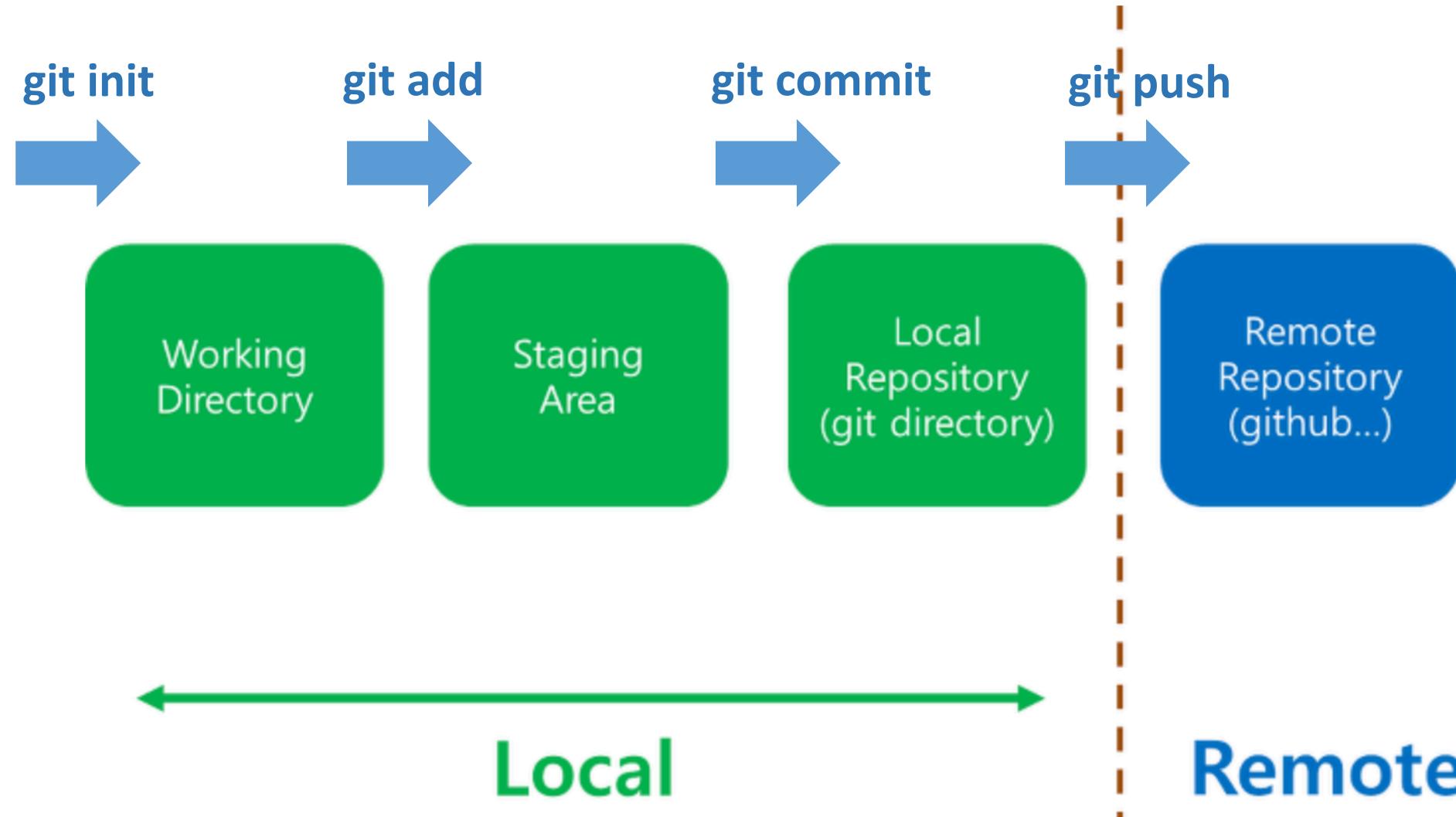
Primary email address
dreams96@naver.com will be used for account-related notifications and for web-based GitHub operations (e.g. edits and merges).
 Save

Backup email address
Your backup GitHub email address can be used to reset your password if you no longer have access to your primary email address.
 Only allow primary email
Please add a verified email, in addition to your primary email, in order to choose a backup email address.

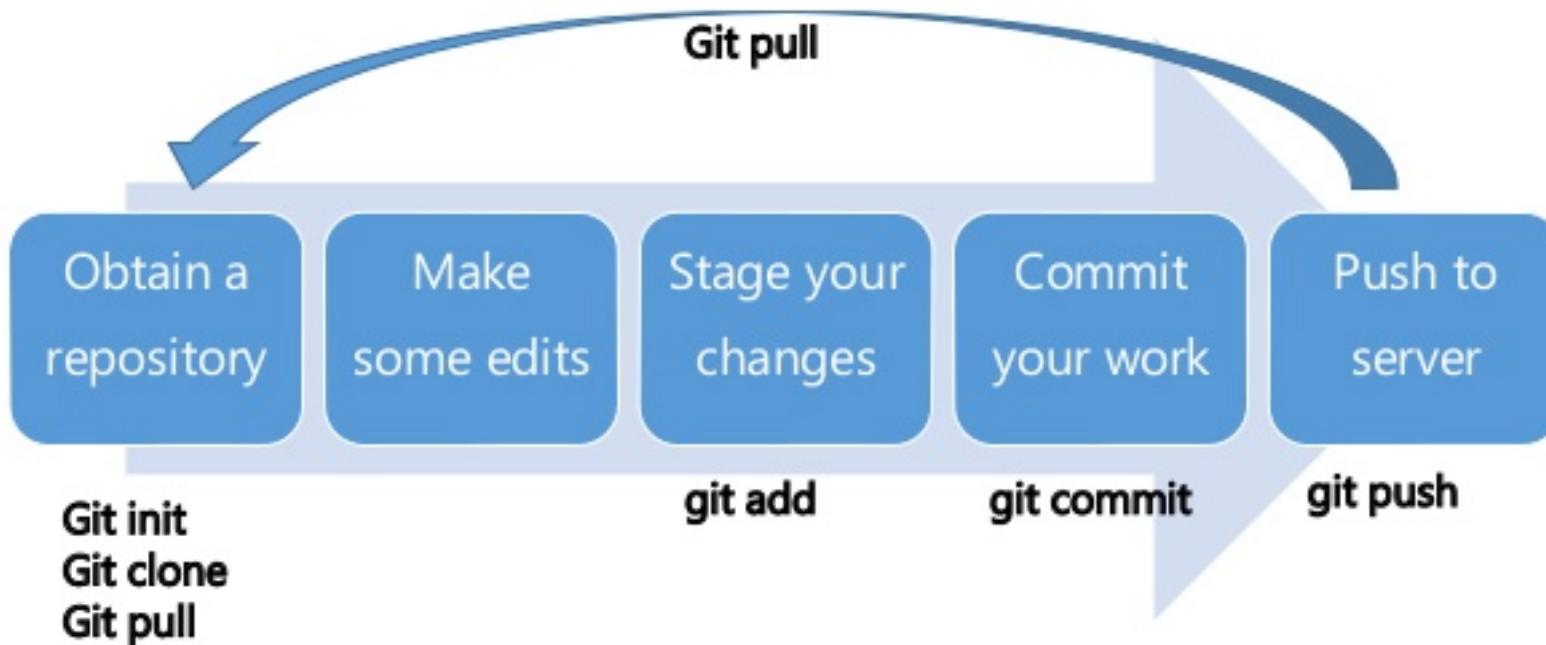
Keep my email address private
We'll remove your public profile email and use 20138033+HuiwonKo@users.noreply.github.com when performing web-based Git operations and sending email on your behalf. If you want command line Git operations to use your private email you must [set your email in Git](#).

Git

Git Workflow



Git usages : Understanding Git Workflow



Git

Git Workflow





1. **git init**

2. **git add <file name / directory name>**

3. **git commit -m “<commit message>”**

4. **git remote add origin <remote repository URL>**

5. **git push -u origin master**

git clone

- remote repository 를 사용자의 컴퓨터(local)로 복사하는 과정

The screenshot shows a GitHub repository page for 'HuiwonKo / MSP_Seminar_20180727'. The page includes a navigation bar with links for Pull requests, Issues, Marketplace, and Explore. Below the navigation bar, the repository name is displayed along with Unwatch (1), Star (1), and Fork (0) buttons. A tab bar at the top of the repository page shows 'Code' (selected), Issues (0), Pull requests (0), Projects (0), Wiki, Insights, and Settings.

No description, website, or topics provided. [Edit](#)

Add topics

1 commit 1 branch 0 releases 0 contributors

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

Heewon Ko Add git practice source code Latest commit c803683 11 hours ago

faceapi Add git practice source code 11 hours ago

Help people interested in this repository understand your project by adding a README. [Add a README](#)

git clone <remote repository URL>

The screenshot shows a GitHub repository page for 'HuiwonKo / MSP_Seminar_20180727'. The repository has 1 commit, 1 branch, 0 releases, and 0 contributors. A tooltip for the 'Clone or download' button displays the HTTPS URL: https://github.com/HuiwonKo/MSP_Semir. This URL is highlighted with a red box.

Search or jump to... Pull requests Issues Marketplace Explore + ⌂ ⌂

HuiwonKo / [MSP_Seminar_20180727](#) [Unwatch](#) 1 [Star](#) 1 [Fork](#) 0

[Code](#) Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

No description, website, or topics provided. [Edit](#)

Add topics

1 commit 1 branch 0 releases 0 contributors

Branch: master ▾ New pull request Create new file Upload files Find file [Clone or download](#) ▾

Heewon Ko Add git practice source code

faceapi Add git practice source code

Help people interested in this repository understand your project by adding a README.

Clone with HTTPS ⓘ Use SSH
Use Git or checkout with SVN using the web URL.
https://github.com/HuiwonKo/MSP_Semir [Copy](#)

[Open in Desktop](#) [Download ZIP](#)



1. **git init**

2. **git add <file name / directory name>**

3. **git commit -m “<commit message>”**

4. **git remote add origin <remote repository URL>**

5. **git push -u origin master**



1. `git init`

2. `git add <file name / directory name>`

3. `git commit -m "<commit message>"`

4. `git remote add origin <remote repository URL>`

5. `git push -u origin master`



1. `git init`

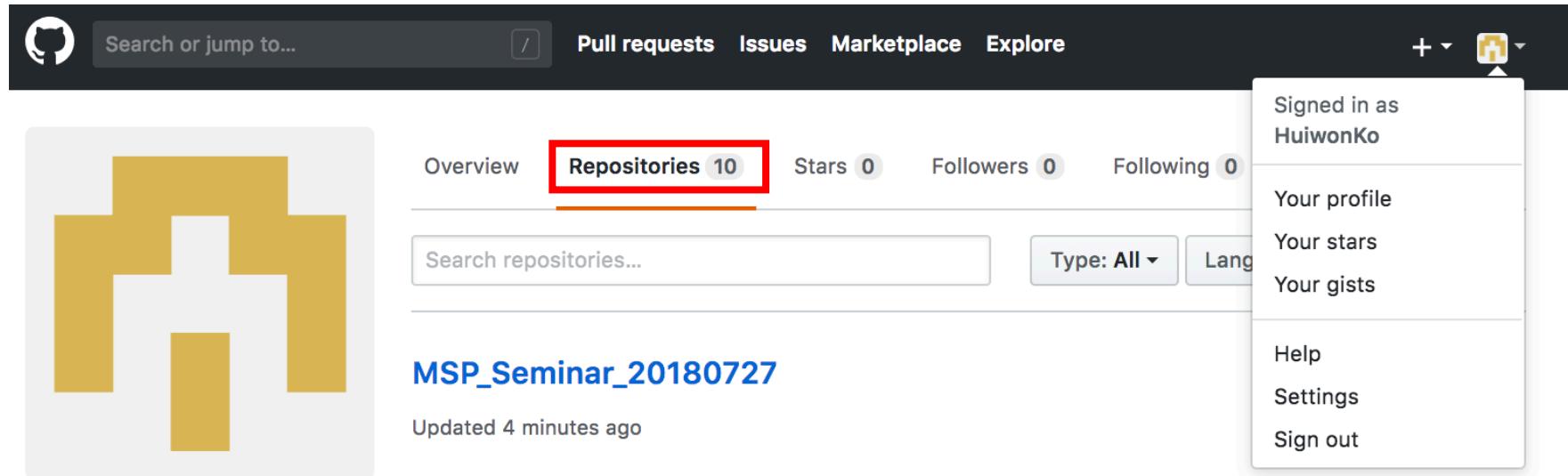
2. `git add <file name / directory name>`

3. `git commit -m "<commit message>"`

4. `git remote add origin <remote repository URL>`

5. `git push -u origin master`

새로운 Remote Repository 만들기



A screenshot of a GitHub user profile page for 'HuiwonKo'. The top navigation bar includes links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. A dropdown menu is open from the top right, showing options like 'Signed in as HuiwonKo', 'Your profile', 'Your stars', 'Your gists', 'Help', 'Settings', and 'Sign out'. The main profile area shows a large yellow 'HK' logo icon. Below it, the user's name 'Heewon Ko' and GitHub handle 'HuiwonKo' are displayed, with a button to 'Add a bio'. The 'Repositories' tab is selected, showing '10' repositories. A search bar and filters for 'Type: All' and 'Lang' are present. One repository, 'MSP_Seminar_20180727', is listed with a blue link, updated 4 minutes ago. Another repository, 'computerscience', is shown with a green activity graph.

Heewon Ko

HuiwonKo

Add a bio

Organizations



computerscience

Forked from Microsoft/computerscience

Free technical resources for faculty, students, and Microsoft developer advocates for use in computer science learning forums.

JavaScript 361 Updated on 15 May



Classrates

Forked from Wintellect/Classrates

Repository for Classrates Web site

JavaScript 74 Updated on 7 Mar



Microsoft



Search or jump to...



Pull requests Issues Marketplace Explore



Overview

Repositories 10

Stars 0

Followers 0

Following 0

Search repositories...

Type: All ▾

Language: All ▾

New

MSP_Seminar_20180727

Updated a minute ago

computerscience

Forked from Microsoft/computerscience

Free technical resources for faculty, students, and Microsoft developer advocates for use in computer science learning forums.



JavaScript 361 Updated on 15 May

Heewon Ko

HuiwonKo

[Add a bio](#)

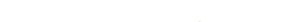
Organizations



Classrates

Forked from Wintellect/Classrates

Repository for Classrates Web site



JavaScript 74 Updated on 7 Mar

MTM

CSS Updated on 6 Nov 2017



Search or jump to...

Pull requests Issues Marketplace Explore

+

Create a new repository

A repository contains all the files for your project, including the revision history.

Owner



/ HuiwonKo

Repository name

gitpractice



Great repository names are short and memorable. Need inspiration? How about [urban-octo-sniffle](#).

Description (optional)



Public

Anyone can see this repository. You choose who can commit.



Private

You choose who can see and commit to this repository.

 Initialize this repository with a README

This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: None

Add a license: None

**Create repository**

Remote Repository URL

The screenshot shows a GitHub repository page for 'HuiwonKo / gitpractice'. The top navigation bar includes 'Pull requests', 'Issues', 'Marketplace', and 'Explore' links. Below the repository name, there are 'Unwatch', 'Star', and 'Fork' buttons. The main content area has tabs for 'Code', 'Issues 0', 'Pull requests 0', 'Projects 0', 'Wiki', 'Insights', and 'Settings'. A large red arrow points from the text 'Remote Repository URL' on the left to the 'HTTPS' URL field in the 'Quick setup' section.

Quick setup — if you've done this kind of thing before

[Set up in Desktop](#) or [HTTPS](#) [SSH](#) <https://github.com/HuiwonKo/gitpractice.git>

We recommend every repository include [README](#), [LICENSE](#), and [.gitignore](#).

...or create a new repository on the command line

```
echo "# gitpractice" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/HuiwonKo/gitpractice.git
git push -u origin master
```

...or push an existing repository from the command line

```
git remote add origin https://github.com/HuiwonKo/gitpractice.git
git push -u origin master
```

...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

[Import code](#)



1. `git init`

2. `git add <file name / directory name>`

3. `git commit -m "<commit message>"`

4. `git remote add origin <remote repository URL>`

>> `git remote`

5. `git push -u origin master`



1. `git init`

2. `git add <file name / directory name>`

3. `git commit -m "<commit message>"`

4. `git remote add origin <remote repository URL>`

5. `git push -u origin master`



1. **git init**

2. **git add <file name / directory name>**

>> git status

3. **git commit -m “<commit message>”**

>> git show
>> git log
>> git shortlog

4. **git remote add origin <remote repository URL>**

5. **git push -u origin master**



1. `git init`

2. `git add <file name / directory name>`

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3. `git commit -m "<commit message>"`

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>> `git show`
>> `git log`
>> `git shortlog`

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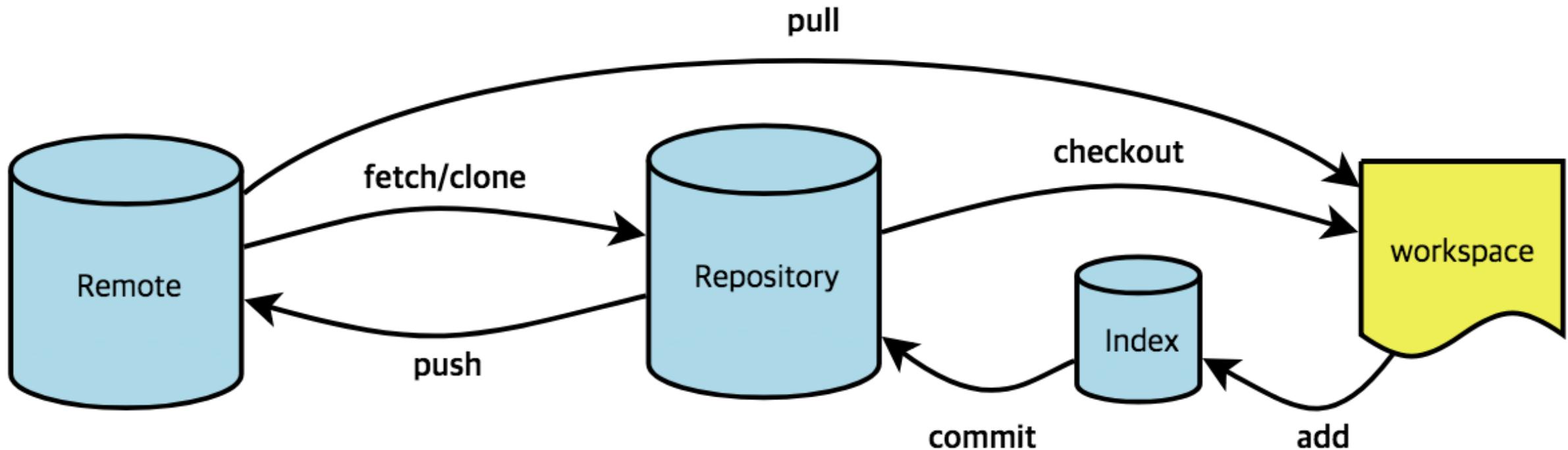
2. `git add <file name / directory name>`

3. `git commit -m "<commit message>"`

4. `git remote add origin <remote repository URL>`

5. `git push -u origin master`

How to collaborate?



Fork

- 외부 remote repository 를 사용자 GitHub 의 remote repository 로 복사하는 과정

The screenshot shows the GitHub interface for the repository `Azure / azure-quickstart-templates`. The top navigation bar includes the GitHub logo, a search bar, and links for Pull requests, Issues, Marketplace, and Explore. On the right side of the header are buttons for Watch, Star, and Fork, with the Fork button highlighted by a red box. The repository name is displayed above the main content area. Below the header, there are tabs for Code, Issues (437), Pull requests (42), Projects (0), Wiki, and Insights. A summary bar at the top provides metrics: 19,090 commits, 3 branches, 0 releases, 668 contributors, and an MIT license. At the bottom of this bar is a progress bar composed of green, dark blue, and yellow segments. Below the summary bar are buttons for Branch: master, New pull request, Create new file, Upload files, Find file, and Clone or download. The main content area displays a list of recent commits:

Commit	Message	Date
.github	Update stale.yml	2 months ago
1-CONTRIBUTION-GUIDE	text tweak	27 days ago
100-blank-template	added schema property to metadata.json	a month ago
100-marketplace-sample	added schema property to metadata.json	a month ago
101-1vm-2nics-2subnets-1vnet	added schema property to metadata.json	a month ago

Azure / azure-quickstart-temp

Code Issues Pull Requests

Azure Quickstart Templates https://

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

Where should we fork this repository? X

@HuiwonKo @unithonbechef

bmoore-msft Merge pull request #4921 from cloudmelon/patch-8 ... Latest commit b16003a 6 days ago

.github Update stale.yml 2 months ago

1-CONTRIBUTION-GUIDE text tweak 27 days ago

100-blank-template added schema property to metadata.json a month ago

100-marketplace-sample added schema property to metadata.json a month ago

101-1vm-2nics-2subnets-1vnet added schema property to metadata.json a month ago

 Search or jump to...  Pull requests Issues Marketplace Explore + ⌂ ⌂

HuiwonKo / [azure-quickstart-templates](#)  Unwatch ▾ 1 Star 0 Fork 5,565

 Code  Pull requests 0  Projects 0  Wiki  Insights  Settings

Azure Quickstart Templates <https://azure.microsoft.com/en-us/doc...> 

Add topics

 19,090 commits  3 branches  0 releases  668 contributors  MIT

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

This branch is even with Azure:master.  Pull request  Compare

 bmoore-msft Merge pull request #4921 from cloudmelon/patch-8 ... Latest commit b16003a 6 days ago

 .github	Update stale.yml	2 months ago
 1-CONTRIBUTION-GUIDE	text tweak	27 days ago
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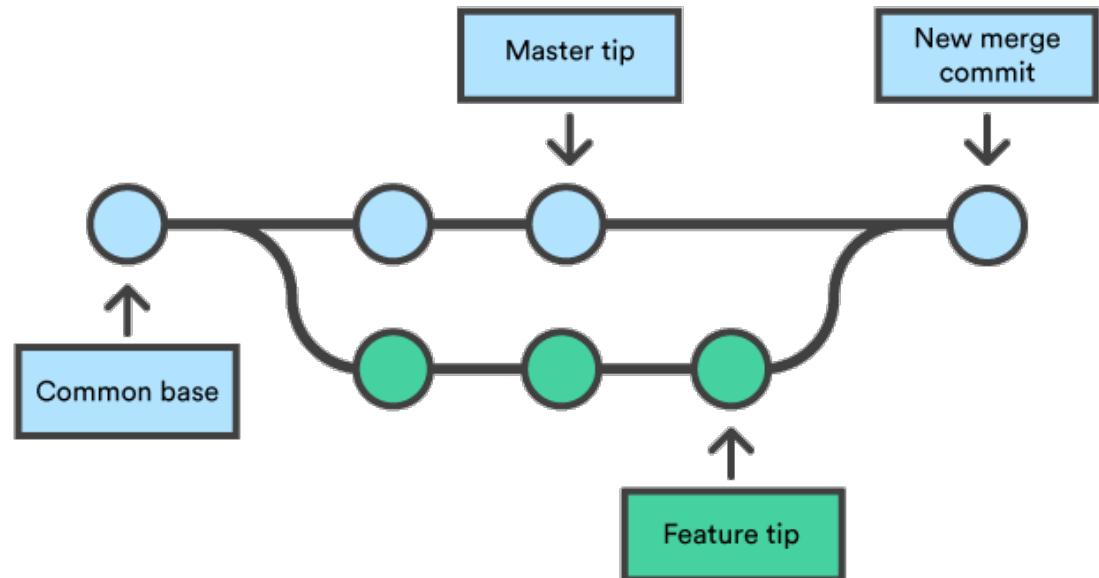
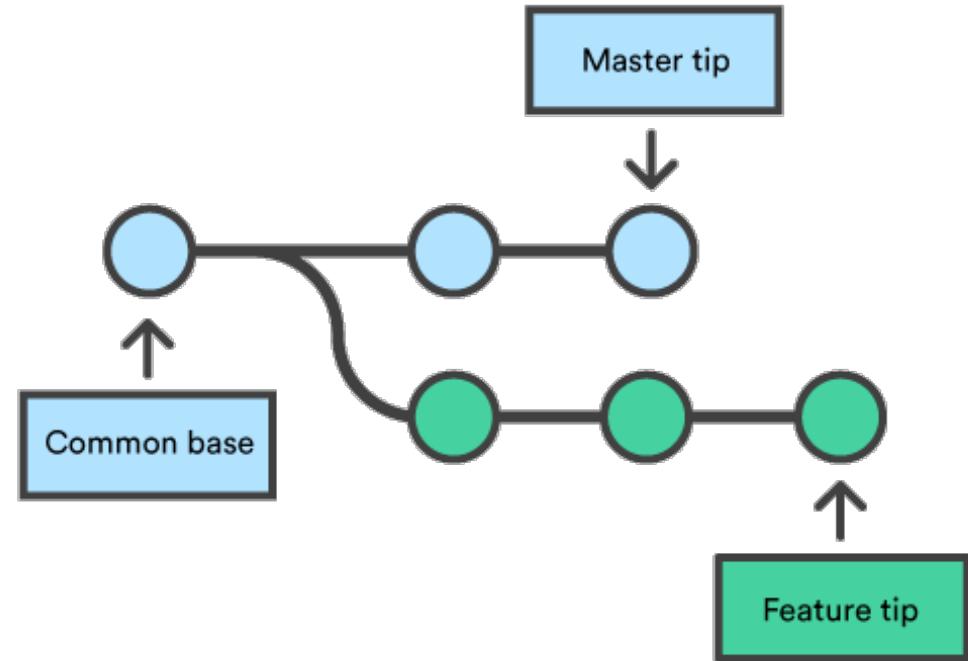
Collaborator

- 다른 사용자에게 해당 repository에 대한 commit 권한 부여

The screenshot shows the GitHub repository settings page for the repository 'HuiwonKo / gitpractice'. The 'Settings' tab is selected. On the left, there is a sidebar with options: Options (selected), Collaborators (highlighted with a red box), Webhooks, Integrations & services, Deploy keys, Moderation, and Interaction limits. The main content area is titled 'Collaborators' and contains the message: 'This repository doesn't have any collaborators yet. Use the form below to add a collaborator.' Below this is a search bar labeled 'Search by username, full name or email address' and a note: 'You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.' At the bottom right of the form is a button labeled 'Add collaborator' (also highlighted with a red box).

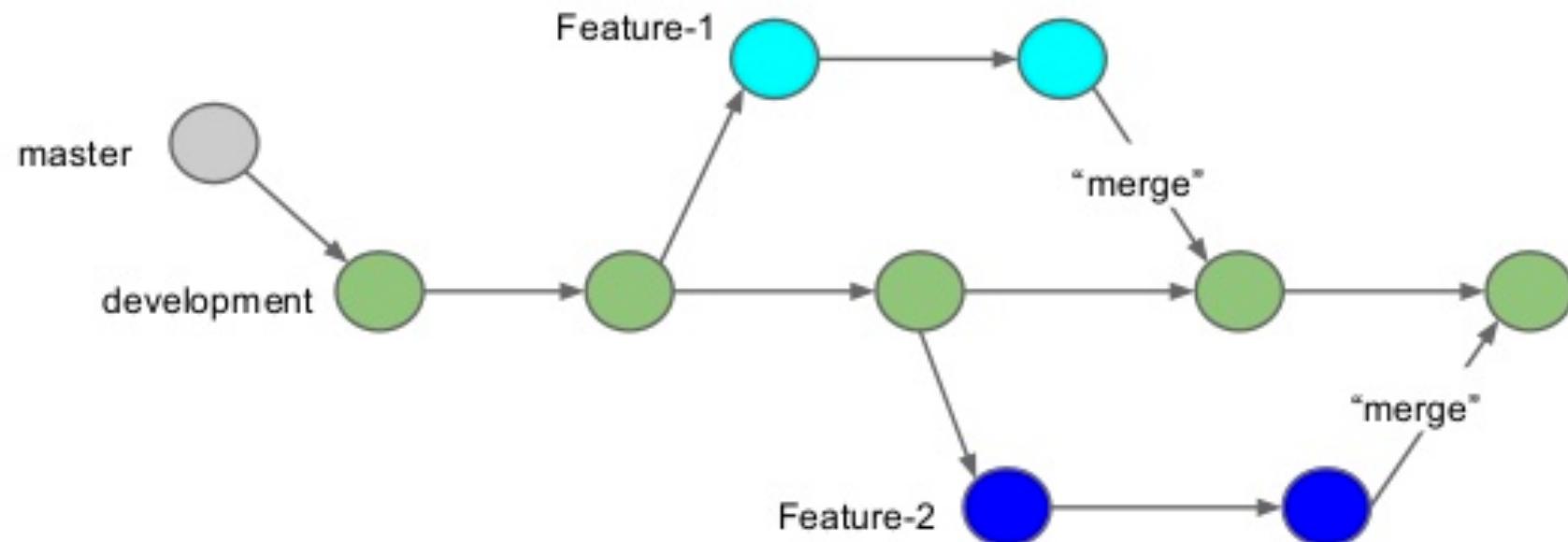
Branch

- 새로운 기능 개발이나 테스트를 위해 사용하는 따로 떨어진 독립적인 commit 모음
- master branch
- feature/topic branch



Feature Branch (2/2)

- Feature -*merge back->* Development



Master Branch

Dev. Branch

Feature Branch

Release Branch

Hotfix Branch

Branch 만들기

- 1) git branch <branch name> -> git checkout <branch name>
- 2) git checkout -b <branch name>

The screenshot shows a GitHub repository page for 'HuiwonKo / computerscience'. The top navigation bar includes links for Pull requests, Issues, Marketplace, and Explore. Below the header, it shows the repository was forked from Microsoft/computerscience. The main content area has tabs for Code, Pull requests (0), Projects (0), Wiki, Insights, and Settings. The 'Overview' tab is selected. A search bar at the top right allows searching for branches. The 'Default branch' section shows the 'master' branch, which is marked as 'Default'. The 'Stale branches' section lists several branches: 'PoliChecks', 'Updates', 'LabTesting', 'OttawaUpdates', and 'Ottawa'. Each branch entry includes the last update time, a 'New pull request' button, and a delete icon.

Branch	Last Updated	Action
master	Updated 3 months ago by jeffprosise	Default
PoliChecks	Updated 2 years ago by hockeygee...	New pull request
Updates	Updated 2 years ago by hockeygee...	New pull request
LabTesting	Updated 2 years ago by Sev Leonard	New pull request
OttawaUpdates	Updated 2 years ago by susanibach	New pull request
Ottawa	Updated a year ago by susanibach	New pull request



1. **git checkout -b develop**

>> git branch

2. **git add <file name / directory name>**

3. **git commit -m “<commit message>”**

4. **git remote add origin <remote repository URL>**

5. **git push -u origin develop**



1. `git checkout -b develop`

2. `git add <file name / directory name>`

>> `git status`

3. `git commit -m "<commit message>"`

4. `git remote add origin <remote repository URL>`

5. `git push -u origin develop`



1. `git checkout -b develop`

2. `git add <file name / directory name>`

3. `git commit -m "<commit message>"`

>> `git show`
>> `git log`
>> `git shortlog`

4. `git remote add origin <remote repository URL>`

5. `git push -u origin develop`



1. `git checkout -b develop`
2. `git add <file name / directory name>`
3. `git commit -m "<commit message>"`
4. `git remote add origin <remote repository URL>`
5. `git push -u origin develop`

Pull Request

- branch에서 완료된 작업을 리뷰 후 master로 merge 요청하기 위해 사용

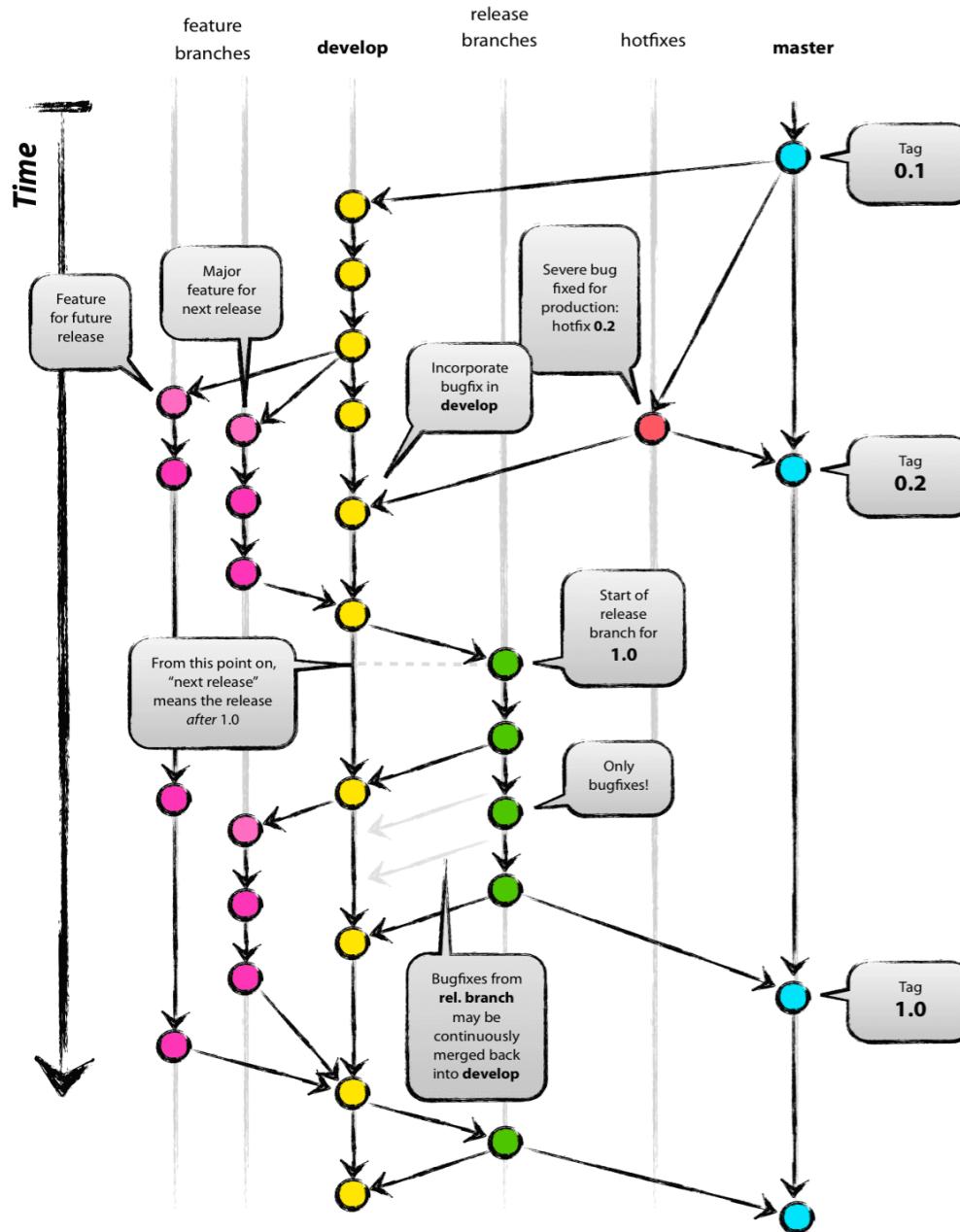
The screenshot shows a GitHub repository page for 'HuiwonKo / azure-quickstart-templates'. The repository was forked from 'Azure/azure-quickstart-templates'. The top navigation bar includes 'Pull requests', 'Issues', 'Marketplace', and 'Explore' buttons. On the right, there are 'Unwatch' (1), 'Star' (0), 'Fork' (5,567), and a profile icon. Below the repository name, it says 'forked from Azure/azure-quickstart-templates'. The main navigation tabs are 'Code', 'Pull requests 0', 'Projects 0', 'Wiki', 'Insights', and 'Settings'. A 'Filters' dropdown is set to 'is:pr is:open', and there are 'Labels' and 'Milestones' buttons. A green 'New pull request' button is visible. The central area displays a 'Welcome to Pull Requests!' message with a gear icon, followed by a description: 'Pull requests help you collaborate on code with other people. As pull requests are created, they'll appear here in a searchable and filterable list. To get started, you should [create a pull request](#)'.

Issue

- bug 추적
- 개발하고 싶은 새로운 feature 를 구체화

The screenshot shows the GitHub interface for the Microsoft/computerscience repository. The top navigation bar includes links for Pull requests, Issues, Marketplace, and Explore. Below the repository name, there are buttons for Watch (111), Star (677), Fork (361), and Insights. The Issues tab is selected, showing 7 open issues. A modal window is displayed, prompting users to submit an issue, stating: "Want to submit an issue to Microsoft/computerscience? If you have a bug or an idea, browse the open issues before opening a new one. You can also take a look at the Open Source Guide." Below the modal, there are filters for Issues (is:issue is:open), Labels, Milestones, and a green "New issue" button. The main list of issues includes:

- ① Add New Section on CaseStudies (#116)
- ① Issues with links on Readme.md at computerscience/Educator Content/Complimentary Course Content (#115)
- ① Add new section for online learning resources (#114)
- ① Issues with Cognitive Toolkit Lab - Images Not Displaying Correctly (#112)
- ① JupyterHub asking for a password (#110)
- ① issue with running on Azure (#109)
- ① issue about Docker in Part 2 Exercise 1 (#58)



감사합니다.