

2025 깃협 스터디

서강대학교 Release 학회





지금까지 저희는 Git Study에서

- 체계적인 소스 코드 저장(add, commit, push)
- 구조적인 협업 관리(branch, pull request)
- 협업 시, 충돌 관리(pull – rebase 0, rebase X)
- 버전 관리(tag)
- 로컬 깃 관리(restore, checkout, status)
- git action을 활용한 자동 CI / CD

위 내용들을 배웠습니다!

CI / CD 2 - 외부 환경 변수 가져오기

CI / CD 플로우를 설정할 때, 깃헙에서 환경변수를 만들고 설정할 수 있어요!

1)

2)

General

Repository name

test-git-action

Rename

☐ Template repository

Template repositories let users generate new repositories with the same directory structure and files. [Learn more about template repositories.](#)

☐ Require contributors to sign off on web-based commits

Enabling this setting will require contributors to sign off on commits made through GitHub's web interface. Signing off is a way for contributors to affirm that their commit complies with the repository's terms, commonly the [Developer Certificate of Origin \(DCO\)](#). [Learn more about signing off on commits.](#)

Default branch

The default branch is considered the "base" branch in your repository, against which all pull requests and code commits are automatically made, unless you specify a different branch.

main

Security

☒ Advanced Security

☒ Deploy keys

☒ Secrets and variables

Actions

Codespaces

Dependabot

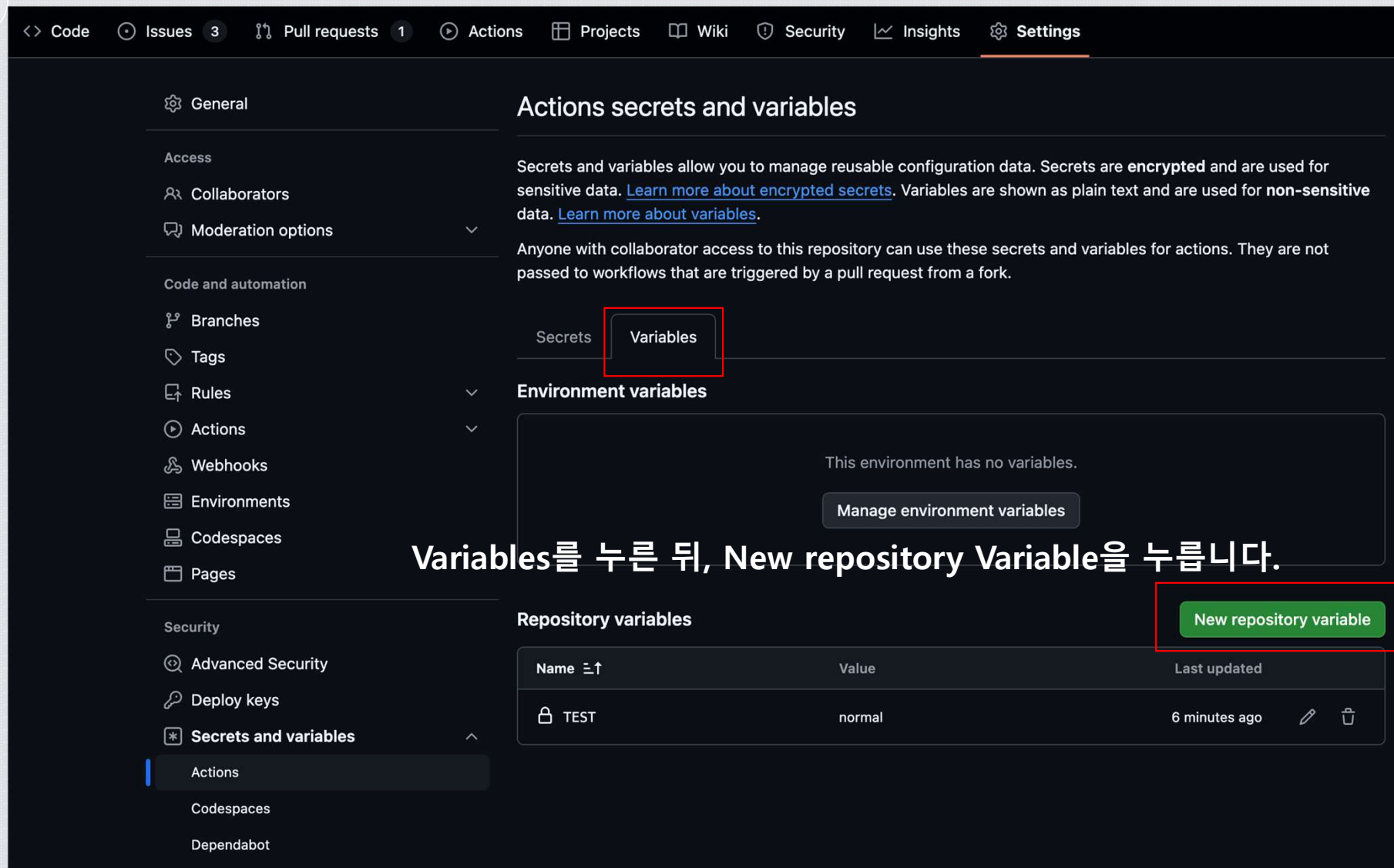
Social preview

Upload an image to customize your repository's social media preview.

Images should be at least 640x320px (1280x640px for best display). [Download template](#)

Edit

CI / CD 2 - 외부 환경 변수 가져오기



The screenshot shows the GitHub Actions 'Secrets and variables' settings page. The left sidebar contains a navigation menu with categories: General, Access, Collaborators, Moderation options, Code and automation, and Security. Under 'Code and automation', 'Variables' is highlighted. The main content area is titled 'Actions secrets and variables' and includes a description of secrets and variables. Below this, there are tabs for 'Secrets' and 'Variables', with 'Variables' selected. Under the 'Variables' tab, there is a section for 'Environment variables' which currently shows no variables and a 'Manage environment variables' button. Below that is a section for 'Repository variables' which contains a table with one variable named 'TEST' with a value of 'normal'. A green button labeled 'New repository variable' is highlighted with a red box.

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Rules

Actions

Webhooks

Environments

Codespaces

Pages

Security

Advanced Security

Deploy keys

Secrets and variables

Actions

Codespaces

Dependabot

Actions secrets and variables

Secrets and variables allow you to manage reusable configuration data. Secrets are **encrypted** and are used for sensitive data. [Learn more about encrypted secrets](#). Variables are shown as plain text and are used for **non-sensitive** data. [Learn more about variables](#).

Anyone with collaborator access to this repository can use these secrets and variables for actions. They are not passed to workflows that are triggered by a pull request from a fork.

Secrets Variables

Environment variables

This environment has no variables.

Manage environment variables

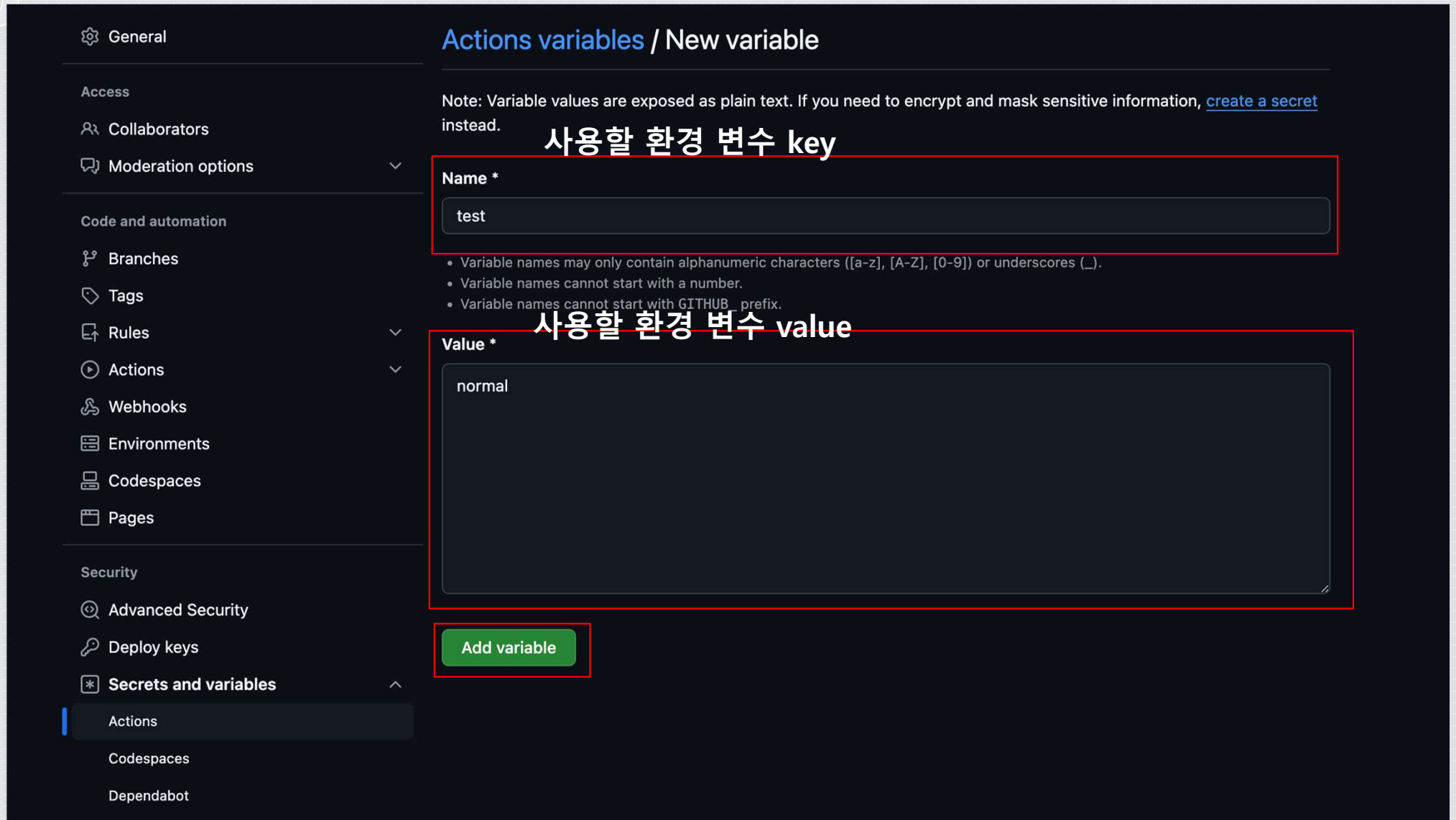
Repository variables

Name ↕	Value	Last updated
TEST	normal	6 minutes ago

New repository variable

Variables를 누른 뒤, New repository Variable을 누릅니다.

CI / CD 2 - 외부 환경 변수 가져오기



The screenshot shows the GitHub Actions 'New variable' page. The left sidebar contains navigation links: General, Access, Collaborators, Moderation options, Code and automation (Branches, Tags, Rules, Actions, Webhooks, Environments, Codespaces, Pages), Security (Advanced Security, Deploy keys, Secrets and variables), and Actions (highlighted). The main content area is titled 'Actions variables / New variable'. A note states: 'Note: Variable values are exposed as plain text. If you need to encrypt and mask sensitive information, [create a secret](#) instead.' Below the note, the 'Name' field is labeled '사용할 환경 변수 key' and contains the text 'test'. The 'Value' field is labeled '사용할 환경 변수 value' and contains the text 'normal'. A green 'Add variable' button is at the bottom. A list of rules for variable names is provided below the 'Name' field.

Actions variables / New variable

Note: Variable values are exposed as plain text. If you need to encrypt and mask sensitive information, [create a secret](#) instead.

사용할 환경 변수 key

Name *

test

- Variable names may only contain alphanumeric characters ([a-z], [A-Z], [0-9]) or underscores (_).
- Variable names cannot start with a number.
- Variable names cannot start with GITHUB_ prefix.

사용할 환경 변수 value

Value *

normal

Add variable

CI / CD 2 - 외부 환경 변수 가져오기

Git action 코드에서는 `${{ vars.만든Key값 }}` 으로 가져올 수 있어요!

! env.yaml M ×

.github > workflows > ! env.yaml

```
1  name: "외부 환경 변수 가져오기"
2
3  on:
4    pull_request:
5      types: [opened]    # PR 오픈 시에만 실행
6
7  jobs:
8    test_env:
9      name: "외부 env 테스트"
10     runs-on: ubuntu-latest
11     steps:
12
13       - name: "normal env"
14         run: |
15           echo "${{ vars.test }}"
16
```



CI / CD 2 - 외부 환경 변수 가져오기

외부 env 테스트
succeeded 10 minutes ago in 0s

Q Search logs

↺ ⚙

> ✓ Set up job0s

▼ ✓ normal env0s

1 ▶ Run echo normal

4 normal

> ✓ Complete job1s

Actions에 가서 확인 할 수 있어요~!

하지만.. 지금 같은 경우에는 환경 변수가 외부에 노출 되어버리는 문제가 있어요!!

다른 외부인도 볼 수 있게 되어버림 -> 위험!

CI / CD 2 - 외부 환경 변수 시크릿으로 가져오기

The screenshot shows the GitHub repository settings page. The 'Settings' tab is selected in the top navigation bar. In the left sidebar, the 'Secrets and variables' section is expanded, and the 'Actions' sub-section is selected. The main content area is titled 'Actions secrets and variables'. It contains a description of secrets and variables, a 'Secrets' tab (which is highlighted with a red box), and a section for 'Environment secrets' which currently shows 'This environment has no secrets.' and a 'Manage environment secrets' button. Below this is the 'Repository secrets' section, which contains a table with one secret named 'PERSONAL_ACCESS_TOKEN'. A green button labeled 'New repository secret' is highlighted with a red box in the top right of the repository secrets section. At the bottom of the page, there is a Korean text overlay.

<> Code Issues 3 Pull requests 1 Actions Projects Wiki Security Insights **Settings**

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Rules

Actions

Webhooks

Environments

Codespaces

Pages

Security

Advanced Security

Deploy keys

*** Secrets and variables**

Actions

Codespaces

Dependabot

Actions secrets and variables

Secrets and variables allow you to manage reusable configuration data. Secrets are **encrypted** and are used for sensitive data. [Learn more about encrypted secrets](#). Variables are shown as plain text and are used for **non-sensitive** data. [Learn more about variables](#).

Anyone with collaborator access to this repository can use these secrets and variables for actions. They are not passed to workflows that are triggered by a pull request from a fork.

Secrets Variables

Environment secrets

This environment has no secrets.

Manage environment secrets

Repository secrets

Name	Last updated
PERSONAL_ACCESS_TOKEN	last month

New repository secret

시크릿 변수를 만들기 위해서, 다시 Secrets and variables로 옵니다.

CI / CD 2 - 외부 환경 변수 시크릿으로 가져오기

<> Code

Issues 3

Pull requests 1

Actions

Projects

Wiki

Security

Insights

Settings

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Rules

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Webhooks

Environments

Codespaces

Pages

Security

Advanced Security

Deploy keys

Secrets and variables

Actions

Codespaces

Dependabot

Actions secrets / New secret

Name *

test

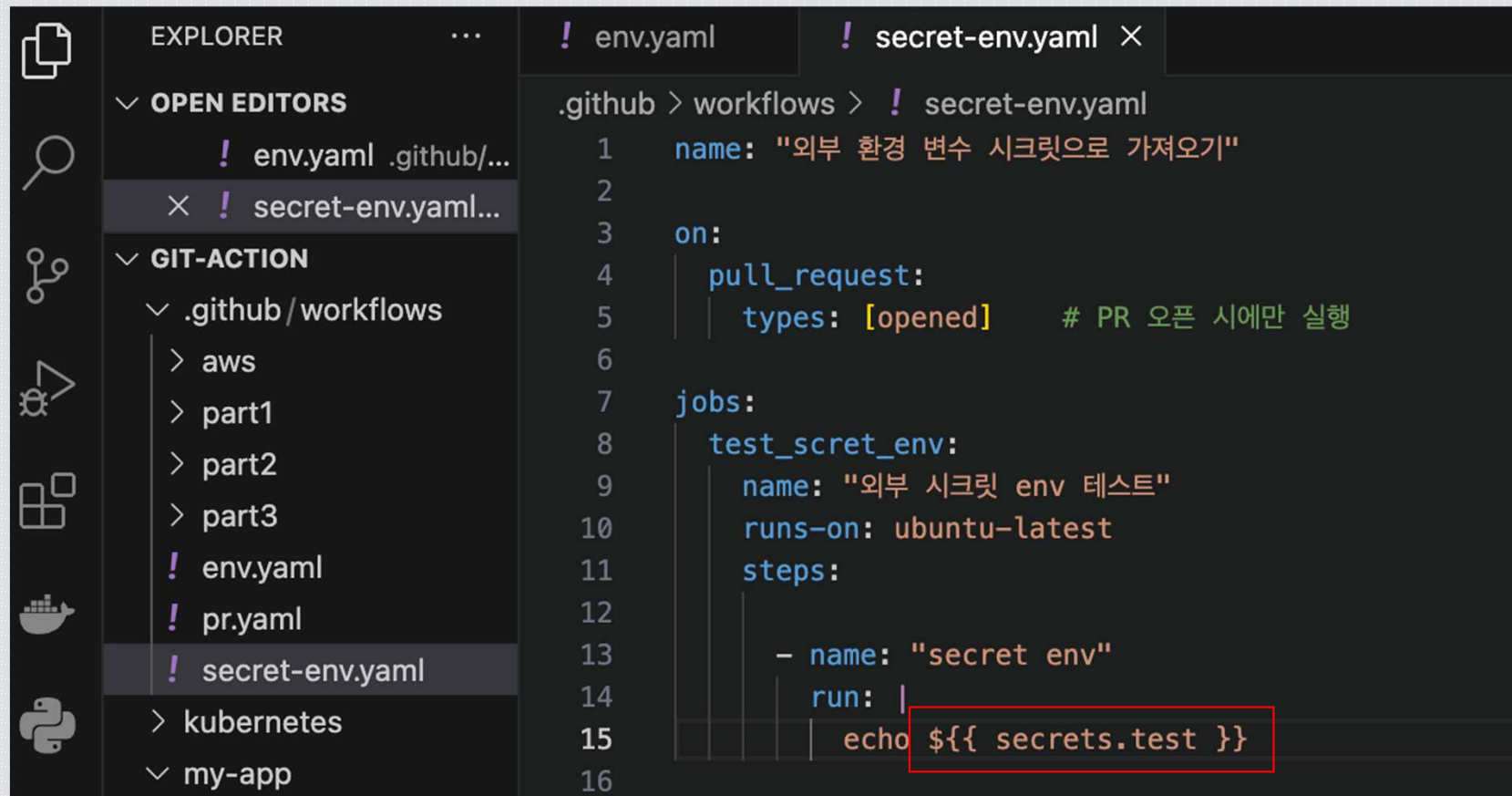
Secret *

secret

Add secret

아까와 동일하게 Key, Value를 작성하고 만듭니다.

CI / CD 2 - 외부 환경 변수 시크릿으로 가져오기



```
1  name: "외부 환경 변수 시크릿으로 가져오기"
2
3  on:
4    pull_request:
5      types: [opened]    # PR 오픈 시에만 실행
6
7  jobs:
8    test_scret_env:
9      name: "외부 시크릿 env 테스트"
10     runs-on: ubuntu-latest
11     steps:
12
13       - name: "secret env"
14         run: |
15           echo ${ secrets.test }
```

Secret 환경 변수를 사용하기 위해선 secrets 를 사용합니다. (vars에서 변경)

CI / CD 2 - 외부 환경 변수 시크릿으로 가져오기

이제 Actions에 가서 확인 해보면,
시크릿 환경 변수가 *** 으로 노출되지 않음을 볼 수 있습니다!

The screenshot shows the GitHub Actions interface for a workflow named '외부 환경 변수 시크릿으로 가져오기'. The workflow is in a 'Test branch #1' state. The left sidebar shows the 'Jobs' section with '외부 시크릿 env 테스트' selected. The main area displays the job details for '외부 시크릿 env 테스트', which succeeded 2 minutes ago. The job steps are listed as follows:

- > Set up job (0s)
- > *** env (0s)
 - 1 ▶ Run echo ***
 - 4 ***
- > Complete job (0s)

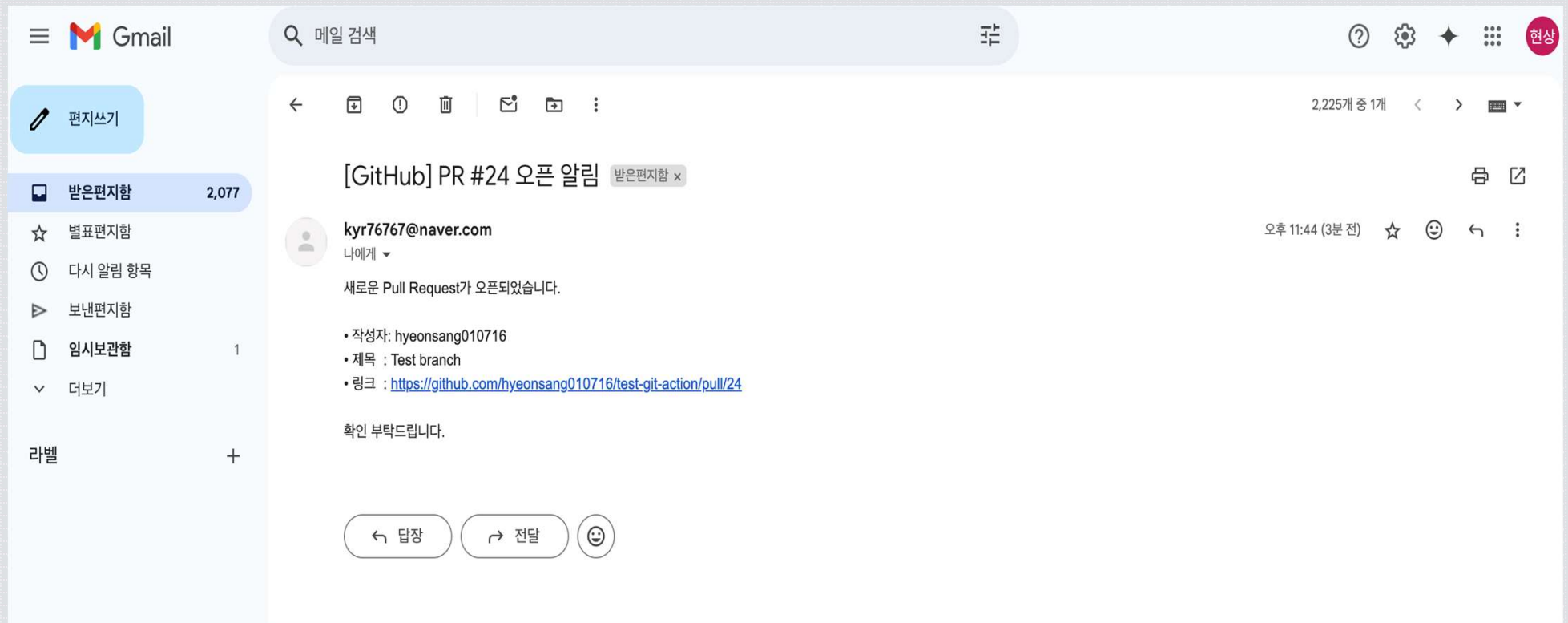
A red box highlights the '*** env' step and its sub-steps, demonstrating that the secret value is masked with asterisks.

만약, private한 key라면 secrets으로 관리하면 됩니다~!

CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

PR 오픈 시, 이메일로 알람이 오면 업무 효율이 올라가겠죠?

해당 예제를 git action을 사용해서 구현해봅시다!





<상황>

개발자 A - naver.com

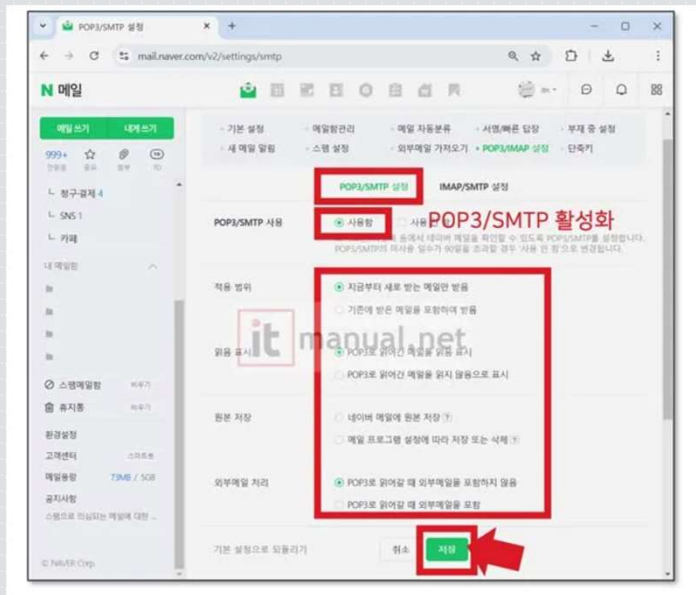
책임 개발자 B - gmail.com

개발자A가 PR을 열었음.

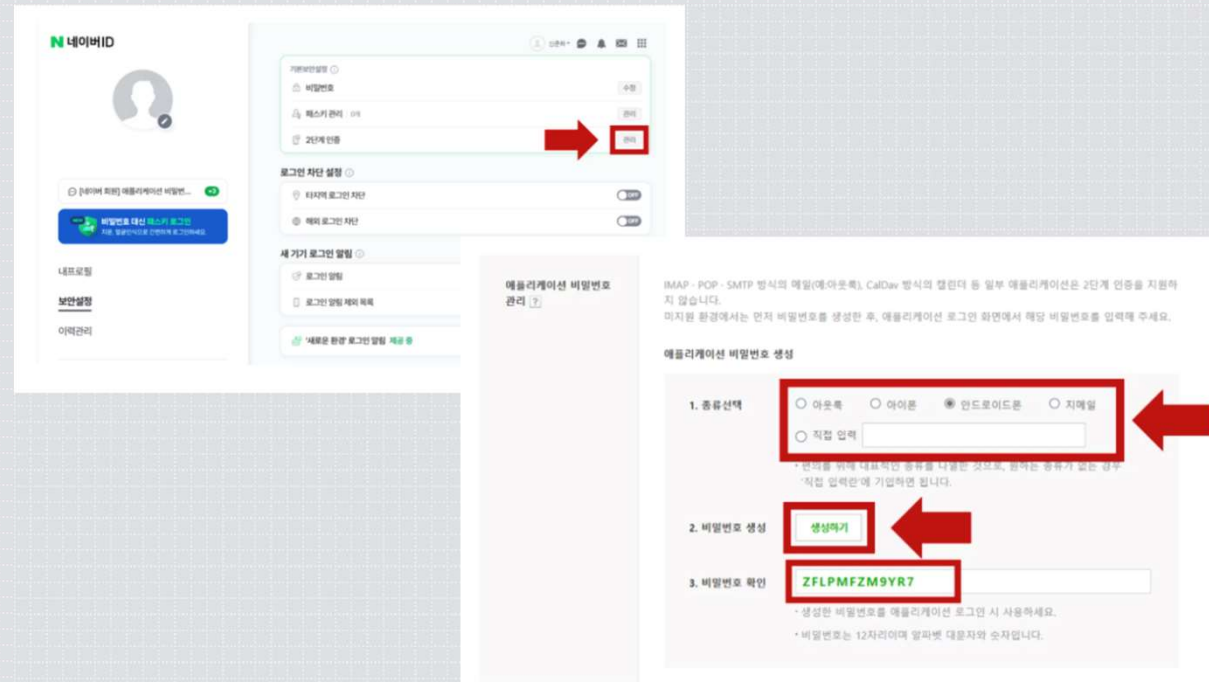
PR 내용이 책임 개발자B에게 이메일로 전송이 되어야 함!

CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

먼저 네이버 이메일을 사용하려면 아래 절차가 필요합니다.
매우 복잡...ㅠㅠ(고생했음..)



POP3/SMTP 활성화 해야함



네이버 2단계 인증,
앱 비밀번호를 만들어야 함



CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

앱 비밀번호까지 모두 만들었다면! 이제 깃헙에 등록을 해줍니다

GMAIL_USERNAME

Value

kyr76767@naver.com

Update secret

개발자A 이메일 시크릿 환경 변수로 등록



앱 비밀번호까지 모두 만들었다면! 이제 깃헙에 등록을 해줍니다

GMAIL_APP_PASSWORD

Value

123456

Update secret

개발자A 앱 비밀번호 시크릿 환경 변수로 등록



CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

앱 비밀번호까지 모두 만들었다면! 이제 깃헙에 등록을 해줍니다

EMAIL_TO

Value

kyr76789@gmail.com

Update secret

책임 개발자B 이메일 시크릿 환경 변수로 등록

CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

```
.github > workflows > ! gmail.yaml
1  name: PR 오픈 시, 이메일 전송
2
3  on:
4    pull_request:
5      types: [opened]
6
7  jobs:
8    notify_gmail:
9      runs-on: ubuntu-latest
10     steps:
11       - name: Send email           이메일 관련 외부 라이브러리라고 생각하면 좋음
12         uses: dawidd6/action-send-mail@v3
13         with:
14           server_address: smtp.naver.com
15           server_port: 465
16           username:       ${ secrets.GMAIL_USERNAME }
17           password:       ${ secrets.GMAIL_APP_PASSWORD }
18           secure:         true
19           from:           ${ secrets.GMAIL_USERNAME }
20           to:             ${ secrets.EMAIL_TO }
21           subject:        "[GitHub] PR #${ github.event.pull_request.number } 오픈 알림"
22           body: |
23             새로운 Pull Request가 오픈되었습니다.
24
25             • 작성자: ${ github.event.pull_request.user.login }
26             • 제목   : ${ github.event.pull_request.title }
27             • 링크   : ${ github.event.pull_request.html_url }
28
29             확인 부탁드립니다.
```


CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

```
.github > workflows > ! gmail.yaml
```

```
1  name: PR 오픈 시, 이메일 전송
2
3  on:
4    pull_request:
5      types: [opened]
6
7  jobs:
8    notify_gmail:
9      runs-on: ubuntu-latest
10     steps:
11       - name: Send email
12         uses: dawidd6/action-send-mail@v3
13         with:
14           server_address: smtp.naver.com
15           server_port: 465
16           username: ${{ secrets.GMAIL_USERNAME }}
17           password: ${{ secrets.GMAIL_APP_PASSWORD }}
18           secure: true
19           from: ${{ secrets.GMAIL_USERNAME }}
20           to: ${{ secrets.EMAIL_TO }}
21           subject: "[GitHub] PR #${{ github.event.pull_request.number }} 오픈 알림"
22           body: |
23             새로운 Pull Request가 오픈되었습니다.
24
25             • 작성자: ${{ github.event.pull_request.user.login }}
26             • 제목 : ${{ github.event.pull_request.title }}
27             • 링크 : ${{ github.event.pull_request.html_url }}
28
29             확인 부탁드립니다.
```

네이버 이메일을 사용하겠다.

CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

```
.github > workflows > ! gmail.yaml
1  name: PR 오픈 시, 이메일 전송
2
3  on:
4    pull_request:
5      types: [opened]
6
7  jobs:
8    notify_gmail:
9      runs-on: ubuntu-latest
10     steps:
11       - name: Send email
12         uses: dawidd6/action-send-mail@v3
13         with:
14           server_address: smtp.naver.com      네이버 이메일 서버 포트 번호
15           server_port: 465
16           username:      ${ secrets.GMAIL_USERNAME }
17           password:      ${ secrets.GMAIL_APP_PASSWORD }
18           secure: true      네이버 이메일은 security 켜줘야 함.
19           from:          ${ secrets.GMAIL_USERNAME }
20           to:            ${ secrets.EMAIL_TO }
21           subject:       "[GitHub] PR #${ github.event.pull_request.number } 오픈 알림"
22           body: |
23             새로운 Pull Request가 오픈되었습니다.
24
25             • 작성자: ${ github.event.pull_request.user.login }
26             • 제목 : ${ github.event.pull_request.title }
27             • 링크 : ${ github.event.pull_request.html_url }
28
29             확인 부탁드립니다.
```

CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

```
.github > workflows > ! gmail.yaml
1  name: PR 오픈 시, 이메일 전송
2
3  on:
4    pull_request:
5      types: [opened]
6
7  jobs:
8    notify_gmail:
9      runs-on: ubuntu-latest
10     steps:
11       - name: Send email
12         uses: dawidd6/action-send-mail@v3
13         with:
14           server_address: smtp.naver.com
15           server_port: 465
16           username: ${{ secrets.GMAIL_USERNAME }}
17           password: ${{ secrets.GMAIL_APP_PASSWORD }}
18           secure: true
19           from: ${{ secrets.GMAIL_USERNAME }}
20           to: ${{ secrets.EMAIL_TO }}
21           subject: "[GitHub] PR #${{ github.event.pull_request.number }} 오픈 알림"
22           body: |
23             새로운 Pull Request가 오픈되었습니다.
24
25             • 작성자: ${{ github.event.pull_request.user.login }}
26             • 제목 : ${{ github.event.pull_request.title }}
27             • 링크 : ${{ github.event.pull_request.html_url }}
28
29             확인 부탁드립니다.
```

개발자A 정보

책임 개발자B 이메일

CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

```
.github > workflows > ! gmail.yaml
1  name: PR 오픈 시, 이메일 전송
2
3  on:
4    pull_request:
5      types: [opened]
6
7  jobs:
8    notify_gmail:
9      runs-on: ubuntu-latest
10     steps:
11       - name: Send email
12         uses: dawidd6/action-send-mail@v3
13         with:
14           server_address: smtp.naver.com
15           server_port: 465
16           username: ${{ secrets.GMAIL_USERNAME }}
17           password: ${{ secrets.GMAIL_APP_PASSWORD }}
18           secure: true
19           from: ${{ secrets.GMAIL_USERNAME }}
20           to: ${{ secrets.EMAIL_TO }}
21           subject: "[GitHub] PR #${{ github.event.pull_request.number }} 오픈 알림"
22           body: |
23             새로운 Pull Request가 오픈되었습니다.
24
25             • 작성자: ${{ github.event.pull_request.user.login }}
26             • 제목 : ${{ github.event.pull_request.title }}
27             • 링크  : ${{ github.event.pull_request.html_url }}
28
29             확인 부탁드립니다.
```

이메일 내용

CI / CD 2 - PR 오픈 시, 이메일 알림 미니 예제

깃 액션 이메일이 정상적으로 보내짐!

The screenshot shows the GitHub Actions interface for a workflow named 'Test branch #8'. The 'notify_gmail' job is highlighted in the left sidebar. The main panel shows the job's execution steps:

- Set up job** (1s):
 - 1 Current runner version: '2.323.0'
 - 2 ▶ Operating System
 - 6 ▶ Runner Image
 - 11 ▶ Runner Image Provisioner
 - 13 ▶ GITHUB_TOKEN Permissions
 - 17 Secret source: Actions
 - 18 Prepare workflow directory
 - 19 Prepare all required actions
 - 20 Getting action download info
 - 21 Download action repository 'dawidd6/action-send-mail@v3' (SHA:4226df7daafa6fc901a43789c49bf7ab309066e7)
 - 22 Complete job name: notify_gmail
- Send email** (4s):
 - 1 ▶ Run dawidd6/action-send-mail@v3
- Complete job**:
 - 1 Cleaning up orphan processes

The job status is 'succeeded 17 minutes ago in 5s'.

보낸메일함 0/132

메일 검색

상세

읽음 삭제 | 답장 전체답장 전달 다시보내기 | 이동 | 더보기 | 필터

kyr76789@gmail.com [GitHub] PR #24 오픈 알림

05.11.23:44

The screenshot shows a Gmail inbox with the following email:

- From:** kyr76767@naver.com
- Subject:** [GitHub] PR #24 오픈 알림
- Body:**
 - 새로운 Pull Request가 오픈되었습니다.
 - 작성자: hyeonsang010716
 - 제목: Test branch
 - 링크: <https://github.com/hyeonsang010716/test-git-action/pull/24>
 - 확인 부탁드립니다.

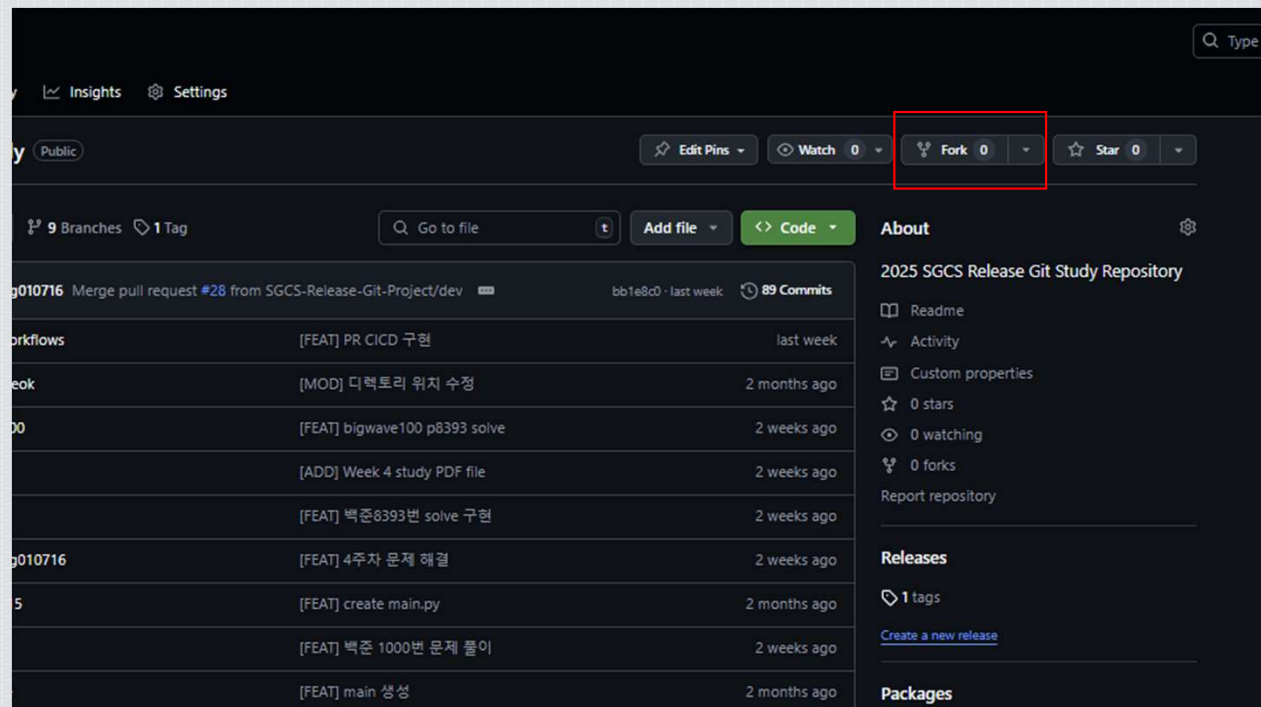


마지막으로 지난 시간(스프린트5)까지 내용을 버전 관리 해볼까요?

git tag를 사용해서 v2.0.0을 만들어 봅시다!

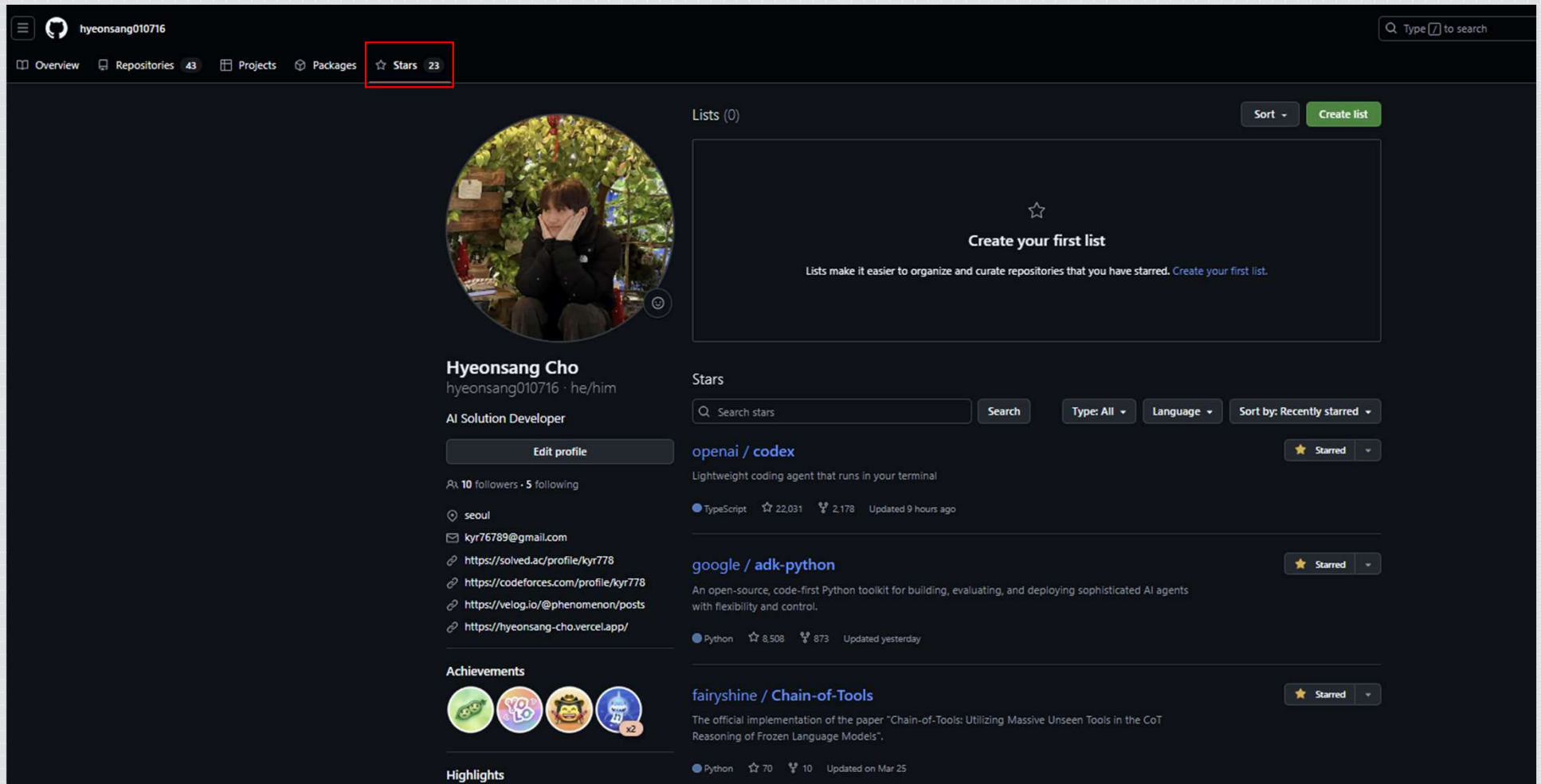


깃헙으로 포트폴리오 만들기



Fork를 사용해서, 자신이 참여한 프로젝트를 내 레포에 가져올 수 있음!

마지막 버전 관리



hyeonsang010716

Overview Repositories 43 Projects Packages **Stars 23**

Hyeonsang Cho
hyeonsang010716 · he/him
AI Solution Developer

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Achievements

Highlights

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깃헙으로 포트폴리오 만들기



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Achievements



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☆ PRO

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 **Cho Hyeon Sang**

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LLM Agent Developer passionate about creating intelligent and scalable AI solutions. 🔥

Hyeonsang Cho's GitHub Stats

☆ Total Stars Earned:	16
🕒 Total Commits (2025):	502
🔗 Total PRs:	102
🔍 Total Issues:	13

B+

Growing with Algorithms

Diamond kyr778

rate 2,258
solved 1,772
class 7

58%

Expert kyr778

1645
max rank
top rating

Expert 1899
1645

Skills


Platforms & Languages

PYTHON

LANGGRAPH LANGCHAIN NUMPY PANDAS PYTORCH

FLASK FASTAPI

STREAMLIT JAVASCRIPT HTML5 CSS3



hyeonsang010716 Hyeonsang Cho · he/him

AI Solution Developer

★ PRO

seoul

Committed to this repository in the past month

Member of [SGCS-Release-Git-Project](#) and 4 more

학교 인증을 하면, 공짜로 깃 pro를 받을 수 있음!

<https://github.com/education>

깃헙으로 포트폴리오 만들기

hyeonsang010716 Public

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Growing with Algorithms

Diamond 5 kyr778

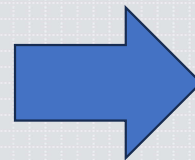
rate	2,258
solved	1,772
class	7
58%	2,258 / 2,300

Expert 1645 max rank top rating Expert 1645 1899 kyr778

Skills

Platforms & Languages

PYTHON



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Growing with Algorithms

Diamond 5 kyr778

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Expert 1645 max rank top rating Expert 1645 1899 kyr778

Skills

Platforms & Languages

PYTHON

LANGGRAPH LANGCHAIN HUNPY PANDAS PYTORCH

PLASK PASTAPE

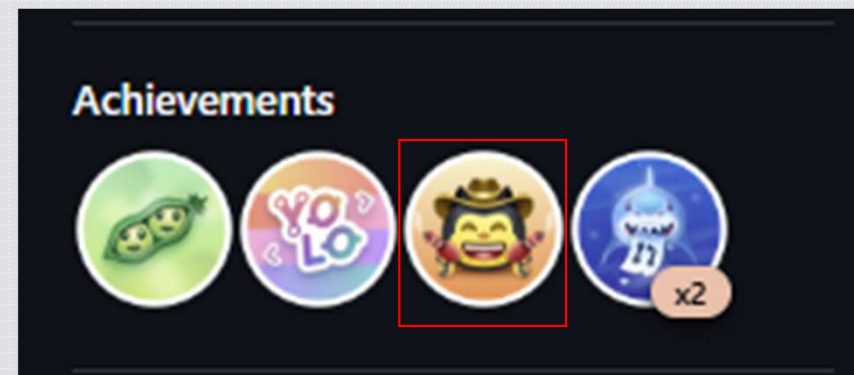
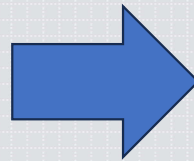
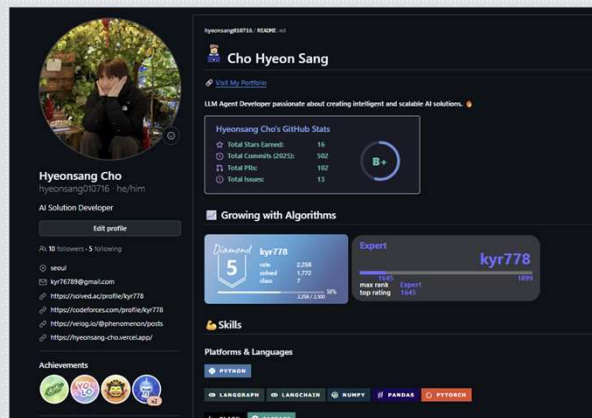
STREAMLIT JAVASCRIPT HTML5 CSS3

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깃헙 아이디와 동일한 레포를 만들고 리드미를 작성하면
깃헙 메인에 연결 됨.

깃헙으로 포트폴리오 만들기



풀리퀘 열었다가 5분 안에 닫으면, 생김 ㅋㅋㅋ



모두 수고하셨습니다~!

그동안 스터디에 열심히 따라와 주셔서 감사합니다~!