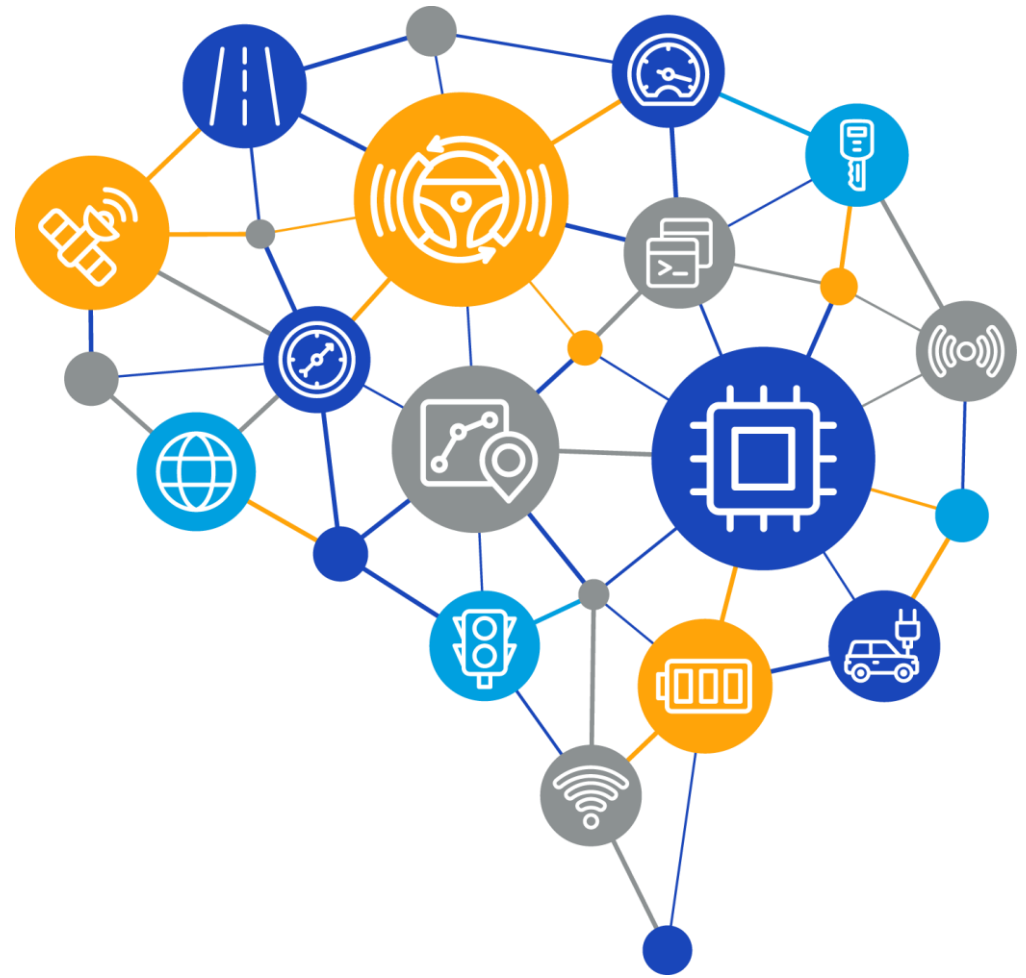


깃허브 개요와 계정 등록

Version Control and
Git & Github basics

2022.05

강환수 교수



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01

깃허브 개요



- **Github**

- 버전 관리를 위한 서버 저장소 및 프로젝트 개발을 위한 협업 관리 서비스
 - 시스템 개발자와 운영을 담당하는 정보기술 전문가 사이의 소통, 협업, 통합 및 자동화 지원
 - 전 세계 개발자가 함께 개발 지원
- 프로젝트 소스 공유와 협업 소프트웨어 빌드 플랫폼
 - 개발자들의 소셜 네트워크 서비스 SNS

Git (깃) ?
분산 버전 제어 SW



Github (깃허브) ?
Git을 위한 웹 저장소(Repository)
+ 커뮤니티 협의공간

+ 시스템 개발자와 운영을 담당하는 정보기술 전문가 사이의
소통, 협업, 통합 및 자동화 지원

Github

분산 환경 소스코드 버전 관리 도구인
Git의 글로벌 웹 호스팅 서비스

세계 최대의 오픈 소스 공유 플랫폼




- ▶ 공개/비공개 저장소, 코드 리뷰, 문서화, 커뮤니티 등 제공
- ▶ 무료 서비스 사용 시 공개 저장소만 사용 가능
 - ✓ 모두에게 소스 코드 내용 오픈
 - ✓ 비공개 저장소 사용 시 유료 서비스 가입

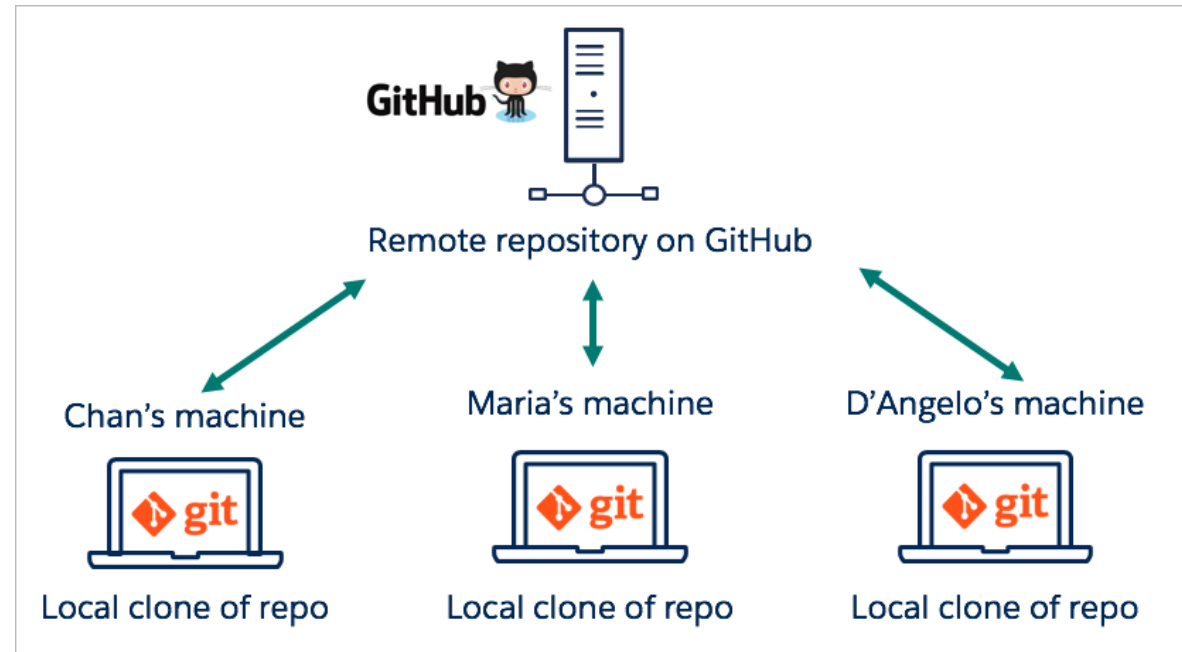
Github

분산 환경 소스코드 버전 관리 도구인
Git의 글로벌 웹 호스팅 서비스

- ▶ 2018년 8월 기준 9600만 개 이상의 프로젝트 호스팅
3100만 명 이상의 개발자 참여
- ▶ 2018년 6월 4일 마이크로소프트사 75억 달러 인수 발표

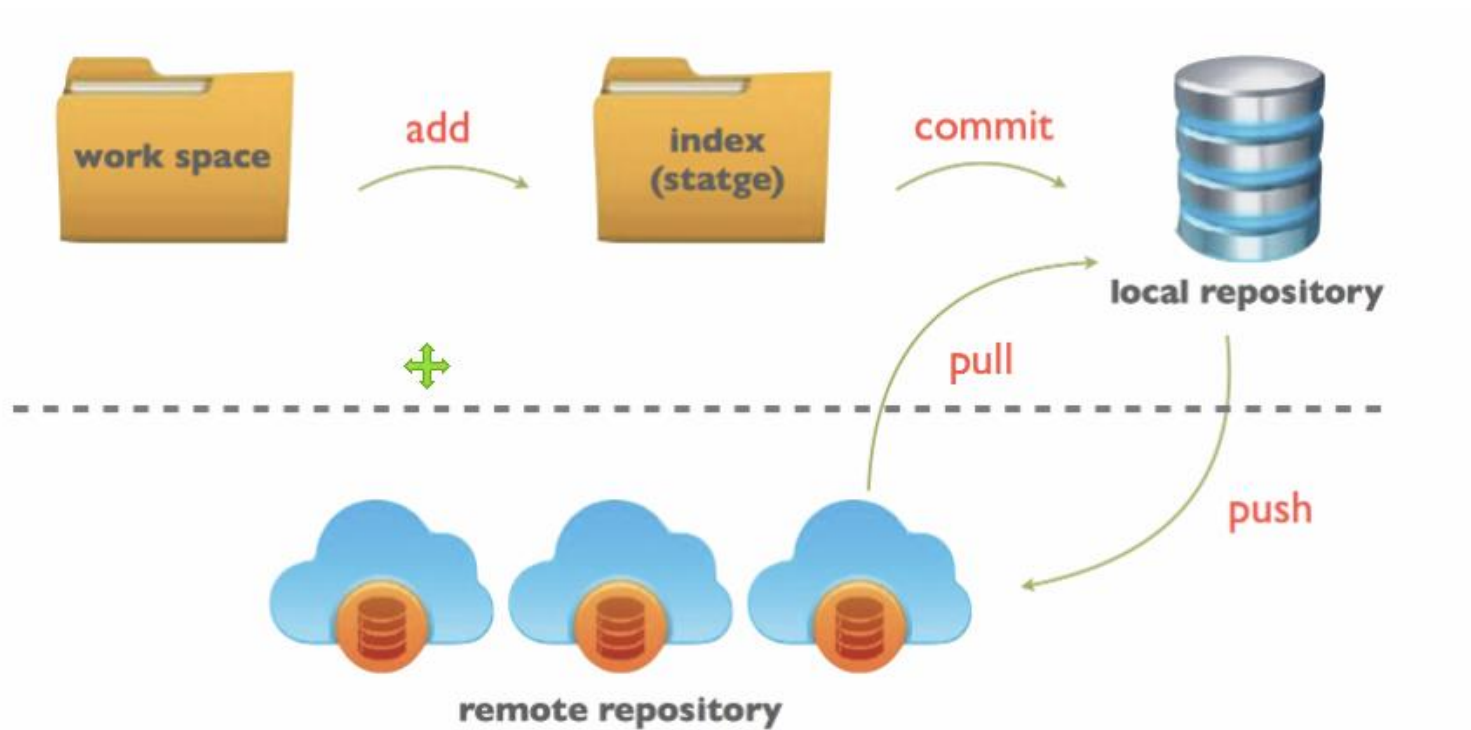
WHAT ARE GIT & GITHUB?

-  **Git** is a version control system to keep track of changes to files and projects over time.
-  **GitHub** is a website that hosts Git repositories online, making it easier for developers to share code.
-  **Repositories** (or "repos") are folders which contain intentional snapshots of progress called commits.



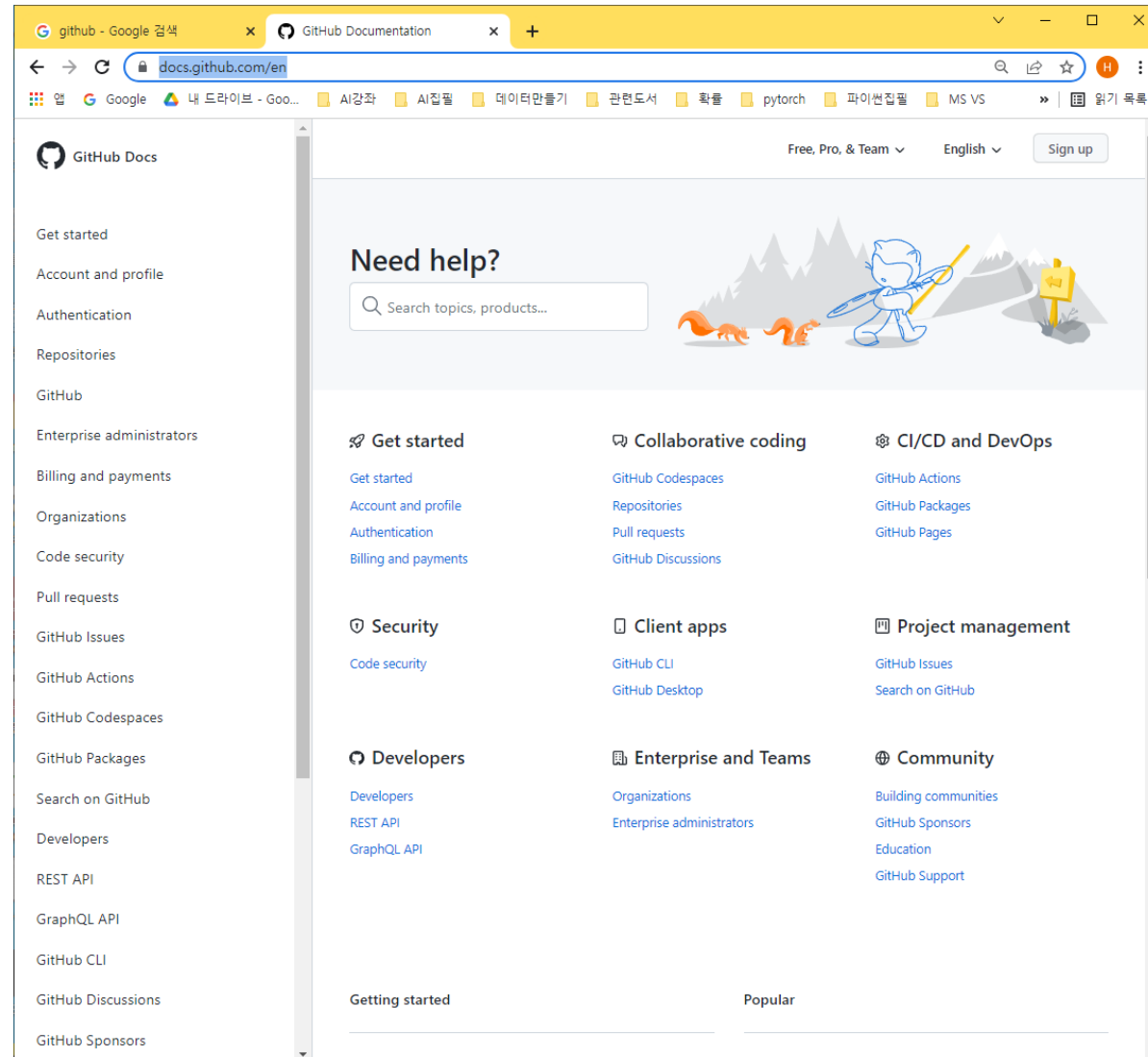
<https://www.coursereport.com/blog/what-is-github>

- **Push**
 - 서버로 올리기
- **Pull**
 - 지역 저장소로 내리기

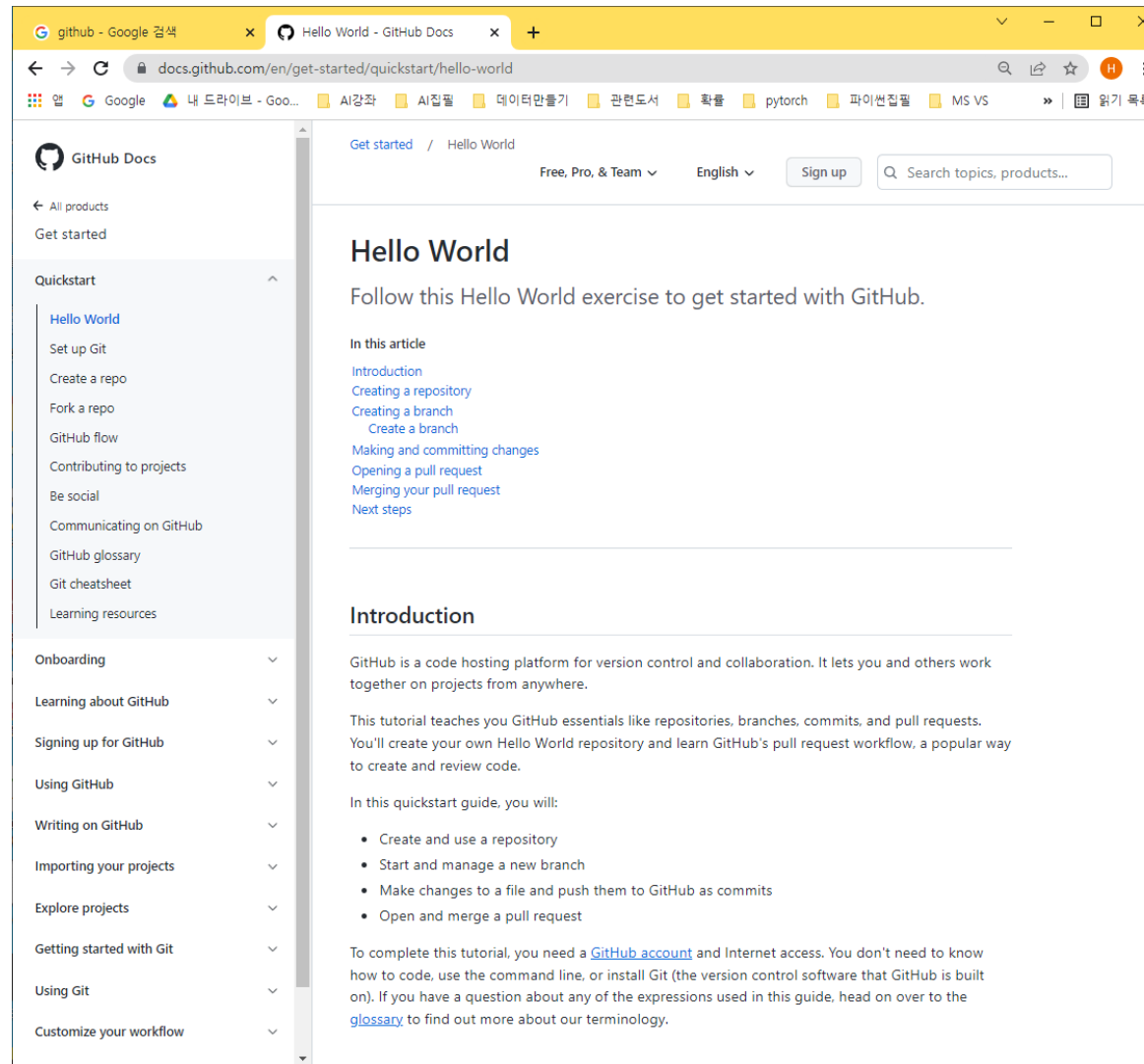


- 분산 버전 관리 툴인 깃 저장소 호스팅을 지원하는 웹 서비스
 - 루비 온 레일스로 작성
 - 영리적인 서비스와 오픈소스를 위한 무상 서비스를 모두 제공
 - 현재 가장 인기있는 버전관리 저장소 호스팅 서비스
- 2018년 6월 4일, 마이크로소프트는 75억 달러(약 9조원)에 깃허브를 인수
- 오픈 소스 소프트웨어의 성지
 - Tensorflow
 - <https://github.com/tensorflow/tensorflow>
 - Visual Studio Code
 - <https://github.com/microsoft/vscode>
- 유사 서비스
 - Bitbucket
 - <https://bitbucket.org/>
 - GitLab
 - <https://about.gitlab.com/>

- <https://docs.github.com/en>

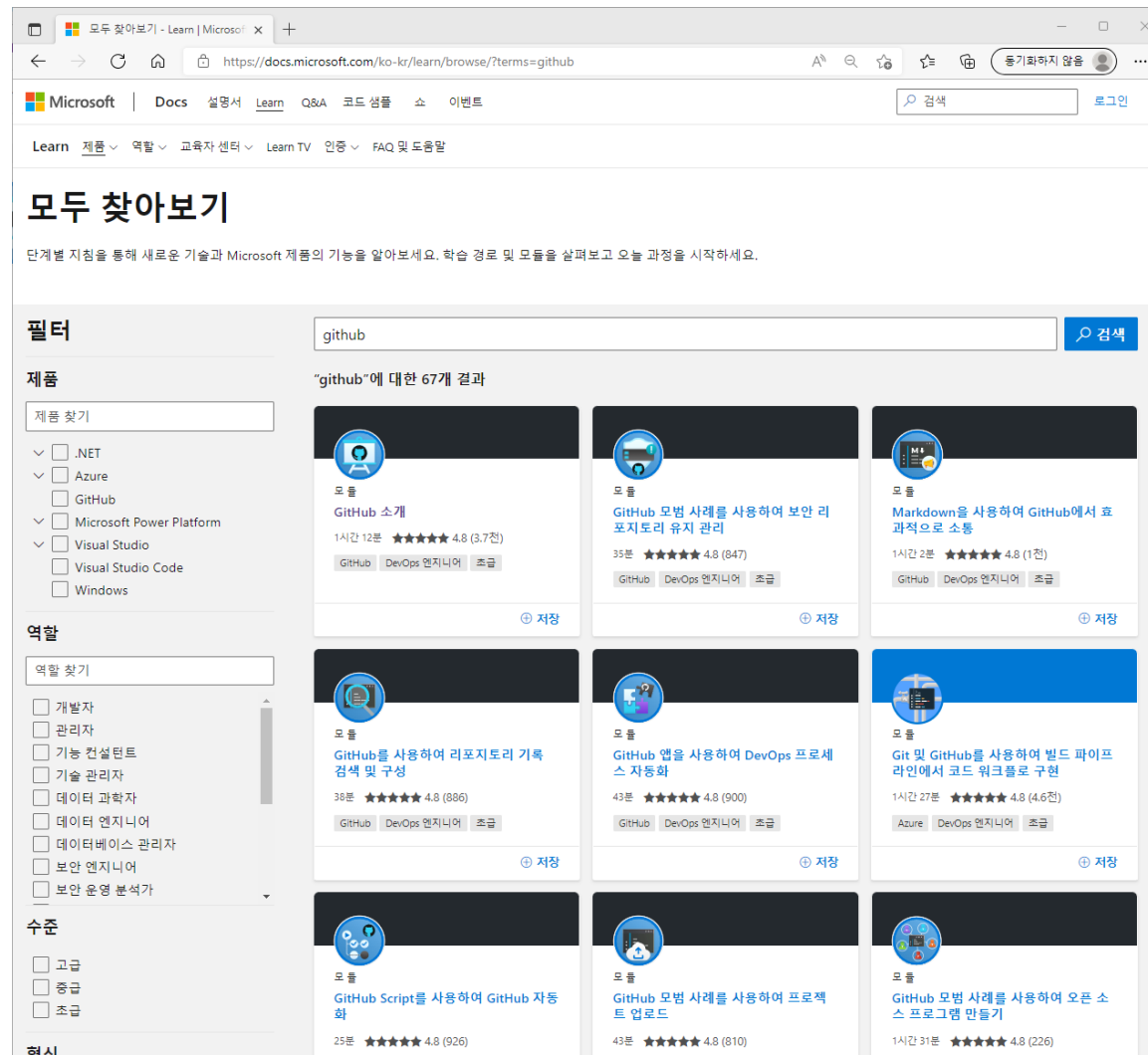


- <https://docs.github.com/en/get-started/quickstart/hello-world>



- MS 공식 사이트

- <https://docs.microsoft.com/ko-kr/learn/browse/?terms=github>



- **GitHub**

- 코드를 호스팅 및 검토하고, 프로젝트를 관리하며,
- 5천만 명이 넘는 개발자와 함께 소프트웨어를 빌드하는 개발 플랫폼

- **모두가 GitHub에서 빌드하는 이유는 무엇일까요?**

- 규모에 상관없이 모든 회사와 조직에서 원하는 공개 및 비공개 프로젝트에 필요한 중요 DevOps 기능을 제공하기 때문
- 계획 수립 기능, 버그 수정, 변경 사항 관련 협업 등을 진행할 때 GitHub를 사용하면 전 세계 소프트웨어 개발자와 함께 작업 가능
- 그리고 더 나은 제품을 만들 가능성 향상

- **주요 기능**

- 문제, 알림
- 분기, 커밋
- 끌어오기 요청(PR: Pull Request)

<https://docs.microsoft.com/ko-kr/learn/modules/introduction-to-github/1-introduction>

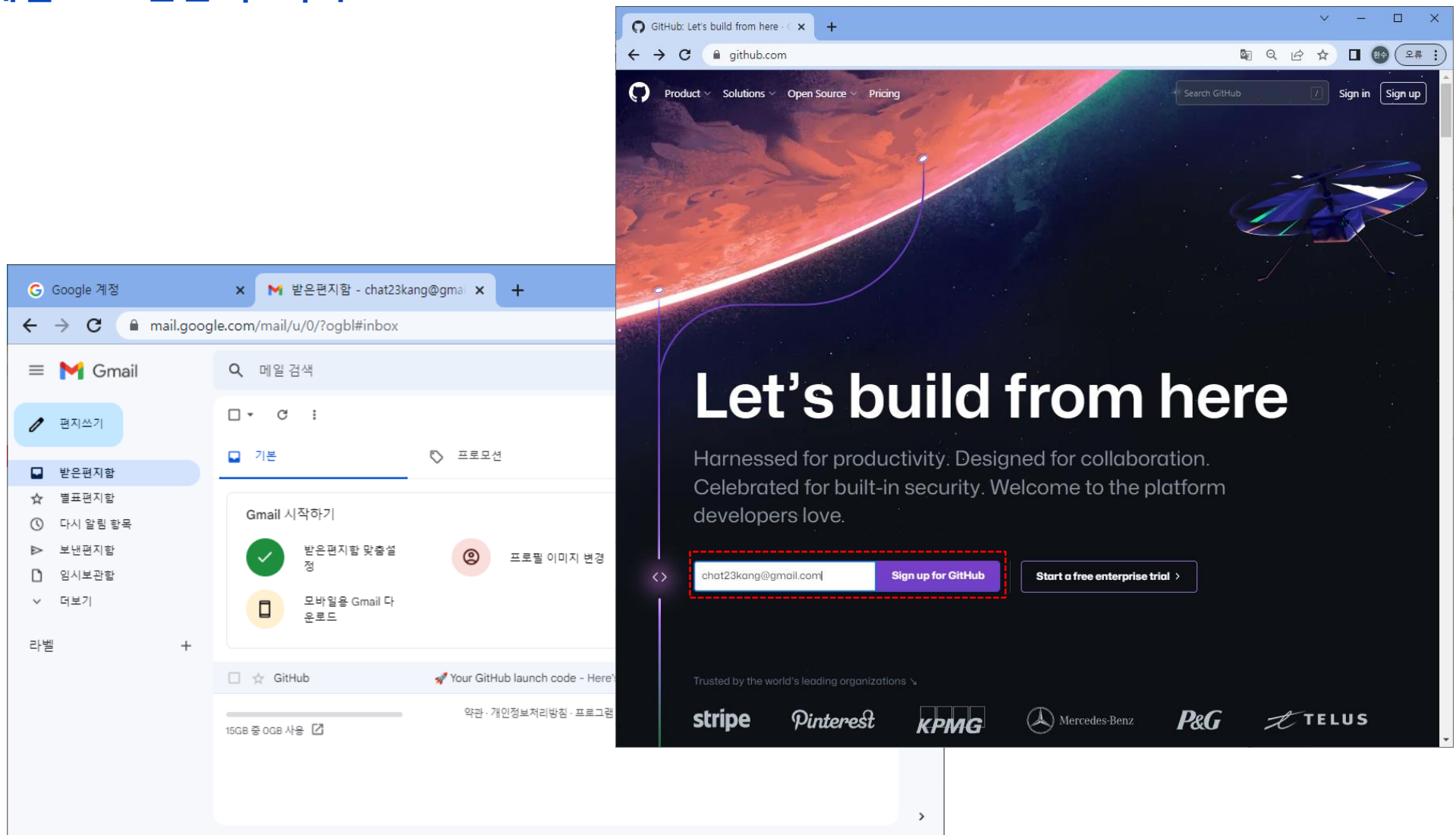
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02

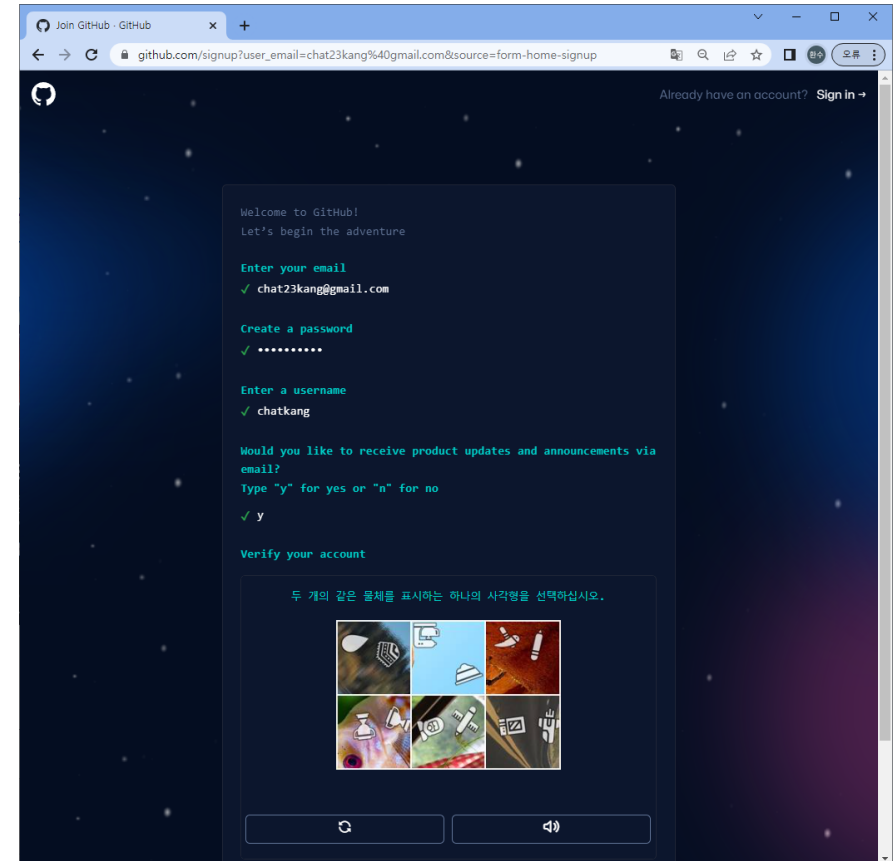
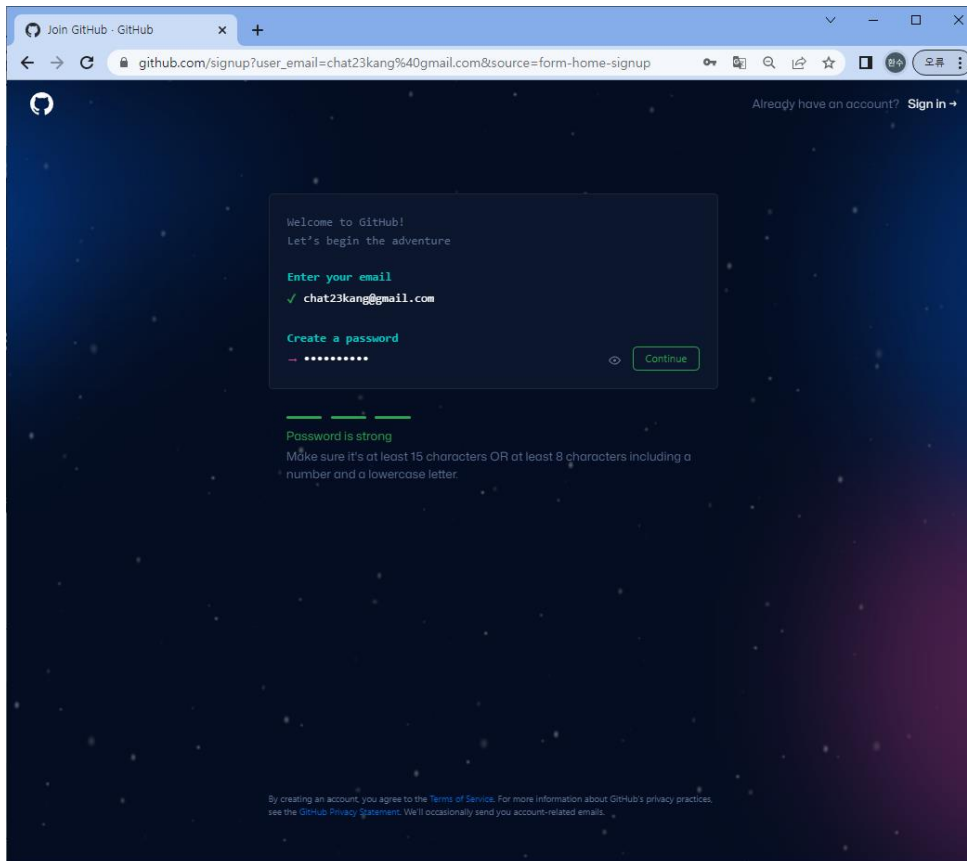
깃허브 계정,
저장소 생성과 삭제



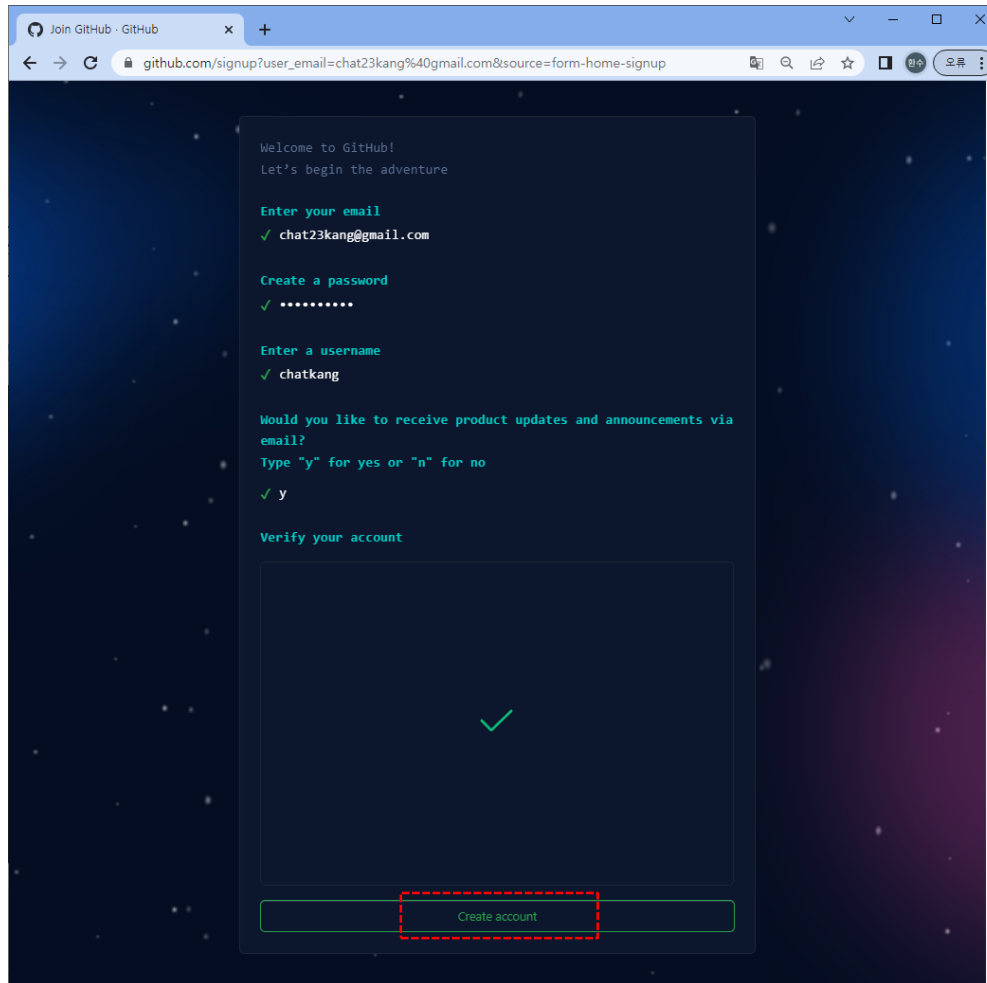
- 메일 로그인한 후 시작...



- Username: 깃허브 계정 이름



- 깃허브 확인: 다음 번호를 깃허브에 입력



The screenshot shows the GitHub sign-up page with the following steps completed:

- Welcome to GitHub! Let's begin the adventure
- Enter your email: ✓ chat23kang@gmail.com
- Create a password: ✓
- Enter a username: ✓ chatkang
- Would you like to receive product updates and announcements via email? Type "y" for yes or "n" for no: ✓ y
- Verify your account: A large green checkmark is displayed.

At the bottom, there is a "Create account" button highlighted with a red dashed box.



Here's your GitHub launch code, @chatkang!



Continue signing up for GitHub by entering the code below:

09479528

Open GitHub

Once completed, you can start using all of GitHub's features to explore, build, and share projects.

Not able to enter the code? Paste the following link into your browser:

- 다음 적정히 입력

How many team members will be working with you?

This will help us guide you to the tools that are best suited for your projects.

Just me 2 - 5 5 - 10 10 - 20 20 - 50 50+

Are you a student or teacher?

Student Teacher

Continue

Skip personalization

The tools you need to build what you want.

Soup to nuts, GitHub has it all.

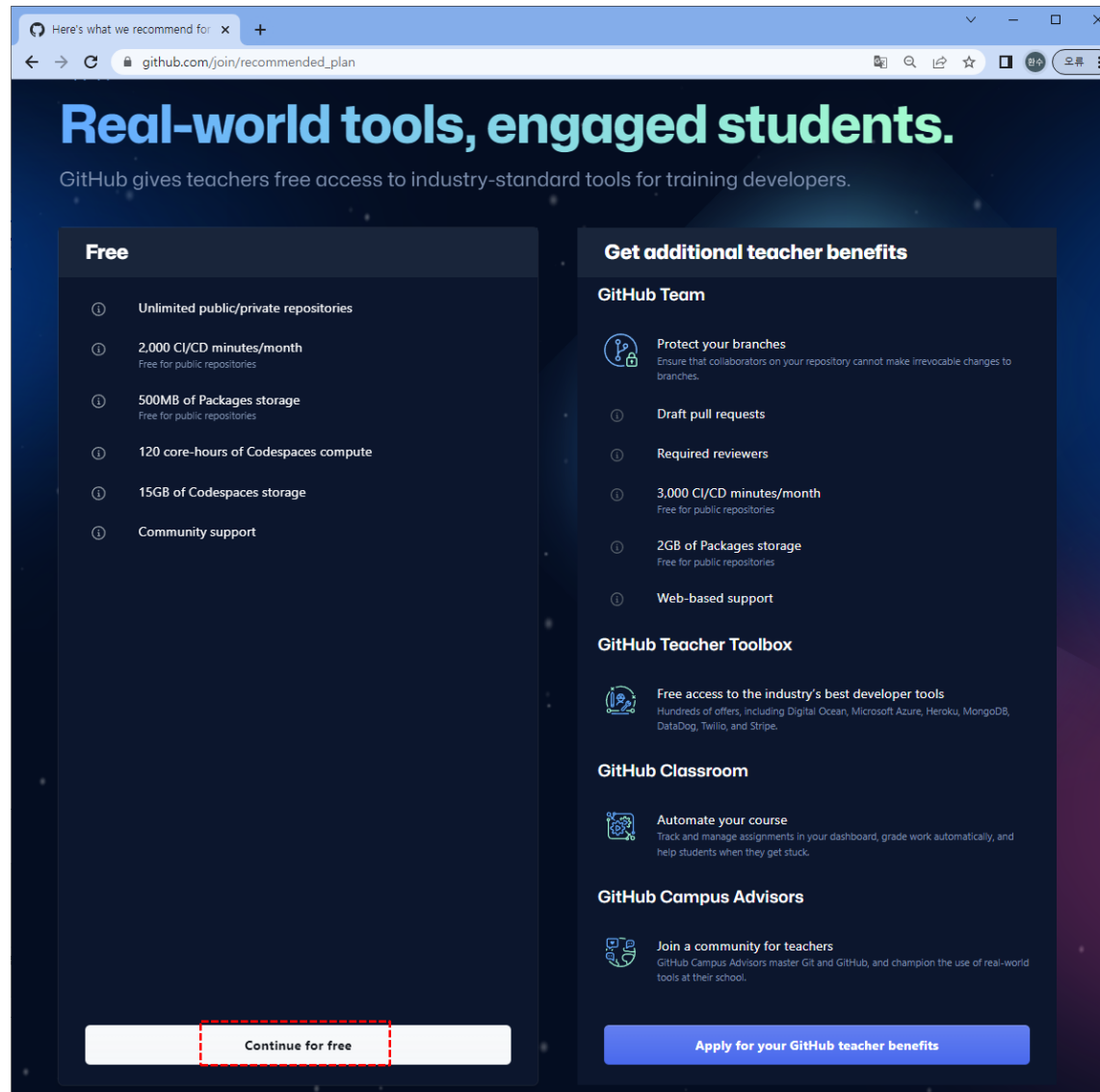
interested in using?

Select all that apply so we can point you to the right GitHub plan.

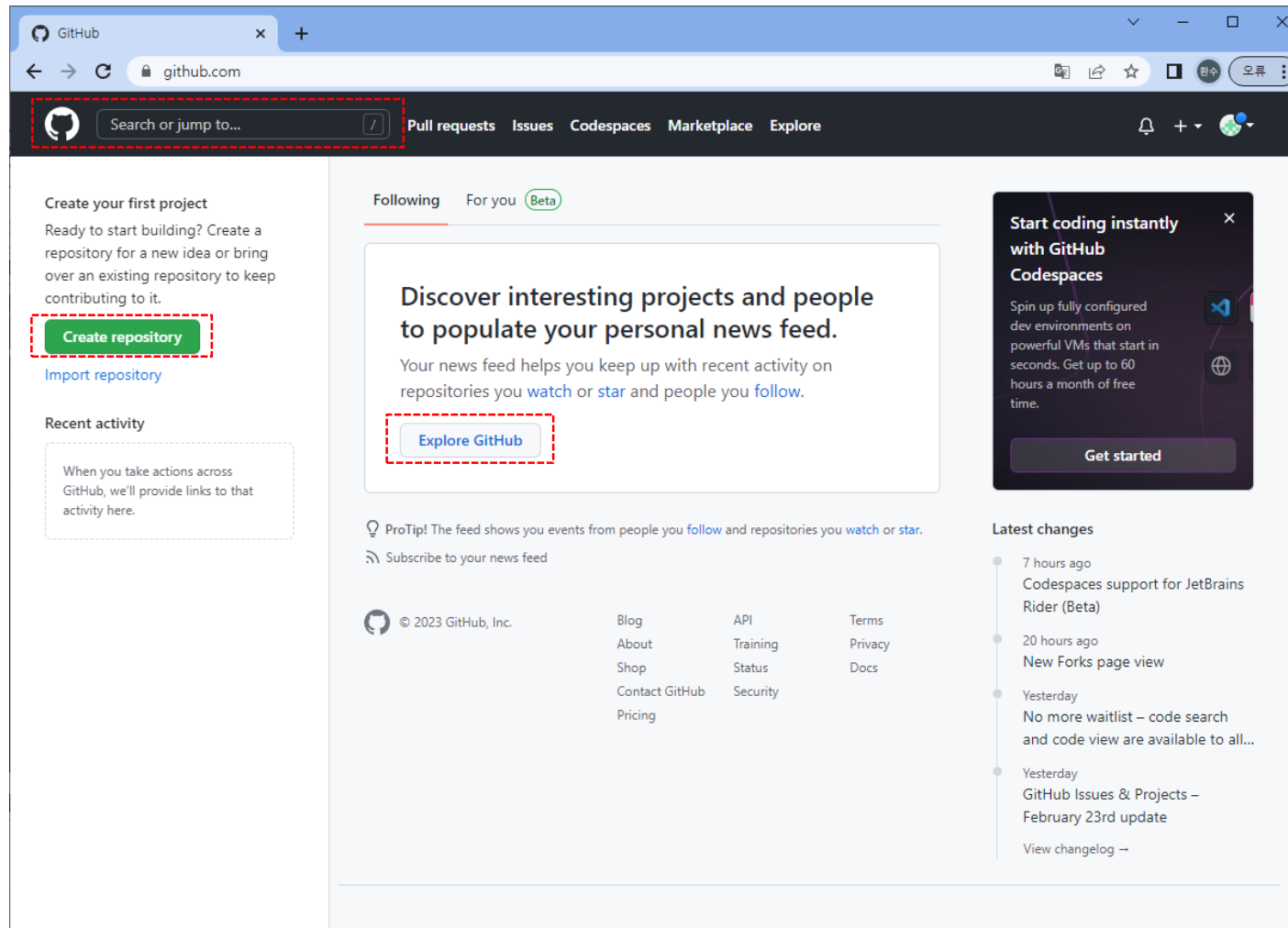
- ☒ Collaborative coding
Codespaces, Pull requests, Notifications, Code review, Code review assignments, Code owners, Draft pull requests, Protected branches, and more.
- ☒ Automation and CI/CD
Actions, Packages, APIs, GitHub Pages, GitHub Marketplace, Webhooks, Hosted runners, Self-hosted runners, Secrets management, and more.
- ☒ Security
Private repos, 2FA, Required reviews, Required status checks, Code scanning, Secret scanning, Dependency graph, Dependabot alerts, and more.
- ☐ Enterprise security
SAML, LDAP, IP allow list, GitHub Connect, and Audit log API.
- ☒ Client Apps
GitHub Mobile, GitHub CLI, and GitHub Desktop.
- ☒ Project Management
Projects, Labels, Milestones, Issues, Unified Contribution Graph, Org activity graph, Org dependency insights, Repo insights, Wikis, and GitHub Insights.
- ☒ Team Administration
Organizations, Invitations, Team sync, Custom roles, Domain verification, Audit Log API, Repo creation restriction, and Notification restriction.
- ☒ Community
GitHub Marketplace, GitHub Sponsors, GitHub Skills, and Electron.

Continue

- Continue for free



- 다음은 저장소가 하나도 없을 때 보이는 화면
- 깃허브에 등록된 공개 저장소를 검색하는 [Explore GitHub]
- 저장소를 만드는[Create repository] 버튼



- 저장소 이름
- 설명
- Public / Private
- Add a README file

Create a New Repository

github.com/new

Search or jump to... Pull requests Issues Codespaces Marketplace Explore

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere?
[Import a repository.](#)

Owner * Repository name *

chatkang / py-basics ✓

Great repository names are short and memorable. Need inspiration? How about [probable-adventure](#)?

Description (optional)

파이썬 프로그래밍 연습

☒ Public
Anyone on the internet can see this repository. You choose who can commit.

☐ Private
You choose who can see and commit to this repository.

Initialize this repository with:
Skip this step if you're importing an existing repository.

☒ Add a README file
This is where you can write a long description for your project. [Learn more.](#)

Add .gitignore
Choose which files not to track from a list of templates. [Learn more.](#)

.gitignore template: None

Choose a license
A license tells others what they can and can't do with your code. [Learn more.](#)

License: None

This will set `main` as the default branch. Change the default name in your [settings](#).

i You are creating a public repository in your personal account.

Create repository

원격 저장소의 소유주. 개인 계정 혹은 팀 계정으로 지정할 수 있습니다.

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

1 Owner * must-have-developer

2 Repository name * chapter1-basic ✓

Great repository names are short and memorable. Need inspiration? How about probable-octo-robot?

3 Description (optional)

깃과 깃허브 첫 실습을 위한 원격 저장소

4

☒ Public Anyone on the internet can see this repository. You choose who can commit.

☐ Private You choose who can see and commit to this repository.

원격 저장소의 이름. 한 계정 내에서 중복된 저장소 이름은 사용할 수 없습니다.

원격 저장소에 대한 간략한 설명

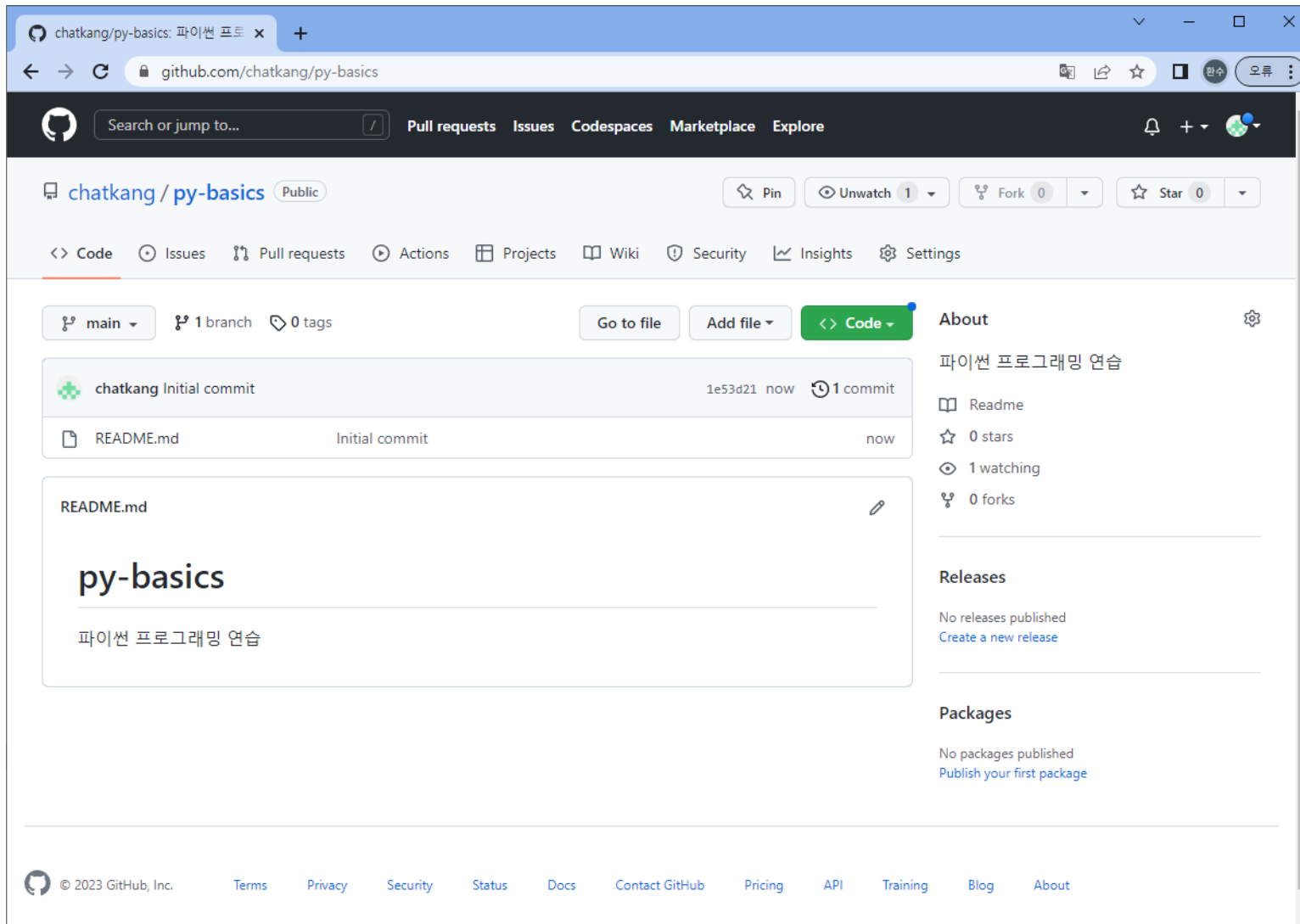
공개/비공개 저장소 선택

- README.md

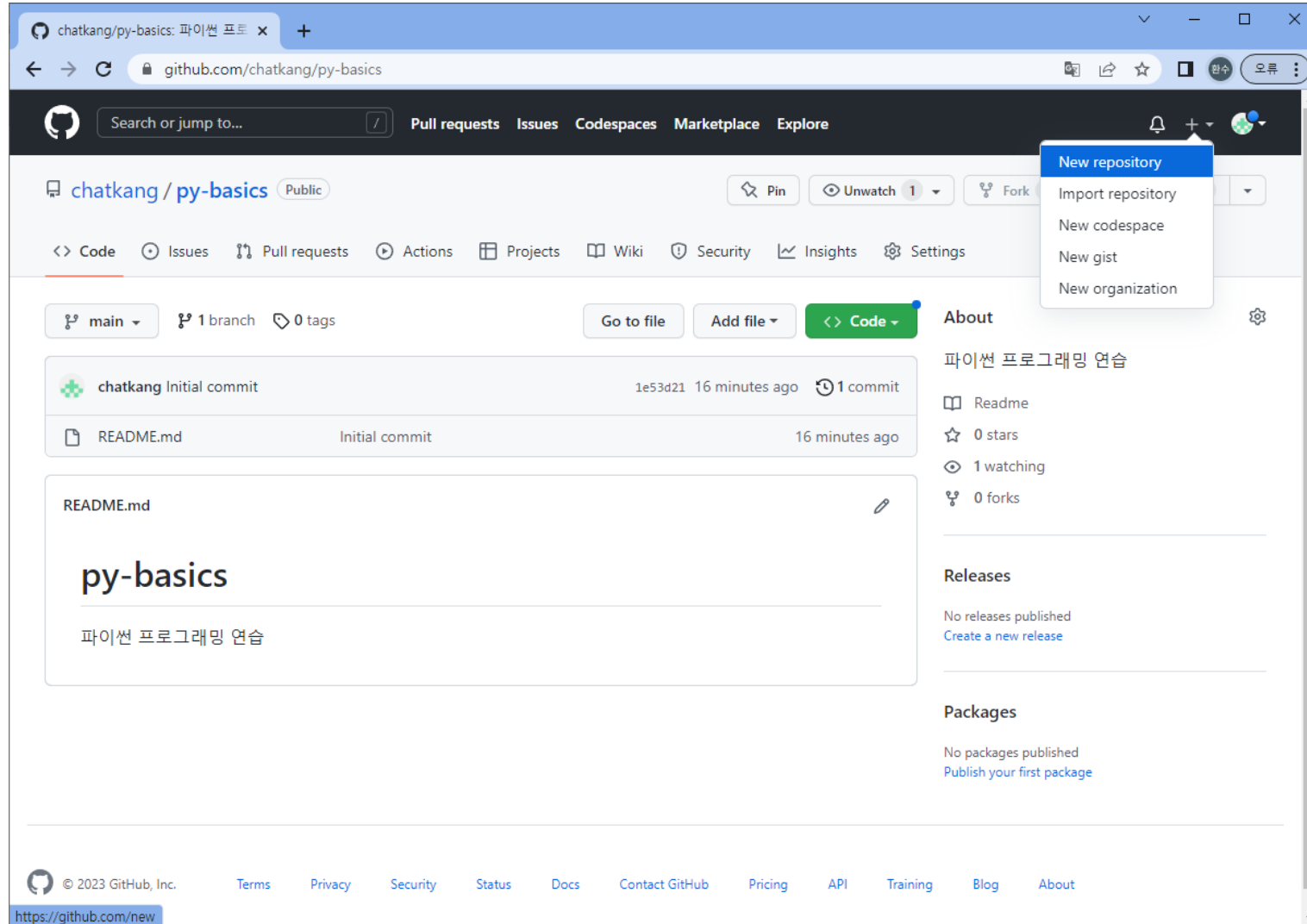
- Markdown 포맷 파일

- # hello-githublearning github
 - ### 분산 버전 관리 툴인 깃 저장소 호스팅을 지원하는 웹 서비스
 - - 루비 온 레일스로 작성
 - - 영리적인 서비스와 오픈소스를 위한 무상 서비스를 모두 제공
 - - 현재 가장 인기있는 버전관리 저장소 호스팅 서비스

- 계정에는 여러 개의 저장소 생성 가능



- 깃허브 저장소 생성
 - hello-github

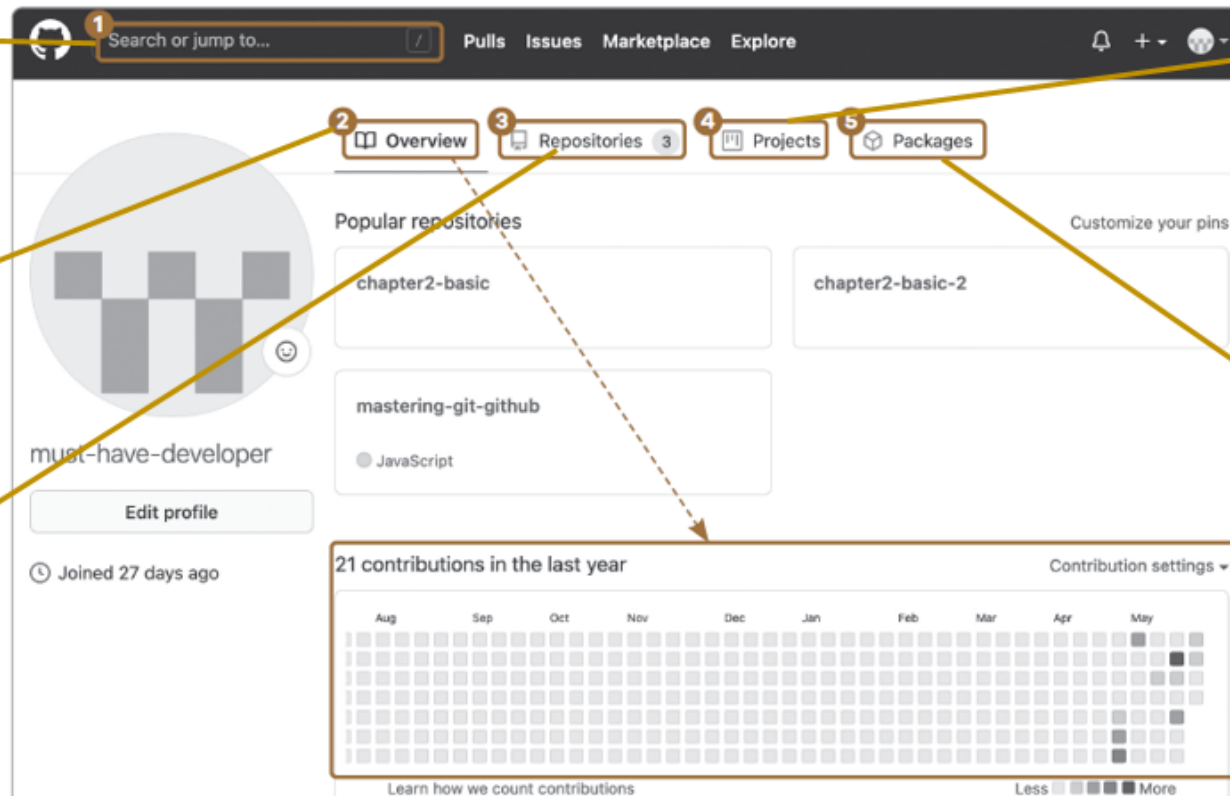


- 주소창
 - `github.com/{Username}`을 입력
- 메인 페이지의 '우측 상단 아이콘' → [Your profile]을 클릭

로그인한 사용자의 깃허브 저장소를 우선으로 검색

얼마나 많은 활동을 했는지 보여줍니다.

개인이 생성한 원격 저장소를 확인할 수 있는 탭입니다.



작업을 정의하고 우선순위를 지정 및 관리하는 도구입니다.

깃허브를 통해 내가 만든 소스 코드를 패키지로 만들고 관리할 수 있도록 돕는 도구

- 이름과 설명만 입력
- 초기화에서
 - Add a README file
 - 체크하지 않으면
 - 저장소에서 브랜치가 하나도 없는 상황이 됨

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner *

 ai7dnn

Repository name *

my01 

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

Description (optional)

repo test



Public

Anyone on the internet can see this repository. You choose who can commit.



Private

You choose who can see and commit to this repository.

Initialize this repository with:

Skip this step if you're importing an existing repository.

☐ Add a README file

This is where you can write a long description for your project. [Learn more.](#)

Add .gitignore

Choose which files not to track from a list of templates. [Learn more.](#)

.gitignore template: None

Choose a license

A license tells others what they can and can't do with your code. [Learn more.](#)

License: None

 You are creating a public repository in your personal account.

Create repository

- 메뉴 Settings
 - 화면 오른쪽 가장 하단
 - Delete this repository

Danger Zone

Change repository visibility

This repository is currently public.

Change visibility

Transfer ownership

Transfer this repository to another user or to an organization where you have the ability to create repositories.

Transfer

Archive this repository

Mark this repository as archived and read-only.

Archive this repository

Delete this repository

Once you delete a repository, there is no going back. Please be certain.

Delete this repository

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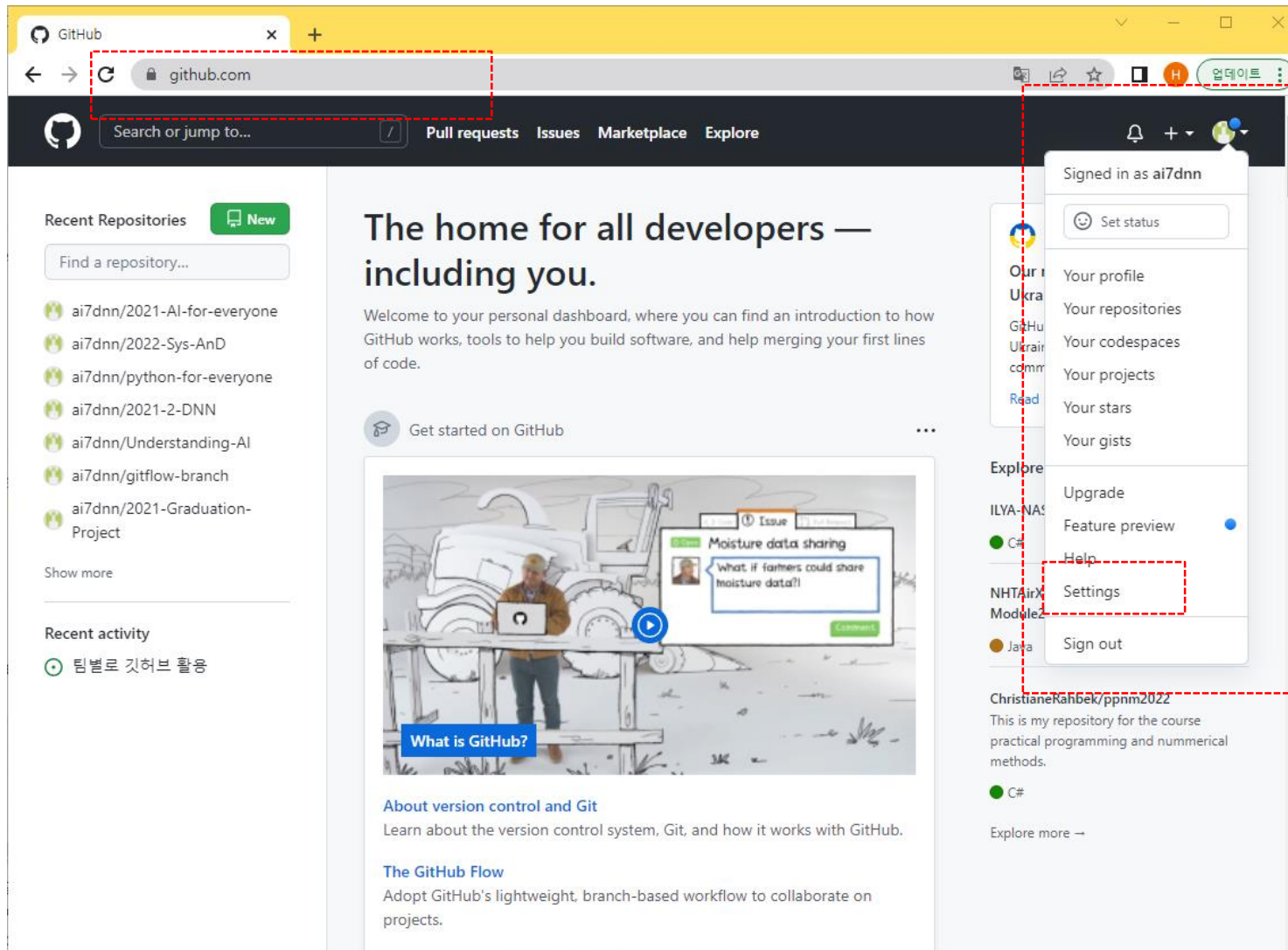
03

개인 접근 토큰(Personal Access Token) 생성

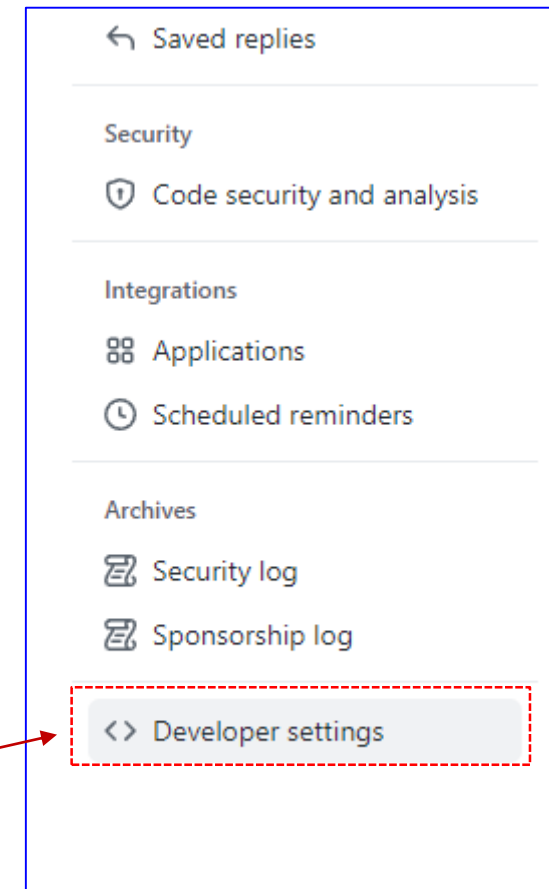
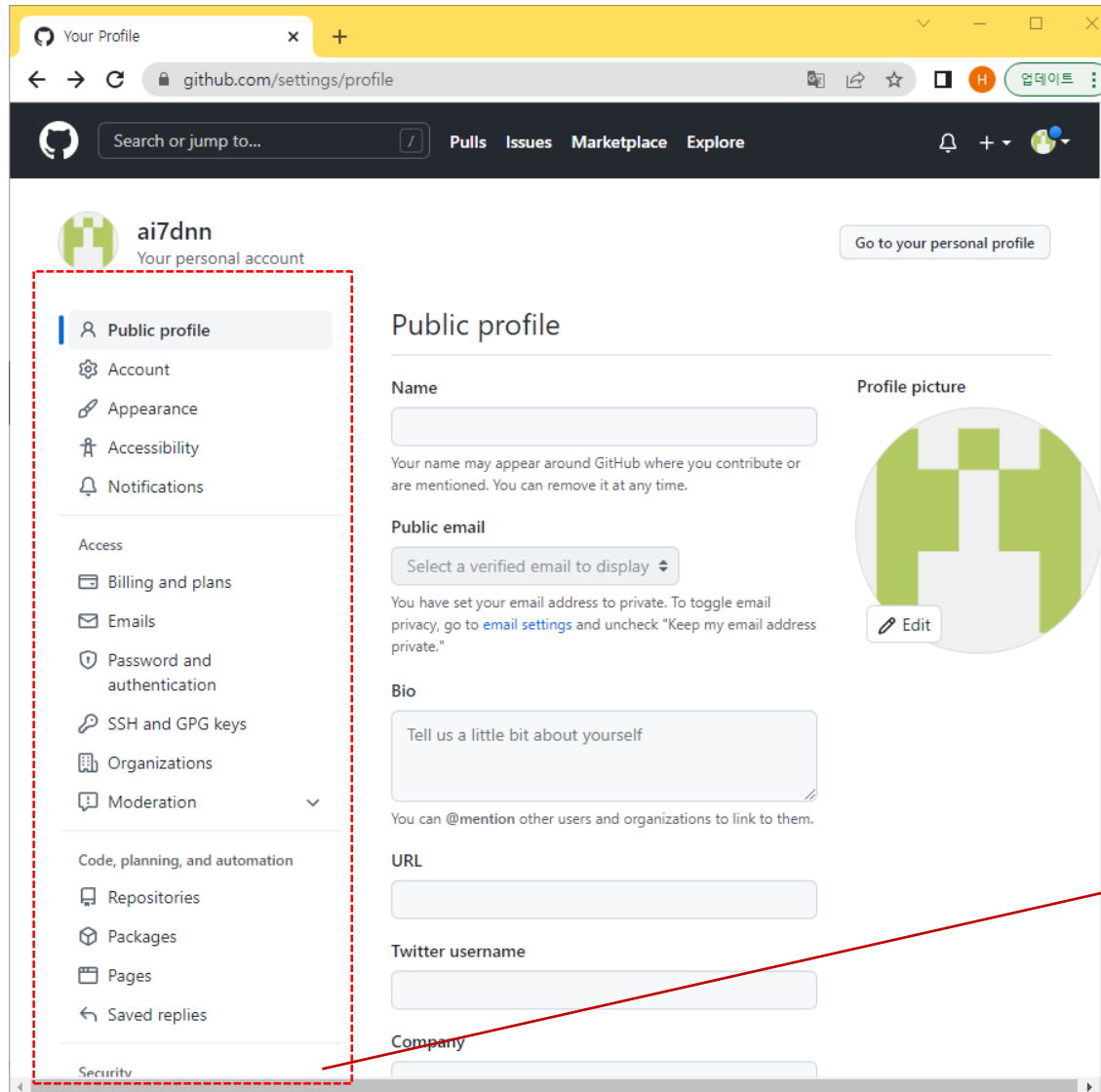
- 개인 프로젝트를 진행하던 중 아래와 같은 에러 메시지가 발생
 - Support for password authentication was removed on August 13, 2021. Please use a personal access token instead. ... The requested URL returned error: 403
 - 이유는 2021년 8월 13일 이후부터는 기존의 비밀번호 대신 토큰을 사용해서 접근하도록 변경되었기 때문입니다. 따라서 github에서 Personal access token을 발급 받아 설정해주어야 합니다.
- 비밀번호 인증 대신 사용하는 강화된 인증 방법
- 깃허브 계정마다 토큰 생성 필요



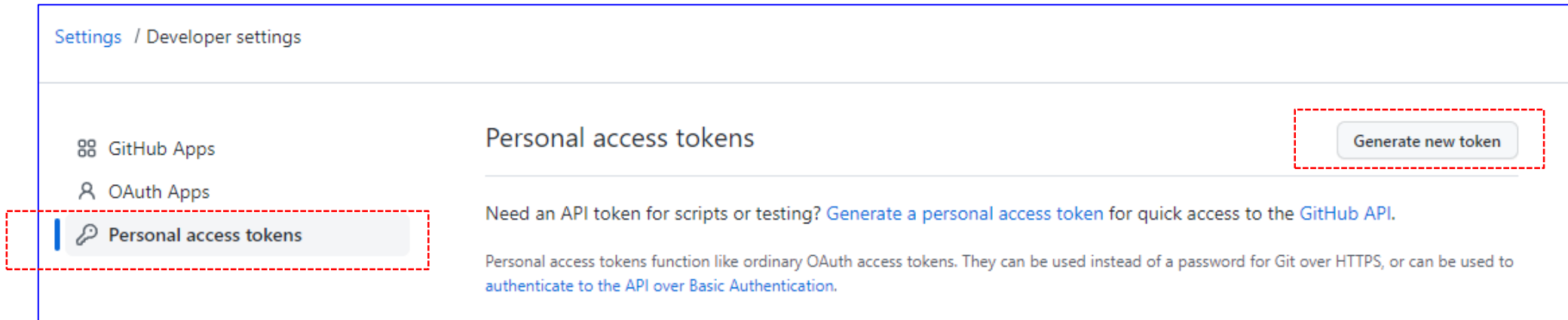
- 프로필 메뉴
 - 로그인 후 GitHub.com에서 우측 메뉴 Settings



- 왼쪽 메뉴 가장 하단: Developers settings



- Generate new token



The screenshot shows the GitHub 'Developer settings' page. On the left sidebar, 'Personal access tokens' is highlighted with a red dashed box. The main content area is titled 'Personal access tokens' and contains a 'Generate new token' button, also highlighted with a red dashed box. Below the title, there is explanatory text about API tokens and a link to 'Generate a personal access token'.

Settings / Developer settings

GitHub Apps
OAuth Apps
Personal access tokens

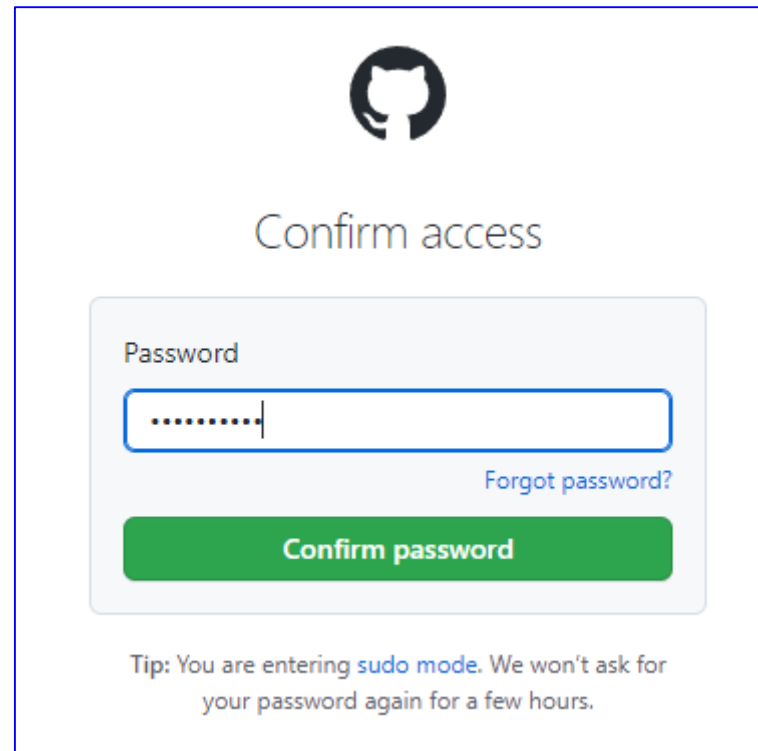
Personal access tokens

Generate new token

Need an API token for scripts or testing? [Generate a personal access token](#) for quick access to the [GitHub API](#).

Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to [authenticate to the API over Basic Authentication](#).

- 암호 인증



The form is titled 'Confirm access' and features the GitHub logo at the top. It contains a 'Password' label, a text input field with masked characters, a 'Forgot password?' link, and a green 'Confirm password' button. A tip at the bottom explains the 'sudo mode'.

Confirm access

Password

.....

[Forgot password?](#)

Confirm password

Tip: You are entering [sudo mode](#). We won't ask for your password again for a few hours.

값 입력

- Generate token
- 범위 선택
 - 모두 선택
 - Publish 기능을 위해
 - 상황에 따라
 - Repo, Workflow, gist 정도 선택

New personal access token

Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to [authenticate to the API over Basic Authentication](#).

Note

token of repo workflow gist

What's this token for?

Expiration *

90 days

The token will expire on Fri, Jul 22 2022

Select scopes

Scopes define the access for personal tokens. [Read more about OAuth scopes](#).

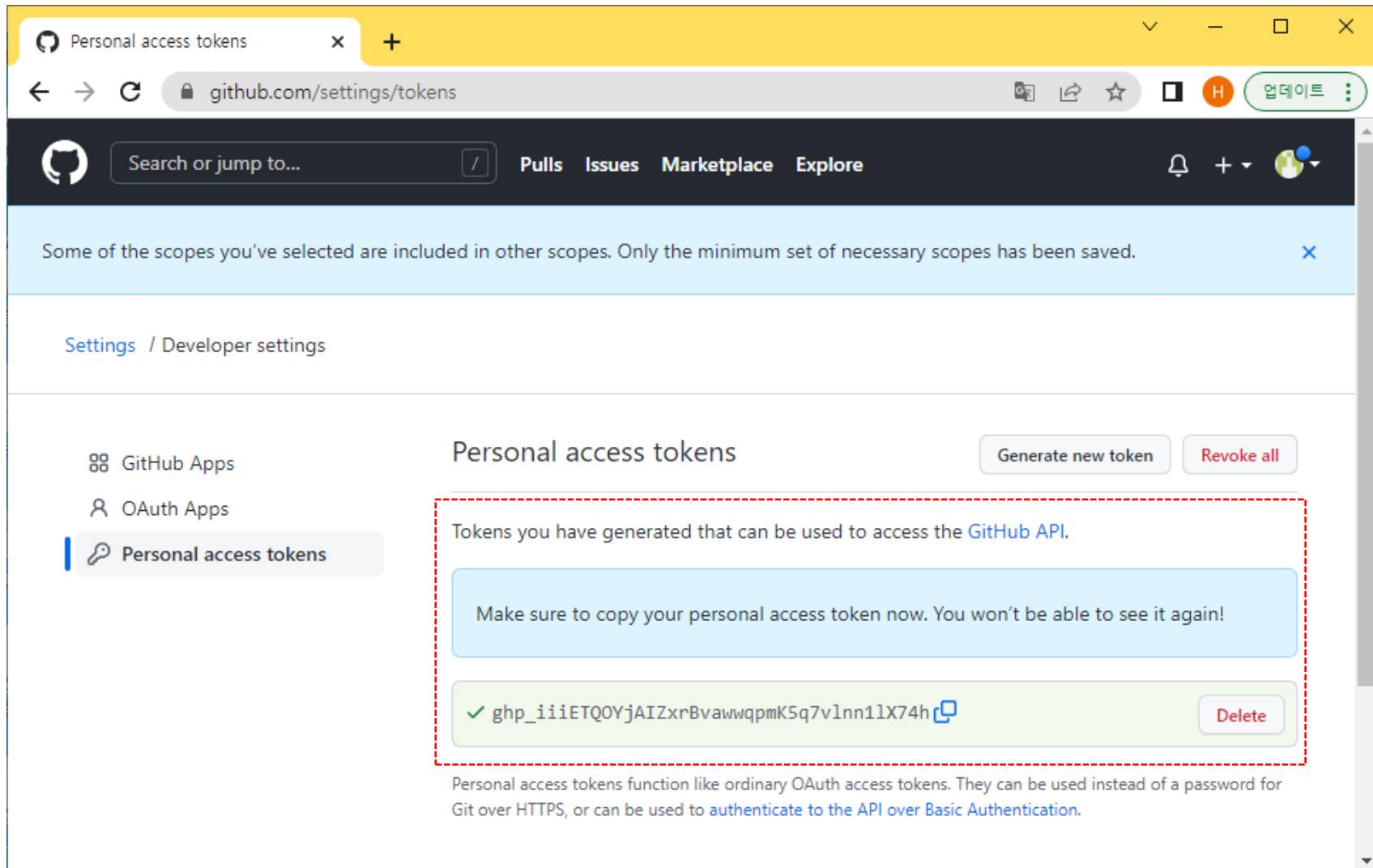
- ☒ repo Full control of private repositories
- ☐ repo:status Access commit status
- ☒ repo_deployment Access deployment status
- ☒ public_repo Access public repositories
- ☒ repo:invite Access repository invitations
- ☒ security_events Read and write security events

- ☒ workflow Update GitHub Action workflows
- ☐ write:packages Upload packages to GitHub Package Registry
 - ☐ read:packages Download packages from GitHub Package Registry
- ☐ delete:packages Delete packages from GitHub Package Registry
- ☐ admin:org Full control of orgs and teams, read and write org projects
 - ☐ write:org Read and write org and team membership, read and write org projects
 - ☐ read:org Read org and team membership, read org projects
- ☐ admin:public_key Full control of user public keys
 - ☐ write:public_key Write user public keys
 - ☐ read:public_key Read user public keys
- ☐ admin:repo_hook Full control of repository hooks
 - ☐ write:repo_hook Write repository hooks
 - ☐ read:repo_hook Read repository hooks
- ☐ admin:org_hook Full control of organization hooks
- ☒ gist Create gists
- ☐ notifications Access notifications
- ☐ user Update ALL user data
 - ☐ read:user Read ALL user profile data
 - ☐ user:email Access user email addresses (read-only)
 - ☐ user:follow Follow and unfollow users
- ☐ delete_repo Delete repositories
- ☐ write:discussion Read and write team discussions
 - ☐ read:discussion Read team discussions
- ☐ admin:enterprise Full control of enterprises
 - ☐ manage_runners:enterprise Manage enterprise runners and runner-groups
 - ☐ manage_billing:enterprise Read and write enterprise billing data
 - ☐ read:enterprise Read enterprise profile data
- ☐ admin:pgp_key Full control of public user GPG keys ([Developer Preview](#))
 - ☐ write:pgp_key Write public user GPG keys
 - ☐ read:pgp_key Read public user GPG keys

Generate token

Cancel

- 잘 보관 필요
 - 후에 토큰이 표시되지 않음



- **\$ git push**
 - edu4py / kang07060*
- **Personal Access Token**
 - 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
- **\$ git push**
 - \$ git push https://{token}@github.com/{username}/{repo_name}.git
 - \$ git push
https://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@github.com/edu4py/repo-edu4.git

