

GEN AI 인텐시브 과정

강사장철원

□ 깃 설치

□ 미니콘다 설치

□ vscode 설치

GEN AI 인텐시브 과정

Section 1. 실습환경 구축

Section 1-1. 깃 설치

깃(Git)

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

The screenshot shows the 'Downloads' section of the Git website. At the top, there's a navigation bar with a link to 'git-scm.com/downloads'. Below it is the Git logo ('git --everything-is-local'). On the left, there's a sidebar with links for 'About', 'Documentation', 'Downloads' (which is highlighted in red), and 'Community'. Under 'Downloads', there are links for 'GUI Clients' and 'Logos'. A callout box on the left says: '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](#).' The main content area has a large 'Downloads' heading. Below it are three download buttons: 'macOS' (with an Apple icon), 'Windows' (with a Windows icon), and 'Linux/Unix' (with a Linux icon). To the right of these buttons, a monitor icon displays the text: 'Latest source Release **2.48.1**', 'Release Notes (2025-01-13)', and a red-bordered button labeled 'Download for Windows'. Below the monitor, there's a section titled 'GUI Clients' with text about built-in tools like git-gui and gitk, and a link to 'View GUI Clients →'. To the right of that is a 'Logos' section with text about various Git logos and a link to 'View Logos →'.

git-scm.com/downloads

git --everything-is-local

Type / to search entire site...

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

macOS Windows Linux/Unix

Older releases 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 →](#)

Logos

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

[View Logos →](#)

Latest source Release
2.48.1
[Release Notes \(2025-01-13\)](#)

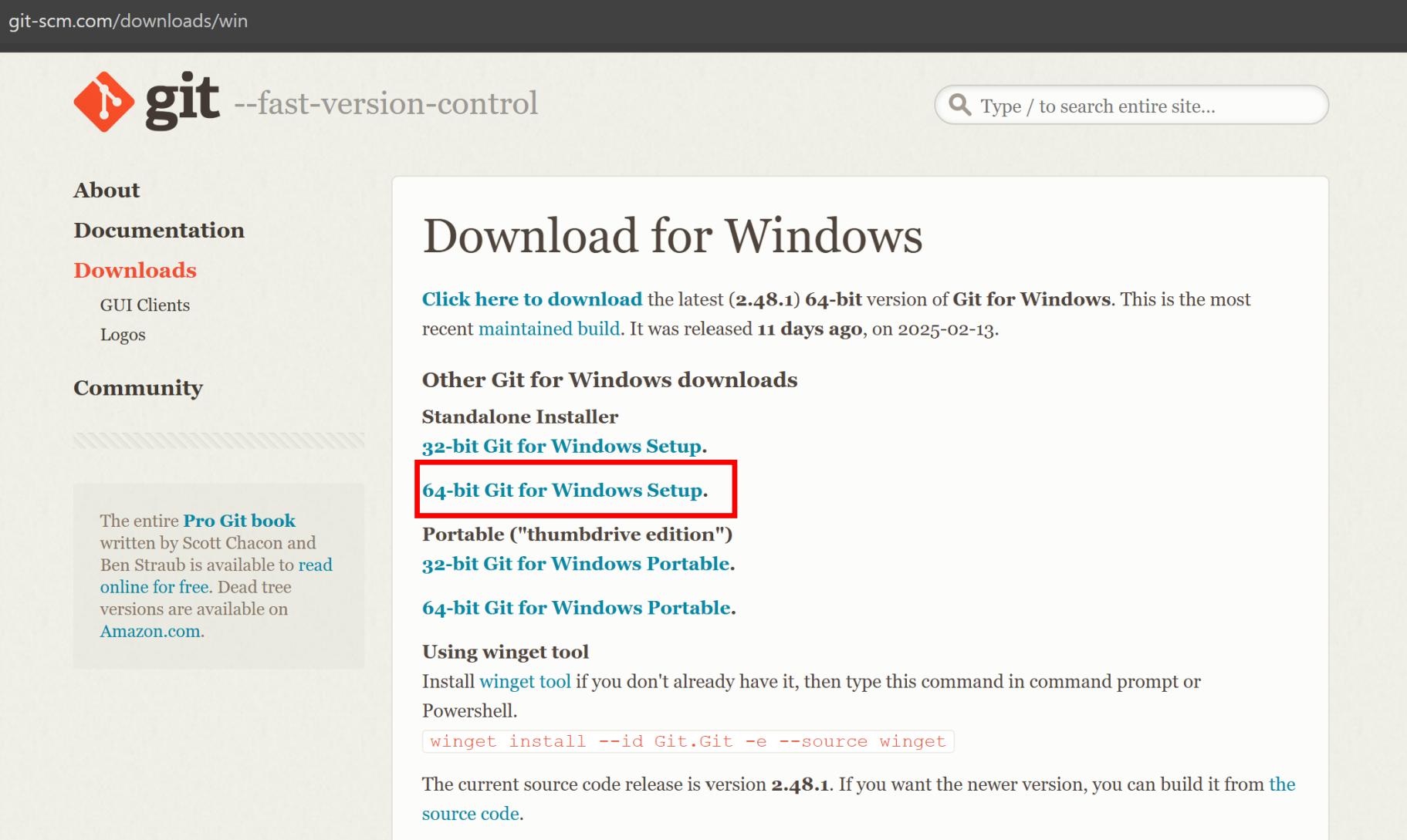
Download for Windows

Section

깃설치

깃(Git)

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



The screenshot shows the 'Downloads' section of the Git website. The left sidebar includes links for 'About', 'Documentation', 'Downloads' (which is highlighted in red), and 'Community'. A callout box in the bottom-left corner promotes the 'Pro Git book'. The main content area is titled 'Download for Windows' and features a large button labeled 'Click here to download' with the latest version information: '2.48.1 64-bit'. Below this, under 'Other Git for Windows downloads', are links for 'Standalone Installer', '32-bit Git for Windows Setup.' (which is also highlighted in red), '64-bit Git for Windows Setup.' (highlighted in red), 'Portable ("thumbdrive edition")', '32-bit Git for Windows Portable.', and '64-bit Git for Windows Portable.'. A section for 'Using winget tool' provides a command to install Git via winget. At the bottom, it notes the current source code release is version '2.48.1'.

git-scm.com/downloads/win

 **git** --fast-version-control

Type / to search entire site...

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](#).

Download for Windows

[Click here to download](#) the latest **(2.48.1) 64-bit** version of **Git for Windows**. This is the most recent [maintained build](#). It was released **11 days ago**, on 2025-02-13.

Other Git for Windows downloads

[Standalone Installer](#)

[32-bit Git for Windows Setup.](#)

[64-bit Git for Windows Setup.](#)

[Portable \("thumbdrive edition"\)](#)

[32-bit Git for Windows Portable.](#)

[64-bit Git for Windows Portable.](#)

Using winget tool

Install [winget tool](#) if you don't already have it, then type this command in command prompt or Powershell.

```
winget install --id Git.Git -e --source winget
```

The current source code release is version **2.48.1**. If you want the newer version, you can build it from [the source code](#).

GEN AI 인텐시브 과정

Section 1. 실습환경 구축

Section 1-2. 미니콘다 설치

가상 환경(virtual environment)

Anaconda

Python Library

가상 환경(virtual environment)



가상 환경(virtual environment)



파이썬 설치 – 구글에서 ‘미니콘다 다운로드’ 검색

The image shows a Google search results page for the query "미니콘다 다운로드". The search bar at the top contains the query. Below it, a navigation bar offers filters: 전체 (selected), 이미지, 동영상, 쇼핑, 뉴스, 웹, 지도, and 더보기. The main search results area is highlighted with a red border. The first result is from "Anaconda Documentation" and links to <https://docs.anaconda.com/miniconda>. The result title is "Miniconda — Anaconda documentation". Below the title, there is a snippet of text: "To download the latest Miniconda installers for Python 3.12: Go to anaconda.com/download. Submit your email to register with Anaconda, if desired. Click ...". At the bottom of the result card are four buttons: "Installing Miniconda", "Miniconda release notes", "Get Started", and "System requirements".

파이썬 설치 – 구글에서 ‘미니콘다 다운로드’ 검색

The screenshot shows a web browser displaying the Anaconda Documentation website at docs.anaconda.com/miniconda/. The page title is "Miniconda". The left sidebar contains a navigation menu with sections like "Anaconda Documentation", "Getting Started", "Tools", and "Business Solutions". The "Miniconda" section is currently selected and expanded, showing sub-links for "System requirements", "Installing Miniconda", "Miniconda release notes", "Uninstalling Miniconda", and "Anaconda Learning". The main content area describes Miniconda as a free, miniature installation of Anaconda Distribution. It includes a green button labeled "Is Miniconda free for me?" and another labeled "Should I install Miniconda or Anaconda Distribution?". Below this, a section titled "Latest Miniconda installer links" provides instructions for downloading the latest Miniconda installers for Python 3.12. The first step, "Go to anaconda.com/download", is highlighted with a red box.

Miniconda is a free, miniature installation of Anaconda Distribution that includes only conda, Python, the packages they both depend on, and a small number of other useful packages.

If you need more packages, use the `conda install` command to install from thousands of packages available by default in Anaconda's public repo, or from other channels, like conda-forge or bioconda.

[Is Miniconda free for me?](#)

[Should I install Miniconda or Anaconda Distribution?](#)

Latest Miniconda installer links

To download the latest Miniconda installers for Python 3.12:

1. Go to anaconda.com/download.
2. Submit your email to register with Anaconda, if desired.
3. Click **Submit** to continue to the Download Now page.
4. Scroll down past the Anaconda Distribution installers.

파이썬 설치 – 구글에서 ‘마니콘다 다운로드’ 검색

The screenshot shows a web browser displaying the Anaconda download page at anaconda.com/download/. The page has a dark header with the Anaconda logo, navigation links for Products, Solutions, Resources, Partners, and Company, and a top banner featuring a green and blue abstract background with the text "Free Download" and "Sign Up". A large section on the left is titled "Distribution" and "Free Download*". It includes a paragraph about registering for workstation tools like Cloud Notebooks, Navigator, AI Assistant, and Learning. Below this is a list of five features with green checkmarks. A central callout box is titled "Provide email to download Distribution" and contains a text input for "Email Address", a consent checkbox, and a "Submit" button. A "Skip registration" link is also present. The overall design is clean with a professional look.

anaconda.com/download/

ANACONDA. Products Solutions Resources Partners Company

Free Download Sign Up Sign In

Distribution

Free Download*

Register to get everything you need to get started on your workstation including Cloud Notebooks, Navigator, AI Assistant, Learning and more.

- ✓ Easily search and install thousands of data science, machine learning, and AI packages
- ✓ Manage packages and environments from a desktop application or work from the command line
- ✓ Deploy across hardware and software platforms
- ✓ Distribution installation on Windows, MacOS, or Linux

Provide email to download Distribution

Email Address:

Agree to receive communication from Anaconda regarding relevant content, products, and services. I understand that I can revoke this consent [here](#) at any time.

By continuing, I agree to Anaconda's [Privacy Policy](#) and [Terms of Service](#).

Submit >

Skip registration

파이썬 설치 – 구글에서 ‘미니콘다 다운로드’ 검색

anaconda.com/download/success

ANACONDA. Products Solutions Resources Partners Company Sign Up

Miniconda Installers



Windows

Python 3.12

↓ 64-Bit Graphical Installer



Mac

Python 3.12

- ↓ 64-Bit (Apple silicon) Graphical Installer
- ↓ 64-Bit (Apple silicon) Command Line Installer
- ↓ 64-Bit (Intel chip) Graphical Installer
- ↓ 64-Bit (Intel chip) Command Line Installer

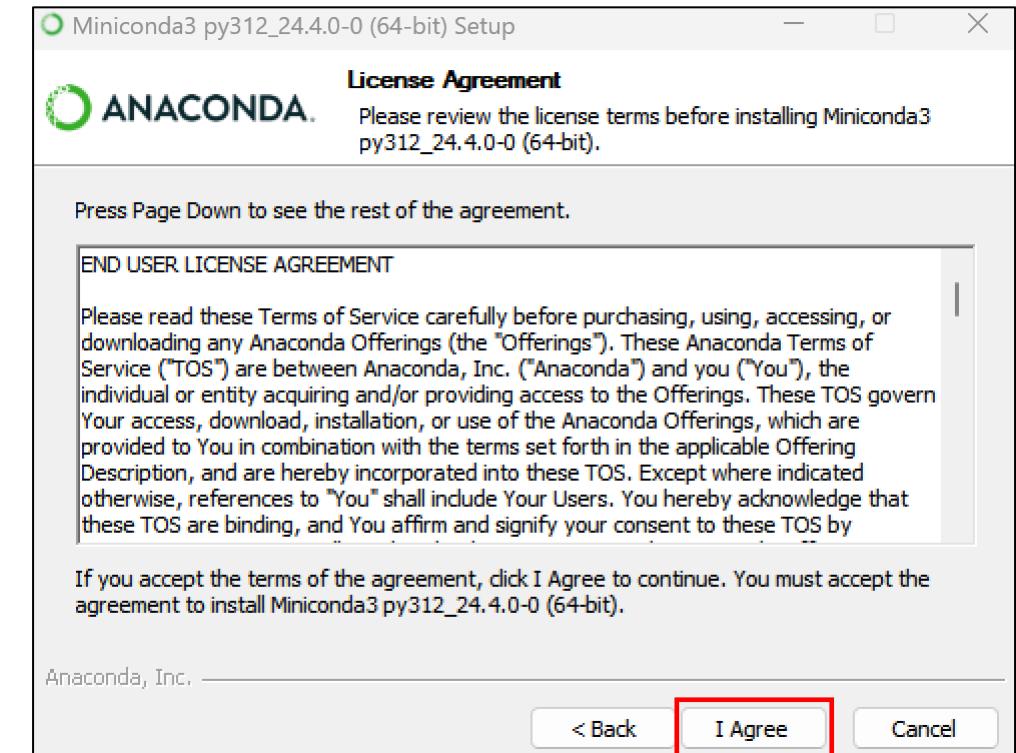
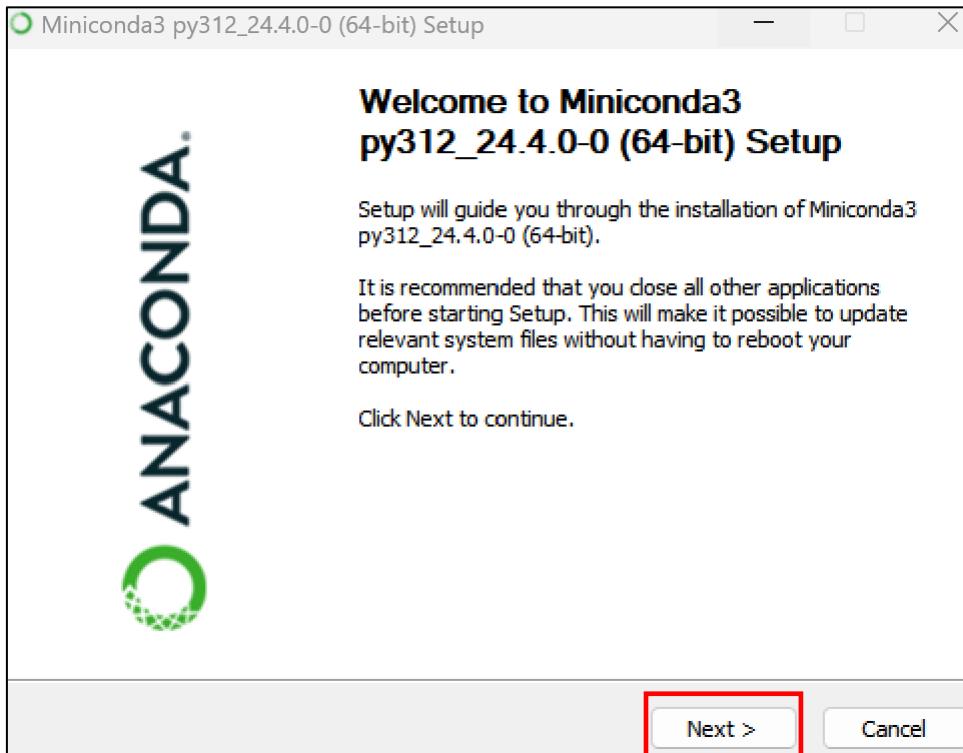


Linux

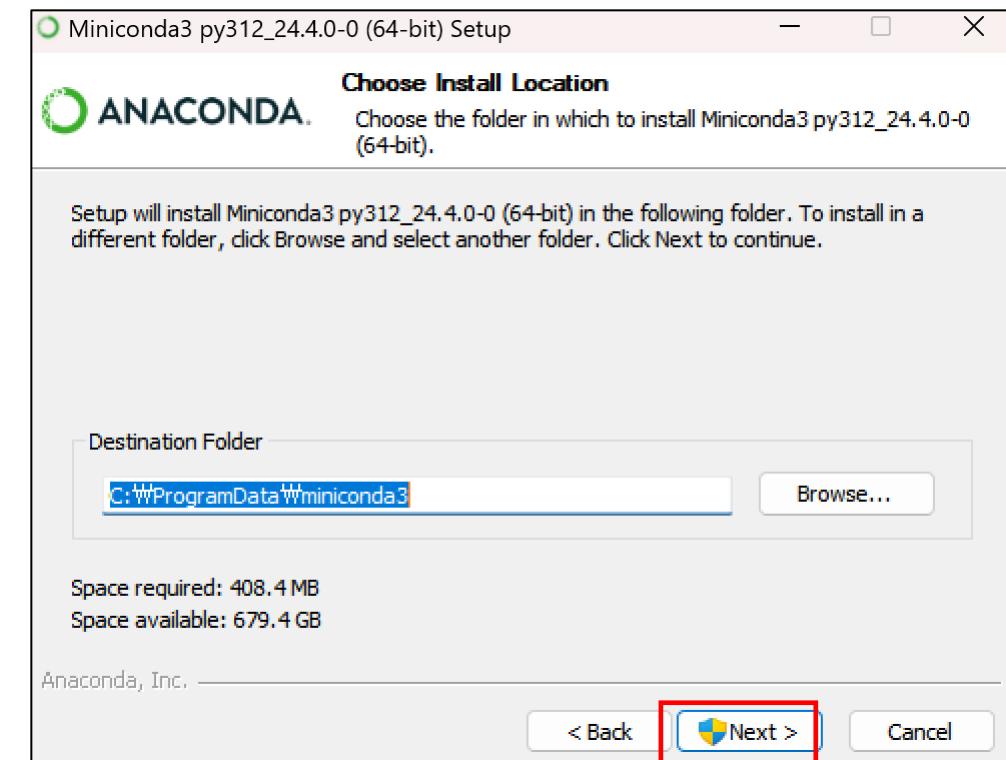
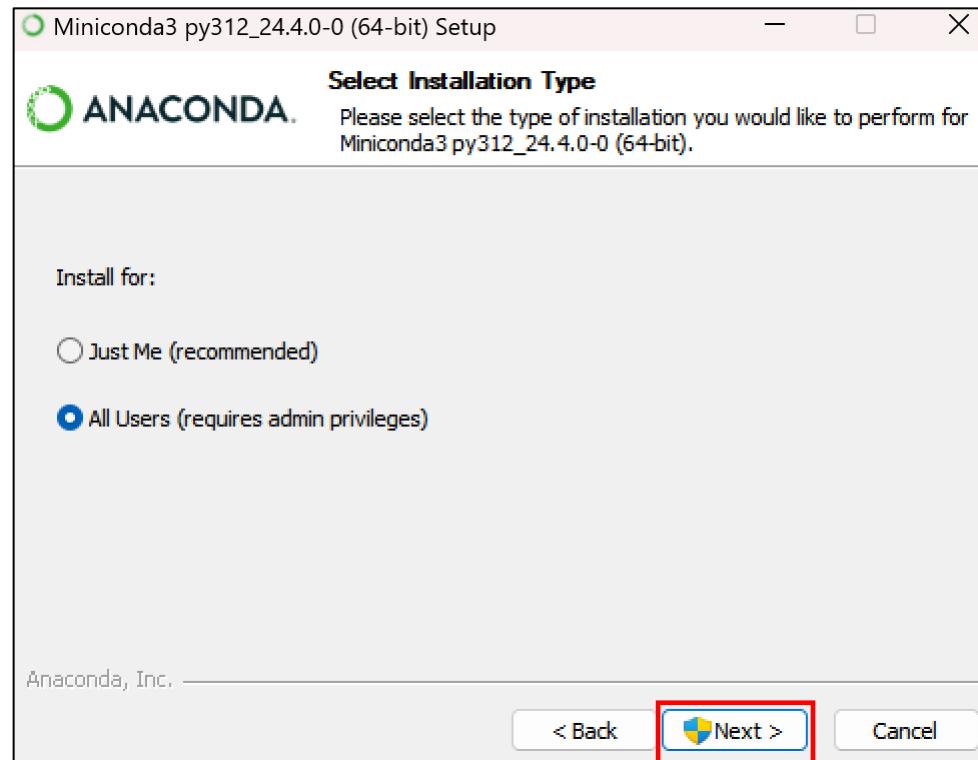
Python 3.12

- ↓ 64-Bit (x86) Installer
- ↓ 64-Bit (AWS Graviton2 / ARM64) Installer
- ↓ 64-bit (Linux on IBM Z & LinuxONE) Installer

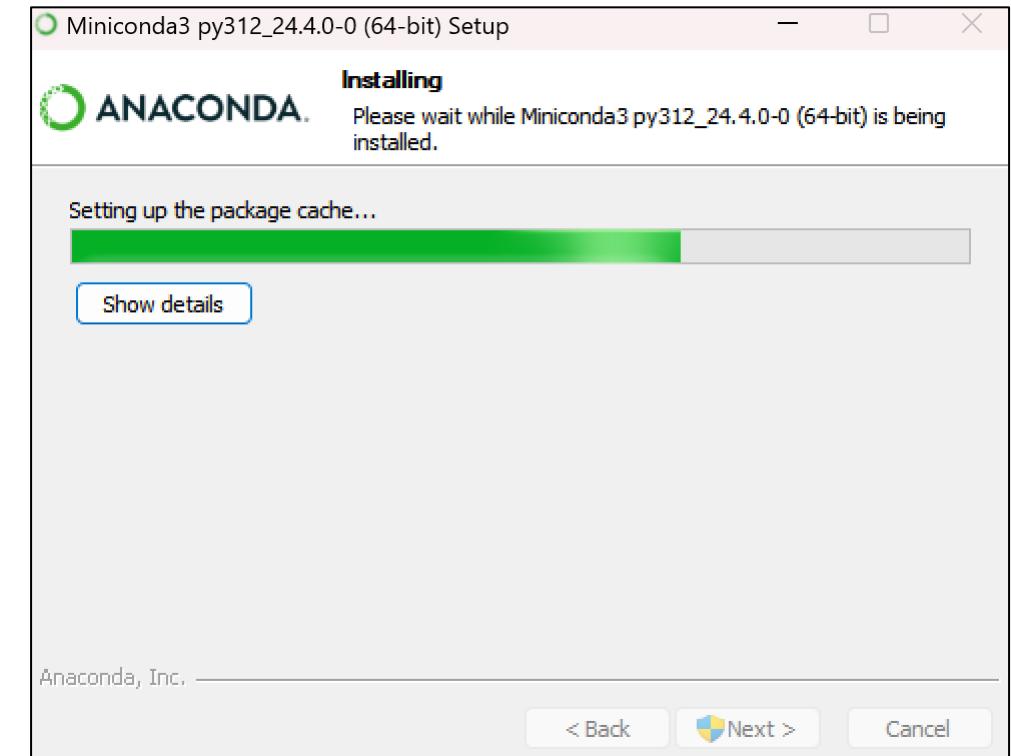
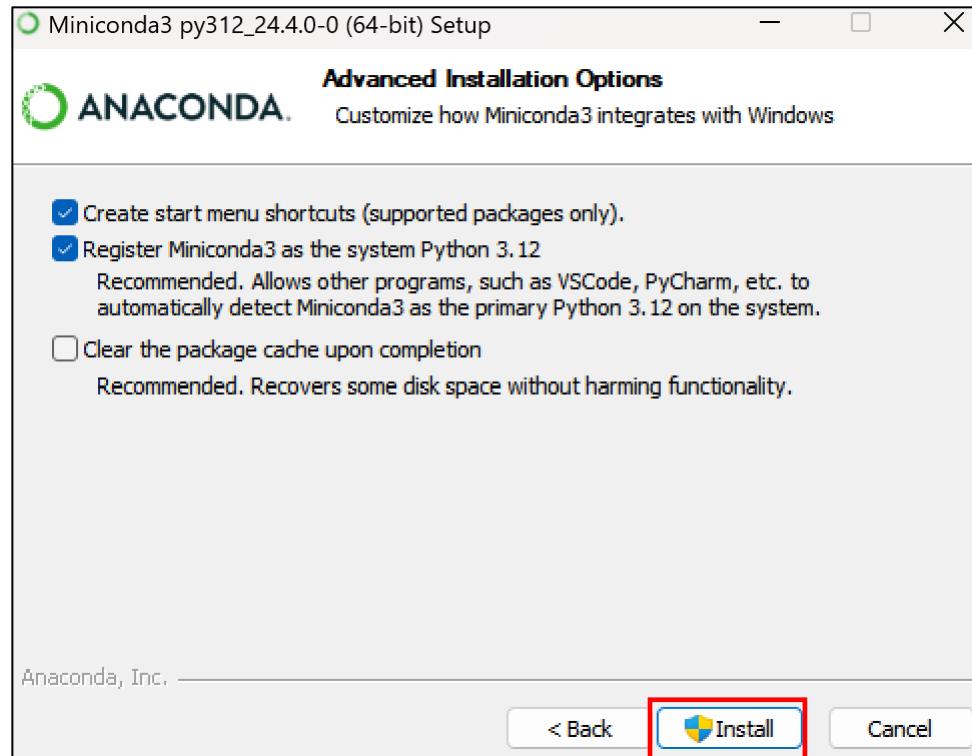
미니콘다 설치



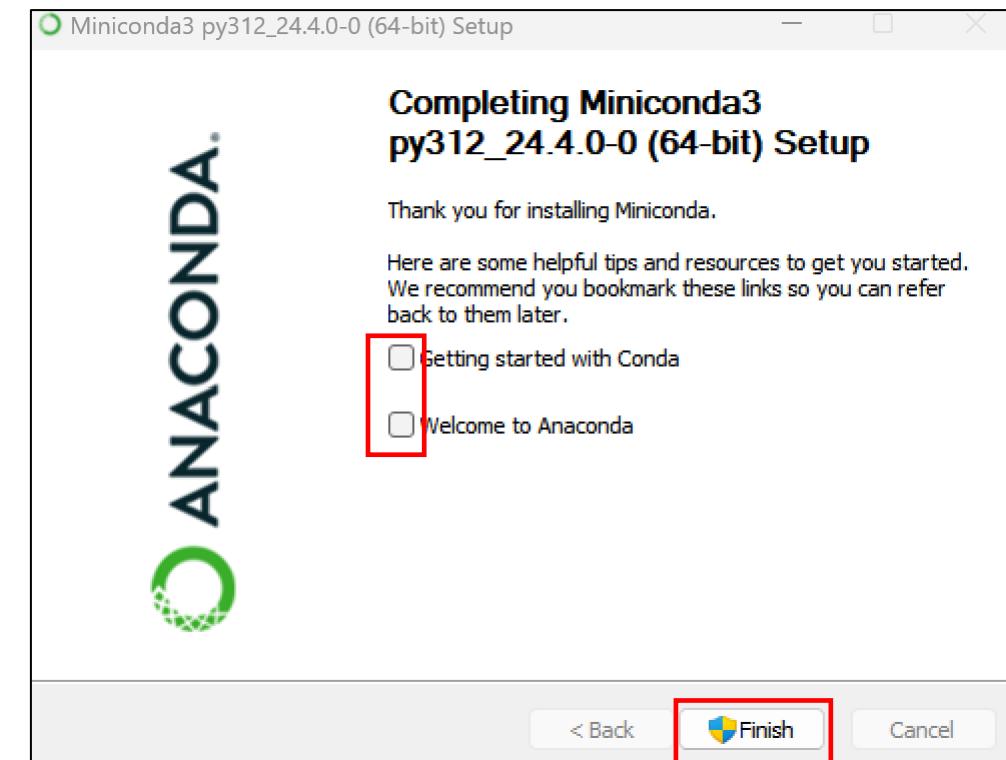
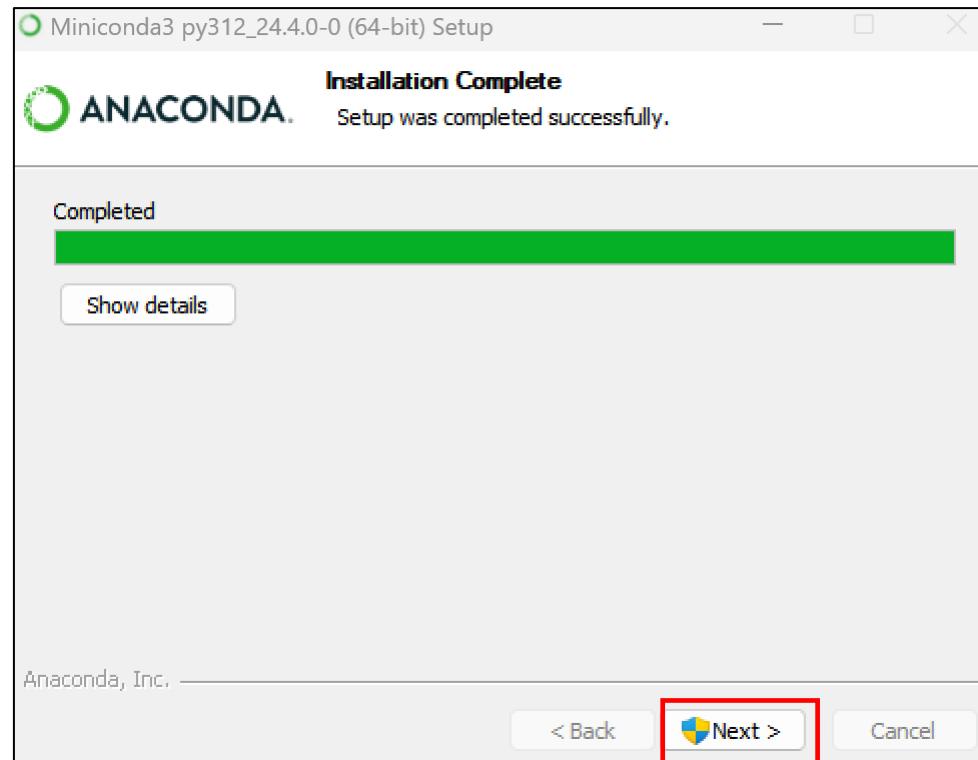
미니콘다 설치



미니콘다 설치



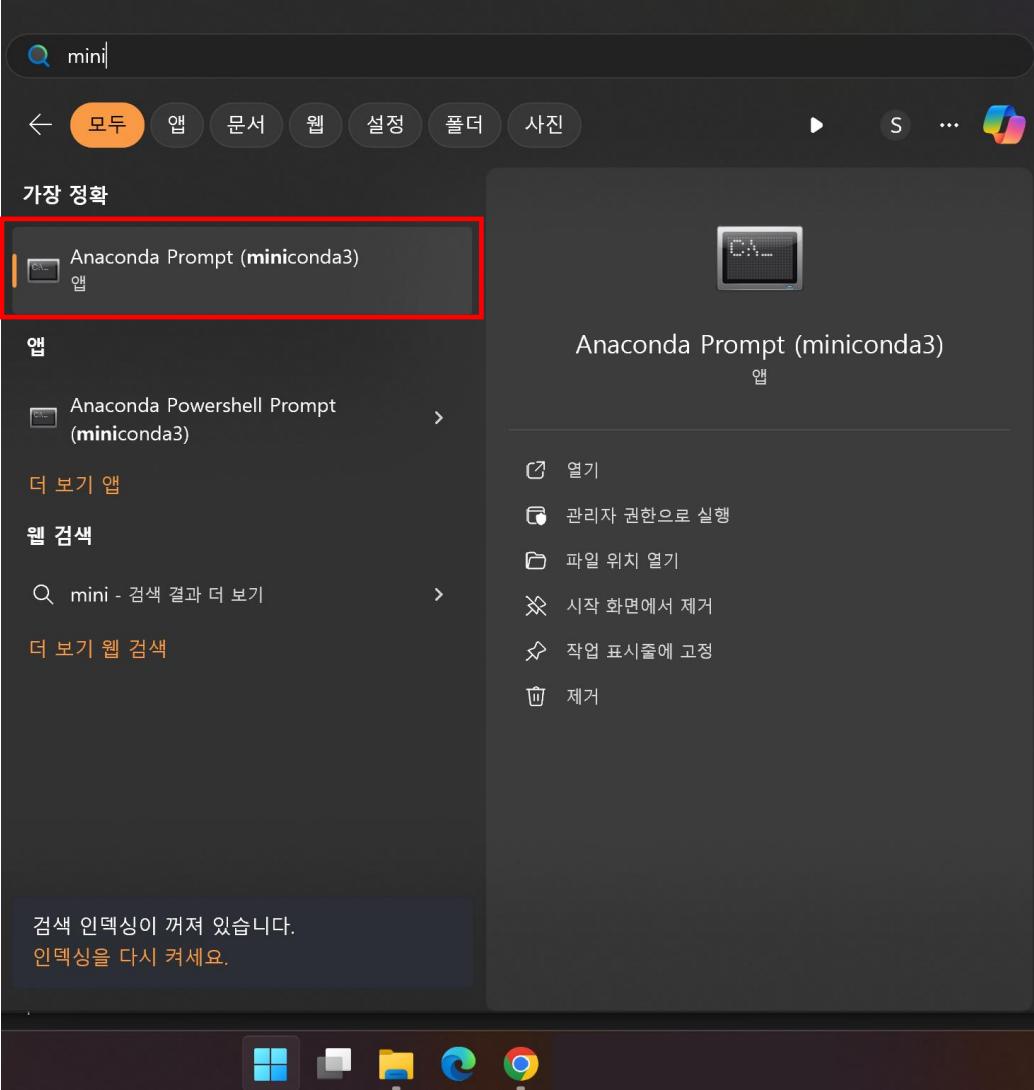
미니콘다 설치



Section

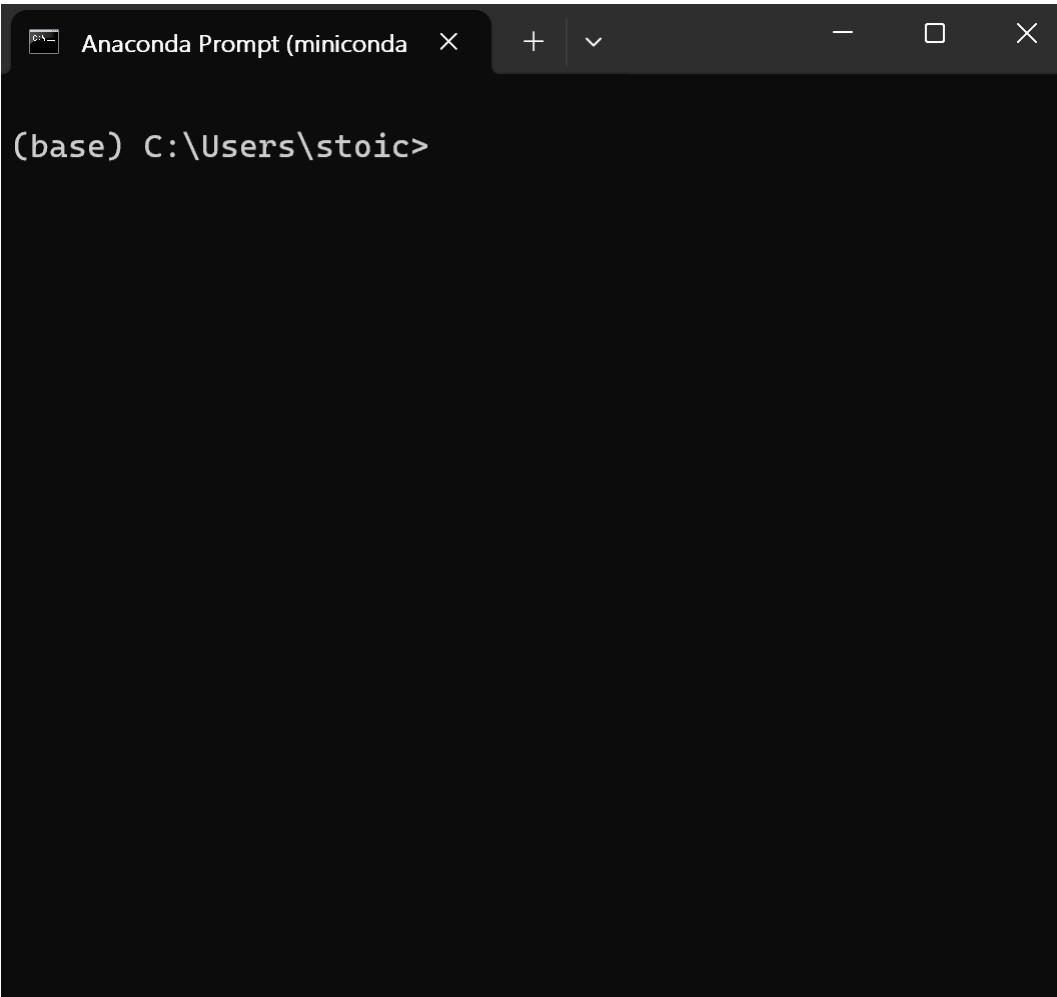
파이썬설치

미니콘다 실행



윈도우 버튼 -> mini 검색 -> Anaconda Prompt 실행

미니콘다 설정



A screenshot of the Anaconda Prompt window titled "Anaconda Prompt (miniconda)". The window has a dark theme with white text. The title bar includes standard window controls (minimize, maximize, close) and a tab indicator. The prompt shows "(base) C:\Users\stoic>" indicating the current environment and working directory.

가상환경 확인

```
(base) C:\Users\stoic>conda info --envs  
  
# conda environments:  
#  
base          *  C:\ProgramData\miniconda3
```

Section

파이썬설치

설치 가능한 파이썬 확인

```
(base) C:\Users\stoic>conda search python
Loading channels: done
# Name          Version       Build Channel
python          2.7.13        h1b6d89f_16  pkgs/main
python          2.7.13        h9912b81_15  pkgs/main
python          2.7.13        hb034564_12  pkgs/main
.
.
.
python          3.11.8         he1021f5_0   pkgs/main
python          3.11.9         he1021f5_0   pkgs/main
python          3.12.0         h1d929f7_0   pkgs/main
python          3.12.1         h1d929f7_0   pkgs/main
python          3.12.2         h1d929f7_0   pkgs/main
python          3.12.3         h1d929f7_0   pkgs/main
```

가상환경 설치

```
(base) C:\Users\stoic>conda create --name py3_11_9 python=3.11.9
```

```
Retrieving notices: ...working... done
```

```
Channels:
```

```
- defaults
```

```
Platform: win-64
```

```
Collecting package metadata (repodata.json): done
```

```
Solving environment: done
```

```
.
```

```
.
```

```
.
```

```
Executing transaction: done
```

```
#
```

```
# To activate this environment, use
```

```
#
```

```
#     $ conda activate py3_11_9
```

```
#
```

```
# To deactivate an active environment, use
```

```
#
```

```
#     $ conda deactivate
```

가상환경 확인 및 실행

```
(base) C:\Users\stoic>conda info --envs
# conda environments:
#
base          *  C:\ProgramData\miniconda3
py3_11_9      C:\Users\stoic\.conda\envs\py3_11_9
```

```
(base) C:\Users\stoic>conda activate py3_11_9    가상환경 실행
```

```
(py3_11_9) C:\Users\stoic>conda deactivate      가상환경 해제
```

```
(base) C:\Users\stoic>
```

라이브러리 설치

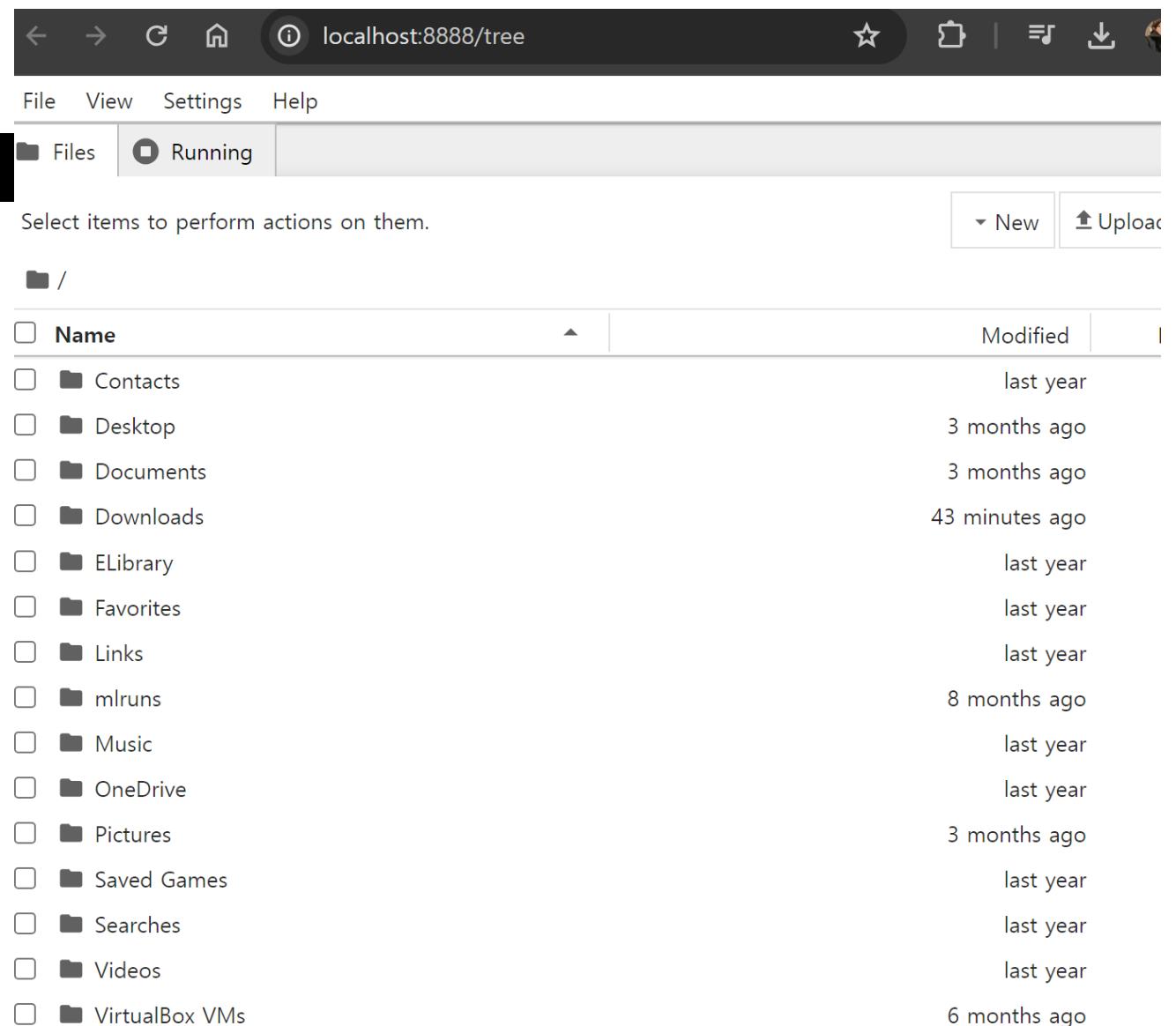
```
(base) C:\Users\stoic>conda activate py3_11_9

(py3_11_9) C:\Users\stoic>pip install numpy
(py3_11_9) C:\Users\stoic>pip install pyarrow
(py3_11_9) C:\Users\stoic>pip install pandas
(py3_11_9) C:\Users\stoic>pip install matplotlib
(py3_11_9) C:\Users\stoic>pip install seaborn
(py3_11_9) C:\Users\stoic>pip install scikit-learn
(py3_11_9) C:\Users\stoic>pip install torch
(py3_11_9) C:\Users\stoic>pip install chromadb
(py3_11_9) C:\Users\stoic>pip install transformers[torch]
(py3_11_9) C:\Users\stoic>pip install peft
(py3_11_9) C:\Users\stoic>pip install -U langchain langchain-core langchain-huggingface langchain-chroma
(py3_11_9) C:\Users\stoic>pip install -U sentence-transformers langchain-community datasets langgraph
(py3_11_9) C:\Users\stoic>pip install streamlit

(py3_11_9) C:\Users\stoic>pip install jupyter
```

주피터 노트북 실행

(py3_11_9) C:\Users\stoic>jupyter notebook



GEN AI 인텐시브 과정

Section 1. 실습환경 구축

Section 1-3. vscode 설치

Section

vscode 설치

구글에서 vscode 검색

The screenshot shows a Google search results page for the query "vscode". The search bar at the top contains "vscode". Below the search bar, there are navigation links: 전체 (selected), 동영상, 이미지, 뉴스, 쇼핑, 도서, 웹, 더보기. To the right of the search bar are icons for refresh, settings, microphone, camera, and search.

The first result is for "Visual Studio Code - Code Editing. Redefined" from <https://code.visualstudio.com>. The snippet of the page content is highlighted with a red box around the "Download" button. The snippet reads: "Visual Studio Code redefines AI-powered coding with GitHub Copilot for building and debugging modern web and cloud applications. Visual Studio Code is free." Below the snippet is a "Download" button, which is also highlighted with a red box. A smaller text below says "Use vscode.dev for quick edits online! GitHub, Azure Repos ...".

Below the first result, there are other sections: "Windows", "Docs", "VS Code for the Web", and "macOS". Each section has a brief description and a link to "visualstudio.com 검색결과 더보기 »".

The second result is for "비주얼 스튜디오 코드" (Visual Studio Code) from Microsoft. The snippet of the page content is: "비주얼 스튜디오 코드 또는 코드는 마이크로소프트가 마이크로소프트 윈도우, macOS, 리눅스용으로 개발한 소스 코드 편집기이다. 디버깅 지원과 Git 제어, 구문 강조 기능, SSH 접속 등이 포함되어 있으며, 사용자가 편집기의 테마와 단축키, 설정 등을 수정할 수 있다." Below the snippet is a "Source: 위키백과 >" link.

On the right side of the page, there are additional details: "프로그래밍 언어: 자바스크립트, C, C#, CSS, 타입스크립트", "개발자: 마이크로소프트", "라이선스: 소스코드: MIT 라이선스; 바이너리: 프리웨어", "안정화 버전: 1.97.2 / 2025년 2월 14일", "언어: 영어, 프랑스어, 독일어, 이탈리아어, 일본어, 한국어, 러시아어, 스페인어, 중국어 번체 및 간체", and "종류: 소스 코드 편집기, 디버거".

Section

vscode 설치

구글에서 vscode 검색

The screenshot shows the official Visual Studio Code download page. At the top, there's a navigation bar with links for Visual Studio Code, Docs, Updates, Blog, API, Extensions, FAQ, GitHub Copilot, and a search bar. A promotional message for GitHub Copilot is visible. The main heading is "Download Visual Studio Code" with the subtitle "Free and built on open source. Integrated Git, debugging and extensions." Below this, there are download links for Windows, Linux, and Mac. The Windows link is highlighted with a red box. Each section includes icons for the operating system and specific file formats like .deb, .rpm, and .tar.gz.

Download Visual Studio Code
Free and built on open source. Integrated Git, debugging and extensions.

Windows (Windows 10, 11)

.deb (Debian, Ubuntu)

.rpm (Red Hat, Fedora, SUSE)

Mac (macOS 10.15+)

User Installer x64 Arm64
System Installer x64 Arm64
.zip x64 Arm64
CLI x64 Arm64

.deb x64 Arm32 Arm64
.rpm x64 Arm32 Arm64
.tar.gz x64 Arm32 Arm64
Snap Snap Store

.zip Intel chip Apple silicon Universal
CLI Intel chip Apple silicon

Section

vscode 설치

확장 프로그램 설치

The screenshot shows the Visual Studio Code Marketplace interface. On the left, there's a sidebar with various icons for file operations like Open, Save, Find, and Settings. The main area has a search bar at the top with the text "code". Below it, a search result for "Python" is displayed. The results list includes:

- Python Debugger** by Microsoft (499ms)
- Python** by Microsoft (757ms)
- Pylance** by Microsoft (354ms)
- Python Indent** by Kevin Rose (13M, 4 stars)
- Python Extension Pack** by Don Jayamanne (10.7M, 4.5 stars)
- Python for VSCode** by Thomas Haakon Townsend (5.8M, 2 stars)

A red box highlights the first three items in the list: Python Debugger, Python, and Pylance. The Python Debugger item is currently selected, showing its details on the right side of the screen.

확장: Python X

Python

Microsoft [microsoft.com](#) | ⚡ 157,236,784 | ★★★★☆(606)

Python language support with extension access points for IntelliSense (Pylance), Debugging (Python Debugger), and more!

사용 안 함 | 제거 | 시험판 버전으로 전환 | 자동 업데이트

세부 정보 기능 변경 로그 확장 팩

Python extension for Visual Studio Code

A Visual Studio Code extension with rich support for the Python language (for all actively supported Python versions), providing access points for extensions to seamlessly integrate and offer support for IntelliSense (Pylance), debugging (Python Debugger), formatting, linting, code navigation, refactoring, variable explorer, test explorer, and more!

Support for vscode.dev

The Python extension does offer some support when running on [vscode.dev](#) (which includes [github.dev](#)). This includes partial IntelliSense for open files in the editor.

설치

식별자

버전

마지막 업데이트

크기

마켓플레이스

게시됨

Section

vscode 설치

확장 프로그램 설치

The screenshot shows the VS Code interface with the sidebar open. The search bar at the top has 'code' typed into it. Below the search bar, the sidebar displays the results for the search term 'jupyter'. The first result, 'Jupyter' by Microsoft, is highlighted with a red box. This result card includes the icon, name, developer information ('Microsoft'), and a loading indicator ('378ms'). Below this, there are four more results: 'Jupyter Keymap', 'Jupyter Notebook Renderers', 'Jupyter Cell Tags', and 'Jupyter Slide Show', each with its own icon, name, developer information ('Microsoft'), and a settings gear icon.

확장: 마켓플레이스

jupyter

Jupyter

Jupyter notebook support, interactive pro...

Microsoft

Jupyter Keymap

Jupyter keymaps for notebooks

Microsoft

Jupyter Notebook Renderers

Renderers for Jupyter Notebooks (with pl...

Microsoft

Jupyter Cell Tags

Jupyter Cell Tags support for VS Code

Microsoft

Jupyter Slide Show

Jupyter Slide Show support for VS Code

Microsoft

확장: Jupyter

확장: Jupyter

Microsoft microsoft.com | 88,251,452 | ★★★★☆

Jupyter notebook support, interactive programming and compu...

사용 안 함 | 제거 | 시험판 버전으로 전환 | 자동 업데이트

세부 정보 기능 변경 로그

확장 팩(4)

Jupyter Keymap

Jupyter keymaps for notebooks

Microsoft

Jupyter Notebook Renderers

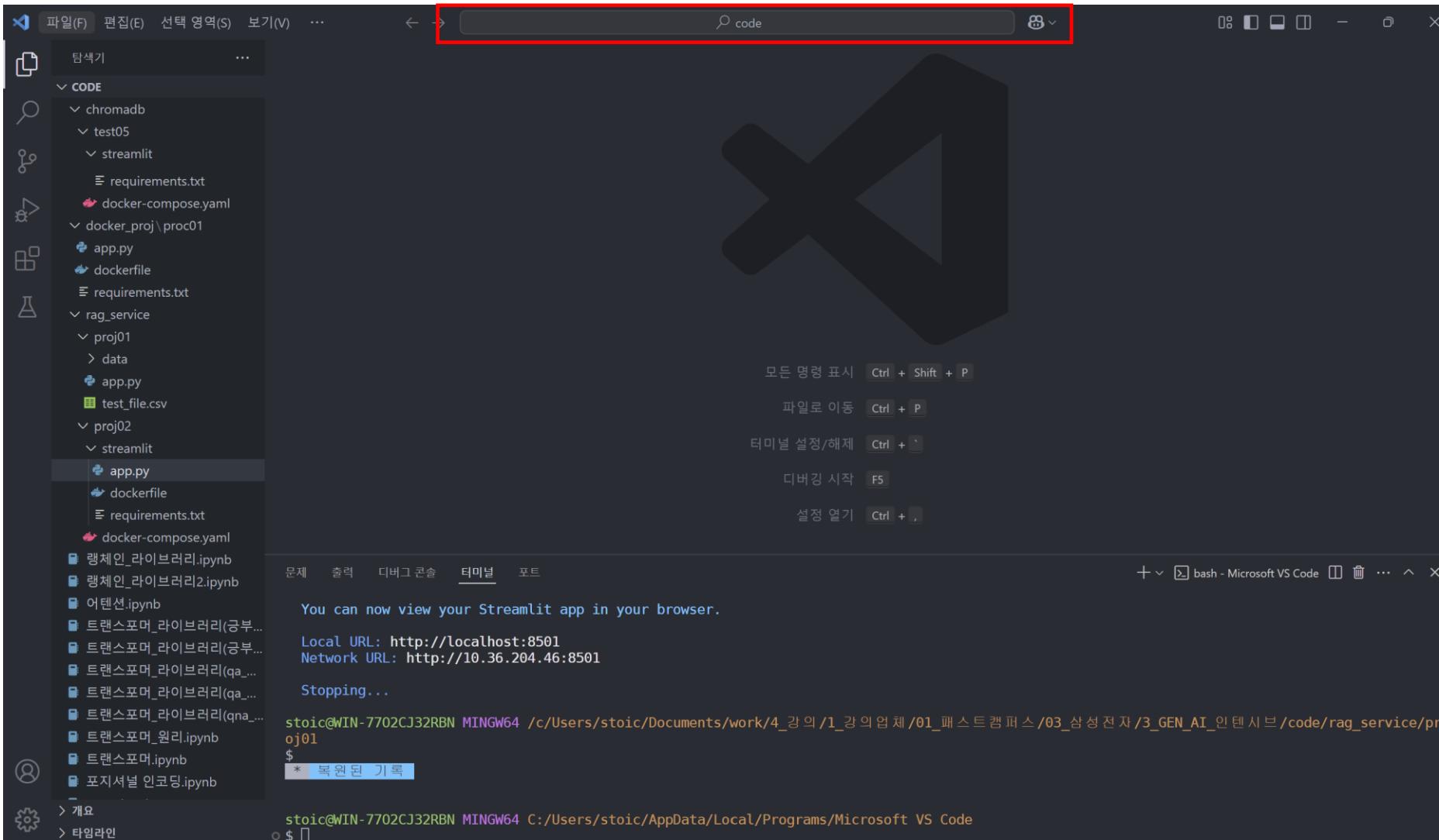
Renderers for Jupyter Notebooks (with plotly...)

Microsoft

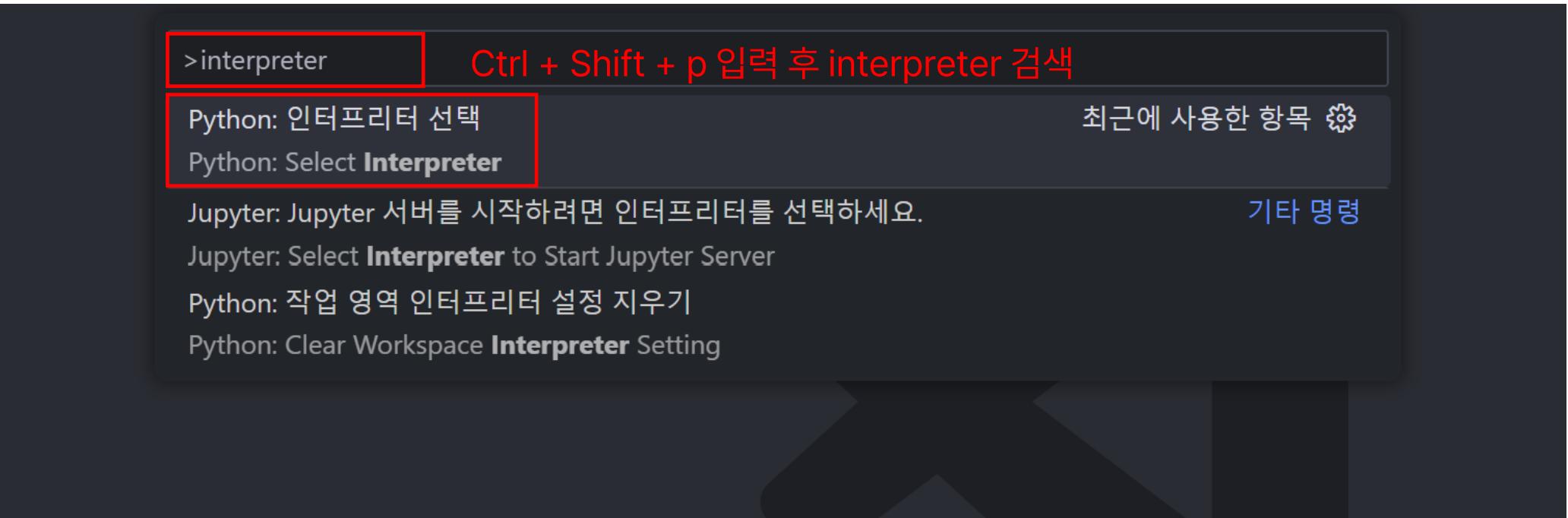
Section

vscode 설치

vscode와 미니콘다 가상환경 연동



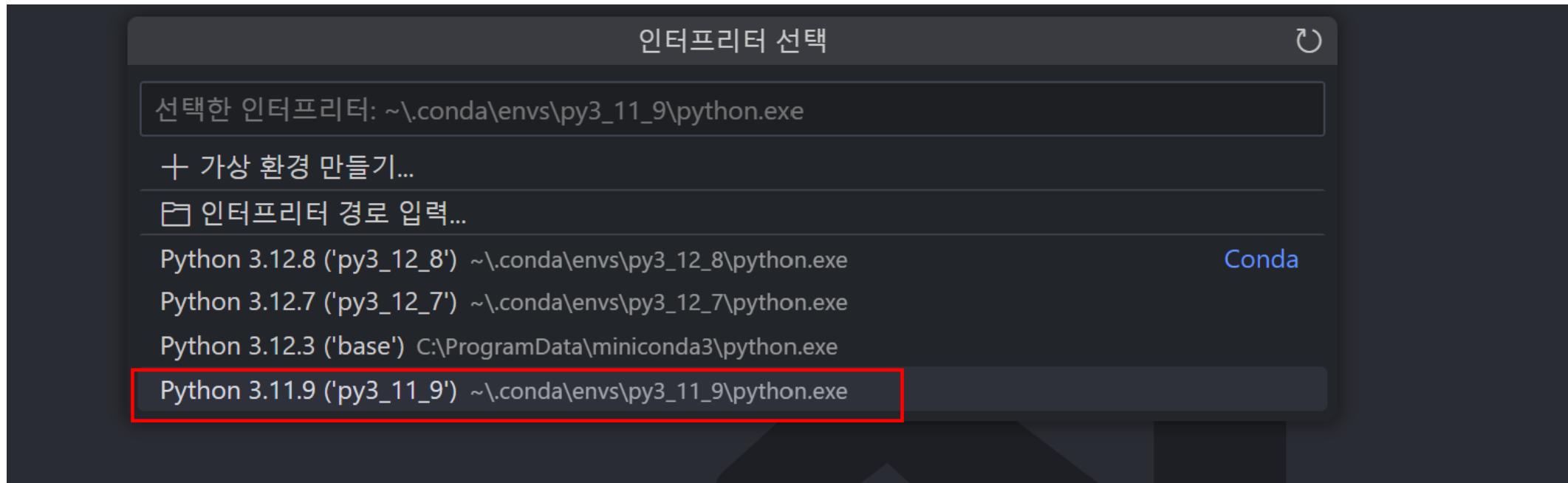
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Section

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감사합니다.

Q & A