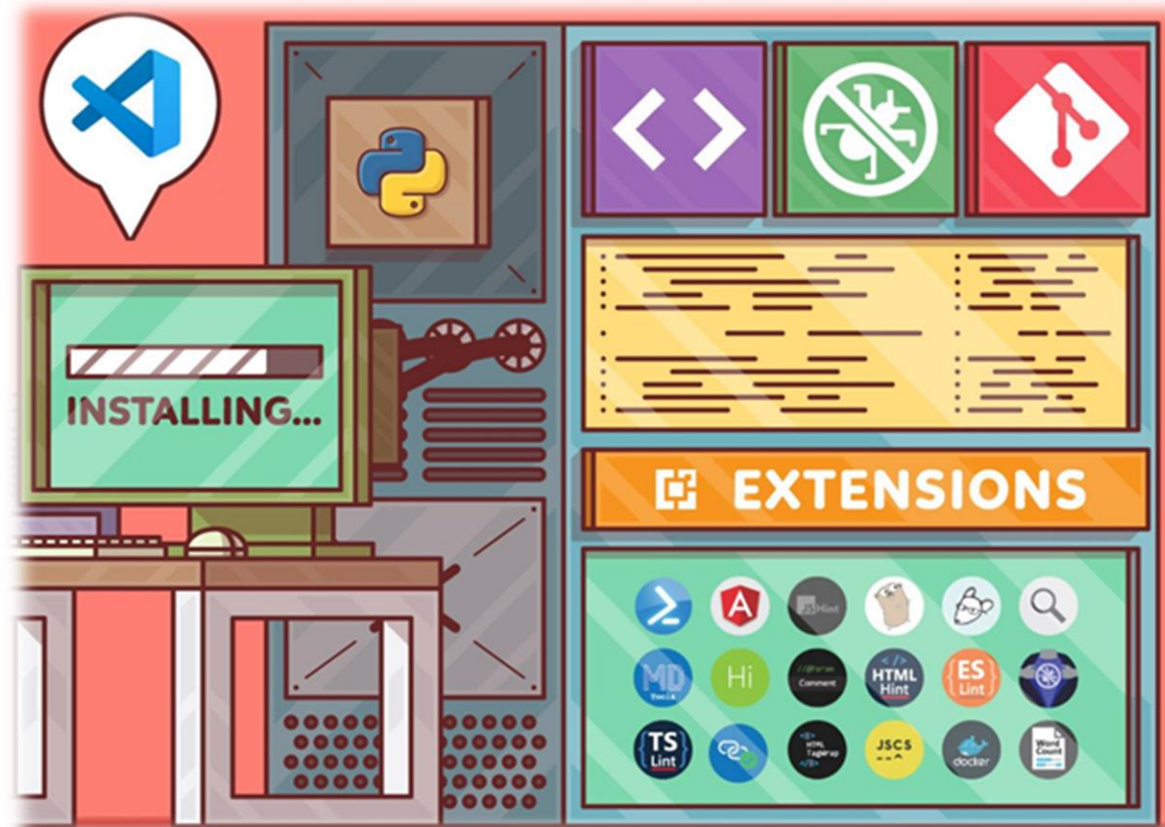


3. 개발환경



개발환경

코드 에디터



Visual Studio Code



Sublime Text

PC



ANACONDA
Powered by Continuum Analytics®



Jupyter Notebook



Jupyter Lab

웹

colab

<https://colab.research.google.com/>

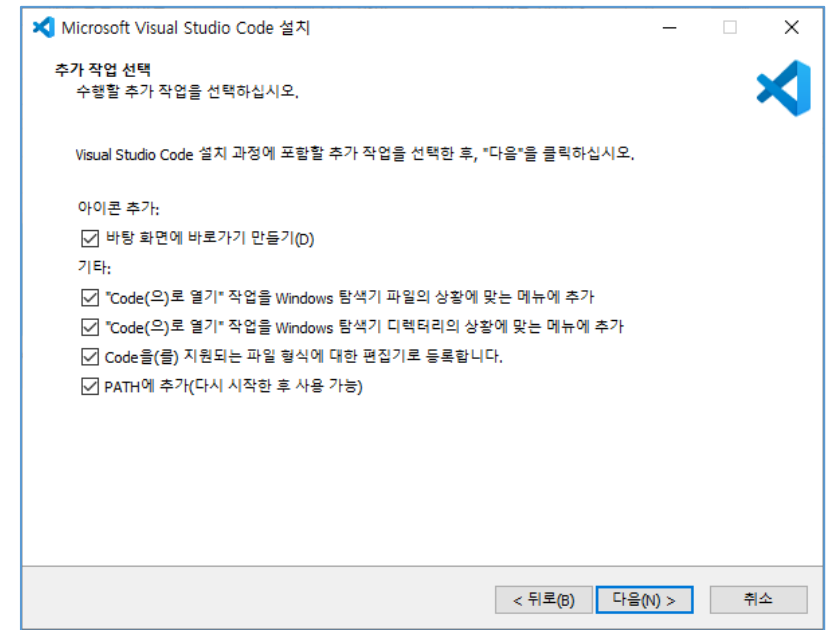
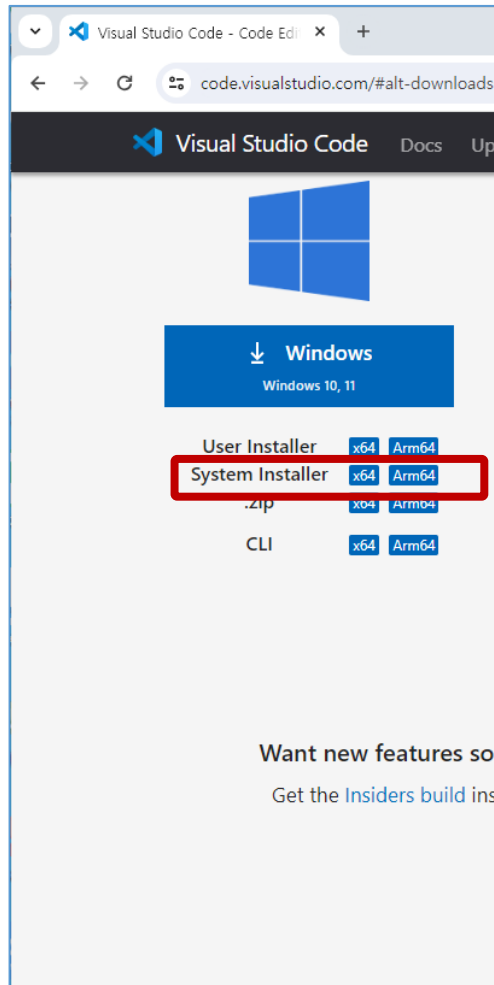
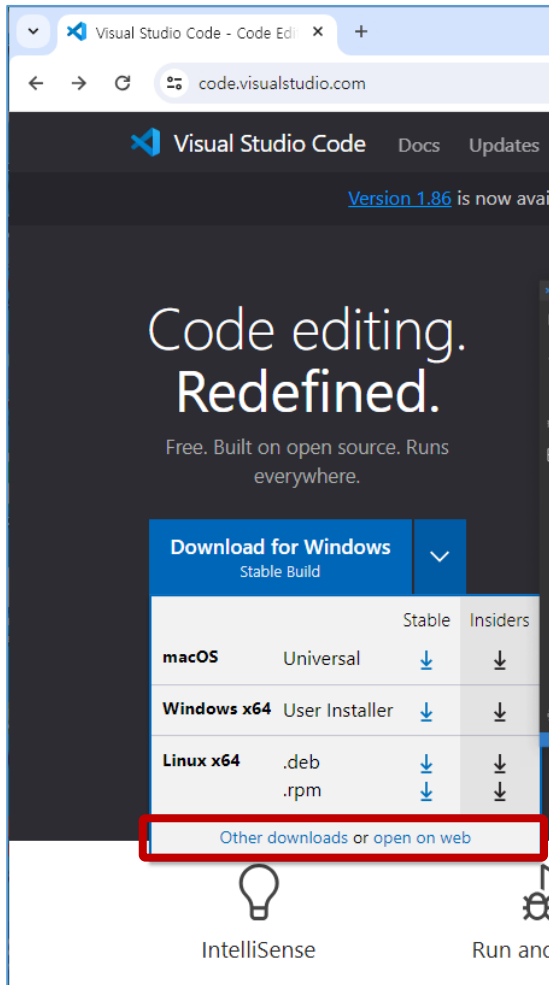
kaggle

<https://www.kaggle.com/>

VS Code 설치

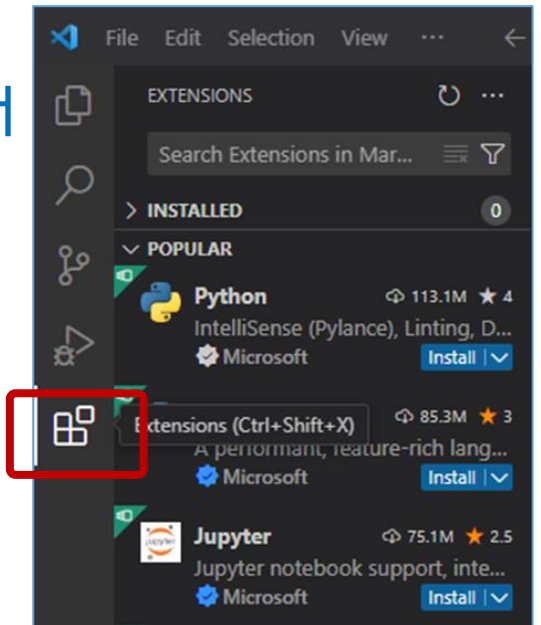
■ 설치 프로그램

<https://code.visualstudio.com/>



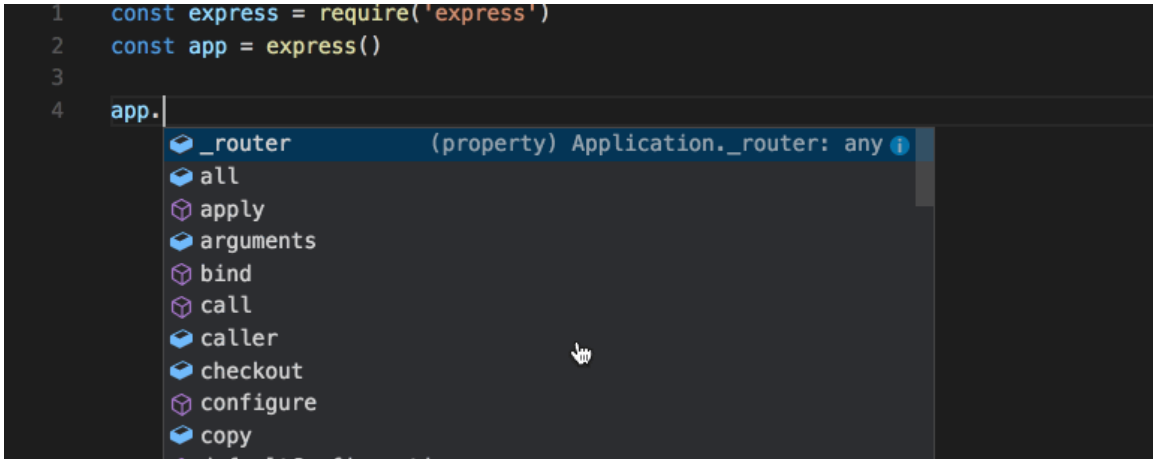
■ VS Code 프로그램에서 Extension 설치

Python
Jupyter
Black Formatter
VSCode Icons
REST Client



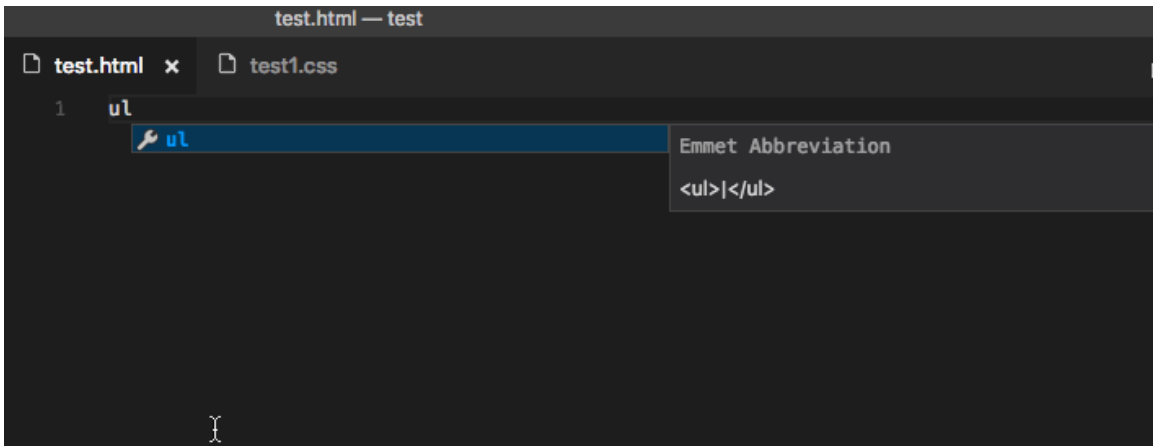
VS Code 단축키

IntelliSense : Ctrl + Shift



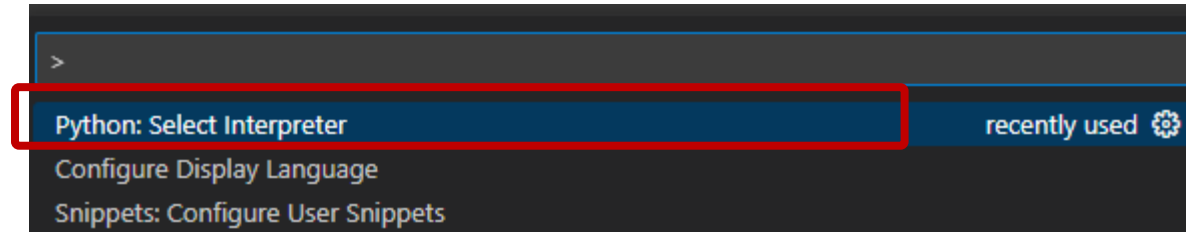
<https://code.visualstudio.com/docs/editor/intellisense>

Emmet Abbreviation : Ctrl + Space



<https://code.visualstudio.com/docs/editor/emmet>

Command Palette : Ctrl + Shift+ P



파일 찾기 : Ctrl + P

행 삭제 : ctrl+X

행 복사 : ctrl+C

위에 행 복사 추가 : shift+alt+Down

아래에 행 복사 추가 : shift+alt+Up

행을 아래로 이동 : alt+Down

행을 위로 이동 : alt+Up

멀티 Cursor : Alt + Mouse click

Python(파이썬)

Python Libraries for Generative AI



TensorFlow



PyTorch



Transformers



Weight and Biases



JAX



LangChain



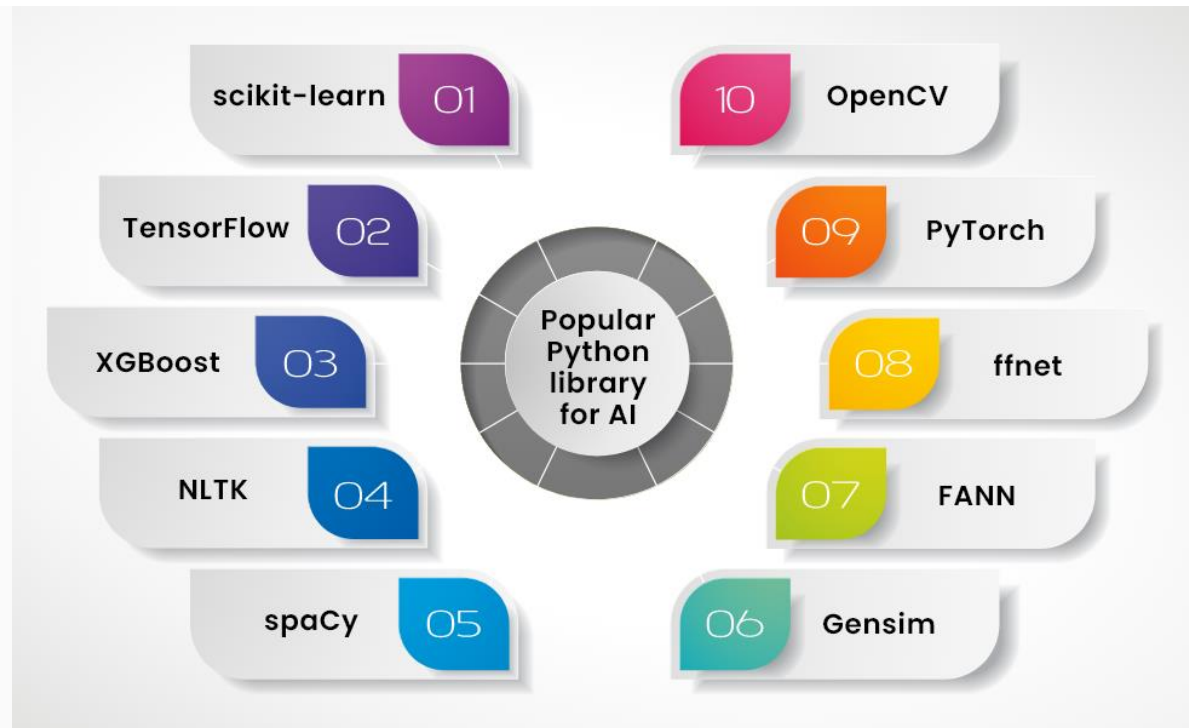
Llama Index



Diffusers



Acme



Python 설치

■ 파이썬 다운로드

<https://www.python.org/downloads/windows/>

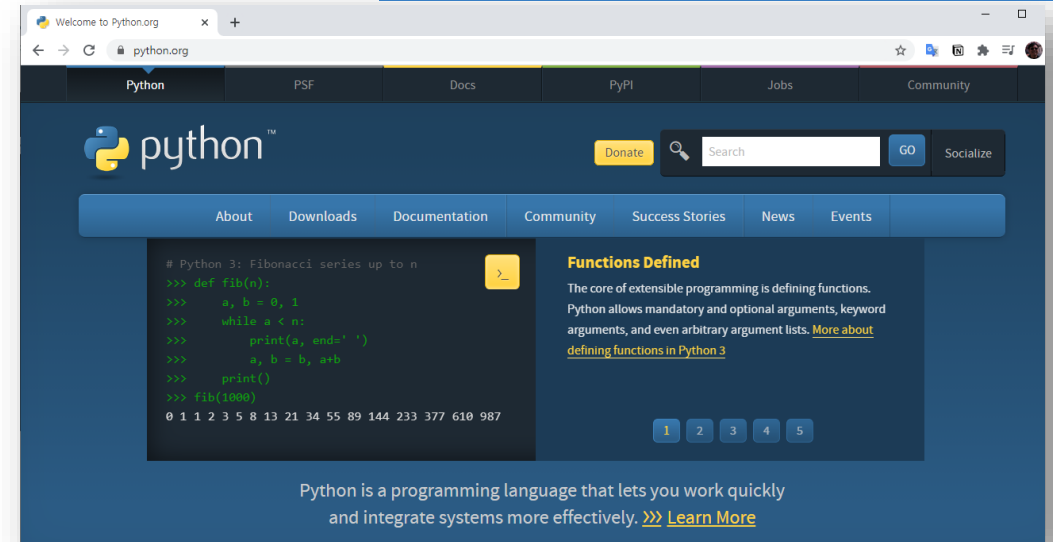
Stable Releases

- [Python 3.11.8 - Feb. 6, 2024](#)
- Note that Python 3.11.8 *cannot* be used on Windows 7 or earlier.
- Download [Windows embeddable package \(32-bit\)](#)
- Download [Windows embeddable package \(64-bit\)](#)
- Download [Windows embeddable package \(ARM64\)](#)
- Download [Windows installer \(32-bit\)](#)
- Download [Windows installer \(64-bit\)](#)
- Download [Windows installer \(ARM64\)](#)

<https://www.python.org/downloads/macros/>

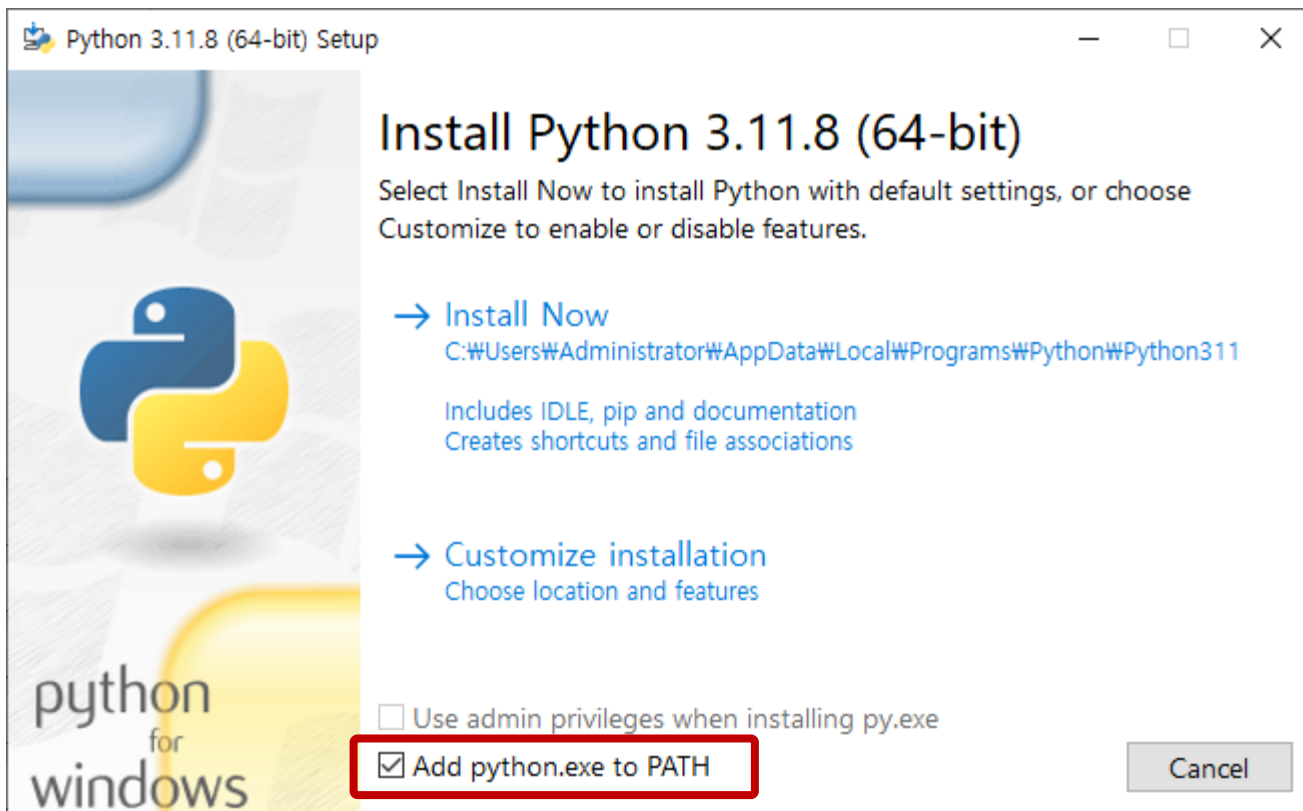
Stable Releases

- [Python 3.11.8 - Feb. 6, 2024](#)
- Download [macOS 64-bit universal2 installer](#)



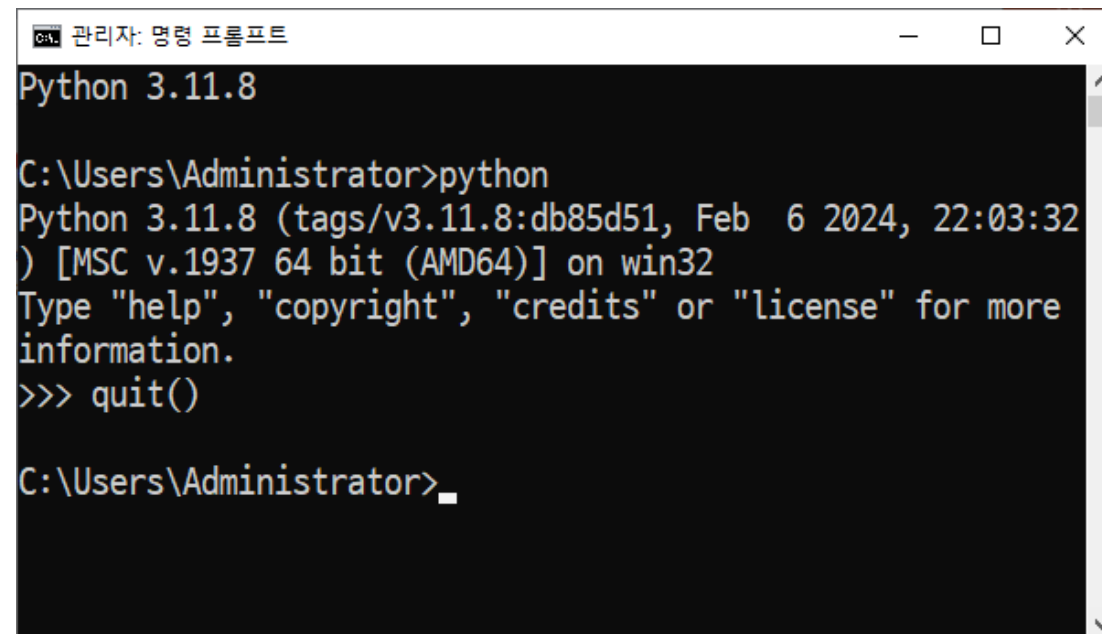
파이썬 설치

■ 파이썬 설치



■ 파이썬 실행

- 버전 확인 : `python --version`
- 실행 : `python`
- 종료 : `quit()`



파이썬 가상환경 설치

프로젝트별로 독립된 파이썬 실행 환경을 사용할 수 있는 가상 환경(Virtual Environment) 구성을 권장합니다.

- 가상환경 생성 : `python -m venv py311`
- 가상환경 실행
 - Windows : `py311\Scripts\activate.bat`
 - Linux / macOS : `source py311/bin/activate`
- 파이썬 패키지 설치 : `pip install jupyterlab notebook openai`
 - Jupyter Lab 설치 확인 : `jupyter lab`
 - Jupyter Notebook 설치 확인 : `jupyter notebook`
- 패키지 목록파일 만들기
`pip freeze > requirements.txt`
- 패키지 목록파일로 패키지 설치 하는 방법
`pip install -r requirements.txt`
- 파이썬 패키지 삭제 : `pip install jupyterlab notebook openai`


Anaconda (아나콘다)

Anaconda는 파이썬 기본 프로그램과 많이 사용하는 패키지 그리고, 통합 개발환경을 포함한 배포판입니다.

■ Anaconda 설치/실행

<https://www.anaconda.com/download/>

- ✓ Free distribution install
- ✓ Thousands of the most fundamental DS, AI, and ML packages
- ✓ Manage packages and environments from desktop application
- ✓ Deploy across hardware and software platforms

 Download

Get Additional Installers



■ 실행

- 윈도우 시작메뉴
 - Anaconda3
 - Anaconda Prompt
 - python

■ 가상환경

- `conda create --name myenv`
- `conda activate myenv`

Anaconda (아나콘다)

The screenshot shows the Anaconda Navigator desktop application. The window title is "Anaconda Navigator". The top menu bar includes "File" and "Help". The top right corner has an "Upgrade Now" button and a "Sign in to Anaconda.org" button. The left sidebar contains navigation links: "Home", "Environments", "Learning", and "Community". The main area displays a grid of application tiles for the "base (root)" environment. Each tile includes an icon, the application name, version, a brief description, and a "Launch" button. The applications shown are: CMD.exe Prompt (0.1.1), JupyterLab (2.1.5), Jupyter Notebook (6.0.3), Powershell Prompt (0.0.1), PyCharm (2021.1.1), Qt Console (4.7.5), Spyder (4.1.4), and VS Code (1.55.2). A "Refresh" button is located in the top right of the main area.

File Help

ANACONDA NAVIGATOR

Upgrade Now Sign in to Anaconda.org

Home

Environments

Learning

Community

Applications on base (root) Channels Refresh

CMD.exe Prompt
0.1.1
Run a cmd.exe terminal with your current environment from Navigator activated
Launch

JupyterLab
2.1.5
An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture.
Launch

Jupyter Notebook
6.0.3
Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis.
Launch

Powershell Prompt
0.0.1
Run a Powershell terminal with your current environment from Navigator activated
Launch

PyCharm
2021.1.1
Full-Featured Python IDE by JetBrains. Supports code completion, linting, debugging, and domain-specific enhancements for web development and data science.
Launch

Qt Console
4.7.5
PyQt GUI that supports inline figures, proper multiline editing with syntax highlighting, graphical calltips, and more.
Launch

Spyder
4.1.4
Scientific PYTHON Development Environment. Powerful Python IDE with advanced editing, interactive testing, debugging and introspection features
Launch

VS Code
1.55.2
Streamlined code editor with support for development operations like debugging, task running and version control.
Launch

Documentation

Colab(코랩)

개발툴 설치없이 웹상에서 파이썬 프로그램을 할수 있는 환경으로 딥러닝에 필요한 GPU를 사용할 수 있습니다.

<https://colab.research.google.com> **구글 계정 필요**



The image shows the Google Colaboratory web interface. At the top, there's a blue bar with the URL <https://colab.research.google.com> and an orange bar indicating '구글 계정 필요' (Google account required). Below the header, the main interface shows a 'Colaboratory에 오신 것을 환영합니다' (Welcome to Colaboratory) message. A menu is open, showing options like '모두 실행' (Run all), '이전 셀 실행' (Run previous cells), etc. A dialog box titled '런타임 유형 변경' (Change runtime type) is displayed, showing 'Python 3' as the selected runtime type. Under '하드웨어 가속기' (Hardware accelerator), the 'T4 GPU' option is selected with a blue circle. Other options include 'CPU', 'A100 GPU', 'V100 GPU', and 'TPU'. At the bottom of the dialog, there's a question '프리미엄 GPU를 이용하시겠어요?' (Would you like to use premium GPU?) with a link '추가 컴퓨팅 단위 구매' (Purchase additional computing units). The dialog has '취소' (Cancel) and '저장' (Save) buttons.

고성능GPU(Graphics Processing Unit)



Colab - AI Powered Coding

The image displays two screenshots of the Google Colab interface, illustrating the AI-powered coding features.

Left Screenshot: Shows the Colab interface with the '생성' (Generate) button highlighted by a red box. The button is located in the bottom right corner of the code editor area.

Right Screenshot: Shows the Colab interface with the 'Colab AI' button highlighted by a red box. The button is located in the top right corner of the interface. Below the button, a side panel displays AI-generated code and prompts.

AI-Generated Code:

```
# prompt: import data_csv as as a dataframe

import pandas as pd

# Read the CSV file into a pandas DataFrame
data_csv = pd.read_csv('data.csv')

# Print the DataFrame
print(data_csv)
```

AI Prompts:

- How do I filter a Pandas DataFrame?
- How can I create a plot in Colab?

Input Field: A text input field with the placeholder text "여기에 메시지를 입력하세요." (Enter message here).

■ 참고 : <https://blog.google/technology/developers/google-colab-ai-coding-features/>

Python 기초

■ 변수 할당(Variable Assignment)

```
x = 2
y = 3
z = x + y
```

```
x = 'hello'
```

Single Quotation
작은 따옴표

```
x = "hello"
```

Double
Quotation
쌍 따옴표

```
X
```

```
[Out] 'hello'
```

■ 출력

```
print(x)
```

```
[Out] 'hello'
```

■ 리스트(List)

```
[1, 2, 3]
```

```
['a', 'b', 'c']
```

```
my_list = [1, 2, 'apple', True]
```

Bracket
대괄호

```
my_list.append(100)
```

```
my_list[0]
```

```
my_list[:-1]
```

```
my_list[-1]
```

■ 딕셔너리(Dictionary)

```
d = {'key1': 'item1', 'key2': 'item2'}
```

Brace
중괄호

```
d['key1']
```

```
[Out] 'item1'
```



python_essence.ipynb



colab



Thank you