

The background features a large, abstract, wavy shape in shades of green and white, resembling a stylized wave or a flowing ribbon. The shape is composed of several overlapping, curved segments that create a sense of movement and depth. The colors range from a bright, vibrant green to a soft, pale green, with white areas that provide contrast and highlight the curves of the shape. The overall effect is clean, modern, and organic.

테스트 환경 설치 및 설정

파이썬 배포판 설치 (Anaconda)

- 다운로드 경로 → <https://www.anaconda.com/products/individual>

Anaconda Installers

Windows

Python 3.8

64-Bit Graphical Installer (457 MB)

32-Bit Graphical Installer (403 MB)

MacOS

Python 3.8

64-Bit Graphical Installer (435 MB)

64-Bit Command Line Installer (428 MB)

Linux

Python 3.8

64-Bit (x86) Installer (529 MB)

64-Bit (Power8 and Power9) Installer (279 MB)

- 다운로드 완료 후 관리자 권한으로 실행 → 설치

파이썬 배포판 설치 (Miniconda)

- 다운로드 경로 → <https://docs.conda.io/en/latest/miniconda.html>

Python version	Name	Size	SHA256 hash
Python 3.8	Miniconda3 Windows 64-bit	57.0 MiB	4fa22bba0497babb5b6608cb8843545372a99f5331c8120099ae1d803f627c61
	Miniconda3 Windows 32-bit	54.2 MiB	9c2ef76bae97246c85c206733ca30fd1feb8a4b3f90a2a511fea681ce7ebc661
Python 2.7	Miniconda2 Windows 64-bit	54.1 MiB	6973025404832944e074bf02bda8c4594980eed4707bb51baa8fbd8a4bf326c
	Miniconda2 Windows 32-bit	47.7 MiB	c8049d26f8b6b954b57bcd4e99ad72d1ffa13f4a6b218e64e641504437b2617b

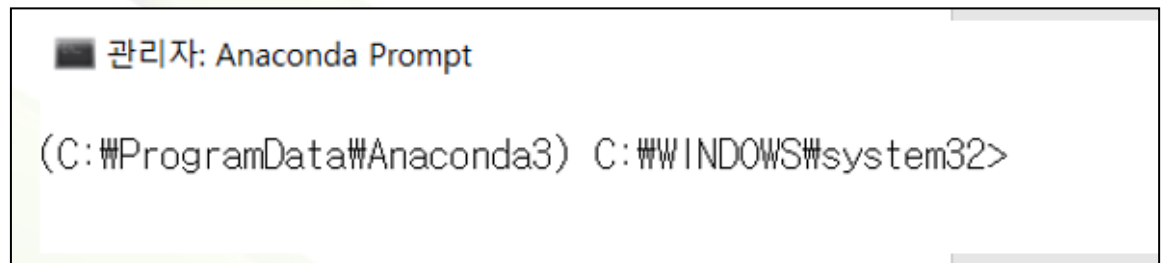
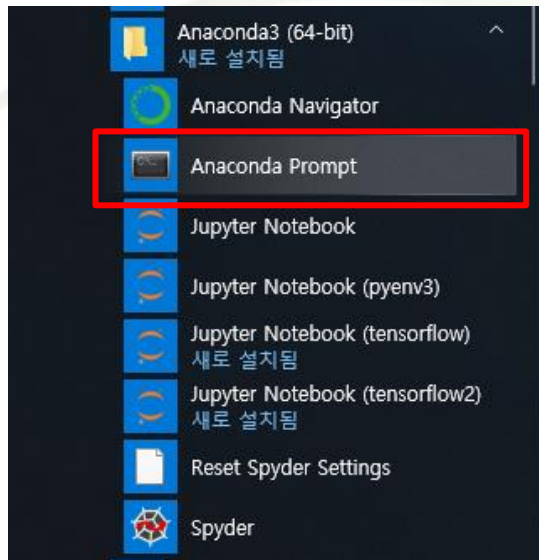
Python version	Name	Size	SHA256 hash
Python 3.8	Miniconda3 MacOSX 64-bit bash	54.5 MiB	a9ea0afba55b5d872e01323d495b649eac8ff4ce2ea098fb4c357b6139fe6478
	Miniconda3 MacOSX 64-bit pkg	62.0 MiB	b06f3bf3cffa9b53695c9c3b8da05bf583bc7047d45b0d74492f154d85e317fa
Python 2.7	Miniconda2 MacOSX 64-bit bash	40.3 MiB	0e2961e20a2239c140766456388beba6630f0c869020d2bd1870c3d040980b45
	Miniconda2 MacOSX 64-bit pkg	48.4 MiB	9ca4313e8162a939c7a5a4f48d657722594f8db9a98472803d63ca7f66fa1da

Python version	Name	Size	SHA256 hash
Python 3.8	Miniconda3 Linux 64-bit	89.9 MiB	1314b90489f154602fd794accfc90446111514a5a72fe1f71ab83e07de9504a7
Python 3.7	Miniconda3 Linux 32-bit	62.7 MiB	f387eded3fa4ddc3104b7775e62d59065b30205c2758a8b86b4c27144adafcc4
Python 2.7	Miniconda2 Linux 64-bit	48.7 MiB	b820dde1a0ba868c4c948fe6ace7300a252b33b5befd078a15d4a017476b8979
	Miniconda2 Linux 32-bit	39.0 MiB	2e20ac4379ca5262e7612f84ad26b1a2f2782d0994facdec28e0baf51749979

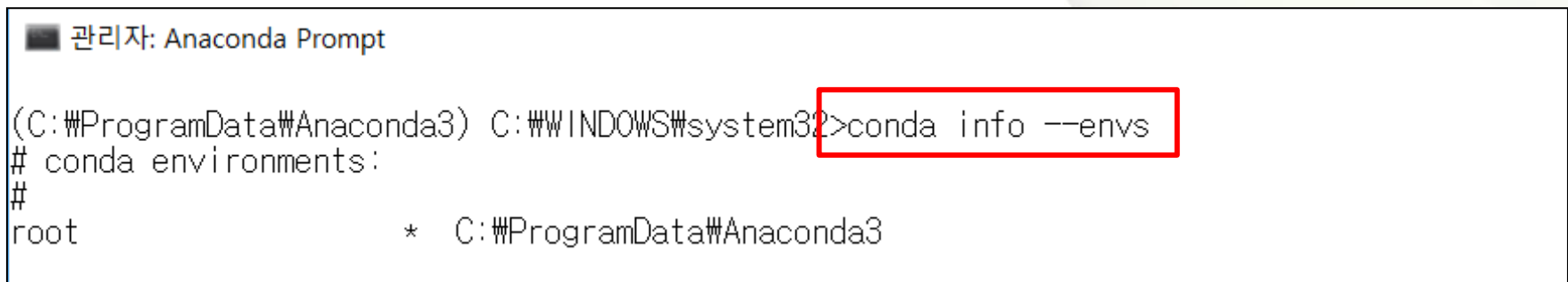
- 다운로드 완료 후 관리자 권한으로 실행 → 설치

가상 파이썬 환경 생성

- 관리자 권한으로 아나콘다 프롬프트 (Anaconda Prompt) 실행



- 가상 환경 목록 보기
 - » 처음 실행한 경우 root 항목만 표시됨



가상 파이썬 환경 생성

■ 가상 환경 만들기

원하는 이름으로 입력

```
C:\WINDOWS\system32>conda create --name pyenv3 python=3.6
```

```
Fetching package metadata .....
```

```
Solving package specifications: .
```

```
Package plan for installation in environment
```

```
C:\ProgramData\Anaconda3\envs\pyenv3:
```

```
The following NEW packages will be INSTALLED:
```

certifi:	2016.2.28-py36_0
pip:	9.0.1-py36_1
python:	3.6.2-0
setuptools:	36.4.0-py36_1
vc:	14-0
vs2015_runtime:	14.0.25420-0
wheel:	0.29.0-py36_0
wincertstore:	0.2-py36_0

```
Proceed ([y]/n)? y
```

가상 파이썬 환경 생성

■ 가상 환경 만들기 (계속)

```
# To activate this environment, use:
# > activate pyenv3
#
# To deactivate an active environment, use:
# > deactivate
#
# * for power-users using bash, you must source
# □□□□
```

■ 설치된 가상 환경 확인 (가상 환경 목록 보기)

```
■ 관리자: Anaconda Prompt

(C:\ProgramData\Anaconda3) C:\WINDOWS\system32>conda info --envs
# conda environments:
#
pyenv3                C:\ProgramData\Anaconda3\envs\pyenv3
root                  * C:\ProgramData\Anaconda3
```

가상 파이썬 환경 제거

■ 가상 파이썬 환경 제거

```
관리자: Anaconda Prompt

(C:\ProgramData\Anaconda3) C:\WINDOWS\system32>conda remove --name pyenv3 --all

Package plan for package removal in environment C:\ProgramData\Anaconda3\envs\pyenv3:

The following packages will be REMOVED:

certifi:                2016.2.28-py36_0
pip:                    9.0.1-py36_1
python:                 3.6.2-0
setuptools:             36.4.0-py36_1
vc:                     14-0
vs2015_runtime:         14.0.25420-0
wheel:                  0.29.0-py36_0
winertstore:            0.2-py36_0

Proceed ([y]/n)? y
```

■ 가상 환경 목록으로 확인

» conda info --envs 명령 실행 → 실행 결과 표시 생략

가상 파이썬 환경 사용

■ 가상 파이썬 환경 접속

```
■ 관리자: Anaconda Prompt  
(C:\ProgramData\Anaconda3) C:\WINDOWS\system32>activate pyenv3  
(pyenv3) C:\WINDOWS\system32>
```

■ 명령 프롬프트에서 대화형 프로그램 환경 실행

```
■ 관리자: Anaconda Prompt - python  
(pyenv3) C:\WINDOWS\system32>python  
Python 3.6.2 |Continuum Analytics, Inc.| (default, Jul 20 2017, 12:30:02) [MSC v.1900 64 bit (AMD64)]  
Type "help", "copyright", "credits" or "license" for more information.  
>>> print ("Hello, python")  
Hello, python  
>>>
```

» 종료는 `exit()` 또는 `quit()` 함수 호출

가상 파이썬 환경에 모듈 설치

- 가상 파이썬 환경 접속

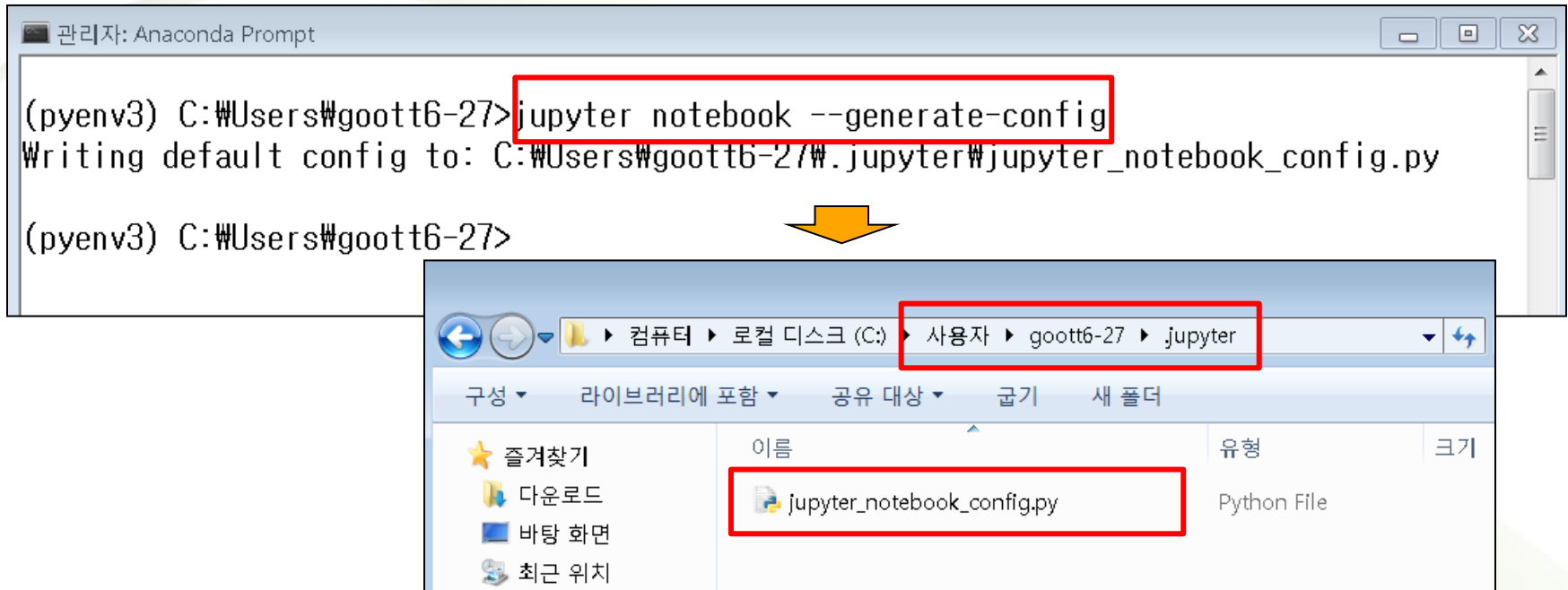
```
관리자: Anaconda Prompt  
(C:\ProgramData\Anaconda3) C:\WINDOWS\system32>activate pyenv3  
(pyenv3) C:\WINDOWS\system32>
```

- 대화형 프로그램 개발을 위한 Jupyter Notebook 모듈 설치

```
(pyenv3) C:\WINDOWS\system32>conda install jupyter  
Fetching package metadata .....  
Solving package specifications: .  
  
Package plan for installation in environment C:\ProgramData\Anaconda3\envs\pyenv3:  
  
The following NEW packages will be INSTALLED:  
  
  jupyter: 1.0.0-py36_3  
  
Proceed ([y]/n)? y
```

대화형 실행 환경

- notebook 설정 파일 만들기 (선택적 - 명령행에서 직접 이동할 수 있음)



- notebook 설정 파일 수정 (선택적 - 명령행에서 직접 이동할 수 있음)

```
259
260  ## The directory to use for notebooks and kernels.
261  c.NotebookApp.notebook_dir = r'C:\python-ml\workspace'
262
```

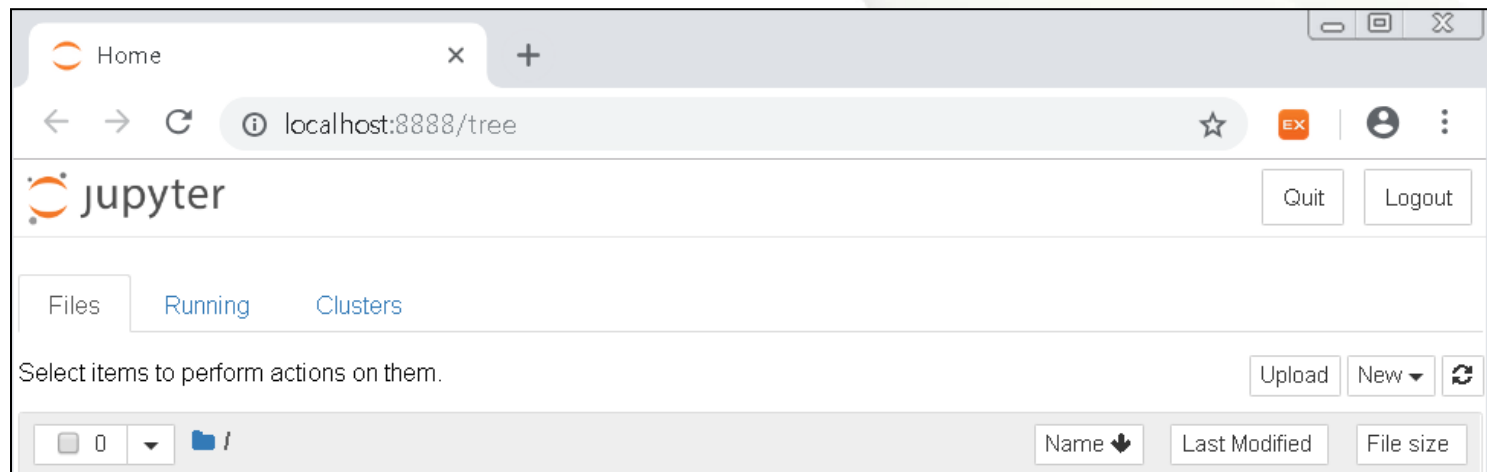
대화형 실행 환경

■ notebook 시작

```
관리자: Anaconda Prompt - jupyter notebook

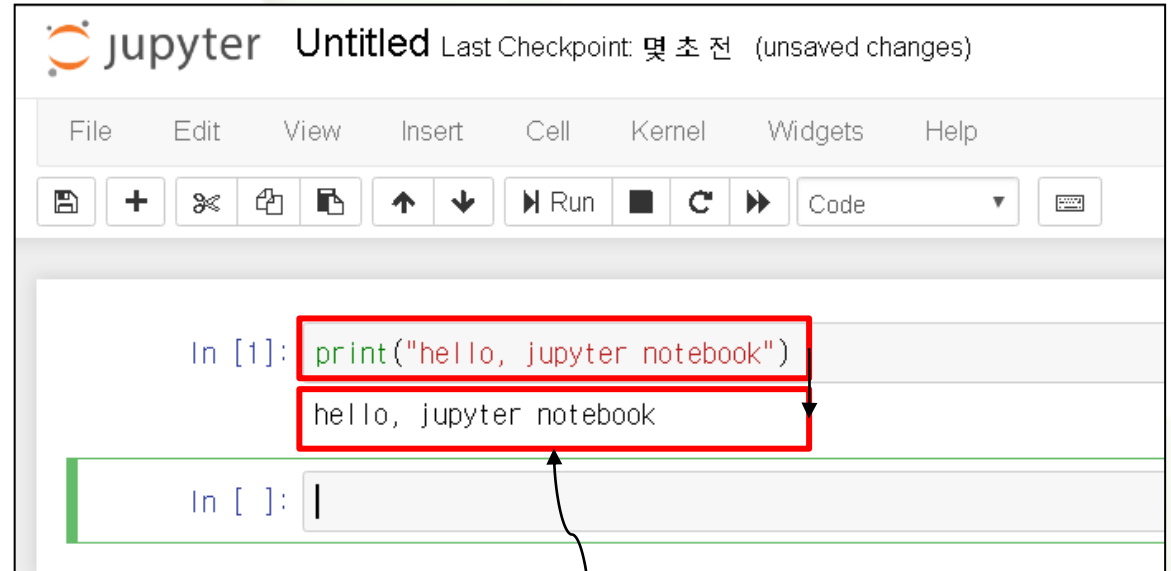
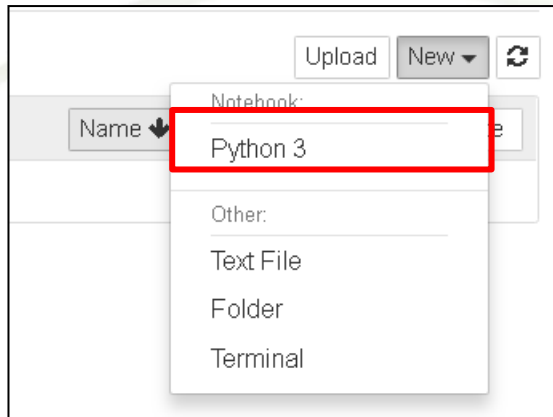
(pyenv3) C:\Users\goott6-2>jupyter notebook
[I 09:01:00.773 NotebookApp] Serving notebooks from local directory: C:\python-ml\workspace
[I 09:01:00.773 NotebookApp] The Jupyter Notebook is running at:
[I 09:01:00.773 NotebookApp] http://localhost:8888/?token=016dd0fdf4ee4c0e1d432d4b54077f918fe985830a423320
[I 09:01:00.773 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 09:01:00.867 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to login with a token:
    http://localhost:8888/?token=016dd0fdf4ee4c0e1d432d4b54077f918fe985830a423320
[I 09:01:02.194 NotebookApp] Accepting one-time-token-authenticated connection from ::1
```

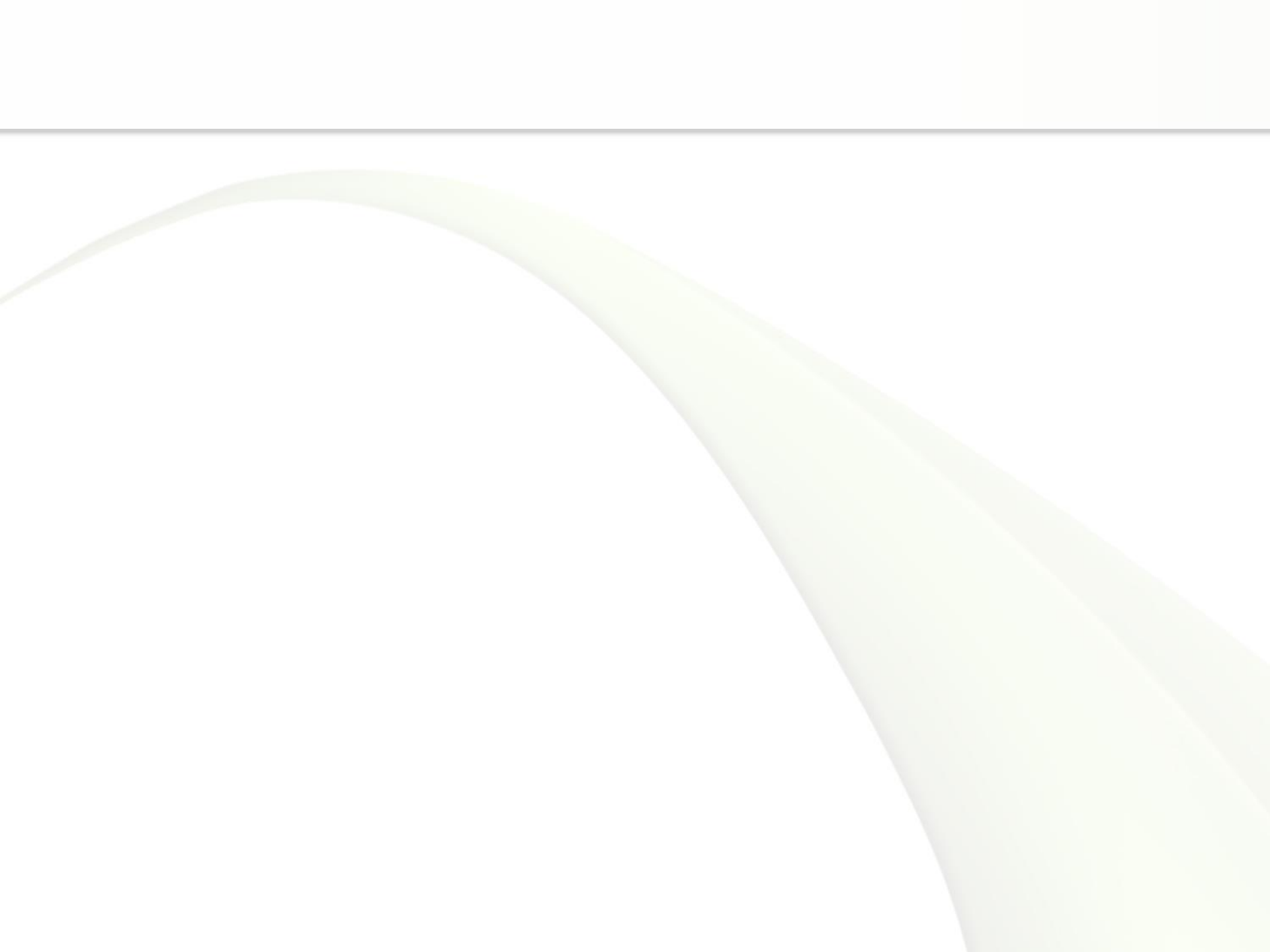


대화형 실행 환경

■ 작업 파일 만들기

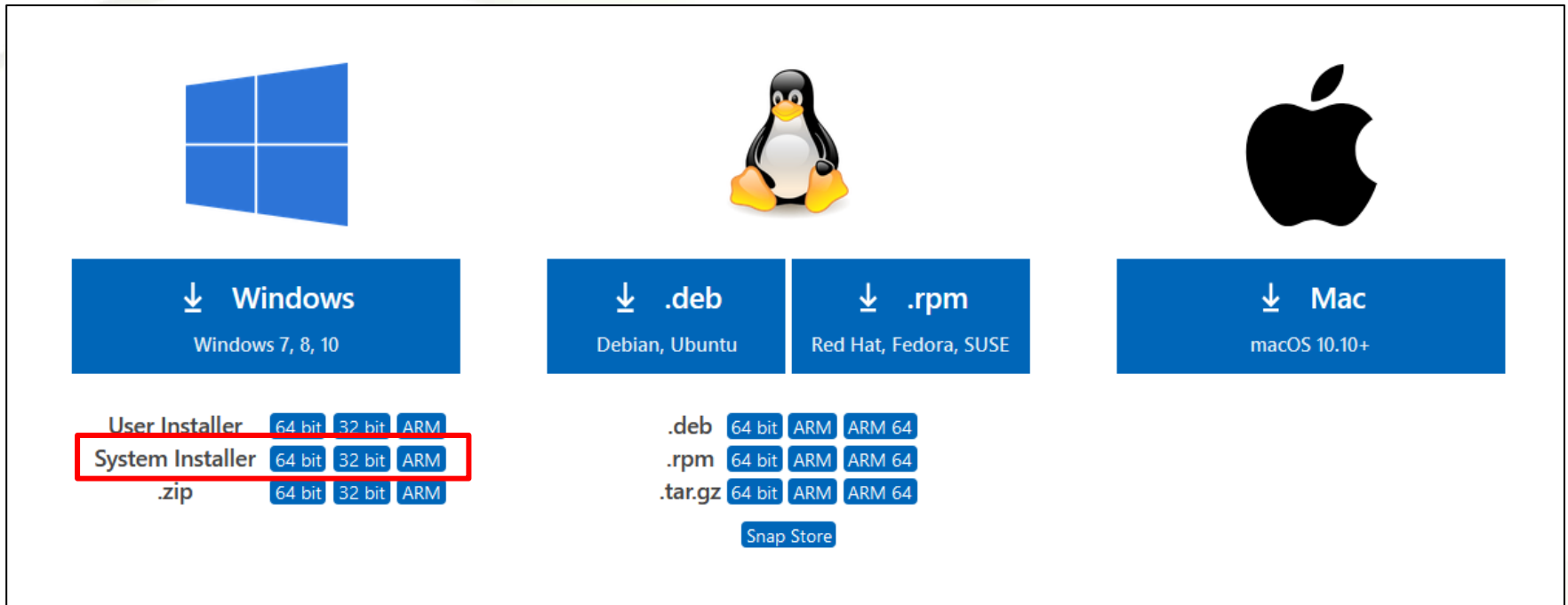


명령어 입력 후
shift + enter 또는 ctrl + enter



Visual Studio Code 설치

- 다운로드 → <https://code.visualstudio.com/Download>



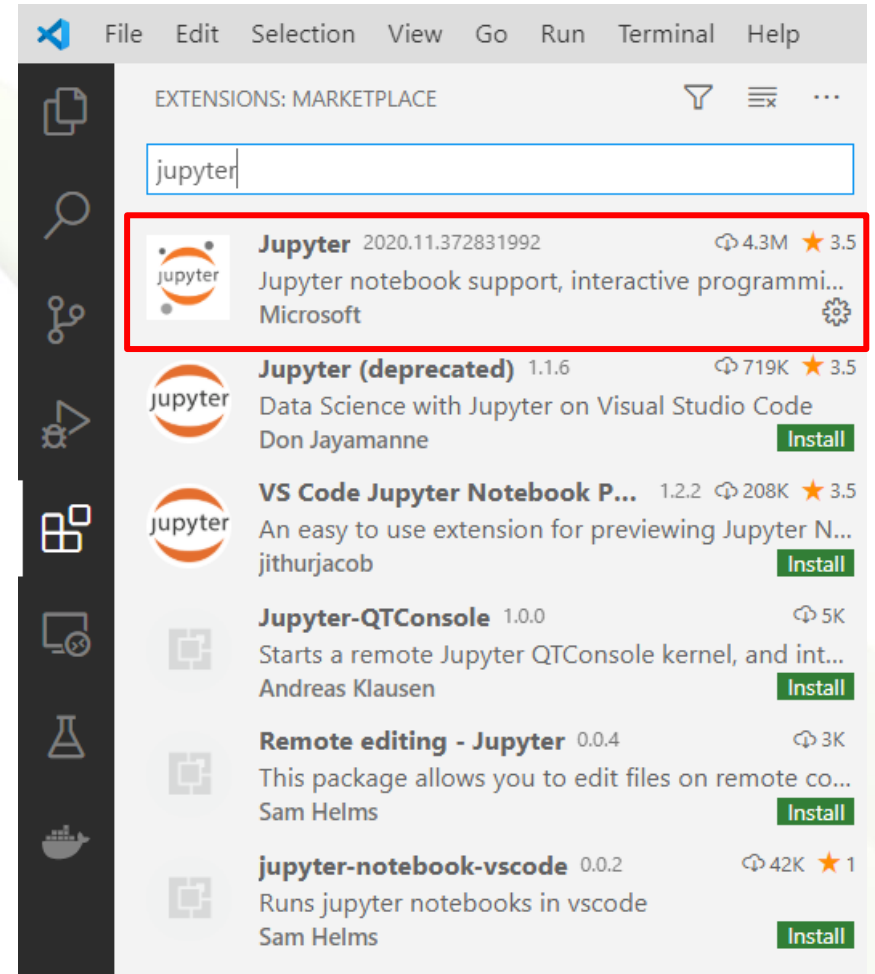
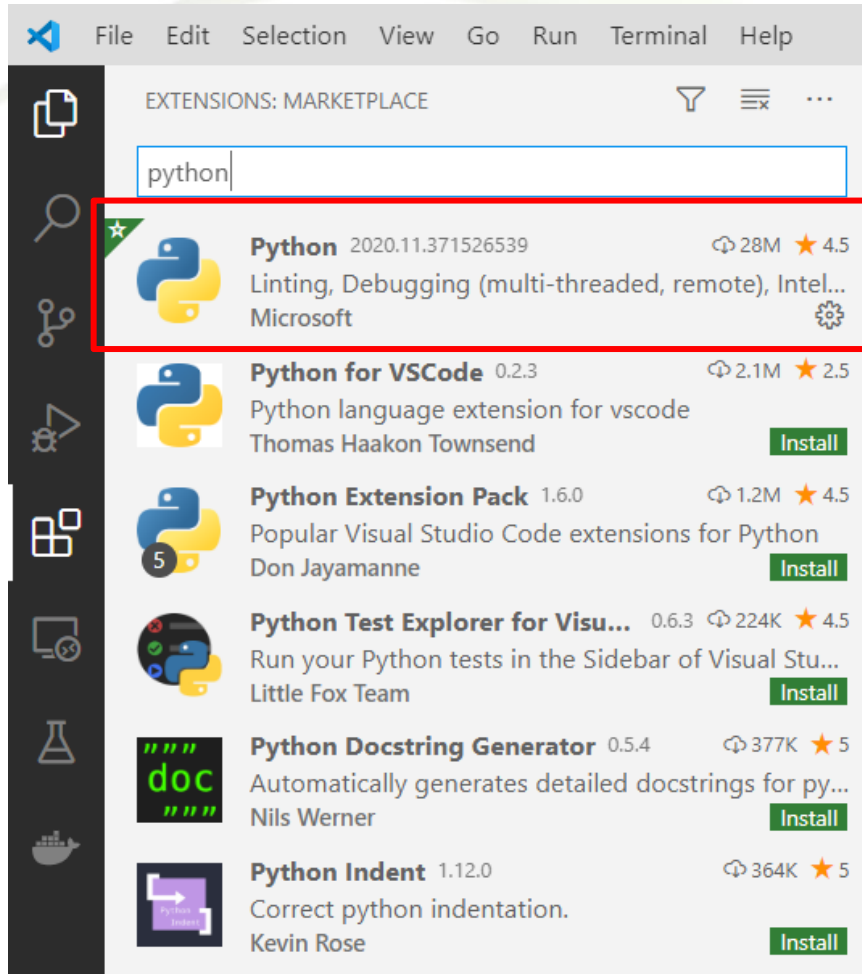
The screenshot displays the Visual Studio Code download page. It features three main sections for different operating systems: Windows, Linux, and Mac. Each section has a download button and a list of available installers. The Windows section includes a 'System Installer' option, which is highlighted with a red box. The Linux section shows options for .deb, .rpm, and .tar.gz formats. The Mac section shows a download button for macOS 10.10+.

Platform	Installer Type	64 bit	32 bit	ARM
Windows	User Installer	64 bit	32 bit	ARM
	System Installer	64 bit	32 bit	ARM
	.zip	64 bit	32 bit	ARM
Linux	.deb	64 bit	ARM	ARM 64
	.rpm	64 bit	ARM	ARM 64
	.tar.gz	64 bit	ARM	ARM 64
	Snap Store			
Mac	Download			

- 다운로드 완료 후 관리자 권한으로 실행 → 설치

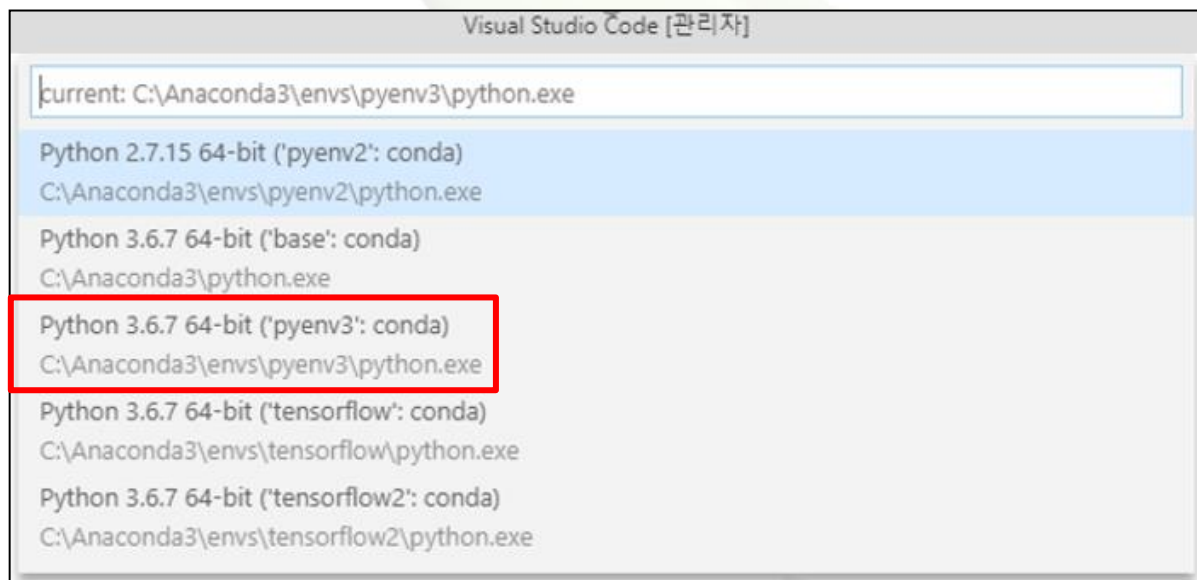
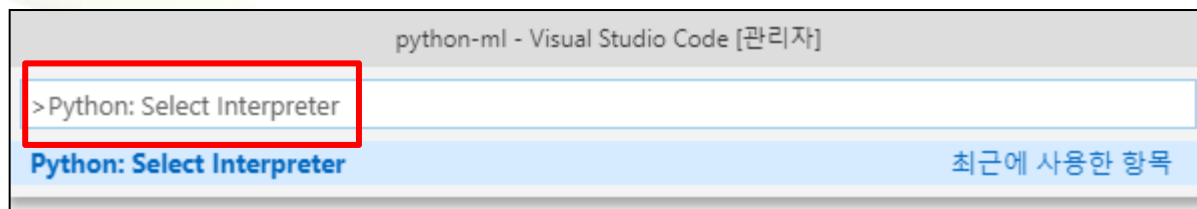
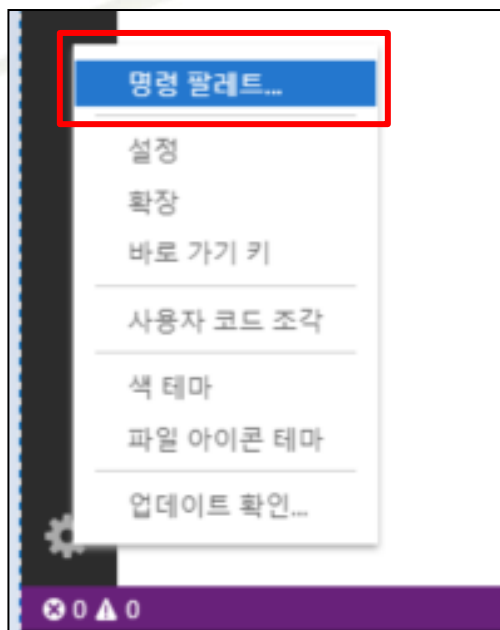
Visual Studio Code 사용

■ 파이썬 확장 설치



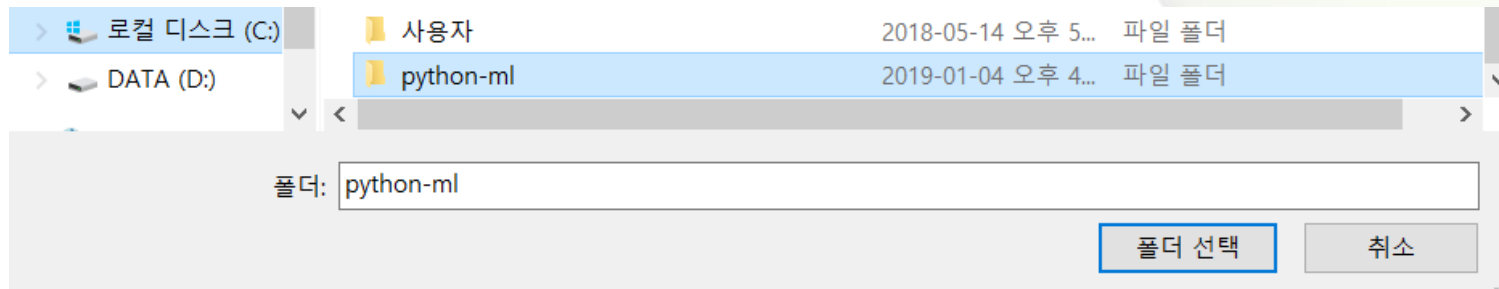
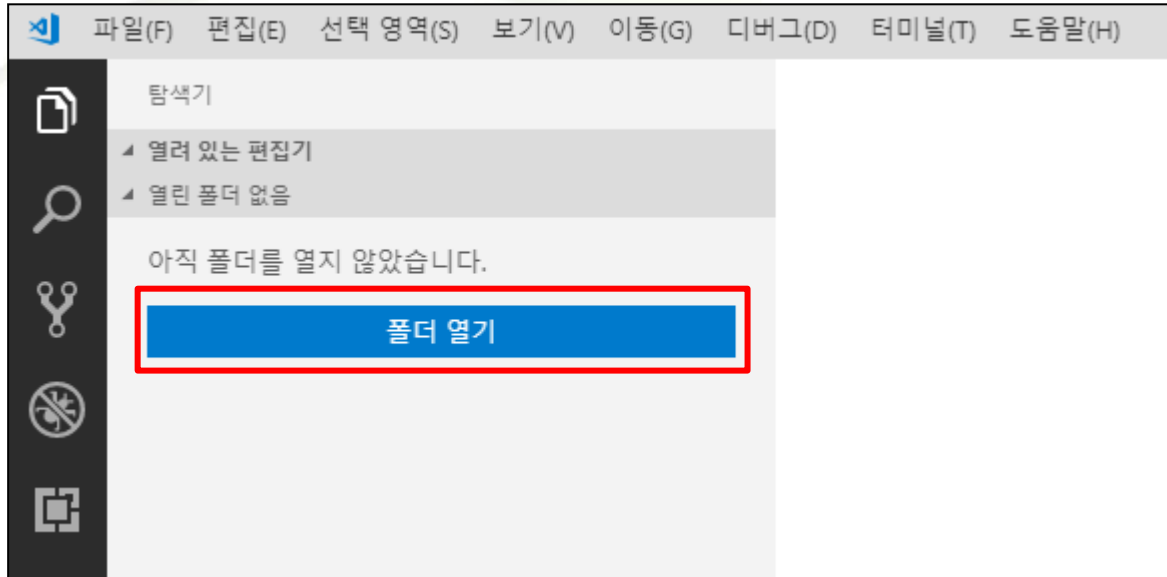
Visual Studio Code 사용

■ 파이썬 인터프리터 설정



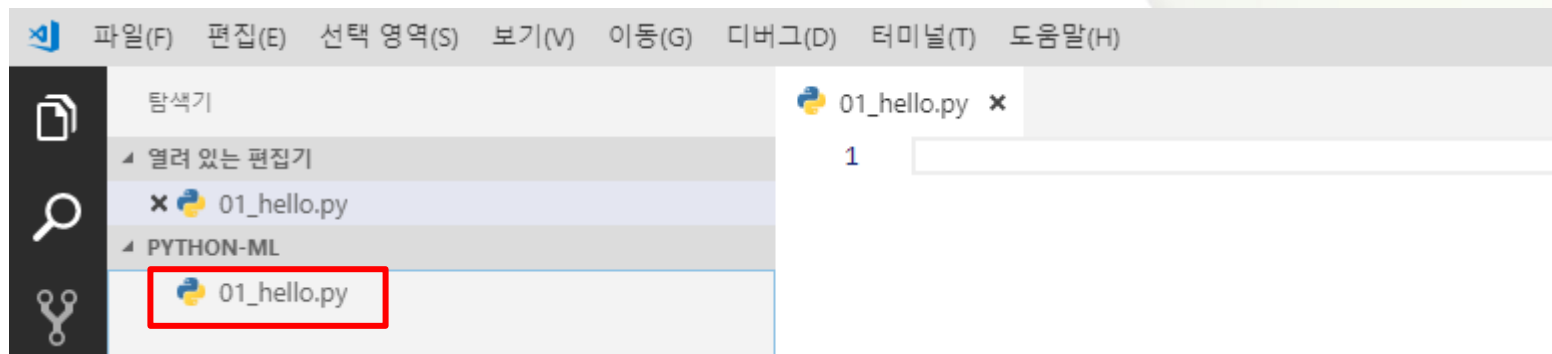
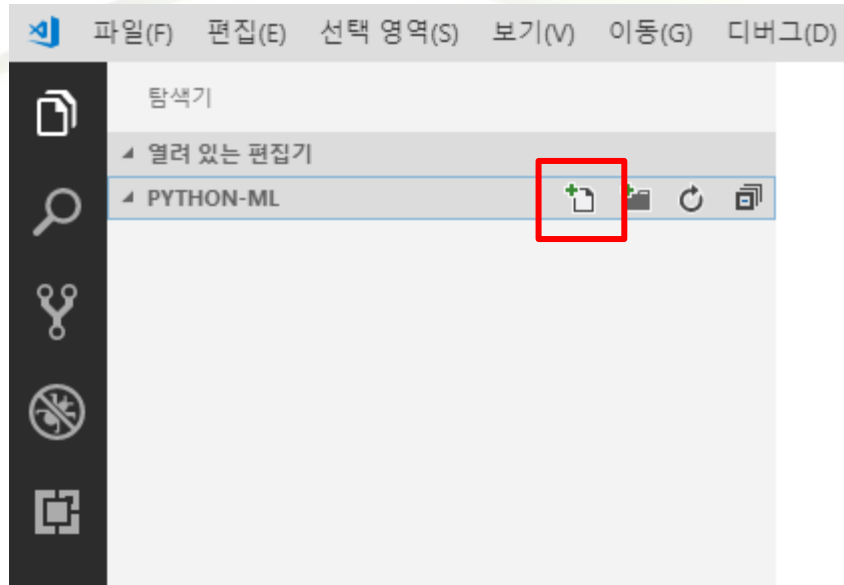
Visual Studio Code 사용

■ 작업 디렉터리 지정



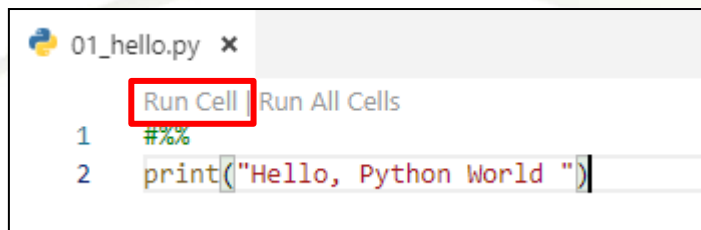
Visual Studio Code 사용

■ 새 파일 추가

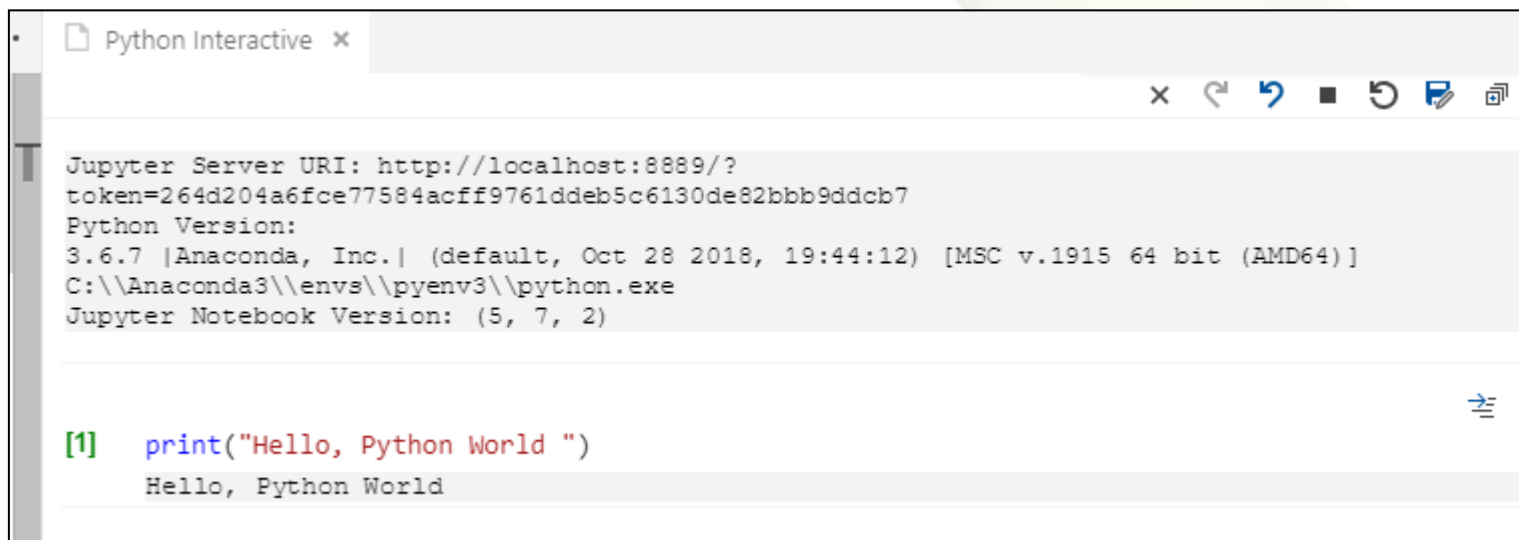


Visual Studio Code 사용

■ 대화형 명령 실행



```
01_hello.py x
1  #%%
2  print("Hello, Python World ")
```



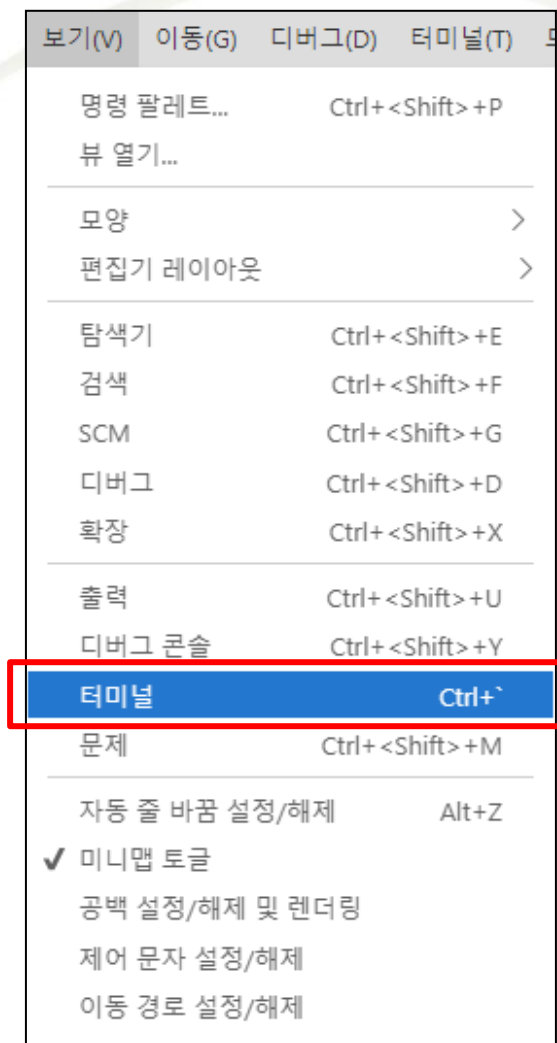
```
Python Interactive x
x ↶ ↷ ■ ↺ ↻ 📄 📋

Jupyter Server URI: http://localhost:8889/?
token=264d204a6fce77584acff9761ddeb5c6130de82bbb9ddcb7
Python Version:
3.6.7 |Anaconda, Inc.| (default, Oct 28 2018, 19:44:12) [MSC v.1915 64 bit (AMD64)]
C:\\Anaconda3\\envs\\pyenv3\\python.exe
Jupyter Notebook Version: (5, 7, 2)

[1] print("Hello, Python World ")
    Hello, Python World
```

Visual Studio Code 사용

■ 배치형 명령 실행



```
문제  출력  디버그 콘솔  터미널

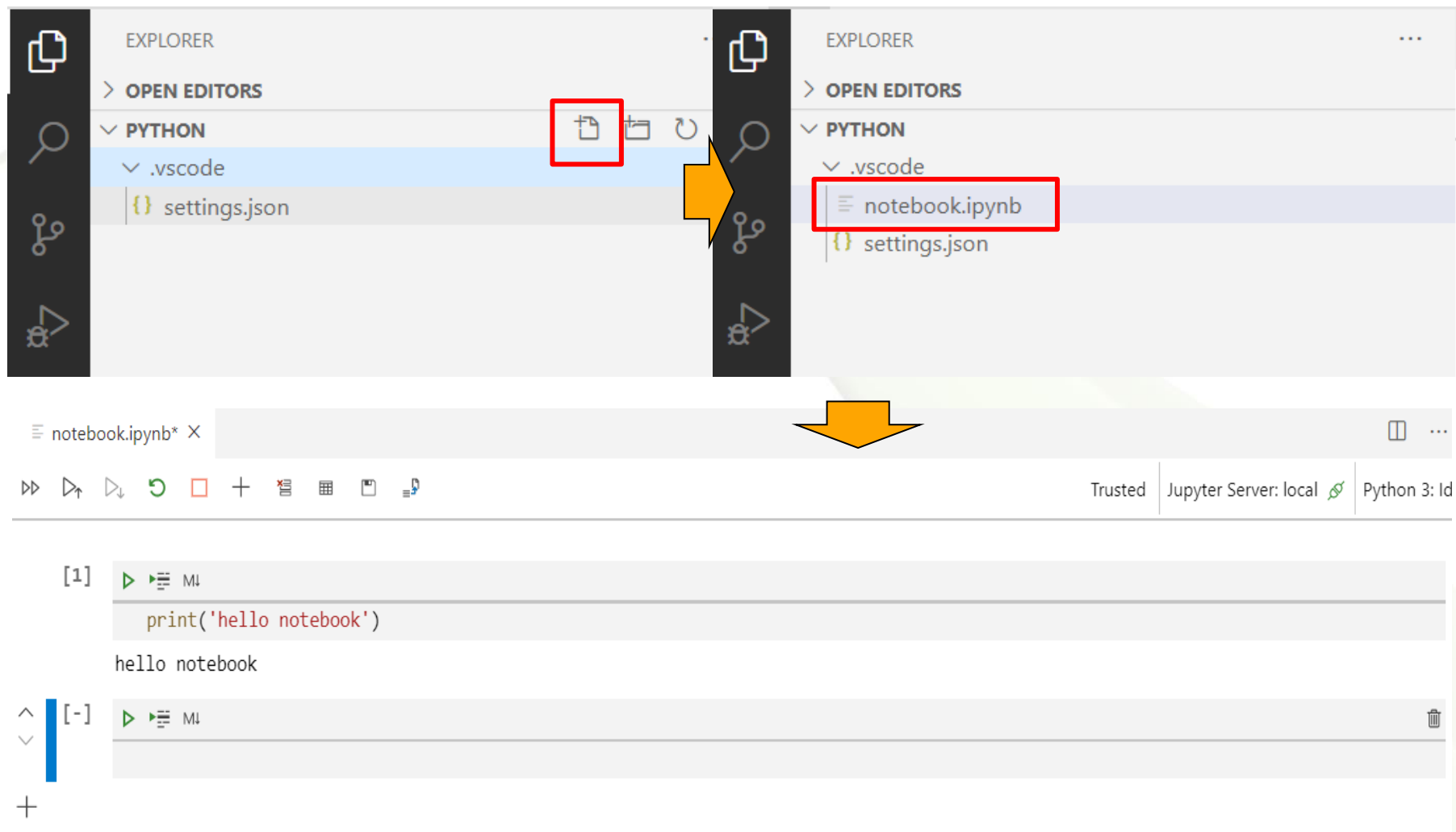
Microsoft Windows [Version 10.0.17134.472]
(c) 2018 Microsoft Corporation. All rights reserved.

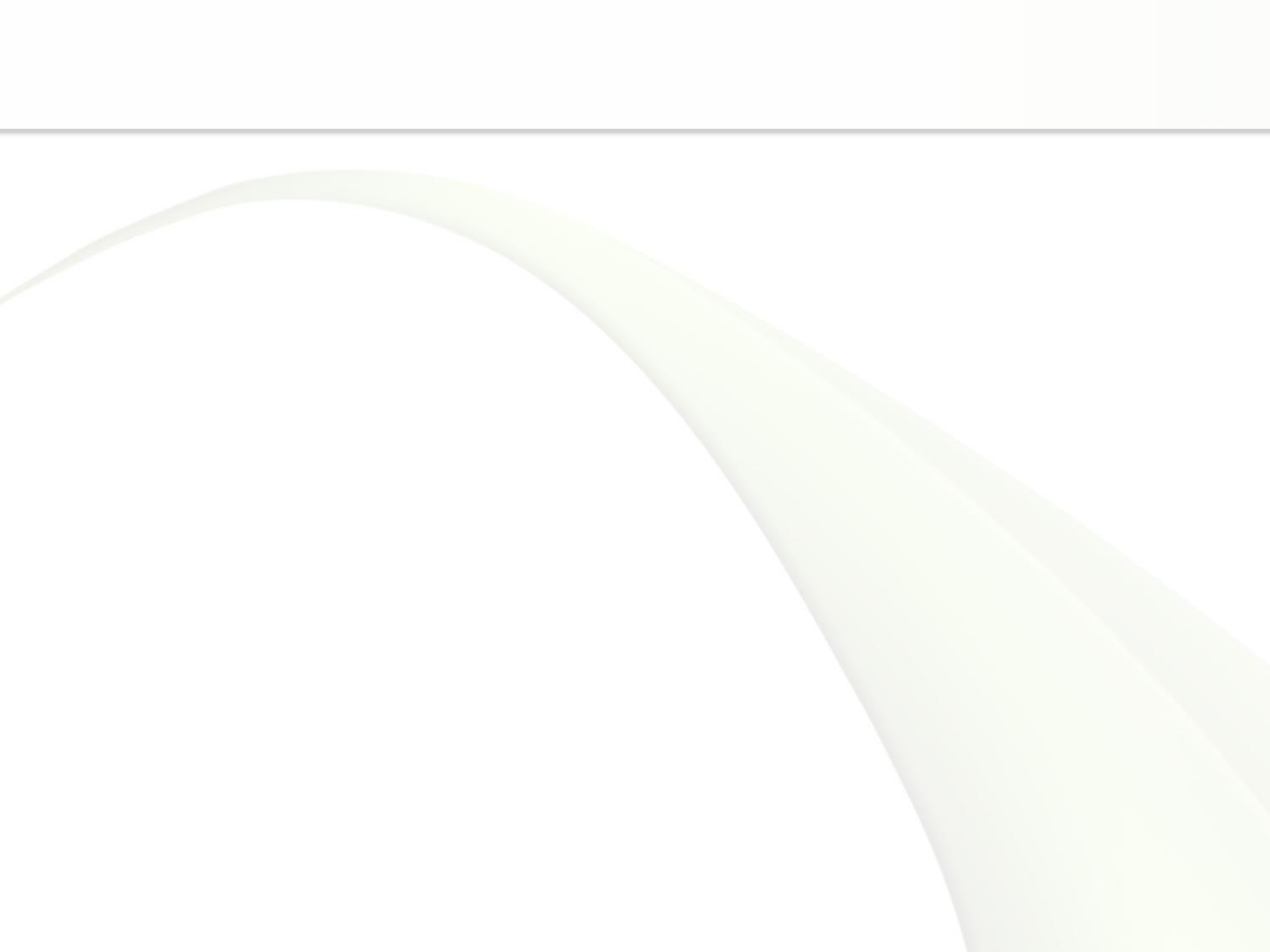
C:\python-ml>C:\Anaconda3\Scripts\activate pyenv3

(pyenv3) C:\python-ml>python 01_hello.py
Hello, Python World

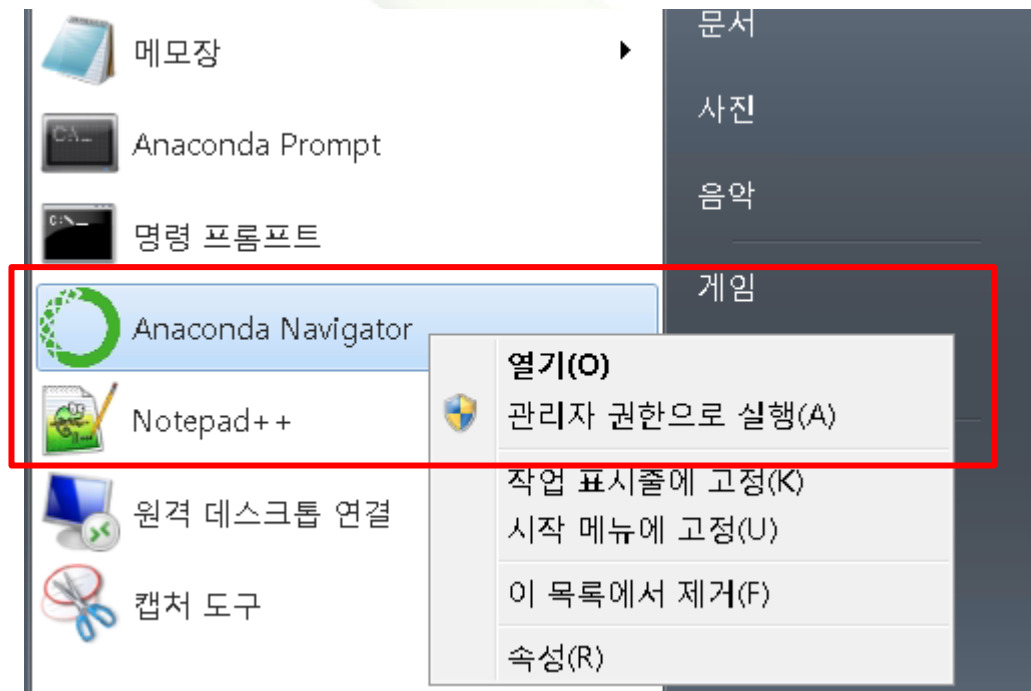
(pyenv3) C:\python-ml>
```

Visual Studio Code 사용

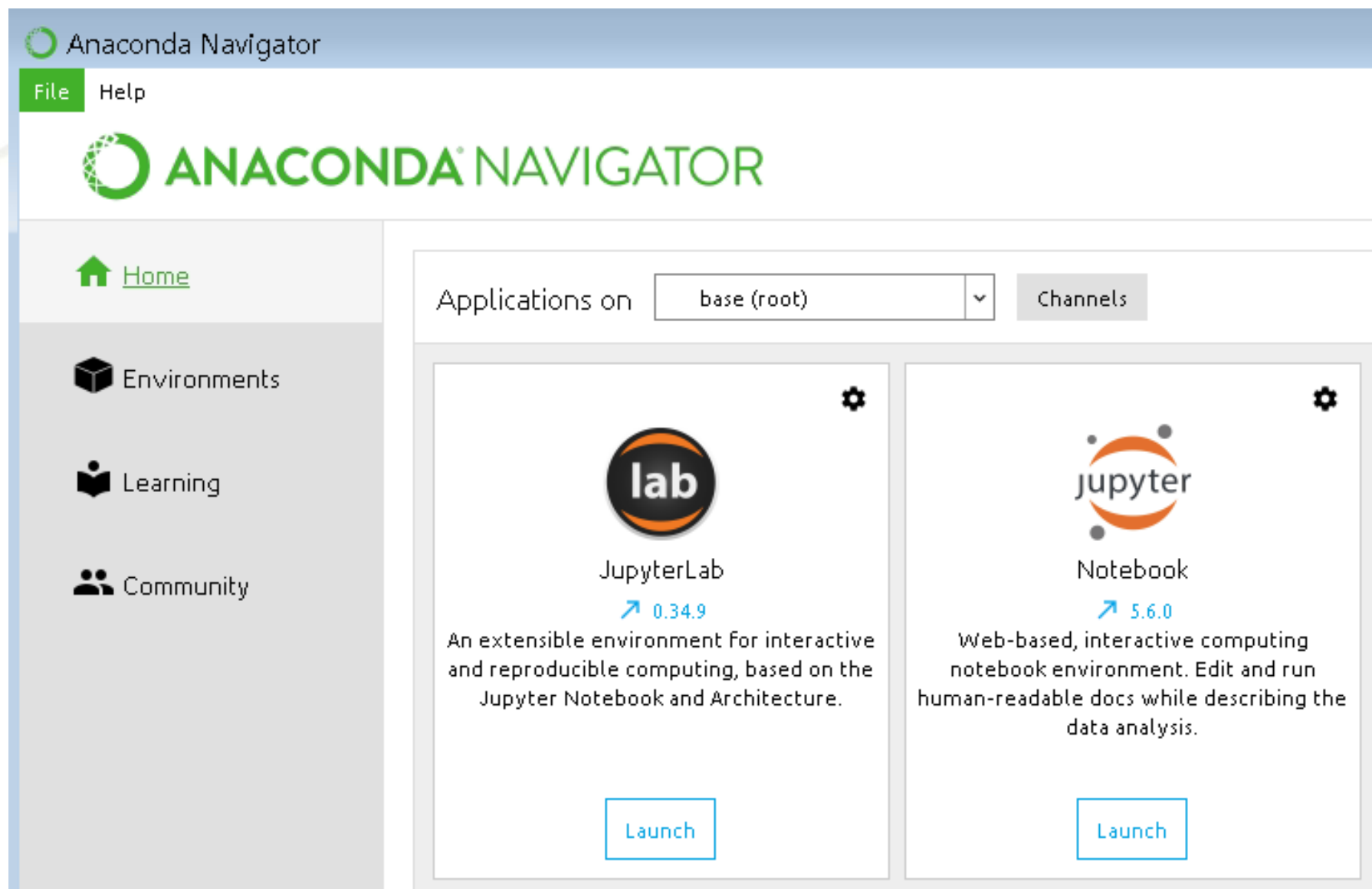




Anaconda Navigator 시작

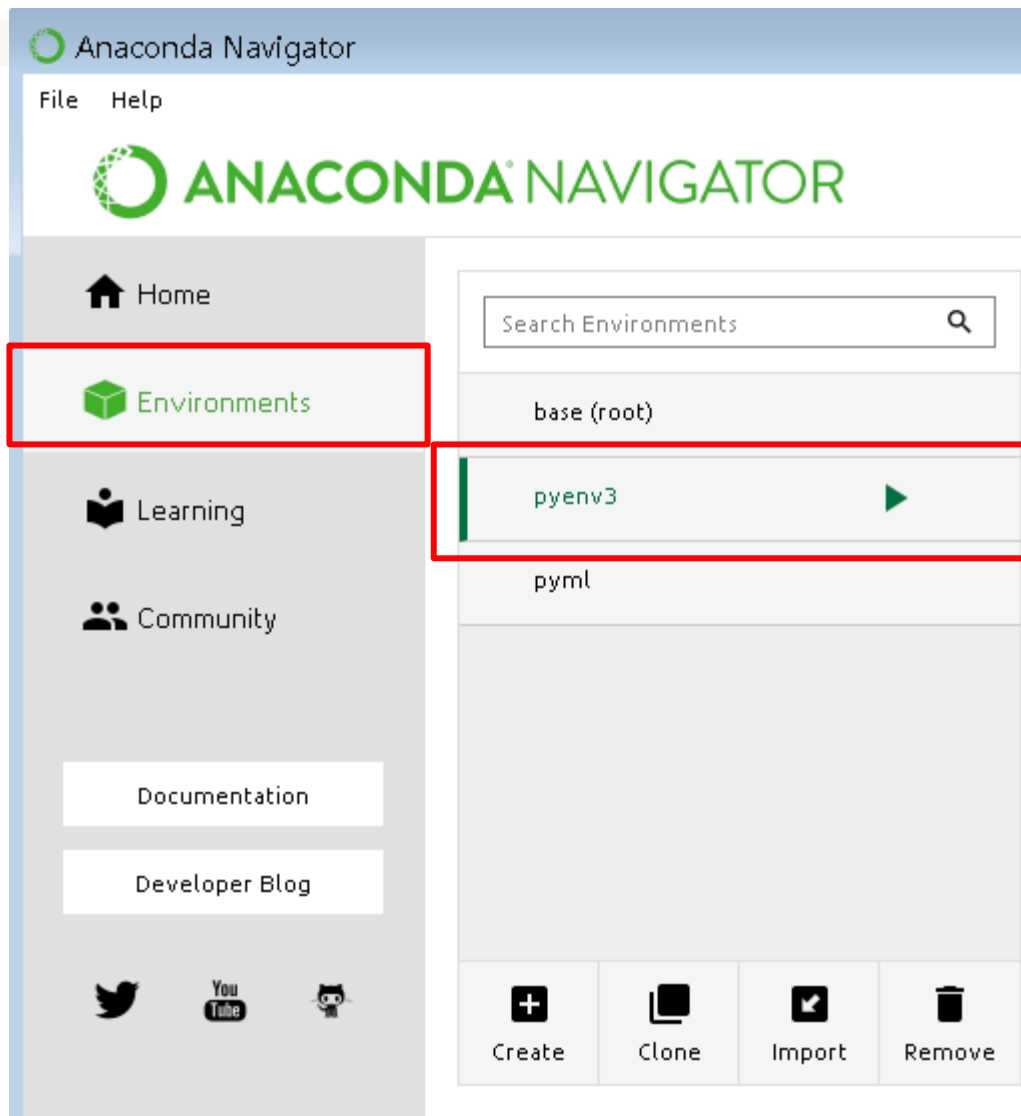


Anaconda Navigator 시작 화면



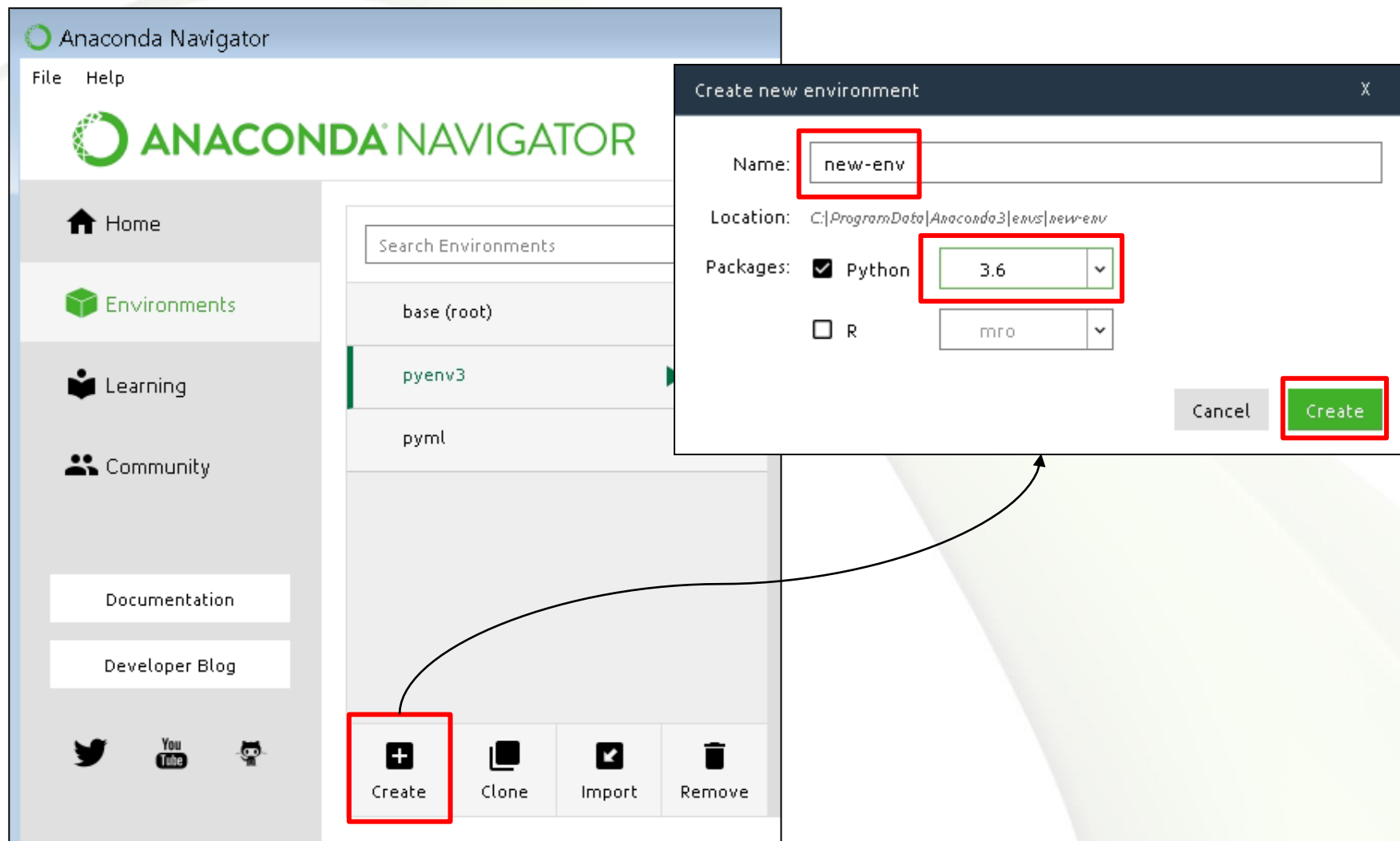
Anaconda Navigator 가상 환경 관리

■ 가상 환경 선택



Anaconda Navigator 가상 환경 관리

■ 가상 환경 만들기



Anaconda Navigator 가상 환경 관리

■ 패키지 설치

The screenshot shows the Anaconda Navigator application window. The left sidebar contains navigation options: Home, Environments (highlighted with a red box), Learning, and Community. Below these are links to Documentation and Developer Blog, and social media icons for Twitter, YouTube, and GitHub.

The main panel displays the 'Environments' view. At the top, there's a 'Search Environments' bar. Below it, a list of environments is shown: 'base (root)', 'new-env' (highlighted with a red box and a green play button), 'pyenv3', and 'pym1'. At the bottom of this list are buttons for 'Create', 'Clone', 'Import', and 'Remove'.

On the right, the 'Channels' tab is active. It shows a search bar with 'jupyter' entered (highlighted with a red box). Below the search bar is a table of packages. The 'jupyter' package is selected (highlighted with a red box). The table has columns for 'Name', 'T', 'Description', and 'Version'. The 'jupyter' package is described as 'Jupyter metapackage. install all the jupyter components in one go.' with version '1.0.0'. Other packages listed include '_ipyw_jlab_nb_ex...', 'hdijupyterutils', 'ipykernel', 'ipywidgets', and 'jupyter_client'.

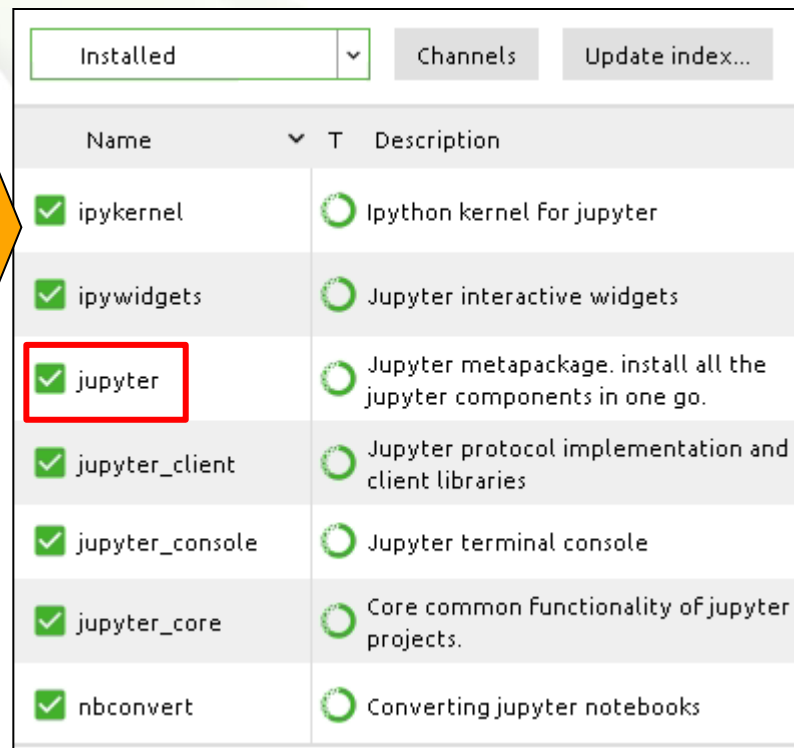
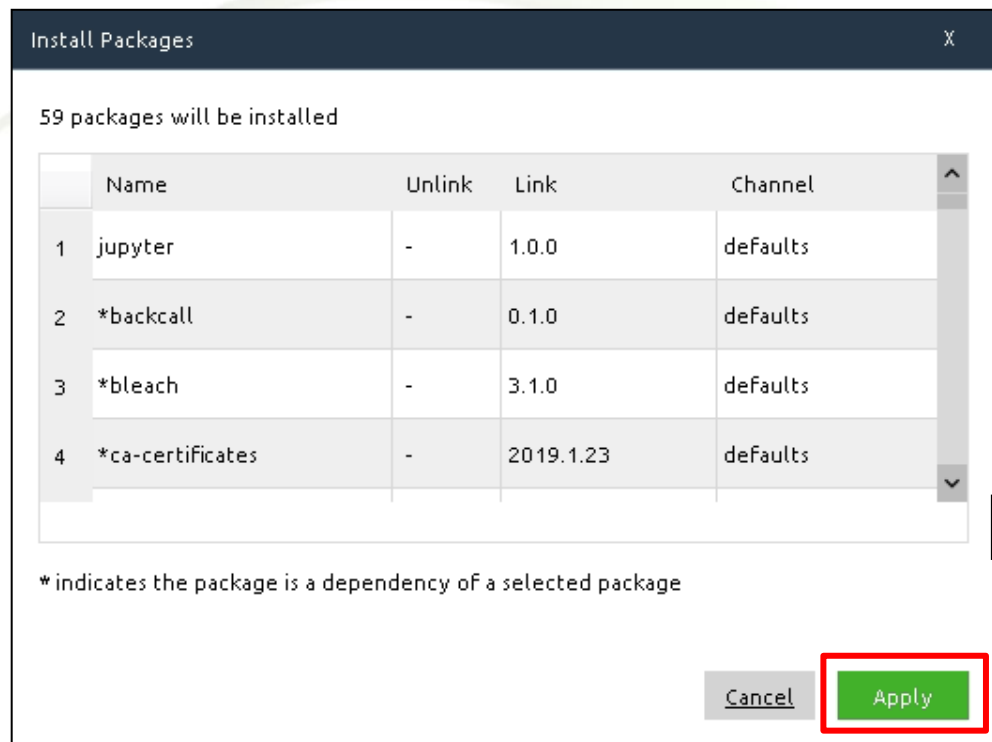
At the bottom right, there's a status bar showing '27 packages available matching "jupyter" 1 package selected'. Below this are 'Apply' (highlighted with a red box) and 'Clear' buttons.

Arrows indicate the workflow: from 'Environments' to 'new-env', then to the 'Channels' search bar, then to the 'jupyter' package in the list, and finally to the 'Apply' button.

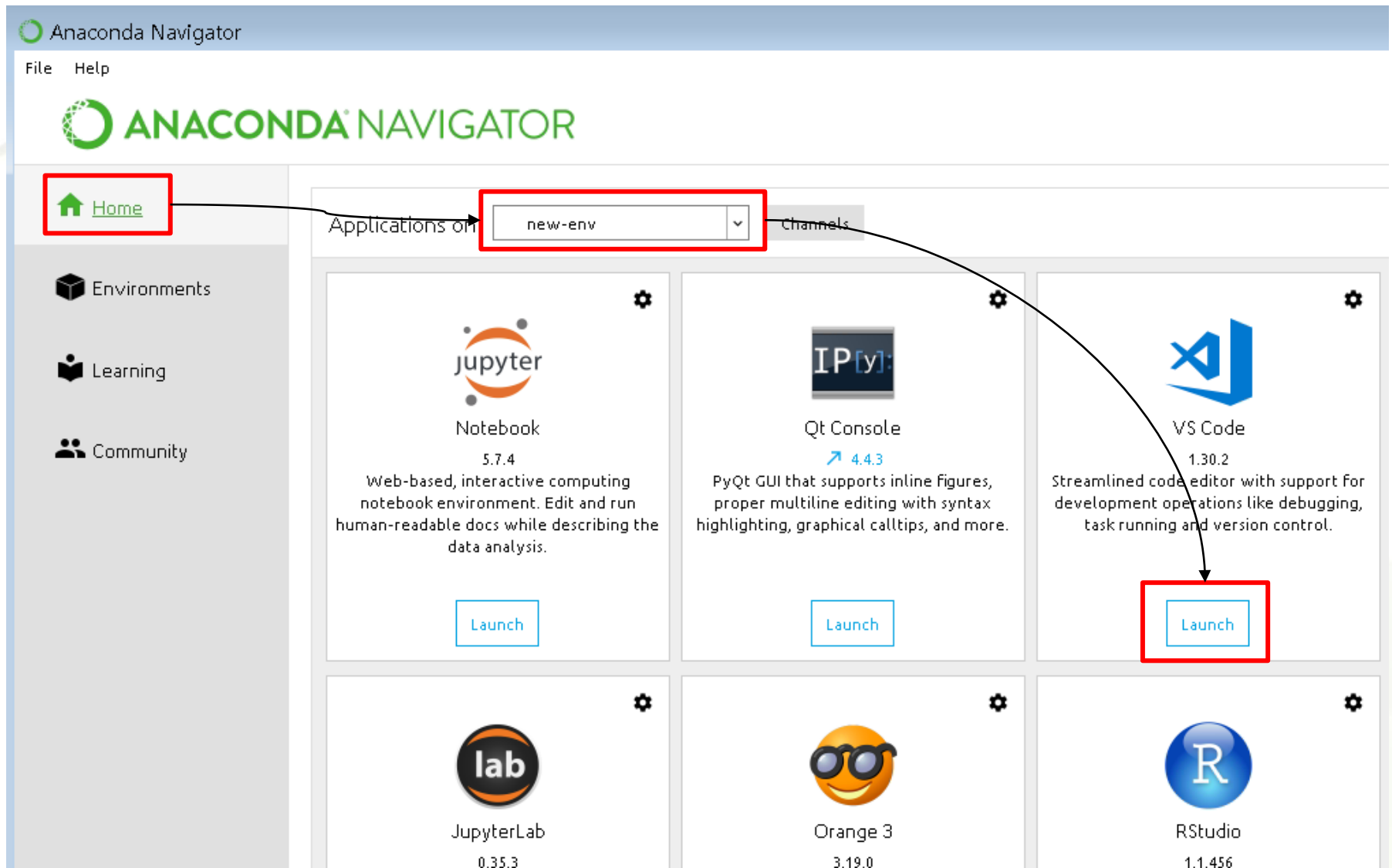
Name	T	Description	Version
<input type="checkbox"/> _ipyw_jlab_nb_ex...	○	A configuration metapackage for enabling anaconda-bundled jupyter extensions	0.1.0
<input type="checkbox"/> hdijupyterutils	○	Project with useful classes/methods for all projects created by the hdinsight team at microsoft around jupyter	0.12.6
<input type="checkbox"/> ipykernel	○	Ipython kernel for jupyter	5.1.0
<input type="checkbox"/> ipywidgets	○	Jupyter interactive widgets	7.4.2
<input checked="" type="checkbox"/> jupyter	○	Jupyter metapackage. install all the jupyter components in one go.	1.0.0
<input type="checkbox"/> jupyter_client	○	Jupyter protocol implementation and client libraries	5.2.4

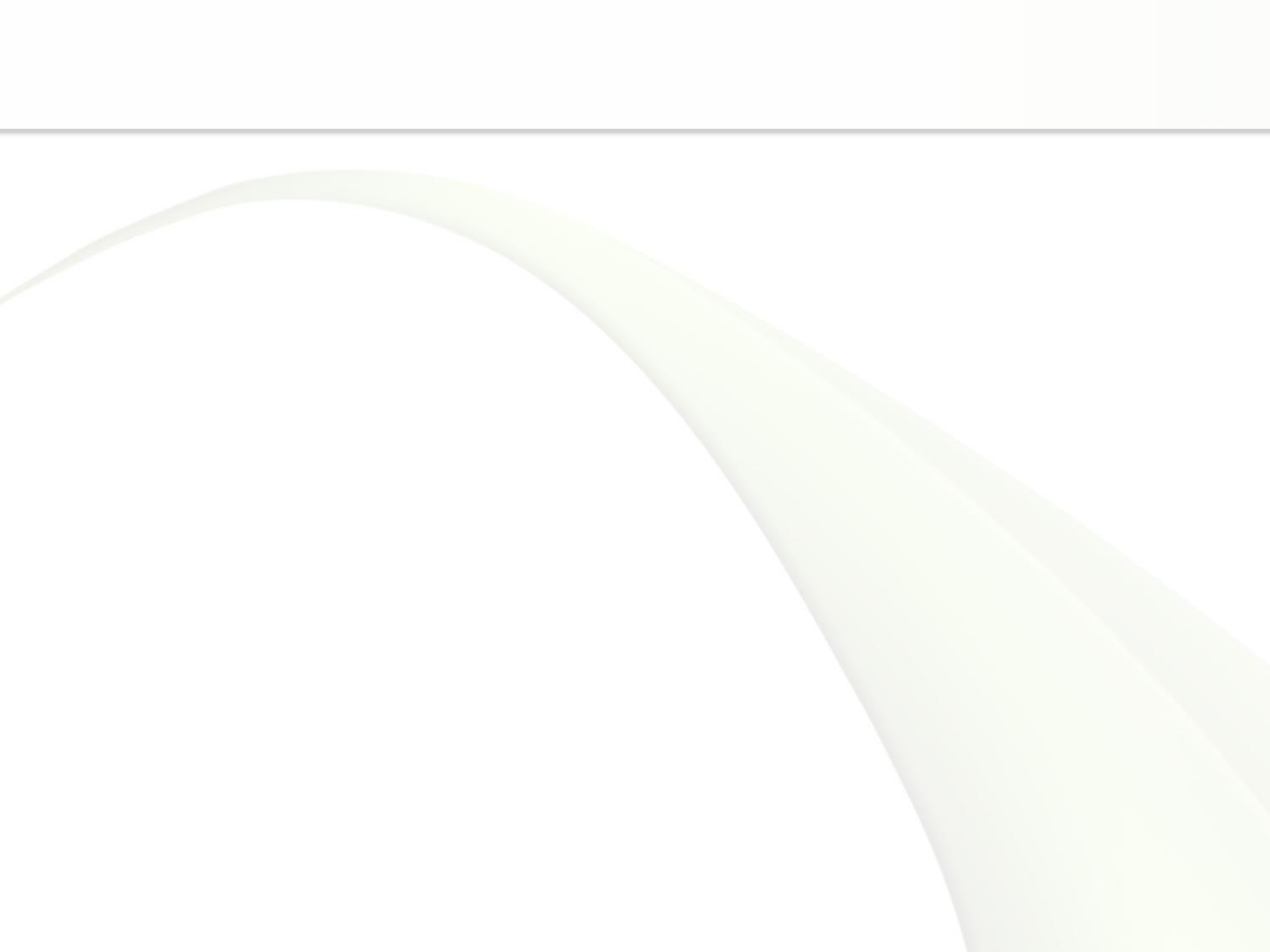
Anaconda Navigator 가상 환경 관리

■ 패키지 설치



Anaconda Navigator에서 개발 환경 시작





Node.js 설치

- 다운로드 → <https://nodejs.org/ko/>

Node.js®는 Chrome V8 JavaScript 엔진으로 빌드된 JavaScript 런타임입니다.

#BlackLivesMatter

New security releases now available for 15.x, 14.x and 12.x
release lines

다운로드 - Windows (x64)

14.15.1 LTS

안정적, 신뢰도 높음

[다른 운영 체제](#) | [변경사항](#) | [API 문서](#)

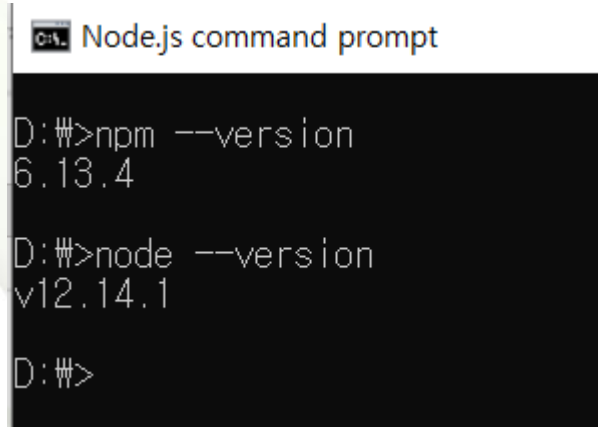
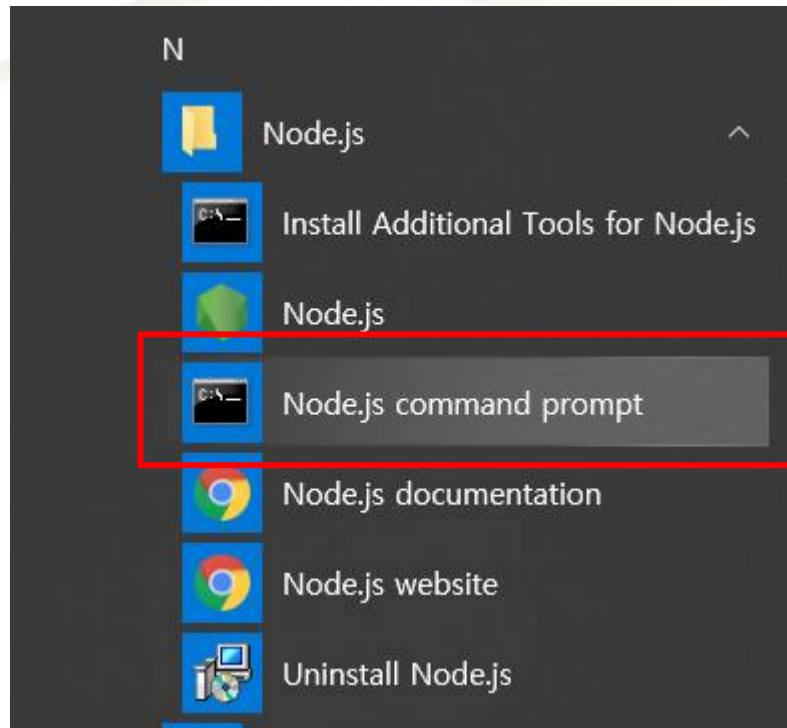
15.3.0 현재 버전

최신 기능

[다른 운영 체제](#) | [변경사항](#) | [API 문서](#)

- 다운로드 완료 후 설치 파일 실행 (관리자 권한으로 실행)

Node.js 설치 확인



```
Node.js command prompt

D:\>npm --version
6.13.4

D:\>node --version
v12.14.1

D:\>
```

A screenshot of a Windows command prompt window titled 'Node.js command prompt'. It shows the output of two commands: 'npm --version' which returns '6.13.4', and 'node --version' which returns 'v12.14.1'. The prompt is at 'D:\>'.