

파이썬 활용 데이터 분석과정



강사:
황성민

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6. Jupyter Notebook 설치
7. Jupyter Notebook 환경설정 및
사용법

1. Python이란?

1. 1989년 귀도 반 로섬(Guido van Rossum)에 의해 개발된 고급 프로그래밍 언어.
2. 비교적 쉽고 간단한 문법으로 배우고 사용하기 쉬운 언어.
3. 머신러닝(Machine Learning), 딥러닝(Deep Learning)등 4차 산업의 핵심적인 기술을 구현하는데 필요한 라이브러리가 많음.

Aug 2021	Aug 2020	Change	Programming Language		Ratings	Change
1	1			C	12.57%	-4.41%
2	3	▲		Python	11.86%	+2.17%
3	2	▼		Java	10.43%	-4.00%
4	4			C++	7.36%	+0.52%
5	5			C#	5.14%	+0.46%

세계 프로그래밍 언어 순위

출처:
<https://www.tiobe.com/tiobe-index/>

2. Python 언어의 특징

1. 인터프리티드 언어로 컴파일이 필요 없다.
C 언어처럼 컴파일을 하지 않기 때문에
2. 읽고 쓰기 편하다. (공백 4칸 들여쓰기 = 코드를 적으면서 자동적으로 정리가 됨)

```
def bigger_than_five(x):  
    ____if x > 5: ____print("X is bigger than five")  
    ____else:  
        ____print("x is 5 or smaller")
```

2. Python 언어의 특징

3. 변수 타입을 자동으로 지정

자바

```
String myName = "Erik";  
int myAge = 37;  
float mySalary = 1250.70;
```

파이썬

```
my_name = "Erik"  
my_age = 37  
my_salary = 1250.70
```

4. Garbage Collection (메모리 관리)을 자동으로 해줌

5. 간결한 코드로 쉽고 빠르게 프로그래밍 가능



ANACONDA[®]

3. Anaconda?

파이썬의 여러 패키지 간 호환성을 관리해 주는
배포판



4. Mini-forge 설치

1. google에서 mini-forge 검색 후 mini-forge github 접속
<https://github.com/conda-forge/miniforge>



4. Mini-forge 설치

README License

Miniforge

Build miniforge: failing downloads: 16M

This repository holds the minimal installers for [Conda](#) and [Mamba](#) specific to [conda-forge](#), with the following features pre-configured:

- Packages in the base environment are obtained from the [conda-forge channel](#).
- The [conda-forge](#) channel is set as the default (and only) channel.

We put an emphasis on supporting various CPU architectures (x86_64, ppc64le, and aarch64 including Apple Silicon). Optional support for PyPy in place of standard Python interpreter (aka "CPython") is provided in the installers with `-pypy3-` in their filename.

Download

Miniforge installers are available here: <https://github.com/conda-forge/miniforge/releases>

Miniforge3

Latest installers with Python 3.10 (*) in the base environment:

OS	Architecture	Download
Linux	x86_64 (amd64)	Miniforge3-Linux-x86_64
Linux	aarch64 (arm64) (**)	Miniforge3-Linux-aarch64
Linux	ppc64le (POWER8/9)	Miniforge3-Linux-ppc64le
OS X	x86_64	Miniforge3-MacOSX-x86_64
OS X	arm64 (Apple Silicon) (***)	Miniforge3-MacOSX-arm64
Windows	x86_64	Miniforge3-Windows-x86_64

(*) The Python version is specific only to the base environment. Conda can create new environments with different Python versions and implementations.

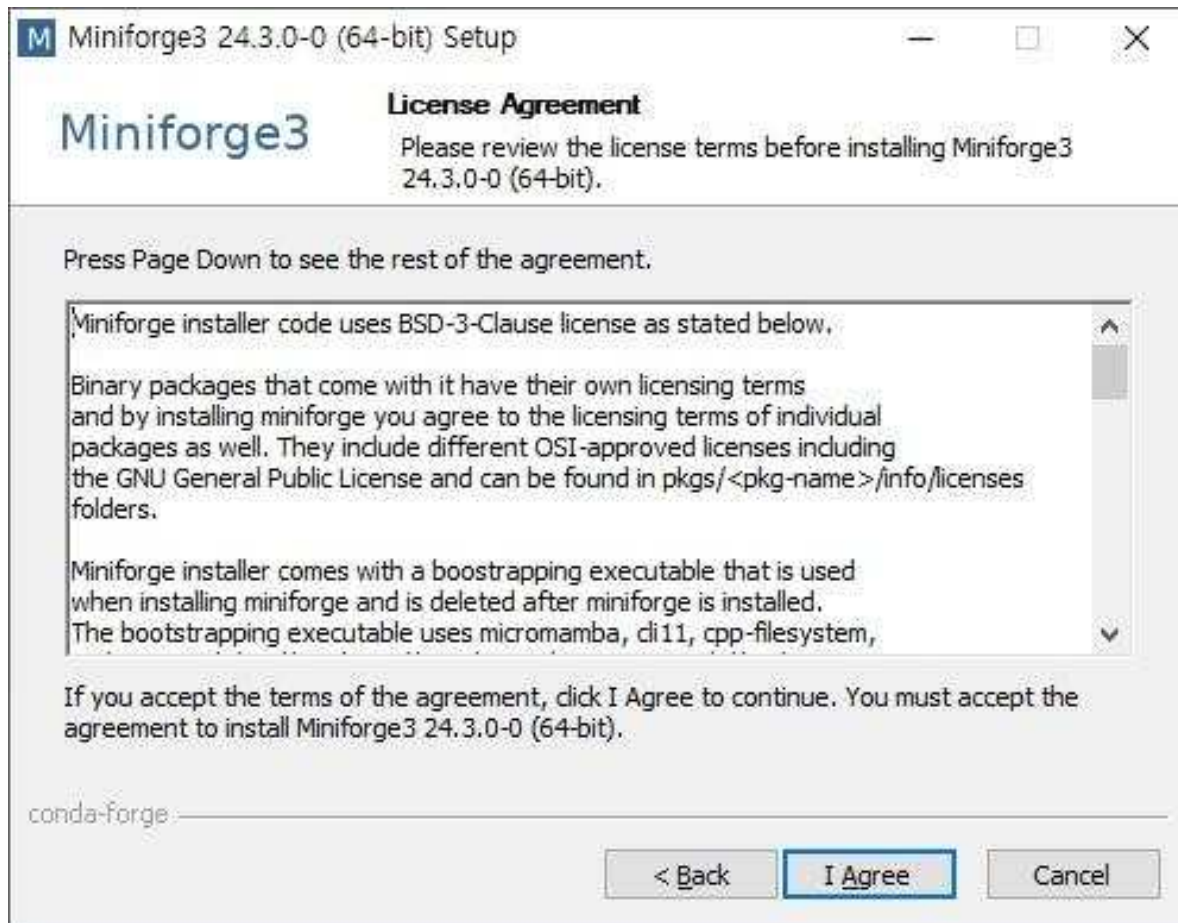
운영체제에 맞는 버전
다운 후 설치

4. Mini-forge 설치



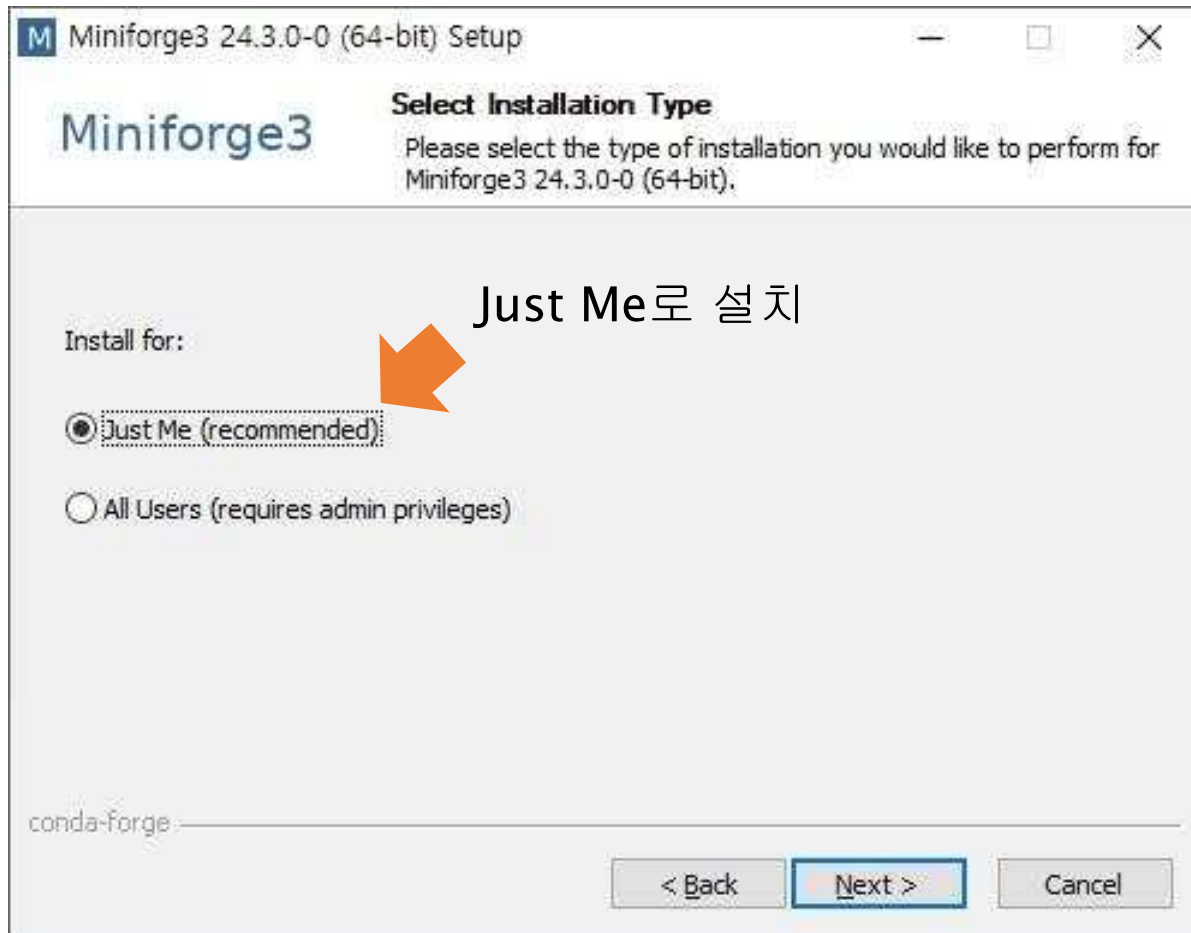
next 클릭

4. Mini-forge 설치



I Agree 클릭

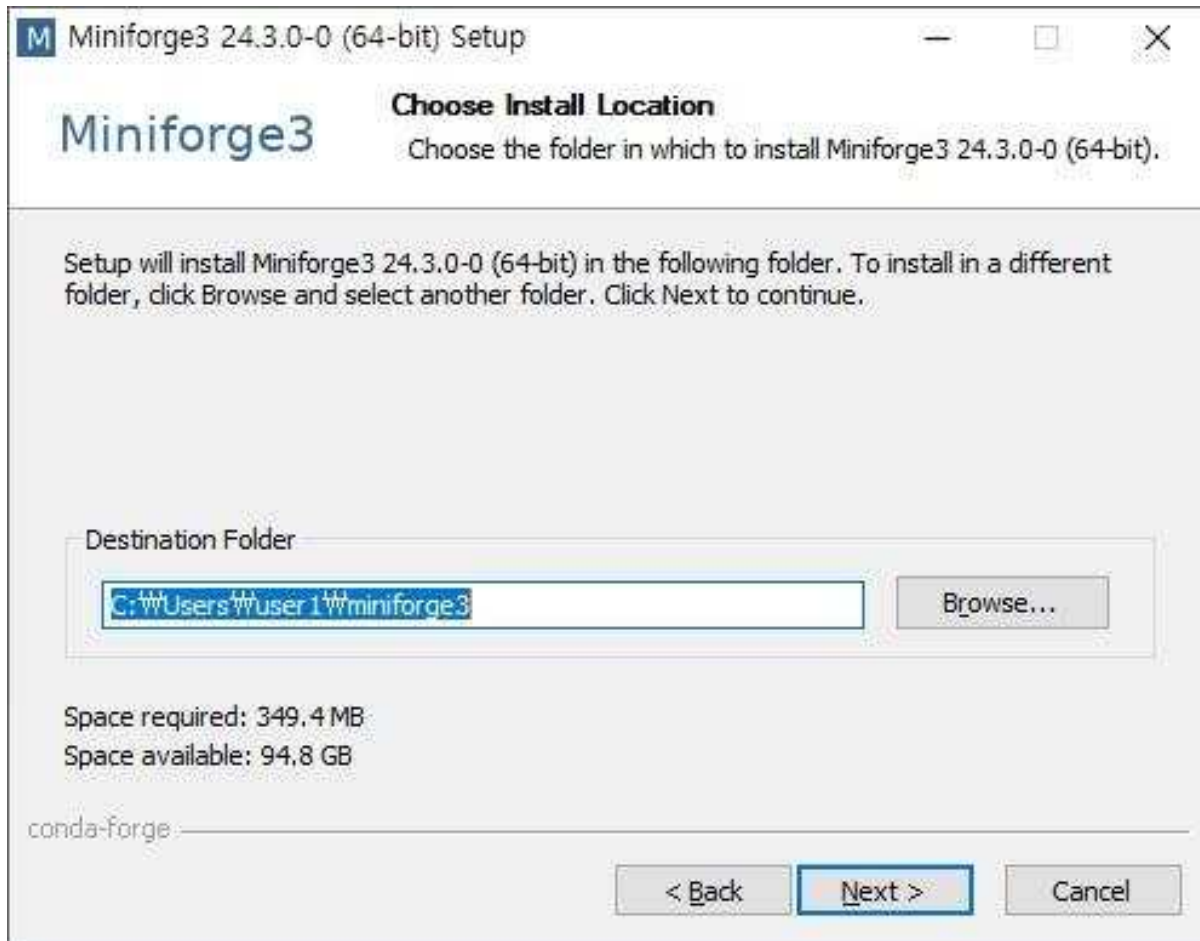
4. Mini-forge 설치



Just Me로 설치

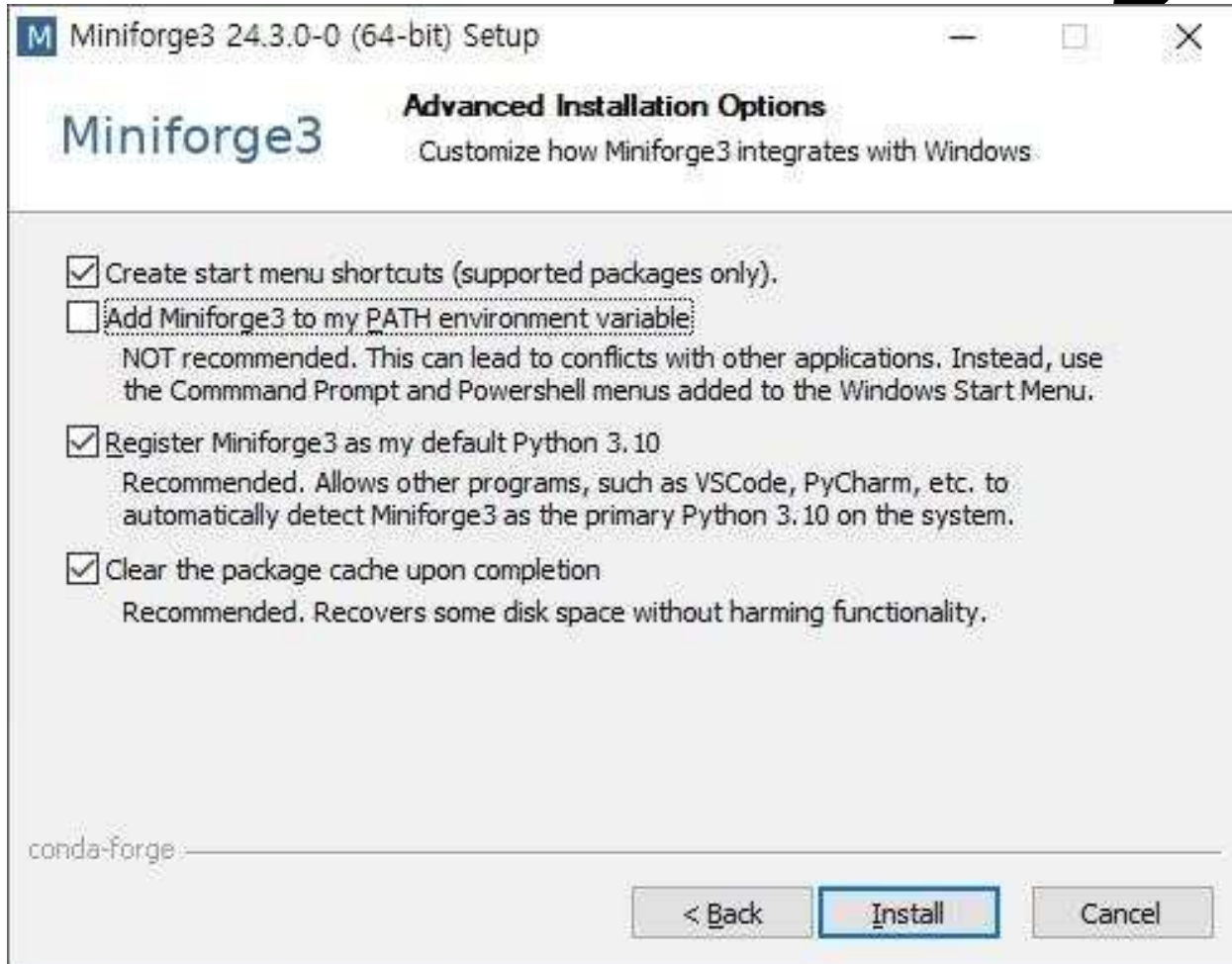
Just Me로 설치

4. Mini-forge 설치



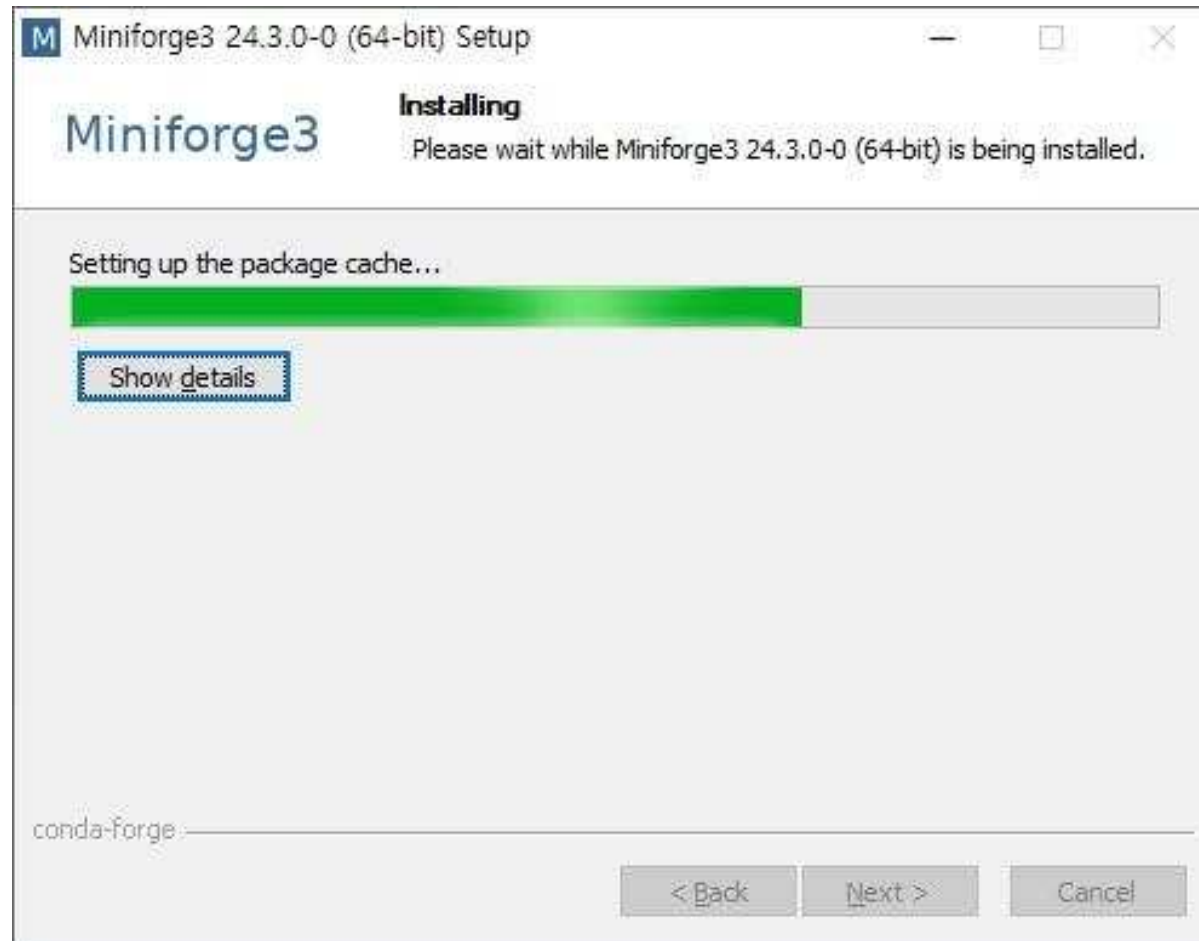
기본 경로로 설치
설치 용량 약 350MB

4. Mini-forge 설치

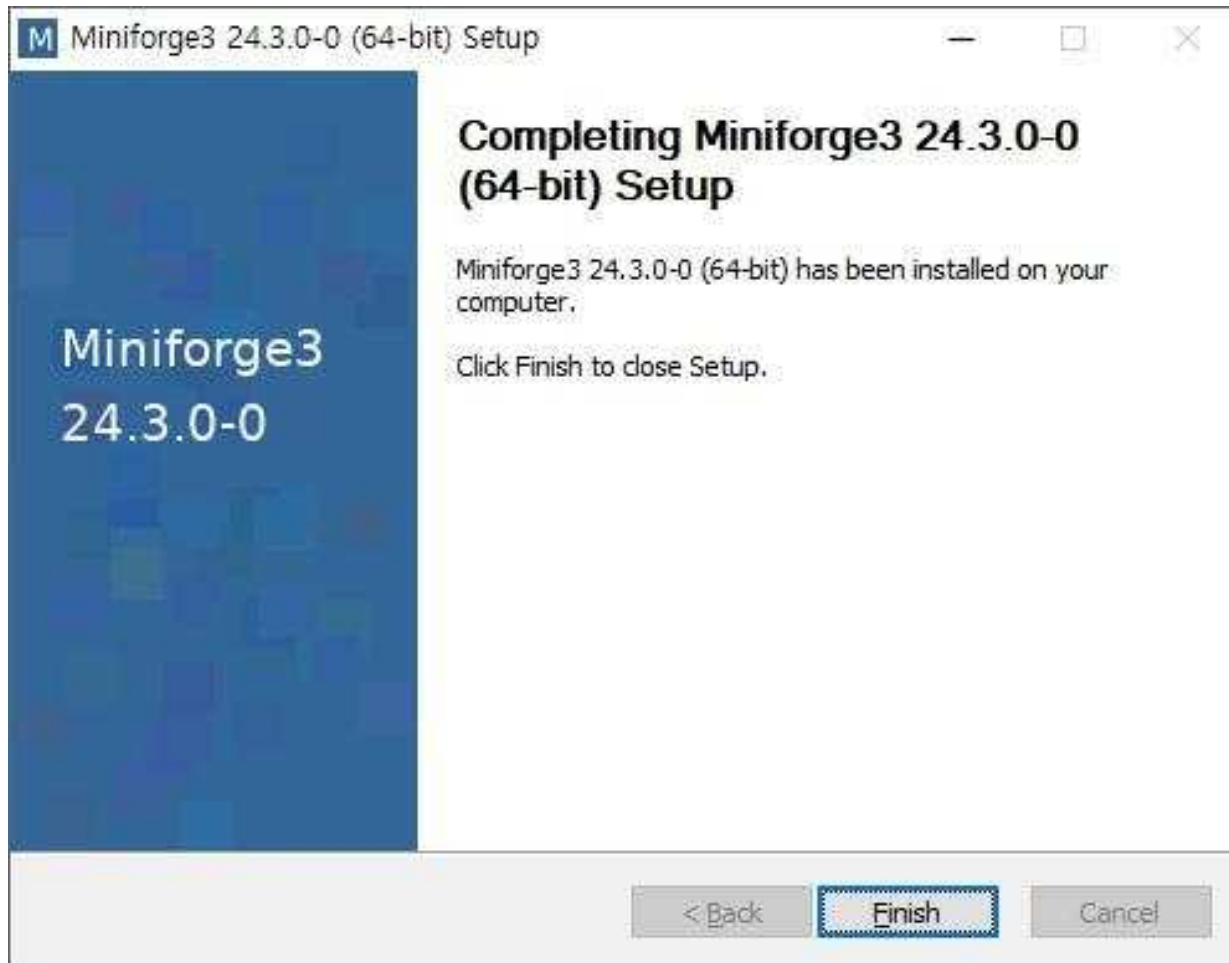


왼쪽과 같이
Add Mini-forge3 to my Path만
제외하고 체크 후
Install 누름

4. Mini-forge 설치

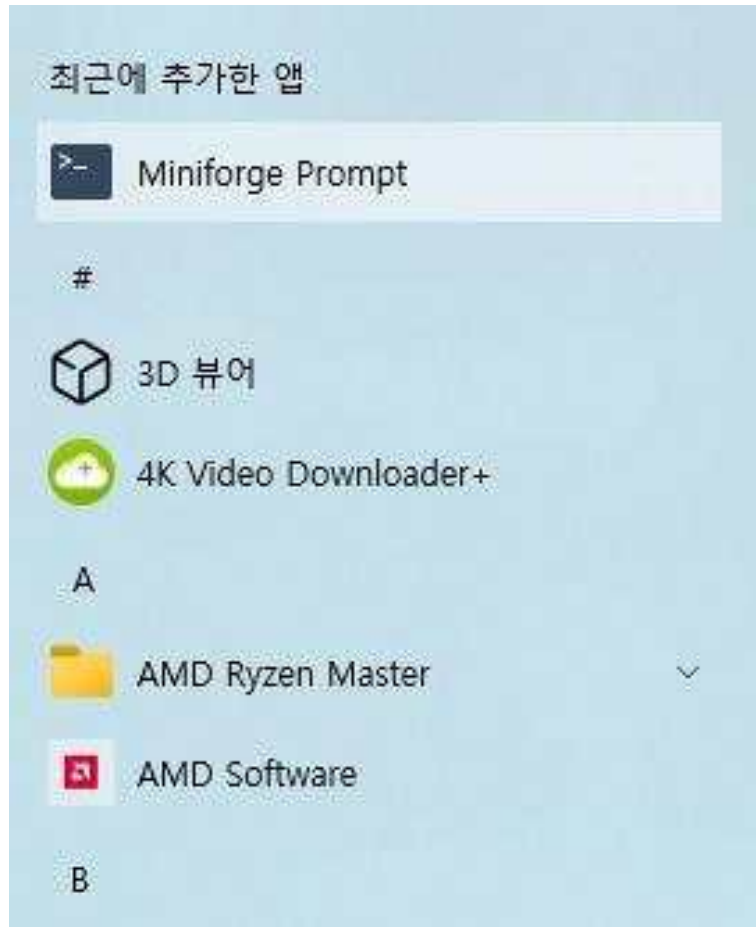


4. Mini-forge 설치



설치가 완료되면
Finish를 누르고 닫음

5.conda 가상환경 생성



윈도우 시작버튼



Miniforge Prompt 클릭

5.conda 가상환경 생성

```
MiniForge Prompt
(base) C:\Users\user1>conda
usage: conda-script.py [-h] [-v] [--no-plugins] [-V] COMMAND ...

conda is a tool for managing and deploying applications, environments and packages.

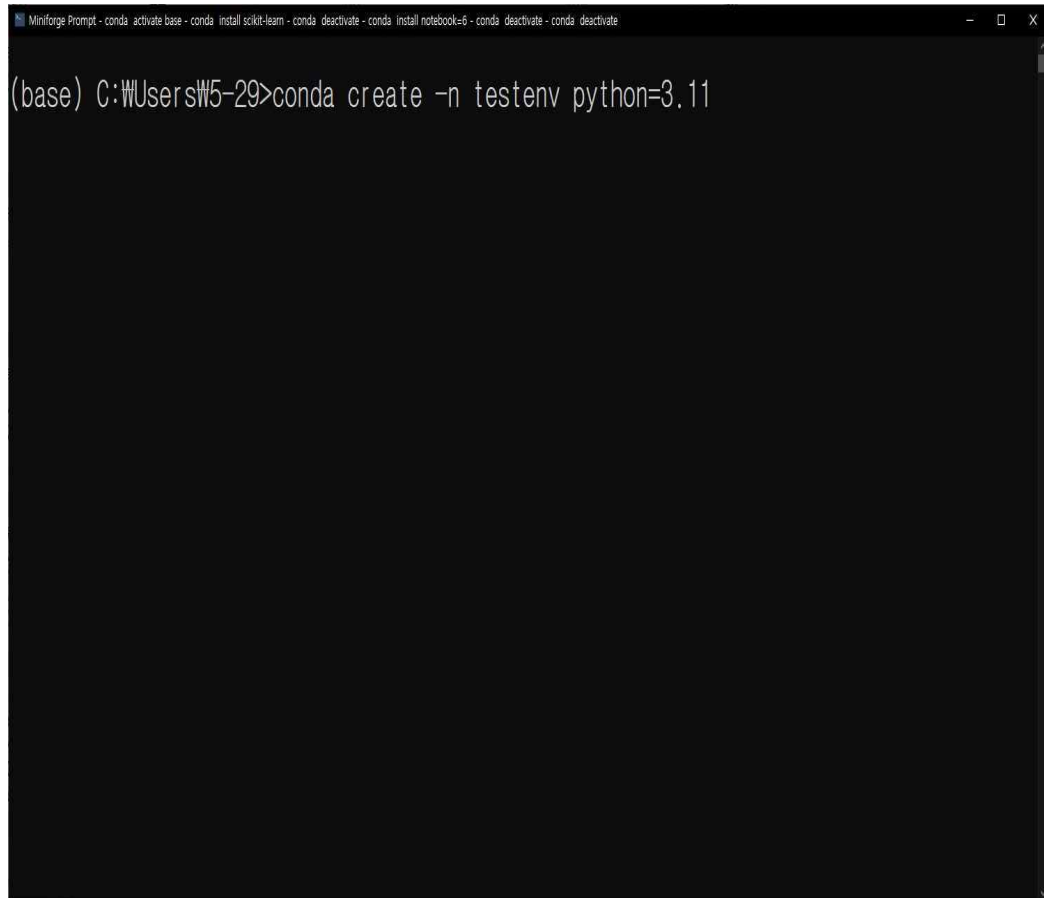
options:
  -h, --help            Show this help message and exit.
  -v, --verbose          Can be used multiple times. Once for detailed output, twice for INFO logging, thrice for DEBUG
                        logging, four times for TRACE logging.
  --no-plugins          Disable all plugins that are not built into conda.
  -V, --version          Show the conda version number and exit.

commands:
  The following built-in and plugins subcommands are available.

COMMAND
  activate              Activate a conda environment.
  clean                 Remove unused packages and caches.
  compare               Compare packages between conda environments.
  config                Modify configuration values in .condarc.
  create                Create a new conda environment from a list of specified packages.
  deactivate            Deactivate the current active conda environment.
  doctor                Display a health report for your environment.
  export                Export a given environment
  info                  Display information about current conda install.
  init                  Initialize conda for shell interaction.
  install               Install a list of packages into a specified conda environment.
  list                  List installed packages in a conda environment.
  notices               Retrieve latest channel notifications.
```

경로에 (base)가 보이고
conda 명령어를
입력했을 때 실행이 되면
성공

5.conda 가상환경 생성

A screenshot of a Windows command prompt window. The title bar at the top reads "Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=6 - conda deactivate - conda deactivate". The command prompt shows the text "(base) C:\Users\W5-29>conda create -n testenv python=3.11" entered at the prompt. The rest of the window is empty, indicating the command has been executed and the output is not visible in this frame.

```
(base) C:\Users\W5-29>conda create -n testenv python=3.11
```

conda create -n 가상환경명 python=버전

conda create -n testenv python=3.11

5.conda 가상환경 생성

```
Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=6 - conda deactivate - conda deactivate - conda create -n testenv python=3.11

bzip2 conda-forge/win-64::bzip2-1.0.8-hcfcfb64_5
ca-certificates conda-forge/win-64::ca-certificates-2024.7.4-h56e8100_0
libexpat conda-forge/win-64::libexpat-2.6.2-h63175ca_0
libffi conda-forge/win-64::libffi-3.4.2-h8ffe710_5
libsqlite conda-forge/win-64::libsqlite-3.46.0-h2466b09_0
libzlib conda-forge/win-64::libzlib-1.3.1-h2466b09_1
openssl conda-forge/win-64::openssl-3.3.1-h2466b09_1
pip conda-forge/noarch::pip-24.0-pyhd8ed1ab_0
python conda-forge/win-64::python-3.11.9-h631f459_0_cpython
setuptools conda-forge/noarch::setuptools-70.1.1-pyhd8ed1ab_0
tk conda-forge/win-64::tk-8.6.13-h5226925_1
tzdata conda-forge/noarch::tzdata-2024a-h0c530f3_0
ucrt conda-forge/win-64::ucrt-10.0.22621.0-h57928b3_0
vc conda-forge/win-64::vc-14.3-h8a93ad2_20
vc14_runtime conda-forge/win-64::vc14_runtime-14.40.33810-ha82c5b3_20
vs2015_runtime conda-forge/win-64::vs2015_runtime-14.40.33810-h3bf8584_20
wheel conda-forge/noarch::wheel-0.43.0-pyhd8ed1ab_1
xz conda-forge/win-64::xz-5.2.6-h8d14728_0

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

Proceed([y]/n)? 이 나오면

y 입력 후 엔터

5.conda 가상환경 생성

```
Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=...
done
#
# To activate this environment, use
#
#   $ conda activate testenv
#
# To deactivate an active environment, use
#
#   $ conda deactivate

(base) C:\Users\W5-29>
```

```
done
#
# To activate this environment, use
#
# $ conda activate testenv
#
# To deactivate an active environment,
use
#
# $ conda deactivate
```

가 뜨면 가상환경 생성 완료

5.conda 가상 환경 생성 확인

```
선택 Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=6 - conda deactivate - conda deactivate
# $ conda activate testenv
#
# To deactivate an active environment, use
#
# $ conda deactivate

(base) C:\Users\W5-29>conda info --envs
# conda environments:
#
base                * C:\Users\W5-29\miniforge3
fintech              C:\Users\W5-29\miniforge3\envs\wfintech
testenv              C:\Users\W5-29\miniforge3\envs\wtestenv

(base) C:\Users\W5-29>_
```

conda info --envs

아나콘다의 가상 환경 확인 가능
* 이 있는 곳이 현재의 가상 환경

가상 환경은 여러 개를 만들고 삭제 가능

가상 환경을 만드는 이유

프로젝트 별로 다른 버전의 **python**이나
패키지를 설치해서 의존성 충돌 문제를 방지

5.conda 가상 환경 활성화

가상 환경 활성화

(base) C:\Users\5-29>conda activate testenv

가상 환경이 활성화 되면 **base**가 활성화된 가상 환경 이름으로 변경됨

(base) C:\Users\5-29>



(testenv) C:\Users\5-29>

가상 환경 비활성화

(testenv) C:\Users\5-29>conda deactivate

```
선택 Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=6 - conda deactivate - conda deactivate
#
base          * C:\Users\5-29\miniforge3
fintech       C:\Users\5-29\miniforge3\envs\fintech
testenv       C:\Users\5-29\miniforge3\envs\testenv

(base) C:\Users\5-29>conda activate testenv

(testenv) C:\Users\5-29>
```

5.conda 가상 환경 패키지 목록

```
Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=6 - conda deactivate - conda deactivate
libffi 3.4.2 h8ffe710_5 conda-forge
libsqlite 3.46.0 h2466b09_0 conda-forge
libzlib 1.3.1 h2466b09_1 conda-forge
openssl 3.3.1 h2466b09_1 conda-forge
pip 24.0 pyhd8ed1ab_0 conda-forge
python 3.11.9 h631f459_0_cpython conda-forge
setuptools 70.1.1 pyhd8ed1ab_0 conda-forge
tk 8.6.13 h5226925_1 conda-forge
tzdata 2024a h0c530f3_0 conda-forge
ucrt 10.0.22621.0 h57928b3_0 conda-forge
vc 14.3 h8a93ad2_20 conda-forge
vc14_runtime 14.40.33810 ha82c5b3_20 conda-forge
vs2015_runtime 14.40.33810 h3bf8584_20 conda-forge
wheel 0.43.0 pyhd8ed1ab_1 conda-forge
xz 5.2.6 h8d14728_0 conda-forge

(testenv) C:\Users\W5-29>
```

conda activate testenv



conda list

가상환경 **testenv**에 설치된
패키지 목록 확인

5.conda 가상 환경 패키지 목록

```
testenv C:\Users\W5-29\miniforge3\envs\testenv
C:\Users\W5-29>conda activate testenv
(testenv) C:\Users\W5-29>conda list
# packages in environment at C:\Users\W5-29\miniforge3\envs\testenv:
#
# Name Version Build Channel
ca-certificates 2024.7.4 h56e8100_0 conda-forge
libexpat 2.6.2 h63175ca_0 conda-forge
libffi 3.4.2 h8ffe710_5 conda-forge
libsqlite 3.46.0 h2466b09_0 conda-forge
libzlib 1.3.1 h2466b09_1 conda-forge
openssl 3.3.1 h2466b09_1 conda-forge
pip 24.0 pyhd8ed1ab_0 conda-forge
python 3.11.9 h631f459_0_cpython conda-forge
setuptools 70.1.1 pyhd8ed1ab_0 conda-forge
tk 8.6.13 h5226925_1 conda-forge
tzdata 2024a h0c530f3_0 conda-forge
ucrt 10.0.22621.0 h57928b3_0 conda-forge
vc 14.3 h8a93ad2_20 conda-forge
vc14_runtime 14.40.33810 ha82c5b3_20 conda-forge
vs2015_runtime 14.40.33810 h3bf8584_20 conda-forge
wheel 0.43.0 pyhd8ed1ab_1 conda-forge
xz 5.2.6 h8d14728_0 conda-forge
(testenv) C:\Users\W5-29>

base C:\Users\W5-29>conda list
# packages in environment at C:\Users\W5-29\miniforge3\envs\base:
#
# Name Version Build Channel
lz4-c 1.9.4 hcfcfb64_0 conda-forge
lzo 2.10 he774522_1000 conda-forge
mamba 1.5.8 py310hd9d798f_0 conda-forge
menuinst 2.0.2 py310h00ffb61_0 conda-forge
miniforge_console_shortcut 1.0 h57928b3_0 conda-forge
openssl 3.2.1 hcfcfb64_1 conda-forge
packaging 24.0 pyhd8ed1ab_0 conda-forge
pip 24.0 pyhd8ed1ab_0 conda-forge
platformdirs 4.2.0 pyhd8ed1ab_0 conda-forge
pluggy 1.4.0 pyhd8ed1ab_0 conda-forge
pybind11-abi 4 hd8ed1ab_3 conda-forge
pycosat 0.6.6 py310h8d17308_0 conda-forge
pyparser 2.22 pyhd8ed1ab_0 conda-forge
pysocks 1.7.1 pyh0701188_6 conda-forge
python 3.10.14 h4de0772_0_cpython conda-forge
python_abi 3.10 4_cp310 conda-forge
reproc 14.2.4.post0 hcfcfb64_1 conda-forge
reproc-cpp 14.2.4.post0 h63175ca_1 conda-forge
requests 2.31.0 pyhd8ed1ab_0 conda-forge
ruamel.yaml 0.18.6 py310h8d17308_0 conda-forge
ruamel.yaml.clib 0.2.8 py310h8d17308_0 conda-forge
setuptools 69.5.1 pyhd8ed1ab_0 conda-forge
tk 8.6.13 h5226925_1 conda-forge
tqdm 4.66.2 pyhd8ed1ab_0 conda-forge
truststore 0.8.0 pyhd8ed1ab_0 conda-forge
tzdata 2024a h0c530f3_0 conda-forge
ucrt 10.0.22621.0 h57928b3_0 conda-forge
urllib3 2.2.1 pyhd8ed1ab_0 conda-forge
vc 14.3 hc57466_18 conda-forge
vc14_runtime 14.38.33130 h82b7239_18 conda-forge
vs2015_runtime 14.38.33130 hcb4865c_18 conda-forge
wheel 0.43.0 pyhd8ed1ab_1 conda-forge
win_inet_pton 1.1.0 pyhd8ed1ab_6 conda-forge
xz 5.2.6 h8d14728_0 conda-forge
yaml-cpp 0.8.0 h63175ca_0 conda-forge
zstandard 0.22.0 py310h0009e47_0 conda-forge
zstd 1.5.5 h12be248_0 conda-forge
(base) C:\Users\W5-29>
```

testenv 가상 환경의 패키지 목록
Python 버전 3.11.9

base 가상 환경의 패키지 목록
Python 버전 3.10.14

5.conda 가상 환경 삭제

```
Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=6 - conda deactiva...
(testenv) C:\Users\W5-29>conda deactivate
(base) C:\Users\W5-29>conda remove -n testenv --all
Remove all packages in environment C:\Users\W5-29\miniforge3\envs\testenv:

## Package Plan ##

  environment location: C:\Users\W5-29\miniforge3\envs\testenv

The following packages will be REMOVED:

bzip2-1.0.8-hcfcfb64_5
ca-certificates-2024.7.4-h56e8100_0
libexpat-2.6.2-h63175ca_0
libffi-3.4.2-h8ffe710_5
libsqlite-3.46.0-h2466b09_0
libzlib-1.3.1-h2466b09_1
openssl-3.3.1-h2466b09_1
pip-24.0-pyhd8ed1ab_0
python-3.11.9-h631f459_0_cpython
setuptools-70.1.1-pyhd8ed1ab_0
tk-8.6.13-h5226925_1
tzdata-2024a-h0c530f3_0
ucrt-10.0.22621.0-h57928b3_0
vc-14.3-h8a93ad2_20
vc14_runtime-14.40.33810-ha82c5b3_20
vs2015_runtime-14.40.33810-h3bf8584_20
wheel-0.43.0-pyhd8ed1ab_1
xz-5.2.6-h8d14728_0

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

`conda remove -n testenv --all`

testenv 가상 환경에 있는 모든 것을 삭제

Proceed([y]/n)?가 나오면 Y

The Jupyter logo consists of two orange curved lines forming a partial circle, with two dark gray dots at the top and bottom. The word "jupyter" is centered within this shape.

jupyter



F#

Spark



C#



php



6. Jupyter Notebook 설치



```
Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=6 - conda deactiva...  
(base) C:\Users\#5-29>conda create -n fintech python=3.10
```

가상 환경 재설치

conda create -n 가상환경명 python=버전

conda create -n fintech python=3.10

6. Jupyter Notebook 설치

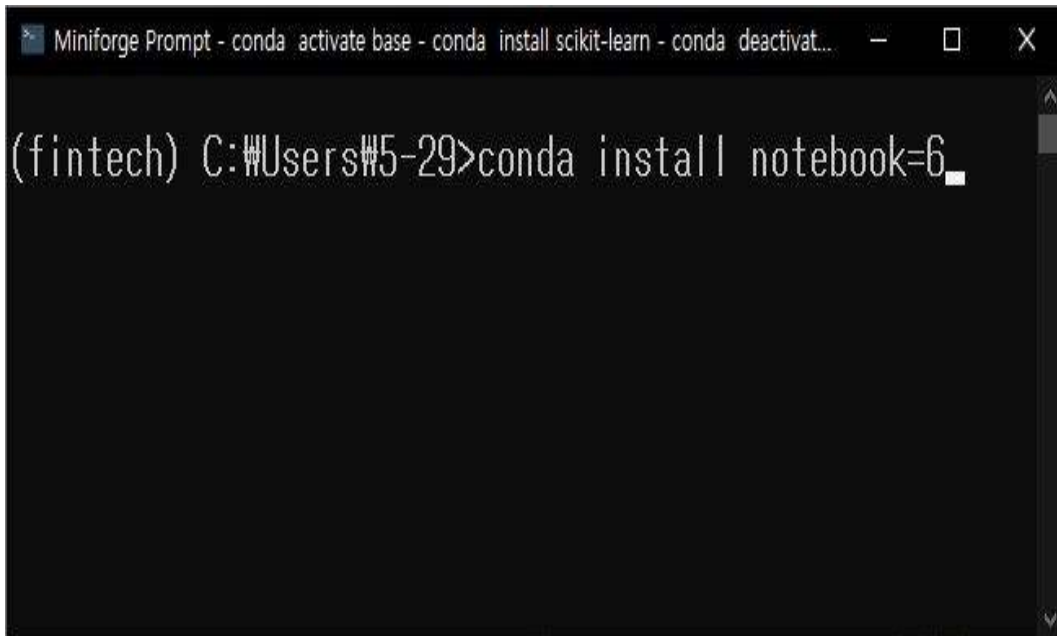
```
Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivate - conda install notebook=6 - conda deactiva...  
(base) C:\Users\W5-29>conda info --envs  
# conda environments:  
#  
base                * C:\Users\W5-29\miniforge3  
fintech              C:\Users\W5-29\miniforge3\envs\fintech  
  
(base) C:\Users\W5-29>
```

가상 환경 생성 확인

conda info --envs

아나콘다의 가상 환경 확인 가능
* 이 있는 곳이 현재의 가상 환경

6. Jupyter Notebook 설치



```
Miniforge Prompt - conda activate base - conda install scikit-learn - conda deactivat...  
(fintech) C:\Users\5-29>conda install notebook=6.
```

가상 환경 활성화

(base) C:\Users\5-29>conda activate fintech

가상 환경이 활성화 되면 **base**가 활성화된 가상 환경 이름으로 변경되는 것 확인

(base) C:\Users\5-29>



(fintech) C:\Users\ 5-29 >

6. Jupyter Notebook 설치

```
Anaconda Prompt (Anaconda3) - deactivate mdai - conda deactivate - conda deactivate - conda deacti...
(base) C:\Users\haram>conda info --envs
# conda environments:
#
bigdata          D:\ProgramData\Anaconda3\envs\bigdata
pythonProject    D:\ProgramData\Anaconda3\envs\pythonProject
base             * d:\ProgramData\Anaconda3
bigdata          d:\ProgramData\Anaconda3\envs\bigdata
mdai             d:\ProgramData\Anaconda3\envs\mdai
mpp1             d:\ProgramData\Anaconda3\envs\mpp1
pythonProject    d:\ProgramData\Anaconda3\envs\pythonProject

(base) C:\Users\haram>conda activate mpp1

(mpp1) C:\Users\haram>conda list
# packages in environment at d:\ProgramData\Anaconda3\envs\mpp1:
#
# Name                   Version           Build    Channel
ca-certificates         2021.7.5          haa95532_1
certifi                 2021.5.30         py38haa95532_0
openssl                 1.1.1i            h2bfff1b_0
pip                     21.0.1            py38haa95532_0
python                  3.8.11            h6244533_1
setuptools              52.0.0            py38haa95532_0
sqlite                  3.36.0            h2bfff1b_0
vc                      14.2              h21ff451_1
vs2015_runtime          14.27.29016       h5e58377_2
wheel                   0.37.0            pyhd3eb1b0_0
winertstore             0.2               py38_0

(mpp1) C:\Users\haram>
```

가상환경 **fintech**에 설치된 패키지 목록
확인

conda activate fintech



conda list

Jupyter notebook이 없으므로 설치

conda install notebook=6

6. Jupyter Notebook 설치

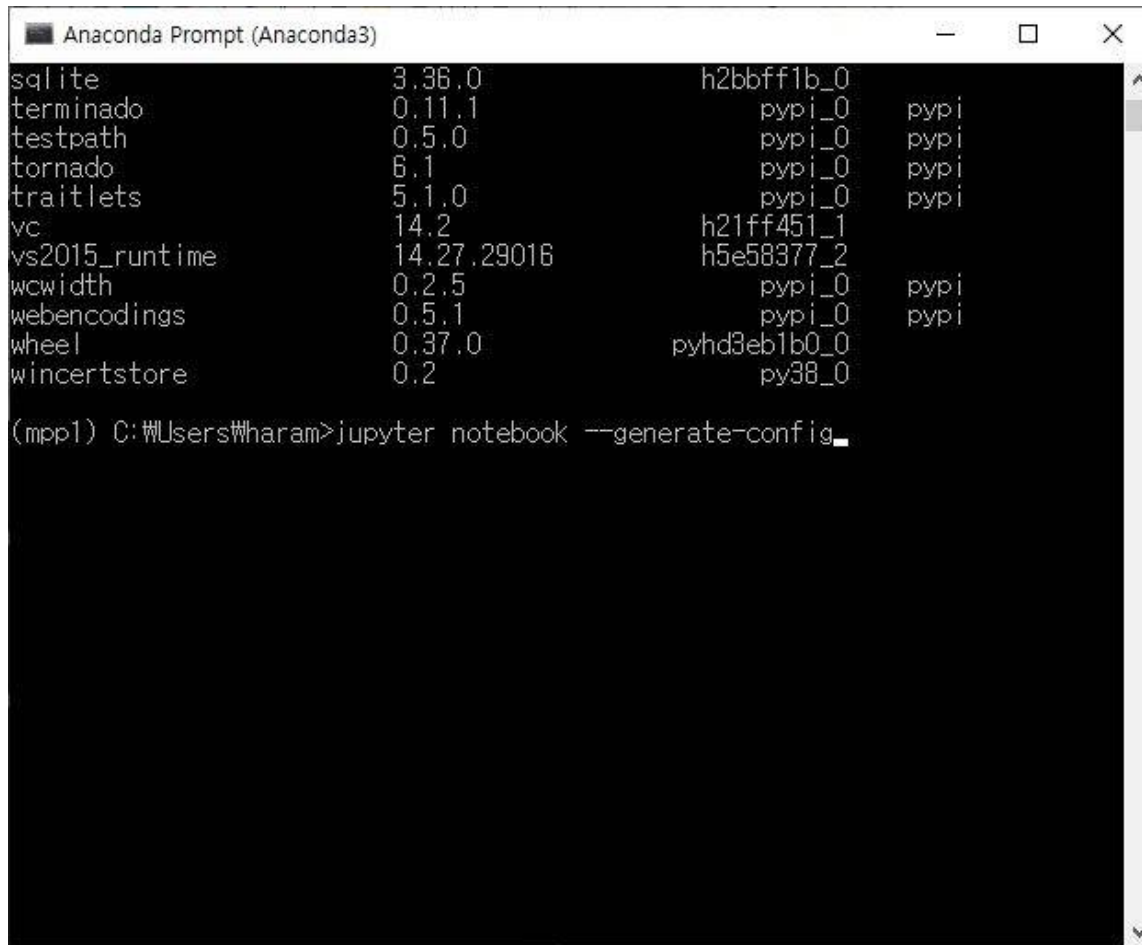
```
Anaconda Prompt (Anaconda3)

(mpp1) C:\Users\haram>conda list
# packages in environment at d:\ProgramData\Anaconda3\envs\mpp1:
#
# Name                        Version      Build      Channel
argon2-cffi                  21.1.0       pypi_0     pypi
attrs                        21.2.0       pypi_0     pypi
backcall                     0.2.0        pypi_0     pypi
bleach                       4.1.0        pypi_0     pypi
ca-certificates              2021.7.5     haa95532_1
certifi                      2021.5.30    py38haa95532_0
cffi                         1.14.6       pypi_0     pypi
colorama                     0.4.4        pypi_0     pypi
debugpy                      1.4.1        pypi_0     pypi
decorator                    5.0.9        pypi_0     pypi
defusedxml                   0.7.1        pypi_0     pypi
entrypoints                  0.3          pypi_0     pypi
ipykernel                    6.3.1        pypi_0     pypi
ipython                      7.27.0       pypi_0     pypi
ipython-genutils             0.2.0        pypi_0     pypi
jedi                         0.18.0       pypi_0     pypi
jinja2                       3.0.1        pypi_0     pypi
jsonschema                   3.2.0        pypi_0     pypi
jupyter-client                7.0.2        pypi_0     pypi
jupyter-core                  4.7.1        pypi_0     pypi
jupyterlab-pygments          0.1.2        pypi_0     pypi
markupsafe                   2.0.1        pypi_0     pypi
matplotlib-inline            0.1.2        pypi_0     pypi
mistune                      0.8.4        pypi_0     pypi
nbclient                      0.5.4        pypi_0     pypi
```

conda list

List 중에 jupyter 설치 확인

7. Jupyter Notebook 환경설정



```
Anaconda Prompt (Anaconda3)

sqlite 3.36.0 h2bfff1b_0
terminado 0.11.1 pypi_0 pypi
testpath 0.5.0 pypi_0 pypi
tornado 6.1 pypi_0 pypi
traitlets 5.1.0 pypi_0 pypi
vc 14.2 h21ff451_1
vs2015_runtime 14.27.29016 h5e58377_2
wcwidth 0.2.5 pypi_0 pypi
webencodings 0.5.1 pypi_0 pypi
wheel 0.37.0 pyhd3eb1b0_0
wincertstore 0.2 py38_0

(mpp1) C:\Users\Wharam>jupyter notebook --generate-config_
```

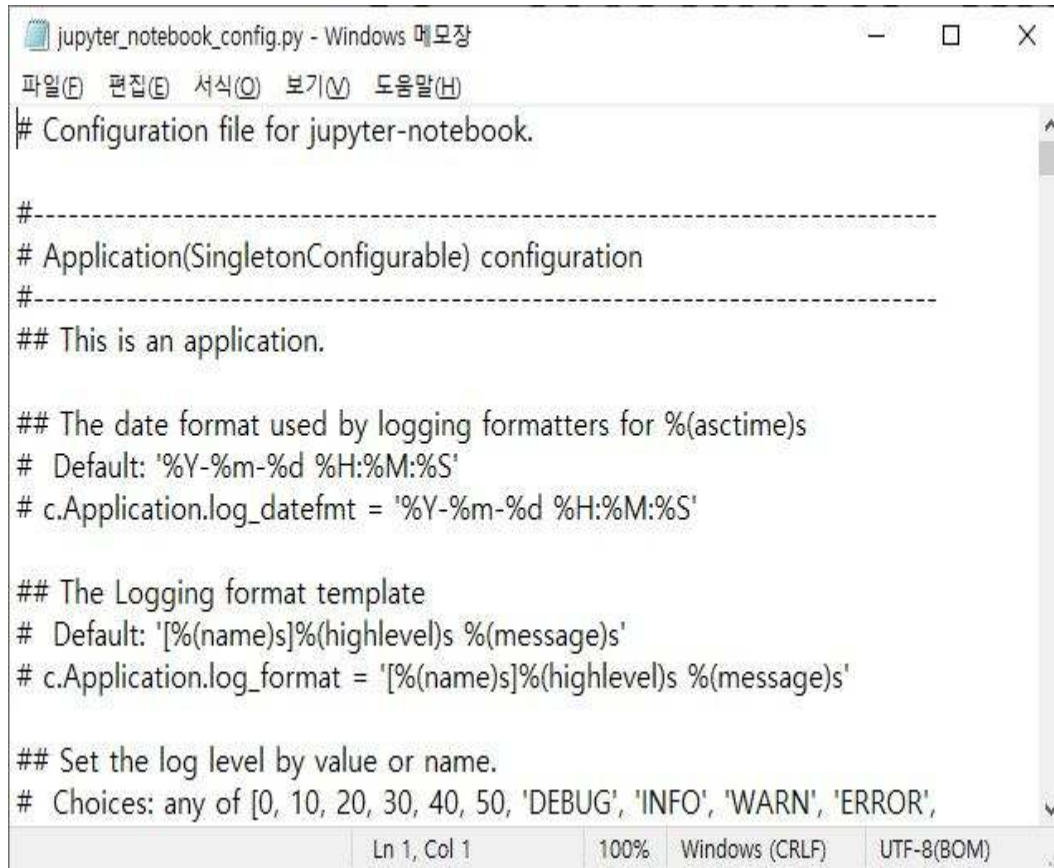
주피터 노트북을 실행하면
시작 폴더가 c:/로되어 있어 불편

1. 프로젝트 폴더를 따로 만들고
2. Jupyter Notebook 시작 폴더를
프로젝트 폴더로 변경

Jupyter notebook --generate-config
로 설정파일 생성

Writing default config to: 뒤에 나오는
경로 복사 후 윈도우 탐색기 경로창에
붙여넣기

7. Jupyter Notebook 환경설정



```
jupyter_notebook_config.py - Windows 메모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
# Configuration file for jupyter-notebook.

#-----
# Application(SingletonConfigurable) configuration
#-----

## This is an application.

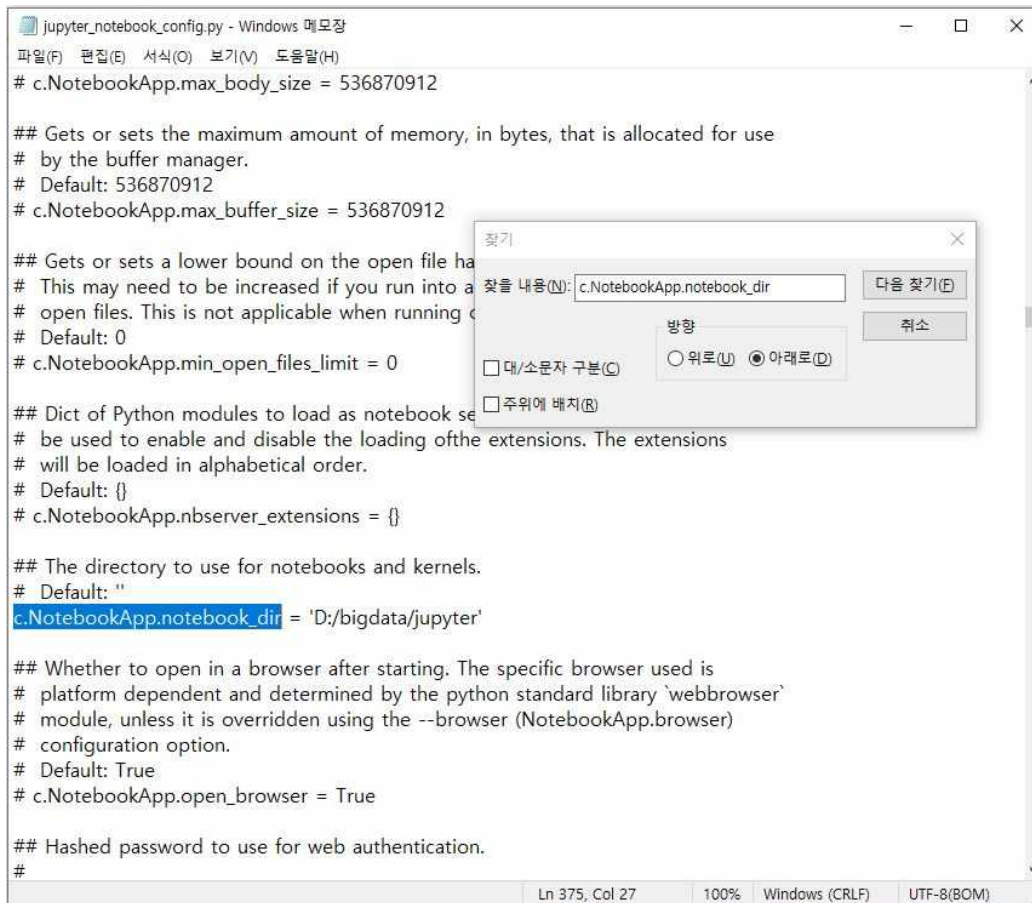
## The date format used by logging formatters for %(asctime)s
# Default: '%Y-%m-%d %H:%M:%S'
# c.Application.log_datefmt = '%Y-%m-%d %H:%M:%S'

## The Logging format template
# Default: '%(name)s%(highlevel)s %(message)s'
# c.Application.log_format = '%(name)s%(highlevel)s %(message)s'

## Set the log level by value or name.
# Choices: any of [0, 10, 20, 30, 40, 50, 'DEBUG', 'INFO', 'WARN', 'ERROR',
```

메모장 혹은 다른 텍스트 에디터를 이용해서
jupyter_notebook_config.py 열기

7. Jupyter Notebook 환경설정



```
jupyter_notebook_config.py - Windows 메모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
# c.NotebookApp.max_body_size = 536870912

## Gets or sets the maximum amount of memory, in bytes, that is allocated for use
# by the buffer manager.
# Default: 536870912
# c.NotebookApp.max_buffer_size = 536870912

## Gets or sets a lower bound on the open file handle
# This may need to be increased if you run into a
# open files. This is not applicable when running c
# Default: 0
# c.NotebookApp.min_open_files_limit = 0

## Dict of Python modules to load as notebook server
# be used to enable and disable the loading of the extensions. The extensions
# will be loaded in alphabetical order.
# Default: {}
# c.NotebookApp.nbserver_extensions = {}

## The directory to use for notebooks and kernels.
# Default: ""
c.NotebookApp.notebook_dir = 'D:/bigdata/jupyter'

## Whether to open in a browser after starting. The specific browser used is
# platform dependent and determined by the python standard library 'webbrowser'
# module, unless it is overridden using the --browser (NotebookApp.browser)
# configuration option.
# Default: True
# c.NotebookApp.open_browser = True

## Hashed password to use for web authentication.
#
```

1. F3키를 누른 뒤 찾을 내용에

notebook_dir

입력 후 **다음 찾기** 클릭

2. 앞에 **# 삭제** 후 공백 없이 왼쪽 끝으로 붙임

3. dir = " **따옴표 안쪽**에 프로젝트 경로 지정

예) 'C:/fintech_service'

4. #삭제 후 공백 없애기, ' '안에 경로 설정
확인

5. 파일 → 저장