

# 파이썬의 다양한 개발환경

# 주요 개발환경

- 통합개발환경(IDE)
  - Pycharm
  - Spyder
  - Wing
- 전통 편집기
  - Sublime Text
  - Atom
  - Visual studio code



# 브라우저 실행환경

- 로컬 실행
  - Jupyter notebook
  - Jupyter lab
- 클라우드 실행
  - Kaggle 노트북
  - Colab
    - <http://colab.research.google.com/>

```
[2] !pip install tensorflow==2.0.0

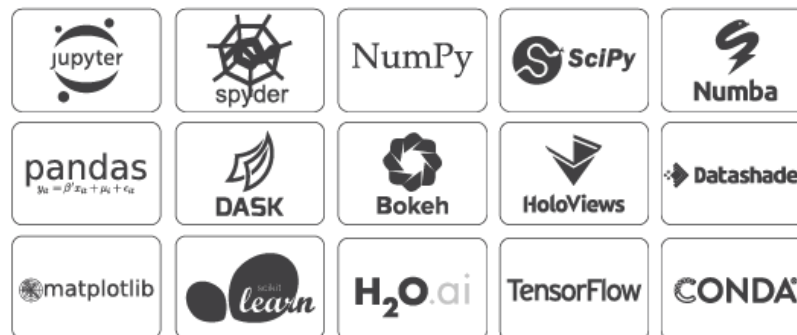
Collecting tensorflow==2.0.0
  Downloading https://files.pythonhosted.org/packages/45/01/70e5361168632736360d15c5e4e966-9c1b6f58a630d1d4279892/tensorflow-2.0.0-cv36-cv36-manylinux2010_x86_64.whl (85.9MB)
Requirement already satisfied: keras-applications>=1.0.8 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (1.0.8)
Collecting tensorboard<2.1.0,>=2.0.0
  Downloading https://files.pythonhosted.org/packages/7b/54/99b9b565fca7321098aaa774040b631e80e6940fab0b13475a/tensorboard-2.0.2-cv2-none-any.whl (3.9MB)
Requirement already satisfied: protobuf>=3.6.1 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (3.10.0)
Requirement already satisfied: absl-py>=0.7.0 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (0.9.0)
Requirement already satisfied: opt-einsum>=2.3.2 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (3.1.0)
Requirement already satisfied: wheel>=0.25 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (0.33.5)
Requirement already satisfied: grpcio>=1.8.6 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (1.15.0)
Requirement already satisfied: google-protobuf>=3.6.1 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (3.6.1)
Requirement already satisfied: numpy>=1.16.0 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (1.17.5)
Requirement already satisfied: termcolor>=1.1.0 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (1.1.0)
Requirement already satisfied: astor>=0.6.0 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (0.8.1)
Collecting tensorflow-estimator<2.1.0,>=2.0.0
  Downloading https://files.pythonhosted.org/packages/7c/08/8e927332b7019-374719145d1d6b21a8b6909-931a6f68b79221ca/tensorflow-estimator-2.0.1-cv2-cv2-none-any.whl (450kB)
Requirement already satisfied: keras-preprocessing>=1.0.5 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (1.1.0)
Requirement already satisfied: gast>=0.2.2 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (0.2.2)
Requirement already satisfied: wrapt>=1.11.1 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (1.11.2)
Requirement already satisfied: six>=1.10.0 in /usr/local/lib/python3.6/dist-packages (from tensorflow==2.0.0) (1.12.0)
Requirement already satisfied: h5py in /usr/local/lib/python3.6/dist-packages (from keras-applications>=1.0.8->tensorflow==2.0.0) (2.8.0)
Requirement already satisfied: reusert>=3.2.21.0 in /usr/local/lib/python3.6/dist-packages (from tensorboard<2.1.0,>=2.0.0->tensorflow==2.0.0) (2.21.0)
Requirement already satisfied: google-auth-oauthlib>=0.5.1-0.4.1 in /usr/local/lib/python3.6/dist-packages (from tensorboard<2.1.0,>=2.0.0->tensorflow==2.0.0) (0.4.1)
Collecting google-auth<2.0.1,>=1.6.3
  Downloading https://files.pythonhosted.org/packages/36/19/846771fac3e6a1f0d01c8-59933648-e085c3d65a20c5034495/google-auth-1.10.0-cv2-cv2-none-any.whl (79kB)
Requirement already satisfied: werkzeug>=0.11.15 in /usr/local/lib/python3.6/dist-packages (from tensorboard<2.1.0,>=2.0.0->tensorflow==2.0.0) (0.16.0)
Requirement already satisfied: markdown>=2.6.8 in /usr/local/lib/python3.6/dist-packages (from tensorboard<2.1.0,>=2.0.0->tensorflow==2.0.0) (2.6.8)
```

아나콘다 설치

# 아나콘다 개요

## • 전통 파이썬과 다른 ipython 인터프리터를 사용한 개발 플랫폼

- Python / R 데이터 과학 및 기계 학습을 수행하는 가장 쉬운 방법
- 데이터 과학자가 수행할 수 있는 단일 머신 1,500 개 이상의 Python / R 데이터 과학 패키지를 빠르게 다운로드
  - 기본적으로 많은 데이터 과학 패키지들이 설치
- 쉽게 가상환경을 만들고 버전 관리를 할 수 있는 도구 포함
  - conda로 라이브러리, 종속성 및 환경 관리
- 과학용 모듈이 기본적으로 설치
  - scikit-learn, TensorFlow 및 Theano를 사용해 기계학습 및 딥러닝 모델 개발 및 교육
  - dask, numPy, pandas 및 Numba를 사용하여 확장성 및 성능으로 데이터 분석
  - matplotlib, bokeh, datashader 및 holoviews를 사용하여 결과 시각화

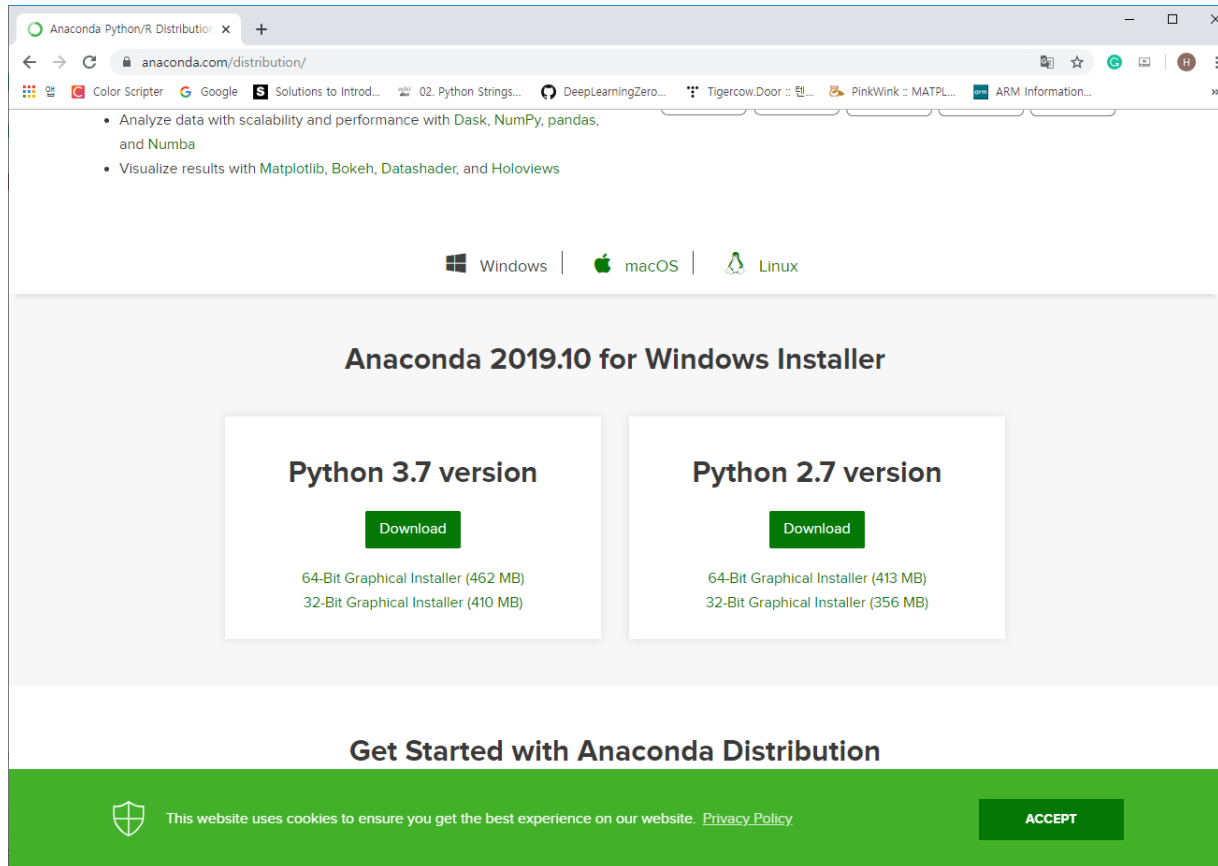


# 아나콘다의 주피터 노트북

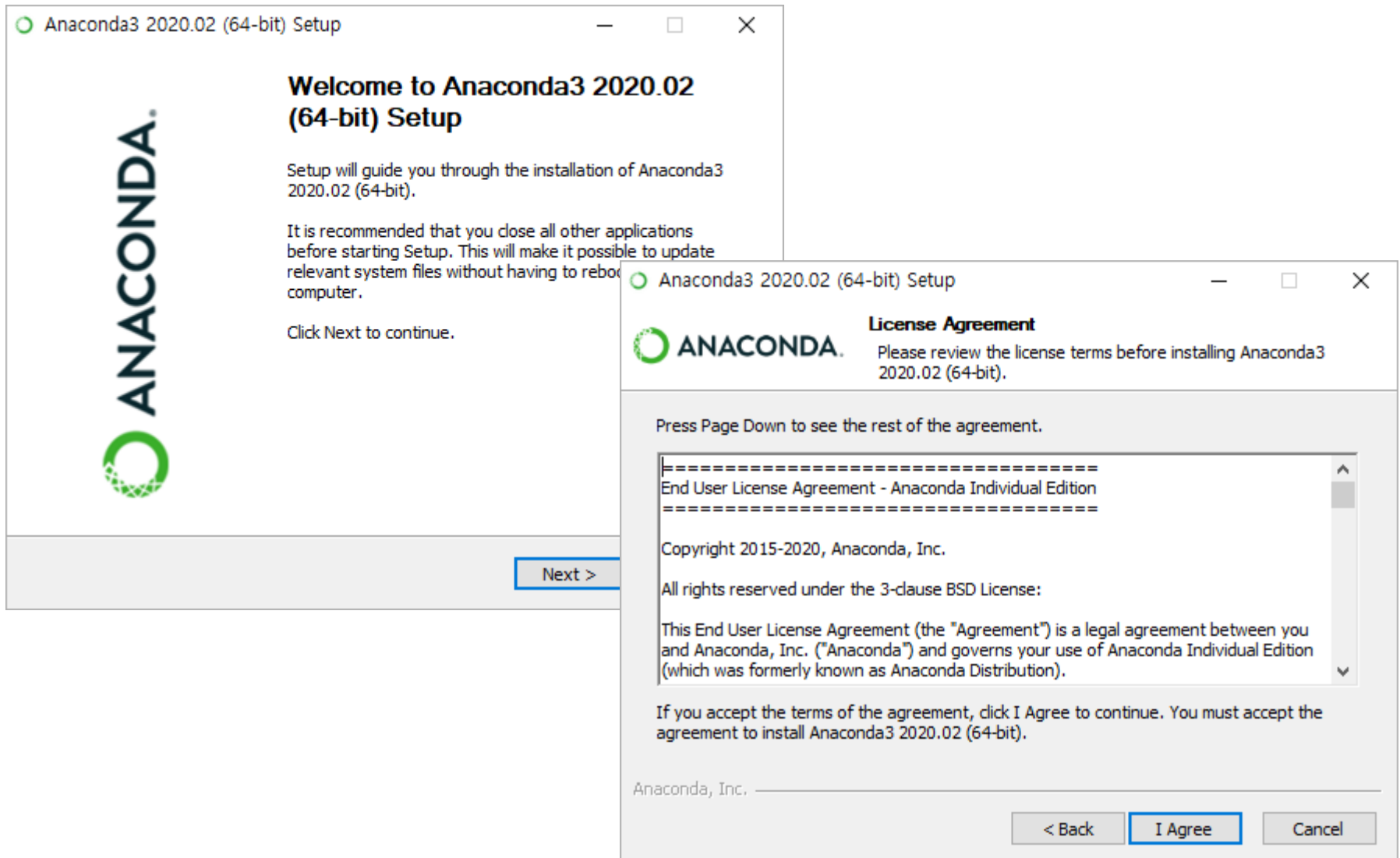
- 초보자에게 아나콘다에서 가장 필요한 것은
  - 주피터 노트북
    - 웹 개발환경
  - Conda
    - 설치 프로그램
  - 위 2개를 이용하기 위해 너무 많은 것을 설치하는 부담
    - 패키지 `notebook`과 `conda`만 설치도 가능하나 오류가 자주 발생
- `ipython`이 `jupyter`라는 이름으로 변경
- 다양한 개발 환경도 설치
  - `jupyter notebook`
  - `jupyter lab`
  - 일반 IDE
    - `spyder`

# 아나콘다 설치

- 아나콘다 홈페이지에서 아나콘다 설치 파일로 설치



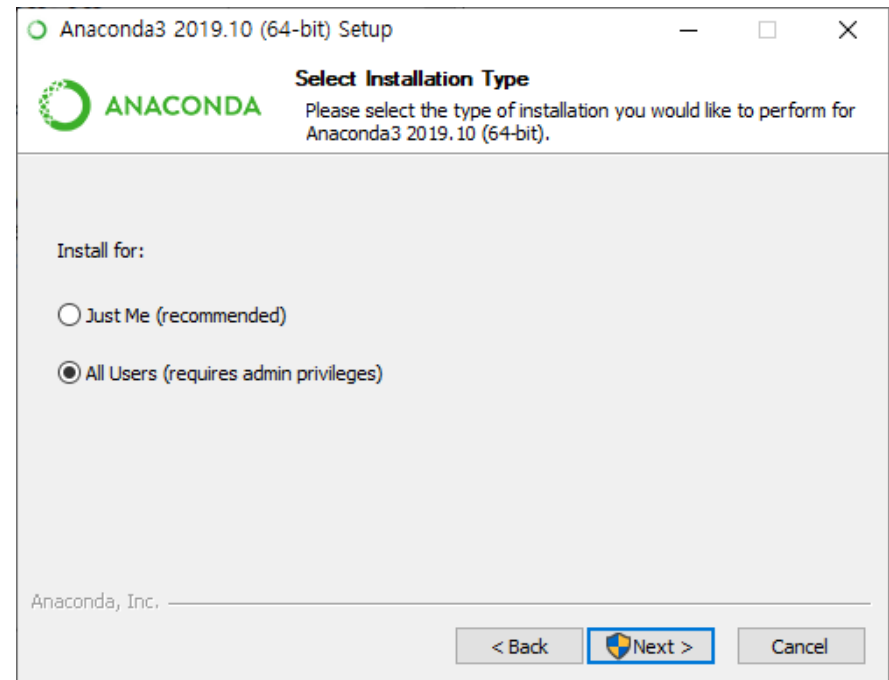
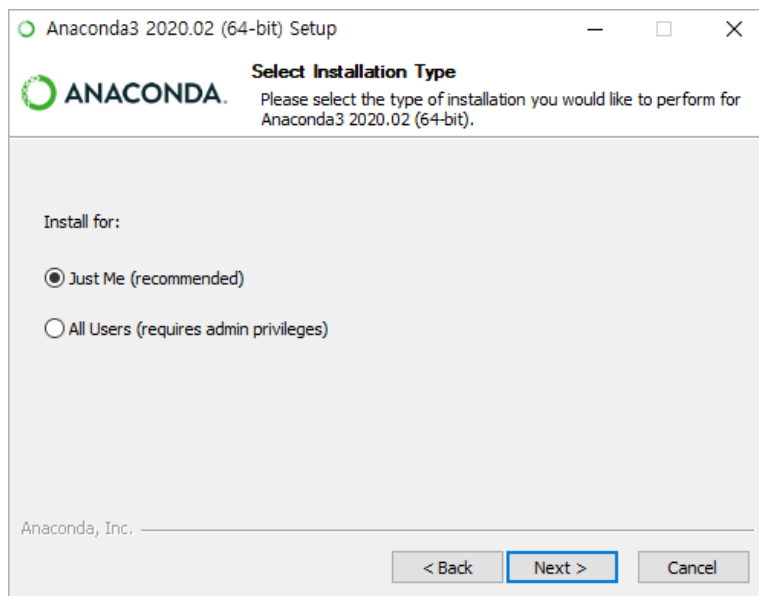
## 설치





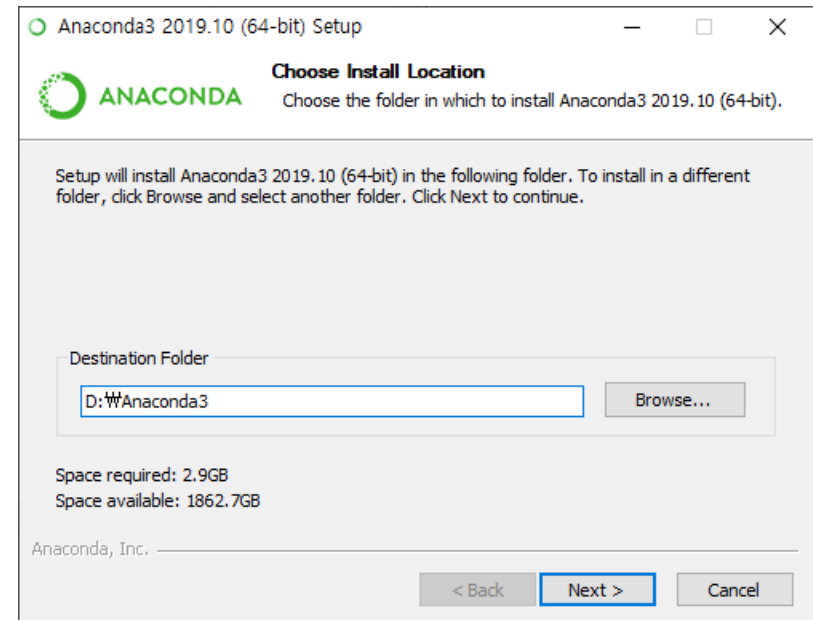
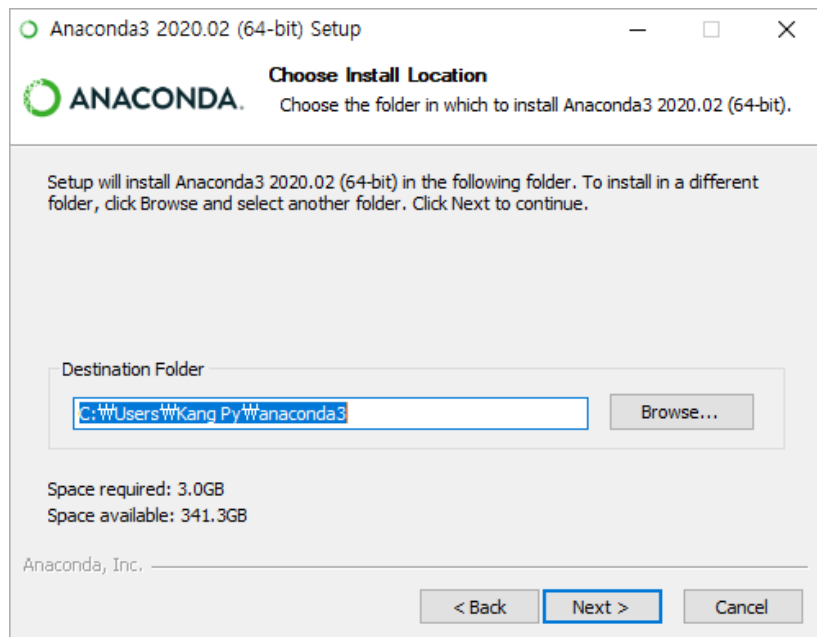
# 설치

- 권한 문제로 All Users가 편리
  - Just Me와 설치되는 경로가 다름
  - Just Me 설치
    - 패키지를 설치 또는 삭제 업그레이드 시 CMD창을 관리자 권한으로 열어 실행해야 하는 경우
    - C:\Users\[사용자]\Anaconda3



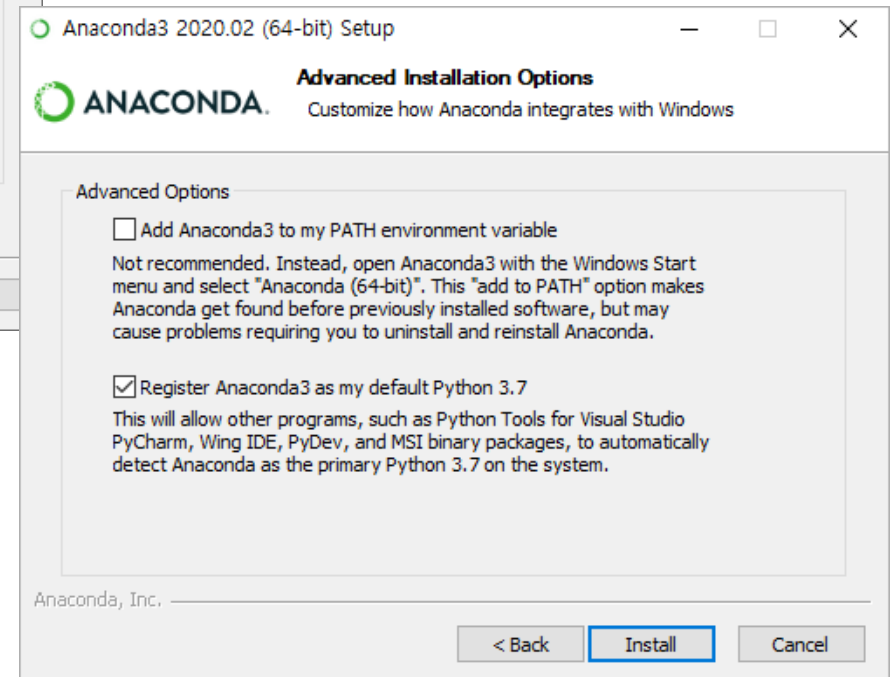
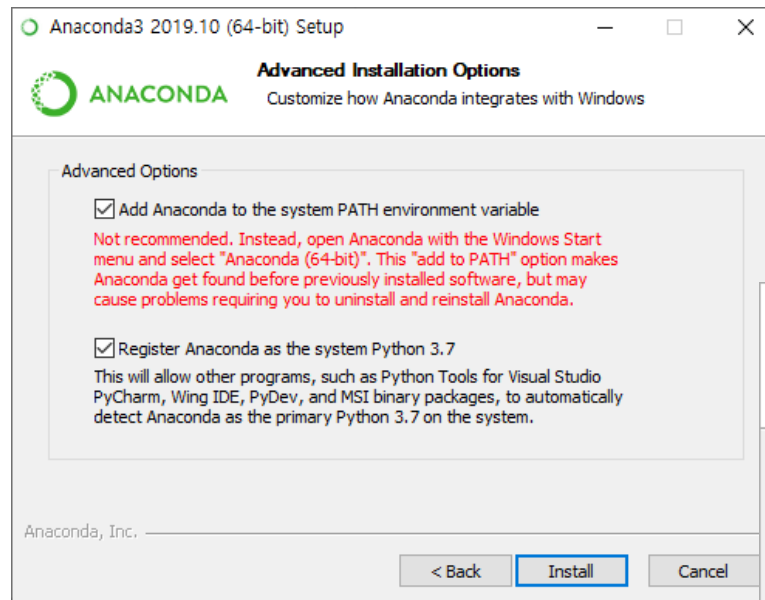
# 설치

- 설치 폴더
  - 쉽게 이동할 수 있는 폴더로 수정 권장



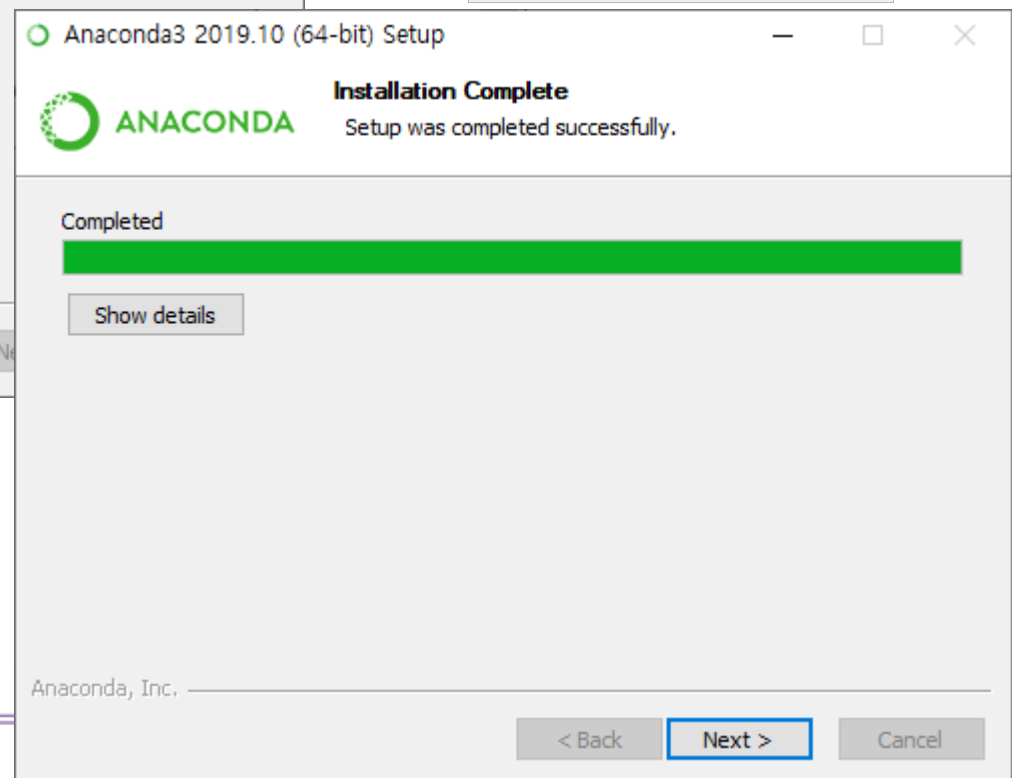
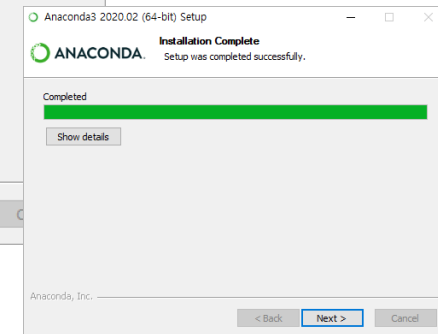
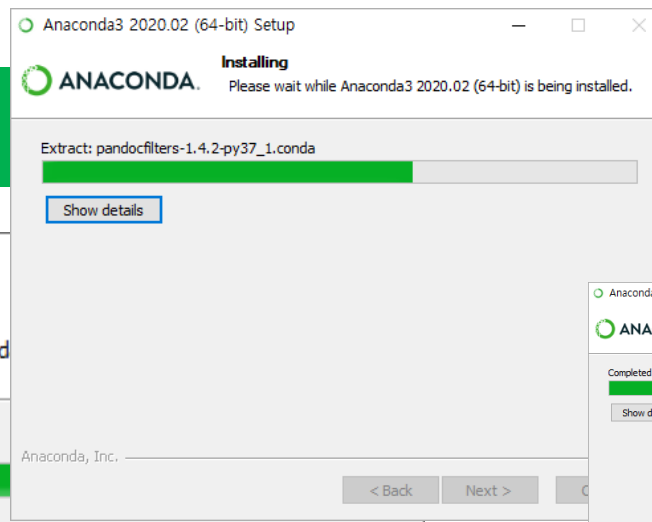
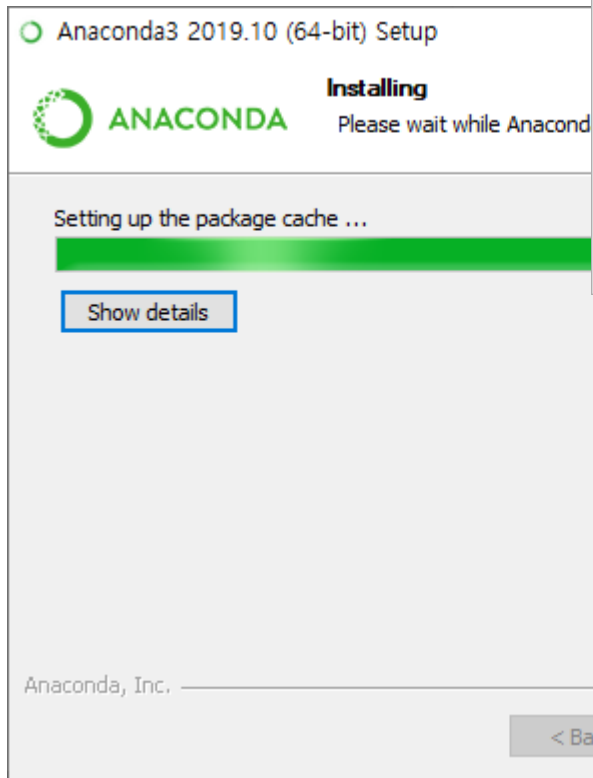
# 설치

## • Path를 모두 설정하도록



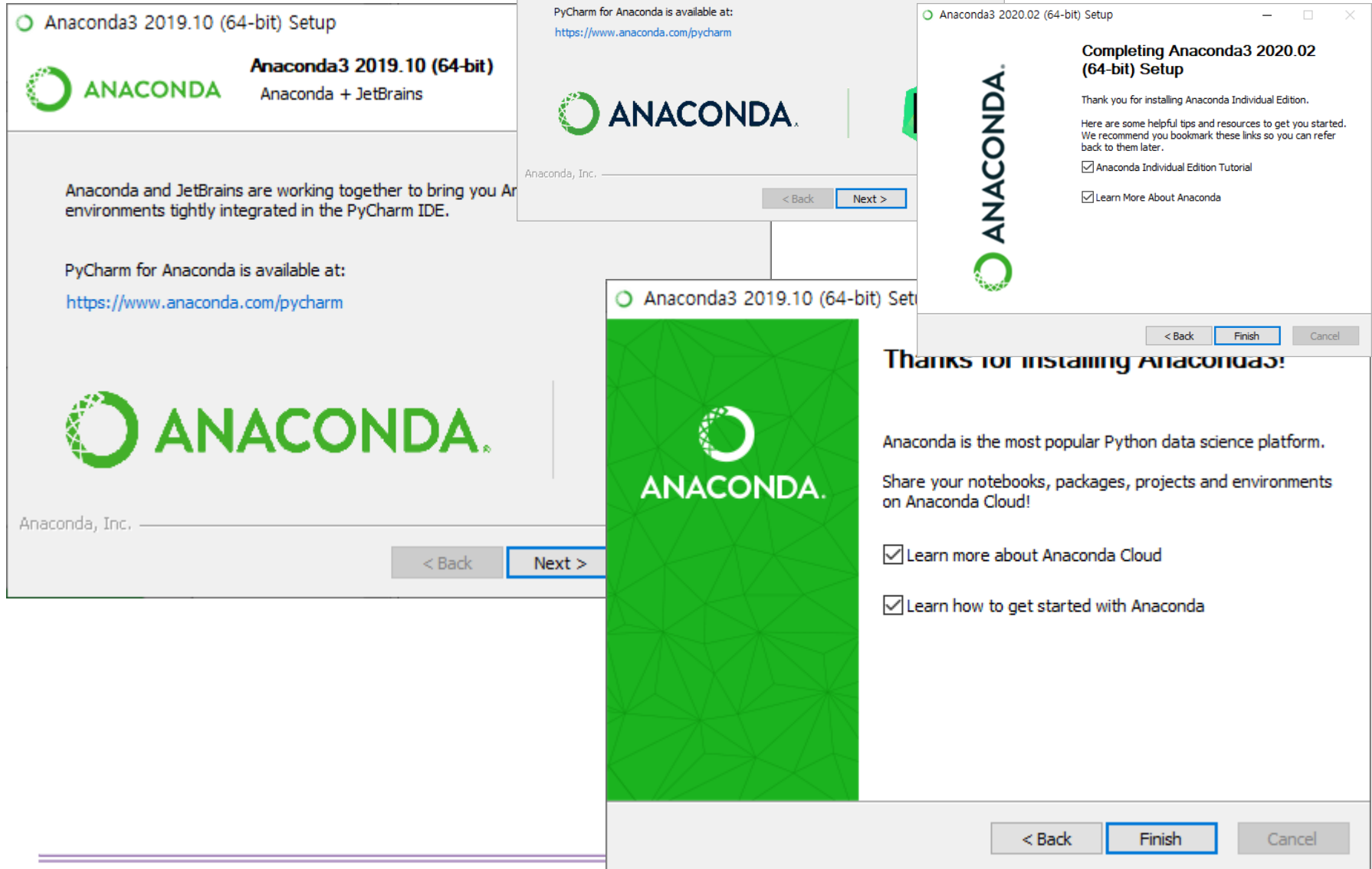
# 설치

## PYTHON PROGRAMMING



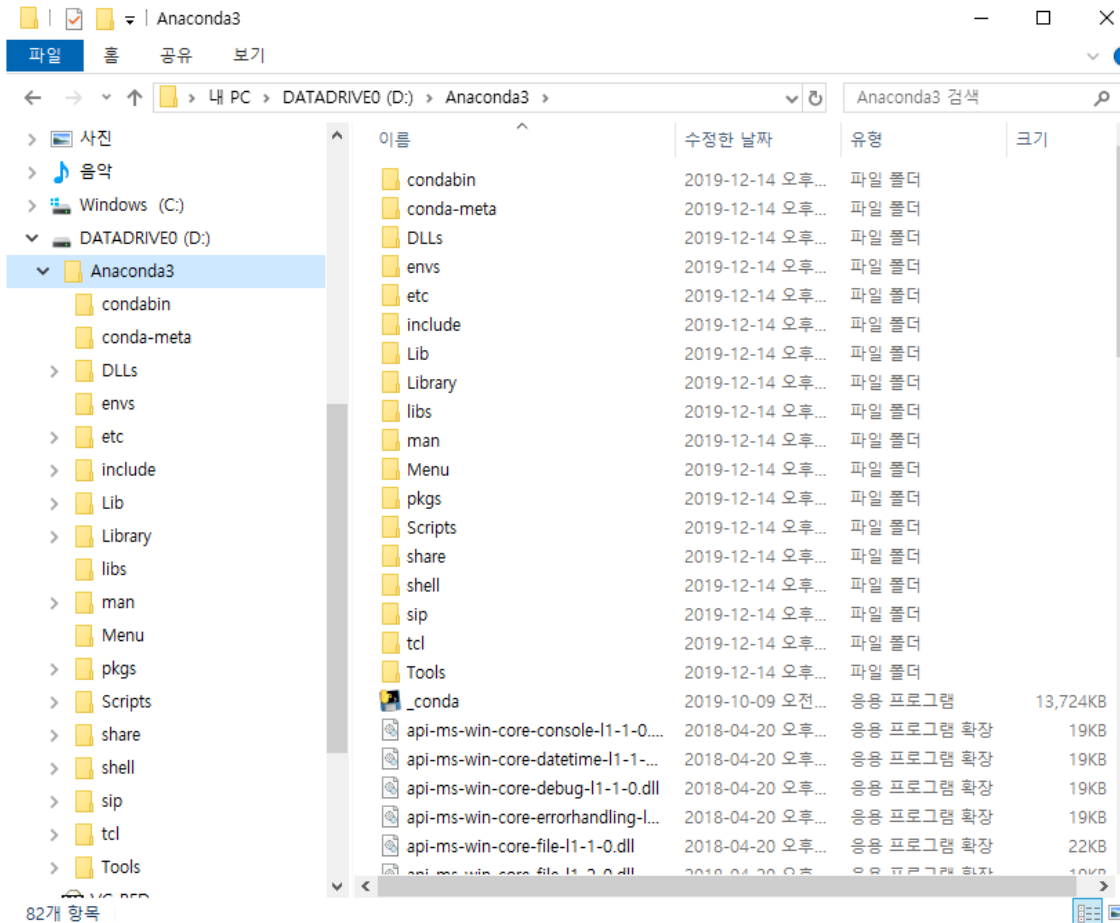
# 설치

## PYTHON PROGRAMMING



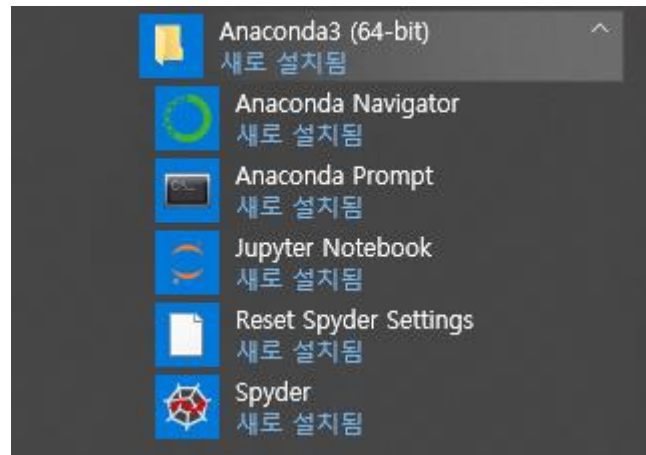
# 설치

## • 설치 후 폴더 확인



# 설치 후 메뉴 확인

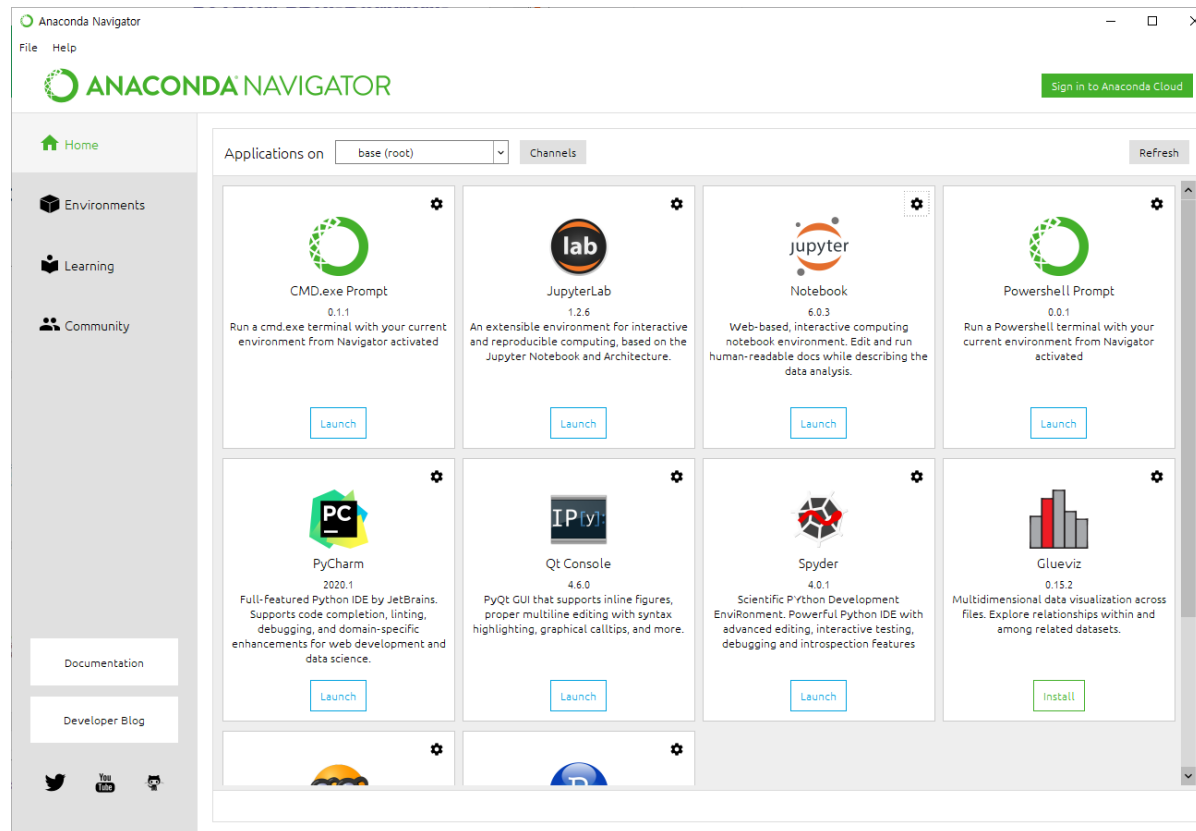
- 5가지 메뉴
  - Jupyter Notebook
    - 주피터 노트북 사용



# 설치

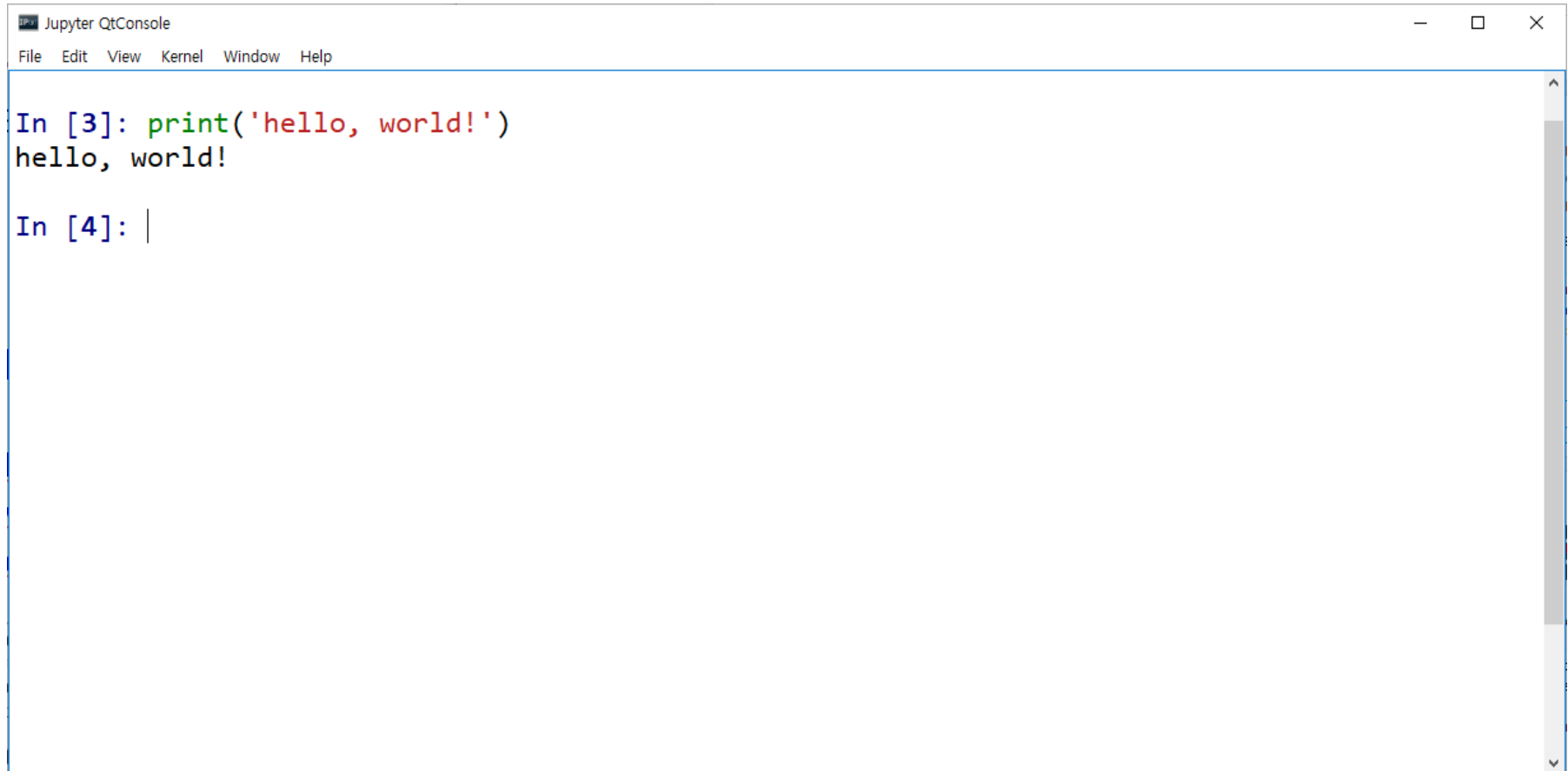
## • 아나콘다 내비게이터 실행

- 데이터 과학 분야의 인기 개발 도구: jupyter notebook, jupyter lab
- 인기 IDE: spyder





# Jupyter Qtconsole



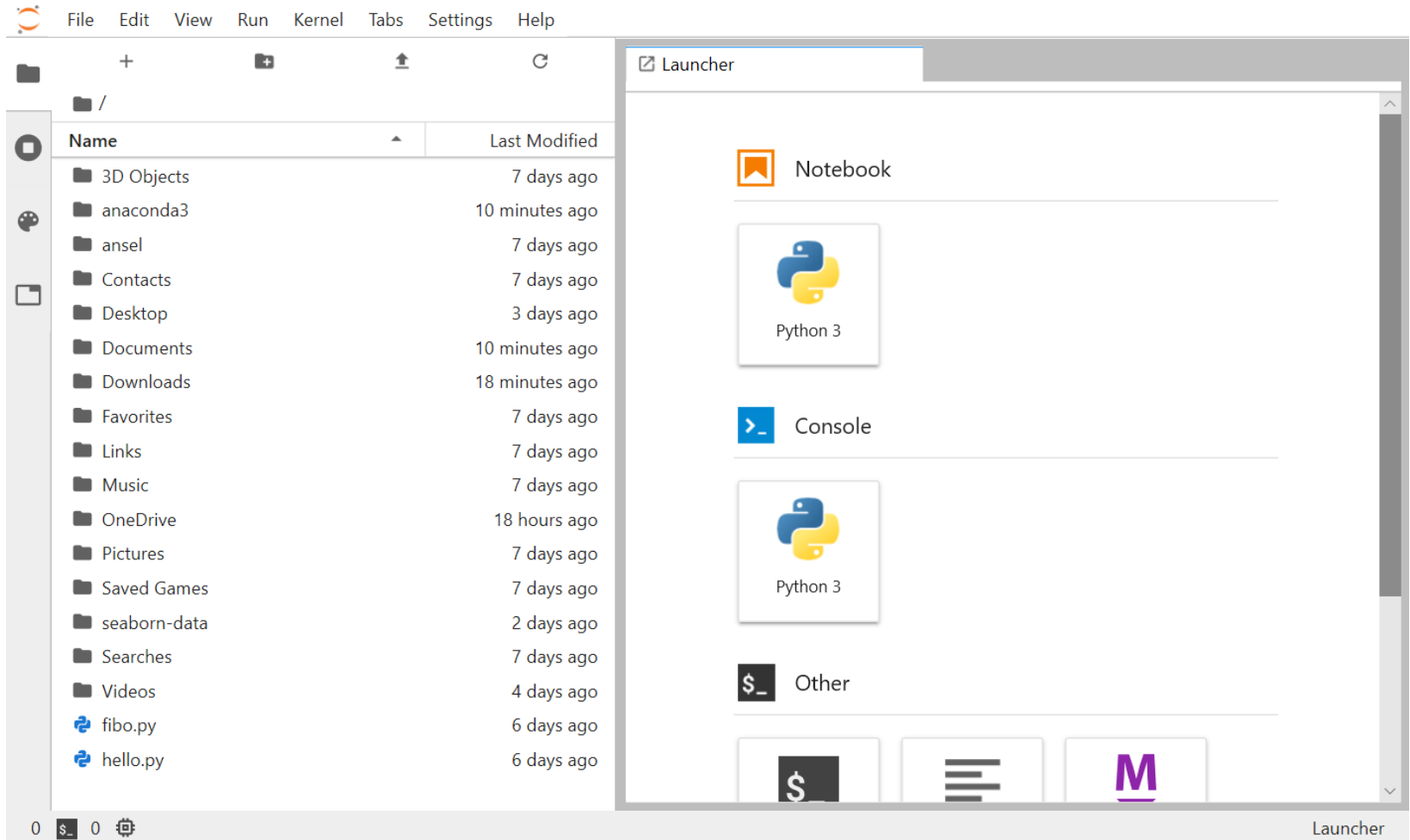
The screenshot shows a window titled "Jupyter QtConsole" with a standard menu bar (File, Edit, View, Kernel, Window, Help). The main area contains two lines of Python code. The first line is "In [3]: print('hello, world!')", where "print" is green and the string is red. Below it, the output "hello, world!" is displayed. The second line is "In [4]: |", with a vertical cursor at the end. A vertical scrollbar is on the right side of the code area.

```
Jupyter QtConsole
File Edit View Kernel Window Help

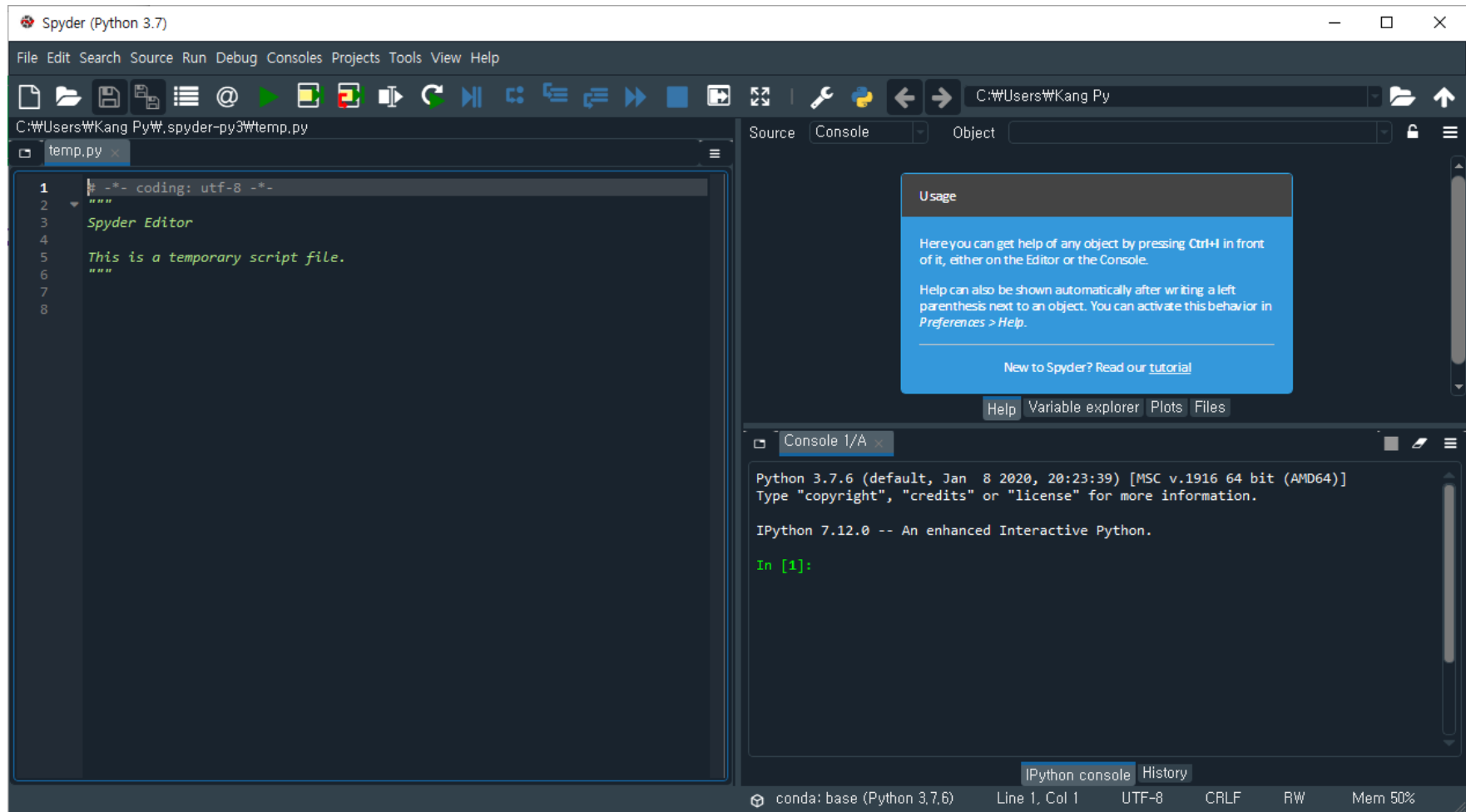
In [3]: print('hello, world!')
hello, world!

In [4]: |
```

# Jupyter Lab



# spyder



# 아나콘다와 미니콘다

- 아나콘다의 단점

- 너무 크다는 것
  - 150개의 패키지와 데이터 과학 패키지들이 포함
  - 쉽게 가상환경을 만들고 버전 관리를 할 수 있는 도구 포함
- 해결 방법
  - 미니콘다의 사용
    - <https://docs.conda.io/en/latest/miniconda.html>

