Python

파이썬 설치

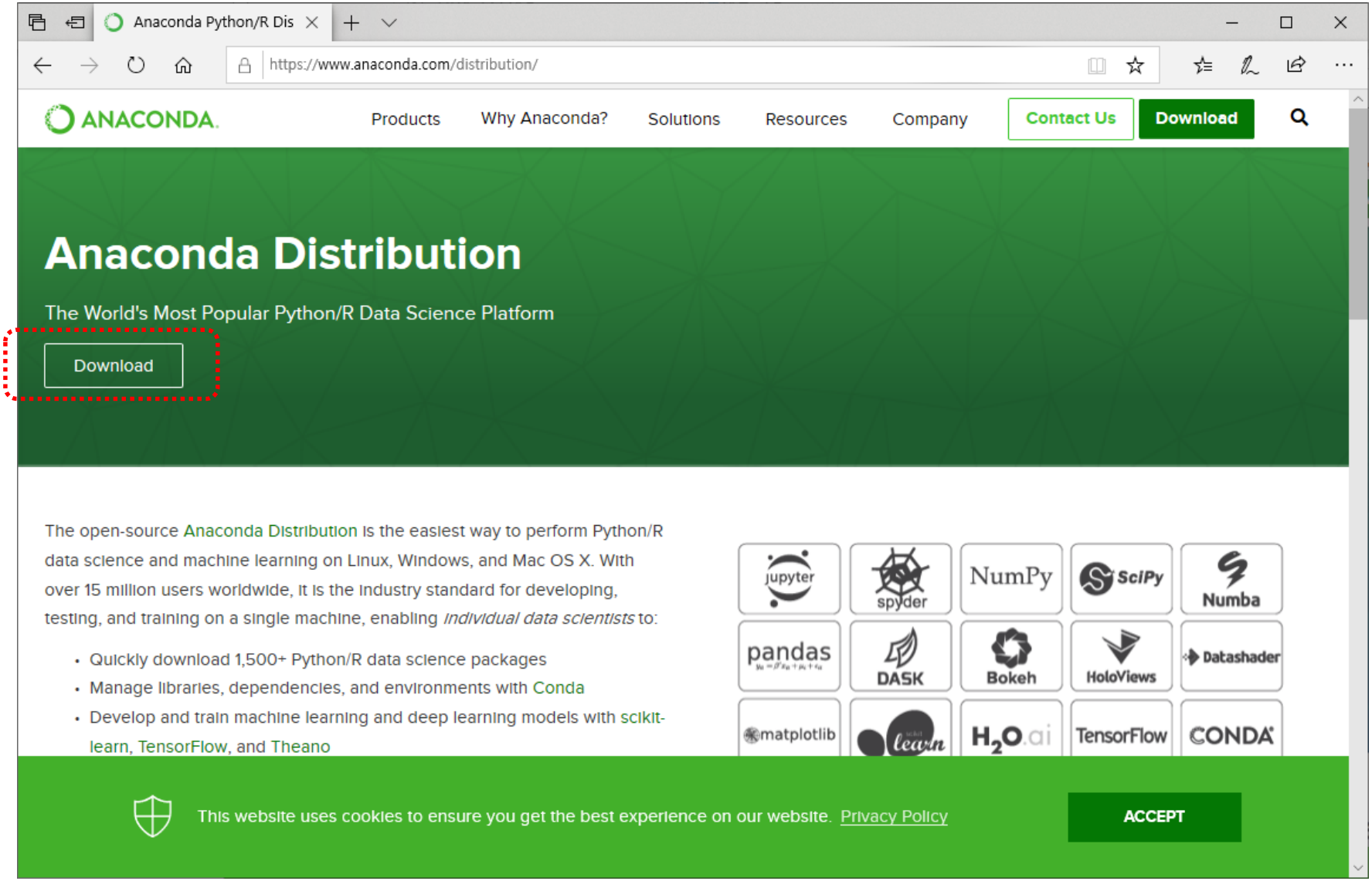
김선녕(sykim.lecture@gmail.com)

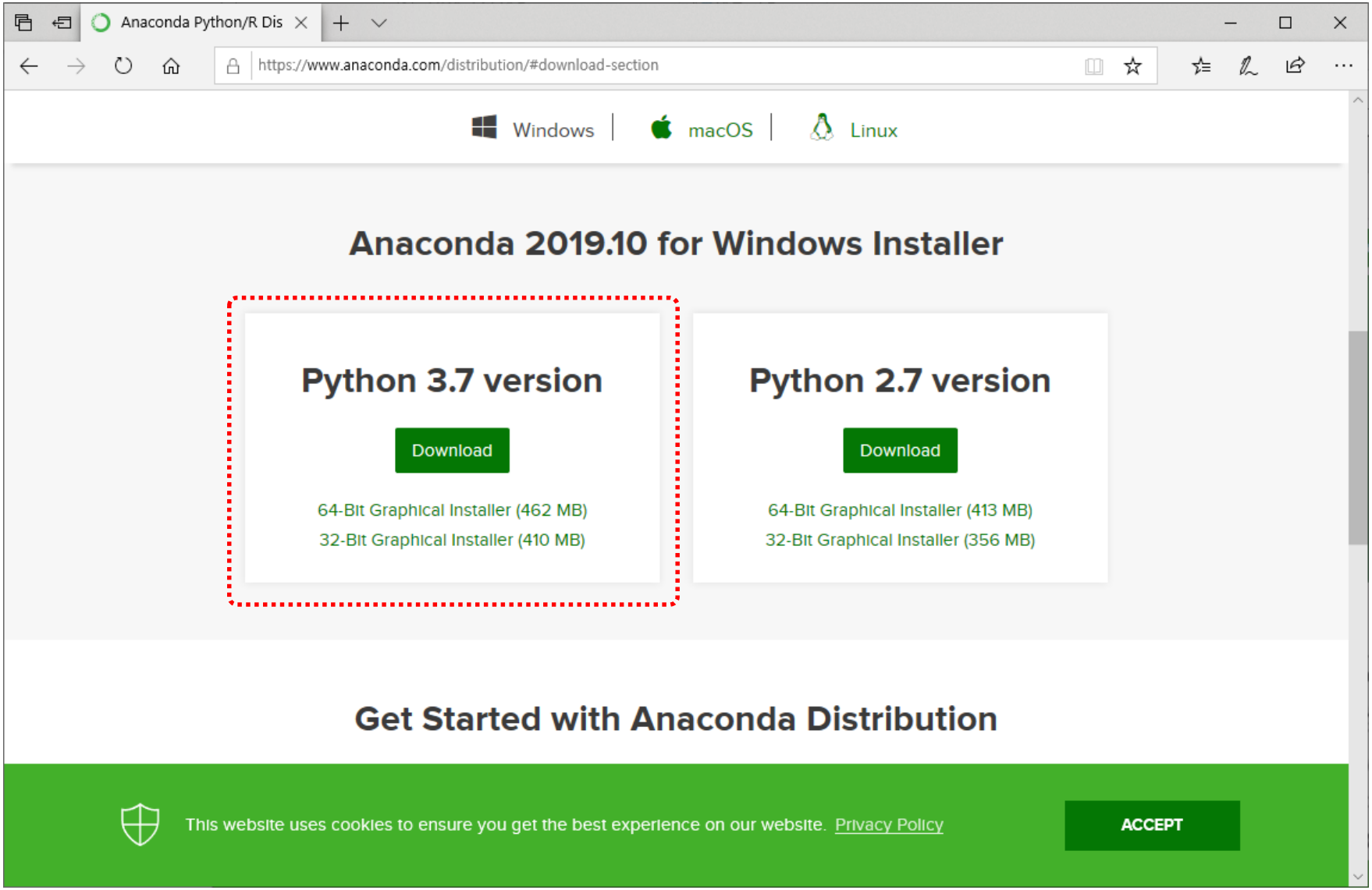
Python

- Python이란?
  - 1991년 귀도 반 로섬(Guido Van Rossum, 1956년, 네덜란드, 히도 판 로쉼)이 발표
    - 1989년 크리스마스 주에 연구실이 닫혀 있어서 심심한 김에...
    - 기술자들은 심심할 때 항상 걸작이 나온다??
  - 다양한 플랫폼에서 쓸 수 있고, 라이브러리(모듈)가 풍부하여, 대학을 비롯한 여러 교육 기관, 연구 기관 및 산업계에서 이용이 증가
  - Interpreter 언어(컴파일 과정이 필요 없다).
  - 들여쓰기를 사용해서 블록을 구분하는 독특한 문법을 채용
  - 사전적 의미는 '피톤'이라는 이름으로 알려진 고대 그리스신화에 나오는 거대한 뱀의 이름
- 버전
  - 2.x(2000년)와 3.x(2008년) 두 가지 버전이 공존.
  - 위 두 가지는 서로 호환되지 않음.
- 커뮤니티(Community)
  - 파이콘 코리아(Pycon Korea)
    - https://www.facebook.com/groups/pythonkorea
- https://www.tiobe.com/tiobe-index/

https://ko.wikipedia.org/wiki/%ED%8C%8C%EC%9D%B4%EC%8D%AC

Anaconda Python 설치




Anaconda Python/R Dis
https://www.anaconda.com/distribution/#download-section
Windows
macOS
Linux
Anaconda 2019.10 for Windows Installer
Python 3.7 version
Download
64-Bit Graphical Installer (462 MB)
32-Bit Graphical Installer (410 MB)
Python 2.7 version
Download
64-Bit Graphical Installer (413 MB)
32-Bit Graphical Installer (356 MB)
Get Started with Anaconda Distribution
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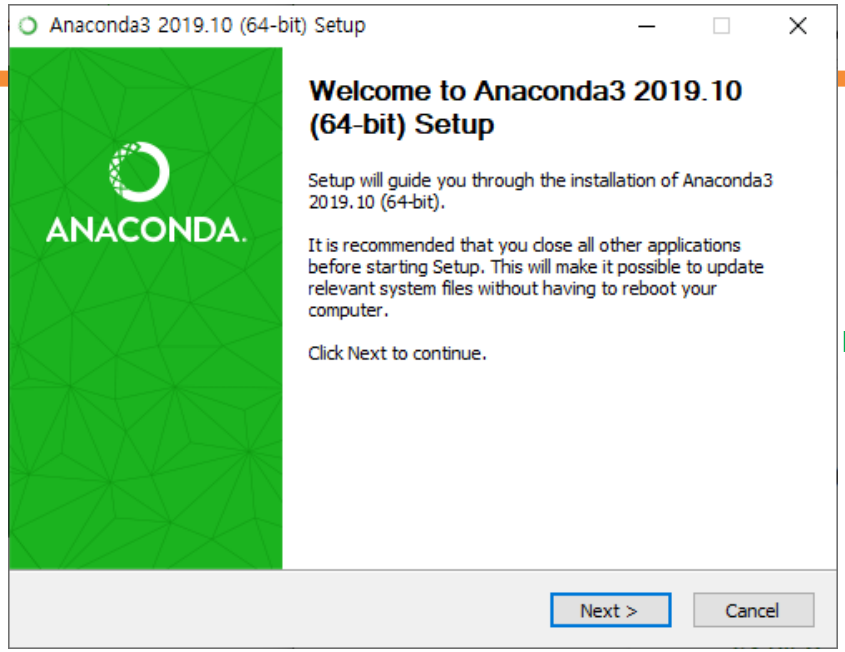
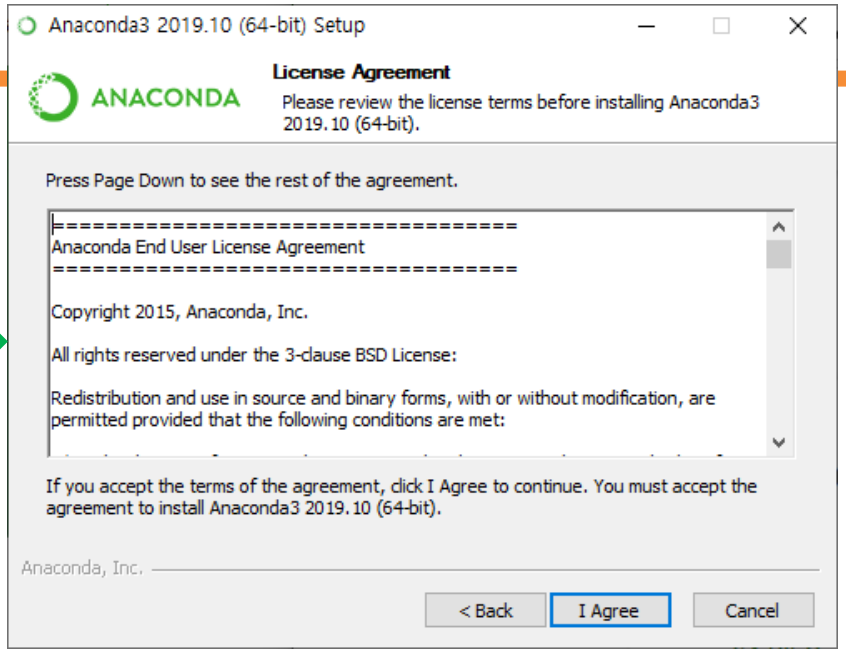
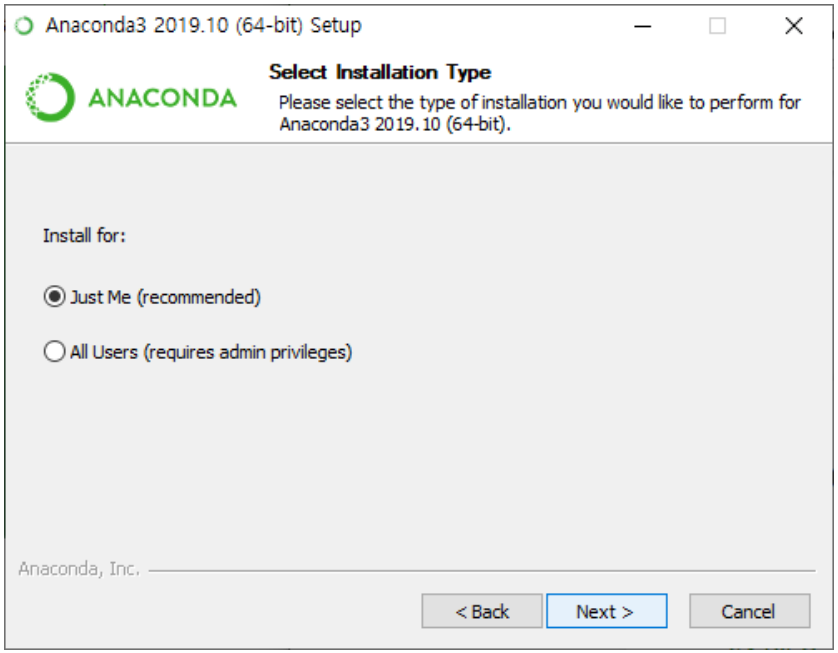
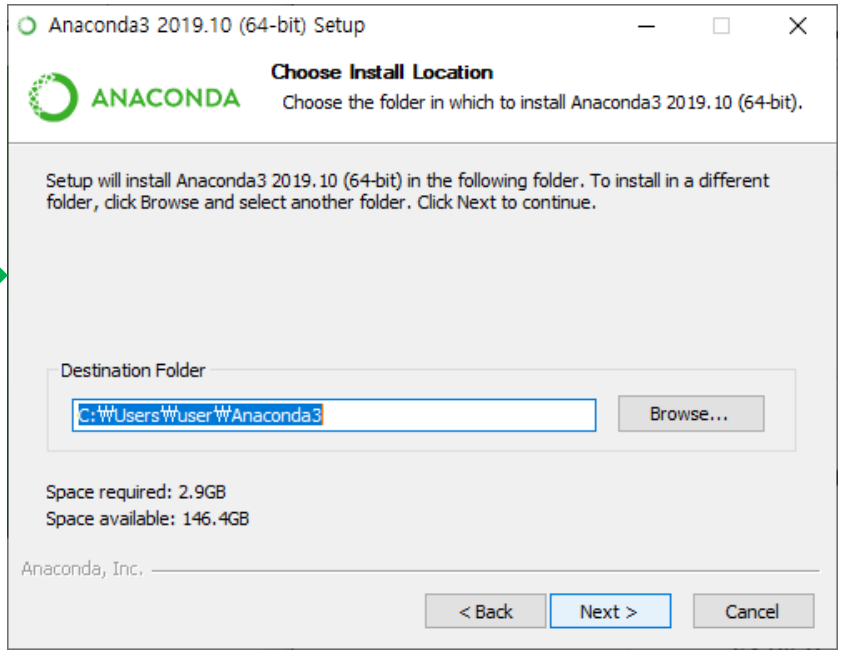
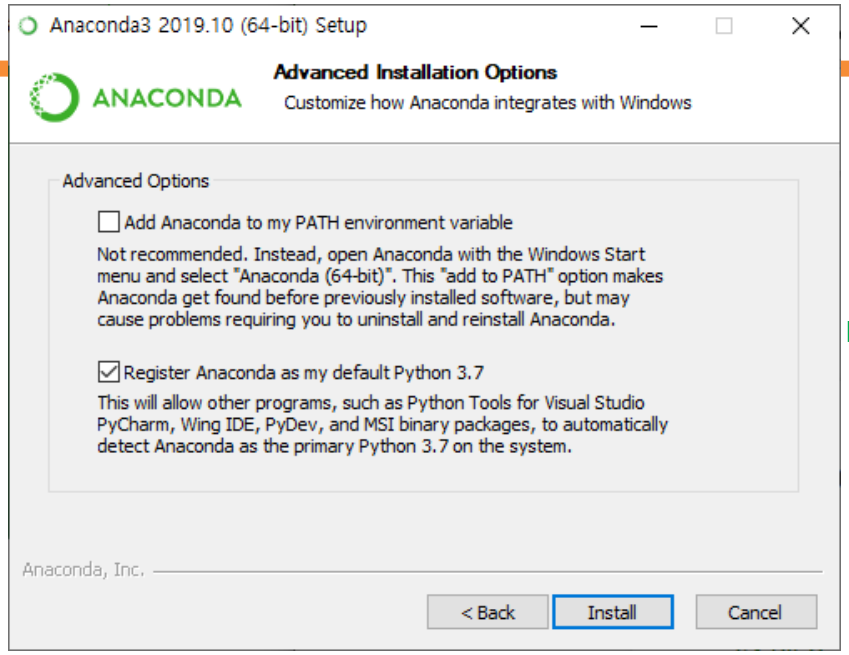
ACCEPT

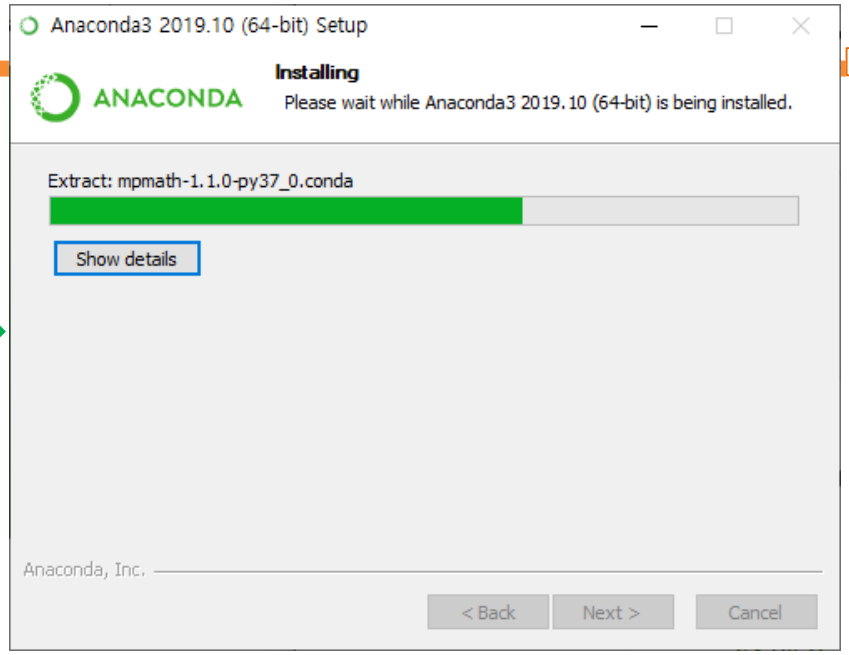

Anaconda3 2019.10 (64-bit) Setup
ANACONDA.
Welcome to Anaconda3 2019.10 (64-bit) Setup
Setup will guide you through the installation of Anaconda3 2019.10 (64-bit).
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel


Anaconda3 2019.10 (64-bit) Setup
ANACONDA
License Agreement
Please review the license terms before installing Anaconda3 2019.10 (64-bit).
Press Page Down to see the rest of the agreement.
Anaconda End User License Agreement
Copyright 2015, Anaconda, Inc.
All rights reserved under the 3-clause BSD License:
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install Anaconda3 2019.10 (64-bit).
Anaconda, Inc.
< Back
I Agree
Cancel


Anaconda3 2019.10 (64-bit) Setup
ANACONDA
Select Installation Type
Please select the type of installation you would like to perform for Anaconda3 2019.10 (64-bit).
Install for:
Just Me (recommended)
All Users (requires admin privileges)
Anaconda, Inc.
< Back
Next >
Cancel


Anaconda3 2019.10 (64-bit) Setup
ANACONDA
Choose Install Location
Choose the folder in which to install Anaconda3 2019.10 (64-bit).
Setup will install Anaconda3 2019.10 (64-bit) in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder
C:₩Users₩user₩Anaconda3
Browse...
Space required: 2.9GB
Space available: 146.4GB
Anaconda, Inc.
< Back
Next >
Cancel


Anaconda3 2019.10 (64-bit) Setup
ANACONDA
Advanced Installation Options
Customize how Anaconda integrates with Windows
Advanced Options
Add Anaconda to my PATH environment variable
Not recommended. Instead, open Anaconda with the Windows Start menu and select "Anaconda (64-bit)". This "add to PATH" option makes Anaconda get found before previously installed software, but may cause problems requiring you to uninstall and reinstall Anaconda.
Register Anaconda as my default Python 3.7
This will allow other programs, such as Python Tools for Visual Studio PyCharm, Wing IDE, PyDev, and MSI binary packages, to automatically detect Anaconda as the primary Python 3.7 on the system.
Anaconda, Inc.
< Back
Install
Cancel


Anaconda3 2019.10 (64-bit) Setup
ANACONDA
Installing
Please wait while Anaconda3 2019.10 (64-bit) is being installed.
Extract: mpmath-1.1.0-py37_0.conda
Show details
Anaconda, Inc.
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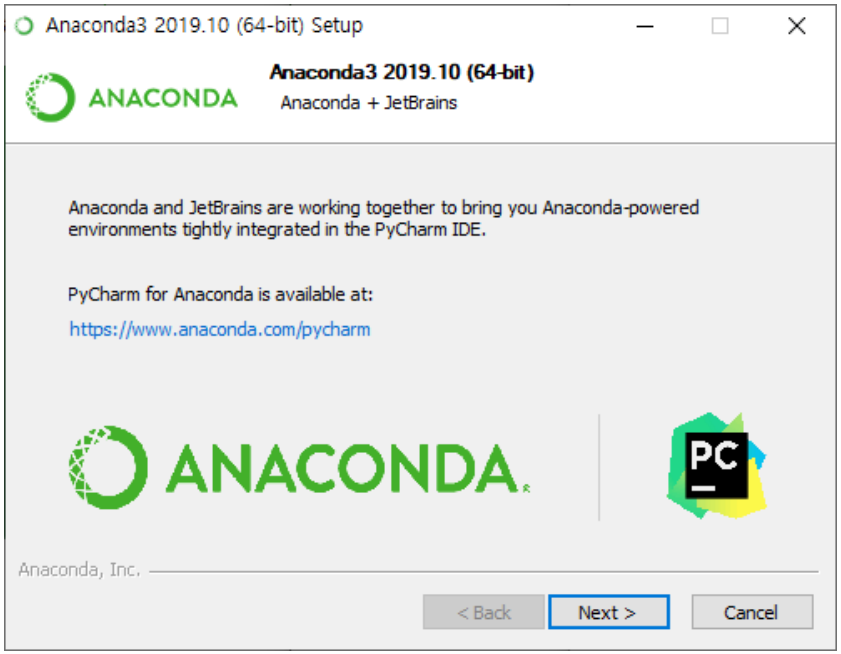
Cancel


Anaconda3 2019.10 (64-bit) Setup
ANACONDA
Anaconda3 2019.10 (64-bit)
Anaconda + JetBrains
Anaconda and JetBrains are working together to bring you Anaconda-powered environments tightly integrated in the PyCharm IDE.
PyCharm for Anaconda is available at:
https://www.anaconda.com/pycharm
ANACONDA.
PC
Anaconda, Inc.
< Back
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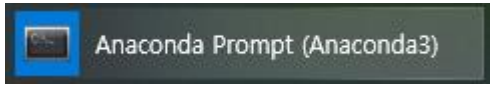
Cancel

- 최신 패키지 업데이트 : Anaconda Prompt (Anaconda3) 선택



  - (base) C:\Users\user>conda update -n base conda
  - (base) C:\Users\user>conda update --all
- 파이썬 버전 확인
  - (base) C:\Users\user>python --version
- 텐서플로우(TensorFlow 2)설치
  - (base) C:\Users\user>pip install tensorflow
- 기타 유틸리티
  - scikit-learn : 파이썬 머신러닝 라이브러리
  - numpy : 고성능의 수치계산 라이브러리. 편리한 벡터 및 행렬 연산 기능
  - scipy : 과학계산용 함수를 모아 놓은 패키지. numpy와 같이 사용
  - matplotlib : 데이터를 챠트나 그래프로 시각화하는 라이브러리
  - pandas : 데이터 처리와 분석을 위한 라이브러리

Jupyter Project

- 대화형 컴퓨팅을 위한 커맨드 쉘
- 40여종 이상의 다양한 언어를 지원
- 브라우저 기반 노트북
  - 코드, 텍스트, 수식, 인라인 플롯, 기타 미디어등을 포함
- 병렬 컴퓨팅을 위한 툴 제공
- **Python** is a requirement (Python 3.3 or greater, or Python 2.7) for installing the Jupyter Notebook itself.
- http://jupyter.org/

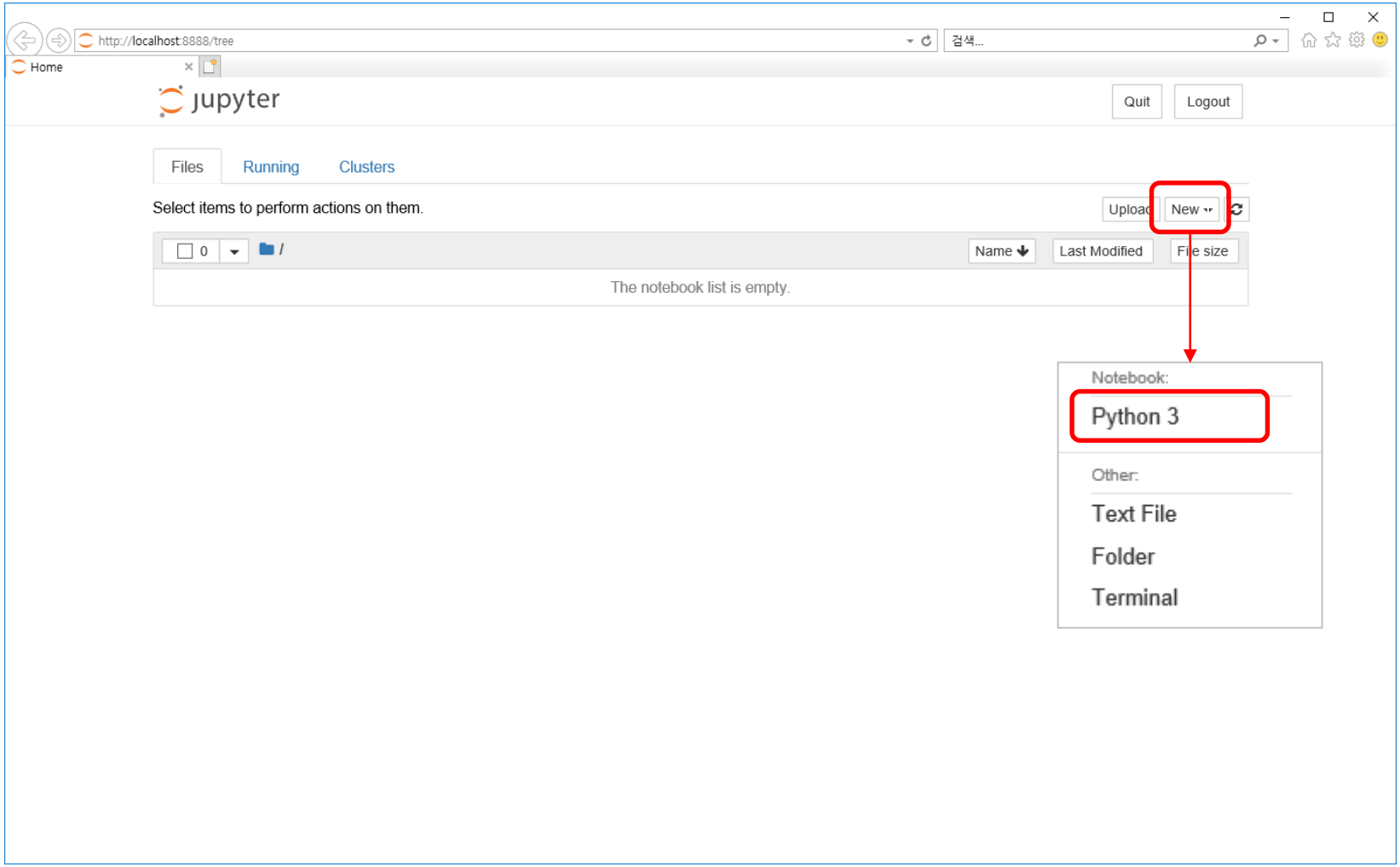
jupyter 소스 root경로 설정

- **(base) C:₩Users₩user>jupyter notebook --generate-config**
  - C:₩Users₩user₩.jupyrt₩jupyter_notebook_config.py 파일이 생성.
  - Text editor로 jupyter_notebook_config.py에서 원하는 경로(root경로)로 수정

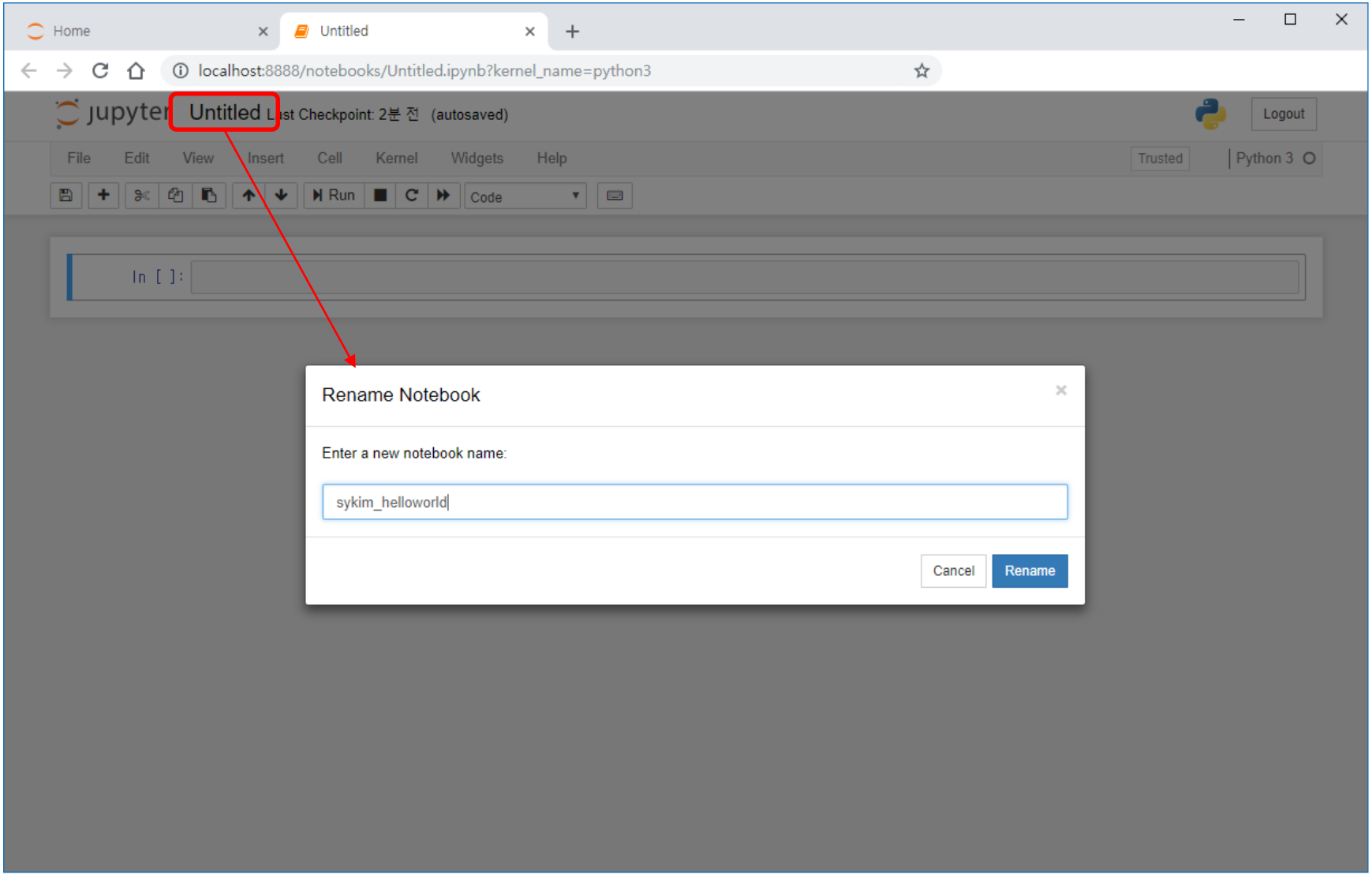
```
201  ## The MathJax.js configuration file that is to be used.
202  #c.NotebookApp.mathjax_config = 'TeX-AMS-MML_HTMLorMML-full,Safe'
203
204  ## A custom url for MathJax.js. Should be in the form of a case-sensitive url to
205  #  MathJax, for example:  /static/components/MathJax/MathJax.js
206  #c.NotebookApp.mathjax_url = ''
207
208  ## Dict of Python modules to load as notebook server extensions.Entry values can
209  #  be used to enable and disable the loading ofthe extensions. The extensions
210  #  will be loaded in alphabetical order.
211  #c.NotebookApp.nbserver_extensions = {}
212
213  ## The directory to use for notebooks and kernels.
214  #c.NotebookApp.notebook_dir = ''
215  c.NotebookApp.notebook_dir = 'D:/python_workspace'
216
217  ## Whether to open in a browser after starting. The specific browser used is
218  #  platform dependent and determined by the python standard library `webbrowser`
219  #  module, unless it is overridden using the --browser (NotebookApp.browser)
220  #  configuration option.
221  #c.NotebookApp.open_browser = True
```

jupyter 실행

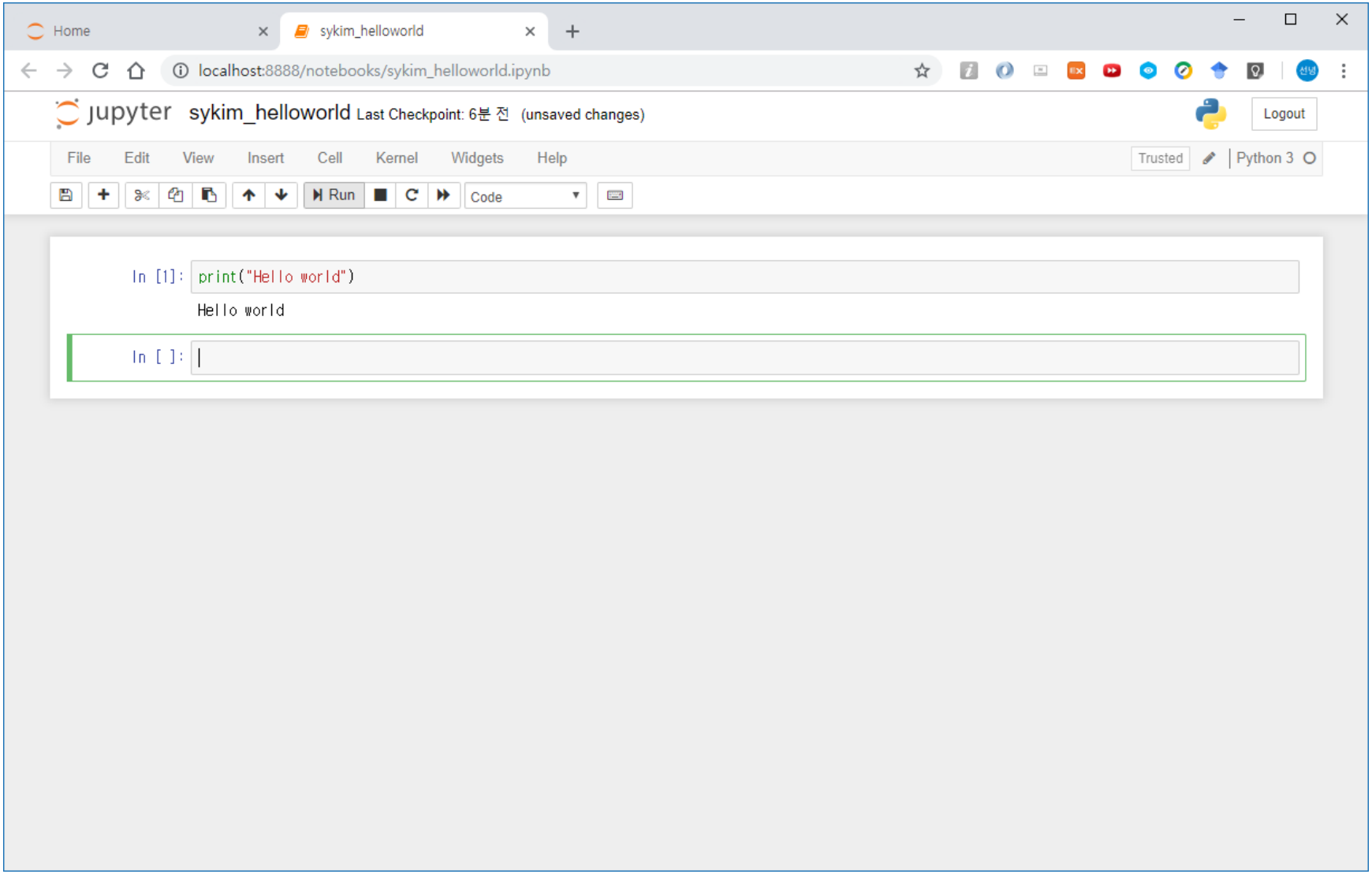
- (base) C:₩Users₩user>jupyter notebook
  - jupyter notebook --notebook-dir=D:/python_ workspace/ →직접 root설정 경우



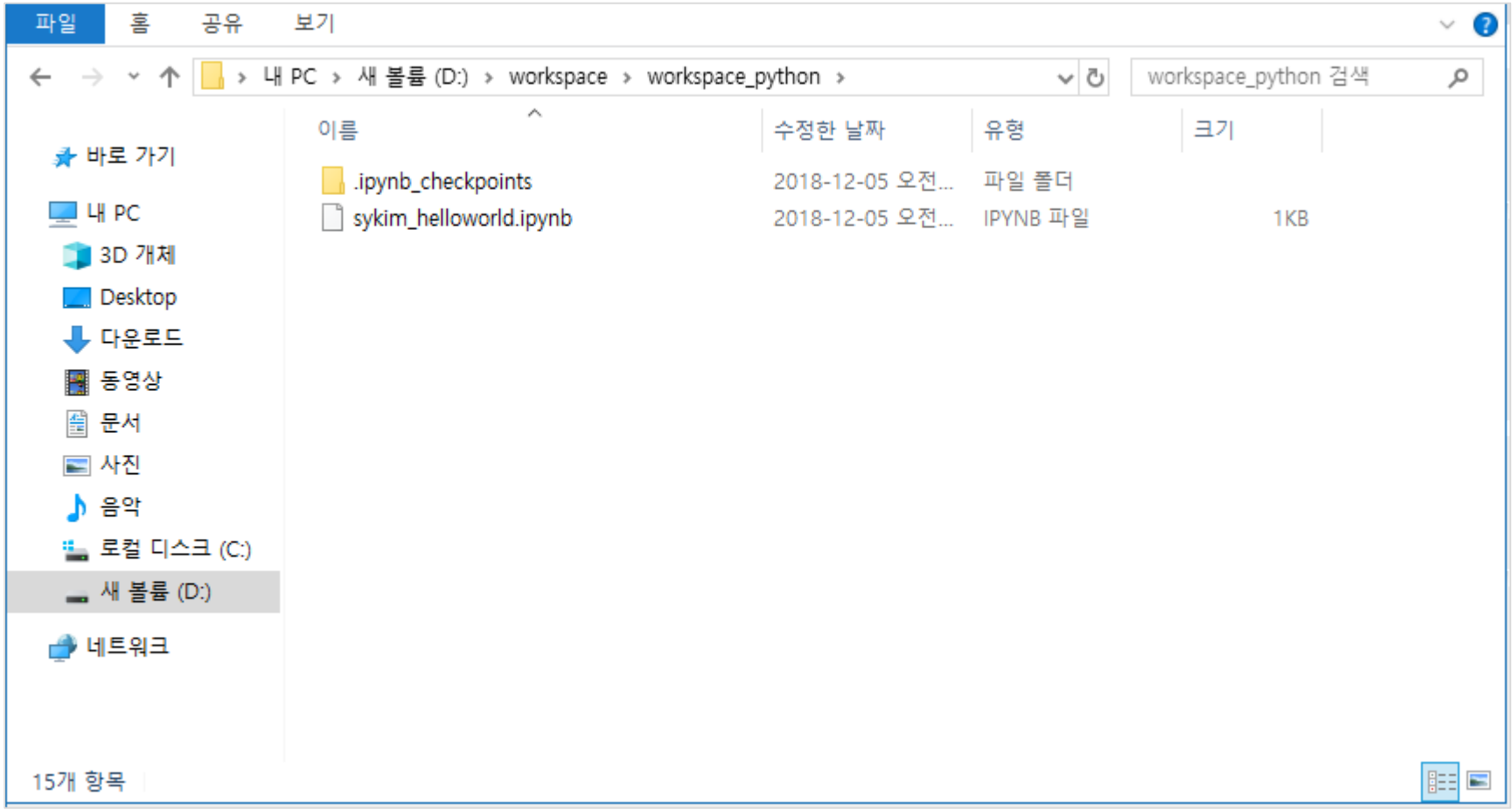
Python 소스명 변경



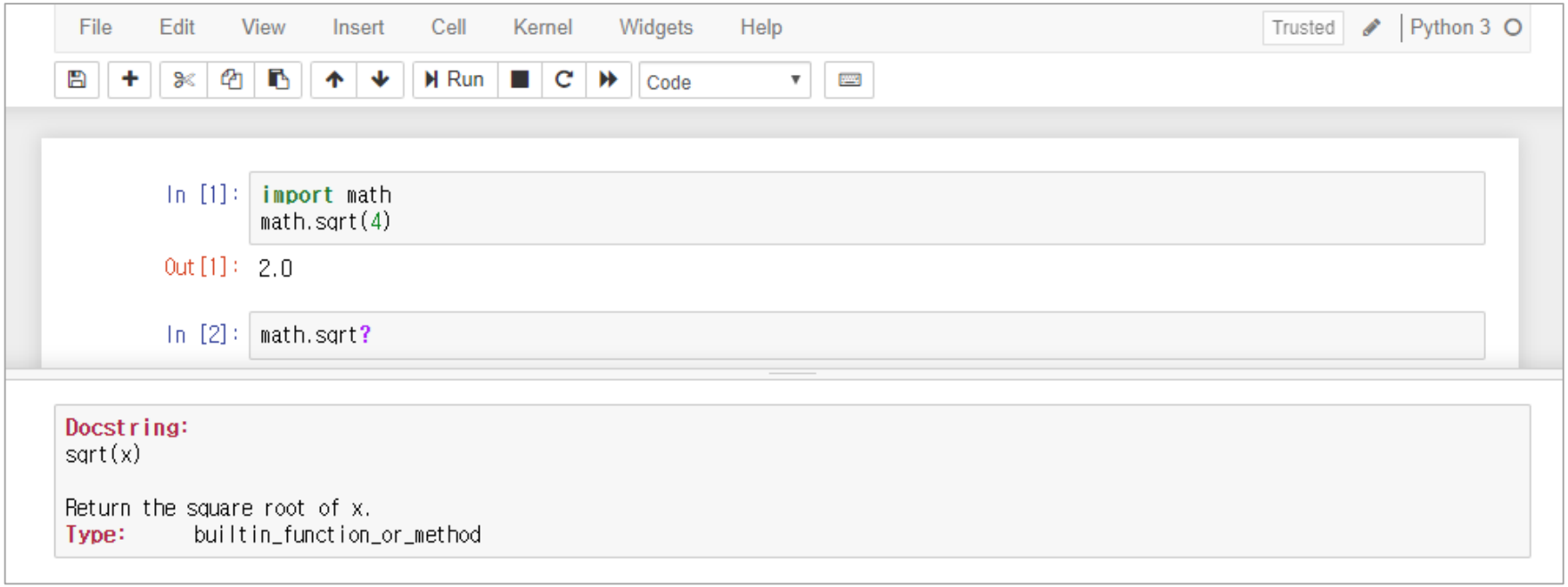
Hello world


Home
sykim_helloworld
localhost:8888/notebooks/sykim_helloworld.ipynb
jupyter sykim_helloworld Last Checkpoint: 6분 전 (unsaved changes)
Logout
File Edit View Insert Cell Kernel Widgets Help
Trusted
Python 3
Run
Code
In [1]: print("Hello world")
Hello world
In [ ]:

소스경로 확인

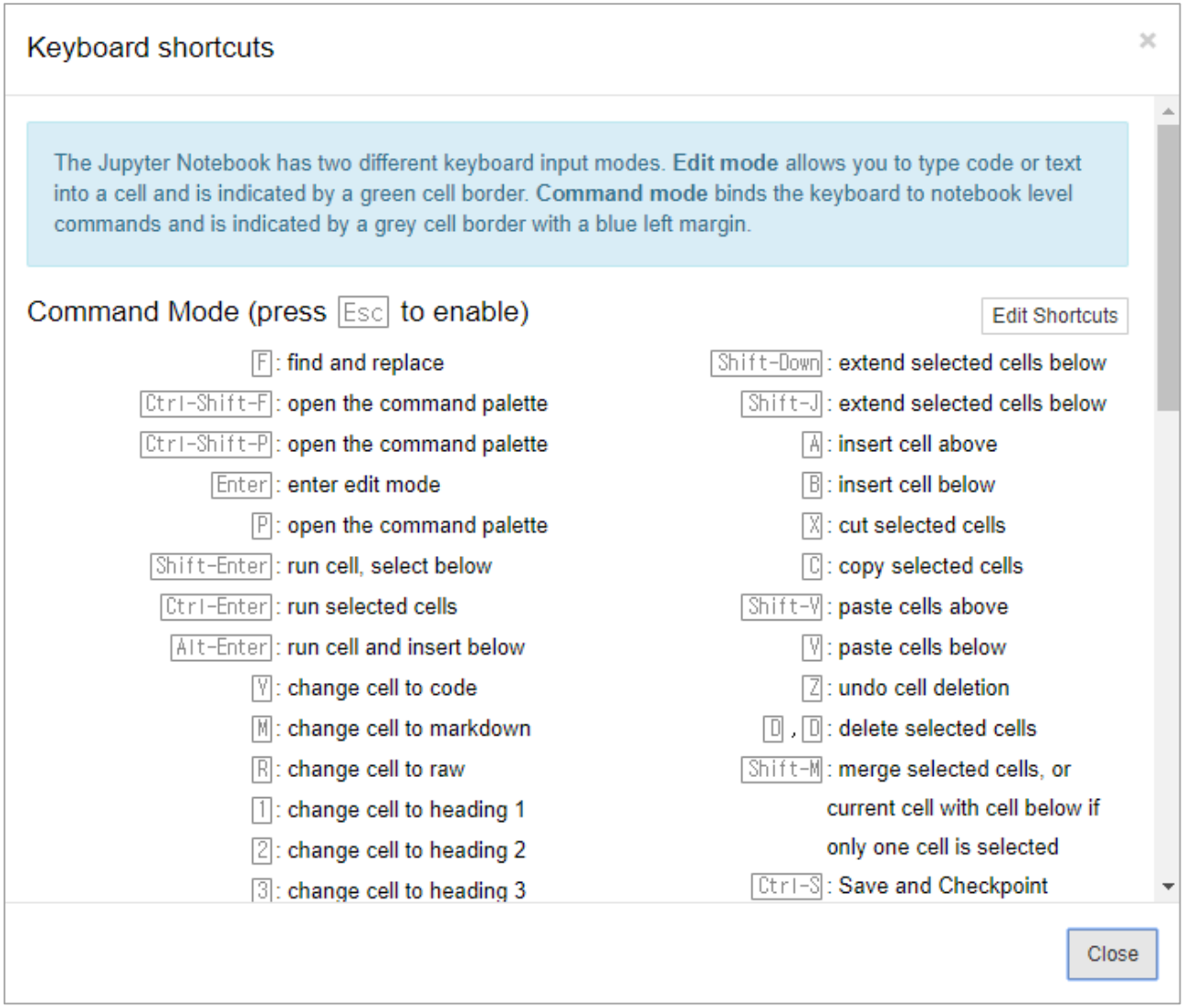

파일
홈
공유
보기
내 PC
새 볼륨 (D:)
workspace
workspace_python
workspace_python 검색
바로 가기
내 PC
3D 개체
Desktop
다운로드
동영상
문서
사진
음악
로컬 디스크 (C:)
새 볼륨 (D:)
네트워크
이름
수정한 날짜
유형
크기
.ipynb_checkpoints
2018-12-05 오전...
파일 폴더
sykim_helloworld.ipynb
2018-12-05 오전...
IPYNB 파일
1KB
15개 항목

Docstring


File Edit View Insert Cell Kernel Widgets Help
Trusted
Python 3
Run
Code
In [1]:
import math
math.sqrt(4)
Out[1]:
2.0
In [2]:
math.sqrt?
Docstring:
sqrt(x)
Return the square root of x.
Type:
builtin_function_or_method

단축키 목록

- [Help] 메뉴 → [Keyboard Shortcuts]



참조 : 독립적으로 파이썬 설치

파이썬(Python) 설치(https://www.python.org/downloads/)

python™

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Looking for Python 2.7? See below for specific releases

Looking for a specific release?

Python releases by version number:

Release version	Release date		Click for more
Python 3.5.9	Nov. 2, 2019	Download	Release Notes
Python 3.5.8	Oct. 29, 2019	Download	Release Notes
Python 2.7.17	Oct. 19, 2019	Download	Release Notes
Python 3.7.5	Oct. 15, 2019	Download	Release Notes
Python 3.8.0	Oct. 14, 2019	Download	Release Notes
Python 3.7.4	July 8, 2019	Download	Release Notes

Windows 64bit 선택

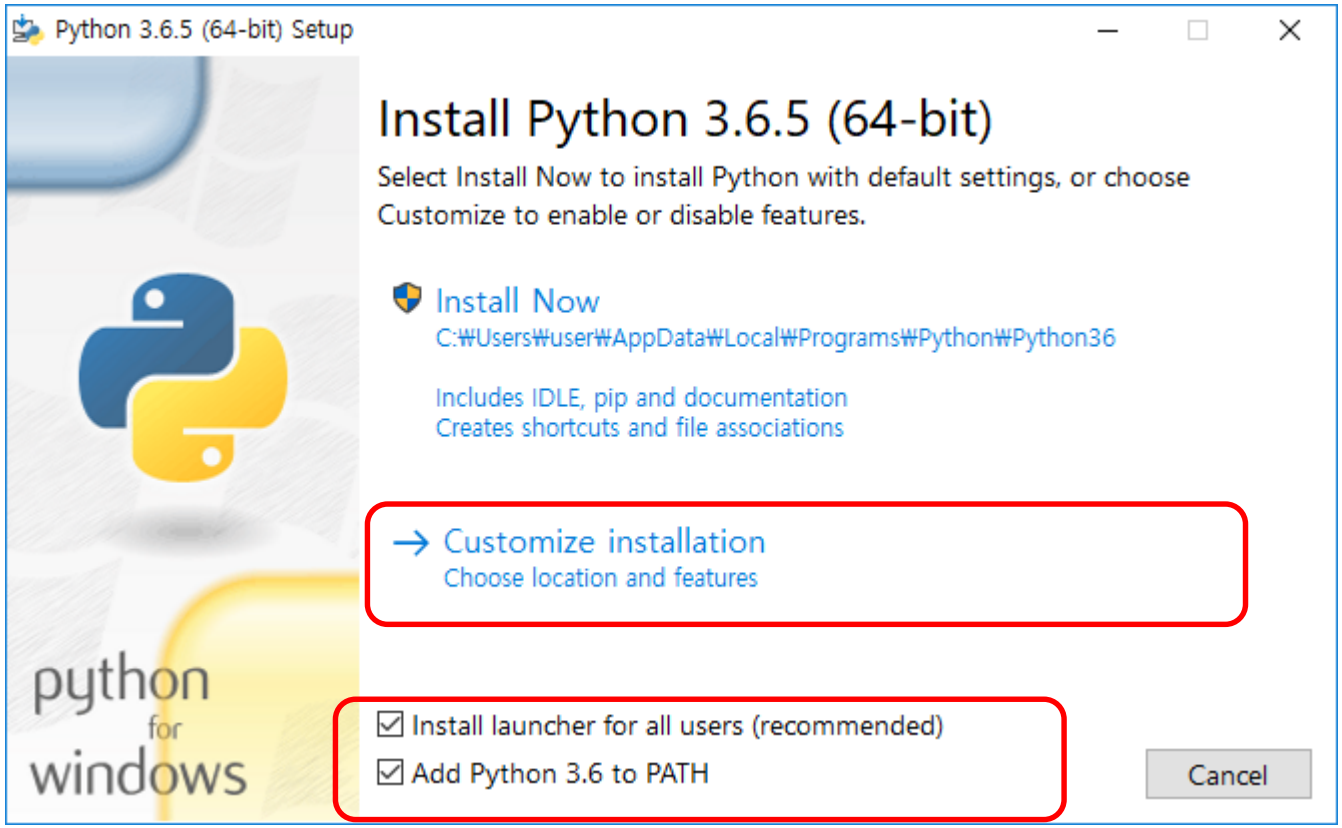
- 브라우저 스크롤링하여 하단참조

Files

Version	Operating System	Description	MD5 Sum	File Size	GPG
Gzipped source tarball	Source release		1cd071f78ff6d9c7524c95303a3057aa	23126230	SIG
XZ compressed source tarball	Source release		08ed8030b1183107c48f2092e79a87e2	17236432	SIG
macOS 64-bit/32-bit installer	Mac OS X	{Deprecated) for Mac OS X 10.6 and later	cd503606638c8e6948a591a9229446e4	35020778	SIG
macOS 64-bit installer	Mac OS X	for macOS 10.9 and later	20d9540e88c6aaba1d2bc1ad5d069359	28198752	SIG
Windows help file	Windows		608cafa250f8baa11a69bbfcb842c0e0	8141193	SIG
Windows x86-64 embeddable zip file	Windows	for AMD64/EM64T/x64	436b0f803d2a0b393590030b1cd59853	7500597	SIG
Windows x86-64 executable installer	Windows	for AMD64/EM64T/x64	697f7a884e80ccaa9dff3a77e979b0f8	26777448	SIG
Windows x86-64 web-based installer	Windows	for AMD64/EM64T/x64	b8b6e5ce8c27c20bfd28f1366ddf8a2f	1363032	SIG
Windows x86 embeddable zip file	Windows		726877d1a1f5a7dc68f6a4fa48964cd1	6745126	SIG
Windows x86 executable installer	Windows		cfe9a828af6111d5951b74093d70ee89	25766192	SIG
Windows x86 web-based installer	Windows		ea946f4b76ce63d366d6ed0e32c11370	1324872	SIG

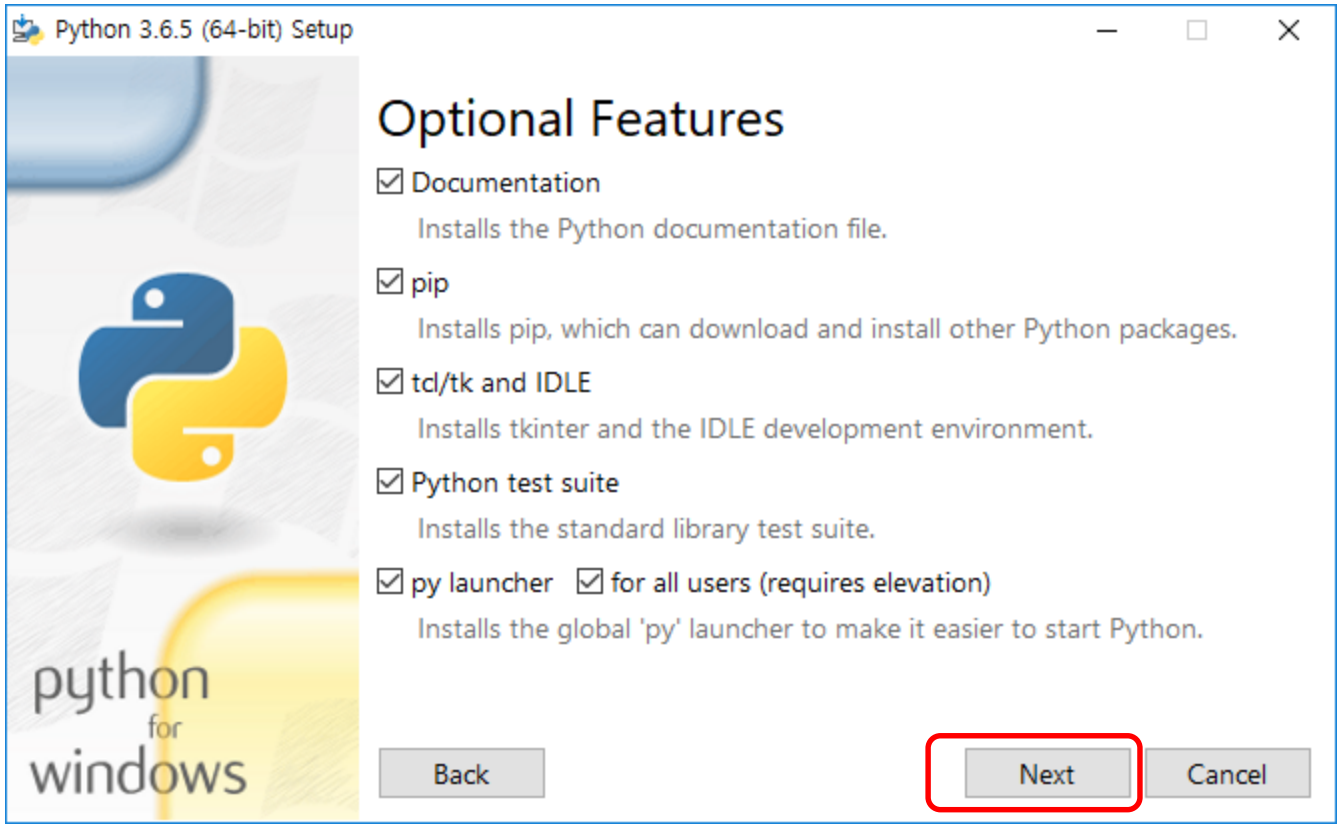
Customize installation

- 반드시 체크 – 이미지 변경(3.7.5형태로)
  - Install launcher for all users(recommended)
  - Add Pyhthon 3.6 to PATH



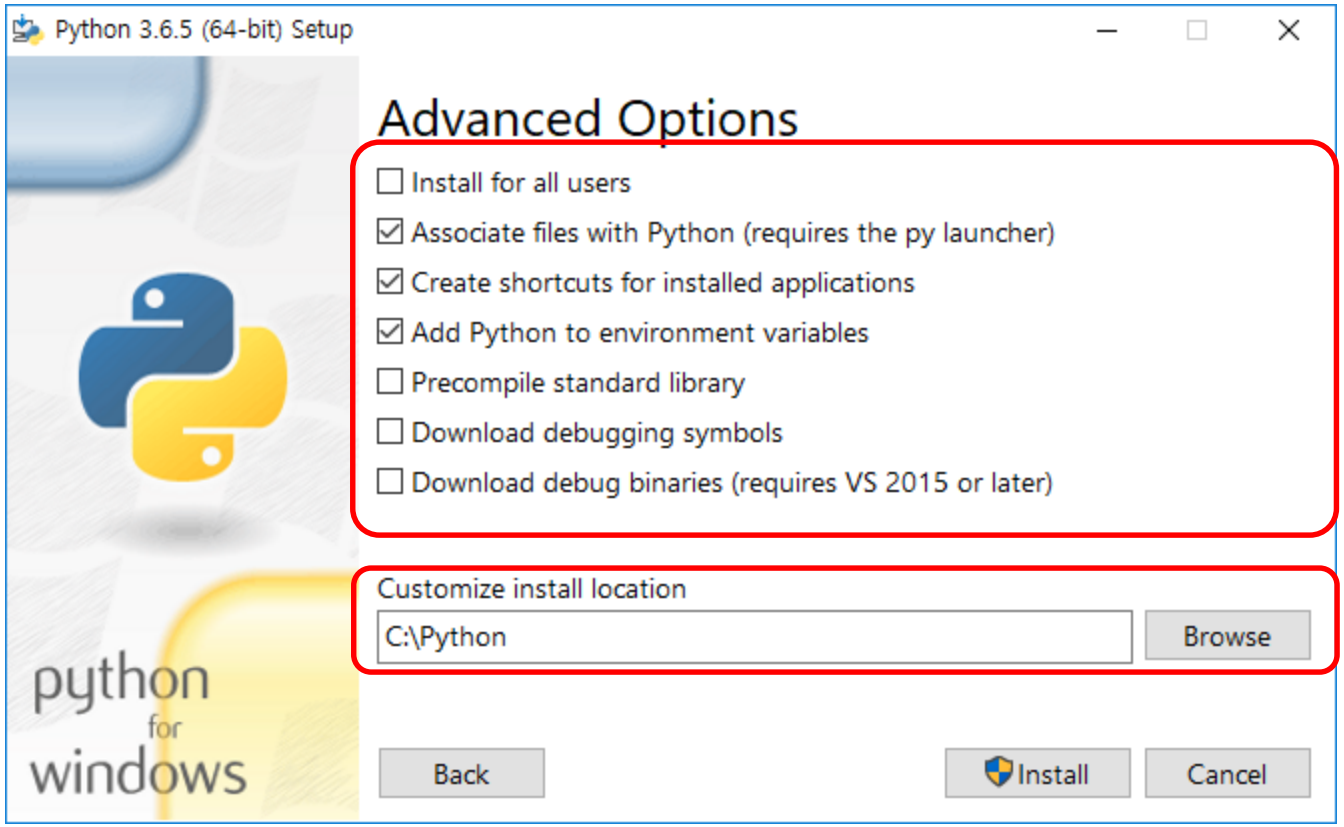
Optional Features

- 파이썬 설치(Python Install)



Advanced Options

- 파이썬 설치(Python Install)



Setup Progress