TensorFlow 2.0 Beta on Windows10

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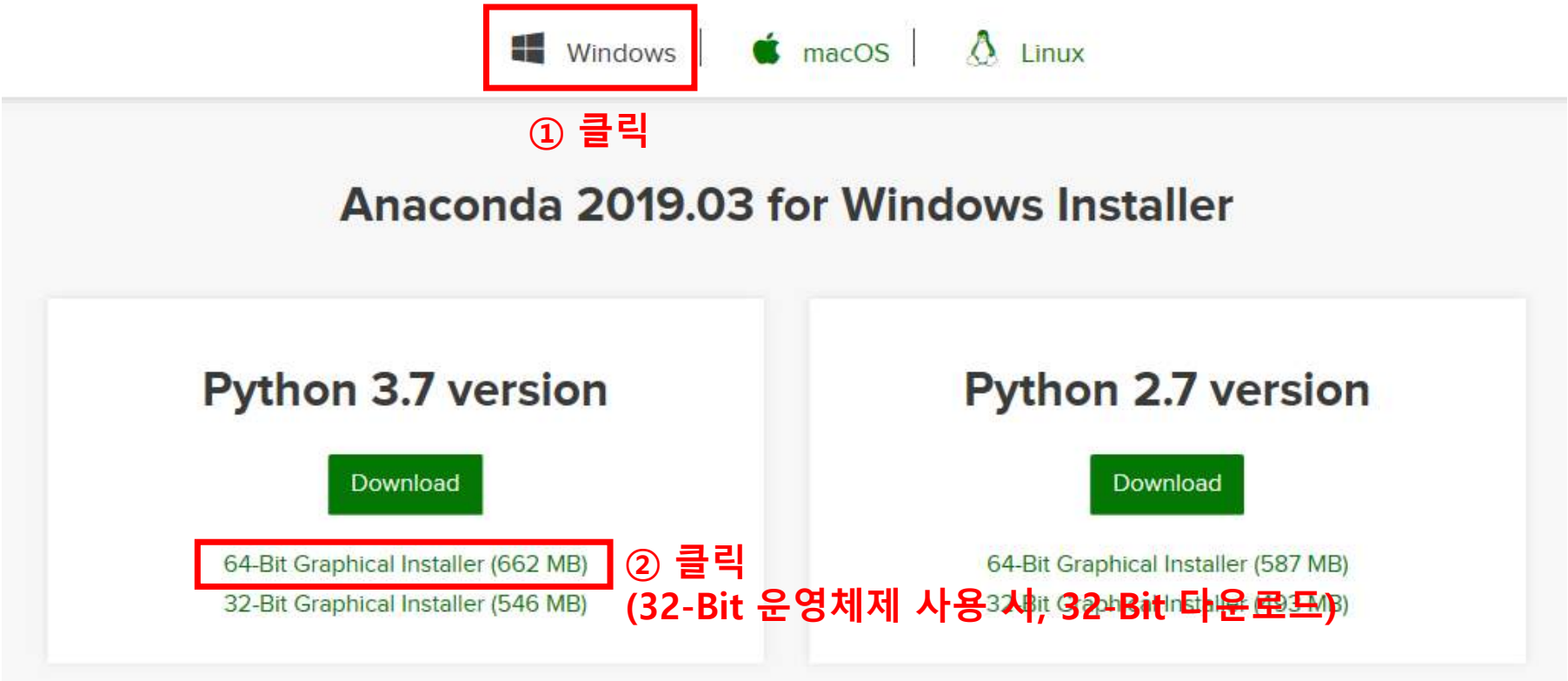
2019.7

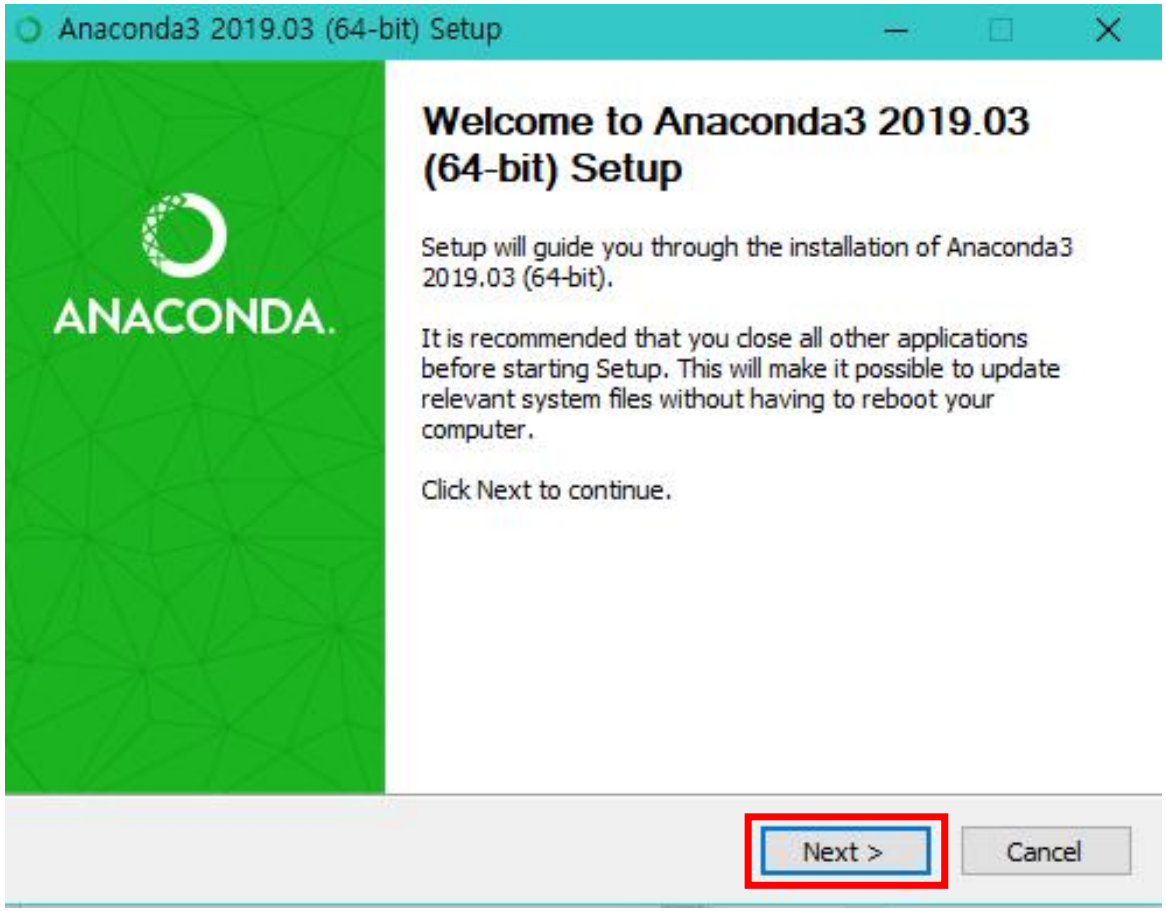
Step 1. Anaconda Install

- Anaconda (Python 3.7)

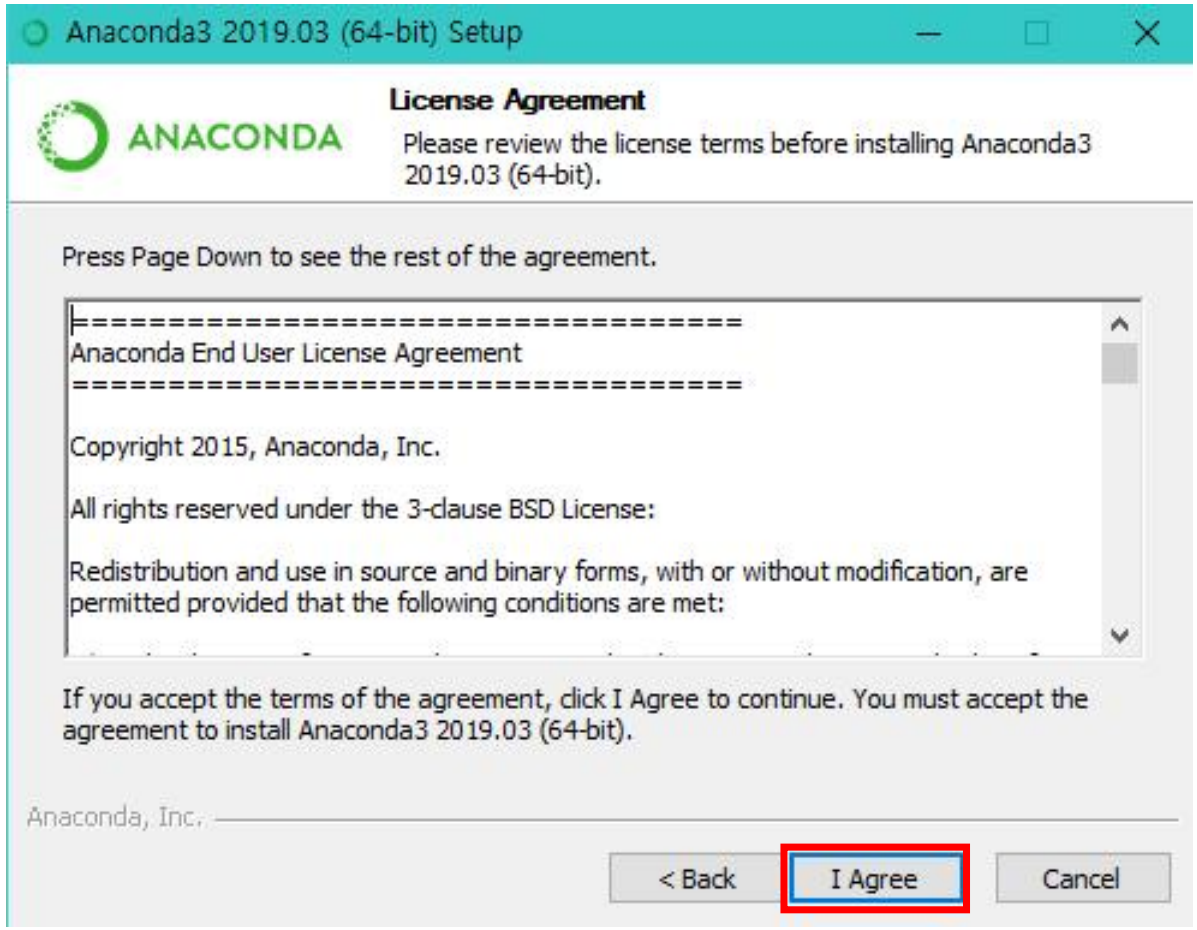
https://www.anaconda.com/distribution/#download-section



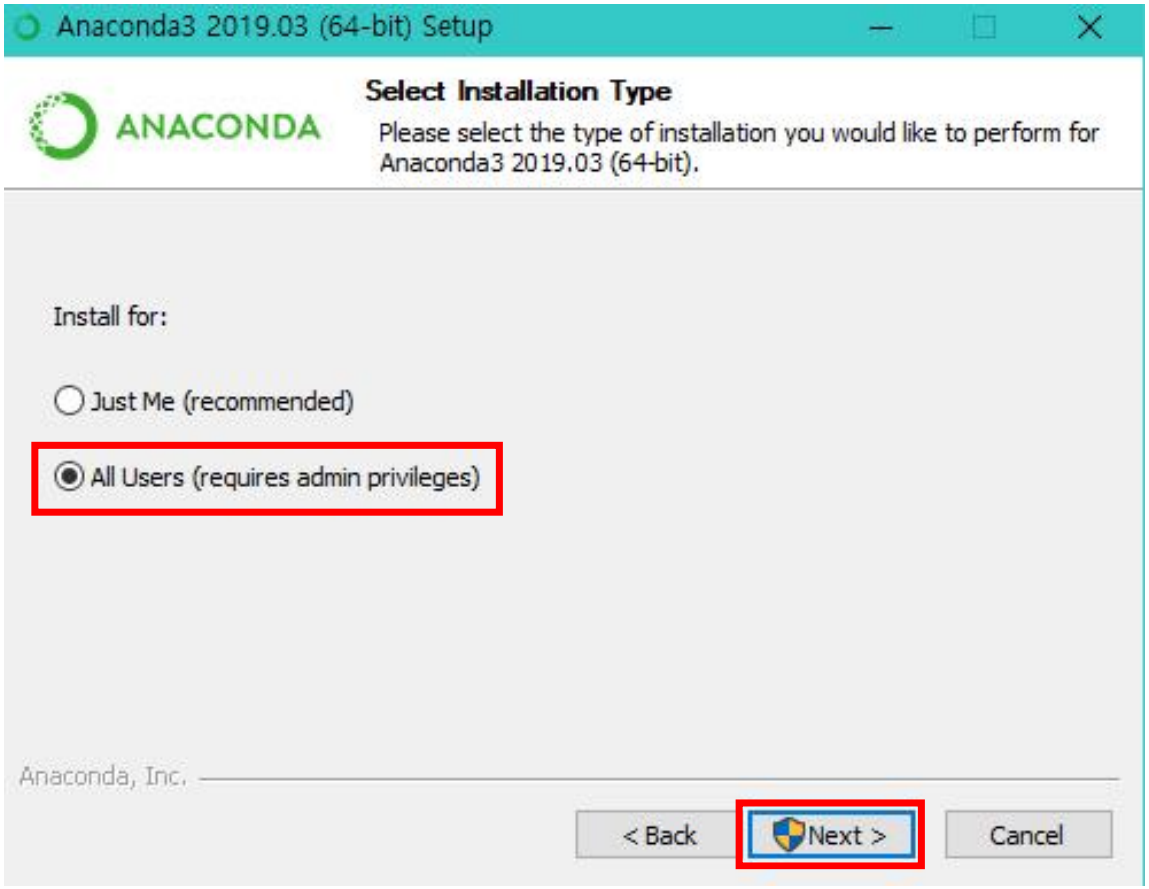
Step 1. Anaconda Install



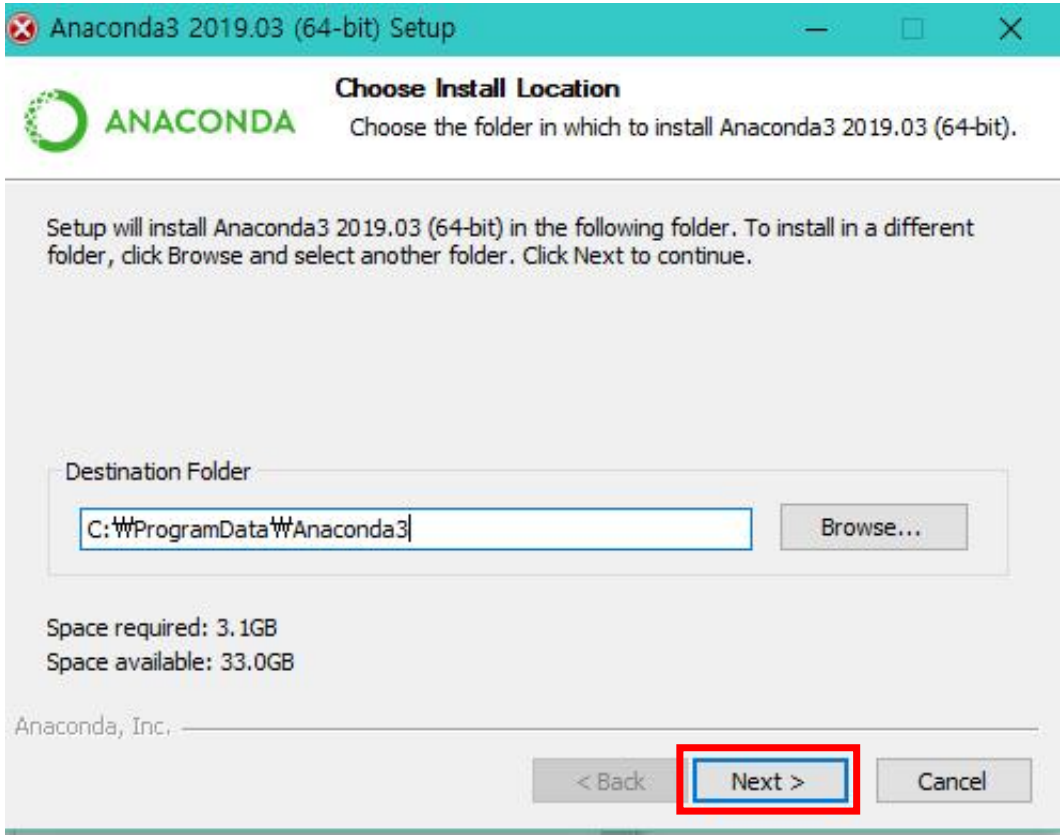
Step 1. Anaconda Install



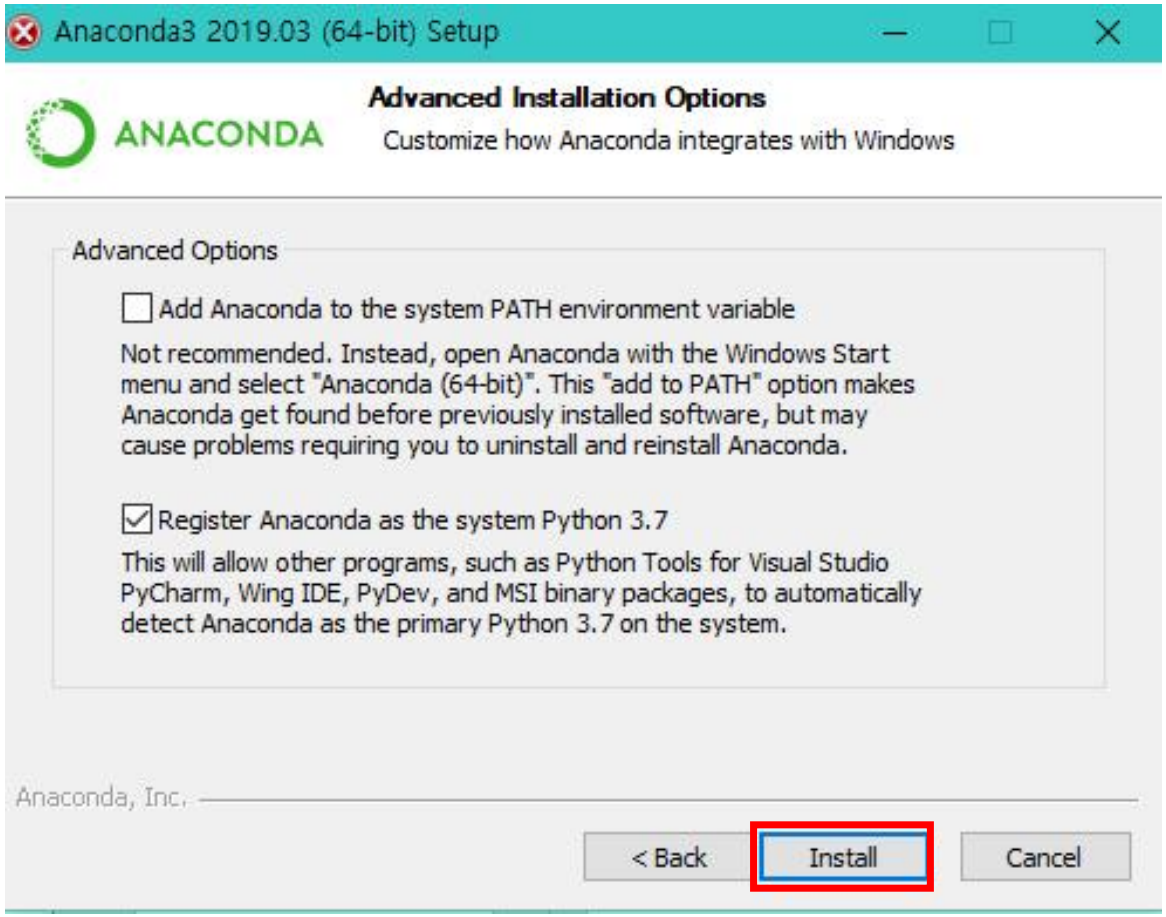
Step 1. Anaconda Install



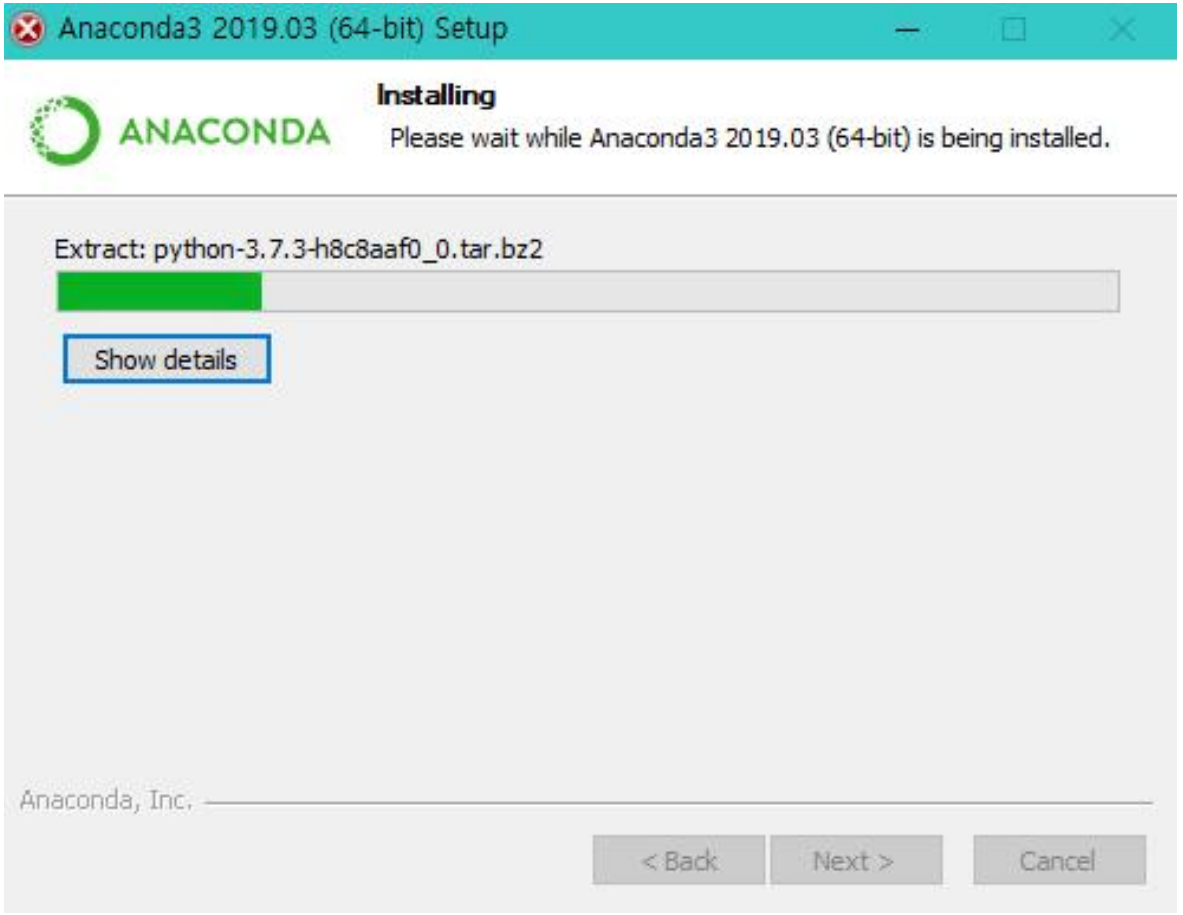
Step 1. Anaconda Install



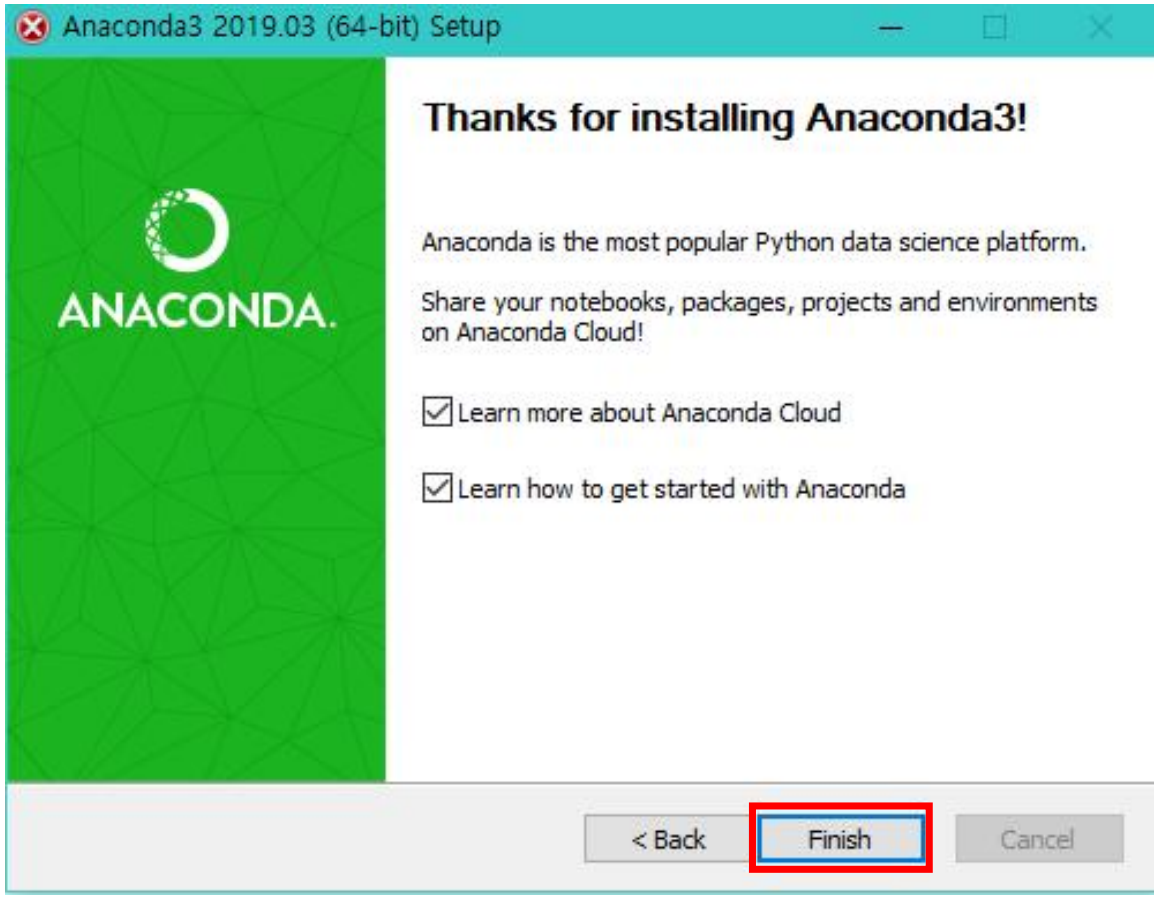
Step 1. Anaconda Install



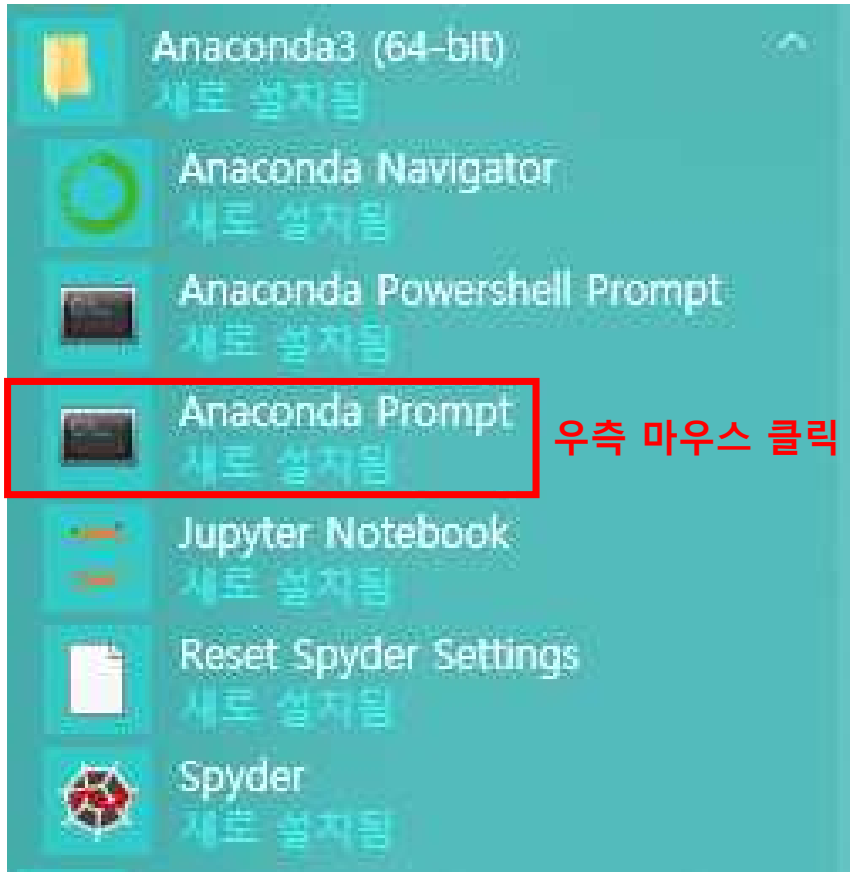
Step 1. Anaconda Install

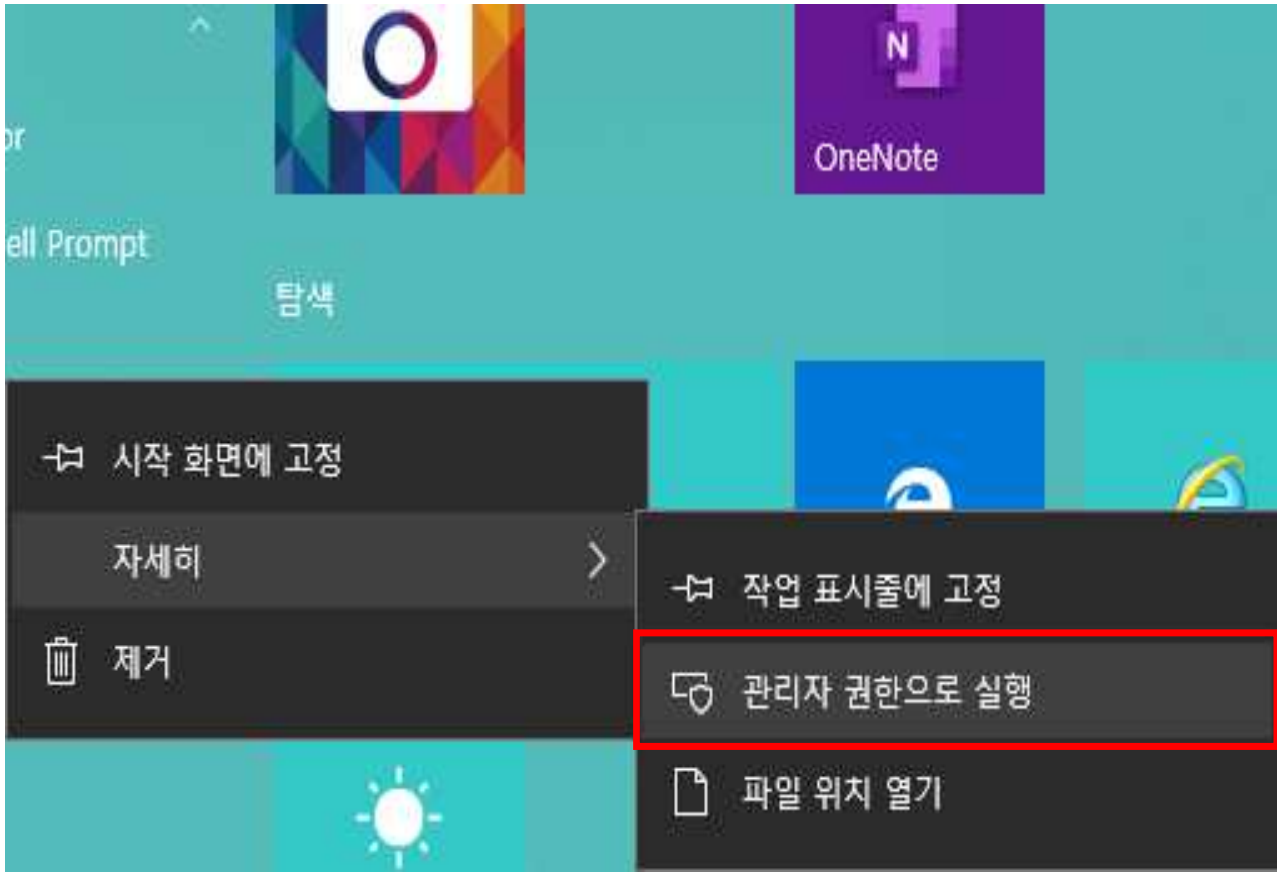


Step 1. Anaconda Install

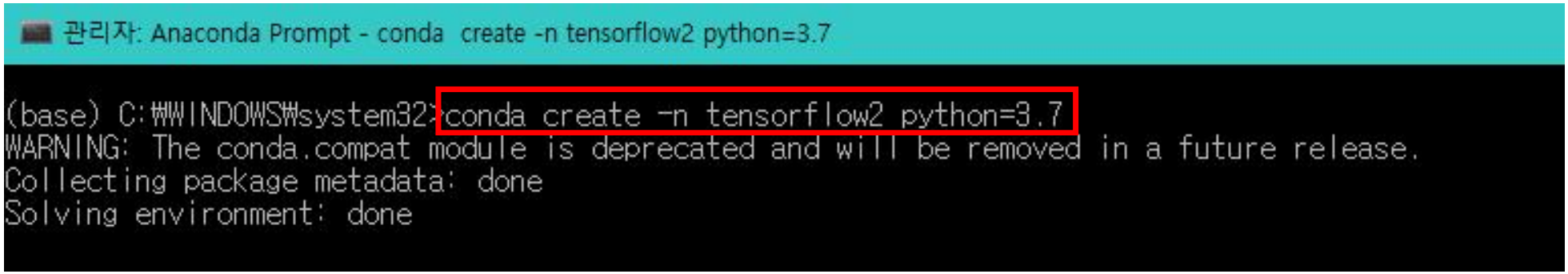


Step 2. Create Environment





Step 2. Create Environment



명령어 입력

conda create –n tensorflow2 python=3.7

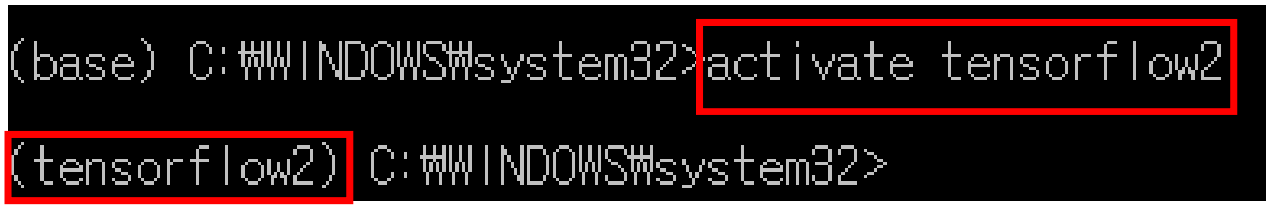
Step 2. Create Environment

```
The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    ca-certificates-2019.5.15  |                0         166 KB
    certifi-2019.6.16          |            py37_0         155 KB
    openssl-1.1.1c             |       he774522_1         5.7 MB
    pip-19.1.1                 |            py37_0         1.8 MB
    python-3.7.3               |       h8c8aaf0_1        17.8 MB
    setuptools-41.0.1          |            py37_0         680 KB
    sqlite-3.28.0              |       he774522_0         945 KB
    vs2015_runtime-14.15.26706 |       h3a45250_4         2.4 MB
    wheel-0.33.4               |            py37_0          57 KB
    ------------------------------------------------------------
                                           Total:        29.6 MB

The following NEW packages will be INSTALLED:

  ca-certificates    pkgs/main/win-64::ca-certificates-2019.5.15-0
  certifi            pkgs/main/win-64::certifi-2019.6.16-py37_0
  openssl            pkgs/main/win-64::openssl-1.1.1c-he774522_1
  pip                pkgs/main/win-64::pip-19.1.1-py37_0
  python             pkgs/main/win-64::python-3.7.3-h8c8aaf0_1
  setuptools         pkgs/main/win-64::setuptools-41.0.1-py37_0
  sqlite             pkgs/main/win-64::sqlite-3.28.0-he774522_0
  vc                 pkgs/main/win-64::vc-14.1-h0510ff6_4
  vs2015_runtime     pkgs/main/win-64::vs2015_runtime-14.15.26706-h3a45250_4
  wheel              pkgs/main/win-64::wheel-0.33.4-py37_0
  wincertstore       pkgs/main/win-64::wincertstore-0.2-py37_0


Proceed ([y]/n)? y   명령어 입력  y
```

Step 2. Create Environment

```
Downloading and Extracting Packages
certifi-2019.6.16    | 155 KB    | ######################################################################################## | 100%
wheel-0.33.4         | 57 KB     | ######################################################################################## | 100%
vs2015_runtime-14.15 | 2.4 MB    | ######################################################################################## | 100%
pip-19.1.1           | 1.8 MB    | ######################################################################################## | 100%
openssl-1.1.1c       | 5.7 MB    | ######################################################################################## | 100%
setuptools-41.0.1    | 680 KB    | ######################################################################################## | 100%
sqlite-3.28.0        | 945 KB    | ######################################################################################## | 100%
python-3.7.3         | 17.8 MB   | ######################################################################################## | 100%
ca-certificates-2019 | 166 KB    | ######################################################################################## | 100%
Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate tensorflow2
#
# To deactivate an active environment, use
#
#     $ conda deactivate


(base) C:₩WINDOWS₩system32>
```

Step 3. Activate Environment



명령어 입력
activate tensorflow2

코드 실습을 진행할 때, 'tensorflow2' 가상환경을 사용

Step 4. TensorFlow 2.0 Beta Install

```
(tensorflow2) C:₩WINDOWS₩system32>pip install tensorflow==2.0.0-beta1
Collecting tensorflow==2.0.0-beta1
  Downloading https://files.pythonhosted.org/packages/24/2c/373d2847538fdd65742ad19df23946e0d0a8f1df7f5f0c6bce6e9b293088
/tensorflow-2.0.0b1-cp37-cp37m-win_amd64.whl (55.1MB)
     |                                | 38.6MB 6.8MB/s eta 0:00:03
```

명령어 입력

pip install tensorflow==2.0.0-beta1

Step 4. TensorFlow 2.0 Beta Install

```
Requirement already satisfied: setuptools in c:₩programdata₩anaconda3₩envs₩tensorflow2₩lib₩site-packages (from protobuf>
=3.6.1->tensorflow==2.0.0-beta1) (41.0.1)
Collecting markdown>=2.6.8 (from tb-nightly<1.14.0a20190604,>=1.14.0a20190603->tensorflow==2.0.0-beta1)
  Downloading https://files.pythonhosted.org/packages/c0/4e/fd492e91abdc2d2fcb70ef453064d980688762079397f779758e055f6575
/Markdown-3.1.1-py2.py3-none-any.whl (87kB)
     |████████████████████████████████| 92kB 1.5MB/s
Collecting werkzeug>=0.11.15 (from tb-nightly<1.14.0a20190604,>=1.14.0a20190603->tensorflow==2.0.0-beta1)
  Downloading https://files.pythonhosted.org/packages/9f/57/92a497e38161ce40606c27a86759c6b92dd34fcdb33f64171ec559257c02
/Werkzeug-0.15.4-py2.py3-none-any.whl (327kB)
     |████████████████████████████████| 327kB 3.3MB/s
Collecting h5py (from keras-applications>=1.0.6->tensorflow==2.0.0-beta1)
  Downloading https://files.pythonhosted.org/packages/4f/1e/89aa610afce8df6fd1f12647600a05e902238587ae6375442a3164b59d51
/h5py-2.9.0-cp37-cp37m-win_amd64.whl (2.4MB)
     |████████████████████████████████| 2.4MB 6.4MB/s
Building wheels for collected packages: absl-py, gast, termcolor, wrapt
  Building wheel for absl-py (setup.py) ... done
  Stored in directory: C:₩Users₩ngsk0₩AppData₩Local₩pip₩Cache₩wheels₩ee₩98₩38₩46cbcc5a93cfea5492d19c38562691ddb23b940176
c14f7b48
  Building wheel for gast (setup.py) ... done
  Stored in directory: C:₩Users₩ngsk0₩AppData₩Local₩pip₩Cache₩wheels₩5c₩2e₩7e₩a1d4d4fcebe6c381f378ce7743a3ced3699feb89bc
fbdadadd
  Building wheel for termcolor (setup.py) ... done
  Stored in directory: C:₩Users₩ngsk0₩AppData₩Local₩pip₩Cache₩wheels₩7c₩06₩54₩bc84598ba1daf8f970247f550b175aaaee85f68b4b
0c5ab2c6
  Building wheel for wrapt (setup.py) ... done
  Stored in directory: C:₩Users₩ngsk0₩AppData₩Local₩pip₩Cache₩wheels₩d7₩de₩2e₩efa132238792efb6459a96e85916ef8597fcb3d2ae
51590dfd
Successfully built absl-py gast termcolor wrapt
Installing collected packages: six, absl-py, numpy, protobuf, grpcio, google-pasta, keras-preprocessing, gast, astor, ma
rkdown, werkzeug, tb-nightly, termcolor, wrapt, tf-estimator-nightly, h5py, keras-applications, tensorflow
Successfully installed absl-py-0.7.1 astor-0.8.0 gast-0.2.2 google-pasta-0.1.7 grpcio-1.22.0 h5py-2.9.0 keras-applicatio
ns-1.0.8 keras-preprocessing-1.1.0 markdown-3.1.1 numpy-1.16.4 protobuf-3.8.0 six-1.12.0 tb-nightly-1.14.0a20190603 tens
orflow-2.0.0b1 termcolor-1.1.0 tf-estimator-nightly-1.14.0.dev2019060501 werkzeug-0.15.4 wrapt-1.11.2

(tensorflow2) C:₩WINDOWS₩system32>
```

Step 5. TensorFlow 2.0 Beta Test

```
(tensorflow2) C:₩WINDOWS₩system32>python
Python 3.7.3 (default, Apr 24 2019, 15:29:51) [MSC v.1915 64 bit (AMD64)] :: Anaconda, Inc. on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import tensorflow as tf
>>> tf.__version__
'2.0.0-beta1'
```

명령어 입력

```
python
>>> import tensorflow as tf
>>> tf.__version__
'2.0.0-beta1'
```

Step 5. TensorFlow 2.0 Beta Test

```
(tensorflow2) C:₩WINDOWS₩system32>python
Python 3.7.3 (default, Apr 24 2019, 15:29:51) [MSC v.1915 64 bit (AMD64)] :: Anaconda, Inc. on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import tensorflow as tf
>>> t=tf.nn.sigmoid([0.])
2019-07-05 19:42:56.840293: I tensorflow/core/platform/cpu_feature_guard.cc:142] Your CPU supports instructions that thi
s TensorFlow binary was not compiled to use: AVX2
>>> print(t)
tf.Tensor([0.5], shape=(1,), dtype=float32)
```

명령어 입력

```
python
>>> import tensorflow as tf
>>> t=tf.nn.sigmoid([0.])
>>> print(t)
tf.Tensor([0.5], shape=(1,), dtype=float32)
```

Step 5. TensorFlow 2.0 Beta Test

```
(tensorflow2) C:₩WINDOWS₩system32>python
Python 3.7.3 (default, Apr 24 2019, 15:29:51) [MSC v.1915 64 bit (AMD64)] :: Anaconda, Inc. on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import tensorflow as tf
>>> w=tf.Variable(2.0)
2019-07-05 19:48:16.117787: I tensorflow/core/platform/cpu_feature_guard.cc:142] Your CPU supports instructions that thi
s TensorFlow binary was not compiled to use: AVX2
>>> b=tf.Variable(1.0)
>>> for x in [1.0, 2.0, 3.0]:
...     z=w*x+b
...     print('x=',x,'z=',float(z))
...
x= 1.0 z= 3.0
x= 2.0 z= 5.0
x= 3.0 z= 7.0
```

명령어 입력

```
python
>>> import tensorflow as tf
>>> w=tf.Variable(2.)
>>> b=tf.Variable(1.0)
>>> for x in [1.0, 2.0, 3.0]:
... (Tab)    z=w*x+b
... (Tab)    print('x=',x,'z=',float(z))
... (Enter)
```

Tensor 연산결과

```
x= 1.0 z= 3.0
x= 2.0 z= 5.0
x= 3.0 z= 7.0
```

End