

TensorFlow 2.0 Beta on Windows10

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Step 1. Anaconda Install

- Anaconda (Python 3.7)

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



① 클릭

Anaconda 2019.03 for Windows Installer

Python 3.7 version

Download

64-Bit Graphical Installer (662 MB)

32-Bit Graphical Installer (546 MB)

② 클릭

(32-Bit 운영체제 사용 시, 32-Bit 다운로드)

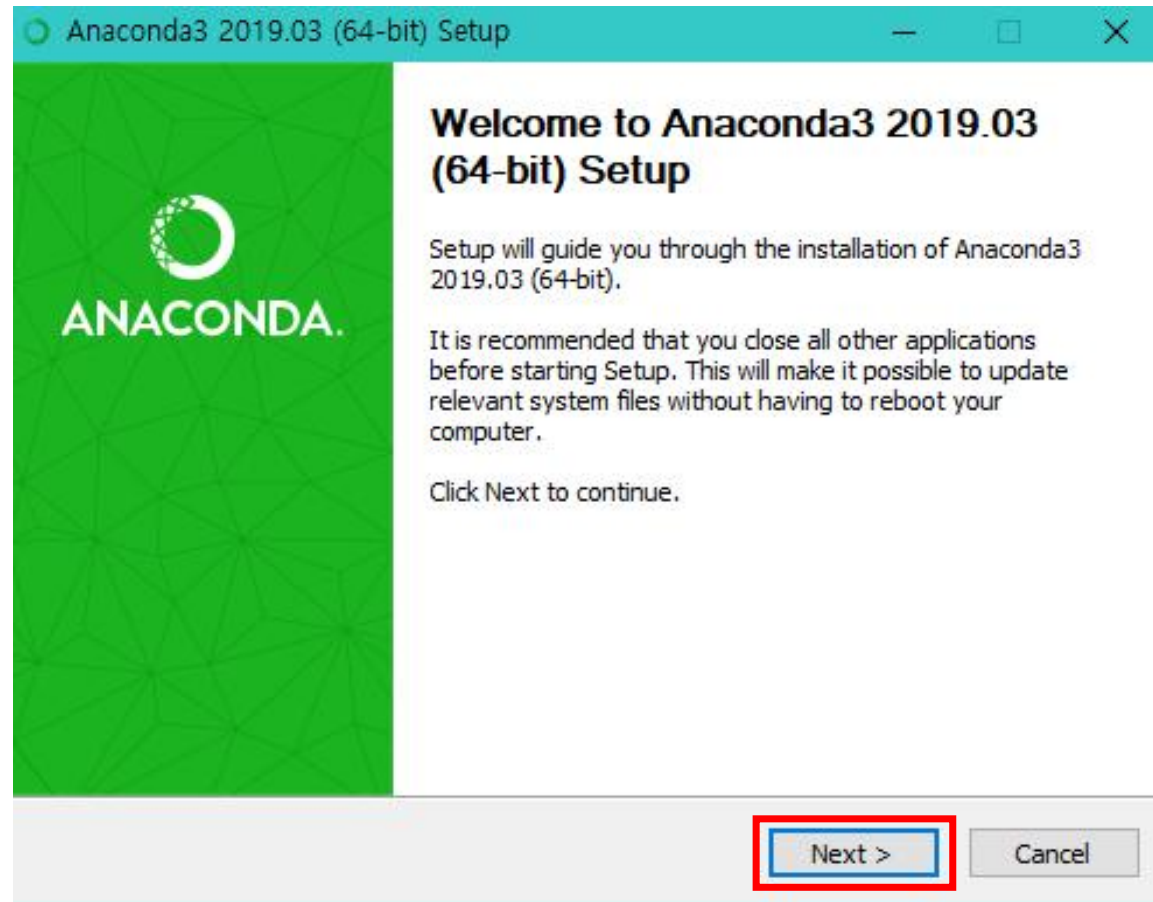
Python 2.7 version

Download

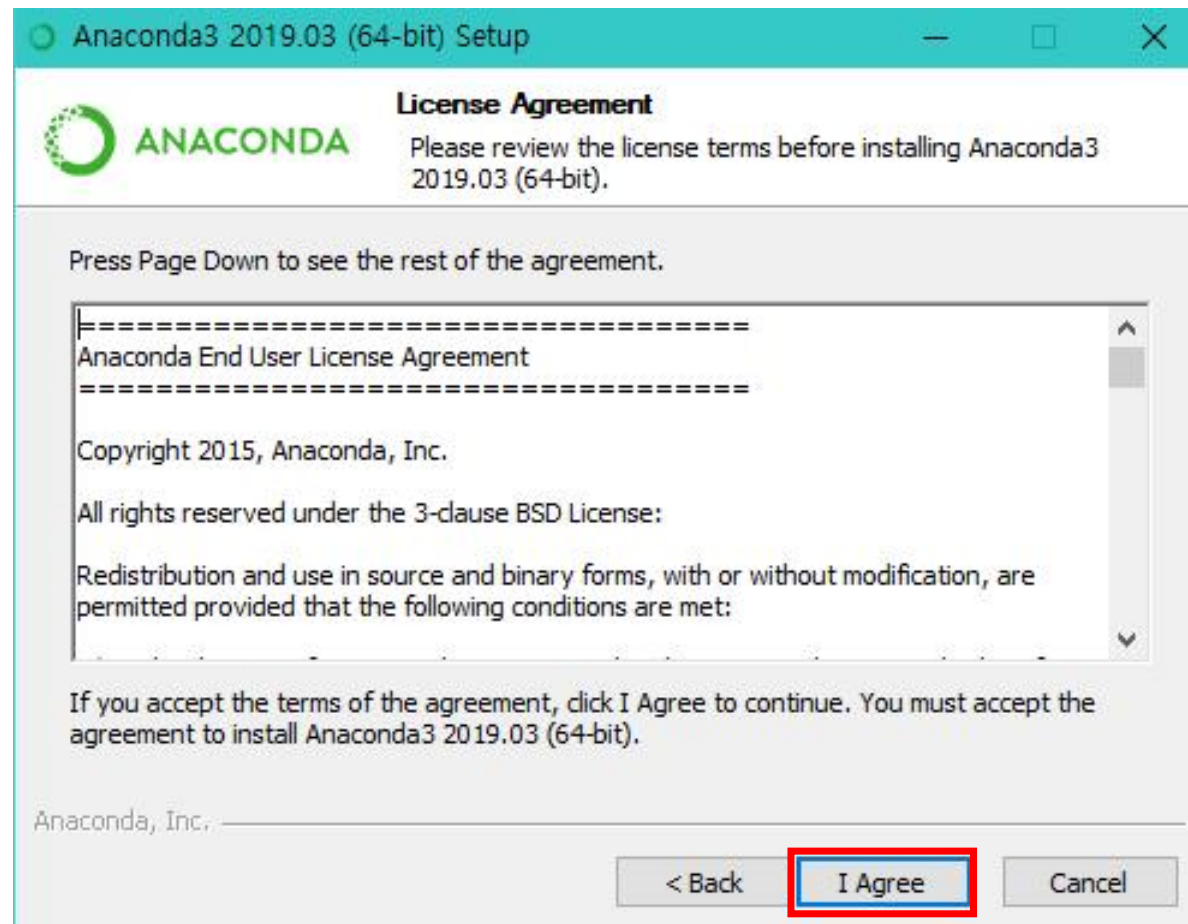
64-Bit Graphical Installer (587 MB)

32-Bit Graphical Installer (493 MB)

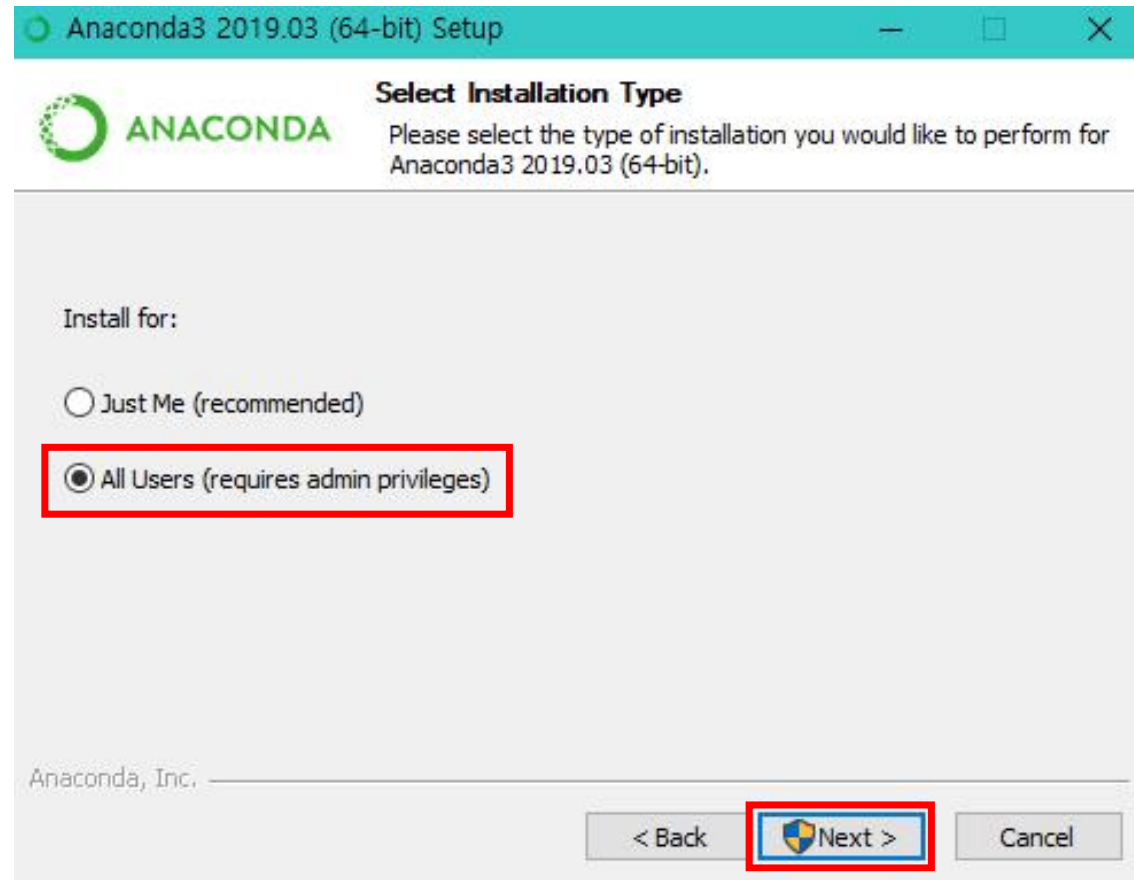
Step 1. Anaconda Install



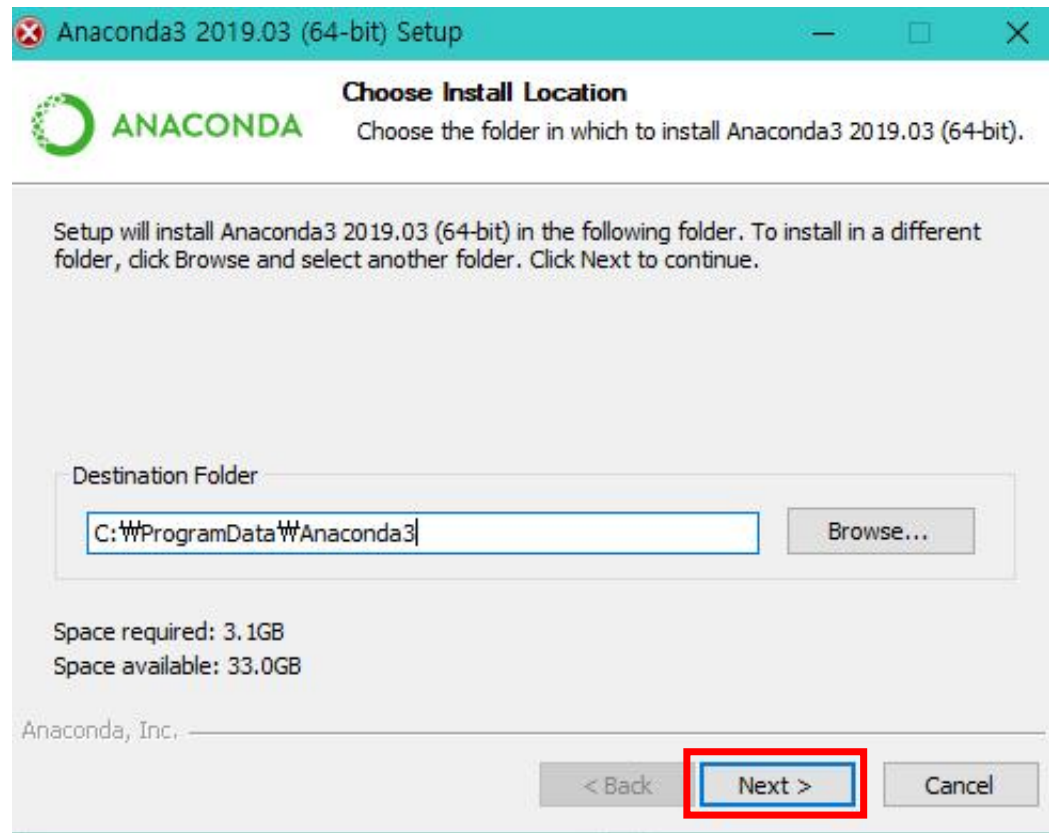
Step 1. Anaconda Install



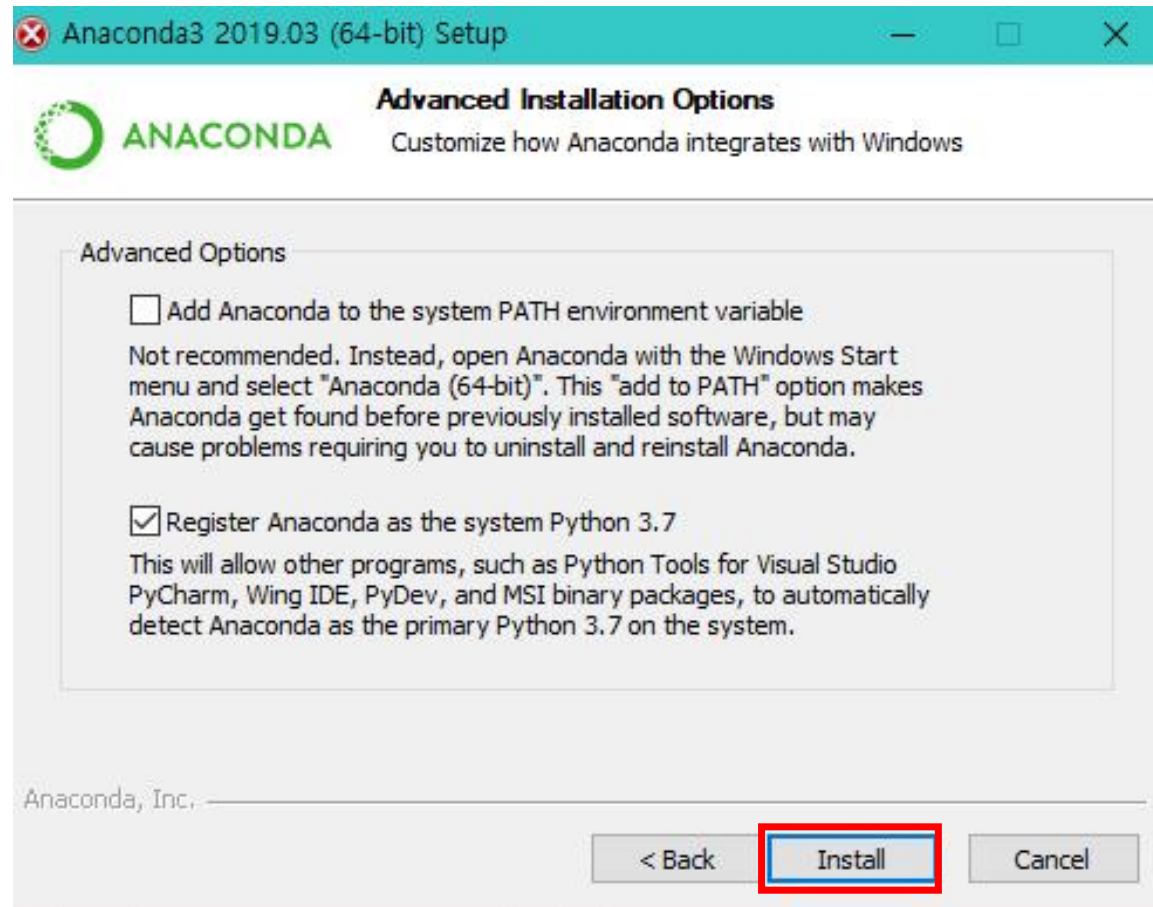
Step 1. Anaconda Install



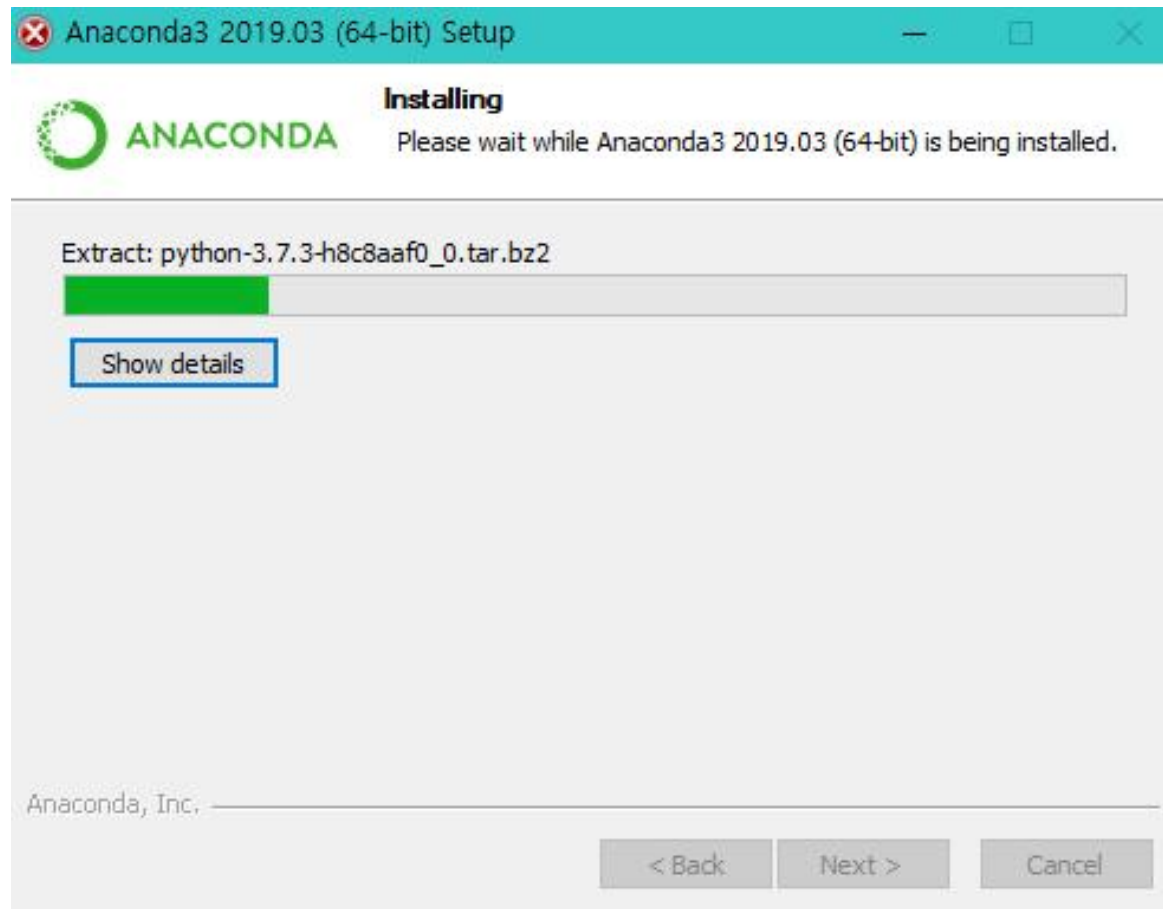
Step 1. Anaconda Install



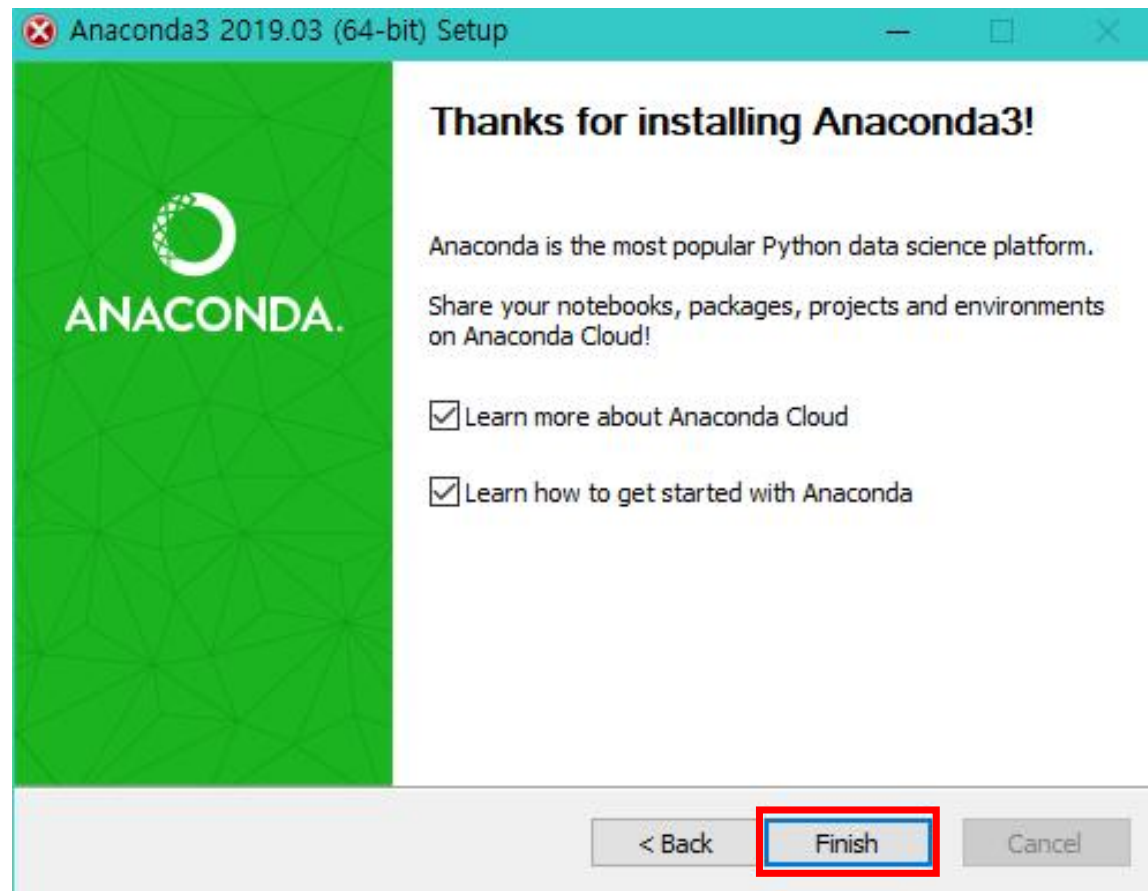
Step 1. Anaconda Install



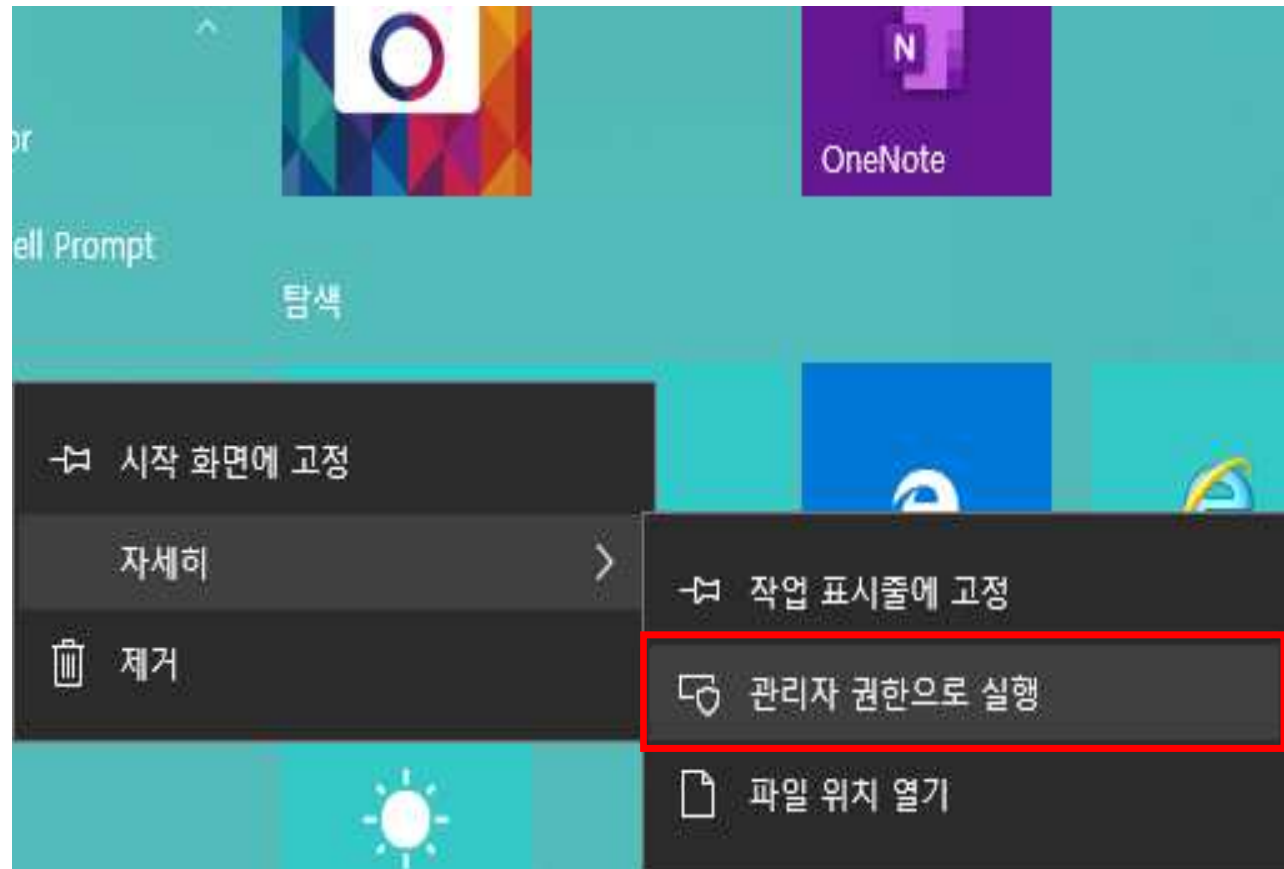
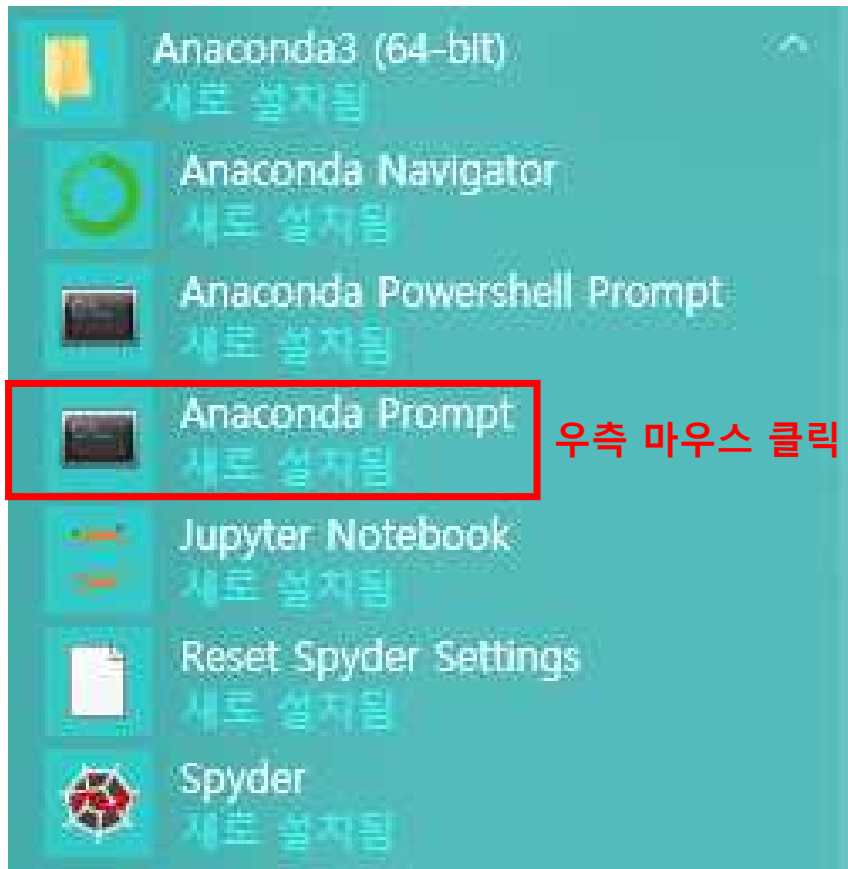
Step 1. Anaconda Install



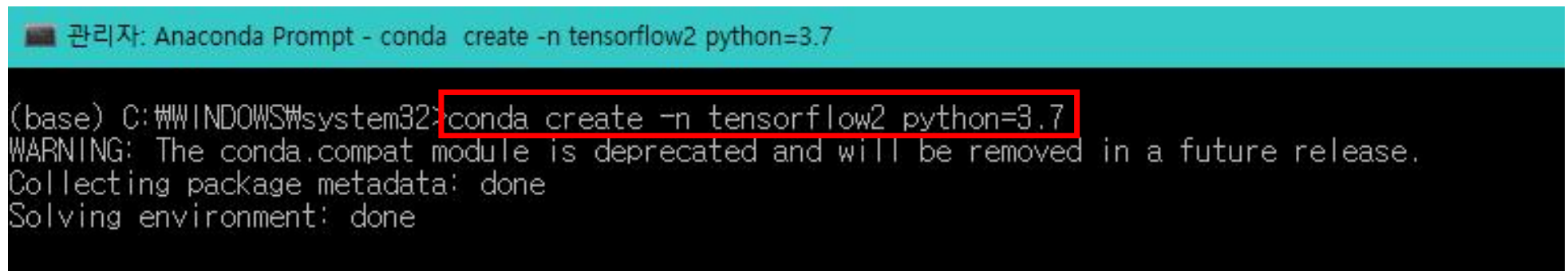
Step 1. Anaconda Install



Step 2. Create Environment



Step 2. Create Environment



A screenshot of an Anaconda Prompt terminal window. The title bar is teal and contains the text "관리자: Anaconda Prompt - conda create -n tensorflow2 python=3.7". The terminal background is black with white text. The prompt is "(base) C:\WINDOWS\system32>". The command "conda create -n tensorflow2 python=3.7" is entered and highlighted with a red rectangular box. Below the command, the following output is displayed: "WARNING: The conda.compat module is deprecated and will be removed in a future release.", "Collecting package metadata: done", and "Solving environment: done".

```
관리자: Anaconda Prompt - conda create -n tensorflow2 python=3.7  
(base) C:\WINDOWS\system32>conda create -n tensorflow2 python=3.7  
WARNING: The conda.compat module is deprecated and will be removed in a future release.  
Collecting package metadata: done  
Solving environment: done
```

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

```
(base) C:\WINDOWS\system32>activate tensorflow2  
(tensorflow2) C:\WINDOWS\system32>
```

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/57/92a497e38161ce40606c27a86759c6b92dd34fdb33f64171ec559257c02
/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\Wngsk0\AppData\Local\pip\Cache\wheels\wee\98\38\46cbcc5a93cfea5492d19c38562691ddb23b940176
c14f7b48
  Building wheel for gast (setup.py) ... done
  Stored in directory: C:\Users\Wngsk0\AppData\Local\pip\Cache\wheels\w5c\2e\7e\1a1d4d4fcebe6c381f378ce7743a3ced3699feb89bc
fbdadadd
  Building wheel for termcolor (setup.py) ... done
  Stored in directory: C:\Users\Wngsk0\AppData\Local\pip\Cache\wheels\w7c\06\54\bbc84598ba1daf8f970247f550b175aaee85f68b4b
0c5ab2c6
  Building wheel for wrapt (setup.py) ... done
  Stored in directory: C:\Users\Wngsk0\AppData\Local\pip\Cache\wheels\wd7\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 this 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 this 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