TensorFlow 환경설치 및 자료 받기

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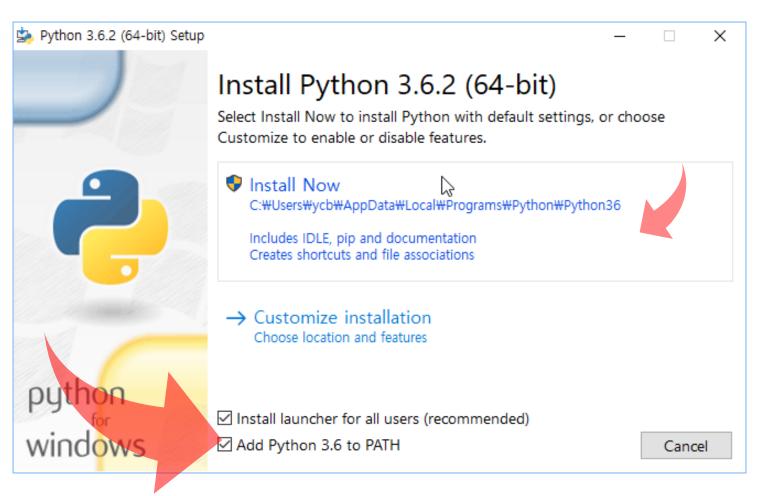
공부할 내용

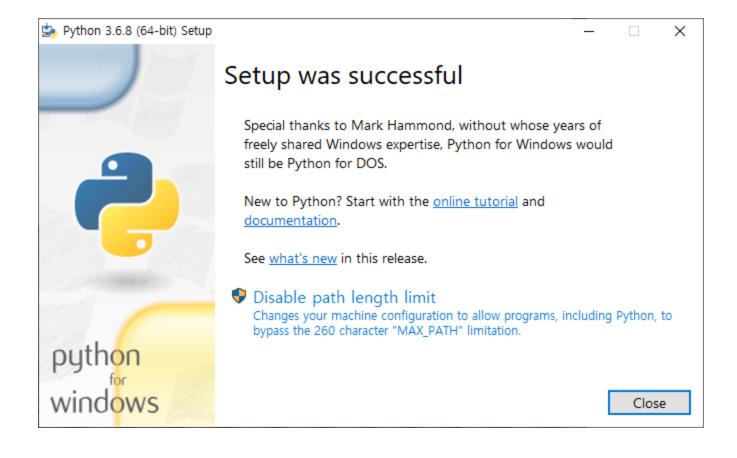
- Python 설치
- TensorFlow 설치
- PyCharm 설치
- PyCharm을 이용한 코딩
- Git 설치 및 오픈소스 받기
- 단축키 설정

(1) Python 설치

- https://www.python.org/downloads/
- 최신버전 설치(64bit)

주의) 3.6.X 버전으로 설치





(2) TensorFlow 설치

Python을 설치하면 pip도 설치됨.

- 1. pip 실행
- > Pip
- 2. Pip 버전 확인
- > pip --version
- 3. pip 업그레이드
- > python -m pip install --upgrade pip (이미 최신 버전이 설치되어 있음)
- 4. pip로 TensorFlow 설치
- > pip install tensorflow==1.5.1

또는

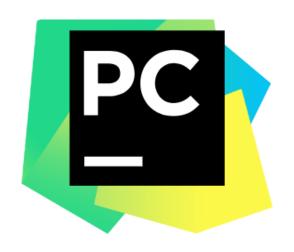
> pip install tensorflow==1.5.1 --user

(3) Pyton & TensorFlow 테스트

• 도스 창에서 Python과 TensorFlow 테 스트

```
C:₩> python
>>> import tensorflow as tf
>>> hello = tf.constant('Hello,World!')
>>> sess = tf.Session()
>>> print(sess.run(hello))
Hello, World!
>>> a = tf.constant(2)
>>> b = tf.constant(3)
>>> print (sess.run(a + b))
5
```

(4) PyCharm 설치



Download PyCharm

Windows

macOS

Linux

Version: 2018.3.1

Build: 183.4588.64

Released: December 5, 2018

System requirements

Installation Instructions

Previous versions

Professional

Full-featured IDE for Python & Web development

DOWNLOAD

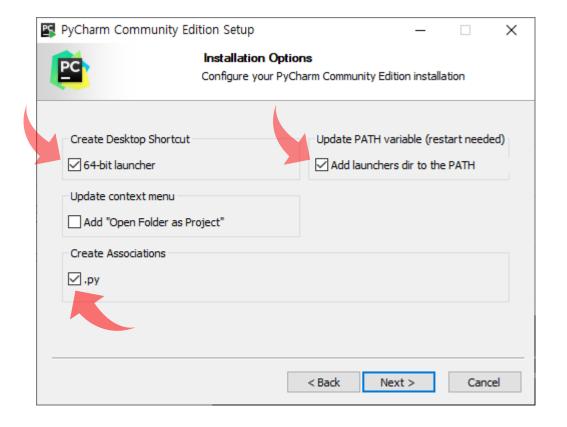
Free trial

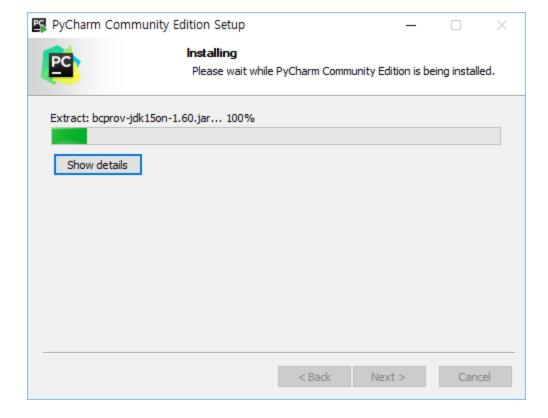
Community

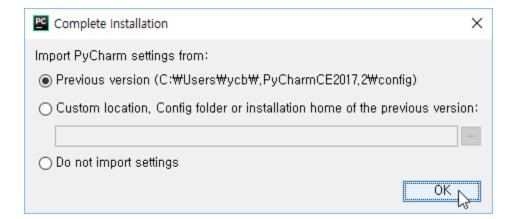
Lightweight IDE for Python & Scientific development

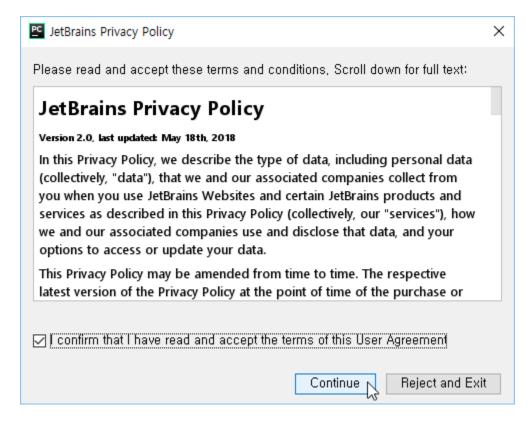
DOWNLOAD

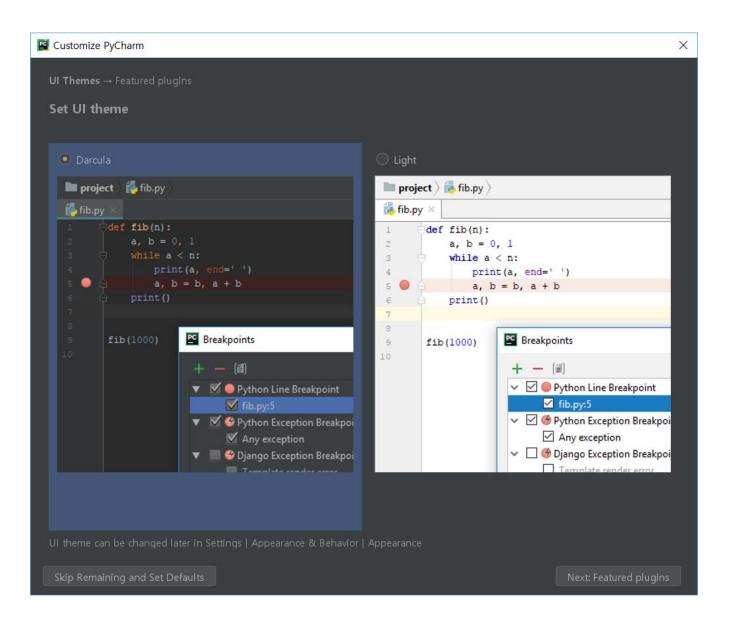
Free, open-source

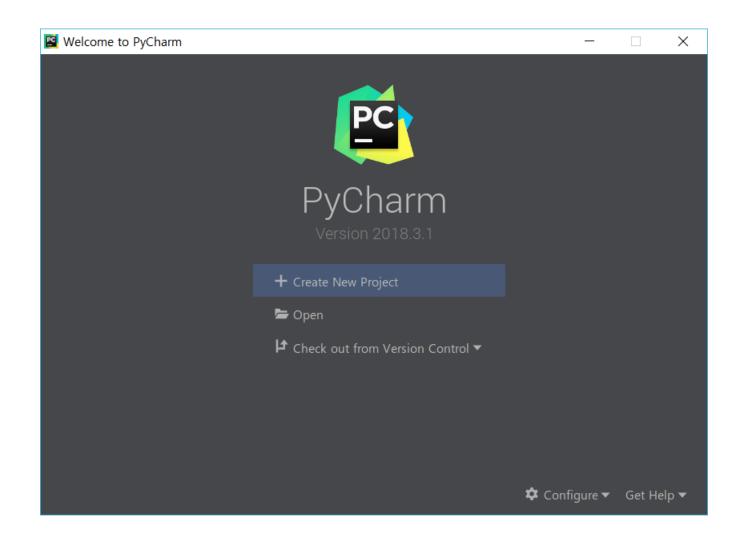




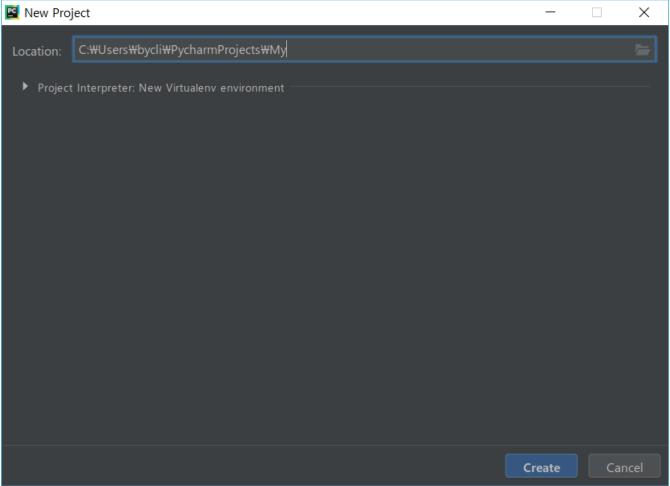


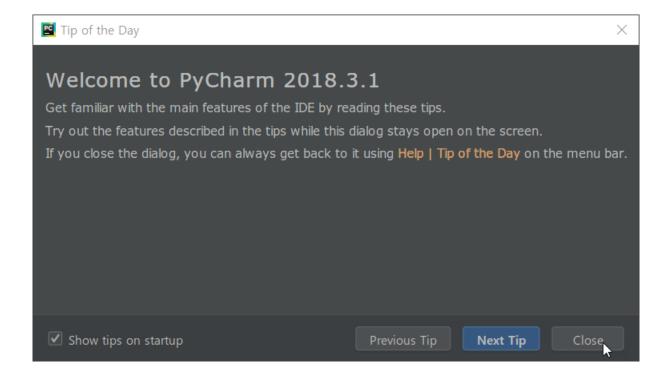


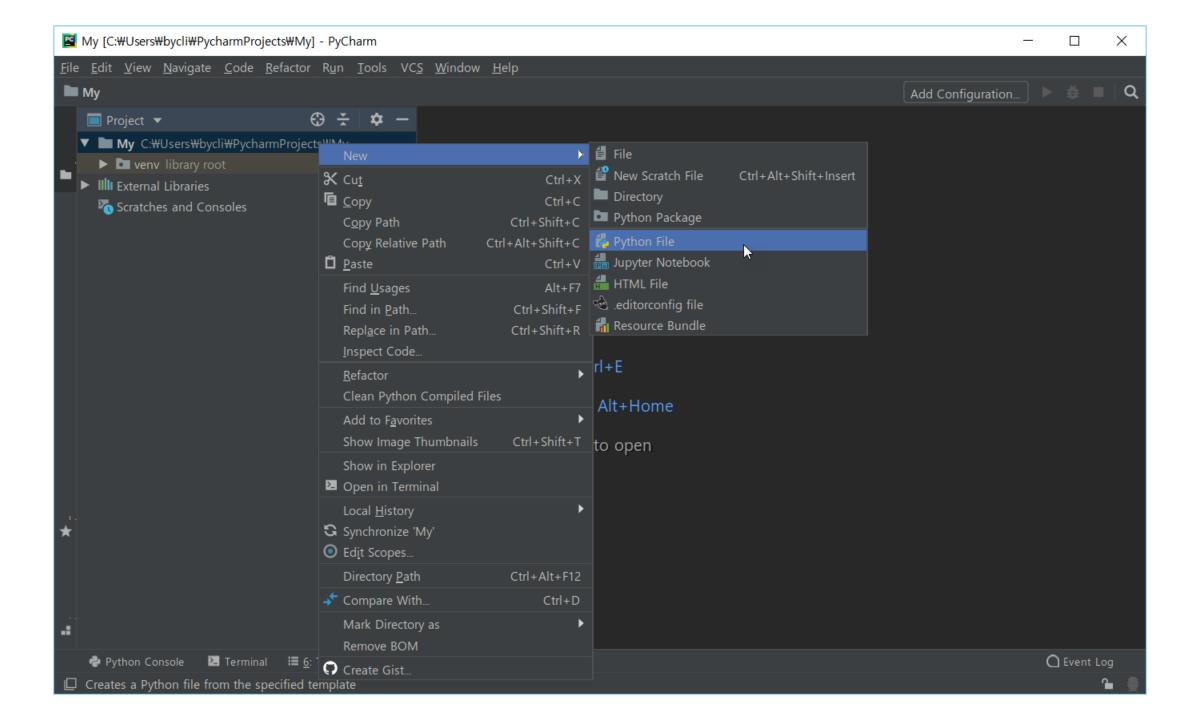


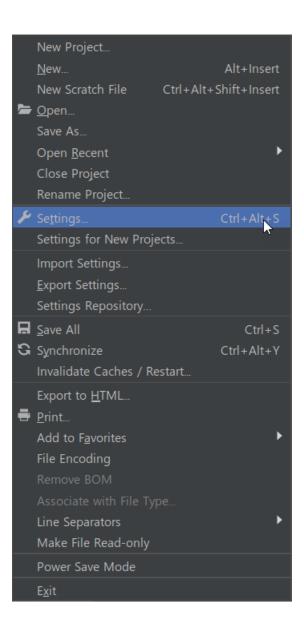


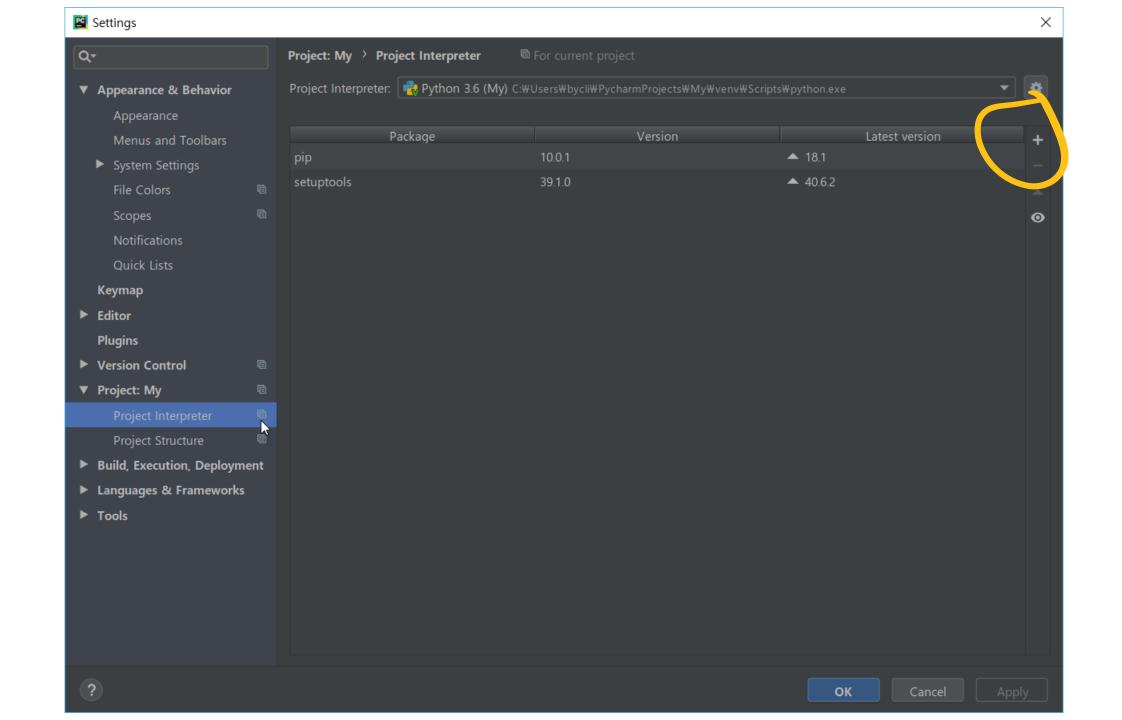
(5) PyCharm을 이용한 코딩

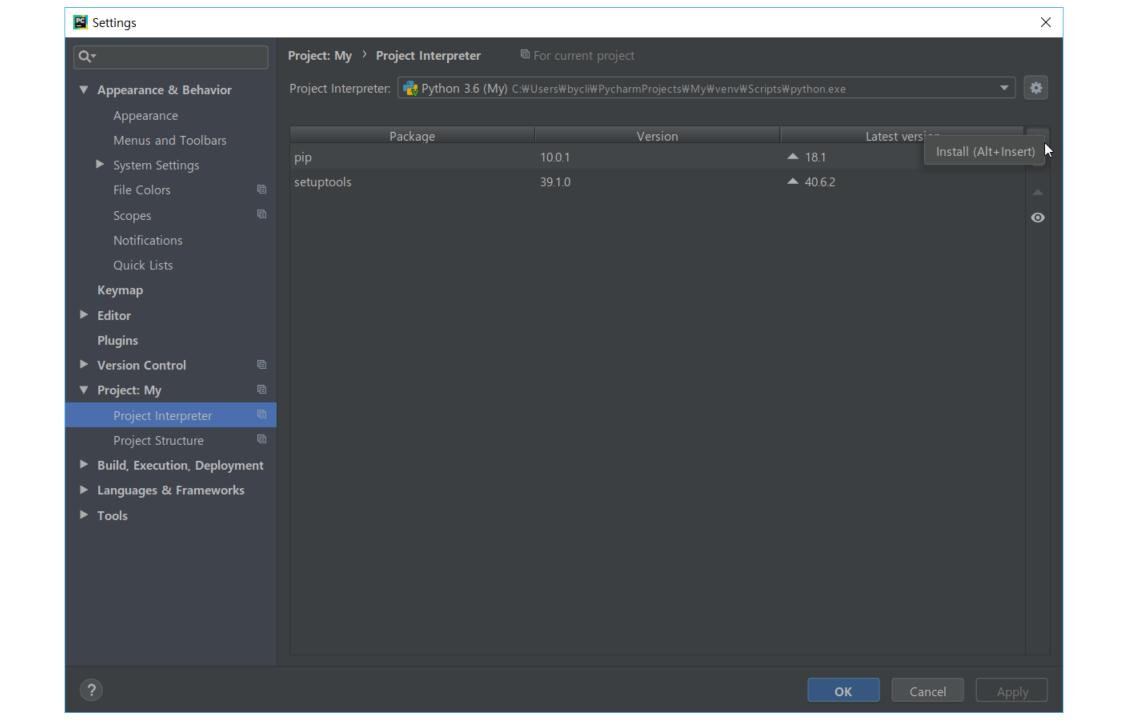


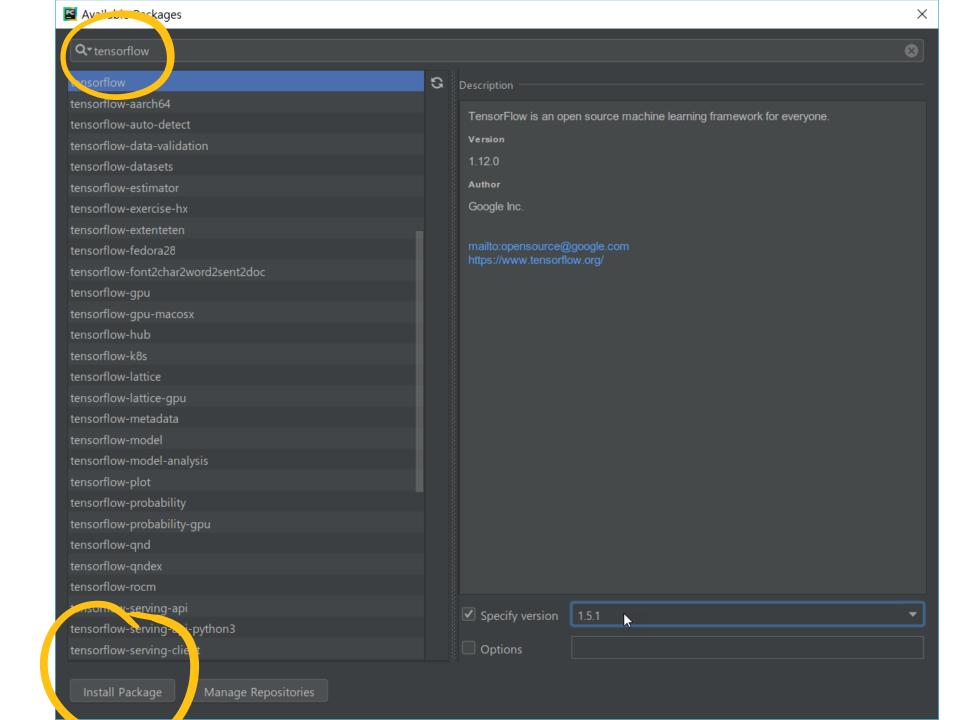


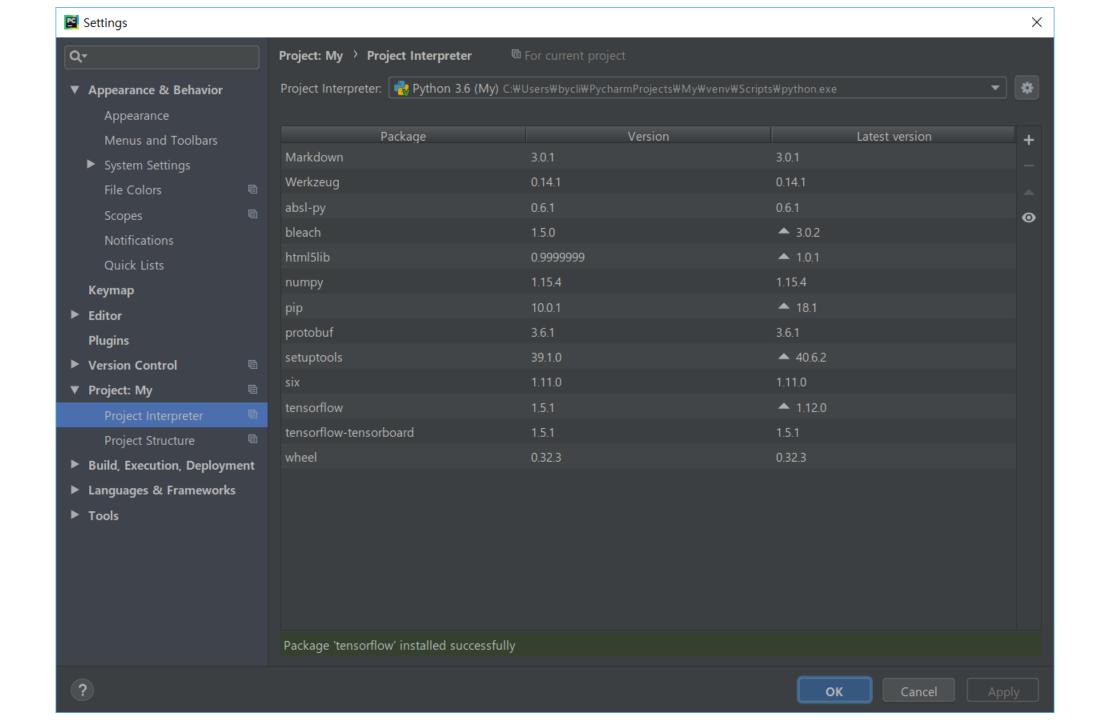




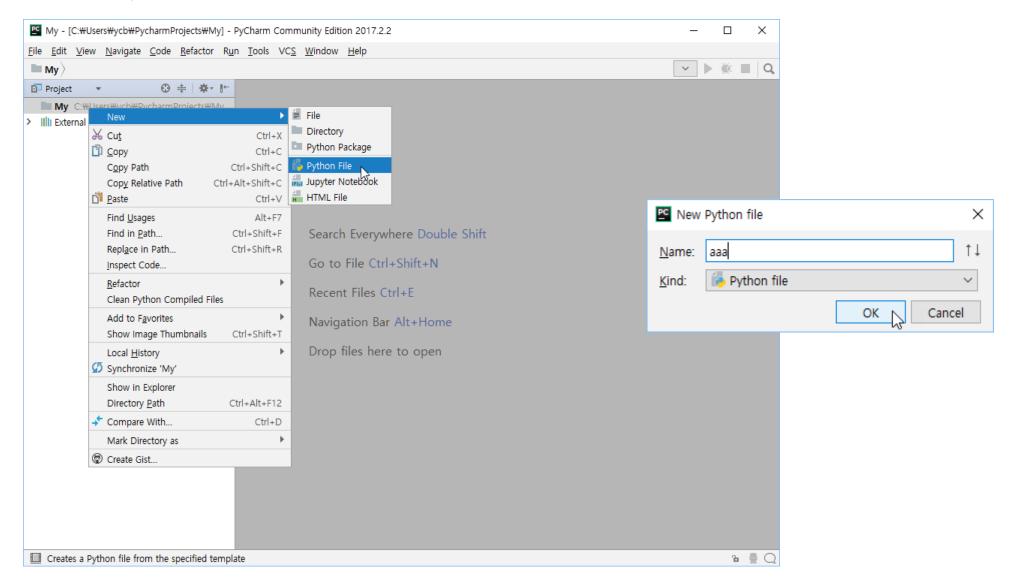








(5) PyCharm을 이용한 코딩



(5) PyCharm을 이용한 코딩

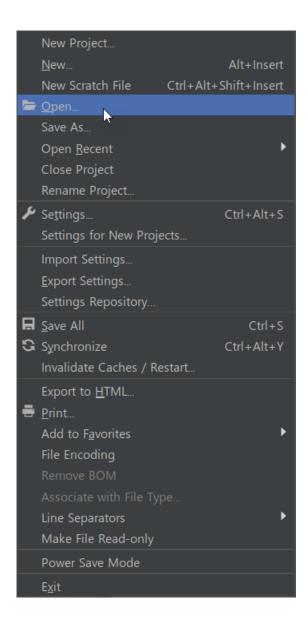
import tensorflow as tf

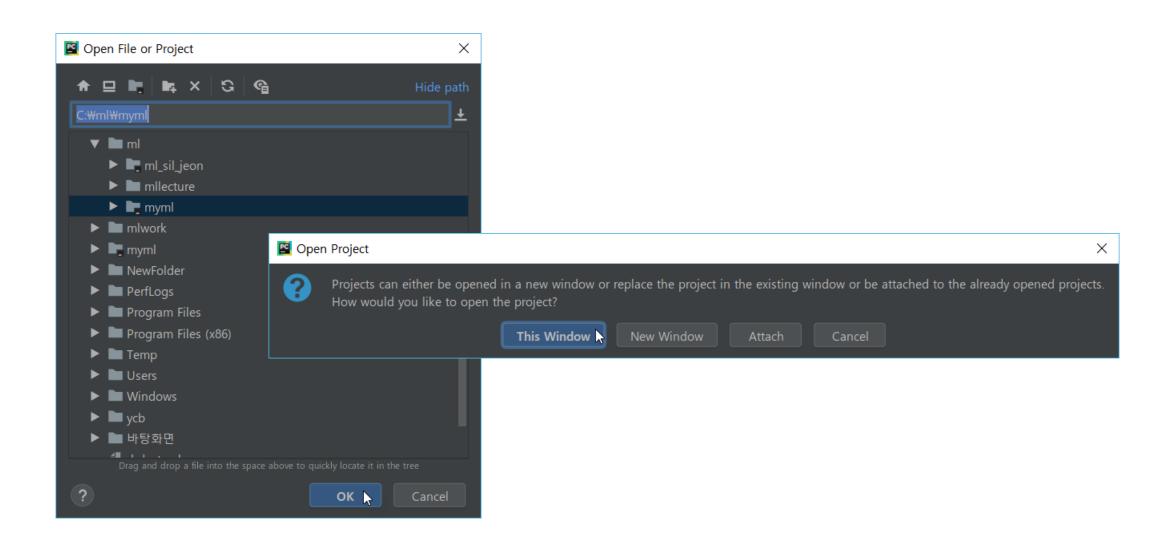
```
a = tf.constant(3);
sess = tf.Session()
print(sess.run(a))
```

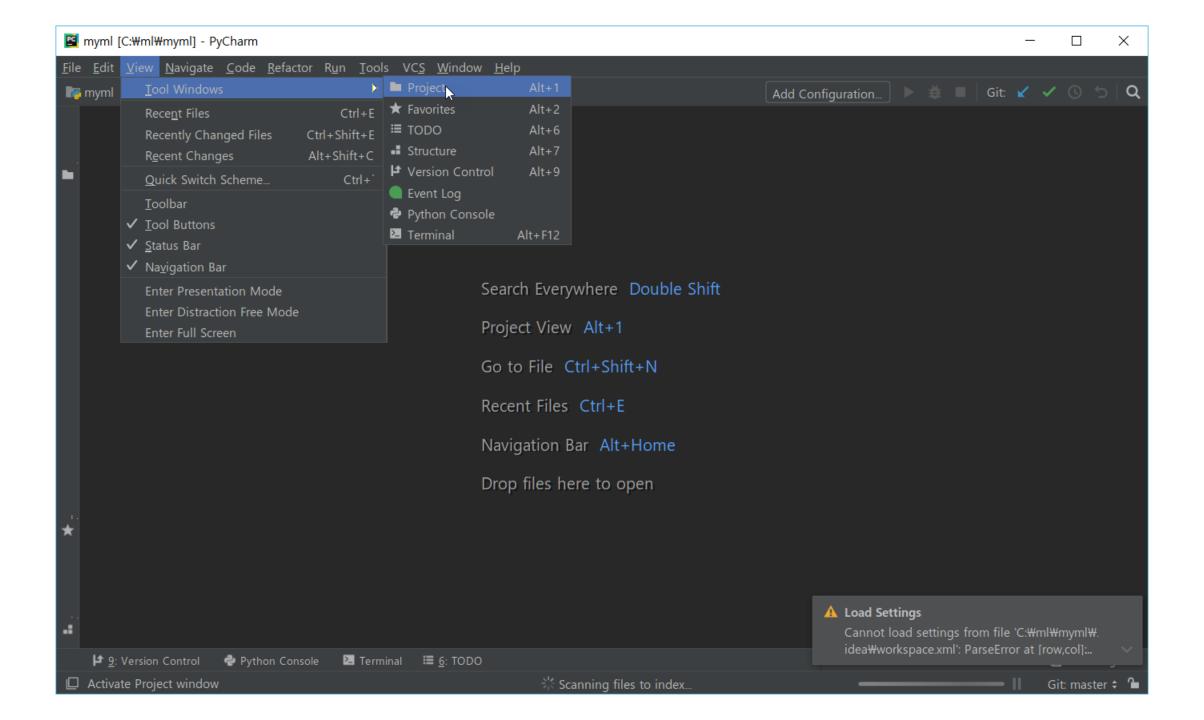
C:₩ml 폴더 생성 후 이동

C:₩ml> git clone https://github.com/yungbyun/myml

(5) PyCharm을 이용한 로딩







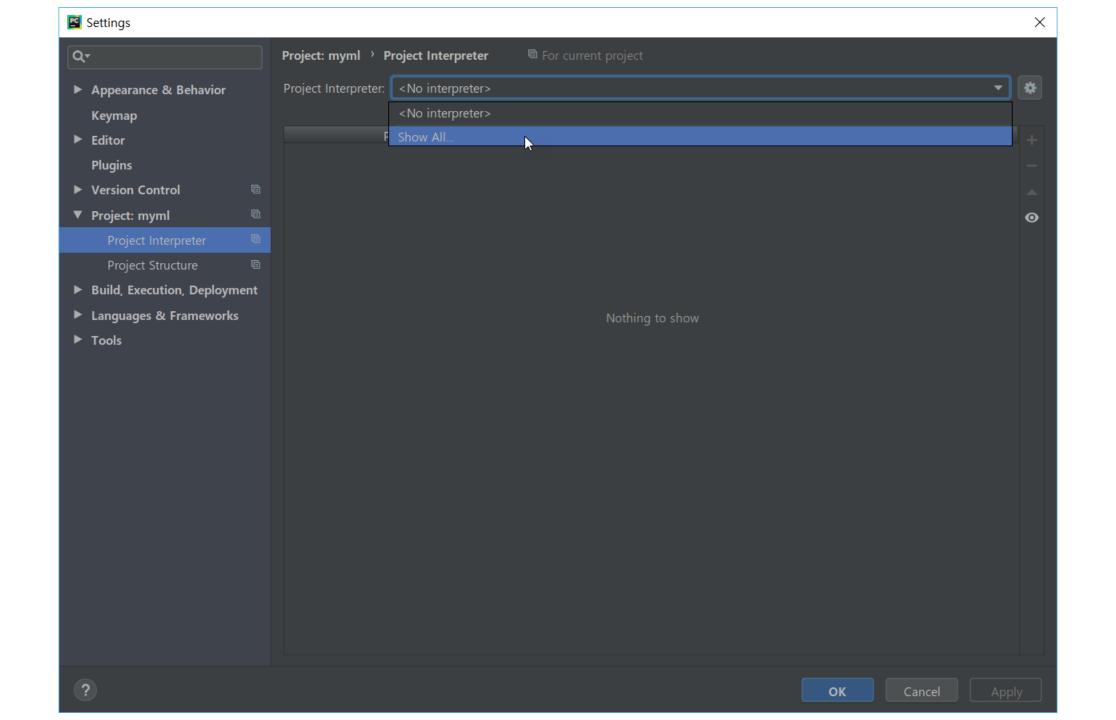
```
myml [C:\mummyml] - ...\u00e401_simple.py [myml] - PyCharm
                                                                                                                                                                                                                                                                                                                                                                              File Edit View Navigate Code Refactor Run Tools VCS Window Help
myml > 6 01_simple.py
                                                                                                                                                                                                                                                                 Add Configuration... | Git: 🗸 🗸 🕓 🔾
        ■ Project ▼
                                                                                                         🐍 01_simple.py
                   ► MNIST_data
                                                                                                                                                                                                                                                                                                                                    Configure Python interpreter 🌣
                                                                                                          No Python interpreter configured for the project
                   ▶ ■ venv
                          gitignore 
                                                                                                                               import tensorflow as tf
                          6 01_simple.py
                          6 02_simple_placeholder.py
                                                                                                                              x data = [1]
                                                                                                                              y_data = [1]
                          6 03_cost_function.py
                          6 04_with_bias.py
                          6 05_multiple_data.py
                                                                                                                               w = tf.Variable(tf.random normal([1]))
                          6 06_multiple_inputs.py
                                                                                                                               hypo = x data * w
                          $\langle 11.logistic_simple.py
                          the second secon
                          13_or_gate.py
                                                                                                                               cost = (hypo - y data) ** 2
                          $\frac{1}{6}$ 14_cooking.py
                                                                                                                               train = tf.train.GradientDescentOptimizer(learning rate=0.01).minimize(cost)
                          14_four_classes.py
                                                                                                                               sess = tf.Session()
                          16_four_classes_placeholder.py
                                                                                                                               sess.run(tf.global variables initializer())
                          $\frac{1}{6} 17_xor_single_neuron.py
                          $\frac{1}{6}$ 18_xor_3_layers.py
                                                                                                                               cost list = []
                          19_xor_4_layers_sigmoid.py
                                                                                                                               for i in range(1001).:
                          20_xor_4_layers_relu.py
                                                                                                                                          if i % 100 == 0:
                          21_mnist_softmax_placeholder.py
                                                                                                                                                      err val = sess.run(cost)
                          22_mnist_nn.py
                                                                                                                                                      print('w:', sess.run(w), 'cost:', err val)
                          23_mnist_nn_xavier.py
                                                                                                                                                      cost list.append(err val)
                          24_mnist_nn_deep.py
                                                                                                                                          sess.run(train)
                          25_mnist_nn_dropout.py
         🗜 9: Version Control 🕏 Python Console
                                                                                                    C Event Log
                                                                                                                                                                                                                                                                                    6:1 CRLF 

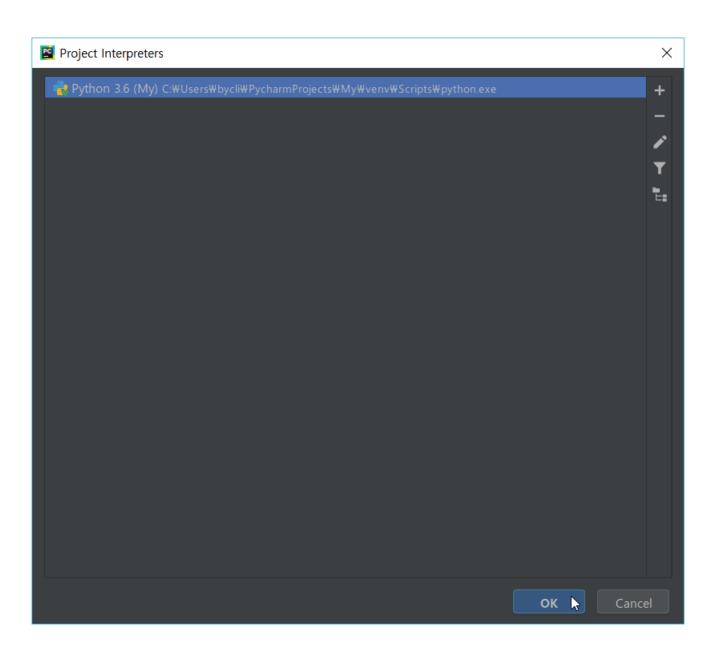
UTF-8 

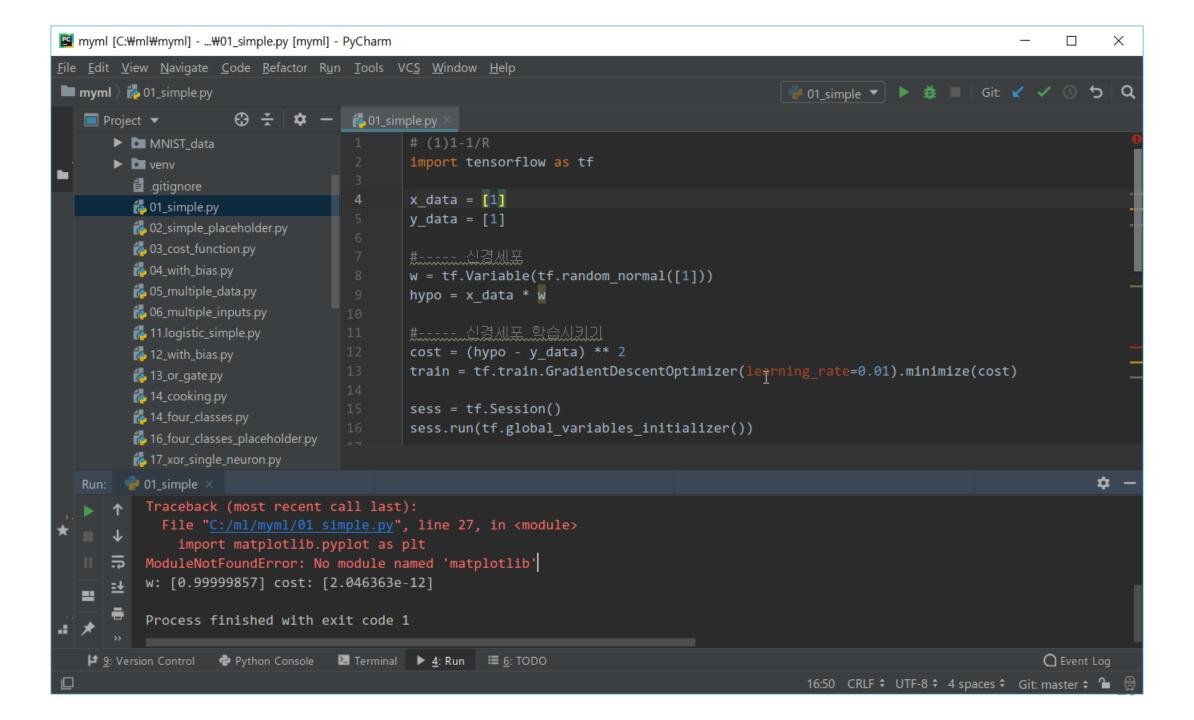
4 spaces 

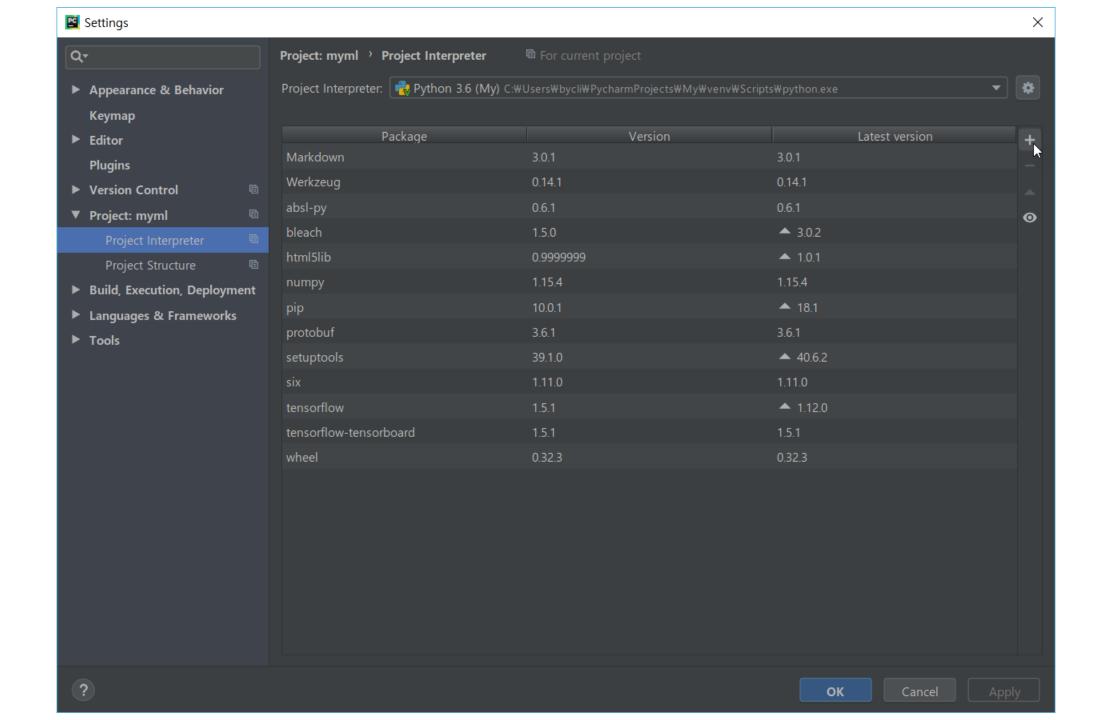
Git: master 

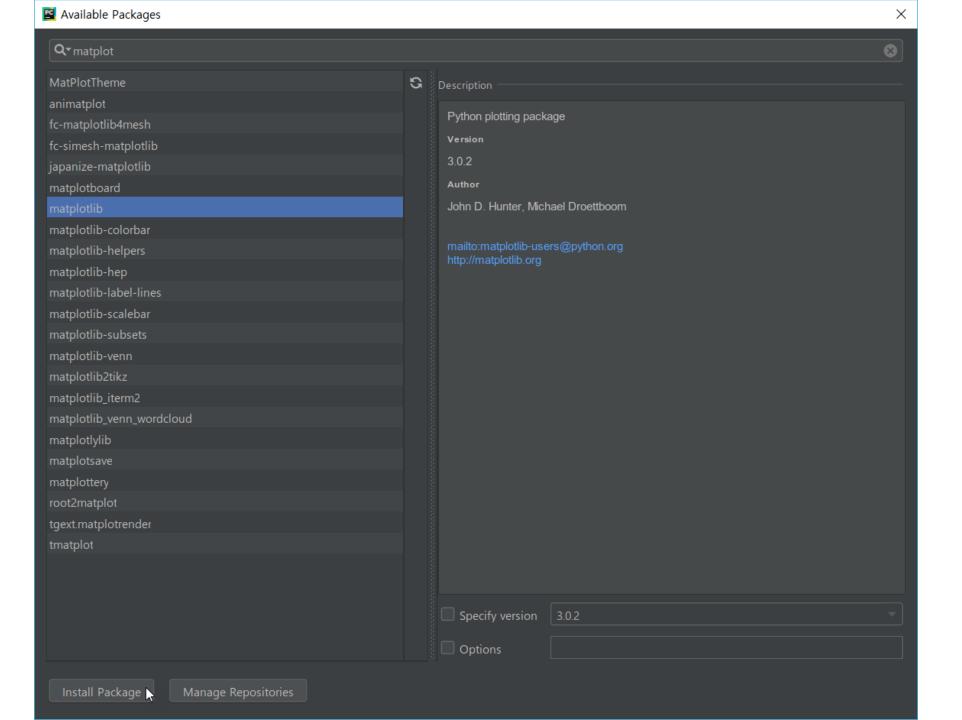
1
```







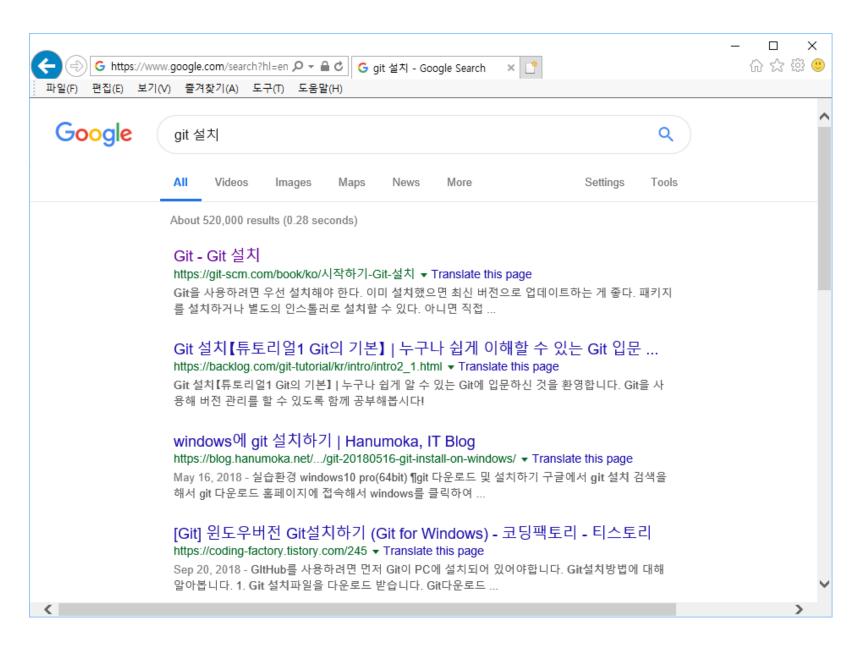




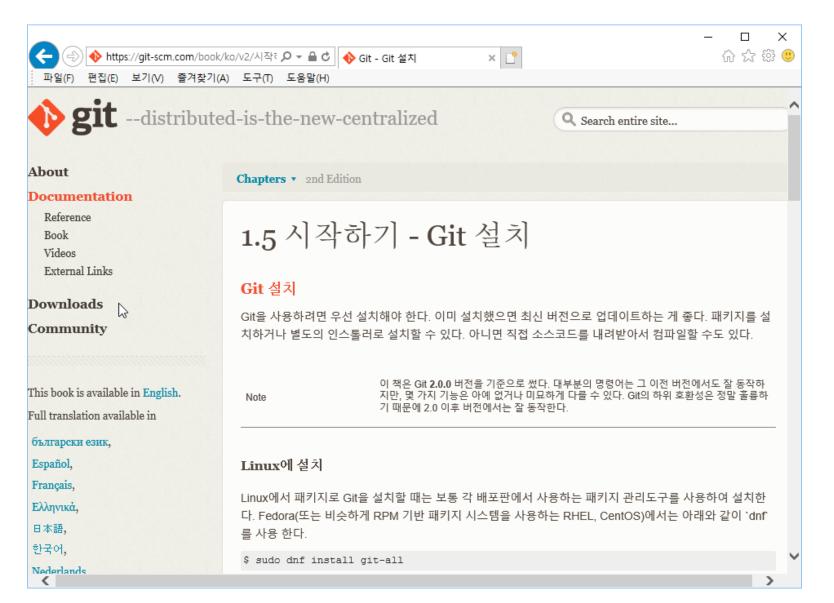
```
import tensorflow as tf
x data = [1]
y_{data} = [1]
#----- 신경세포 만들기
w = tf.Variable(tf.random_normal([1]))
hypo = w * x data
#----- 신경세포 학습시키기
cost = (hypo - y_data) ** 2
train = tf.train.GradientDescentOptimizer(learning_rate=0.01).minimize(cost)
sess = tf.Session()
sess.run(tf.global_variables_initializer())
cost list = []
print('w:', sess.run(w), 'cost:', sess.run(cost))
for i in range(1001):
   sess.run(train)
   if i % 100 == 0:
      err_val = sess.run(cost)
      print('w:', sess.run(w), 'cost:', err_val)
      cost_list.append(err_val)
# 오류가 줄어드는 모습 보기
import matplotlib.pyplot as plt
plt.plot(cost_list)
plt.show();
#----- 테스트/예측해 보기
print(sess.run(w * [3]))
```

(6) git 설치

• Google에서 'git 설치' 검색



(6) git 설치





Q Search entire site...

About

Documentation

Downloads

GUI Clients Logos

Community

The entire **Pro Git book** written by Scott Chacon and Ben Straub is available to **read** online for free. Dead tree versions are available on Amazon.com.

Downloads



Older releases are available and the Git source repository is on GitHub.



GUI Clients

Git comes with built-in GUI tools (git-gui, gitk), but there are several third-party tools for users looking for a platform-specific experience.

View GUI Clients →

Logos

Various Git logos in PNG (bitmap) and EPS (vector) formats are available for use in online and print projects.

 $View\ Logos \rightarrow$

https://git-scm.com/download/win

Downloading Git



Your download is starting...

You are downloading the latest (2.19.2) 64-bit version of Git for Windows. This is the most recent maintained build. It was released 10 days ago, on 2018-11-21.

If your download hasn't started, click here to download manually.

Other Git for Windows downloads

Git for Windows Setup
32-bit Git for Windows Setup.

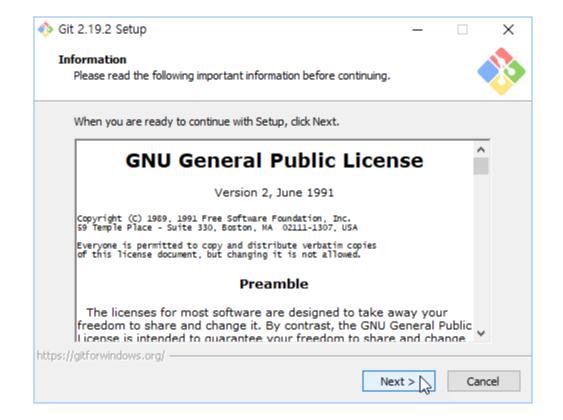
64-bit Git for Windows Setup.

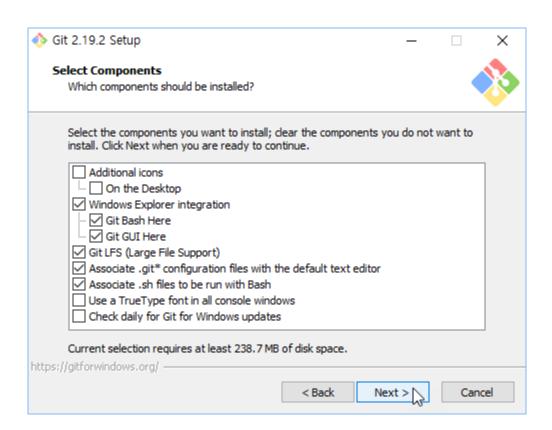
Git for Windows Portable ("thumbdrive edition")
32-bit Git for Windows Portable.

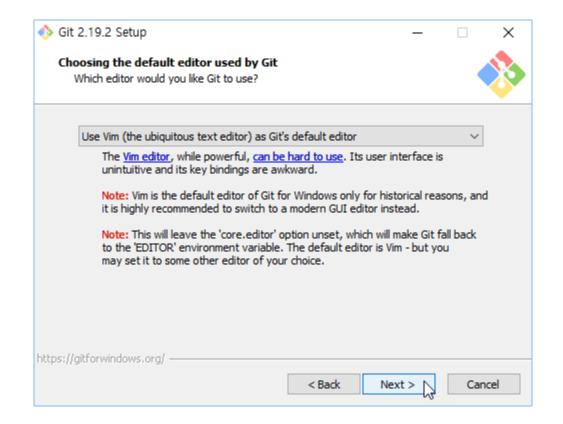
64-bit Git for Windows Portable.

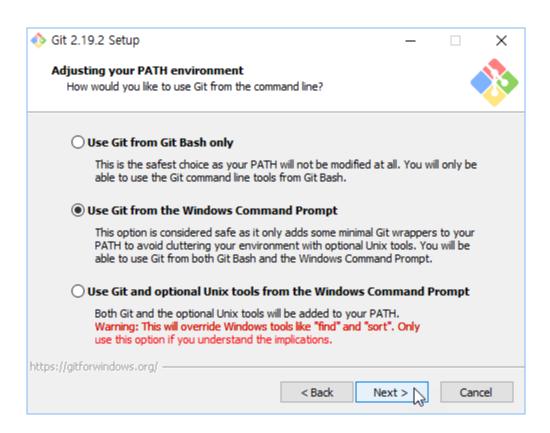
The current source code release is version 2.19.2. If you want the newer version, you can build it from the source code.

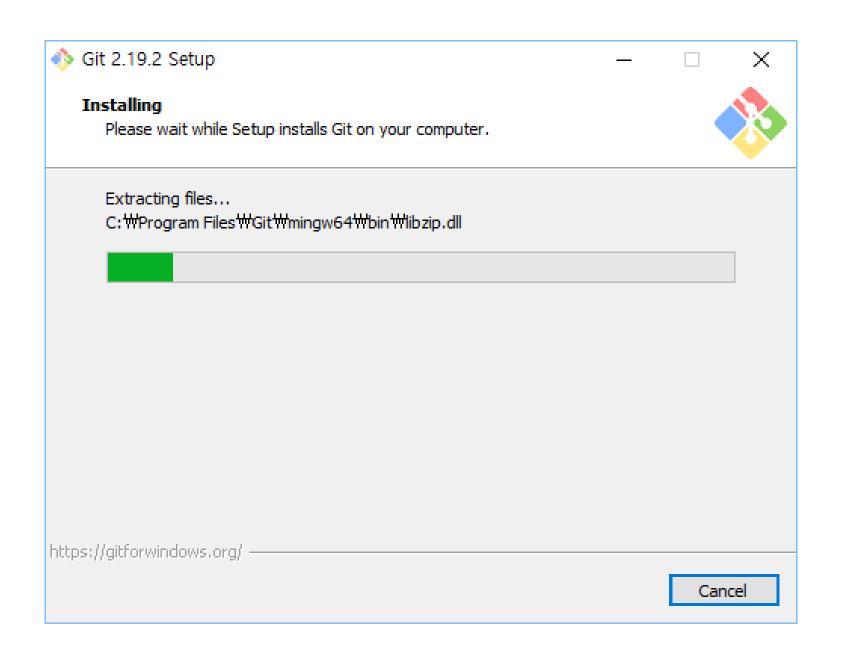
...ub-production-release-asset-2e65be.s3.amazonaws.com의 Git-2.19.2-64-bit.exe(42.0MB)을(를) 실행하거나 저장하시겠습니까? [×] 실행(R) ↓ 저장(S) ▼ 취소(C)

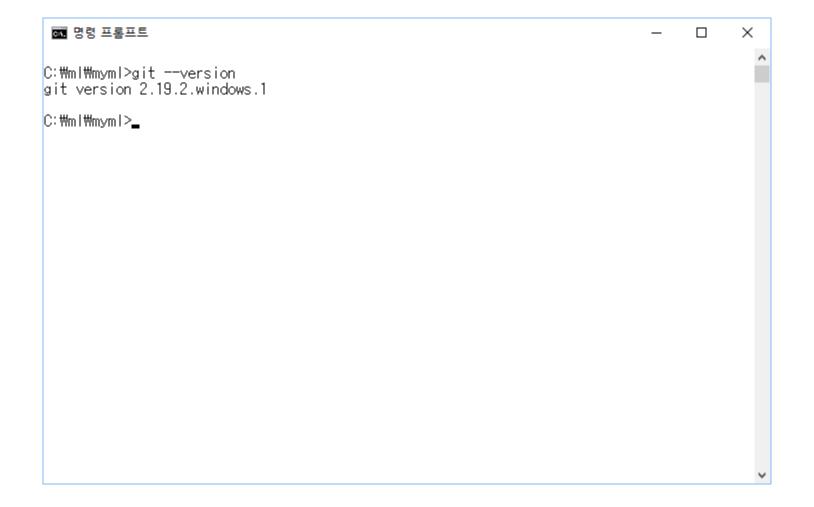












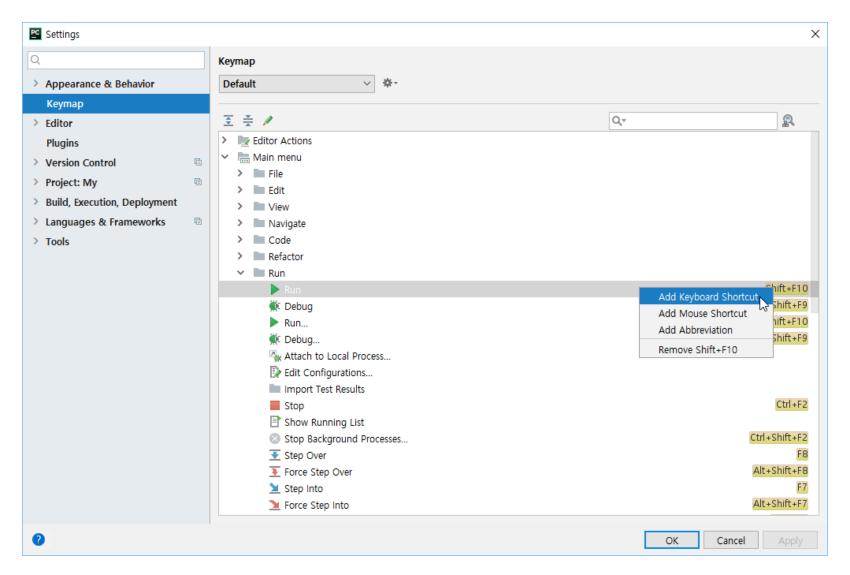
(7) 소스 프로그램 다운로드

- 원하는 폴더를 만듦(가령, c:₩>myml)
- 도스 창에서 원하는 폴더로 이동
- > git clone https://github.com/yungbyun/myml

(8) 강의자료 다운로드

- 강의자료 다운로드
- 도스 창에서 원하는 폴더로 이동
- > git clone https://github.com/yungbyun/mllecture

(9) 단축키 설정



(10) PyCharm 기본 단축키

- 이전 혹은 다음 작업 하던 곳으로 빠르게 이동 Alt + ←, Alt + →
- 선언/정의 부분으로 빠르게 가기 Ctrl + B
- 변수/함수 이름 일괄적으로 바꾸기 Shift + F6

이번 학습에서는

- 텐서플로우 실행 환경을 설치할 수 있다.
- github에서 코드를 다운로드하 고 이를 이용할 수 있다.
- 텐서플로우 코드를 실행할 수 있다.