

TensorFlow 환경설치 및 자료 받기

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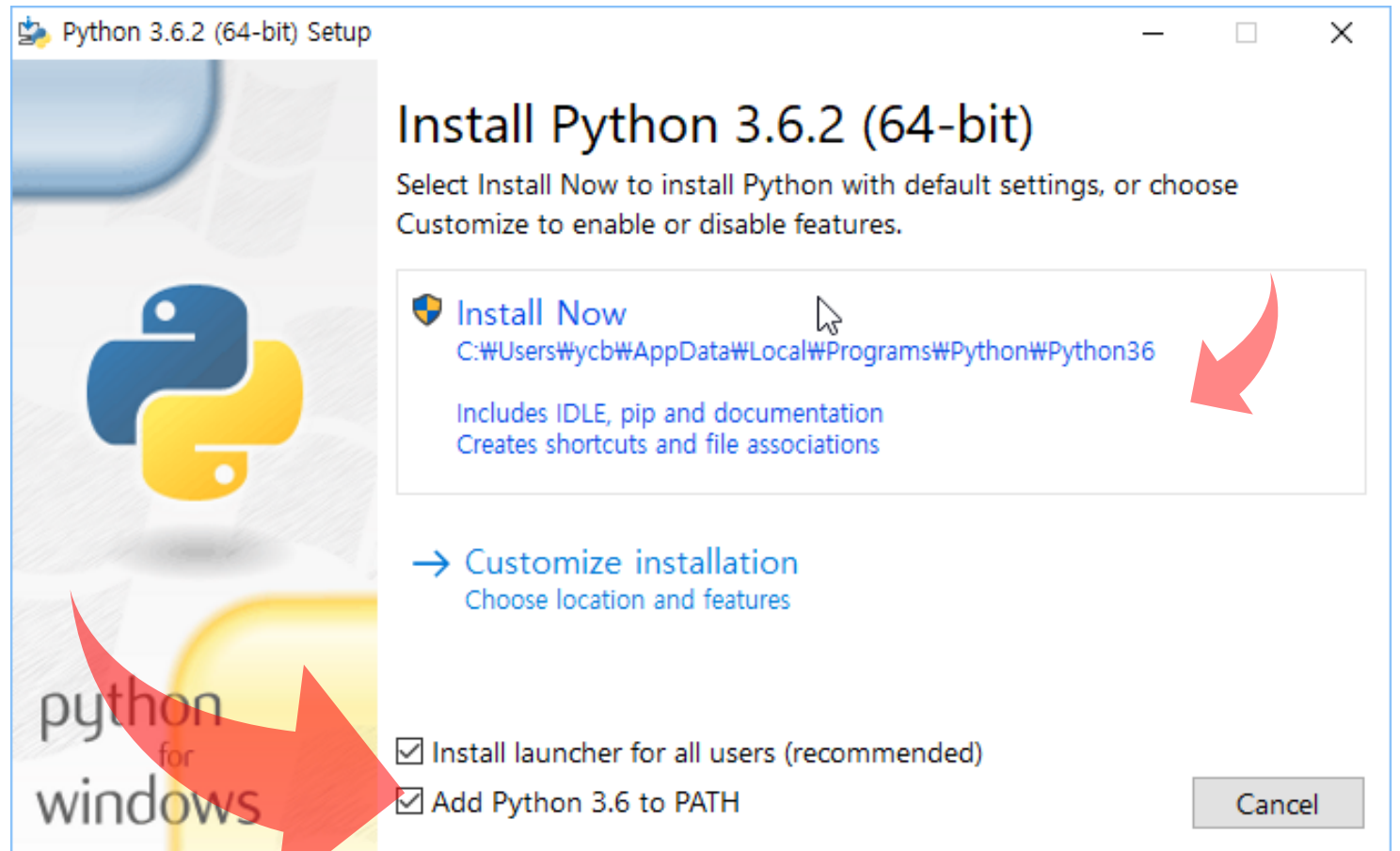
공부할 내용

- Python 설치
- TensorFlow 설치
- PyCharm 설치
- PyCharm을 이용한 코딩
- Git 설치
- 단축키 설정

(1) Python 설치

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

주의) 3.6.x 버전으로 설치



(1) Python 설치

⚙️ 홈

설정 찾기 🔍

앱








☰ 앱 및 기능


📁 기본 앱

🗺️ 오프라인 지도

🌐 웹 사이트용 앱

앱 및 기능

	OneNote Microsoft Corporation	16.0KB 2017-08-26
	Paint Shop Pro 7 Jasc Software Inc	48.0MB 2017-05-02
	photoWORKS 사용할 수 없음	2017-05-02
	Python 3.6.2 (64-bit) Python Software Foundation	91.1MB 2017-09-01
	Python Launcher Python Software Foundation	1.73MB 2017-09-01
	Samsung_MonSetup Samsung	4.88MB 2017-07-19
	Skype Skype	32.0KB 2017-08-23



(2) TensorFlow 설치

Python을 설치하면 pip도 설치됨.

1. pip 업그레이드

> `pip install --upgrade pip`

(이미 최신 버전이 설치되어 있음)

2. pip로 TensorFlow 설치

> `pip install tensorflow==1.5.1`

주의) 1.5.x 버전으로 설치

```
cmd 명령 프롬프트
C:\Users\mycb>pip install tensorflow
Collecting tensorflow
  Using cached tensorflow-1.3.0-cp36-cp36m-win_amd64.whl
Collecting tensorflow-tensorboard<0.2.0,>=0.1.0 (from tensorflow)
  Using cached tensorflow_tensorboard-0.1.5-py3-none-any.whl
Collecting wheel>=0.26 (from tensorflow)
  Downloading wheel-0.29.0-py2.py3-none-any.whl (66kB)
    100% |#####| 71kB 688kB/s
Collecting numpy>=1.11.0 (from tensorflow)
  Using cached numpy-1.13.1-cp36-none-win_amd64.whl
Collecting six>=1.10.0 (from tensorflow)
  Using cached six-1.10.0-py2.py3-none-any.whl
Collecting protobuf>=3.3.0 (from tensorflow)
  Using cached protobuf-3.4.0-py2.py3-none-any.whl
Collecting bleach==1.5.0 (from tensorflow-tensorboard<0.2.0,>=0.1.0->tensorflow)
  Using cached bleach-1.5.0-py2.py3-none-any.whl
Collecting html5lib==0.9999999 (from tensorflow-tensorboard<0.2.0,>=0.1.0->tensorflow)
Collecting markdown>=2.6.8 (from tensorflow-tensorboard<0.2.0,>=0.1.0->tensorflow)
Collecting werkzeug>=0.11.10 (from tensorflow-tensorboard<0.2.0,>=0.1.0->tensorflow)
  Using cached Werkzeug-0.12.2-py2.py3-none-any.whl
Requirement already satisfied: setuptools in c:\Users\mycb\AppData\Local\Programs\Python\Python36\lib\site-packages (from protobuf>=3.3.0->tensorflow)
Installing collected packages: six, html5lib, bleach, protobuf, markdown, werkzeug,
```

(3) Python & TensorFlow 테스트

- 도스 창에서 Python과 TensorFlow 테스트

```
>python
```

```
>>> import tensorflow as tf
```

```
>>> hello = tf.constant('Hello,World!')
```

```
>>> sess = tf.Session()
```

```
>>> print(sess.run(hello))
```

```
Hello,World!
```

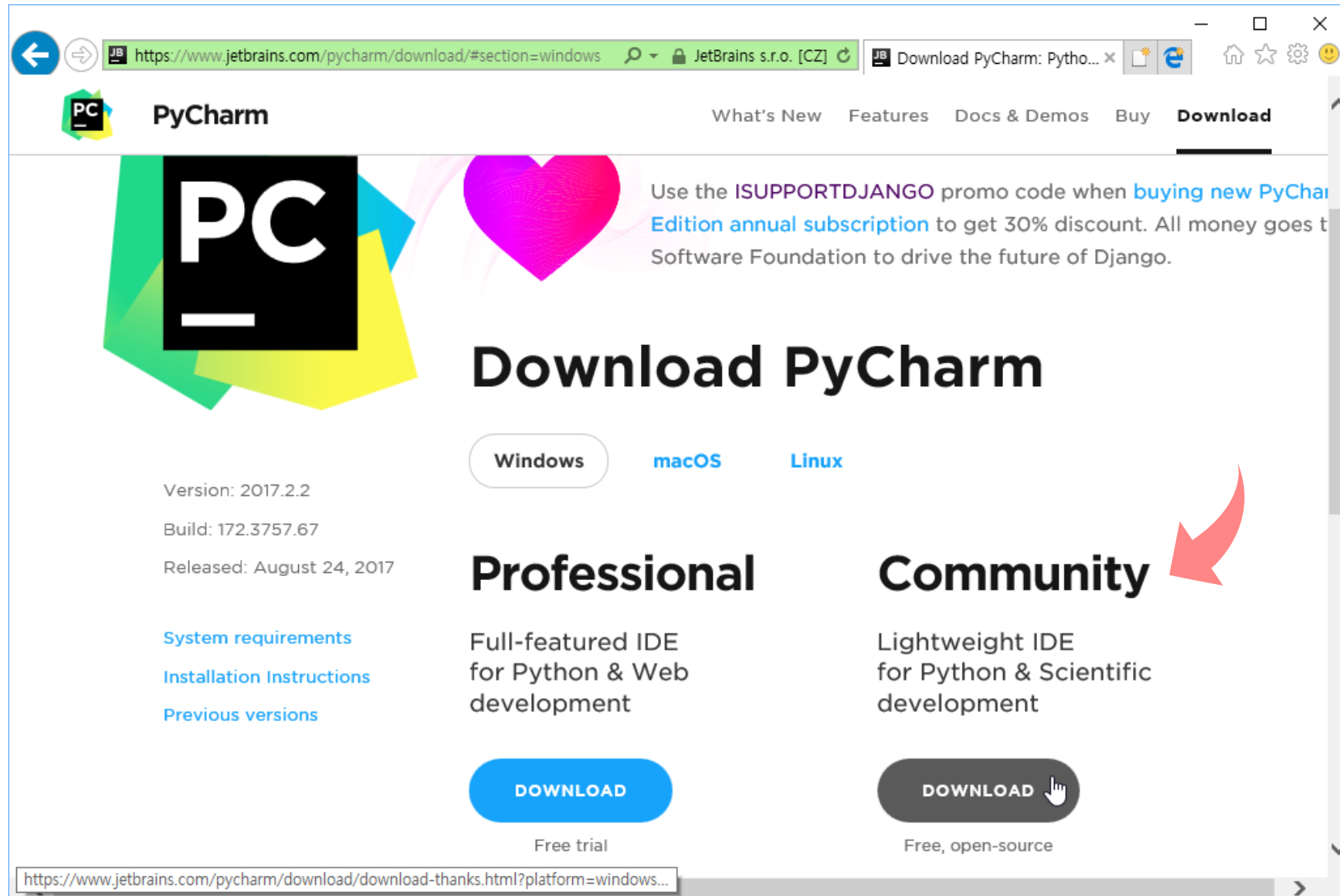
```
>>> a = tf.constant(2)
```

```
>>> b = tf.constant(3)
```

```
>>> print (sess.run(a + b))
```

```
5
```

(4) PyCharm 설치



PyCharm

What's New Features Docs & Demos Buy **Download**

Use the [ISUPPORTDJANGO](#) promo code when [buying new PyCharm Edition annual subscription](#) to get 30% discount. All money goes to Software Foundation to drive the future of Django.

Download PyCharm

Version: 2017.2.2
Build: 172.3757.67
Released: August 24, 2017

[System requirements](#)
[Installation Instructions](#)
[Previous versions](#)

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Full-featured IDE for Python & Web development

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Community

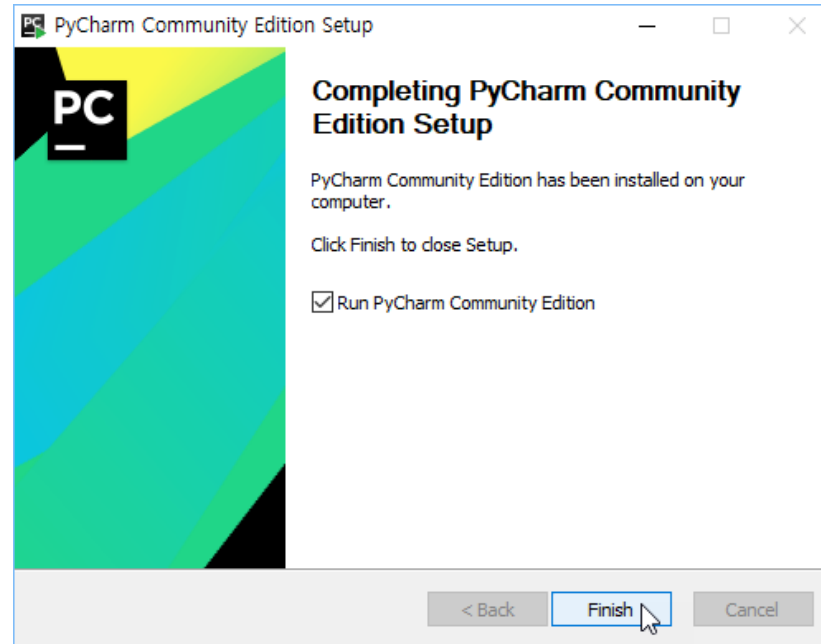
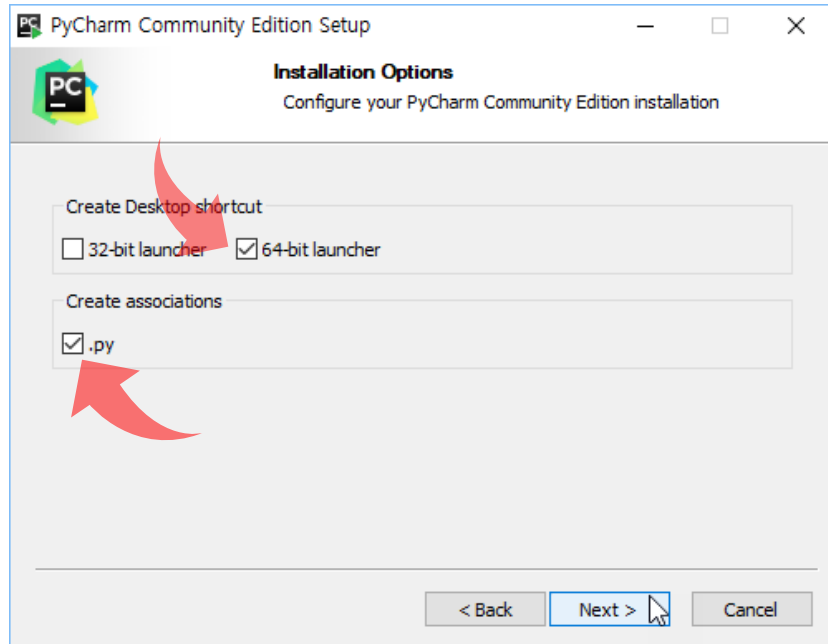
Lightweight IDE for Python & Scientific development

DOWNLOAD

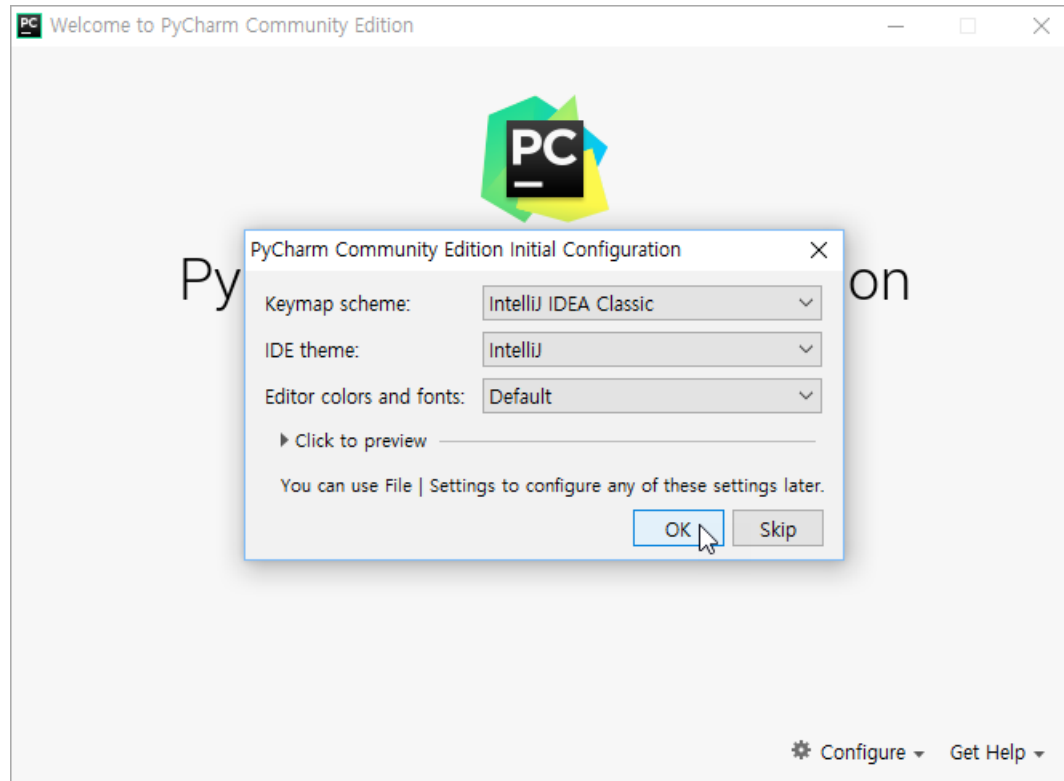
Free, open-source

<https://www.jetbrains.com/pycharm/download/download-thanks.html?platform=windows...>

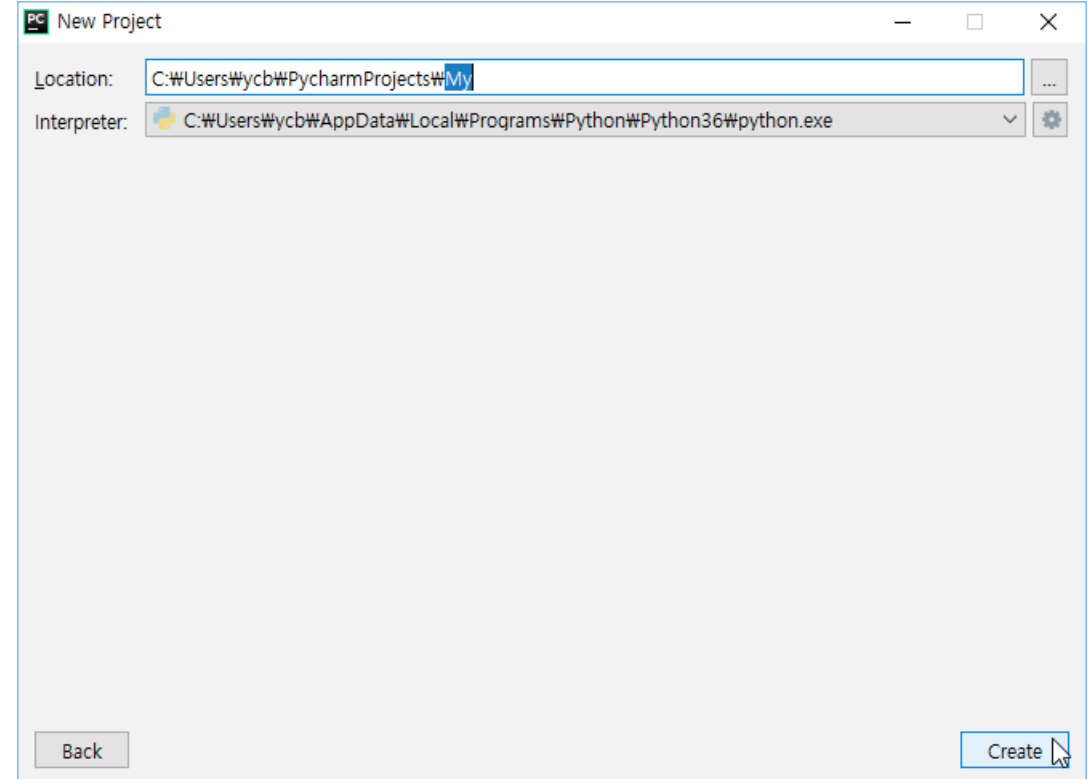
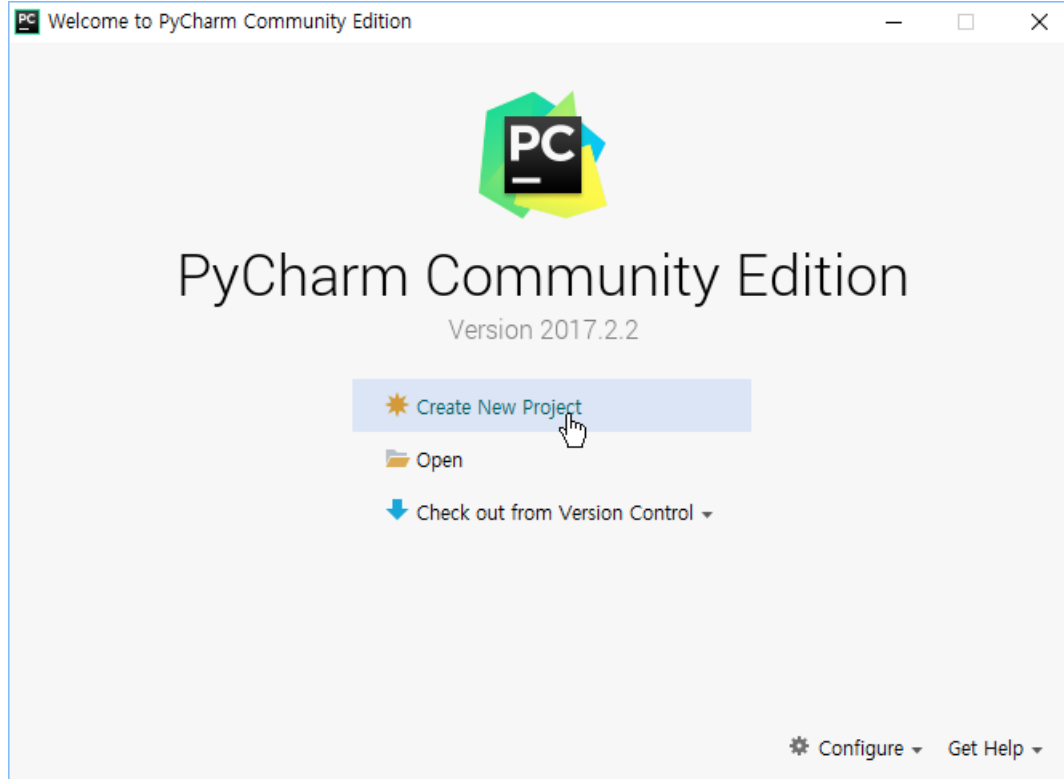
(4) PyCharm 설치



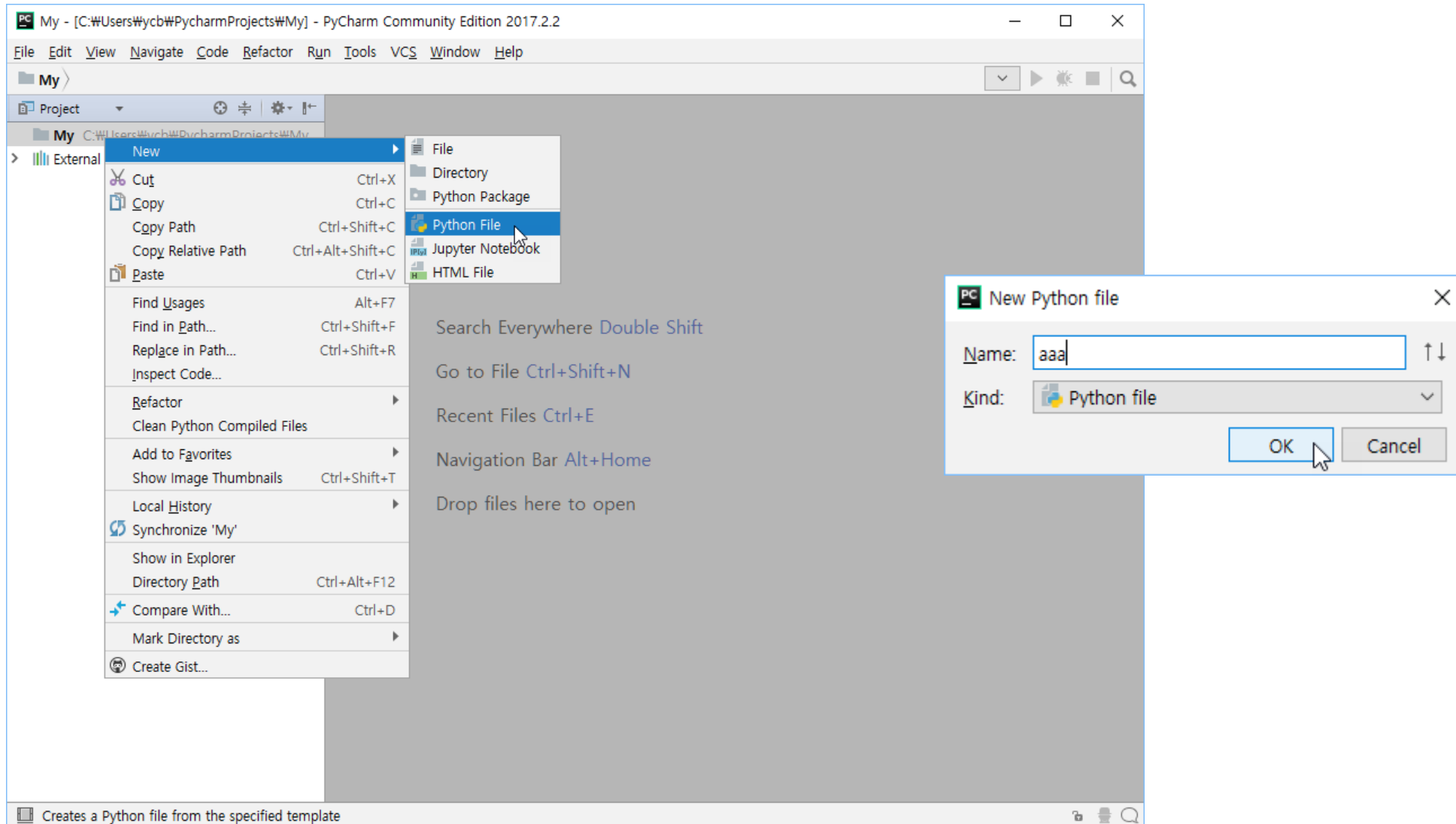
(4) PyCharm 설치



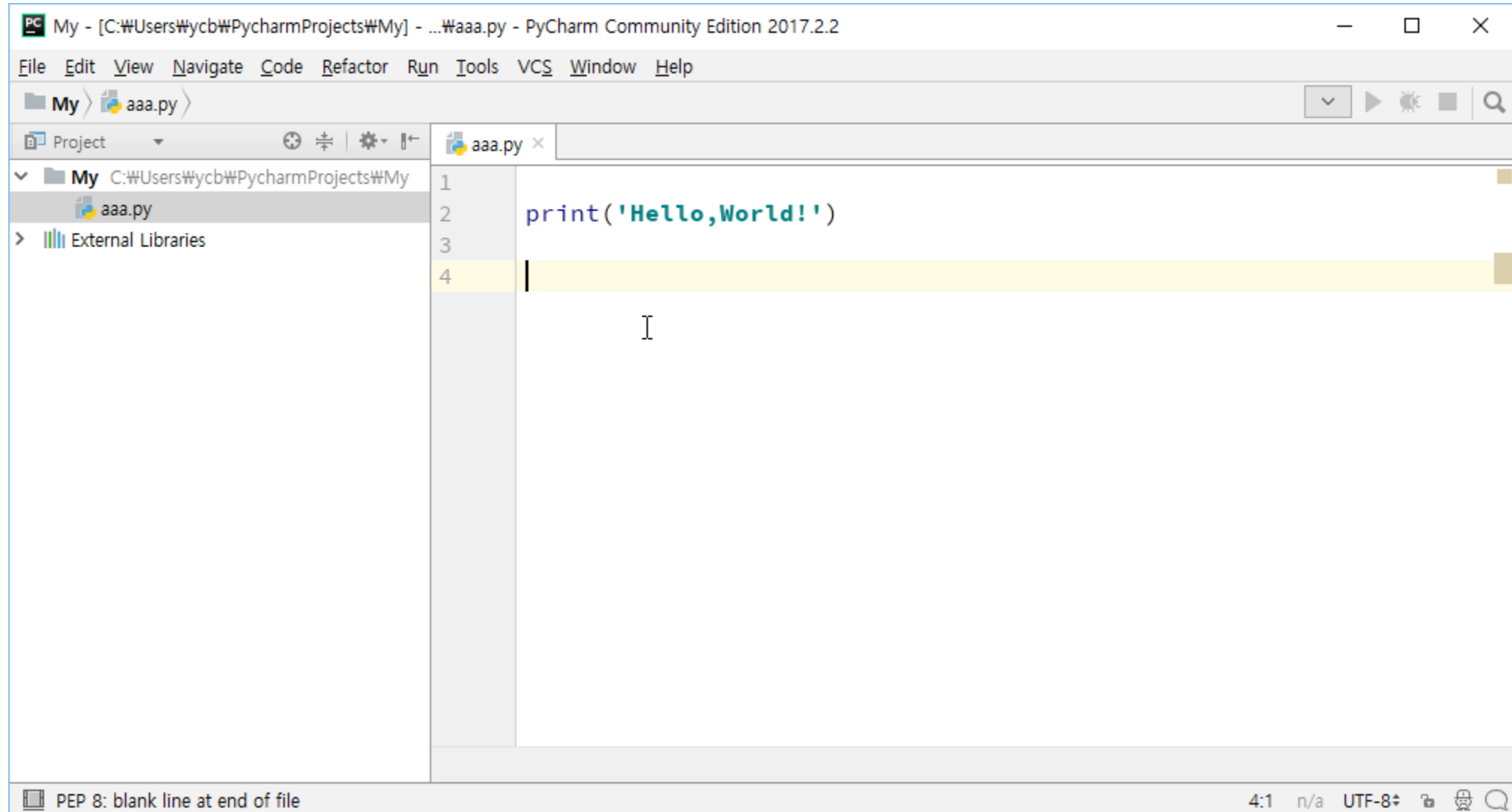
(5) PyCharm을 이용한 코딩



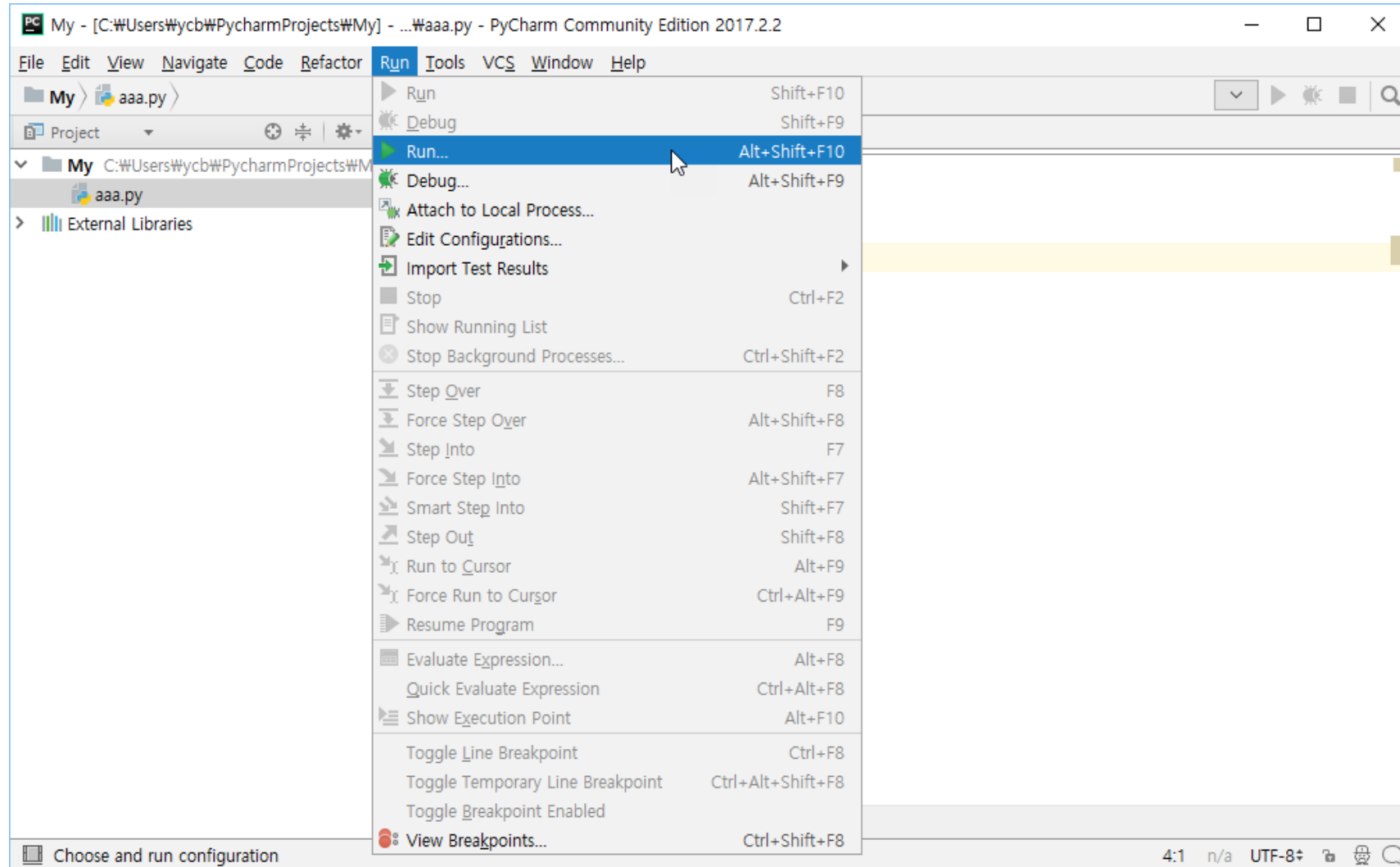
(5) PyCharm을 이용한 코딩



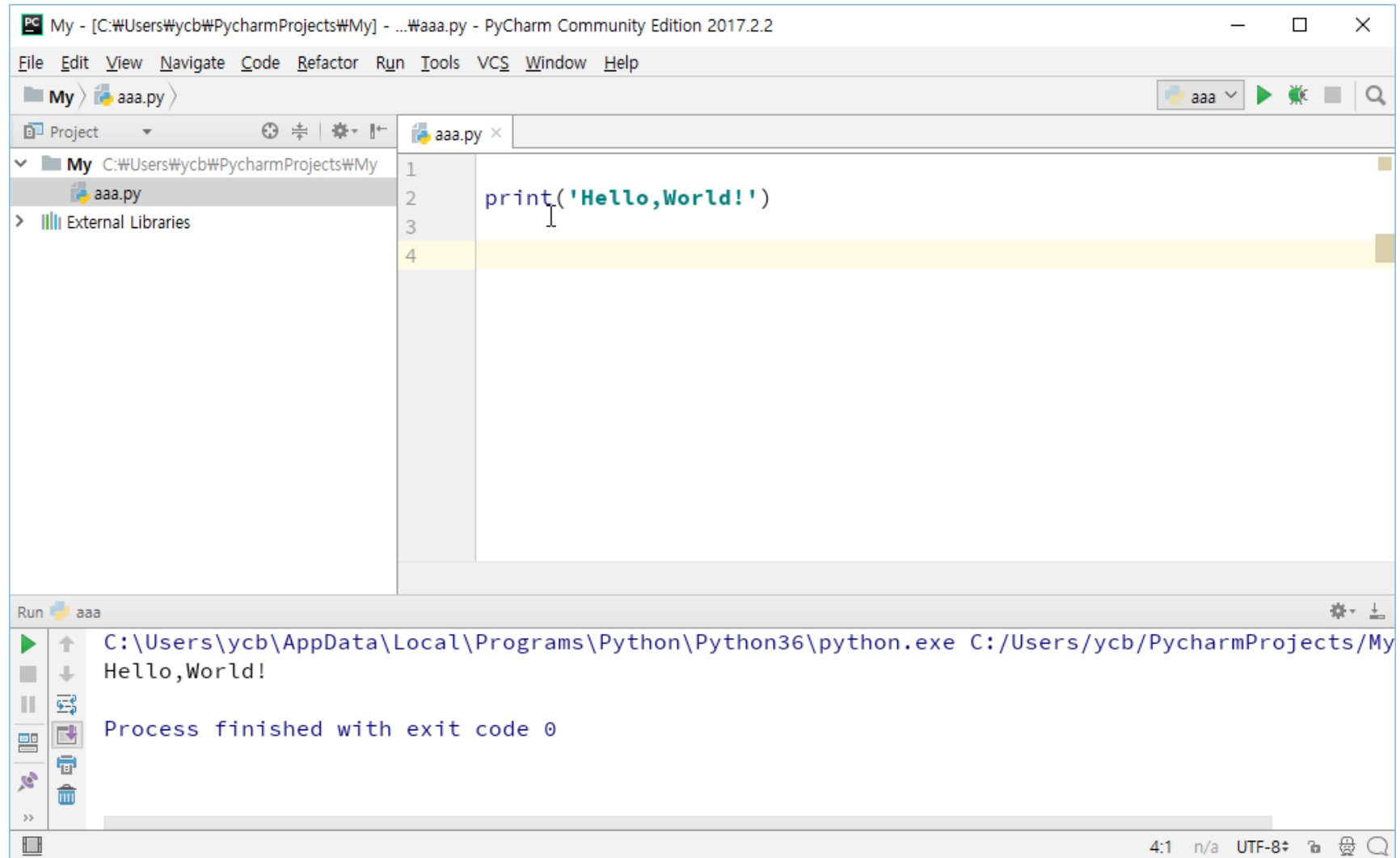
(5) PyCharm을 이용한 코딩



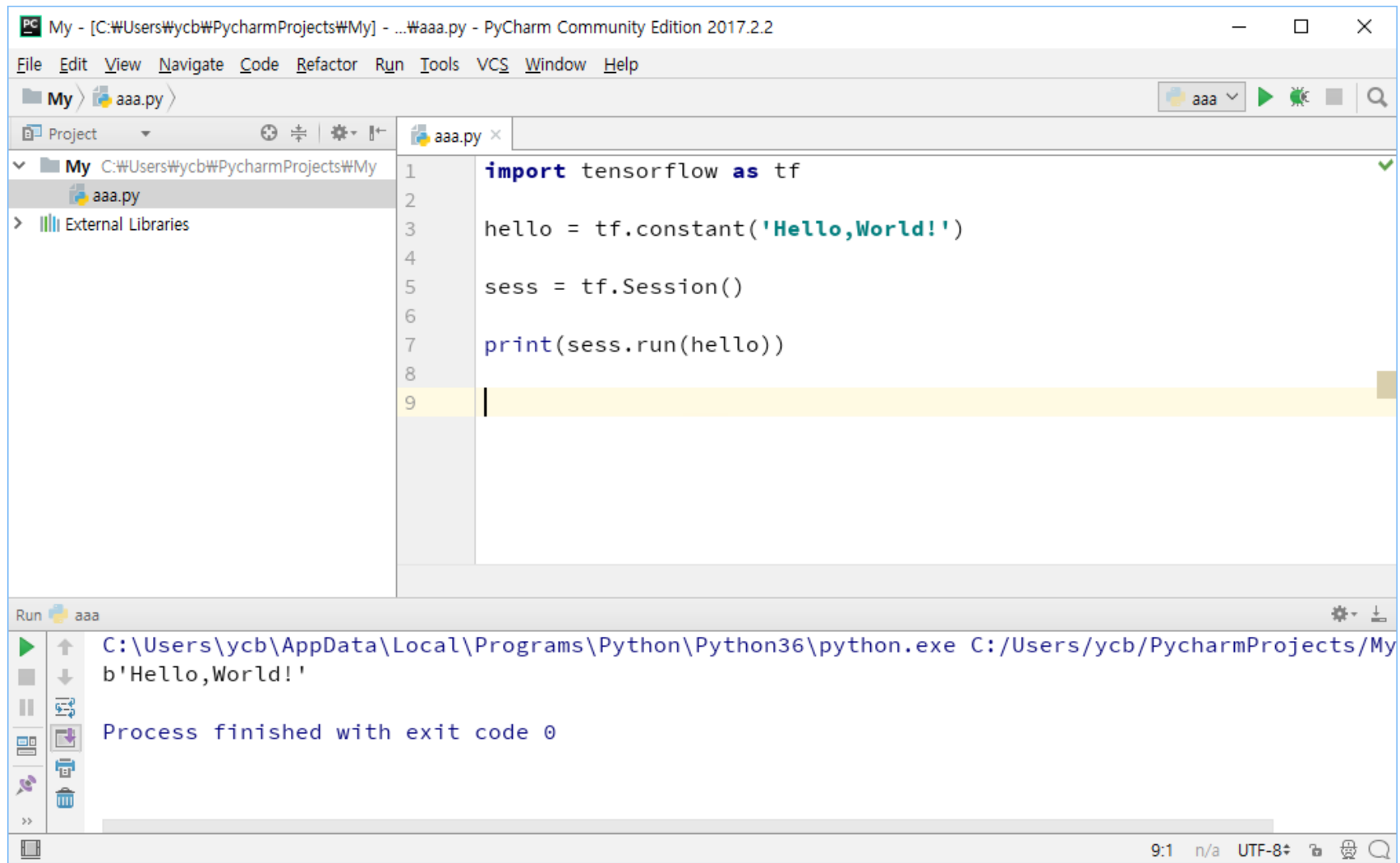
(5) PyCharm을 이용한 코딩



(5) PyCharm을 이용한 코딩



(5) PyCharm을 이용한 코딩



```
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)
```

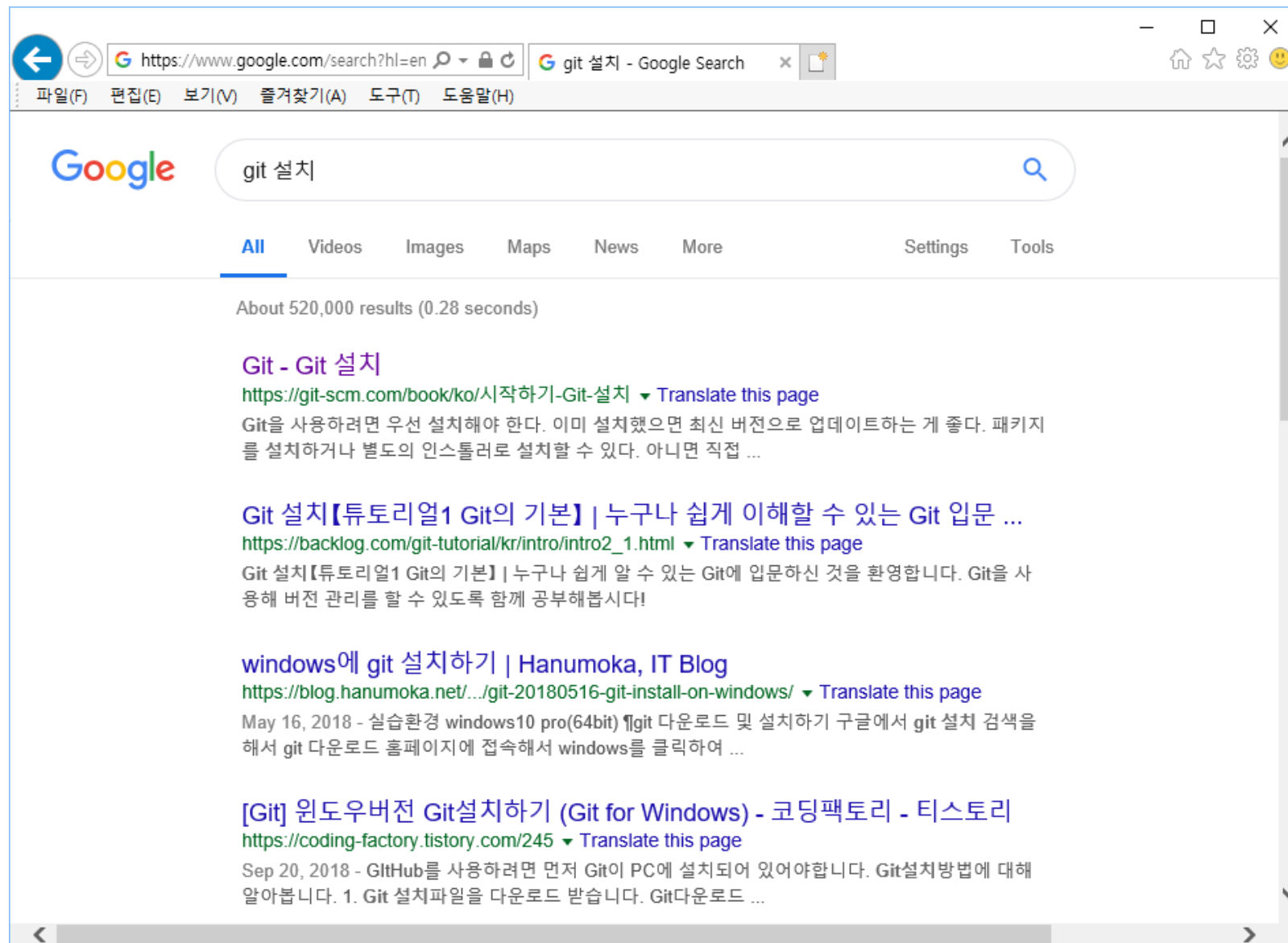
```
plt.show();
```

```
#----- 테스트/예측해 보기
```

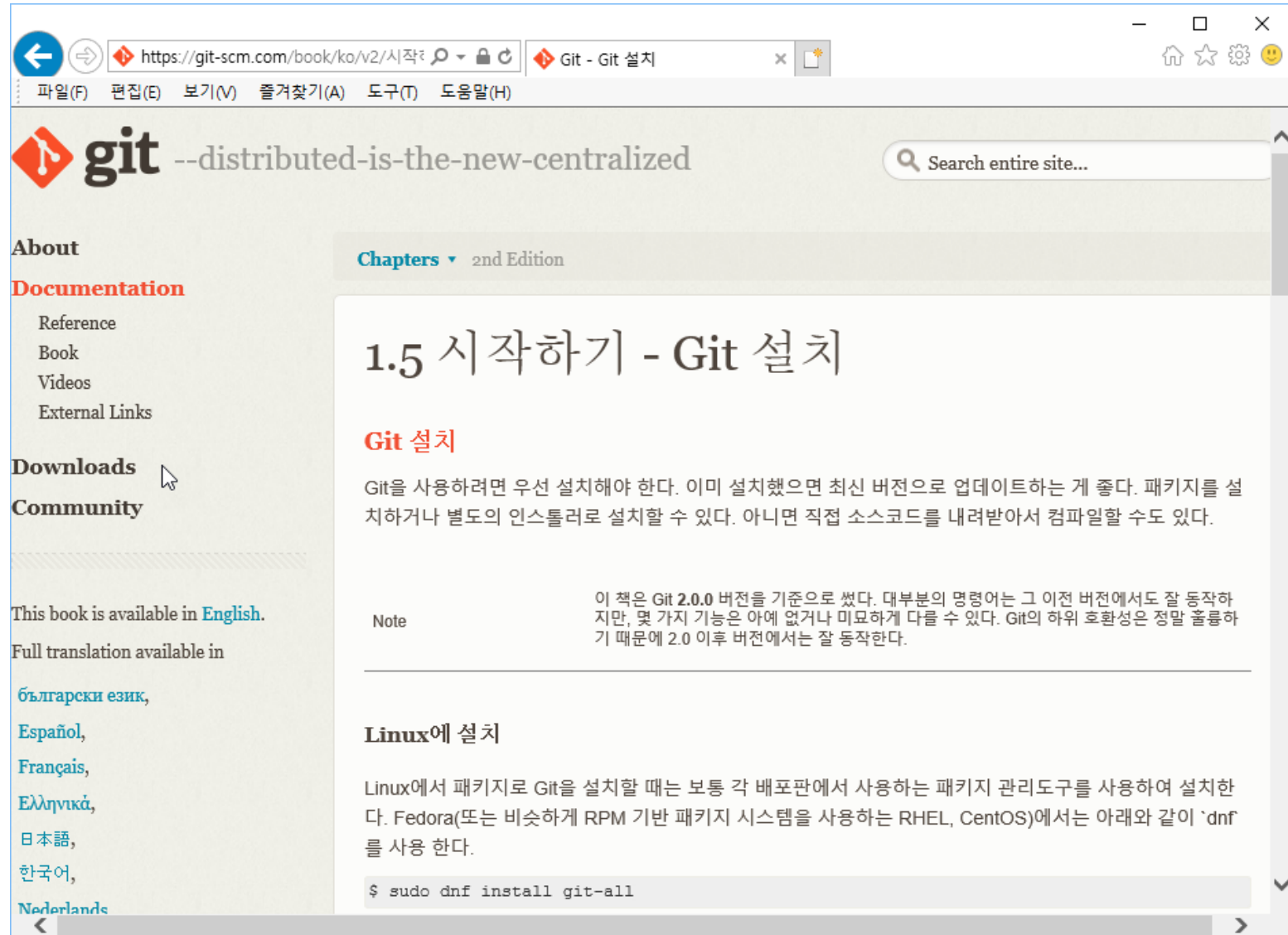
```
print(sess.run(w * [3]))
```


(6) git 설치

- Google에서 'git 설치' 검색



(6) git 설치



The screenshot shows a web browser window with the URL <https://git-scm.com/book/ko/v2/시작하기>. The page title is "Git - Git 설치". The main content area is titled "1.5 시작하기 - Git 설치" (1.5 Getting Started - Git Installation). Below the title, there is a section titled "Git 설치" (Git Installation) with the following text:

Git을 사용하려면 우선 설치해야 한다. 이미 설치했으면 최신 버전으로 업데이트하는 게 좋다. 패키지를 설치하거나 별도의 인스톨러로 설치할 수 있다. 아니면 직접 소스코드를 내려받아서 컴파일할 수도 있다.

Note

이 책은 Git 2.0.0 버전을 기준으로 썼다. 대부분의 명령어는 그 이전 버전에서도 잘 동작하지만, 몇 가지 기능은 아예 없거나 미묘하게 다를 수 있다. Git의 하위 호환성은 정말 훌륭하기 때문에 2.0 이후 버전에서는 잘 동작한다.

Linux에 설치

Linux에서 패키지로 Git을 설치할 때는 보통 각 배포판에서 사용하는 패키지 관리도구를 사용하여 설치한다. Fedora(또는 비슷하게 RPM 기반 패키지 시스템을 사용하는 RHEL, CentOS)에서는 아래와 같이 `dnf`를 사용한다.

```
$ sudo dnf install git-all
```

The sidebar on the left contains the following links:

- About
- Documentation
 - Reference
 - Book
 - Videos
 - External Links
- Downloads
- Community

At the bottom of the sidebar, it says: "This book is available in [English](#). Full translation available in [български език](#), [Español](#), [Français](#), [Ελληνικά](#), [日本語](#), [한국어](#), [Nederlands](#)".

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



Mac OS X



Windows



Linux/Unix

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 →](#)

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](#).

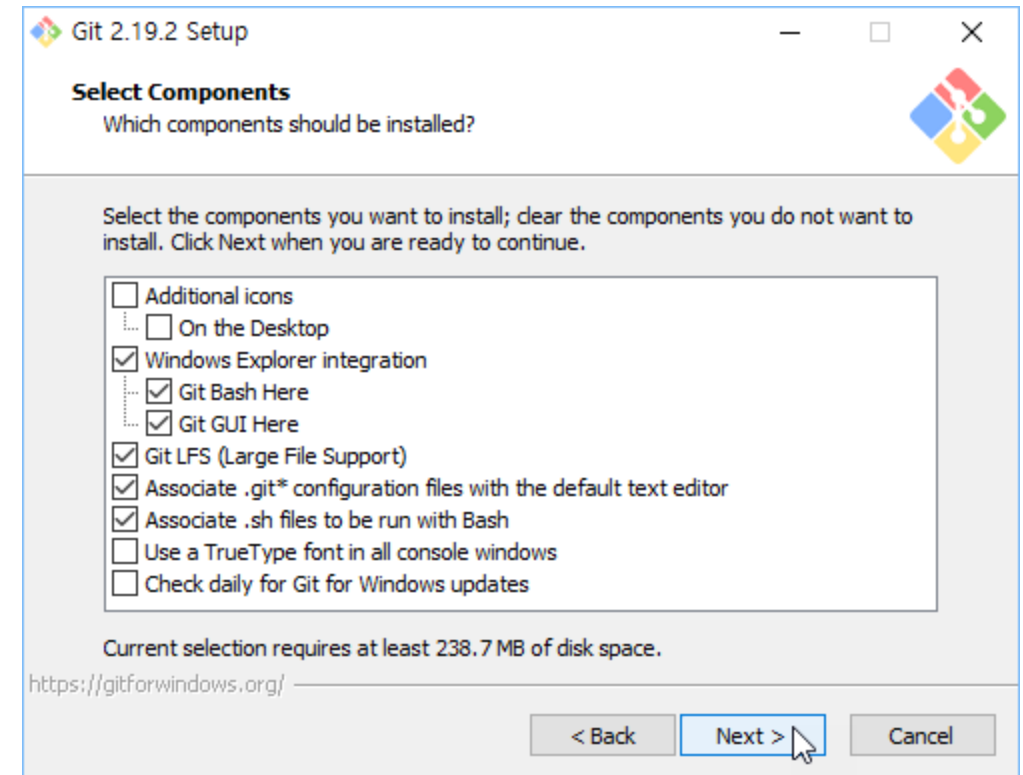
...ub-production-release-asset-2e65be.s3.amazonaws.com의 Git-2.19.2-64-bit.exe(42.0MB)을(를) 실행하거나 저장하시겠습니까? ✕

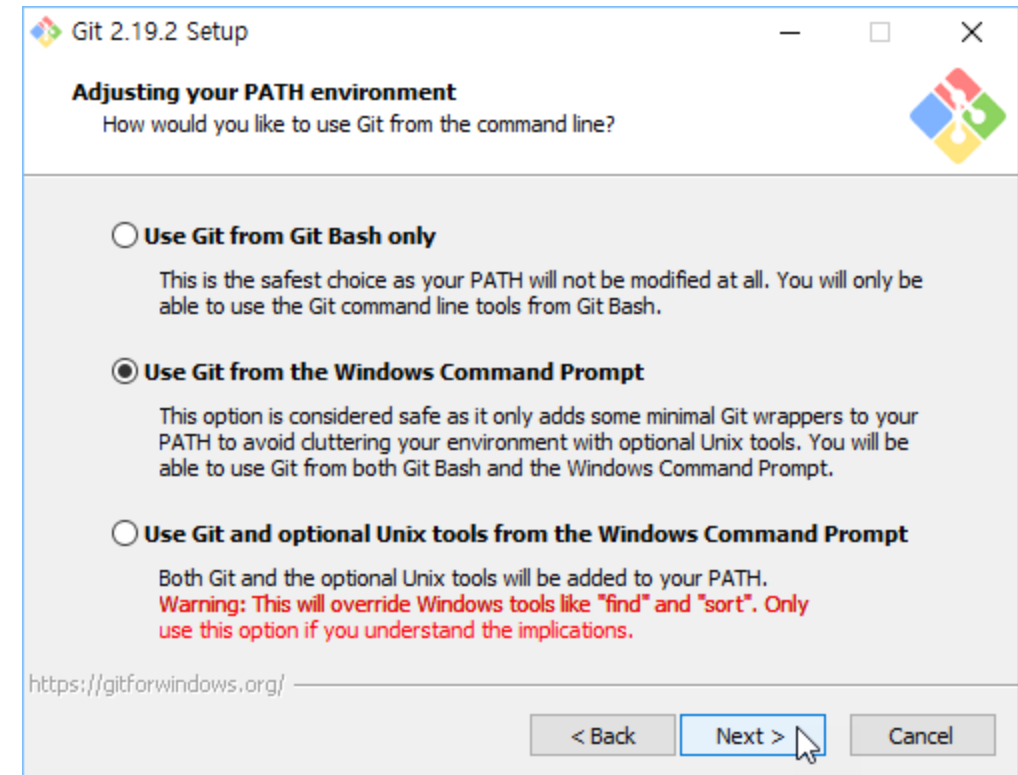
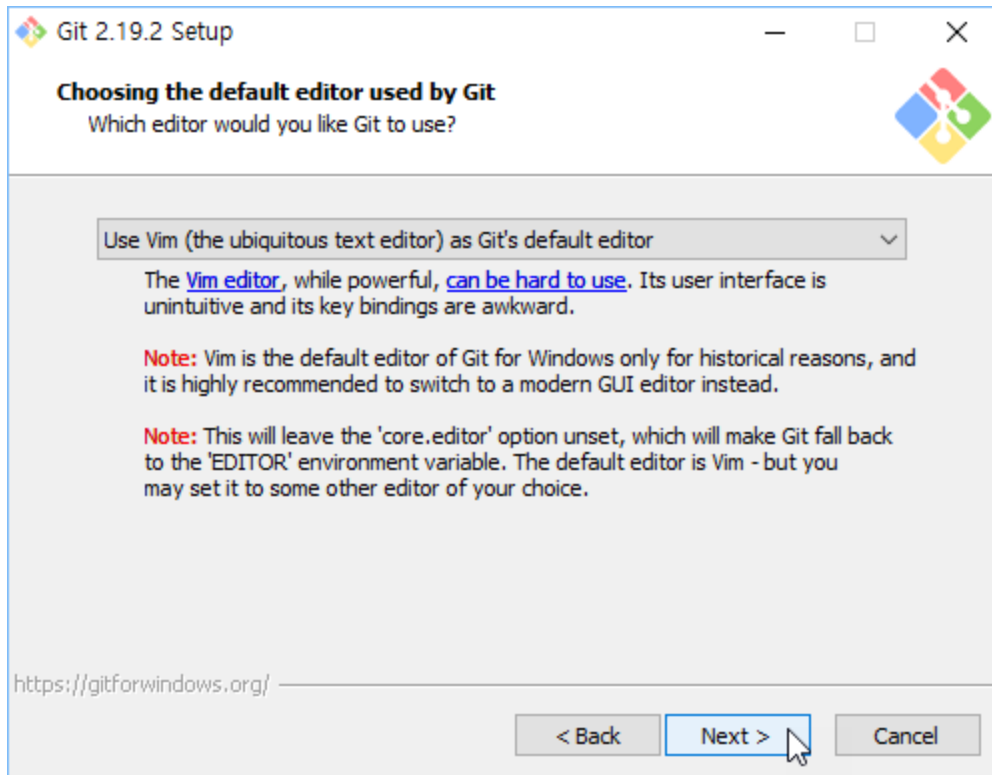
실행(R)

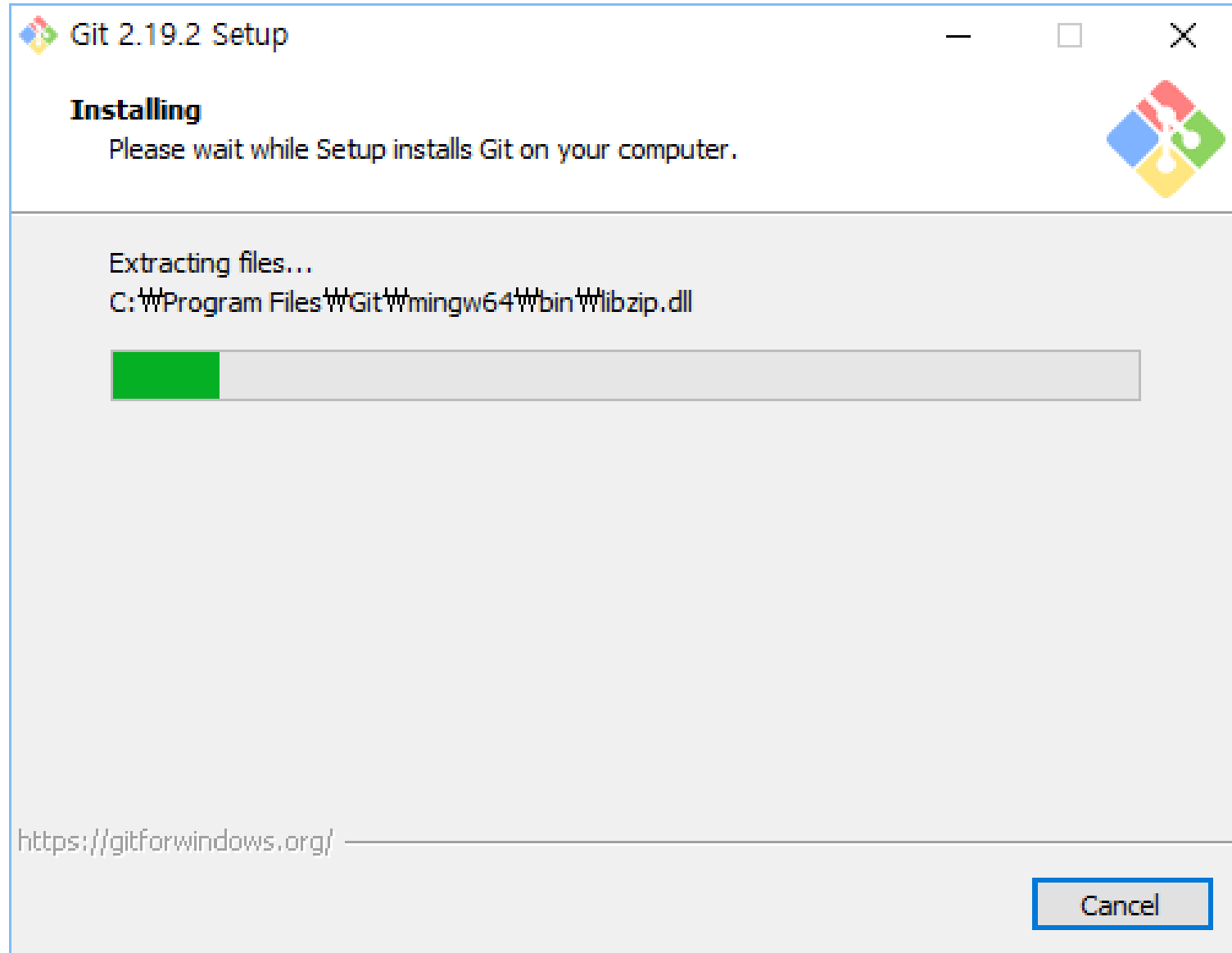
저장(S)

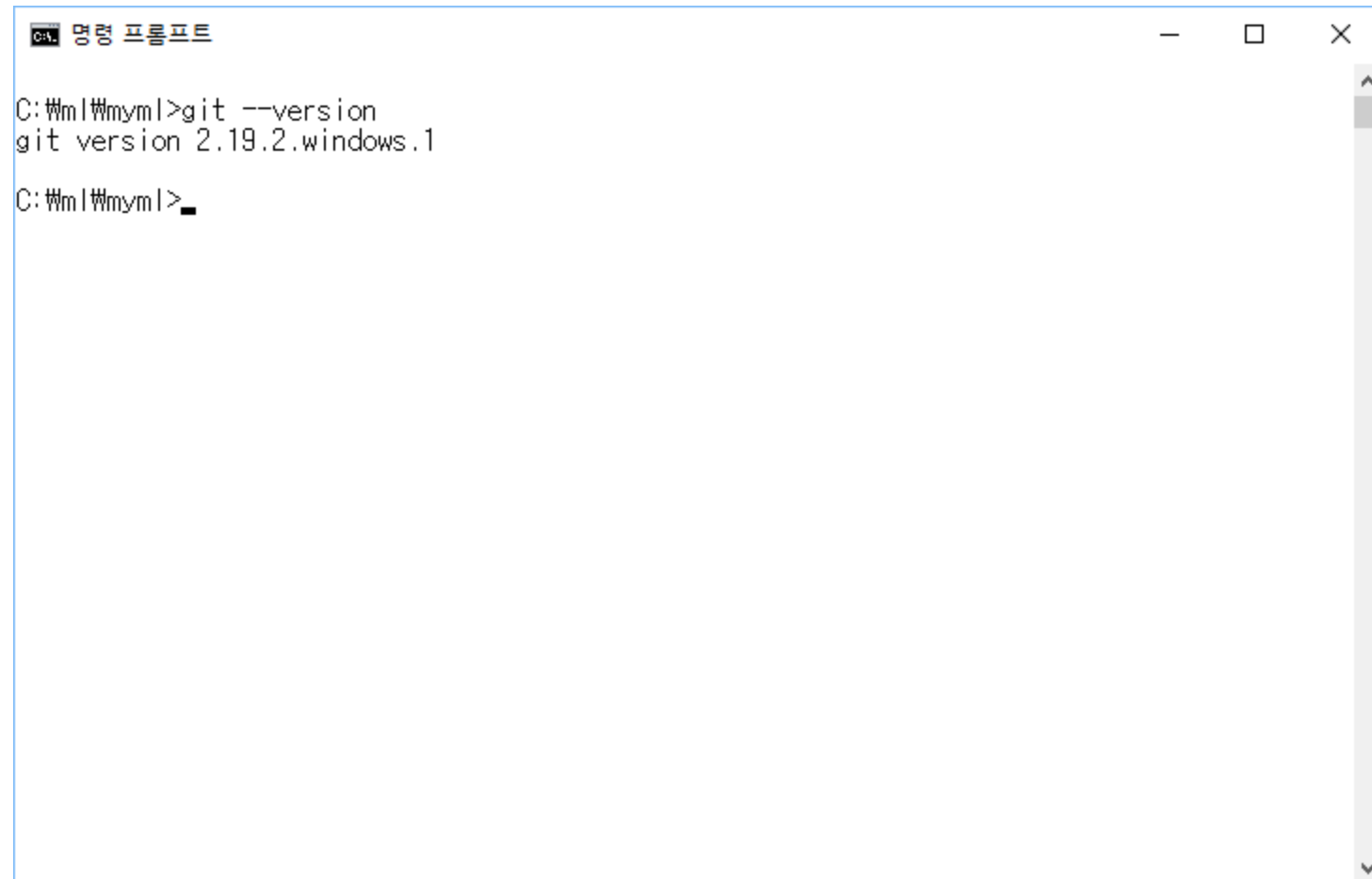


취소(C)









A screenshot of a Windows Command Prompt window. The title bar at the top reads "명령 프롬프트" (Command Prompt) with a small icon on the left and standard window controls (minimize, maximize, close) on the right. The command prompt shows the following text:
C:\m\mym\>git --version
git version 2.19.2.windows.1
C:\m\mym\>_

(7) 소스 프로그램 다운로드

- 원하는 폴더를 만듦(가령, c:\₩>myml)
- 도스 창에서 원하는 폴더로 이동

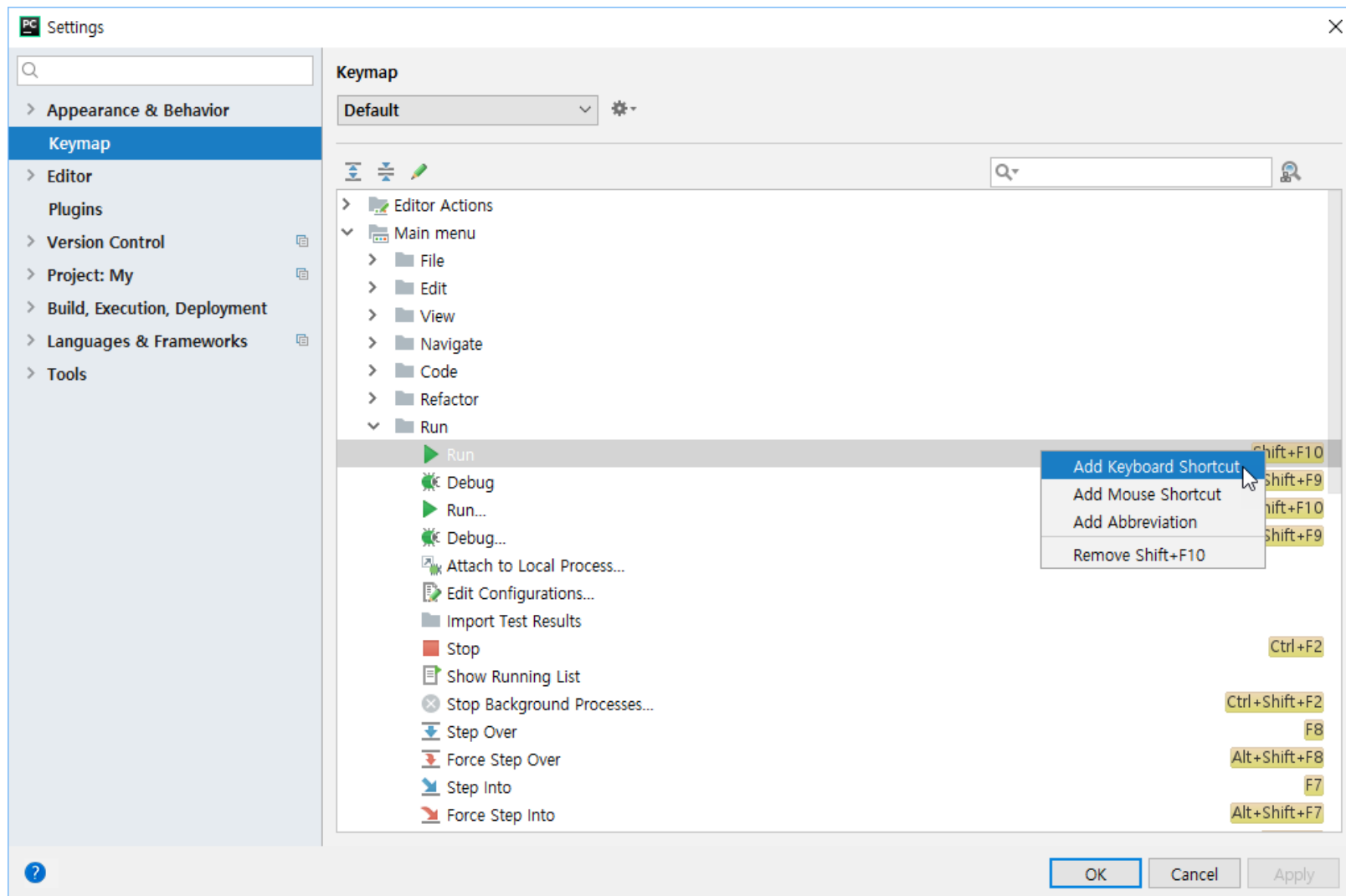
> git clone https://github.com/yungbyun/myml

(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.
- 자료를 다운로드하고 이를 이용할 수 있다.
- 텐서플로우 코드를 실행할 수 있다.