

# 딥러닝 실습 환경 설정 : conda + pytorch + jupyter

Knowledge Engineering Lab, Korea University

# 딥러닝 실습을 위해 필요한 것

IDE



신경망 프레임워크



연산 라이브러리



프로그래밍 언어



이론

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프로그래밍 언어

이론

ONDA

 jupyter

 PyTorch

 NumPy

 NVIDIA  
CUDA

 python™

# 실습 환경 설정 단계

1. conda (miniconda) 설치
2. conda 가상 환경 추가 + pytorch 설치
3. jupyter 실행

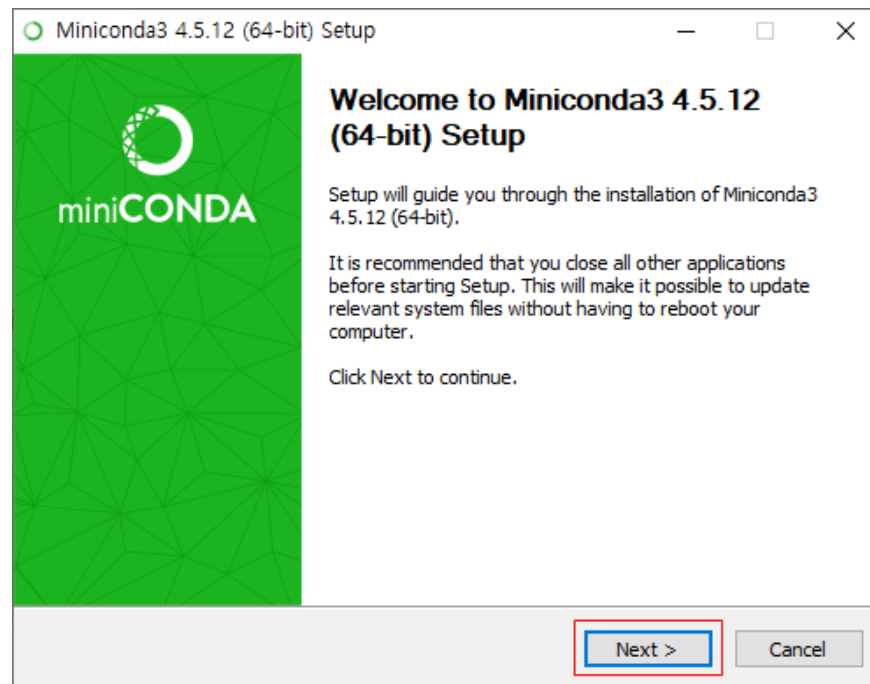
# 1. Conda (miniconda) 설치

- <https://conda.io/en/latest/miniconda.html>

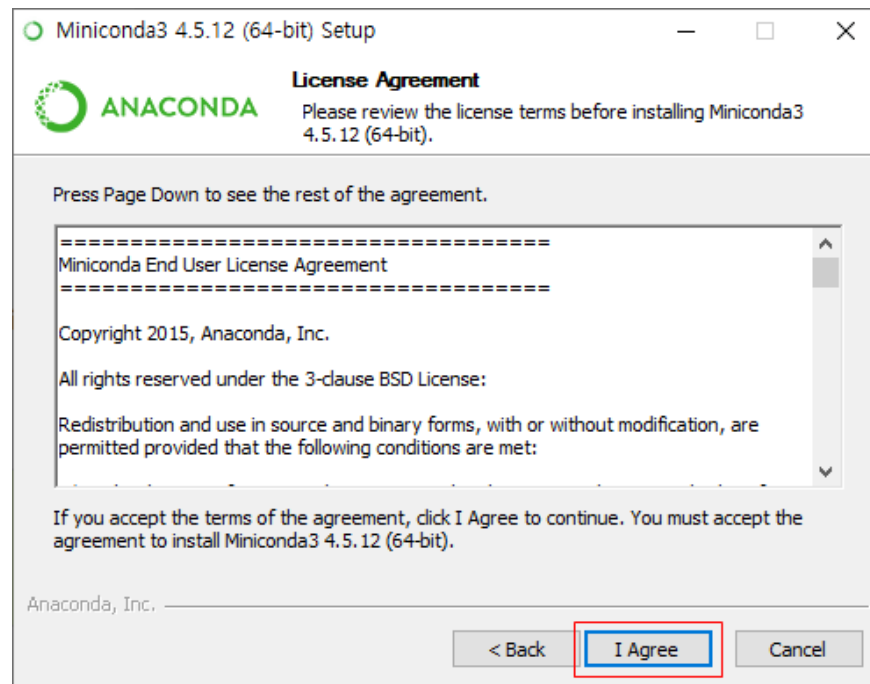
## Miniconda

	Windows	Mac OS X	Linux
Python 3.7	64-bit (exe installer)	64-bit (bash installer)	64-bit (bash installer)
	32-bit (exe installer)	64-bit (.pkg installer)	32-bit (bash installer)
Python 2.7	64-bit (exe installer)	64-bit (bash installer)	64-bit (bash installer)
	32-bit (exe installer)	64-bit (.pkg installer)	32-bit (bash installer)

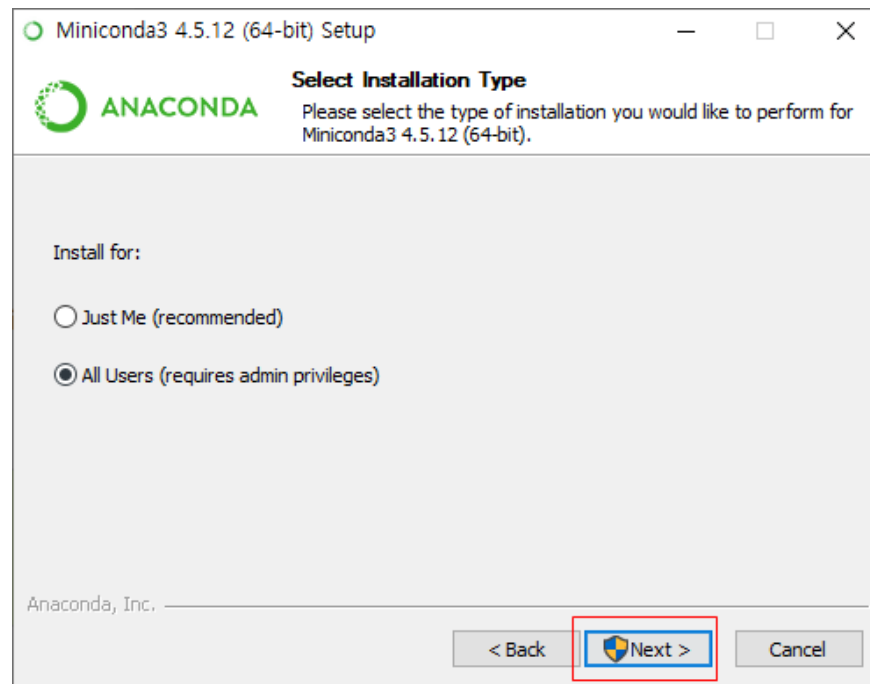
# 1. Conda (miniconda) 설치



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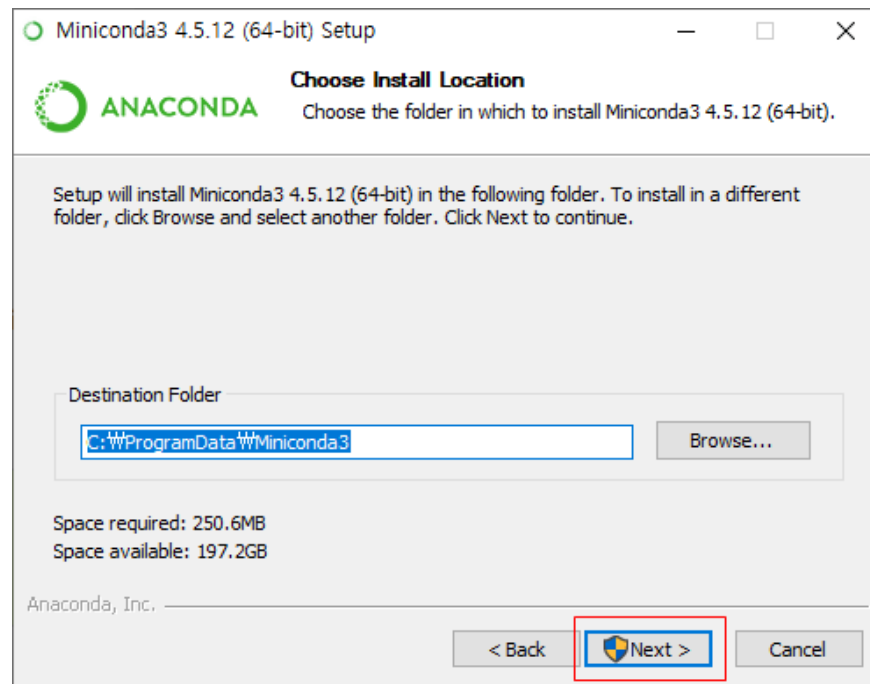


# 1. Conda (miniconda) 설치

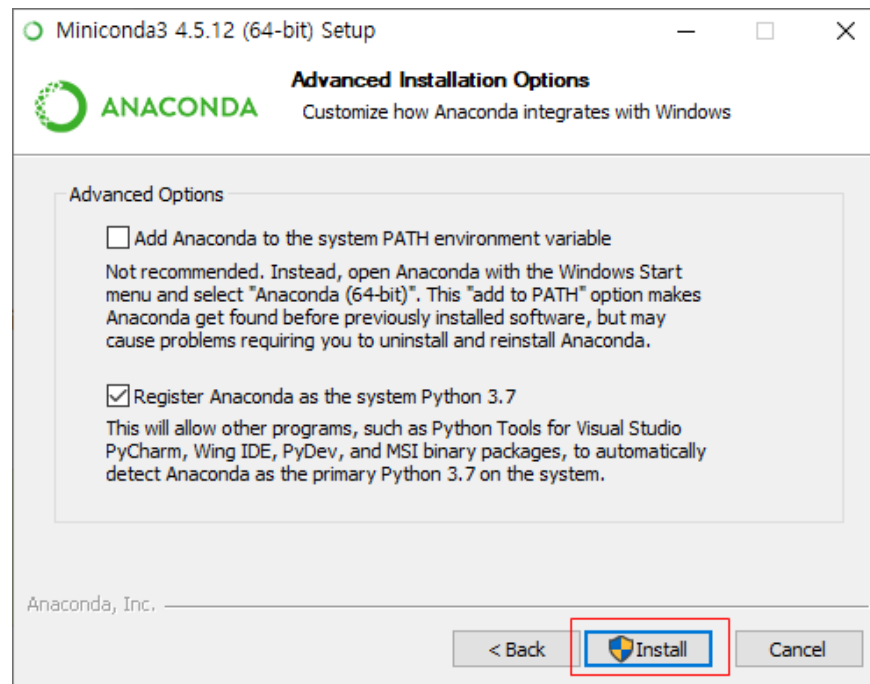




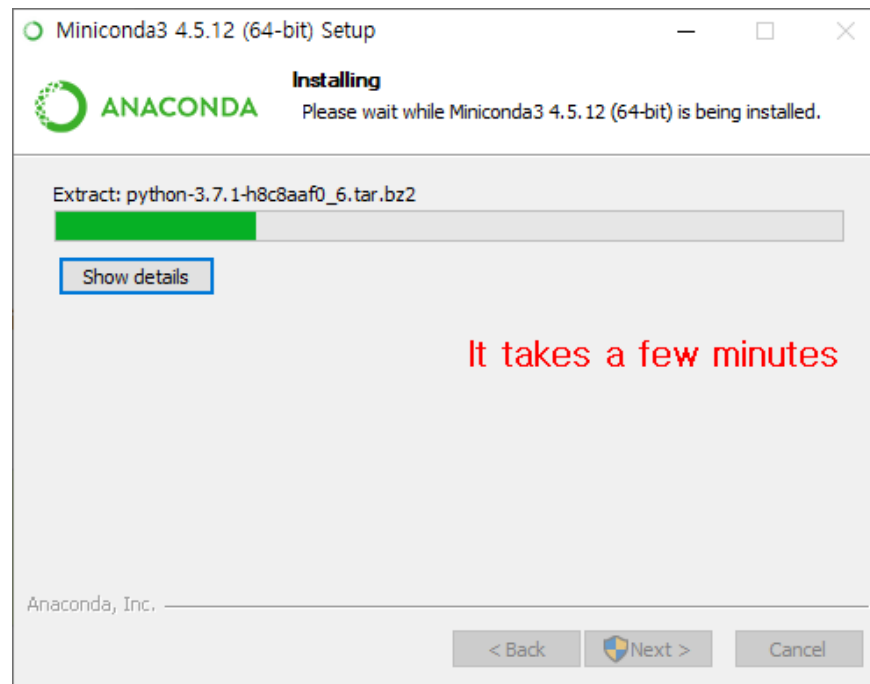
# 1. Conda (miniconda) 설치



# 1. Conda (miniconda) 설치



# 1. Conda (miniconda) 설치



## 2. 가상 환경 추가 + pytorch 설치

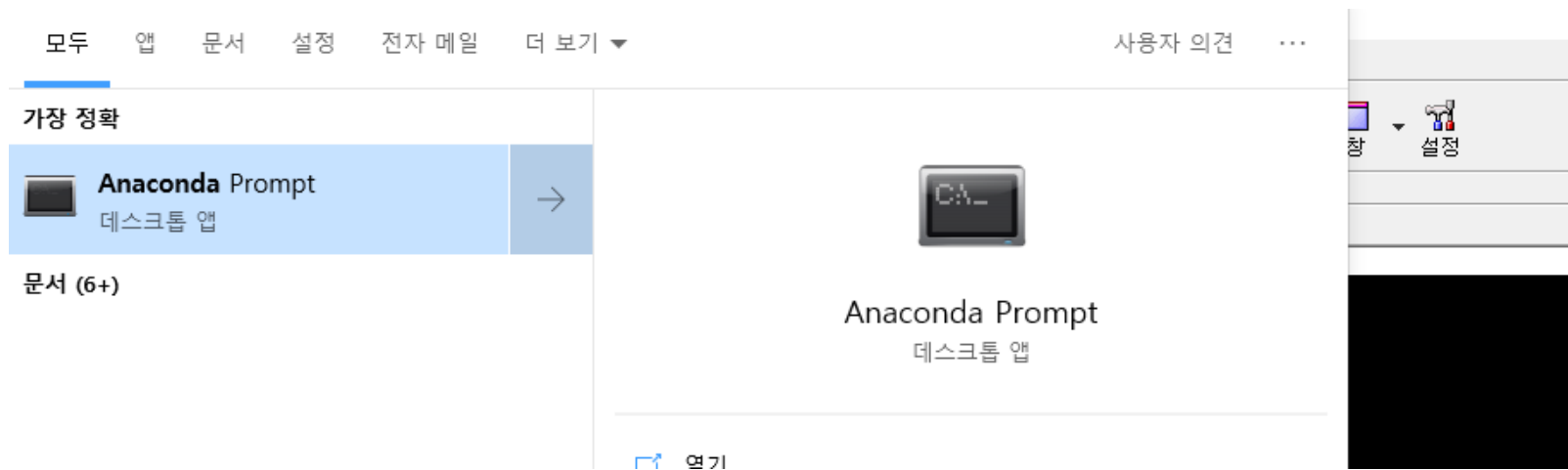
- Anaconda prompt 의 conda create 명령어로 가상 환경 추가

```
conda create --name [ENV_NAME] [-c CHANNEL] [PRE_INSTALL_PACKAGES]
```

- ENV\_NAME : pytorch
- CHANNEL : pytorch
- PRE\_INSTALL\_PACKAGES : pytorch jupyter matplotlib

```
> conda create --name pytorch -c pytorch pytorch jupyter  
matplotlib
```

## 2. 가상 환경 추가 + pytorch 설치



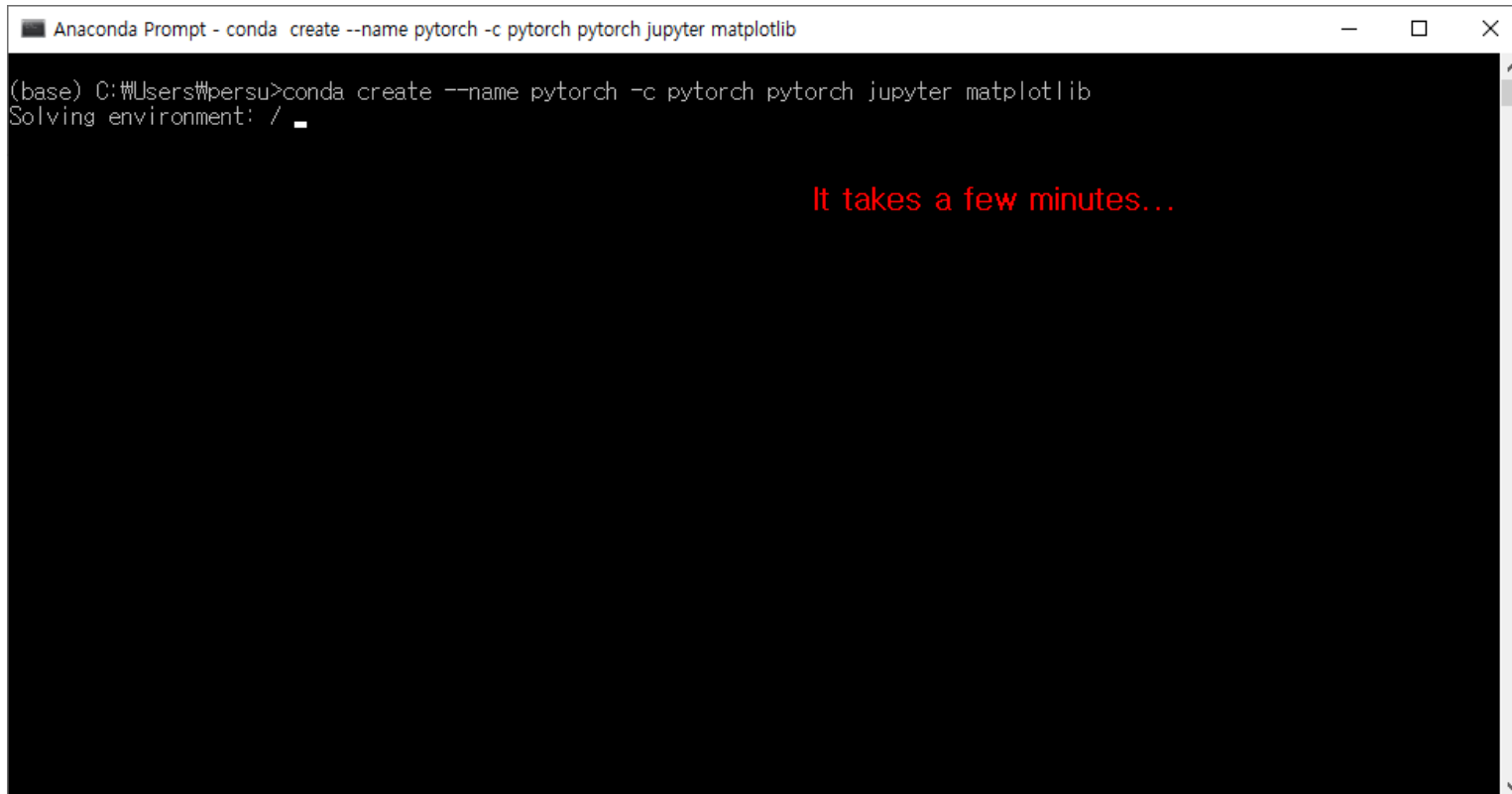
## 2. 가상 환경 추가 + pytorch 설치



```
Anaconda Prompt
(base) C:\Users\persu>conda create --name pytorch -c pytorch pytorch jupyter matplotlib
```

The image shows a screenshot of an Anaconda Prompt window. The window title is "Anaconda Prompt". The command prompt shows the user is in the base environment at the path C:\Users\persu. The command entered is `conda create --name pytorch -c pytorch pytorch jupyter matplotlib`. The command prompt is currently empty, waiting for the command to execute.

## 2. 가상 환경 추가 + pytorch 설치



```
Anaconda Prompt - conda create --name pytorch -c pytorch pytorch jupyter matplotlib  
(base) C:\Users\persu>conda create --name pytorch -c pytorch pytorch jupyter matplotlib  
Solving environment: / _  
  
It takes a few minutes...
```

## 2. 가상 환경 추가 + pytorch 설치

```
Anaconda Prompt - conda create --name pytorch -c pytorch pytorch jupyter matplotlib
pyqt: 5.9.2-py37h6538335_2
python: 3.7.2-h8c8aaf0_10
python-dateutil: 2.8.0-py37_0
pytorch: 1.0.1-py3.7_cuda100_cudnn7.1_pytorch
pytz: 2018.9-py37_0
pywinpty: 0.5.5-py37_1000
pyzmq: 18.0.0-py37ha925a31_0
qt: 5.9.7-vc14h73c81de_0
qtconsole: 4.4.3-py37_0
send2trash: 1.5.0-py37_0
setuptools: 40.8.0-py37_0
sip: 4.19.8-py37h6538335_0
six: 1.12.0-py37_0
sqlite: 3.26.0-he774522_0
terminado: 0.8.1-py37_1
testpath: 0.4.2-py37_0
tornado: 5.1.1-py37hfa8e2cd_0
traitlets: 4.3.2-py37_0
vc: 14.1-h0510ff6_4
vs2015_runtime: 14.15.26706-h3a45250_0
wcwidth: 0.1.7-py37_0
webencodings: 0.5.1-py37_1
wheel: 0.33.1-py37_0
widgetsnbextension: 3.4.2-py37_0
wincertstore: 0.2-py37_0
winpty: 0.4.3-4
zeromq: 4.3.1-h33f27b4_3
zlib: 1.2.11-h62dcd97_3

checks version is 1.0 or higher

Proceed ([y]/n)? y_
```



## 2. 가상 환경 추가 + pytorch 설치

```
Anaconda Prompt - conda create --name pytorch -c pytorch pytorch jupyter matplotlib

qt: 5.9.7-vc14h73c81de_0
qtconsole: 4.4.3-py37_0
send2trash: 1.5.0-py37_0
setuptools: 40.8.0-py37_0
sip: 4.19.8-py37h8538335_0
six: 1.12.0-py37_0
sqlite: 3.26.0-he774522_0
terminado: 0.8.1-py37_1
testpath: 0.4.2-py37_0
tornado: 5.1.1-py37hfa6e2cd_0
traitlets: 4.3.2-py37_0
vc: 14.1-h0510ff6_4
vs2015_runtime: 14.15.26706-h3a45250_0
wcwidth: 0.1.7-py37_0
webencodings: 0.5.1-py37_1
wheel: 0.33.1-py37_0
widgetsnbextension: 3.4.2-py37_0
wincertstore: 0.2-py37_0
winpty: 0.4.3-4
zeromq: 4.3.1-h33f27b4_3
zlib: 1.2.11-h62dcd97_3

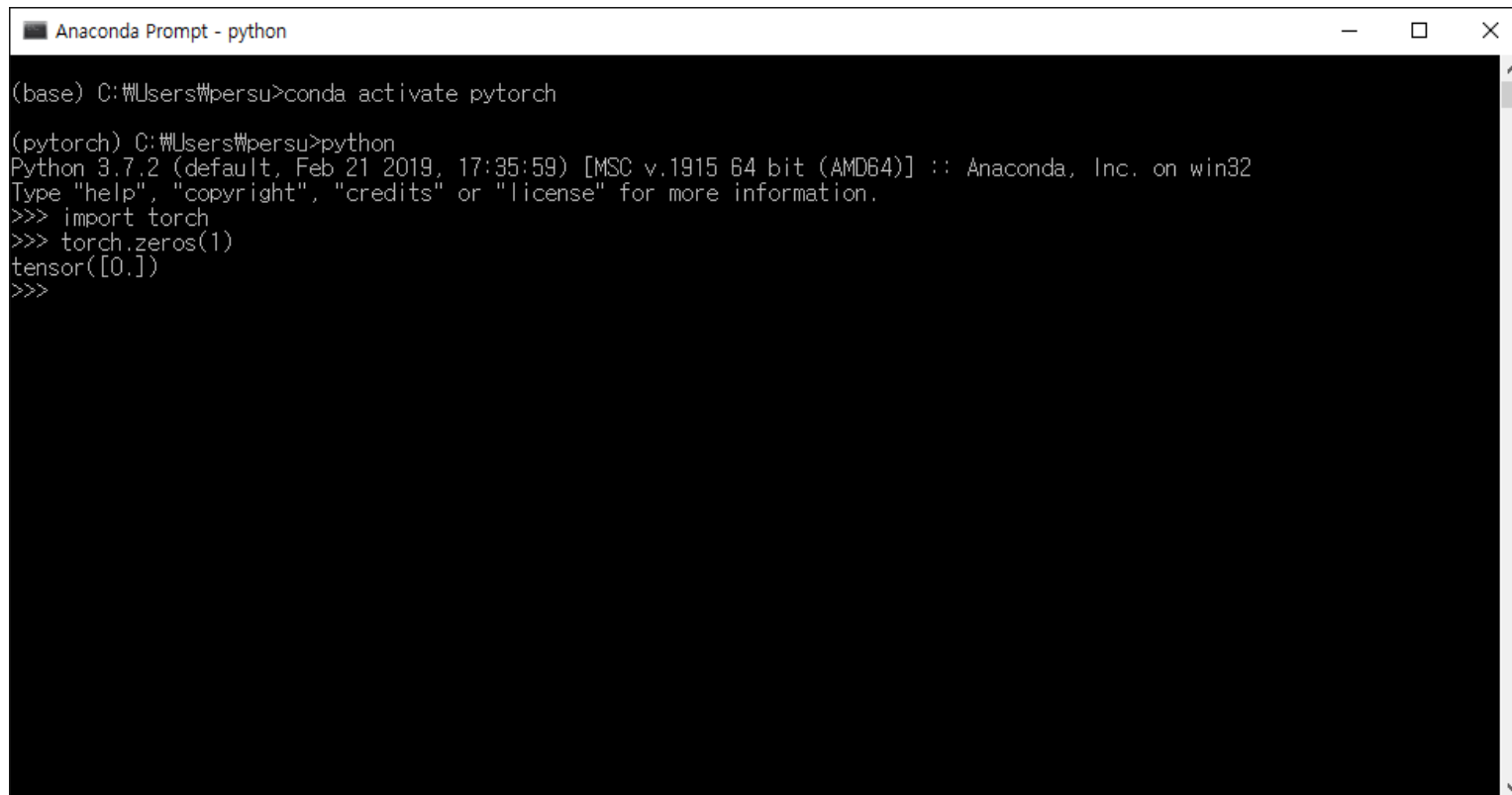
Proceed ([y]/n)? y

Downloading and Extracting Packages
ca-certificates-2019 | 158 KB | ##### | 100%
qtconsole-4.4.3 | 176 KB | ##### | 100%
m2w64-gmp-6.1.0 | 689 KB | ##### | 100%
notebook-5.7.4 | 7.3 MB | #####3 | 75%
```

it takes longer than before.

It may take more than a dozens of minutes;

## 2. 가상 환경 추가 + pytorch 설치



```
Anaconda Prompt - python

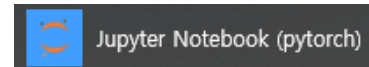
(base) C:\Users\persu>conda activate pytorch

(pytorch) C:\Users\persu>python
Python 3.7.2 (default, Feb 21 2019, 17:35:59) [MSC v.1915 64 bit (AMD64)] :: Anaconda, Inc. on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import torch
>>> torch.zeros(1)
tensor([0.])
>>>
```

# 3. Jupyter 실행

## 1. 바로가기 이용

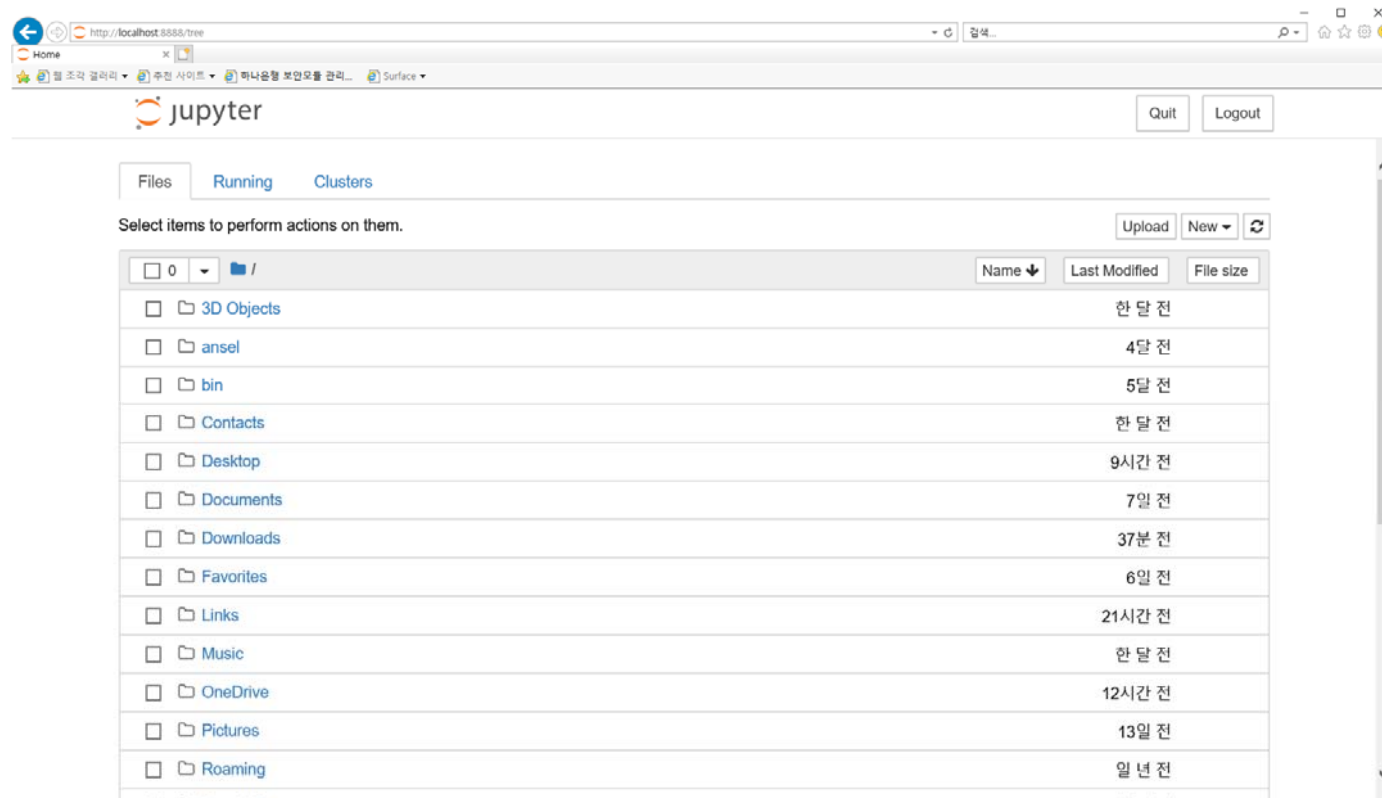
- 시작 -> “jupyter notebook (pytorch)” 실행



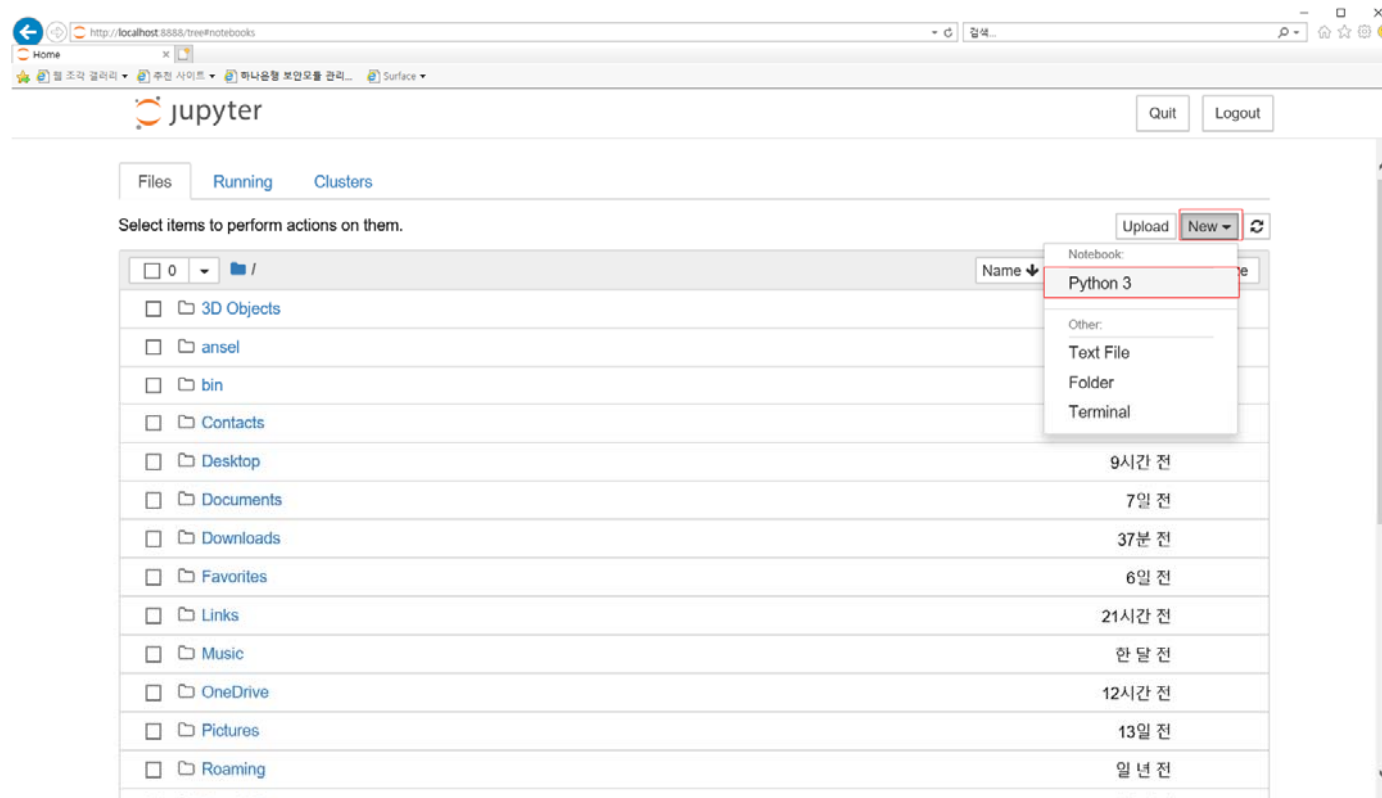
## 2. Anaconda prompt 이용

- Anaconda prompt 실행
- 가상 환경 변경
  - > activate pytorch
- 소스코드 폴더로 이동
- Jupyter 실행
  - > jupyter notebook

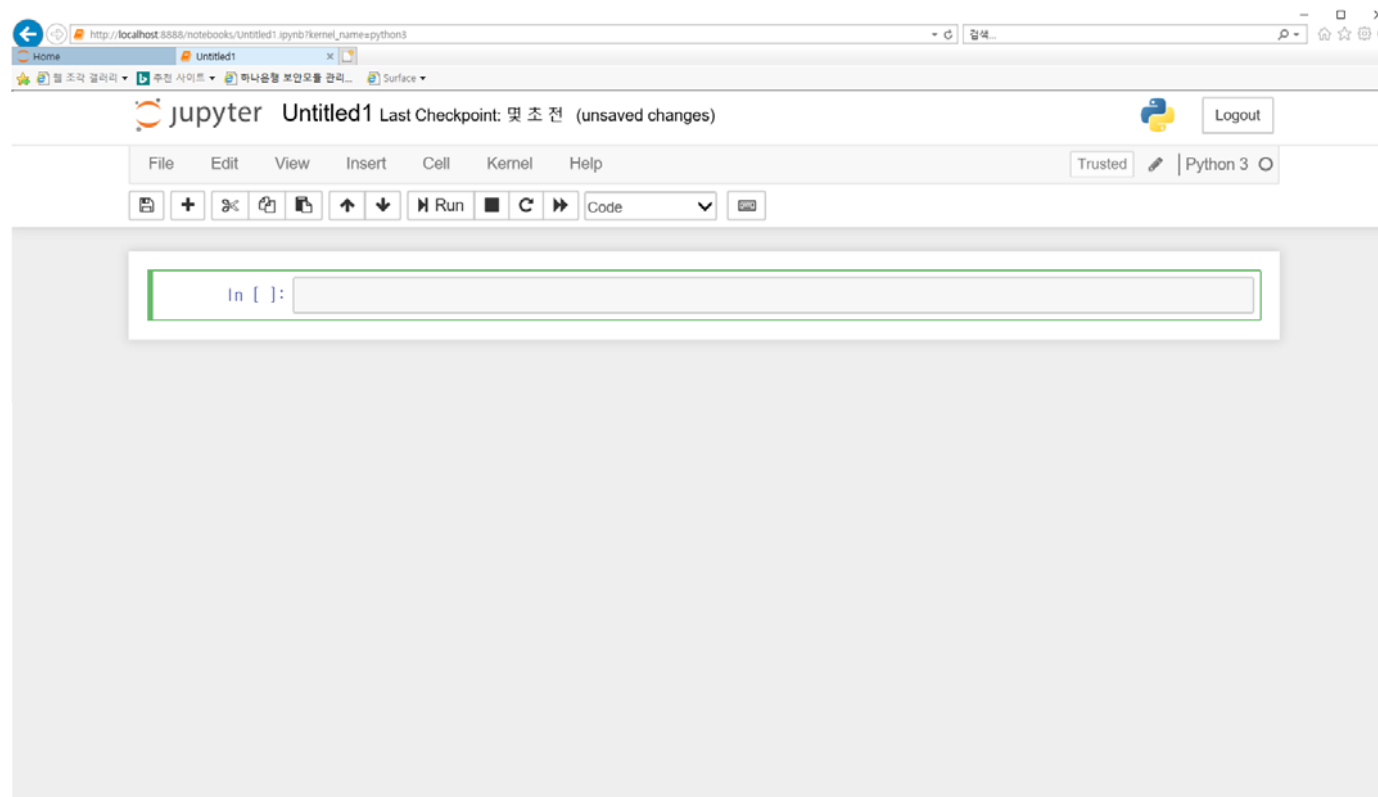
### 3. Jupyter 실행



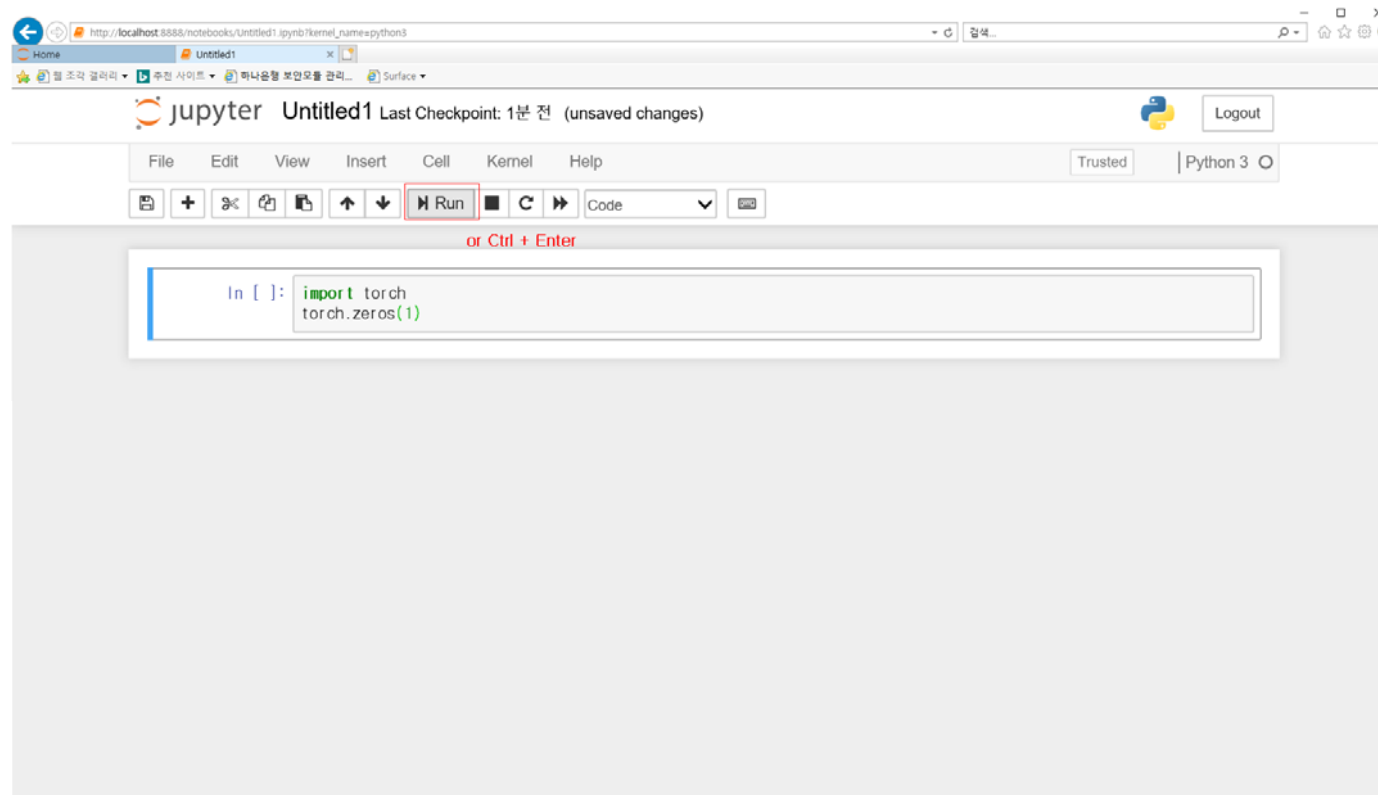
### 3. Jupyter 실행



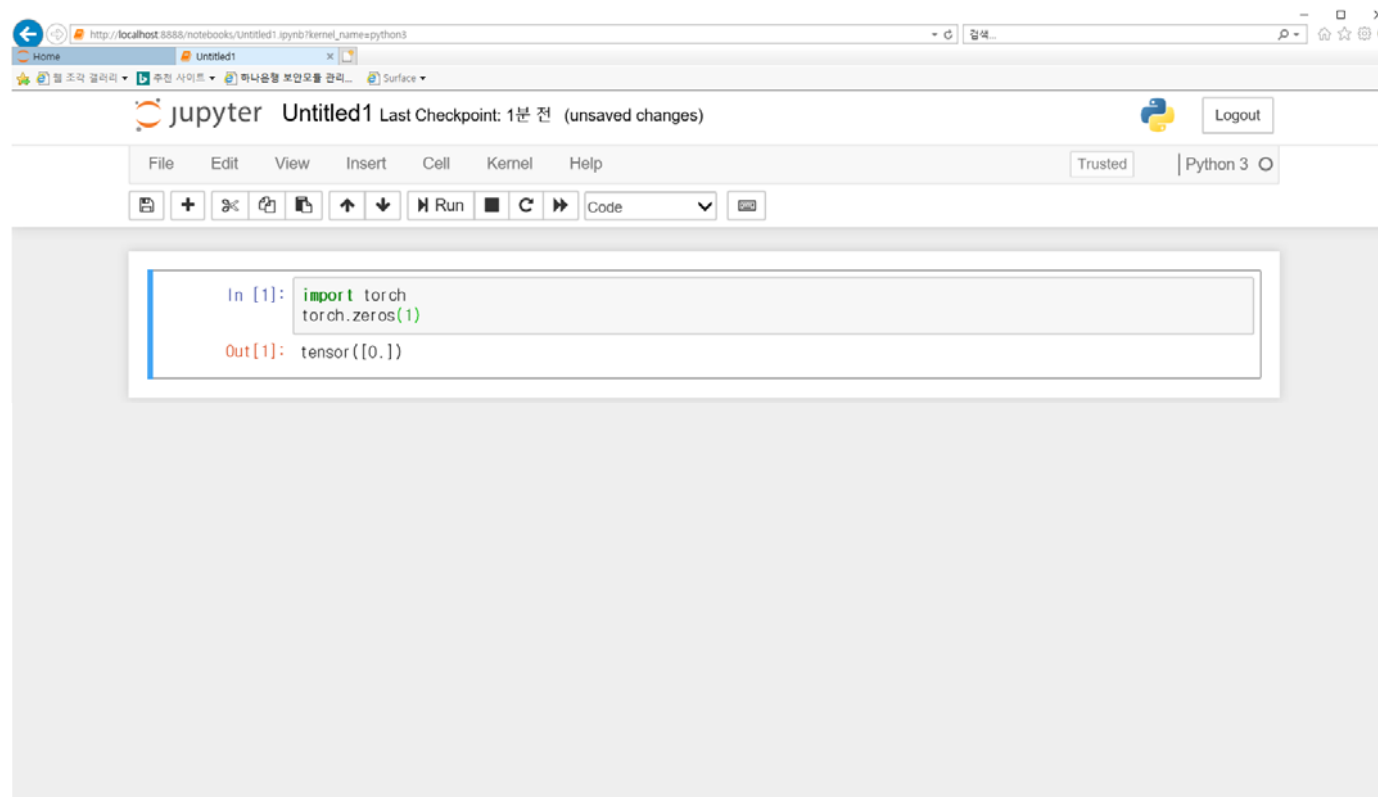
### 3. Jupyter 실행



### 3. Jupyter 실행

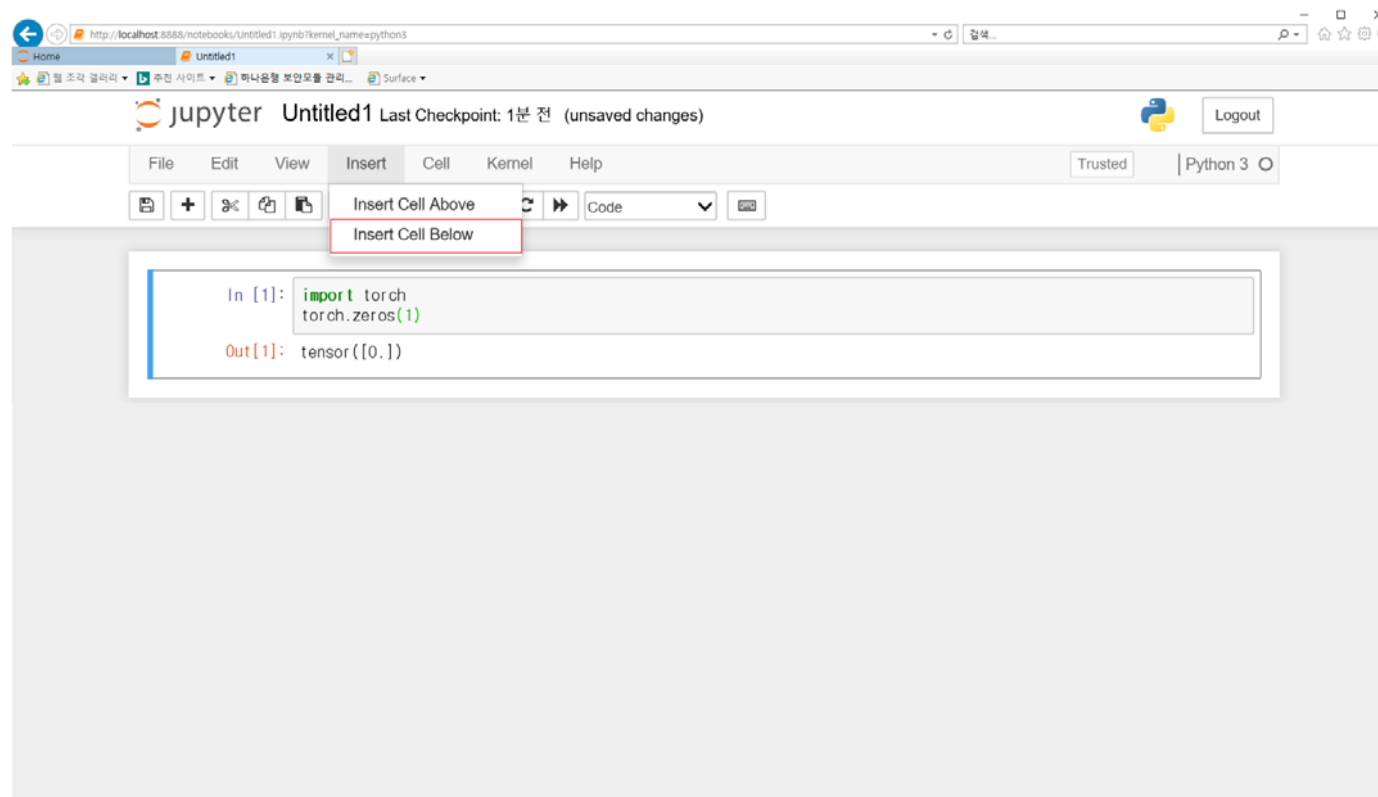


### 3. Jupyter 실행

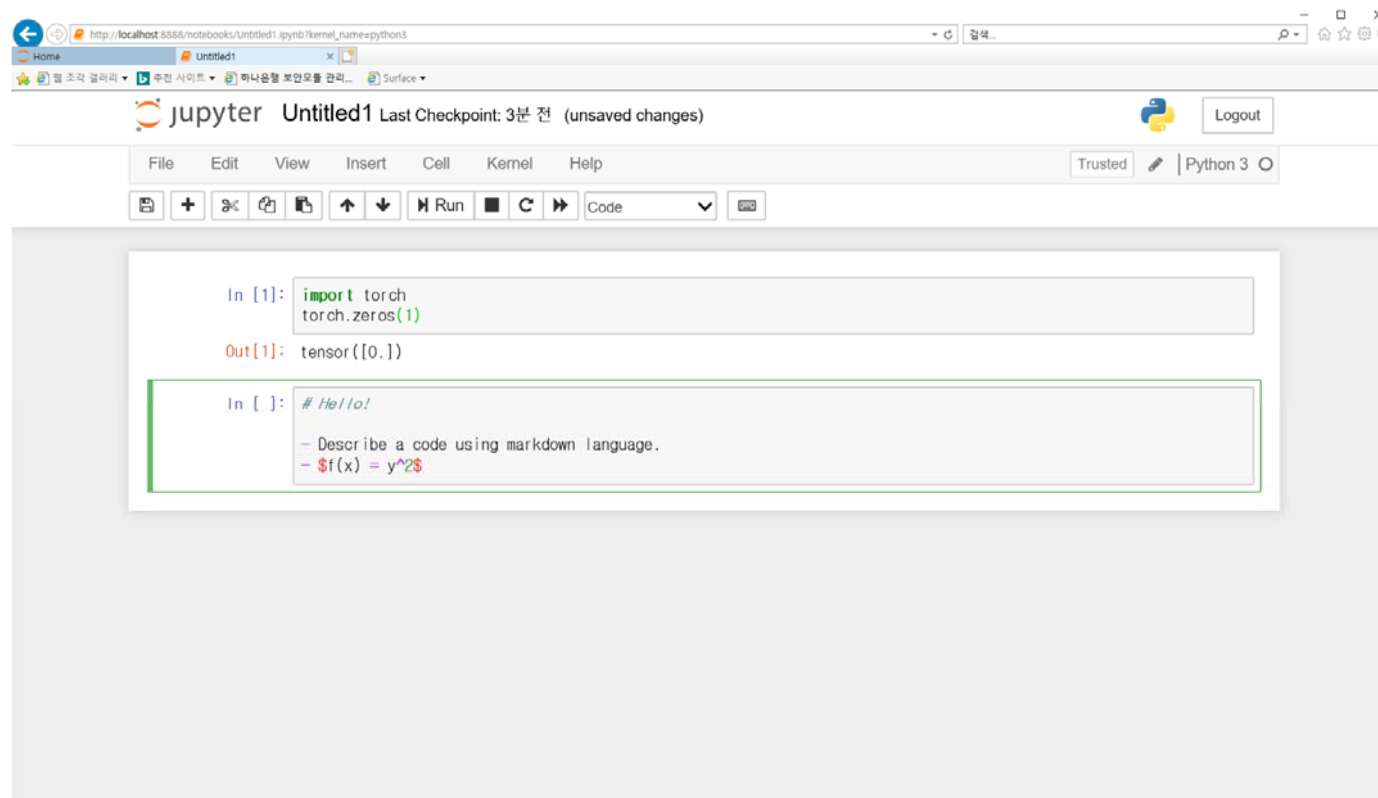




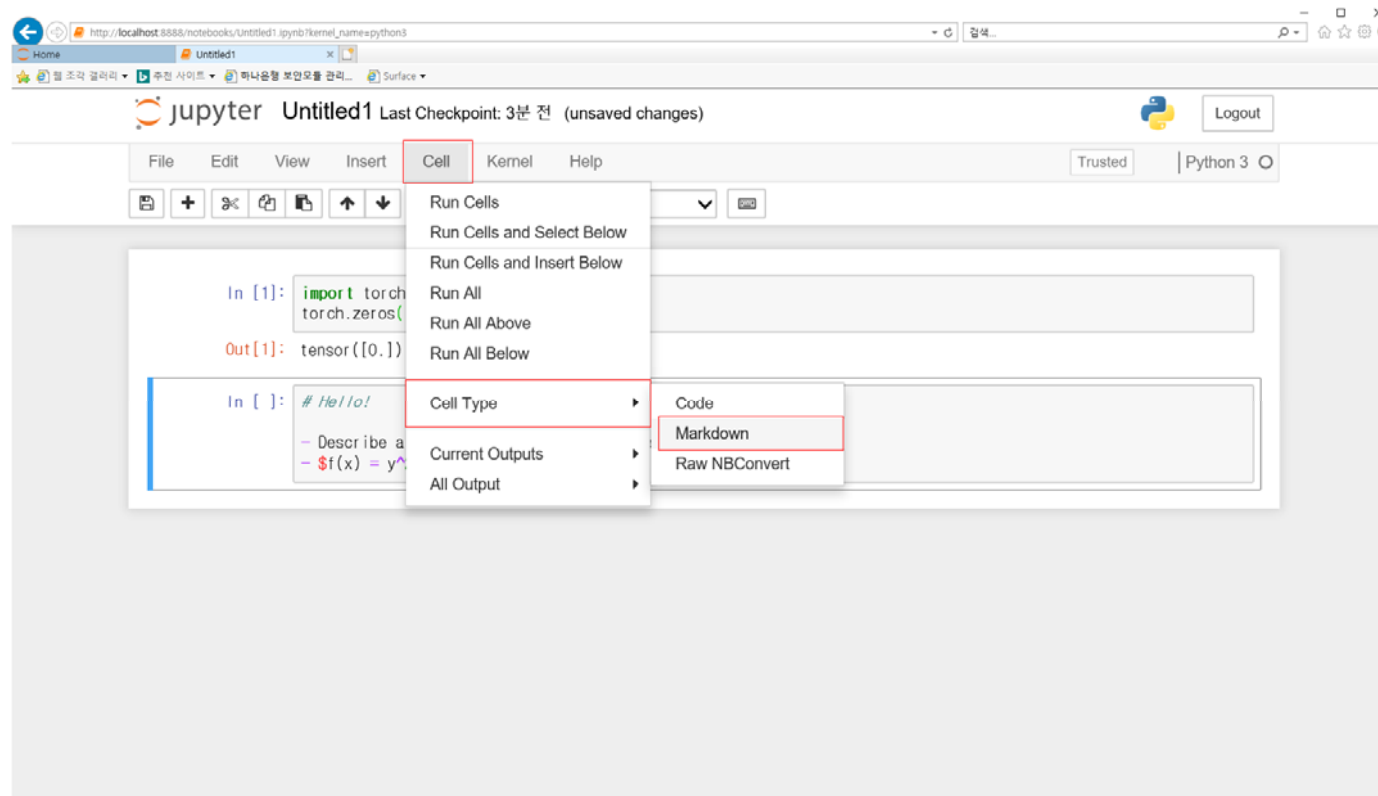
### 3. Jupyter 실행



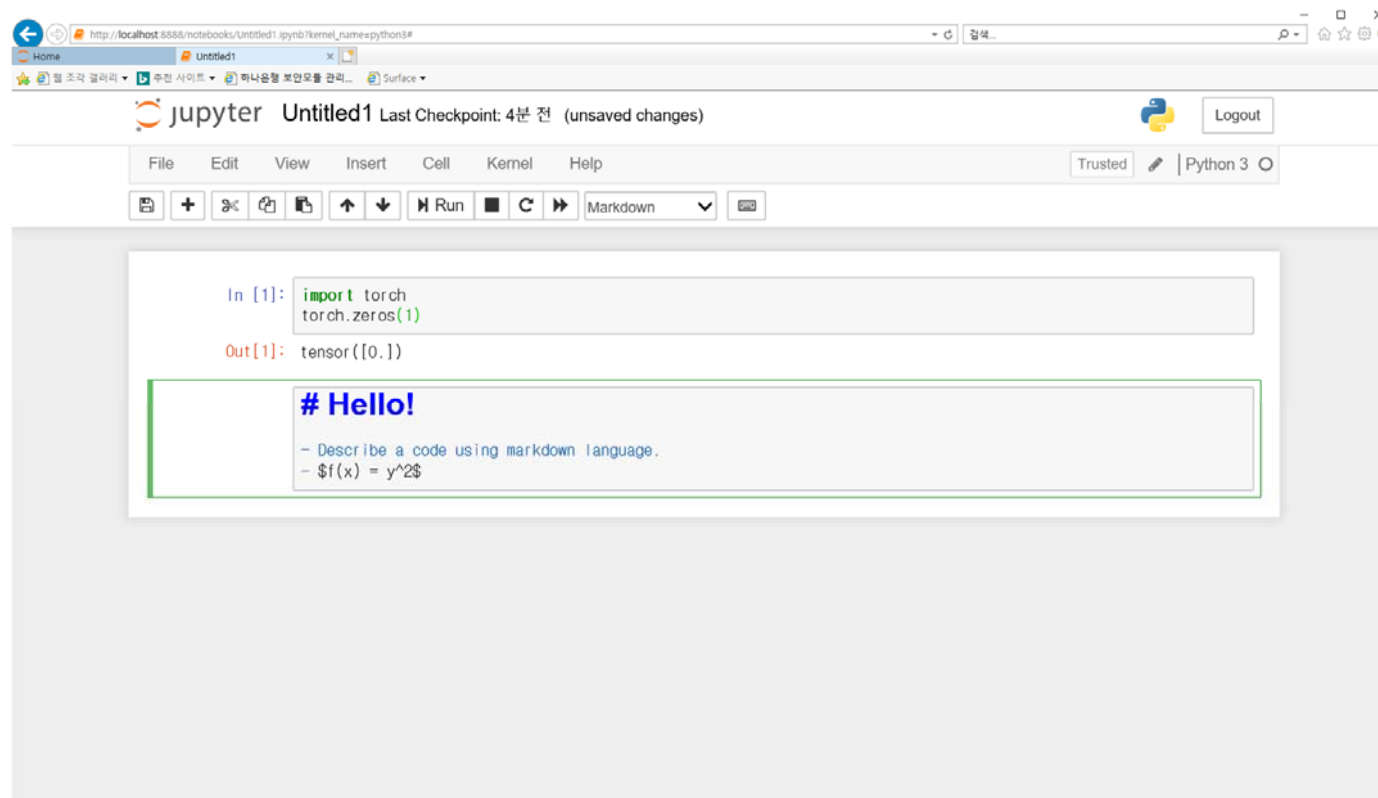
### 3. Jupyter 실행



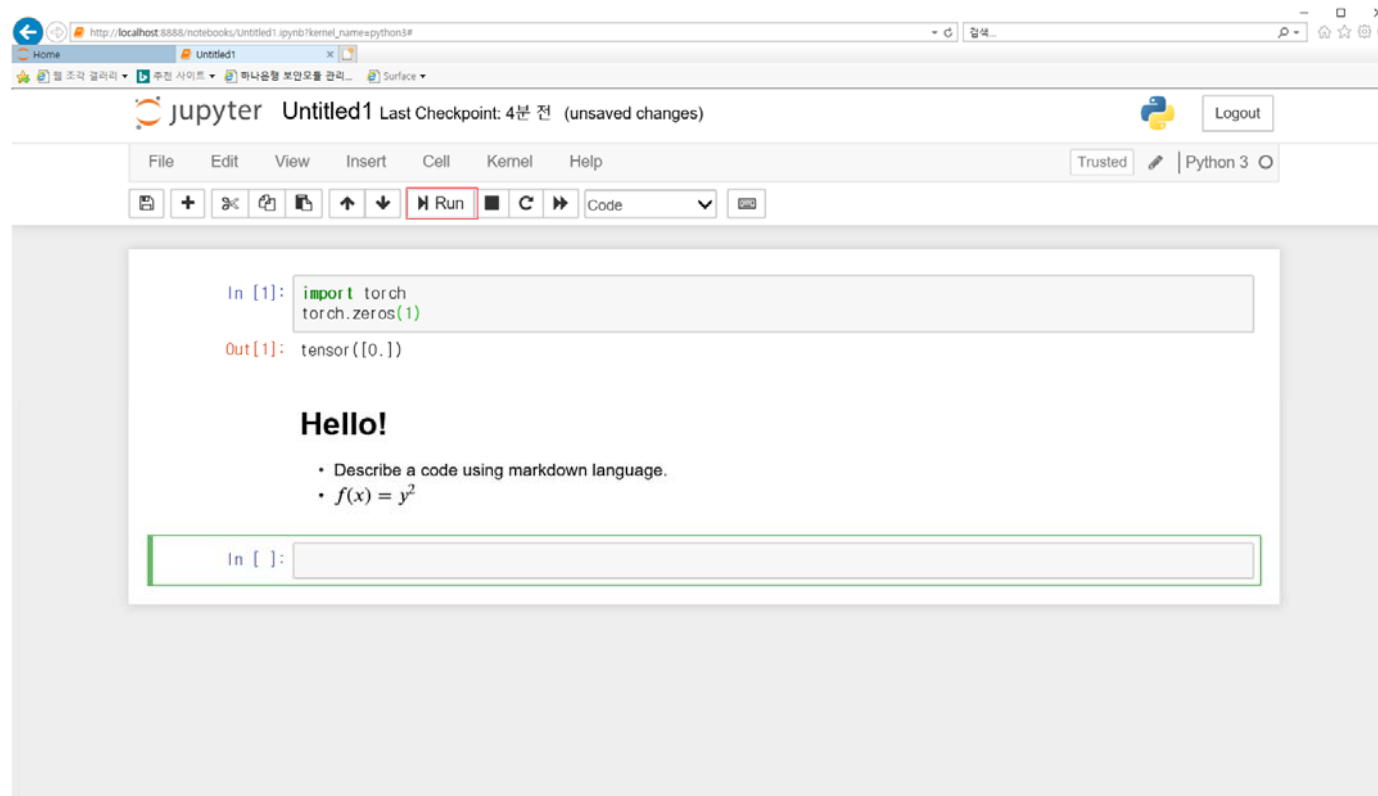
### 3. Jupyter 실행



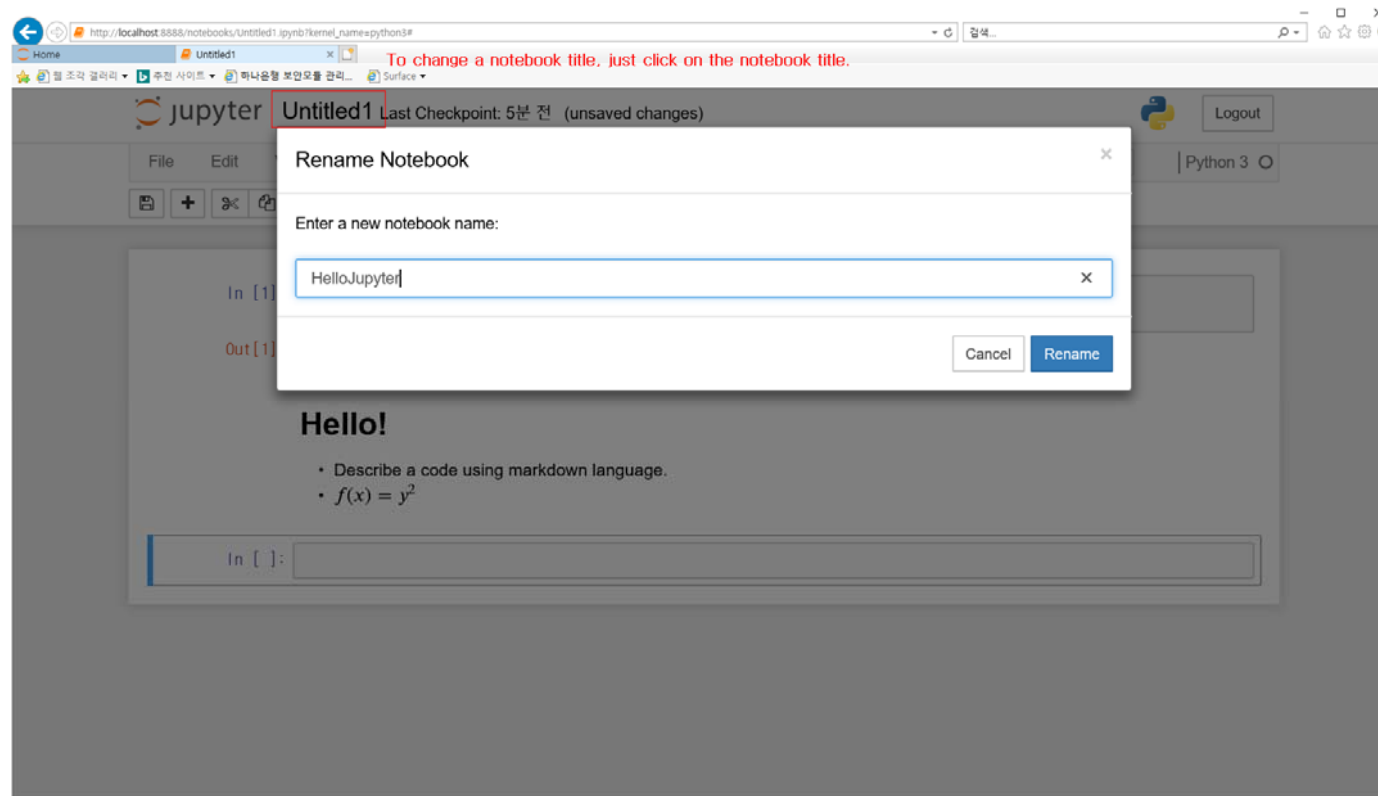
### 3. Jupyter 실행



### 3. Jupyter 실행



### 3. Jupyter 실행



# Appendix 1 : 라이브러리 추가

## 1. Anaconda prompt 이용

> activate pytorch

> conda install [PACKAGE NAME]

## 2. Jupyter 이용

```
! pip install [PACKAGE NAME]
```

## Appendix 2 : Cuda 지원 확인

```
import torch
```

```
torch.zeros(1).cuda()
```



## Appendix 2 : Cuda 지원 확인 (O)

```
import torch
```

```
torch.zeros(1).cuda()
```

```
>>> torch.zeros(1).cuda()  
tensor([0.], device='cuda:0')
```

## Appendix 2 : Cuda 지원 확인 (X)

```
import torch
```

```
torch.zeros(1).cuda()
```

```
AssertionError:  
Found no NVIDIA driver on your system. Please check that you  
have an NVIDIA GPU and installed a driver from  
http://www.nvidia.com/Download/index.aspx  
>>>
```

```
of the CUDA driver. %>>>format(str(torch._C._cuda_getDriverVersion)  
AssertionError:  
The NVIDIA driver on your system is too old (found version 9020).  
Please update your GPU driver by downloading and installing a new  
version from the URL: http://www.nvidia.com/Download/index.aspx  
Alternatively, go to: https://pytorch.org to install  
a PyTorch version that has been compiled with your version  
of the CUDA driver.  
>>>
```