Installing Python: Windows, Mac OS, Ubuntu, GNU/Linux

Windows:

go to: python.org/downloads/release/python-366/

on the Files section download the Windows x86-64 executable installer

run the installer: check boxes ☑ Install launcher for all users

☑ Add Python 3.6 to PATH

then click Install Now

click on Disable path length limit

close the installer

[go to: cygwin.com and download installer and install with all defaults

open Windows Power Shell:

Get-Command py → shows where the binary is and the version of Python

py --version → 3.6.6

py -m pip install -U pip

py -m pip install virtualenv

you can "create" a which command in Windows via:

New-Alias which Get-Command

to make the new command always available:

"`n New-Alias which Get-Command" | add-content $profile

(`n = newline)

Mac OS:

go to: same url as Windows

download the mac OS 64-bit installer from Files section

run Installer and install with defaults

open Terminal:

which python3.6

python3.6 --version → 3.6.7 rc 2 or the name of the version you have

still in Terminal:

```
python3.6 -m pip install -U pip
python3.6 -m pip install virtualenv
```

Linux:

open Terminal:

```
sudo apt-get install python3.6
python3.6 -m pip install -U pip
```

→ run which python3.6 to see if it is on the PATH
on Linux pip is usually installed but not on PATH
upgrading pip to its latest version will add it

now if this last command does not work, then we also need to install pip:

```
sudo apt-get install python3-pip
which pip3
```

→ should show the path to the pip3 binary

```
python3.6 -m pip install -U pip
```

install virtualenv:

```
python3.6 -m pip install virtualenv
```

→ you may need permission for this
if it does not work start the command with 'sudo'

```
which virtualenv
```

→ should display the path to virtualenv

Econ Cluster (Duke):

cluster runs on Linux, to verify that we can run:

uname --kernel-name → same as just 'uname'

the hostname is:

uname --nodename

to print information about the CPU:

lscpu

to print information about the block devices (storage devices):

lsblk

to print the operating system:

uname -o (or --operating-system)

to print all information from uname:

uname -a (--all)

Installing python3.6 (or other versions) on the cluster:

while we do not have admin privileges on the cluster, we can still install a more recent version of python

to facilitate that we will use a project that allows us to easily install python and switch between different versions

that project is: pyenv ~ available on pyenv/pyenv

```
git clone https://github.com/pyenv/pyenv.git ~/.pyenv
echo 'export PYENV_ROOT="$HOME/.pyenv"' >> ~/.bash_profile
```

this env. variable holds the path to your home folder

creates a new environmental variable called PYENV_ROOT which points to the folder that contains the files of the project we just downloaded

this file is executed by the terminal whenever a new session is initialized

```
echo 'echo Welcome Guillermo!' >> ~/.bash_profile
```

→ now if you open a new terminal you will see this welcome message

```
echo 'export PATH="$PYENV_ROOT/bin:$PATH"' >> ~/.bash_profile
```

if you use another terminal (say you want to use pyenv on your personal computer) then you may need to change .bash_profile to .bashrc or to .zshenv

lastly, run:

```
echo -e 'if command -v pyenv 1>/dev/null 2>&1; then\n  eval "$(pyenv init -)"\nfi' >> ~/.bash_profile
```

↑ Interprets special characters like \n to a new line

this last command adds pyenv to the path so that it intercepts the commands related to python and points towards the correct binaries

(If for some reason you mess up your PATH, you can reset it to default via:

PATH = $(/usr/bin/getconf PATH)

now exit your ssh session and log back in

We can use pyenv to easily install and manage python versions:

pyenv install --list → lists all python implementations and versions we can install

pyenv install 3.6.6 → the use of 3.6.6 is mostly for compatibility with tensorflow
In the future it should be compatible with the most recent versions of python

Installing other versions (like 3.7.0

pyenv global 3.6.6 → sets python version 3.6.6 as the global Python version
typing python or python3 will take you to the Python 3.6.6 version

pyenv versions → lists all available Python versions

pyenv → lists all pyenv commands and descriptions

pyenv global → lists the version of python currently specified to be used

to go back to using the system versions of Python (versions of python installed with pyenv):

```
pyenv global system
```

to disable pyenv, open your ~/.bash_profile file and comment the lines

```
# if command -v pyenv 1>/dev/null 2>&1; then
#     eval "$(pyenv init -)"
# fi
```

then reopen the session (terminal) and now the python will be whatever is installed outside pyenv

depending on the python version you want to install or what tools (binaries) are available on the cluster, you will need access to `sudo` to install python (for example `pyenv install 3.7.0` does not work because it needs to create