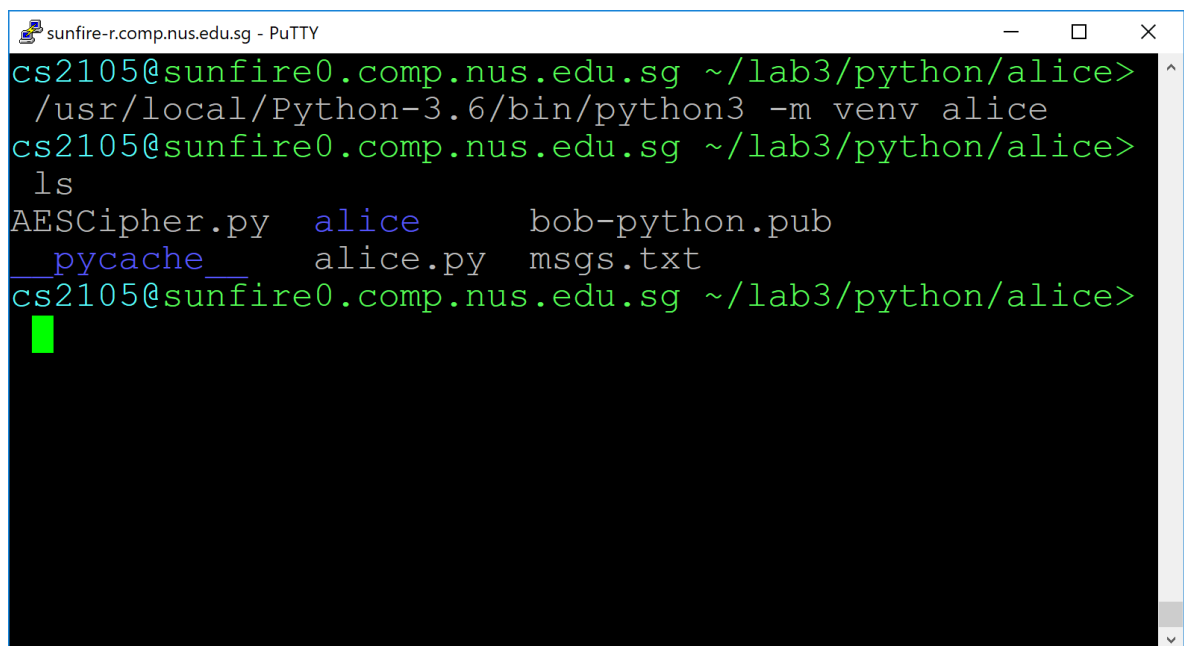


National University of Singapore  
School of Computing  
CS2105: Introduction to Computer Networks  
Semester 1, 2018/2019  
**Assignment 3 – Supplemental Information**  
**Python Virtual Environment**

## Python Virtual Environment

If you are using Python, we will test your code in sunfire using Python virtual environment. Currently, the example below works for Python 3.6 and not Python 3.7. As such, we will test your code with Python 3.6.

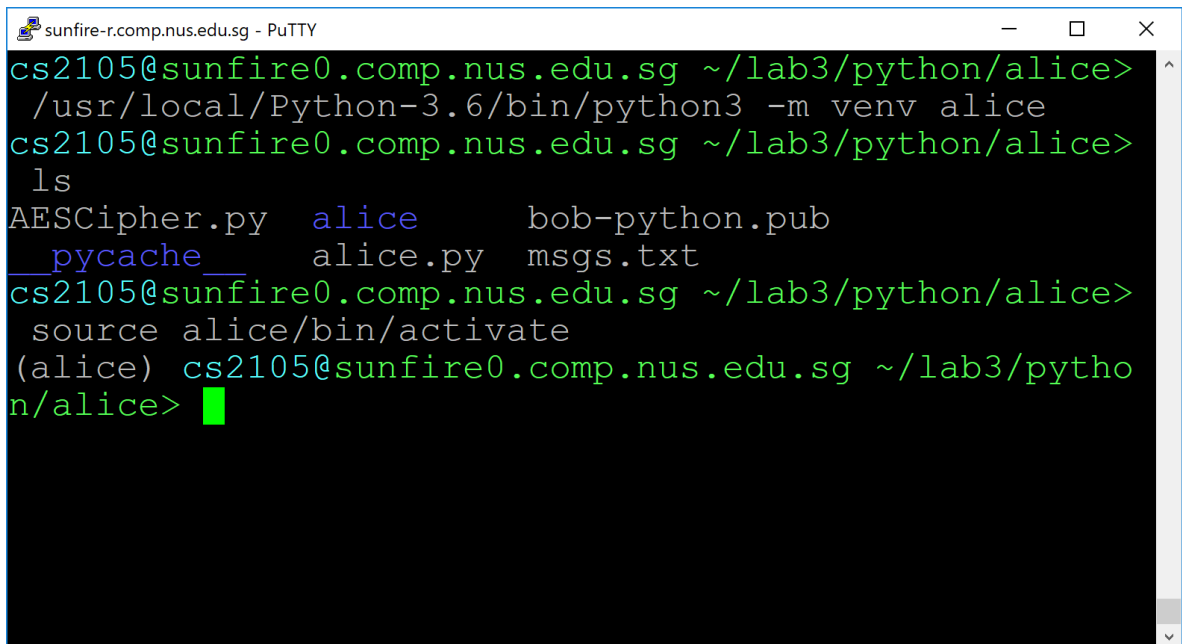
1. Go to the folder where your Python file is located (e.g., `alice` in the example) and run `/usr/local/Python-3.6/bin/python3 -m venv <environment_name>` where `<environment_name>` is the name you choose for your virtual environment. We recommend using the folder name (e.g., `alice` in the example) for the name.



```
sunfire-r.comp.nus.edu.sg - PuTTY
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
/usr/local/Python-3.6/bin/python3 -m venv alice
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
ls
AESCipher.py  alice      bob-python.pub
__pycache__  alice.py  msgs.txt
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
```

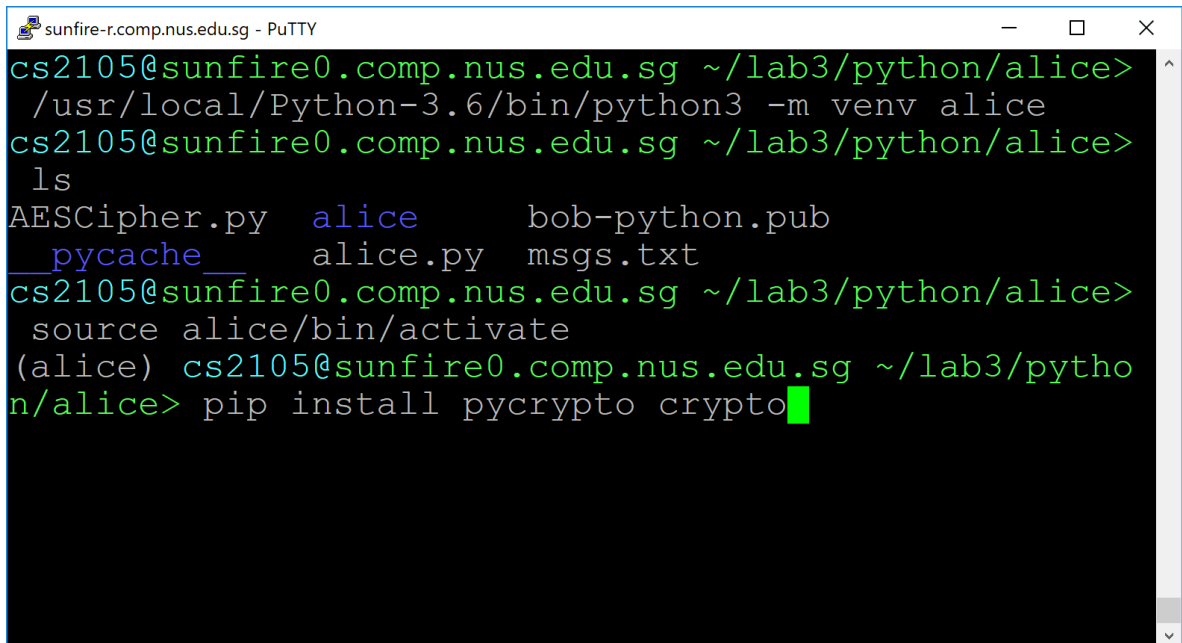
This should create the sub-folder `<environment_name>` in your folder.

2. This should create the sub-folder <environment\_name> in your folder. To activate your virtual environment, run `source <environment_name>/bin/activate`. You will see the virtual environment name on the left inside a bracket (e.g., (alice) in the example).



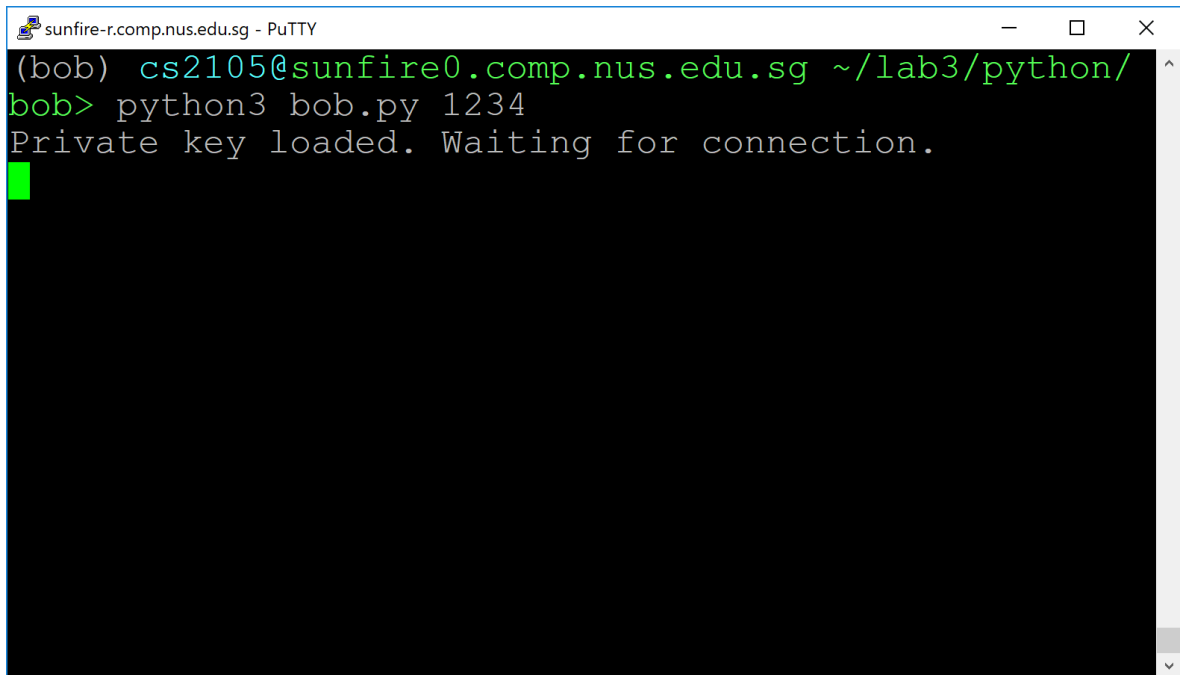
```
sunfire-r.comp.nus.edu.sg - PuTTY
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
/usr/local/Python-3.6/bin/python3 -m venv alice
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
ls
AESCipher.py  alice      bob-python.pub
__pycache__   alice.py   msgs.txt
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
source alice/bin/activate
(alice) cs2105@sunfire0.comp.nus.edu.sg ~/lab3/pytho
n/alice>
```

3. Install pycrypto and crypto by running `pip install pycrypto crypto`.

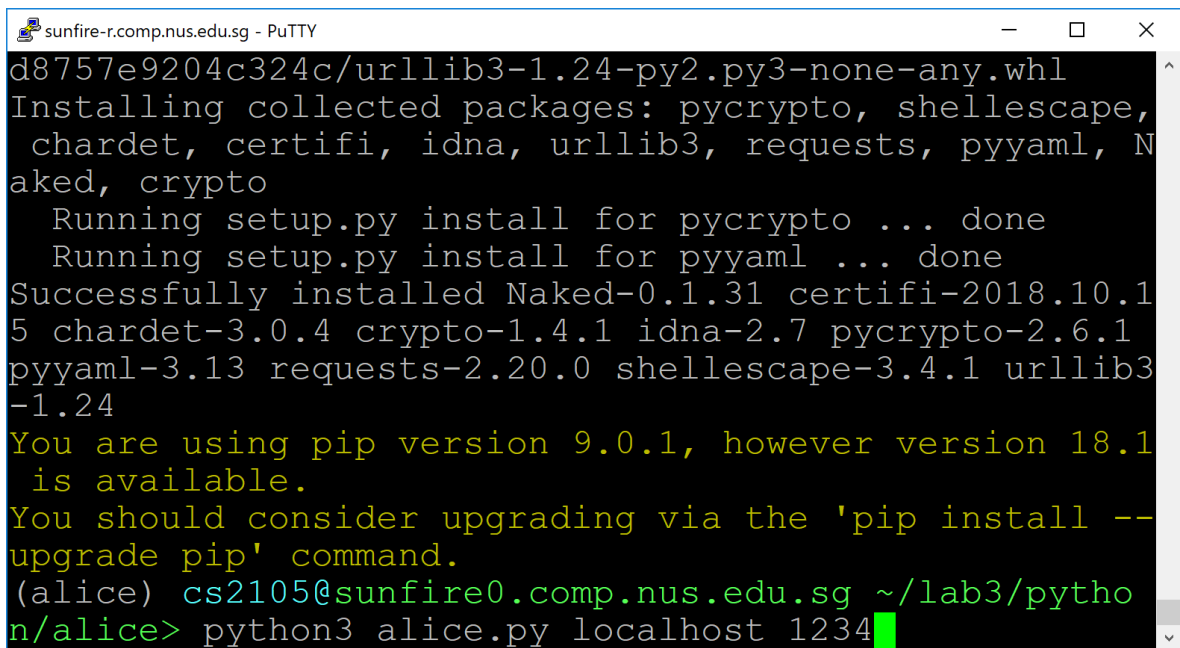


```
sunfire-r.comp.nus.edu.sg - PuTTY
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
/usr/local/Python-3.6/bin/python3 -m venv alice
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
ls
AESCipher.py  alice      bob-python.pub
__pycache__   alice.py   msgs.txt
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
source alice/bin/activate
(alice) cs2105@sunfire0.comp.nus.edu.sg ~/lab3/pytho
n/alice> pip install pycrypto crypto
```

4. To run, use `python3 <filename.py>`. The top image shows how to run `bob.py` while the bottom image shows how to run `alice.py`.

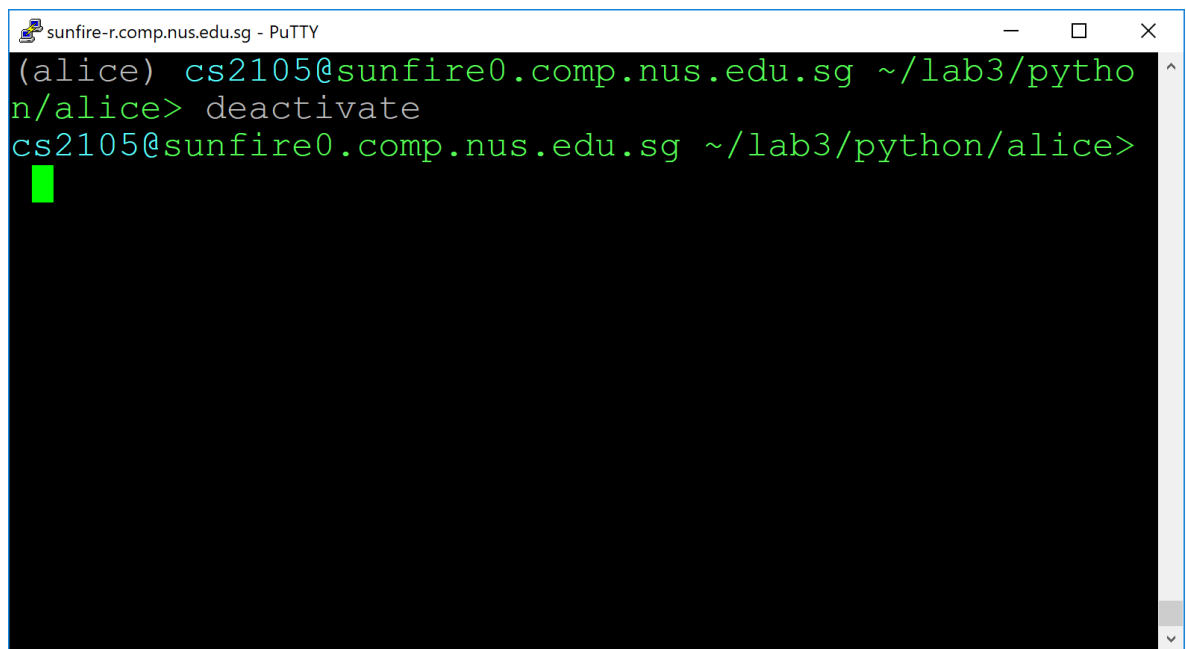


```
sunfire-r.comp.nus.edu.sg - PuTTY
(bob) cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/
bob> python3 bob.py 1234
Private key loaded. Waiting for connection.
█
```



```
sunfire-r.comp.nus.edu.sg - PuTTY
d8757e9204c324c/urllib3-1.24-py2.py3-none-any.whl
Installing collected packages: pycrypto, shellescape,
chardet, certifi, idna, urllib3, requests, pyyaml, N
aked, crypto
  Running setup.py install for pycrypto ... done
  Running setup.py install for pyyaml ... done
Successfully installed Naked-0.1.31 certifi-2018.10.1
5 chardet-3.0.4 crypto-1.4.1 idna-2.7 pycrypto-2.6.1
pyyaml-3.13 requests-2.20.0 shellescape-3.4.1 urllib3
-1.24
You are using pip version 9.0.1, however version 18.1
is available.
You should consider upgrading via the 'pip install --
upgrade pip' command.
(alice) cs2105@sunfire0.comp.nus.edu.sg ~/lab3/pytho
n/alice> python3 alice.py localhost 1234█
```

5. To deactivate, simply run `deactivate`.



The image shows a PuTTY terminal window titled "sunfire-r.comp.nus.edu.sg - PuTTY". The terminal displays the following text in green on a black background:

```
(alice) cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice> deactivate  
cs2105@sunfire0.comp.nus.edu.sg ~/lab3/python/alice>
```

A green cursor is visible on the line following the prompt.