This guide is for installation of Python and its necessary packages to run the code for assignments. Note that these commands will work for both Windows and Mac users. For other operating systems, please check the associated links for more detailed instruction.

I. Installing Python

Installation of Python 3.6.x

To check for successful installation, on your command prompt (For Windows users, be sure to enter the following command on the PATH where Python 3.6 has been downloaded in) or terminal:

```
python
```

If it has been installed correctly, the python environment should open with the version shown.

Try the following command:

```
print(2+2)
```

If you are able to print the outcome of this command, Python 3.6.x has been correctly installed.

II. Setting up Jupyter Notebook

Installation of Jupyter Notebook with Python 3.6

After installing Python 3.6.x, you can install Jupyter Notebook with Python's built in package manager (pip).

On your command prompt or terminal:

```
pip install jupyter
```

Running Jupyter Notebook

On your command prompt or terminal:

```
jupyter notebook
```

The notebook will then open in your browser. To create a new document, press ‘New’ on the upper right hand side of the browser. It is important to select ‘Python 3’.

To run a cell, press Shift + Enter

To download the notebook, go to File and then Download as. There you will have a choice to download as an IPython notebook (.ipynb).

III. Scientific, Data Handling, and Visualization Packages

Installation of Numpy, Matplotlib, Sci-kit Learn, Pandas

Numpy may be installed using pip after installing Python 3.6.x.

On your command prompt or terminal:

```
pip install numpy
```

Similarly, Matplotlib and Sci-kit Learn may be installed the same way via pip:

```
pip install matplotlib
pip install scikit-learn
pip install pandas
```

These packages can also be installed with one line:

```
pip install numpy matplotlib scikit-learn pandas
```

IV. Installing Tensorflow

Installation of Tensorflow

On your command prompt or terminal:

```
pip install tensorflow==2.0.0-beta0
```

V. Installing Keras

Installation of Keras

Tensorflow now has Keras in its libraries and installing Keras separately may not be necessary. Keras wrapper functions are easily accessible through importing tensorflow.keras

To install Keras separately, you can use the package manager again.

On your command prompt or terminal:

```
pip install keras
```

VI. Troubleshooting

Downloading Packages
Wheel packages for Windows users

Installing Tensorflow
ERROR: Cannot uninstall 'wrapt'. during upgrade
'Uninstalling a distutils installed project' error when installing blockstack
Dimensional ordering

The above are some common issues that may be encountered. Other similar problems and solutions may also be found on Github or related sites.

VII. Testing Your Notebook

After going through this procedure to set up Jupyter Notebook with Python and its libraries, let us do a test run.

1. Go to your command prompt or terminal
2. Enter **`jupyter notebook`**
3. Create a new notebook by pressing ‘New’ in the upper right hand side of the browser page. Be sure to select the ‘Python 3’ option if you have multiple versions of Python on your machine.
4. Try importing the libraries into the first cell

```
import numpy
import pandas
import sklearn
import matplotlib.pyplot as plt
import tensorflow as tf
import keras
```

After running the cell, if no error occurs, your notebook environment has been successfully setup.