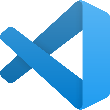
**CS506 Programming for Computing**

**HOP06A – Set Up Jupyter Notebooks**

06/06/2020 Created by Apiwat Chuaphan

11/08/2020 Revised by Kim Nguyen

Center for Information Assurance (CIAE) @City University of Seattle (CityU)

 A close up of a sign

Description automatically generated

**Before You Start**

* The directory path shown in screenshots may be different from yours.
* Some steps might not be explained in the tutorial.  If you are not sure what to do:
  + Consult the resources listed below.
  + If you cannot solve the problem after a few tries, ask a TA for help.

**Learning Outcomes**

* Installing Jupyter Extension
* Run a simple program in notebooks

***Jupyter Notebook*** (formerly IPython Notebook) is an interactive computing environment that enables users to author notebook documents that include: - Live code - Interactive widgets - Plots - Narrative text - Equations - Images – Video.

Visual Studio Code supports working with Jupyter Notebooks natively, as well as through Python code files.

***NOTE: The path and/or folder names in the screenshots might be different from yours***

**Set up environment (2 Methods)**

**VS Code Extension**

1. In Visual Studio Code, open the private repository generated when you accepted the HOP06 assignment (If you cannot find that repository in your machine, you might have not cloned the repo, if so, please do before proceeding).
2. To select an environment, use the **Python: Select Interpreter** command from the Command Palette (Press **Ctrl+Shift+P** to bring up a command palette, then type “select” to narrow down the list and then select **Python: Select Interpreter)**

A screenshot of a cell phone

Description automatically generated

1. Choose any Python version you would like to use. (in this case, version 3.8.3 is used)

*Once the appropriate environment is activated, you can create and open a Jupyter Notebook, connect to a remote Jupyter server for running code cells, and export a Jupyter Notebook as a Python files.*

1. Press **Ctrl+Shift+P** to select a command palette again, then type “create” to bring up **Python: Create New Blank Jupyter Notebook** and select it from the dropdown. You will see similar screen like the image below.

A screenshot of a computer screen

Description automatically generated

1. Type **print(‘hello’)** into the Jupyter like the following

**A picture containing black, monitor, sitting, dark

Description automatically generated**

1. Click run button and you will get an error says; click **install.**

A screenshot of a cell phone

Description automatically generated

1. if you see another error saying **"Data Science library ipykernel is not installed. Install?",** select "Yes" prompt.
2. Restart VS Code by pressing using command palette, then type in “reload” to select **Reload Window**
3. Try **Step 4** again to see if jupyter was installed correctly. You should see that Jupyter Server has been connected like the screenshot below.

**A screen shot of a computer

Description automatically generated**

1. Type the following in the code cell and hit green run button, it should print out the message just below the code cells.

**A screenshot of a video game

Description automatically generated**

1. Now, save it with the name “hello\_jupyter.ipynb” under new folder name “Module 6” (for example: **CS506/Module 6**).

**A screenshot of a cell phone

Description automatically generated**

*Notice the file you saved will have an extension \*.ipynb*

**Pip**

You can also install Jupyter using pip by typing the following commands in terminal:

1. python -m pip install --upgrade pip
2. python -m pip install jupyter
3. Restart VS Code
4. Pick the Python environment you did the pip install in
5. Then, create a Jupyter Notebook

**Tips and Tricks**

1. Use the command palette: **Cmd + Shift + P (Ctrl + Shift + P on Windows)**
2. To move from edit mode to command mode, press the **ESC** key. To move from command mode to edit mode, press the **Enter** key.
3. In command mode, press **A** to add cell above, **B** add cell below.
4. Select a cell, up/down arrow keys
5. Run code cell:

* **Ctrl+Enter** runs the currently selected cell.
* **Shift+Enter** runs the currently selected cell and inserts a new cell immediately below (focus moves to new cell).
* **Alt+Enter** runs the currently selected cell and inserts a new cell immediately below (focus remains on current cell).

1. Delete a cell, press **dd** while in command mode.
2. Switching between Markdown and code cell, **M** and **Y** respectively.
3. Enable line number, press **L** while in command mode.