**Lab 3 Jupyter Notebook Introduction**

Now that we are familiar with containers let’s start exploring how a scientist might use them. We are going to be combining this powerful container approach with Jupyter Notebooks. Now, Jupyter Notebooks does not need to be done within containers but it’s a much easier and cleaner approach to do so. For this video, we are just learning about Jupyter Notebooks to start. If you don’t find all the answers in the video, you may want to look at other videos on youtube or go to the Wikipedia page for jupyter notebooks for more information. (We won’t setup Jupyter until homework 4, when we will install Jupyter in a docker container.)

Video 1: <https://www.youtube.com/watch?v=jZ952vChhuI>

*This video is a technical introduction of the basics of Jupyter. Don’t worry about the command line information presented.*

Video 2: <https://www.youtube.com/watch?v=q_BzsPxwLOE>

*This video is more of a higher level introduction with some examples of dynamic data.*

1. (Video 1) Notice how it’s just little code snippets that he is running. What does it mean to have your output displayed “in line”?
2. (Video 1) Give an example of a Jupyter Notebook file. What is a Kernel and give an example of a couple Kernels.
3. (Video 1) Most of the time for our class work we will just be doing some simple edits and running the code to exam some data. (We won’t do much with command mode) Please write a simple code that you could put into the input in Jupyter Notebook with Python. Then tell me how you would run it and what you expect to happen. (You could use the video example)

1. (Video 2) I want you to start by thinking about Microsoft excel. Excel is a very old technology and can be used for looking quickly at some data. For example, you want to create a list of grocery items that you purchased and the cost of each. Then you could summarize the cost in a column in excel. Jupyter Notebooks can be used for this as well but the real benefit of Jupyter is that it can connect seamlessly to live data on the Internet. What live data is the demo displaying?
2. (Video 2) Jupyter is also browser based. This is a more modern approach to desktop apps, while using a common user interface setup. What are the three essential components from the video? (He is working in Python in the video and this is the most common language for scientists working with data. Notice also, he uses a library called Pandas to help easily pull in and work with the data)