Running a Python 3 Script in a nanoHUB Jupyter Notebook

This tutorial will show you how to create and run Python 3 code in a Jupyter notebook, rather than creating and running a Python script. We are looking at Chapter 1.8 "Writing a program" in the Python for Everybody course:
https://eng.libretexts.org/Bookshelves/Computer_Science/Book%3A_Python_for_Everybody_(Severance)/01%3A_Introduction/1.08%3A_Writing_a_Program.
In this lesson they execute a Python script that prints the string, 'hello world'. We are going to create a Jupyter notebook in nanoHUB that does the same thing.

The Python script and the iPython (Jupyter) notebook will look very similar, but there are slight differences, for example in the file extension used.
- Open Jupyter notebooks in nanoHUB.
- Go into the notebooks directory.
- Go into the py4e directory.

Here we are going to create a new folder, called hello, for this exercise. This is where we're going to create our first Python 3 notebook.

Go to the "New" dropdown menu, select Python 3. This creates a new tab, which is a Jupyter notebook running the Python 3 kernel, and we are in a code cell. In this code cell begin to type the following: print ('hello world.')

Notice that the text color changes, so the print **function** shows up in green and the **string** "hello world" that is the **argument** of the print function shows up in red. This is because the Jupyter notebook is an intelligent text editor that understands or recognizes Python 3 syntax.

You can click the Run button or hold down the shift key and then press Return or Enter. That executes the cell and you can see the text hello world. is printed right beneath it.

If we want to edit this, for example make this a capital Hello world, you can go back to the code cell, make your edits, and then re-run the cell. You'll see the new output showing below the code cell. Notice that when we run the cell a second time, the number in the square bracket increments.

If we were more excited and wanted to say "Hello world!" we can add an exclamation point (!). Run the cell again, and there we have Hello world! You'll notice the cell number is now 3.

From here we will save this file, and rename by clicking on Untitled. We'll call this file **hello**.

That should be saved. To check, go back to your Jupyter dashboard -- that's the first tab -- and in the dashboard we're in the hello directory under py4e under notebooks under the home directory and here is the **hello.ipynb** or iPython notebook file. You can see that the notebook is running, which is indicated by the green color.

This tutorial is available in nanoHUB with an associated video, at:
https://nanohub.org/resources/33389