

Week 2 Skills Lab Exercises

Exercise 1 - Create a new Notebook

- Go to the File menu -> New and select "Notebook". This creates a new Jupyter Notebook file.
 - Select the "Python 3" kernel
- Look in the file browser, right-click on "Untitled.ipynb" and click "rename." Change the name of the file to "<LASTNAME>-week-2-lab.ipynb"
 - <LASTNAME> should be your actual last name
- Change the first cell in your new notebook to the Markdown cell by clicking on the menu that says "Code" and selecting "Markdown"
 - Try writing some markdown and executing it

Exercise 2 - Markdown

- In the top cell, create a level 1 header and give your notebook a title. You can give it any title you want.
- Below the title, create a list with two elements:
 - Your Name
 - The Date
- Create a new Markdown cell and put the following text at the top:
 - **##** Markdown Exercises
- Write a paragraph of text that answers the following questions and include some **bold** and *italics* text:
 - Why are you or are you not interested in learning to code?
 - What do you hope being able to program will enable you to do?
 - Make a Markdown list of 5 things you'd like to learn from this course, from SCI, or from Pitt
- Feel free to use other Markdown styles as well!

Exercise 3 - Just a bit more of Markdown

- Create a new Markdown cell.
- Now visit <https://giphy.com/> and find an animated gif that represents how you feel at this moment. Right-click on the image and get the URL linking to that image
 - On Chrome it is "Copy Image Address" and on Firefox it is "Copy Image Location".
- Use Markdown image notation to insert the gif you found into the Markdown cell.
 - Hint: it is a lot like link notation but more excited.
- * Create one more Markdown cell and insert the following text:
 - ---

Exercise 4 - Executing Code in the Jupyter Notebook

- Create a new Markdown cell with just the following text:
 - `## Jupyter Notebook Exercises`
- Create a new code cell and copy the following Python code into the cell and execute it:

```
name = input(prompt="What is your name? ")
print("Hello", name, "!")
```
- Create a Markdown cell underneath the code cell you just executed and describe in your own words what happened when you ran that code.
- Create a new code cell and copy that same code into the new code cell. Try modifying the code and executing it to see what happens.
 - Don't worry about making any mistakes, we are just playing around.
- Create a Markdown cell underneath the code cell you just executed and describe what happened. What did you try and modify? Did you get an error or did it run successfully?

Exercise 5 - Visualizing Data in the Notebook

- Create a new code cell and copy the following code into the cell and execute it (it takes a bit of time):

```
%matplotlib inline
import pandas as pd

# Load the PGH 311 Complaint data
data_url =
"https://data.wprdc.org/datastore/dump/76fda9d0-69be-4dd5-8108-0de7907fc5a4"
complaints = pd.read_csv(data_url, parse_dates=True, index_col="CREATED_ON")
# Produce a graph that shows the number of complaints per month
complaints.resample("M").size().plot()
```

- Create a Markdown cell underneath the code cell you just executed and describe what you see. What do you think the data in this chart tell us?
- Create a new Markdown cell, visit <https://giphy.com/>, and insert an gif into the Notebook that describes how you feel.

Exercise 6 - Upload your Notebook

- Look at the file-browser on the left side of the JupyterLab window. Do you see the notebook you created? Right-click on the notebook file and select "Download" and save it to your local machine.
- Now go to Courseweb and upload your notebook file to Week 2 Assignment in the Skills Lab
- You're Done!