# Python Q&A

Q: When should I be importing pandas?
A: If you're going to work with data, use pandas.

Q: Will we always use a Jupyter Notebook when using pandas?
A: If you are developing (or writing) your code, use a Jupyter notebook -- they make it sooooooo much easier to test and debug your code. If you need to run your code as part of an automated process, you can export your notebook as a .py file and run it from a command line or terminal or batch process.

Q: How do I distinguish between VBA and Python?
A: The two languages are quite different, but they can be used to accomplish the same thing. The most important things to take away from the VBA lessons are:

1. VBA is a there and you can use it to automate your worksheets or create custom functions; and
2. Programming uses variables, loops, conditions, and functions.
   A quick google (actually using bing) yields a VBA Cheat sheet here
   https://www.automateexcel.com/vba/cheatsheets/#vba-cheat-sheet-pdf-free-download that could be useful.
   The same search for Python yielded a crazy cheat sheet that is pages and pages. Python does not require that many pages in a cheatsheet.

Q: Do I have to memorize the syntax?
A: If you can, great! If you can't then you should become familiar with the concepts and how to find the syntax.
For VBA:

- Dim variable as datatype
- For loops
- If-elseif-else-End if conditionals
- Function-End Function (returns a value) and Sub-End Sub (doesn't return a value)
  For Python:
- Just use the variables, make sure to initialize them if that is necessary
- For loops
- If-elif-else conditionals

- def to define a function
- return in a function to return a value
- Def, Loops and conditionals end in a colon followed by an indent
- ["lists"] and {"dictionaries": "value"}
- Pandas: pd.DataFrame(), pd.read_csv() and pd.to_csv()

Q: How do I know what and when to indent in Python?

A: You will need to indent whenever you have a command as a parent to some child commands.

For example:

```python
for x in range(10):
        # have to indent the children of the for loop
        print(x)


if y == 10:
        # have to indent the children of a conditional
        print(y)
else:
        print("y is not equal to 10")


def my_function(parm1, parm2):
        # have to indent the children of a function definition
        print(parm1 + parm2)
```

Also notice the colons at the end of the loop, conditional, and function definition. You will always indent after a colon.

Sometimes you will nest an if inside a for inside a def. That would look like this:

```python
# states is a list of states to rate
def housing_price_commentary(states):
        # indent after a colon
        print(len(state))
        housing_prices = {}
        for state in states:
                # indent after the colon
                if state == 'NY':
                        housing_prices[state] = "High"
                elif state == 'OK':
                        housing_prices[state] = 'Moderate'
```

```python
            elif state == 'CA':
                    housing_prices[state] = 'Ridiculous'
            else:
                    housing_prices[state] = 'Unclear'
        # outdent when you're done with the parent command
        # note: we're still in the loop
    # outdent again to get out of the loop
    # note: we're still in the function
    return housing_prices
# outdent now that we are done with the function
# leave two blank lines after a function definition


# now write some more code
states_of_interest = ["NC","NY","CA","TX"]
housing_prices = housing_price_commentary(states_of_interest)
for state in states:
        # indent after the colon
        print(state, housing_prices[state])

# outdent now we're done with the loop
# ...
# write more code here
```

Q: Is VS Code just and easier method for code? How does it compare to Jupyter Notebooks?

A: VS Code is an editor for all sorts of things, while Jupyter Notebooks are pretty much limited to Python. If you look at all the extensions in VS Code, you will see: C# (c-sharp), R, Go, Rust, CSS, HTML, JavaScript, TypeScript, SQL and many other languages in addition to Python. Each extension enables a ton of new functionality in VS Code.

Think of Jupyter Notebooks as a minimally functional editor for Python, while VS Code is an entire toolbox of functionality. In VS Code, Jupyter notebooks are just one of the many things you can edit, run, and test with.

Q: How do I interact with APIs using Python?

A: This too shall be answered. Next week. We spend all week on APIs.

Q: Will employers require us to use specific tools?

A: Sometimes. Some employers just want the code written, tested, and running. So you can use the editor of your choice, the modules of your choice, and so on. Most employers will provide you with a suite of tools to choose from, some paid for tools, and some free tools. Some will forbid the use of certain tools. This is definitely something you can

discuss during an interview: "What editor do you use for your Python code?" Or, "What languages do you code in?" Or, "What tools do you use for Data Analytics?"