Python interview questions

1. Why you should use NumPy arrays instead of nested Python lists?
   1. Python list is an array of pointers to Python objects
      1. More memory requirements
   2. Numpy array is array of uniform values
      1. Less flexible but faster
2. Cons of python?
   1. Interpreted language so slower than compiled language
   2. Not in mobile use, or client side of web applications
      1. Hard to secure
   3. **Dynamically typed** – type checking at run time
      1. Vs statically typed
3. What are some SciPy libraries you’ve worked with?
   1. NumPy
   2. Matplotlib
   3. Pandas
   4. IPython
   5. Cython
4. What is pylab?
   1. Package that combines NumPy, SciPy, and Matplotlib into single namespace.
5. Tuples vs lists in python?
   1. Tuples:
      1. Immutable
      2. Can’t add/remove elements to tuple
         1. No append or extend
      3. Can use *in* operator in tuple
      4. Faster than lists
         1. Use if only going to iterate through
   2. List
      1. Mutable
6. Is all memory freed when Python exits?
   1. No. Objects referenced in global namespace of Python modules not always deallocated when Python exits.
7. What is \_\_init\_\_.py?
   1. Empty file to import module into directory
   2. Provides easy way to organize files
8. Range vs xrange?
   1. Range returns a list
   2. Xrange returns object that acts like an iterator
   3. Python 3.x now uses only xrange, but is called range
9. Is Python call-by-value or call-by-reference?
   1. Neither.
   2. Pass by object value.
   3. Example: