

Artificial Intelligence Summer Assignment

Task: Learn Python 3

Resources: Any book, website, friend, youtube channel, etc that you like

Proficiency Measure: A test will be given during the first week of class on basic Python Programming

Details:

The AI courses use Python 3 exclusively for all coding tasks. The sooner you learn the language, the better! Luckily, it's easy to pick up. Any intro course you find will be sufficient. You should be able to, by the end of the summer

- Create and run a python script
- Define functions that take parameters and return values
- Define a main method
- Create a class with constructors, instance methods and fields; instantiate objects
- Define and modify global variables
- Use arrays (lists) and array operations built-in such as: insert, delete, sort, reverse, append
- Use dictionaries and operations like keys(), values()
- Use sets and operations like len, in, union, difference, intersection
- Use python iterators like "for thing in myList: print(thing)". Iterate over sets, lists and dictionaries
- Create python strings and basic string operations
- Python type conversion (int to double to string, etc)
- Control structures: for, while, if
- Open a file, close a file, read all lines in a file

A great idea would be to take a few of your AP labs and code them in Python. Or come up with any programming task you need done and figure out how to do it in Python.

Some links

<https://learnpythonthehardway.org/python3/>

<https://wiki.python.org/moin/BeginnersGuide/Programmers>

<http://www.google.com>

Software

You will want to download and install the latest Python on your computer. Also get a real editor (NOT the built-in IDLE). You could try Sublime or Atom, or a full IDE like PyCharm. Students have had success with all of these. PyCharm include a debugger, which is very nice.