**Data Camp Python Class**

**4/30/20**

**Class 1:**

Pre-class study preparation (optional):

Jupyter Notebook: <https://jupyter.org/install.html>

<https://jupyter-notebook.readthedocs.io/en/stable/>

Class: <https://docs.python.org/3.6/tutorial/classes.html>

**Variable:**

* int and its operations (+, -, \* , /，//, %)
* float and its operations (+, -, \* , /)
* bool (and/or/not)
* practice:

A+B problem: <https://www.lintcode.com/problem/a-b-problem/>

Leap Year (optional) - <https://www.lintcode.com/problem/leap-year/>

**Function**

* why?: code reuse and readability
* def and parameter of function

**Control Flow**

* if/elif/else
* for loop, while; break, continue (optional)
* practice:

Max of 3 Numbers– <http://www.lintcode.com/en/problem/max-of-3-numbers/>

Trailing Zeros (optional) <https://www.lintcode.com/problem/trailing-zeros/description>

**Object Oriented Design (a brief introduction)**

* class
* \_init\_()/self

**Python packages and its import**

Instructors need to briefly describe the use of each package.

* numpy
* Pandas
* sklearn
* keras/tensorflow

Practice: import numpy, read a data set from csv and save a csv file from .npy.

**Class 2:**

Pre-class study preparation (optional):

List:[https://docs.python.org/3.6/tutorial/introduction.html#lists](https://docs.python.org/3.6/tutorial/introduction.html" \l "lists)

Tuples:[https://docs.python.org/3.6/tutorial/datastructures.html#tuples-and-sequences](https://docs.python.org/3.6/tutorial/datastructures.html" \l "tuples-and-sequences)

String:[https://docs.python.org/3.6/tutorial/introduction.html#strings](https://docs.python.org/3.6/tutorial/introduction.html" \l "strings)

Built-in Types:[https://docs.python.org/3.6/library/stdtypes.html#sequence-types-str-unicode-list](https://docs.python.org/3.6/library/stdtypes.html" \l "sequence-types-str-unicode-list-tuple-bytearray-buffer-xrange)

**List:**

* Create: +, append, insert, extend
* Read: iteration, slice, in, index, count
* Delete: pop, remove, del
* Update/len/sort/reverse
* Tuple (optional)
* practice:

Swap two integers in an array using function – <http://www.lintcode.com/en/problem/swap-two-integers-in-array/>

remove element (optional): <https://www.lintcode.com/problem/remove-element/description>

**String**

* Immutable
* Character: ord() and chr()
* ASCII and Unicode
* operations: +,\*,iteration, slice, find, replace, len
* practice:

Lowercase to Uppercase <https://www.lintcode.com/problem/lowercase-to-uppercase/description>

**Dictionary**

* Create
* Read: find, iteration, in, get, keys, values, items
* Update
* Delete: pop, del
* Len
* Practice: build a dictionary

Lintcode interface:

