Python Topics Review Sheet

Object and Data Structures Basics

* Variable Assignment
  + **Dynamic Typing vs Static Typing**
  + **Common data types** (int,float,str,list,tuple,dict,set,bool)
* Strings
  + **String Indexing** (Strings are a sequence – hence indexable)
  + **Common methods** (len, split, upper, lower, join, etc)
  + **Properties** – immutablility
* String Formatting
  + **Formatting with Placeholders** (%)
  + **Format conversion methods** ( %s : str(), %r : repr(), %d)
  + **Padding/Precision of floats** (%5.2f)
  + **Better way : using .format()** – pros : indexing,keywords, Alignment/padding/precision.
* Lists
  + **Properties**
  + **Common methods/functionality**
* Dictionaries
  + **Creating dictionaties.**
  + **Common methods** (values,keys,items)
* Tuples
  + **Creating Tuples**
  + **Common methods/properties**
* Sets and Booleans
  + **Common set methods** (add)
  + **Booleans** (placeholders**)**
* Files
  + **Ipython (magic) methods** (%%writefile)
  + **Opening/closeing/reading/writing files** (seek)
  + **Iterating over file contents**

Python Statements

* **If/else**
* **Loops**
* **Useful Operators**
  + Range, enumerate, zip, in, min/max, random, input
* **List Comprehensions**

Methods and Functions

* **Lambda expressions**
* **Nested statements and scope** (globals)
* **Args/kwargs**

Object Orientated Programming:

* **Objects**
* **Classes**
  + Attributes
  + Methods
  + Inheritance
* **Polymorphism**
* **Special Methods**

Modules and Packages:

* **Use of “if \_\_name\_\_ == \_\_main\_\_:”** (import/run directly check)
* **Main function**
  + Implicitly all top level code – indent level 0
* **Modules**
  + A .py script that implements a set of functions.
  + Modules can be imported by other .py scripts.
* **Packages**
  + Name-spaces which contain multiple packages and modules (dirs. With a twist)
  + Each package must contain a “\_\_init\_\_.py” file (empty)
  + \_\_init\_\_.py indicates the directiory is a python module.
  + \_\_init\_\_.py can decide which modles exports as the API by overriding \_\_all\_\_ method.