#### CSE 160 25sp Quiz 4 Reference Sheet

#### File I/O

Function	Description
<pre>my_file = open(filepath)</pre>	Opens the file with given <i>filepath</i> for reading, returns a file object
<pre>my_file.close()</pre>	Closes file my_file
with open( <i>filepath</i> ) as <i>my_file</i> : # read file	Opens the file with given <i>filepath</i> for reading via the file object <i>my_file</i> in the body of the "with" statement. This closes the file automatically and does not require an additional call .close().
<pre>my_file.read()</pre>	Returns the entire file's contents as a single string (newlines included).
<pre>my_file.readlines()</pre>	Returns the file's contents as a list of strings (newlines included).

# Process one line at a time: for line\_of\_text in my\_file: # process line of text

# Process entire file at once
all data as a big string = my file.read()

Dictionaries

FunctionDescriptionmy\_dict = {}<br/>my\_dict = dict()Creates a new, empty dictionarymy\_dict = dict()Returns the value associated with the given key in my\_dictmy\_dict[key]Returns the value associated with the given key in my\_dictmy\_dict.keys()Returns the keys in my\_dictmy\_dict.values()Returns the values in my\_dictmy\_dict.items()Returns the keys and values as tuples in the form (key, value)

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# Process each key-value pair together: # Process one key at a time
for key, value in my_dict.items():
    # process key and value
    # use dictionary's key
```

### csv.DictReader

Interprets a standard comma-separated file into a series of dictionaries. For example, the file contents on the left become the list of dictionaries on the right.

a,b,c	I					
1,2,3	{ ' a	a': 1,	'b':	2,	'c':	3},
4,5,6	{ ' a	a': 4,	'b':	5,	'c':	6},
	]					

Function	Description
<pre>reader = csv.DictReader(fileobject)</pre>	Given a file object (created from either with open( <i>filepath</i> ) as <i>fileobject</i> or <i>fileobject</i> = open( <i>filepath</i> )), return a reader object that can be looped over.
list(reader)	Converts a csv DictReader object into a list of dictionaries.
for <i>row</i> in reader:	Loops through one line of data in the file at a time, giving <i>row</i> as a dictionary.

#### Lists

Function	Description
lst = []	Creates an empty list
lst[ <b>idx</b> ]	Returns the element in <i>Lst</i> at index <i>idx</i>
lst[ <b>start : end</b> ]	Returns a sublist of <i>Lst</i> from index <i>start</i> to index <i>end</i> (exclusive). Both values are optional.
<pre>lst[start : end : step]</pre>	Returns a sublist of <i>Lst</i> from index <i>start</i> (default 0) to index <i>end</i> (exclusive, default <i>Len(Lst)</i> ), incrementing by <i>step</i> . All values are optional.
lst.append( <i>elmt</i> )	Adds the element <i>eLmt</i> to the end of <i>Lst</i> . Returns None.
lst.extend( <i>other</i> )	Adds each of the elements in the list <i>other</i> to the end of <i>Lst</i> . Returns None.
lst.index( <i>eLmt</i> )	Returns index of the first occurrence of <i>eLmt</i> in <i>Lst</i> , error if <i>eLmt</i> is not in 1st
lst.count( <i>eLmt</i> )	Returns the number of times <i>eLmt</i> occurs in <i>Lst</i>

## Classes

Function	Description
class Name: # class methods, for example: def method(self, [args]): # method body	Defines a new class named <i>Name</i> with the subsequently defined methods.
<pre>definit(self):     # method body</pre>	The function that is called during class construction/creation, as in <i>Name()</i> .
self	Required parameter for all class methods (functions). Refers to the specific instance of the class. Can hold any number of arbitrary variables, as in <i>self.name</i>
<pre>n = Name()</pre>	Instantiates (creates/constructs) a new instance of the <i>Name</i> class and assigns a reference to it in the variable <i>n</i> .
<pre>n.method([args])</pre>	Calls the <i>method</i> function on the instance defined in <i>n</i> , optionally passing in any required arguments.

# Miscellaneous Functions

Function	Description
<pre>range([start,] stop [, step])</pre>	Returns a sequence of numbers from <i>start</i> (inclusive) to <i>stop</i> (exclusive) incremented by <i>step</i>
len( <i>Lst</i> )	Returns the number of elements in <i>Lst</i>
"string".split([delimiter])	Returns a list where the elements are the result of separating "string" by [delimiter] (which defaults to all whitespace (e.g., " ") if not given).