**October 5th, 2020**: Write a Python function called counts that takes a list as input and returns a dictionary of unique items in the list as keys and the number of times each item appears as values. So, the input ['A', 'A', 'B', 'C', 'A'] should have output {'A': 3, 'B': 1, 'C': 1} . Your code should not depend on any module from the standard library or otherwise. You should research the task first and include a description with references of your algorithm in the notebook.

**Intro**

Lists and dictionaries have some things in common. Both are data structures containing one or more data points. You can change and alter both during the execution of a program, otherwise known as being mutable. You can nest both inside a list or a dictionary. Both can be, but do not have to be, homogeneous. Meaning that you can have numbers, strings and Booleans in the same list or dictionary. [1]

list = [0, 1, “hello”, True, “world”, 3.14, 9.81, False]

dict = { 1: 0, 2: 1, “False”: “hello”, 0: True, 42: “world”, “pi” = 3.14, “g” = 9.81, “True”: False}

The main differences between the two is that lists are ordered, and dictionaries are not. Simply put this means that when you search for list[0] it will look up the first element of the list but when you search dict[0] it will search for the key value 0 and give you the corresponding value. And that each element in a list has a value but in a dictionary each element has a key and a value.[2]

Make image to explain maybe.

**Research for list to dictionary:**

**Describe Problem:**

**Different methods:**

**Chosen method & why:**

**Code**

**References**

[1] <https://www.geeksforgeeks.org/difference-between-list-and-dictionary-in-python/s>

[2] <https://realpython.com/python-dicts/>

[3] <https://www.pluralsight.com/guides/manipulating-lists-dictionaries-python>

[]<https://careerkarma.com/blog/python-dict-object-is-not-callable/>

[] <https://stackoverflow.com/questions/2600191/how-can-i-count-the-occurrences-of-a-list-item>

* l = ["a","b","b"]
* dict({(x,l.count(x)) for x in set(l)})
* <https://www.w3schools.com/python/ref_func_dict.asp>

[] <https://careerkarma.com/blog/python-convert-list-to-dictionary/>

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