Python course materials

# Built-in Functions Test Solutions

### For this test, you should use built-in functions and be able to write the requested functions in one line.

### Problem 1

Use map() to create a function which finds the length of each word in the phrase (broken by spaces) and return the values in a list.

The function will have an input of a string, and output a list of integers.

def word\_lengths(phrase):  
   
 return list(map(len, phrase.split()))

word\_lengths('How long are the words in this phrase')

[3, 4, 3, 3, 5, 2, 4, 6]

### Problem 2

Use reduce() to take a list of digits and return the number that they correspond to. For example, [1,2,3] corresponds to one-hundred-twenty-three. *Do not convert the integers to strings!*

from functools import reduce  
  
def digits\_to\_num(digits):  
   
 return reduce(lambda x,y:x\*10 + y,digits)

digits\_to\_num([3,4,3,2,1])

34321

### Problem 3

Use filter() to return the words from a list of words which start with a target letter.

def filter\_words(word\_list, letter):  
   
 return list(filter(lambda word:word[0]==letter,word\_list))

words = ['hello','are','cat','dog','ham','hi','go','to','heart']  
filter\_words(words,'h')

['hello', 'ham', 'hi', 'heart']

### Problem 4

Use zip() and a list comprehension to return a list of the same length where each value is the two strings from L1 and L2 concatenated together with a connector between them. Look at the example output below:

def concatenate(L1, L2, connector):  
   
 return [word1+connector+word2 for (word1,word2) in zip(L1,L2)]

concatenate(['A','B'],['a','b'],'-')

['A-a', 'B-b']

### Problem 5

Use enumerate() and other skills to return a dictionary which has the values of the list as keys and the index as the value. You may assume that a value will only appear once in the given list.

def d\_list(L):  
   
 return {key:value for value,key in enumerate(L)}

d\_list(['a','b','c'])

{'a': 0, 'b': 1, 'c': 2}

### Problem 6

Use enumerate() and other skills from above to return the count of the number of items in the list whose value equals its index.

def count\_match\_index(L):  
   
 return len([num for count,num in enumerate(L) if num==count])

count\_match\_index([0,2,2,1,5,5,6,10])

4

# Great Job!