Ankit\_Aggarwal (/dashboard)

Courseware (/courses/MITx/6.00x/2012\_Fall/courseware)

Course Info (/courses/MITx/6.00x/2012\_Fall/info)

Textbook (/courses/MITx/6.00x/2012\_Fall/book/0/)

Discussion (/courses/MITx/6.00x/2012 Fall/discussion/forum)

Wiki (/courses/MITx/6.00x/2012\_Fall/course\_wiki)

Progress (/courses/MITx/6.00x/2012\_Fall/progress)

### **DEA IN WITH HANDS: 10.0 POINTS**

### Please read this problem entirel before ou begin coding the solution

#### **EP ESENTIN HANDS**

A hand is the set of letters held b a pla er during the game. The pla er is initiall dealt a set of random letters. For example the pla er could start out with the following hand: a, q, 1, m, u, i, 1 u am, a a ill

aaiia alala alua um imaiula liaiaa aml,a aul a

```
hand = {'a':1, 'q':1, 'l':2, 'm':1, 'u':1, 'i':1}
```

'1' is represented. em em ber that with a dictionary, the usual way to access a value is hand['a'], where 'a' is the key we want to find. However, this only works if the key is in the dictionary otherwise, we get a KeyError. To avoid this, we can use the call hand.get('a',0). This is the "safe" way to access a value if we are not sure the key is in the dictionary. d.get(key, default) returns the value for key if key is in the dictionary d, else default. If default is not given, it returns None, so that this method never raises a KeyError. For e ample:

```
>>> hand['e']
Traceback (most recent call last):
   File "<stdin>", line 1, in <module>
KeyError: 'e'
>>> hand.get('e', 0)
0
```

getFrequencyDict, defined near the top of ps4a.py. hen given a string of letters as an input, it returns a dictionary where the keys are letters and the values are the num ber of times that letter is represented in the input string. For e am ple:

```
>>> getFrequencyDict("hello")
{'h': 1, 'e': 1, 'l': 2, 'o': 1}
```

displayHand function. Take a few m inutes rightnow to read through this function carefully and understand what it does and how it works.

```
ENE ATIN A AND HAND
```

The hand a player is dealt is a set of letters chosen at random. e provide you with the implementation of a function that generates this random hand, deal Hand. The function takes as input a positive integer n, and returns a new object, a hand containing n bwercase letters. Again, take a few m inutes (rightnow!) to read through this function carefully and understand what it does and how it works.

u i updateHand, which takes in two inputs -a hand and a word (string). updateHand uses letters from the hand to spellthe word, and then returns a copy of the hand, containing only the letters remaining. For eam ple:

11 i 1

```
>>> hand = {'a':1, 'q':1, 'l':2, 'm':1, 'u':1, 'i':1}
>>> displayHand(hand) # Implemented for you
a q l l m u i
>>> hand = updateHand(hand, 'quail') # You implement this function!
>>> hand
{'l': 1, 'm': 1}
>>> displayHand(hand)
l m
```

NOTE: In the abo e example after the call to updateHand, it is also acceptable for the value of hand to be the dictionary {'a':0, 'q':0, 'l':1, 'm':1, 'u':0, 'i':0}. The value of hand willdepend on your implementation but the output of displayHand() will be the same in either case.)

In plement the updateHand function. ake sure this function has no side effects: ie., it must not mutate the hand passed in. efore pasting your function definition here, be sure you've passed the appropriate tests in test ps4a.py.

```
1 def updateHand(hand, word):
 3
      Assumes that 'hand' has all the letters in word.
 4
     In other words, this assumes that however many times
 5
     a letter appears in 'word', 'hand' has at least as
 6
     many of that letter in it.
7
8
     Updates the hand: uses up the letters in the given word
9
     and returns the new hand, without those letters in it.
10
11
     Has no side effects: does not modify hand.
12
13
       word: string
14
       hand: dictionary (string -> int)
15
       returns: dictionary (string -> int)
```

# Test results

quail T i

ul la

CORRECT

ullu u

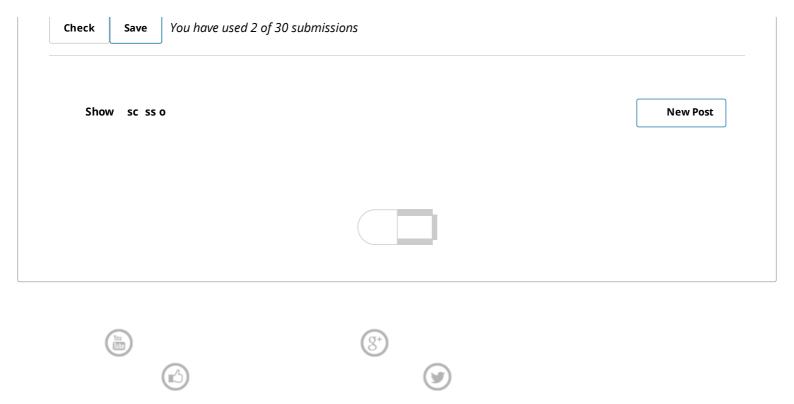
#### Hints

# **Cop ing Dictionaries**

ou ma wish to re iew the .cop method of P thon dictionaries (re iew this and other P thon dictionar methods here (http://docs.p thon.org/librar /stdt pes.html mapping t pes dict)).

### **Testing**

**Testing:** Make sure the <code>test\_updateHand()</code> tests pass. You willake want to test your im plem entation of <code>updateHand()</code> with some reasonable inputs.



© 2012 edX, some rights reserved.

 $terms\ of\ service\ (/tos) \quad privacy\ policy\ (/privacy) \quad honor\ code\ (/honor) \quad help\ (/help)$