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## Problem 1 - Build the Shift Dictionary and Apply Shift

Problem Set due Jul 23, 2020 20:30 -03

### Problem 1 - Build the Shift Dictionary and Apply Shift

20/20 points (graded)

The `Message` class contains methods that could be used to apply a cipher to a string, either to encrypt or to decrypt a message (since for Caesar codes this is the same action).

In the next two questions, you will fill in the methods of the `Message` class found in `ps6.py` according to the specifications in the docstrings. The methods in the `Message` class already filled in are:

- `__init__(self, text)`
- The getter method `get_message_text(self)`
- The getter method `get_valid_words(self)`, notice that this one returns a copy of `self.valid_words` to prevent someone from mutating the original list.

In this problem, you will fill in two methods:

1. Fill in the `build_shift_dict(self, shift)` method of the `Message` class. Be sure that your dictionary includes both lower and upper case letters, but that the shifted character for a lower case letter and its uppercase version are lower and upper case instances of the same letter. What this means is that if the original letter is "a" and its shifted value is "c", the letter "A" should shift to the letter "C".

If you are unfamiliar with the ordering or characters of the English alphabet, we will be following the letter ordering displayed by `string.ascii_lowercase` and `string.ascii_uppercase`:



```
>>> import string
>>> print(string.ascii_lowercase)
abcdefghijklmnopqrstuvwxyz
>>> print(string.ascii_uppercase)
ABCDEFGHIJKLMNOPQRSTUVWXYZ
```

A reminder from the introduction page - characters such as the space character, commas, periods, exclamation points, etc will *not* be encrypted by this cipher - basically, all the characters within `string.punctuation`, plus the space (`' '`) and all numerical characters (0 - 9) found in `string.digits`.

2. Fill in the `apply_shift(self, shift)` method of the `Message` class. You may find it easier to use `build_shift_dict(self, shift)`. Remember that spaces and punctuation should not be changed by the cipher.

Paste your implementation of the `Message` class in the box below.

```
1 class Message(object):
2     ### DO NOT MODIFY THIS METHOD ###
3     def __init__(self, text):
4         '''
5         Initializes a Message object
6
7         text (string): the message's text
8
9         a Message object has two attributes:
10            self.message_text (string, determined by input text)
11            self.valid_words (list, determined using helper function load_words)
12        '''
13        self.message_text = text
14        self.valid_words = load_words(WORDLIST_FILENAME)
15
16    ### DO NOT MODIFY THIS METHOD ###
```

Press ESC then TAB or click outside of the code editor to exit

Correta

## Test results

[Hide output](#)

**CORRECT**

Test: 1 build shift dict



build\_shift\_dict with 0

**Output:**

passed

Test: 2 build shift dict

build\_shift\_dict with 5 shift

**Output:**

passed

Test: 3 build shift dict

build\_shift\_dict with 16 shift

**Output:**

passed

Test: 4 build shift dict

build\_shift\_dict with 25

**Output:**

passed

Test: 5 apply shift



apply\_shift on "hello" with 0 shift

**Output:**

hello

Test: 6 apply shift

apply\_shift on "we are taking 6.00.1x" with random shift

**Output:**

ck gxk zgqotm 6.00.1d

Test: 7 apply shift

apply\_shift on "th!s is Problem Set 6?" with random shift

**Output:**

ym!x nx Uwtgqjr Xjy 6?

Test: 8 apply shift

apply\_shift on "TESTING.... so many words we are testing out your code: last one" with random shift

**Output:**

KVJKZEX.... jf drep nfiuj nv riv kvjzxex flk pfli tfuv: crjk fev

[Hide output](#)

You have used 3 of 30 attempts



Enviar

✓ Correct (20/20 points)

Problem 1 - Build the Shift Dictionary and Apply Shift

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