

## Lab 6 – Word Manipulation

### Goals

- Familiarity with string manipulation
- Familiarity with for loops and iteration
- Learn how to use the string library/member methods
- Learn how to manipulate strings
- Understanding the difference between mutable and immutable

### Setup

- Create a new PyCharm file in your desired directory
- When you name the code, use the following naming convention  
**ITP115\_l#\_lastname\_firstname**  
(replace # with this lab number)
- Your new file must begin with comments in the following format (replace the name and email with your actual information):  

```
# Name
# ITP 115, Spring 2035
# Lab L^ (replace ^ with this lab number)
# USC email
```

### Requirements

Your program must perform the following:

- Write a program that takes in two words or statements from the user.
- Convert the input to all lowercase or uppercase
- Strip the statement of all spaces (*hint: this can be done with strings, or with lists*)
- Convert those words to two separate lists
- Check if the words are anagrams of each other (i.e. they are the same length and have all the same letters such as *life* and *file*)
- Use a **for** loop to check if each word is a palindrome (a word that is spelled the same backwards and forwards, e.g. *civic*). Ignore case so CIVic should be considered a palindrome
- Hint:
  - For the anagrams, there are functions built into Python you can use on lists and strings to make this part easier
  - Useful functions for strings: **join()**, **split()**, **lower()**, **upper()**, **replace()**

- When checking for palindromes, you may *not* convert the words to lists and use the `reverse()` method. Instead you will want to check the letters using a for loop (hint: use a for loop with range).

## Sample Output

### Example 1:

Please enter a word or statement: **file**

Please enter a second word or statement: **life**

The two words you entered are anagrams

The first word is not a palindrome

The second word is not a palindrome

### Example 2:

Please enter a word or statement: **Ana**

Please enter a second word or statement: **aNa**

The two words you entered are anagrams

The first word is a palindrome

The second word is a palindrome

### Example 3:

Please enter a word or statement: **A but tuba**

Please enter a second word or statement: **a Butt UbA**

The two words you entered are anagrams

The first word is a palindrome

The second word is a palindrome

Example 4:

Please enter a word or statement: **chicken**

Please enter a second word or statement: **tofu**

The two words you entered are not anagrams

The first word is not a palindrome

The second word is not a palindrome

### **Deliverables and Submission Instructions**

- A compressed folder (zip file) containing you Python code. This can be done by:
  - a. Windows (*you must find the folder on your computer—this can't be done within PyCharm*):
    - i. Select your lab file
    - ii. Right click
    - iii. Send to ->
    - iv. Compressed (zipped) folder
    - v. Rename this folder with the following name:  
**ITP115\_l#\_lastname\_firstname**  
(*replace # with this assignment number*)
    - vi. Submit this zipped folder through Blackboard
  - b. OSX (*you must find the folder on your computer—this can't be done within PyCharm*):
    - i. Select your lab file
    - ii. Right click
    - iii. Compress 1 item
    - iv. Rename this folder with the following name:  
**ITP115\_l#\_lastname\_firstname**  
(*replace # with this assignment number*)
    - v. Submit this zipped folder through Blackboard