

Homework Assignment 1

LING 1991 Fundamentals of Text Processing for Linguists

(Palindrome, 40 points) The goal of this problem is to write a Python script that takes a string input from the keyboard and then reports whether or not it is a **palindrome**, following this scheme:

- If the input string x is too short (0 – 2 characters long), print out: ‘Sorry, “ x ” is too short to be a palindrome.’, where x is the input string.
- Otherwise, if x IS a palindrome, print out: ‘YES, “ x ” is a palindrome.’
- Otherwise, if x is NOT a palindrome, print out: ‘NO, “ x ” is not a palindrome.’

In addition, make your palindrome test allow the following:

- Mixed upper and lower case: "Level" as well as "level" should be accepted as a palindrome.
- Space: "A Toyota" should be recognized as a palindrome.
- Punctuation: Allow commas, apostrophes, colons, and periods in the input string. That is, these all should test positive: "Madam, I'm Adam.", "A man, a plan, a canal: Panama."

The string methods required for transforming a string for the above criteria were covered in Lesson 2.

Note that a palindrome test can be administered by turning a word (e.g., ‘cat’) into its reverse (e.g., ‘tac’) and then comparing the two: if they are the same, then you have a palindrome. A reversed word can be obtained by: (1) converting the word into a list of characters, (2) reversing the list, and then (3) joining the reversed list back to a string. These operations were covered in Lesson 3.

When executed, the program should work exactly like the example shown on the right.

```
>>> ===== RESTART ===
>>>
Give me a palindrome: mm
Sorry, "mm" is too short to be a palindrome.
>>> ===== RESTART ===
>>>
Give me a palindrome: eye
YES, "eye" is a palindrome.
>>> ===== RESTART ===
>>>
Give me a palindrome: Level
YES, "Level" is a palindrome.
>>> ===== RESTART ===
>>>
Give me a palindrome: python
NO, "python" is not a palindrome.
>>> ===== RESTART ===
>>>
Give me a palindrome: Madam, I'm Adam.
YES, "Madam, I'm Adam." is a palindrome.
>>>
```

Make sure to **test** your script with various types of input. Also, provide proper documentation on your code by inserting **comments** where appropriate. When you are done, upload your Python script, named "hw1.palindrome.Your-last-name.py".