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:

a. 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.
b. Otherwise, if \( x \) IS a palindrome, print out: ’YES, “\( x \)” is a palindrome.’
c. 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.

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".