**Homework 2**

**Due: Sunday (see Syllabus)**

**Points: 40**

**Instructions**

A **palindrome** is a string that reads the same forwards and backwards. For example, these strings are all palindromes: abba, Madam, xyzZyx, 1234554321. Note that upper-case and lower-case letters are treated as being equivalent.

One way to determine if a string is a palindrome is to compare the first and last characters. If they are different, then the string is not a palindrome. If they are identical, then move the comparison points one to the right and one to the left, respectively. Repeat until the two comparison points meet. If they meet and no non-matching characters have been discovered, then the string must be a palindrome.

A far less efficient way to determine if a string is a palindrome is to see if the string is identical to its “mirror image.” For short strings the inefficiency is not a big deal. But if the string is longer, say 100 million characters, then this approach can be extremely time consuming.

Write a script that asks the user to input a string. Then the script determines if the string is a palindrome or not and displays the result. You may use either of the two approaches described above, or you may come up with an approach of your own.

Run your program several times using different inputs – sufficient to demonstrate that your program meets all the assignment requirements. Capture a screen shot of each run and paste them into an MS Word document. Place a caption above each image.

**Submit the Python .py file (lastname\_hw2.py) containing your program and the MS Word document** **to your instructor using the appropriate Assignment Submissions link.**

**Sample Output**

Text

Description automatically generated