

# Homework 4

CS 4364/5364  
Spring 2022

Due: 7 March 2022

1. **(20 points)** Describe how to *use* the suffix tree data structure to find the longest *palindrome* substring in a string  $S$ . Remember a palindrome is a string that is the same forward as in reverse (i.e. **tacocat**). The longest palindrome substring in the example string **bananas** is **anana**: it is both a substring (from the 2nd to 6th characters) and is a palindrome. Include in the submission: (1) an algorithm, (2) an explanation of its correctness, and (3) an analysis of its running time.