CS 372/469 – Spring 2022

Alternate Lab 2

Due: 04/10/2022 11:59 pm

For each of the following questions, write a successful running code in any programming language that you prefer. Your code should run without any errors for any *valid* input. **The total grade for this alternate lab is 50% of the Lab 2. Submit this only if you would like to replace your existing Lab 2 grade.**

All problems are borrowed from <https://adriann.github.io/programming_problems.html>

**Question 1 (20 points):**

Write a function that returns the largest element in a list. You cannot use an in-built max (or equivalent) function.

Your algorithm must have a time complexity of O(n)

**Question 2 (20 points):**

Write a function that returns the elements on odd positions in a list

Your algorithm must have a time complexity of O(n)

**Question 3 (20 points):**

Write a function that tests whether a string is a palindrome.

**Question 4 (20 points):**

Write a function that combines two lists by alternatingly taking elements, e.g. [a,b,c], [1,2,3] → [a,1,b,2,c,3].

**Question 5 (20 points):**

Write a function that rotates a list by k elements. For example [1,2,3,4,5,6] rotated by two becomes [3,4,5,6,1,2].

**Submission Instructions**: Put all your solutions in a properly commented file named *alternatelab2\_lastname\_firstname.EXTENSION*, where EXTENSION = the appropriate extension for the programming language that you chose.

Email your solutions to the TA ([lamia@nmsu.edu](mailto:lamia@nmsu.edu)) and cc me on it ([nagarkar@nmsu.edu](mailto:nagarkar@nmsu.edu))