CSC 355. Discrete Structures and Basic Algorithms
Homework Assignment 2

Instructions: Solve the following questions.

1. Using induction to prove that for any natural number *n, 0+1+…+ n = n(n+1)/2*
2. Using the literature provided in Module 2, explain the following:
    a. Describe the upper bound.
    b. Describe the lower bound.
    c. Describe the grow rate.
3. State the recursive algorithm or pseudocode to solve the following exercises. For each algorithm analyze the best, worst and average cases.
    a. Fibonacci Series
    b. Factorial
    c. Hanoi Tower
4. Does the Linear Search is Ω(1) in its best case? Why?
5. The sequential search algorithm is $\Theta(n^2)$ or not? Why?

Submission Instructions

You must upload your homework in a **pdf** file in the designated area in D2L.

Grading Points

Total Score: 25 points

**Each question has a value of 5 points*