

# Lab 07

## Algorithms and Data Structures

November 2, 2018

For my implementation of the all pairs shortest path algorithm, the  $\Omega$  run-time would be  $\Omega(n^3)$ , where the  $n$  is the amount of vertices within our graph. The run-time for my implementation is  $O(n^3)$  because I have a triple nested for loop where each loop runs between 1 -  $n$  times. Within the triple nested for loop I am performing a check between two values to determine the minimum value between the two and then reassigning the values, which is a constant time operation. For the worst case ( $\Omega$ ) of my implementation I would need to iterate over every possible vertex in the graph, leaving us with  $\Omega(n^3)$ .