Week 2 Reflection

1. What was the focus of this week?

This first part of this week looked at various algorithms that used the divide and conquer paradigm to solve the problem in more optimal time. These included an algorithm for counting inversions, Strassen's matrix multiplication algorithm, and the Closest Pair algorithm.

The second part of this week looked at the Master Method which allows us to give an asymptotic running time of an algorithm using O notation based on several constants.

1. What did I learn this week?

I learned about a number of different algorithms which I

have not encountered before, as well as "piggybacking" off other algorithms to achieve optimal complexity (used with inversion counting piggybacking off mergesort).

I also learned about the master theorem and how to find the complexity of an algorithm using just a few constants relevant to the algorithm.

1. What did I already know?

Although practically all the content this week was new to me, there was mention of the binary search algorithm which I have studied previously in informatics.

1. What were some challenges this week?

The concept of matrix multiplication was strange to me and I had some difficulty getting my head around.

1. (With reference to suggested improvements last week) What did I need to know?

In terms of maths proofs, only a short amount of proofing in relation to the master method was done, and this I was able to loosely follow along with

1. What do I need to improve on for next week?

Managing my time so that I can watch all the lectures and implement the algorithms without having to do it all on the last day.

1. How has my understanding of Algorithms increased this week?

Exposure to some new and different algorithms has shown me the similarities between them in using divide and conquer. My understanding of asymptotic analysis has also increased with learning the Master Method.