

Reflection Essay - Assignment 2

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Once again I shall be dividing what I learnt question-wise:

Question 1: I learnt to break down a complexity counting problem step-by-step and to guess a solution and prove it.

Question 2: I learnt to avoid being overtly accurate as simply having a lower bound suffices and tightness of the bound doesn't matter. I gave up on trying to find an accurate $\Theta(n^a)$ solution as there wasn't any easy method that I could come up with. So I settled for an upper bound of $O(n)$ and a lower bound of $\Omega(\sqrt{n})$

Question 3: This was very straightforward as it involved breaking the problem up and observing patterns. The recursion-tree method helped me solve this.

Question 4: I got a good grasp of the master's theorem and all its conditions necessary before using it. Especially case 3 which has that salient sub clause, which is often easy to miss when concluding something.

Question 5: Again a very simple counting problem which is simplified tremendously by ignoring floor functions and assuming natural numbers everywhere. Used well known results of Harmonic series summation for this.

Note: Did not have to refer to any external source for this assignment as everything was straight application of 'Analysis and Method of Summation' lectures.