CSCI432 HWN+1

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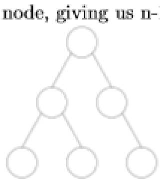
I've grown quiet a bit as a Computer Scientist this semester. In just this class alone, I've expanded my knowledge in this field tremendously. The majority of this has been in writing, during the beginning of the semester, I was a rather weak writer. When it comes to writing a proof, I think I have one major crux. I rush through it. Often times I have the concept correct, and show that I understand the problem being presented, however, I fail to fully express my thoughts and process of approaching the proof. Towards the beginning of the semester, I was getting frustrated whenever I got the proof correct but was getting docked points. I understand now that I was making proofs that were very elementary and vague. I would often forget to write out hypothesis and conclusions, even not defining new variables. After realizing these ?aws in my proofs, I've been trying to improve my formality. Its been a slow process but I believe I'm improving in comparison to the first few proofs we did in class. However, I think a strength I possess in academic writing is my step by step process to proving my proof. For example, in inductive proofs, I often for 1 get my conclusion and problem statement, but I always believed my inductive hypothesis and inductive steps where always pretty solid. For instance, this was the very first inductive proof I did for this class:

For each node, there is always an edge. The only exception is the root node, which gives the n-1 edges.

Figure 1: As you can see here. Every nodes have an edge except for the root node, giving us n-1 edges.



As compared to my most recent proof:

Prove that the Levenshtein Distance satisifies the identity of indiscernibles (that $E(x, y) = 0$ iff $(x = y)$)

Base Case: Both strings are empty sets, hence $E(x, y) = 0$ and $(x = y)$
Induction Hypothesis: Assume that the distance of two strings of length k is 0.
Inductive Step : Then to have a string become k + 1 in length one of multiple things can happen. Either both strings can add the same +1 character to the string, one string can add a +1 character and the other string is unchanged, or both strings can add a different +1 character. If the second or third option are chosen then the distance of x to y becomes 1 and x will not equal y. Therefore for the distance to be 0 x must equal y.

So I think it's clear that I have improved and grown when it comes to professional writing in Computer Science