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CS-499: Computer Science Capstone

Southern New Hampshire University

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Narrative: Algorithms and Data Structures

1. This artifact takes a pre-defined list of dictionaries in python and allows the user to sort by each element (title, director, year). This artifact was created roughly one year ago as a part of the introduction to python class at SNHU.
2. This artifact relates to algorithms and data structures because it manipulates a list of dictionaries, which is sort of like an easier way to represent a two-dimensional array. I think I have done projects that use more complex data structures such as bitmaps and linked lists built from starch in C at UMass, but they have been lost to time. However, I remember struggling with this assignment and settling on a roundabout solution, so I think there was a lot of room for improvement. By changing the format of the data structure and using lambda to sort the structure instead of iterating through it manually, I was able to eliminate 16 lines of code and hopefully improve optimization.
3. As predicted in the outline, I believe I have fulfilled the algorithmic principles outcome by improving upon my work. I was able to arrive at the same solution using better algorithms and design choices with minimal trade-off. However, this artifact has relatively low coverage because the poker project showcases the same skills and is more complex.
4. Thinking back, this assignment was my first significant programming assignment in probably three or four years, so it makes sense that I had a little trouble. The class was mostly review until suddenly, the final project was much more complex. This shows that I have improved since then or at least gotten back the skills I had as I took relatively little time to arrive at a better solution. I hope that in the future I can reach even greater milestones of progress.