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CS-300

Project 1, Data Structure Analysis

Given the option between the three runtime objects described by this project the binary search tree is the logical choice for building out a simple reporting mechanism for reporting on computer science courses. It has the advantage of being the least costly method of data storage for both search and build operations. The only drawback that I have seen from doing a pseudo code analysis is that is will be a bear to maintain. The recursive nature of the calls leads to semi-spaghetti style code paths that can be difficult to debug.

Looking at the other to data structures the analysis indicates that each one is more pricey (runtime execution wise). Specifically, hashtable is the priciest of all due to the fact you must iterate through each bucket and any item within the bucket. However, from my experience this may be the easiest project to maintain and enhance in the long term. Execution paths are straight forward and can be broken apart easily. A straight vector based project would perform a bit better but would be difficult to enhance going forward.

If I were to decide on which project to implement it would be the hash table. Even though performance is better with the binary search tree, the maintainability and enhance ability of the hash table is far superior.