// SNHU

// CS:499 – Computer Science Capstone

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// MOD 5 – Narrative

// This is the narrative for the third artifact enhancement (Databases)

* **Briefly describe the artifact. What is it? When was it created?**

The artifact in this category (Databases) is Module Five's assignment titled "BinarySearchTree" from the “Data Structures and Algorithms” course, taken during my 6th term at SNHU. It is a program written in C++, designed to perform various functions related to bid data from a CSV file named “eBid\_Monthly\_Sales.csv”. These functions within the program include the ability to load the data, print all bids, find a bid, add a bid, remove a bid, as well as the primary artifact enhancement which is to incorporate data mining via the utilization of a Binary Search Tree class.

As a side note, when this assignment was given to us (students) during that course, the skeleton of this program was provided to us by the University, and so most of the parts of the program that we students were assigned to add and modify were under the "FIXME" comments. For the purposes of this artifact enhancement, I have added to, modified, and thus improved the entire program.

* **Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills and abilities in software development? How was the artifact improved?**

I selected this item primarily because it met the rubric requirements for this category in our Capstone course, that being Databases, by incorporating data mining within this program. I also selected it because when I initially took the “Data Structures and Algorithms”, I did not complete this assignment according to its full rubric standards, so I wanted to complete it, and learn new things in the process by going above and beyond what was required initially in that course. In this way, I have enhanced and improved the program all around, and I believe that I have met a required course outcome with the incorporation of data mining.

I believe that that this artifact enhancement demonstrates the ability to first and foremost, incorporate data mining in a way that is straightforward and easy to understand. That is, through the calculation of statistics associated with a database, in this case, a CSV file. Also, I have improved the program all around by adding more functionality and validating user input, as well as incorporating descriptive comments throughout the program.

* **Did you meet the course outcomes you planned to meet with this enhancement in Module One? Do you have any updates to your outcome-coverage plans?**

Yes, in completing this artifact enhancement, I believe that I have met the second expected outcome which focuses on developing a type of communication which is technically sound and adapted to the user experience of this program.

* **Reflect on the process of enhancing and modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?**

When I first worked on this assignment back in the Data Structures and Algorithms course, I didn’t delve deep into this program’s functionality other than what was immediately required under the “FIXME” comments. This time around, I examined every single line of code and figured out how they all worked together to form the structure of the Binary Search Tree. So, the understanding and knowledge of exactly how a Binary Search Tree functioned in this context became much clearer.

As for challenges, figuring out how to implement data mining primarily by comparing variables against each other along with when and where to direct pointers in the tree was the main obstacle in terms of difficulty. The other difficulty was validating user input within the main menu and figuring out which operators to use to detect digits and convert strings to a double type, for example.