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CS 499: Computer Science Capstone

Southern New Hampshire University

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4-2 Milestone – Algorithms and Data Structures

The reason behind using the artifact that was used in this milestone is to demonstrate the proper representation and best usage of algorithms and data structures in written code, these includes proper naming conventions, proper use of coding standards commenting, syntax and structure, knowledge of data structures and algorithms and the right ones to use for specific needs. The artifact that was chosen to demonstrate such usage was an artifact from a previous coursework, CS300 – data structures and algorithms. In CS300 - data structures and algorithms, students were tasked with creating a project that showcases the proper use of data structures and algorithms in their code. In the project, we were required to write code that loads data from file, specifically a .csv file, and after successfully loading the data from the file, we were tasked with storing the data in a data structure of choice, putting into consideration the time it takes to load the data as a guide towards choosing the right data structure, we were then tasked with allowing a user of our program the opportunity to search for courses contained in the data, and subsequently getting access to prerequisites of such courses if available. The user was to get the opportunity to search for courses using their course number. The project was written in the C++ programming language.

It was very necessary to include this artifact in the ePortfolio, as this artifact showcases my skills of being able to use data structures to access, store and load data as needed. It shows my possession of the needed skill set required to satisfy the knowledge of data structures and algorithms. The project used for this artifact completely satisfies what a programmer would need to know in order to successfully demonstrate the proper use of data structures and algorithms. This artifact was enhanced through the means of converting the already existing code which was written in C++ language to the C language. Doing this demonstrates, anyone that accesses my ePortfolio would be immediately become aware of my knowledge of a variety of programming languages and my ability to navigate different language by converting code from one language to another. A number of course outcomes were demonstrated in this particular exercise. Some of the outcomes are the those that require us to demonstrate the use of computing solutions to solve problems using algorithms principles. Overall, this artifact and its enhancement gives my ePortfolio the technical background that a programmer is required to possess to demonstrate their knowledge of the core of any programming language.