3-2 Milestone Two: Enhancement One: Software Design and Engineering

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## Category One Narrative - Software Design and Engineering

The artifact selected is an invoicing system for Davy’s auto shop services that was originally created in March of 2019 in the CS-200 Computer Science Role in Industry course at SNHU. The artifact was selected because it was in the beginning of my computer science related courses and was one of the first experiences I had with coding. I found it to be a great candidate for selection because it will give me the opportunity to improve code from when I began into a polished artifact utilizing concepts learned throughout the remainder of the computer science program. The artifact had no information about what it was for and how it worked so this gave me the ability to showcase my ability to read and understand code. The artifact also allows me to showcase many course outcomes in the software engineering and design category. The enhancement plan for this category included changes to the code and flow that would create reusable code which improves readability and removes duplication of code. The artifact was improved with the addition of a request class that includes the ability to store user input for service selections, display them, and get them. The code now calls the functions for user input and displays the request made to the user. The sum calculation now utilizes the variable created with the functions and gets the prices from the dictionary based on those variables. Additional changes currently implemented under this category, beyond the original enhancement plan, include comments, a new naming convention for the dictionary that allows for key to value understanding, cleaning up white space manipulation, adding an ASCII art banner for company branding, and various OS functions. The objectives originally planned have been met in enhancement one and further updates are being considered to further improve the code in this category. Reflecting on the process of enhancing the code, I learned to recreate my understanding of how the code worked and improved my brainstorming and implementation skills. I faced challenges when enhancing the code because I originally wrote the code four years ago and haven’t utilized Python a lot in the time between then and now. I had to refresh myself as I went through it and referred to certain parts of Python documentation to recap on certain topics. This demonstrates the ability to research and learn when on a schedule and still follow through with planned dates and adding additional improvements beyond originally planned. I accomplished this utilizing an agile approach to my development. “Agile Software Development is an iterative and incremental approach to software development that emphasizes the importance of delivering a working product quickly and frequently. It involves close collaboration between the development team and the customer to ensure that the product meets their needs and expectations” (Naidu, 2023). I iterated through my development to make sure I was taking functionality one portion at a time and ensuring it worked. In doing so I could stay on schedule to satisfy the customer requirements, in this case my professor approved enhancement plan, and ensured they work as planned. This allows for the opportunity to get fast changes and functionality to the customer even though there is room for future growth and potential for the code. The course outcome of demonstrating an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals has been accomplished in this enhancement plan.

References

Naidu, N. (2023, February 15). *Software engineering: Agile software development*. GeeksforGeeks. Retrieved March 16, 2023, from https://www.geeksforgeeks.org/software-engineering-agile-software-development/