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Professor Kalinowski

CS499

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Milestone Three Narrative

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

The original artifact for this milestone was created in the CS250 course, and detailed Chada Tech’s transition into the agile methodology, from the waterfall methodology. The upgrade of this artifact is an algorithm which serves the purpose of streamlining the prioritization process of different user stories. Using this algorithm, users can input their user stories, and their corresponding scores, and get back a list of the tasks in order of importance.

**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 algorithms and data structure? How was the artifact improved?**

I selected this artifact because of its relevance and importance in the industry, and the number of ways I could go about upgrading it. This artifact was improved because it took the plans that were in writing and automated them. This algorithm showcases my abilities in its ability to streamline such an important task. Various actors in the process of development can believe that one task is more important than the other, but this algorithm is unbiased, producing a fair and agreeable task list.

**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, this algorithm satisfied the course outcomes I planned to accomplish. (Design and evaluate computing solutions that solve a given problem using algorithmic principles and computer science practices and standards appropriate to its solution while managing the trade-offs involved in design choices. Demonstrate 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.)

**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?**

The process of implementing the algorithm posed a few challenges, though nothing too difficult. My first challenge was deciding which data structure would be the best for this implementation. After doing some light research, I decided that a heap would be the best option due to the necessity of sorting items based on the level of priority they demand. After coming to this conclusion I had to figure out how to interact with the data inside the heap (I was familiar with operations like push and pop, but they came up as undefined). I then found the built in module heapq, which worked perfectly. I created an initial implementation with static data, and then implemented user input without any further issues. This process helped me learn about choosing a data structure and implementing it efficiently.