Milestone Three Narrative

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

The project I used for my algorithms/data structure portion of the ePortfolio is one I worked on in my *CS 260: Data Structures and Algorithms* course last year. This project is called LinkedList, and the point of this artifact is that a .csv file with ‘bids’ is taken as an input, and the program quickly loads in the bids, allowing the user to add new bids, view all bids, etc.

*B. Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills in algorithms and data structure? How was the artifact improved?*

I included this artifact in my ePortfolio because it simply had unfinished features that always bothered me. First off, it wasn’t commented to the best extent in the past, and the two features that were unfinished are the FindBid() and RemoveBid() functions. The idea of these functions is that they take a bidID and quickly find the row where it exists in the csv file and then returns the info of the bid or removes it, depending on the function. The problem is that these features weren’t developed with user input in mind, and instead just used a predetermined ID to search for/remove. This artifact shows my skills in algorithms and data structures by showing off my ability to develop code that quickly loads in large lists of data, with the ability to develop relevant features for the program. It also shows my skills to develop secure code, as I created logic to require a password from the user to be able to utilize the program. This gives the user 3 attempts to enter the password “Open”, and if the password attempts run out the program closes. To summarize, this artifact was improved by more thoroughly commenting it, by promoting secure code through password usage, and by fully developing the unfinished features FindBid and RemoveBid.

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

I did meet the course objectives that I planned to meet with this enhancement. Specifically, I met the objectives ‘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’ (finishing the FindBid and RemoveBid methods), and ‘Develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities’ (Creating more secure code/requiring a password). I may go back and look at the capabilities to add sorting logic to the program.

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

I think the lesson I learned from this particular enhancement is to not settle if you know that something can be improved. Back when I take the course where this assignment was dealt with, our instructor told us to not bother to develop the FindBid and RemoveBid functions, which never sat right with me. I learned through improving this artifact that I’m decent at plotting things out in my head before executing them in code, as I was able to pretty easily finish the relevant functions to provide the utility that I wanted. By proxy, I also learned how useful these types of applications are in the real world, specifically how in a program like Excel the user can search for specific things all the time. The biggest challenge I faced was actually in implementing the password logic, as I had some trouble getting the loop correct for it, but I eventually was able to figure it out.