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**01/26/2021**

**CS 499**

**Milestone Three**

**Enhancement Two: Algorithms and Data Structure**

**The narrative that accompanies the artifact should explain why you included the artifact in your ePortfolio and reflect on the process you used to create the artifact. The narrative should focus less on the actual creation of each artifact and more on the learning that happened through the creation of the artifact. Discuss the following:**

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

This artifact was created September 2020 for my CS 210 Project two. The assignment is called The Airgead Banking App, and will allow the user to enter an Initial Investment Amount, Monthly Deposit, Annual Interest, and Number of Years their investment has to grow. It will then display the information for the user to see. For enhancement two, I will be enhancing the application by adding to the design questions requesting additional information in regards to their annual salary and what percentage they are looking to save each month.

1. **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 decided to include this artifact because I feel this is one of my best examples of programming and design. The design is easy to follow, but I always felt that I needed to add more to the design. This program is a good example of an application which can be used in the real world. By asking two simple question it will be able to give the user a better overall picture of what they can save, henceforth improving the original artifact. Originally the application just asked for the user to input what they want to save, which could have been any number, even something which might not have been reachable. Now the user can have a number that is based on their salary and is attainable. By adding the extra calculation, it shows my understanding of algorithms and data structures and even though this is a simple calculation, the application including the math calculations solve a problem and I feel this a good example of an algorithm.

1. **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?**

By completing the outlined enhancements I feel I have met the course objectives. I outlined the enhancement in the ePortfolio Selection and Refinement Plan and added the extra coding to my original application. I started by creating the new code separate from the original artifact to make sure everything worked correctly and then I added the code to the original artifact. It is like working within a repository and the master file. By doing this, it would have been like creating a separate branch to implement this design. The algorithm works as outlined in my refinement plan and you can see I kept the structure consistent throughout the code. I also implemented the error handling which I created in my first enhancement.

1. **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?**

The biggest challenge with this part of the milestone was just coming up with what I wanted to add to the design. The first milestone I enhanced the application by implementing error handling, but I wanted to add something to the application that was relevant and bring value to the user. The application is great for addressing the users need but anyone can input any number and the algorithm will supply the user with an answer, but how accurate is that number to the user? By asking the user for their personal information in the form of their salary and what percentage they are looking to save, the algorithm will output a number that is now based on facts and not just on what the user is hoping. After that initial challenge was ironed out, I moved on to my next challenge, which was to create the new code and not destroy what I already created. That is where I look my knowledge of repositories and implemented a strategy that mirrored what I would do if my application was in a repository. This was an easy way to stay organized and protect my original artifact.