Milestone Three Narrative

My second artifact is an open source Java program that falls into the data structures and algorithms category. The program finds the most frequent element in an array by sorting the array and then linearly traversing it. This artifact was selected because it falls into the data structures and algorithms category, and I saw an opportunity to improve the efficiency of the program using a different data structure. The part of the program that shows my specific skills with algorithms and data structures is the implementation and traversal of the hash map to find the most frequent element from the array. This is also the part of the program that was improved, as using a hash map is more efficient than sorting and linearly traversing an array.

I successfully met the course outcomes of CS-499-03 and CS-499-04 that I outlined in Module One. I did not have any updates to my outcome-coverage plans. Enhancing this artifact was good practice in creating and traversing a hash map using Java. The key was to store the array numbers and their frequencies as key-value pairs. This enabled a quick lookup of the most frequent element. I did not encounter many issues, I just had to remember to keep the variables straight, such as “frequency” and “key”, and “maxCount” and “mostFrequent”.