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CS 499

This artifact is the algorithms and data structures portion of my CS-465 Full Stack Development I final project. I created a token bucket algorithm to rate-limit the amount of API calls made to my application to enhance its security and usability.

I included this artifact in my ePortfolio because, along with the enhancement, it showcases my knowledge of how to implement modern algorithms into a functioning codebase. This demonstrates my understanding of the algorithm at a theoretical level and of its usage at a practical level. By integrating this algorithm into ExpressJS’s middleware, I also show my knowledge of modern JavaScript frameworks and how to augment the framework within its parameters.

Through the process of enhancing this artifact, I found that there could be further updates by limiting tokens per user such that the entire application isn’t halted by one greedy user. I learned about how the middleware system works in ExpressJS, and how extensible it could be for further API development. In my further enhancements, I will document the limitations of the token bucket rate limiting algorithm and how it could be extended for further improvement.