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CS302 Section 1004

Assignment 6 write up

The environment used for coding, compiling, and running this program was a Microsoft Windows 10 Home OS. System Manufacturer is HP using a Intel® Core™ i7 CPU with 8Gb of RAM. The assignment was coded using VSCODE and compiled using windows subsystem for Linux. The hash was implemented by overwriting the [] operator in order to handling the collision/ hashing and insertion as well as the sort. Then a brute force technique was used in order to find a solution given the data in the hash.

Assuming insert/find in the hash structure takes  $O(1)$  time, the overall runtime would be  $O(n^2)$  because of the brute force search technique used in order to find  $a + b + c = d$ . If the search was more elegant the overall run time would be closer to  $O(1)$  ; If a hash wasn't used the runtime would most likely be slower as the insertions/sorting of the data would be slower than  $O(1)$  thus giving an overall slower runtime.