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- Getting the rounding of the output correct was difficult for me. I realized that I was incorrect in how I thought type casting from a double to an int worked. This slowed me down at the end of the scripting process
- This is just an estimate but from the trials I ran, the -O2 flag brought the average time on the larger word puzzles down by half

Dictionary File	Word Grid	RunTime(sec)
250x250	words	1.317
	Words2	.967
300x300	words	2.563
	Words2	1.39

- I am using a Dell xps13 with a 7th gen i7 chip
- The Big-Theta running speed of the program should be n^2 of $r(\text{rows}) * c(\text{columns})$. The words do not factor into the search section of the program as the hash table can theoretically be infinitely large and still have constant hashing time. In my case there are probably collisions that slow down the hashing when passing in larger dictionaries. Additionally, directions and the word length should not factor into the running speed as they are constant
- I think that the biggest problem that I experienced in this lab was trying to figure out how to structure my program. Since there were more open directions, it was harder to know where to begin. I ended up doing a lot of extra functions in my wordpuzzle.cpp file that I had to migrate to my hashTable.cpp file. Also, because of the size of the program and the number of methods we had to write I got stuck in debugging. I was receiving segmentation faults as a result of an incorrect hashTable method but it was difficult to determine what was causing the error when looking with the debugger
- The shell scripting went alright but I was having trouble with the variables. I have a little bit of experience with scripting so it hasn't been too steep of a learning curve