

## In-Lab 6

1. I did have to reformat the spacing in my output, but otherwise it printed the correct results. I ordered my items differently, but sort fixed that issue.
2. With -02 the program ran in 8.86233 seconds, without the flag it ran in 11.8109 seconds.
3. Running on my MacBook Pro:
  - 300x300 words2.txt
    - i. 2,855 words found in 8.80753 seconds
  - 250x250 words.txt
    - i. 26,013 words in 9.62726
4. Big theta running speed is  $\text{rows} + \text{cols}^4$ , this is the worst case, due to the 4 for loops. The words running time gets dwarfed by the size of the running time of the for loops.
5. Problems
  - Originally implemented using Vectors of Vectors
    - i. Took too much space
  - Started with a bad hash function using pow, which is very slow.
  - Had trouble getting wordpuzzle to correctly insert the values into my hashtable
6. It went well after reading the tutorial. Shell scripts are interesting and seem like a convenient way of saving time for repeated tasks.