

# Assignment 7 Write-up Document

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## ABSTRACT

This writeup document includes everything I learned from this assignment that I could remember.

Keywords: Identity

## DIFFICULTIES

During the implementation of this project, there were several things that stood out, both good and not-so-good.

1) The instructions were well written, and for each source file I was able to copy-and-paste the description(s) from the text and drop them into the .c files I created.

2) The organization of the code as outlined in the instructions was very easy to follow and made the implementation of the various functions fairly straightforward.

3) A challenge was the discovery that I didn't have `speck.c` which, according to the instructions, was part of the distribution. In the interim, I created one from a description of the algorithm I located on the Web.

4) A more significant challenge was the run-time performance of my implementation. Running it against the full (`lib.db`) database to recreate the example output took 5.5 hours. The reference program completes in less than a minute. I have yet to resolve this issue.

5) In the absence of time (due to previous challenges), my `PriorityQueue` implementation uses `qsort()` for ordering, rather than a proper  $O(\log^2 n)$  priority queue.

6) The instructions are somewhat vague in certain areas. In particular, there is no mention of the details of the behavior of the `text_dist()` function. I assumed that, for each pair of texts a new `HashTable` must be created, containing all words from both texts. I thought that this is necessary so that, upon iterating over this `HashTable`, each of the pair of the texts would result in a vector of the same length, and where the  $i$ th element of each would represent the frequency of the same word for each text. Given the final, erroneous results of my implementation, I suspect that this assumption may be incorrect.

## THANK YOU

Thanks to my family for supporting and encouraging me to knock down the difficulties, not to give up.