

Project 7 - Hashtables

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What we did for extra credit

- We created 2 separate hashing algorithms, beyond the one provided, to try to improve our collision rate before Linear Probing. This makes the algorithm more efficient to begin with. The additional algorithms are included in the directory in case you're curious
- After this we implemented the hash table as a hash map instead. This was to decrease the memory footprint and speed up our instantiation/lookup speeds.
- We utilized the Bucket and Chain method of storing values, rather than Linear Probing, in our final product. This was simply because it seemed cool.
- We hosted and updated this project on Github, mainly used through the command line, to help learn the service. Version control is a vital part of the software development industry, and we wanted to learn how to use it. The project can be found on Anthony's Github
- the code is formatted well and very readable
- this can use any dictionary you desire, and is shipped with "words" from the standard Unix build
- our program doesn't have an issue with too many words filling up the hash table. As a "Bucket" of words, if a second word maps to the same address, they get stored together and collisions are not a problem. Even if the map were to use all the available keys allotted to it, collisions would not interfere with the program at all.
- The GUI was built using JavaFX, with multiple scenes
- use of combo boxes for ability to enter your own files, as well as a dropdown menu of files in the current directory. These files can be specified via absolute or relative file paths

- The ability to go back and modify the current text file being scanned and the dictionary files used to check it against.
- Displaying the dictionary being checked against and the list of misspelled words, as well as the file being checked
- We optimized the finding of the size of the hash map, with a simple text file litmus test rather than a (computationally complex) function to check if a number is prime
- this was written in LaTeX (not necessarily extra credit, but that makes it fun at least)