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Assignment 7 writeup

For this assignment we developed a firewall using a hash table with linked lists representing the buckets, a bloom filter to confirm if the word might be bad and linked lists because who doesn't love a memory system which technically has no maximum capacity. Personally I loved this lab because this lab game be the best visual of the class: it takes a lot of time but the more time you put in the more you'll get out. To start off I learned what a lexical analyzer is and how to properly use one in order to read standard input and text documents I also learned how to implement hash tables which I personally saw as large arrays of pointers. I also had an issue with valgrind which is now fixed, but it would cause a memory leak, I later learned that when checking if a node was a duplicate I never deleted duplicates resulting in over 9,000 bytes of memory being lost thankfully this was easily solved using a struct which I implemented in my goodspeak header which basically created the goodspeak struct. I did this because I realised that it is much easier making it once rather than defining the struct in every file which calls upon the goodspeak struct. I also found that by using the bloom filter and hashtable our programs ran very efficiently, but the tradeoff was that I was allocating a lot more memory(about 1,300,000 bytes). This is where our lecture came in full circle, I learned that your can either have high efficiency with a low memory usage or the opposite, but never both. I would also like to mention that I initially made my program capable of reading the long urls that the professor had given us, but after I asked about it he said that what I was doing was wrong, therefore my one critique for this class is that the assignment document needs to be more specific as I understand we are the test dummies but next quarter when there are hundreds of students its gonna become irritating having all of these students ask how many hashtables are we creating for the bloom filter. I guarantee you that that was asked at least once a day for the last two weeks(believe it or not counting today as well).