

Assignment 2: Keyspace Construction

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In this project, we used the file system API and wrote an indexing program. We parsed through files and created an inverted index which maps the token in the file with the subset of files that contain each token. We maintained the frequency of each token and used a trie data structure to implement this. To run the program, you must call the Makefile, make clean, and then make which will allow you to use the invertedIndex executable and run your directory or file.

invertedIndex.c:

We used a trie data structure within this assignment which stores the words in the tree as nodes. We first start by mallocing and creating a new trie node. Then we insert a new node and start the linked list. We have a method called numnode which orders nodes with same data alphabetically. We use the method printList to print the words to the file and then we free each trie node.

Trie runtime: $O(nm)$

Trie space complexity: $O(m)$