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Assignment 4: Search

This project will accept an indexed file and store the tokens and addresses of the indexed file into memory. It will then prompt the user to choose which type of search they will want to use for the program. The two search options are SA using the and logical operation where it will find the intersect of the files shared between the inputted tokens and the SO option will result in the union of the files shared between the inputted tokens. We used UTHash to construct a hashtable to store the tokens and their addresses and we then use our `saSearch()` and `soSearch()` methods on the hashtables created with all the indexed file data to extract the needed information for the user based on their prompt input.

The program runs at $O(n * 2t + f^2)$ where n represents the number of inputs in the specified user input prompt, t represents the number of tokens contained in the indexed file which are then added into the hash table. F represents the number of nodes which keep track of the file names for each token ID in the hash table.