ASSIGNMENT 4 INDEXER

Design:
argument 1 is the file in which the words are being written to in JSON format
argument 2 is what we are searching and if it doesn't exist , an error message appears
First I made error checks for the command line arguments , checked if files were files and if directories were directories, if not the program exited with an error message.
Interacted with the user if the file for argument 1 already existed and asked them if they wanted to overwrite it.
Second I made a directory recursive traversal function
whenever it reaches a file it will call tokenize function in indexertk.c , if argument 2 is a file and not a directory it will just tokenize that file
indexertk.c tokenizes the words in files, disregards non alphanumerical characters including white spaces.
then I call search function in indexer.c file
the search function creates a data structure of linked list in memory
a list of word nodes and each node has a list of file nodes
word nodes hold a pointer to the list of file nodes for that word node, the word and a pointer to the next word.
the file node hold the pathname, the count number of times the word appears in that file, and a pointer to the next file node.
then write to file function is called which writes the structure to the file indicated by argument 1 in JSON format
files used are closed and program exits after it outputs the file

analysis: O(n^2)