Commands and Server.c Documentation

1) Server Main Thread
    1. Runs an infinite loop representing a scheduler
        i) If there is something to delete, it deletes and extra threads
        ii) If it is waiting for all to terminate, then it waits and checks again for threads to delete (w)
        iii) Else it handles commands
            (1) Note: It will block here until new user input is detected, so it won't delete threads till after it gets more input. Threads all still are cleaned up eventually
            (2) This goes to the function handle_input() which spits up input to words and handles input
        iv) Else if it is terminated it exits the whole thing
        v) Else it sleeps and gives up context
2) e
    1. This command spawns a new window and thread
    2. The thread is detached when created, and added to a linked list in the server
        i) Note, since the thread is detached it never needs to be joined, I made this decision since I have to state to join from the thread anyways
    3. The windows can be closed and the thread ended with cntrl-d
        i) When exiting the thread asks the server to free it by setting a Boolean in the server's list of threads
3) E [input file name] [output file name]
    1. This command spawns a new thread and only takes in a file input (and potential output)
    2. The thread ends when done processing the file
        i) When exiting the thread asks the server to free it by setting a Boolean in the server's list of threads
4) s
    1. Tells all threads to wait on a pthread_cond by setting a bool wait_all
        i) Before they handle the next line of commands
5) g
    1. Broadcasts to all threads that are waiting on pthread_cond
        i) Tells them to go and sets the bool wait_all so that they don't wait again
6) w
    1. Broadcasts to all threads that are waiting on pthread_cond
        i) Tells them to go and sets the bool wait_all so that they don't wait again
    2. Sets the state of the server to be WAITING_FOR_TERMINATIONS so that it doesn't accept any more input until all threads are deleted