Homework 5

100 Points

Binary Search Trees and Queues

PROJECT: A variation of Project 9, page 202 - Write a program which generates a cross-reference listing of the identifiers in an input C program. This problem will be like problem #9 in Chapter 7 of the text except:

- It will NOT have an interactive part.
- Because it will not have an interactive part, it will NOT have an offsets array as mentioned under "d" of problem 9.
- The input and output files will be specified on the command line. Make sure the input file is a C program i.e., name ends with ".c".

Your cross-reference listing will consist of an ASCII-ordered listing of identifiers in the input program plus the line numbers where those identifiers occur. Make sure your cross-reference listing is NICELY FORMATTED. Make line numbers line up under one another! See sample_output.txt.

Notice that the cross-reference listing is TIMESTAMPED!!

In all other respects, it is like Ch. 7, Problem 9 -- you will put the identifiers in a tree and the line numbers for a given identifier in a queue which hangs off of that identifier's tree node. No duplicate line numbers!!

Note that you assume a CORRECT C PROGRAM!!

Extra Credit: Project 9, page 202.

Grading

1.	Commend line arguments	– 10	
2.	Timestamp	– 10	
3.	BST	– 50	
4.	Queue	– 15	
5.	2 or 3 source files, 1 or 2 header files	– 5	
6.	Testing	– 5	
7.	Memory Management	– 5	// No memory leak