EE 4374
Programming Assignment #2
Due February 13, 2023

Write a multi-threaded program that computes the Catalan number sequence (http://mathworld.wolfram.com/CatalanNumber.html) and writes those numbers in fixed point representation to a file called "catalan.dat". Your program should take ***two command line arguments***: *the first* specifies the number of Catalan numbers to generate and *the second* specifies the number of threads to use to compute the Catalan number sequence; you can assume a maximum of four threads. Create a way to balance the load among the threads.

You must use the "long double" type to get the largest range possible; the Catalan numbers grow very quickly! Each thread should write its output to a separate file. For example thread 1 will write its output to "catalan1.dat".

Your C source file should be named with your last name and the number 2: e.g., mcgarry2.c. You will demonstrate your program and explain the code to the instructor. Submit your C file through Blackboard.

Grading rubric:

Submission	30
Computation of Catalan numbers	15
Thread creation	35
Thread load balancing	5
Output format	15