

Abhijit Singh 260675220

COMP 409

Q2 Report:

The following timing was observed. 1000 chars was processed in total

Optimistic Thread Count	Time in ms
0	501
1	423
2	322
3	340
4	422
5	495
6	501
7	551

My approach was the following

After dividing the string evenly:

Thread 0

Simply generates a chain of DFAs separated by non satisfying characters by going left to right

Thread 1-n

Generate all possible DFA chains with all 5 possible start states

Once all chains and arrays of chains are created do the following:

Write all chars of thread 0's chain into the output stream

Try extending the incomplete DFA(or complete) of the left neighbor by testing which state on char 0 of current string links with last char of last using a transition.

If not possible, then backtrack and delete incomplete characters. And choose the chain with the earliest start state on the current string

A speedup was observed when there weren't too many chains that had to be simulated. The more varied the input string is, the larger the DFA chains and the longer it takes to link them together