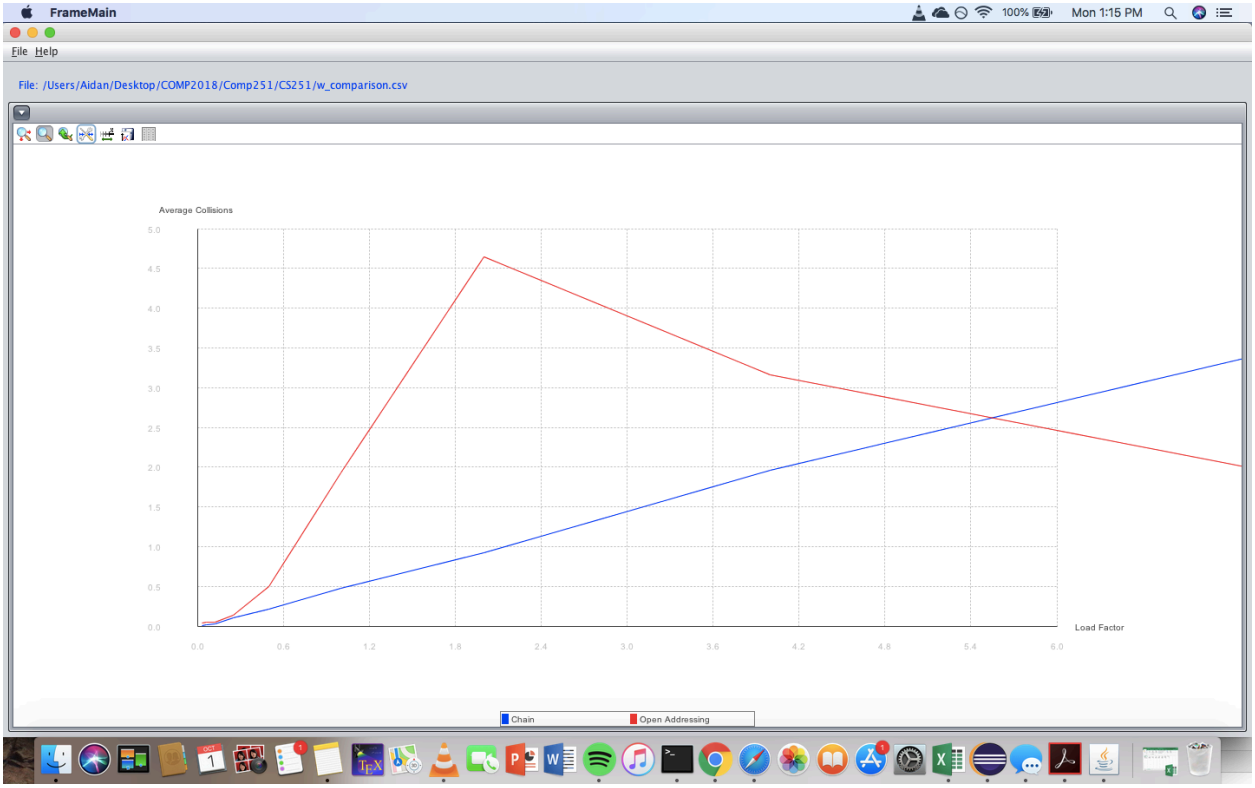
W_Comparison_Graph Aidan Weber-Concannon



-In the plot of Open hashing vs Chained hashing, the average collisions are roughly equal up until a load factor of 0.5-0.6 at which point the performance of open hashing severely decreases. This decrease in open hashing is due to having to traverse a large number of filled slots in order to find an empty one to insert in the table(1/1-alpha). Whereas in chaining, this decrease is much less noticeable, with a good hash function the furthest you will have to traverse is the length of the average chain.

-At a load factor of roughly 2.0 the average collisions for open hashing decreases and by a load factor of 5.5 it is less than Chaining. This is due to chaining table size and collisions continuing to increase after a load factor of 1.0, whereas the open table is full after 1.0 and will produce only m collisions per inserted element in order to realize that the table is full, which for n sufficiently large is less than the average length of a chained table's list.

-The n comparison graph below corroborates our observations from the first graph showing that, average collisions are roughly identical up until a load factor of 0.45 and that Open Hashing's collision increase greatly above chaining's at a load factor of 0.7.