

Analysis: Boggle Assignment 11/17/14

	1000 Trials	5000 Trials	10,000 Trials	20,000 Trials
Lexicon First: Simple Lexicon	1.998 s	9.321 s	18.527 s	41.256 s
Board First: Simple Lexicon	0.007 s	0.029 s	0.034 s	0.045 s
Lexicon First: Trie Lexicon	13.143 s	59.458 s	130.604 s	279.484 s
Board First: Trie Lexicon	0.001 s	0.005 s	0.010 s	0.018 s
Lexicon First: Binary Search Lexicon	0.810 s	4.916 s	10.716 s	20.023 s
Board First: Binary Search Lexicon	0.001 s	0.005 s	0.011 s	0.016 s

Conclusion:

It seems that in the Lexicon First Simple Lexicon, the run time is linear and directly dependent on the number of trials. Thus, the time it would take to run 100,000 trials would be 5 times that of 20,000, or 206.28 seconds. Also, a million trials would be 50 times that of 20,000, or 2062.8 seconds. In Board First Simple Lexicon, the times follow a logarithmic regression, meaning that 100,000 trials would take 0.143 seconds and one million trials would take 0.171 seconds. In Board First Trie Lexicon, the times seem to follow a linear pattern, meaning that it would take 0.090 seconds to run 100,000 times and 0.900 seconds to run one million times. In Board First Binary Search, it takes 0.056 seconds to run 100,000 times, and 0.0678 seconds to run a million times.

As the data shows, Board First Binary Search and Board First Trie Lexicon search are the fastest, with Board First Binary Search Lexicon that may be the faster of the two.