Boggle Game Analysis

Trial 1 (N=3)	Time(s)	Correct(%)
Kory	75	47
Lou	60	34
Emma	55	52
Human Average	63.33	44.33
Recursive Program	.278	100
Iterative Program	.262	100

Trial 2(N=5)	Time(s)	Correct(%)
Kory	89	22
Lou	123	17
Emma	115	28
Human Average	109.00	22.33
Recursive Program	.356	100
Iterative Program	.371	100

Trial Results	Time Change(flat)	Time Change(%)	Correct Change(flat)	Correct Change(%)
Human Average	+45.666	+72.11	-20	-50.27
Recursive Program	+.078	+28.05	-	-
Iterative Program	+.109	+41.60	-	-

Test Description:

The human testing was done on three individuals: Emma, Kory, Lou. The test was conducted by handing each subject a piece of paper with the Boggle game drawn on the bottom. At time start, the paper could be flipped over. Found words had to be written on a separate piece of paper. The subject was tasked with notifying the timekeeper when they were finished looking so time could be stopped.

The Boggle Program was tested by using the System.currentTimeMillis() function before and after running the playing part of the respective programs. Both the Iterative and Recursive versions were carried out with the same structure in three steps.

1. Create game Object
2. Solve game
3. Print results

Analysis:

It is clear that the Boggle program is more efficient than a human player. Both in Time and in terms of Correctness%, the Boggle program was far superior. While increasing the game board size did significantly increase run time, it was far less of a percent increase than the human time. It was also notable that just a slight increase in game board size dropped the human Correct(%) by over 50%. All factors considered, the Boggle program blew the human subjects out of the water in all metrics.