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CS470

Optimization Search LAB

Each test was done 10 times and reports the average seconds per puzzle.

Heuristics used	No Heuristics	Only MRV	Both Heuristics
Time / puzzle	2+ minutes / p	2.3504 s/p	2.2750 s/p

It was difficult to be able to implement the forward checking function the right way as I kept trying to do the same thing that was already implemented by other methods. I was trying to implement the ability for the puzzle to be solved in the way that I thought was right but was not actually the way that the lab was set up to be done. Using the heuristics seemed like it was not going to work and took a while to understand how the heuristics worked but now, I can see how they help. The ability to select the right value to be assigned seems like a straightforward thing for a sudoku puzzle but using the heuristic I learned that if I didn't use them then the value would be chosen at random or sequentially rather than finding the ones that are most likely to be found and the least values in its domain. I didn't consider the value of utilizing ordering each of the values to the least number of values in its domain but that makes sense.