| | Miniznc | | | |
|---|---|---|---|---|
| | min | | med | |
| n | time(ms) | fail | time(ms) | fail |
| 10 | 1.438 | 9 | 1.065 | 0 |
| 20 | 3.698 | 33 | 4.759 | 21 |
| 30 | 9.754 | 29 | 7.869 | 81 |
| 40 | 15.626 | 19 | 13.87 | 44 |
| 50 | 30.45 | 512 | 20.924 | 2 |
| 60 | 44.704 | 406 | 32.498 | 3 |
| 70 | 84.039 | 1 | 40.47 | 14 |
| 80 | 61.839 | 21 | 54.518 | 0 |
| 90 | 75.415 | 341 | 72.88 | 96 |
| 100 | 150.475 | 22 | 91.316 | 60 |
| 110 | 215005.137 | 9679544 | 111.507 | 0 |
| 120 | 168299.361 | 5889835 | 139.524 | 19 |
| 130 | * | * | 181.473 | 26 |
| 140 | 422104.684 | 13898607 | 204.161 | 0 |
| 150 | 6920.364 | 319289 | 240.22 | 4 |
| 160 | 239.77 | 8 | 242.084 | 0 |
| 170 | 285.465 | 85 | 264.746 | 1 |
| 180 | * | * | 312.976 | 7 |
| 190 | * | * | 416.315 | 7900 |
| 200 | 3247.169 | 146838 | 415.341 | 8 |
| * | *No result within 10 mins* | | | |

| | Gecode | | | |
|---|---|---|---|---|
| | min | | med | |
| n | time(ms) | fail | time(ms) | fail |
| 10 | 0.536 | 9 | 0.494 | 1 |
| 20 | 2.463 | 33 | 1.307 | 7 |
| 30 | 3.33 | 29 | 3.722 | 32 |
| 40 | 5.164 | 19 | 4.878 | 12 |
| 50 | 13.428 | 512 | 8.796 | 16 |
| 60 | 13.422 | 406 | 9.352 | 1 |
| 70 | 12.292 | 1 | 13.985 | 0 |
| 80 | 16.268 | 21 | 18.798 | 41 |
| 90 | 30.982 | 341 | 22.32 | 1 |
| 100 | 30.889 | 22 | 30.99 | 1 |
| 110 | 198918.503 | 9679544 | 56.512 | 466 |
| 120 | 159707.583 | 5889835 | 42.742 | 1 |
| 130 | * | * | 58.861 | 3 |
| 140 | 396132.248 | 13898607 | 61.005 | 19 |
| 150 | 6378.172 | 319289 | 136.209 | 6064 |
| 160 | 84.171 | 8 | 82.736 | 0 |
| 170 | 91.581 | 85 | 94.996 | 3 |
| 180 | * | * | 121.254 | 4 |
| 190 | * | * | 137.576 | 168 |
| 200 | 3280.595 | 146838 | 151.075 | 4 |
| * | *No result within 10 mins* | | | |

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|---|---|
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| | |
| | **Conclusions** |
| | **(1) Since we want to compare the performance difference of min and med, I tried to control all other factors, and deliberately discard the global constraint (all_different/distinct) for all four implementations above** |
| | **(2) "first-fail, median-domain-value" (short for med) search method is generally faster than the "first-fail, minimum-domain-value" (short for min) search method.** |
| | **(3) To find the first solution, the med search method is relatively stable. The run time of the med search method is relatively propostional to the boardsize.** |
| | **(4) To find the first solution, the min search method is relatively unstable. While n = 130, n = 180, n = 190 produces no result within 10 mins, we can find a solution for n = 200 within 3 seconds. The run time of the min search method is not propostional to the boardsize.** |