

The hardest sudokus (new thread)

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Re: The hardest sudokus (new thread)

by champagne » Wed Oct 23, 2019 12:35 pm

“ sxxxxxxx wrote:
Is this 11.7 not a new puzzle? What is the isomorphism puzzle in ph_1910.zip

It is a new one, now added to my data base

Re: The hardest sudokus (new thread)

by m_b_metcalf » Fri Jan 10, 2020 9:21 am

“ champagne wrote:
This data base is shared to give samples of "potential hardest puzzles".

champagne,
Until now you've understandably restricted your data base to standard sudokus. However, now that tarek has provided us with a way to rate X-sudokus too, do you think it worth adding a section for that variant? In particular, I believe that these three are rated higher than any others to date ([see here](#)):

CODE: SELECT ALL

...1...2...3...45.....6.3...1..5.....6..7.....82....6.9....8...7.9. ED=12.0/12.0/7.7 : Xtreme_bronze

...23...23...45.....4.6...1..5.....7..8.....98....5.3....9...8.3. ED=12.0/12.0/7.8 : Xtreme_silver

...1...2...23...44.....5.3...6..1...5..6.....78.....9.....7...1.9. ED=12.0/12.0/8.1 : Xtreme_gold

Best regards,

Mike

Re: The hardest sudokus (new thread)

by champagne » Fri Jan 10, 2020 10:19 am

Hi Mike,

for sure this makes sense.

till now, I did not follow tarek's efforts to extend the scope of "Sudoku Explainer" and I never worked on sudoku variants.
IMO, this should be a separate data base, one for each variant, and the volunteer to do the job should be personally involved in the variant (and if possible relatively young).

Years ago, tarek produced one of the first data bases of hard puzzles, but each of us has some tools to do it.

Re: Hardest Variants

by tarek » Fri Jan 10, 2020 8:05 pm

Hi Mike & Champagne:

There could be a sperate thread for Hardest Variants based on Explainer or others. I think That Latin Square, SudokuX, Windoku and SudokuP are relatively reasonable. Certainly Latin Square is quicker to search & rate with SE and the Mathematics/Computer Sciences community may have an interest in the hardest Latin Square (QWH)

With Sukaku Explainer I can see at least 2 issues:

1. It is constantly being updated & therefore a rating of "x" today may change in the next release
2. There are several options that control the rating: one is the -B option which controls how close SE is to a depth 1st search The other is the -P option which controls what SE uses as nested techniques in Dynamic forcing chains + and above. Both of these are by default similar to what Sudoku Explainer 1.2.1 does.

The rating therefore is correct for the version of the release being used under the set of parameters utilized. The -S option would output all the parameters used to assist in referencing all of this.

There are few freely available solvers to compare to out there and although I have checked for errors/glitches/bugs, There are very few that would be able to verify that 11 is actually harder than 10. I'm assuming that - without evidence to the contrary - that Sukaku explainer is doing a good job!

Re: The hardest sudokus (new thread)

by m_b_metcalf » Sun Feb 23, 2020 10:34 am

“ champagne wrote:
the count per clue in the data base is now the following

CODE: SELECT ALL

c\ues Count

20 79

21 11093

22 89650

23 366678

24 759490

25 693710

26 853490

27 302100

28 69757

29 3979

30 132

31 15

32 8

33 3

35 1

champagne, In these tables there appears to be a cut-off at 26 clues. Are there any high flyers with 29 clues? Have you seen the new 10+ results in the current Patterns Game?

Mike

Re: The hardest sudokus (new thread)

by champagne » Sun Feb 23, 2020 11:54 am

Hi Mike,

I have no cut off in the data base, I just reported till now in areas deeply searched.

In fact, due to the work of paquita I assume, I have now a significant volume with more clues.

The entire to-day table is

CODE: SELECT ALL

20 79

21 11093

22 89650

23 366678

24 759490

25 693710

26 853490

27 302100

28 69757

29 3979

30 132

31 15

32 8

33 3

35 1

37 1

In the high side, if I remember properly, the constraint to have a puzzle minimum has been voluntarily omitted.

Here below, the table giving for ratings 11.0 and more the situation for 27 clues and more

CODE: SELECT ALL

c\ues er Count

27 11.4 3

27 11.3 85

27 11.2 78

27 11.1 26182

27 11.0 275622

28 11.2 24

28 11.1 9202

28 11.0 69559

29 11.1 804

29 11.0 3175

30 11.1 22

30 11.0 98

31 11.0 12

32 11.0 3

37 11.2 1

and yes, I follow the games on an irregular basis .

Re: The hardest sudokus (new thread)

by pjb » Sun Feb 23, 2020 10:39 pm

Hi Tarek

You wrote "I'm assuming that - without evidence to the contrary - that Sukaku explainer is doing a good job!", and no one should dispute this, given how it has given us such valuable structure to the daily practice of sudoku.
However, it has been mentioned more than once that its methods, some of which are astonishingly complex, could be augmented by newer ones such as exocet, msls to name a couple. For example, the 11.8 puzzle mentioned above in denis_berthier's post is solved by an MSLS and 2 simple xy chains. I imagine it would be a massive undertaking, but is there any move to re-engineer sudoku explainer ?

Cheers, Phil

Re: The hardest sudokus (new thread)

by tarek » Mon Feb 24, 2020 5:33 pm

Hi Phil,

Thanks. I have no objections on adding any new techniques to Sudoku Explainer. As the interface (both GUI and command line) allow you to select/deselect them.

Sukaku explainer is a modified and improved version. Oh sudoku explainer and includes a few more techniques. The core engine is roughly the same.

The project had 4 people involved at some stage in the start about 6 months ago. At the moment is only yours truly. All of the people involved including me are doing this out their own time with no return except bringing these improvement to everybody.

I've managed to introduce a few techniques which are primarily targeting medium to advanced solvers, but nothing as exotic as Exocet Or MSLS. Furthermore even advanced fish and ALS are not even fully implemented. So there plenty of room for improvement in techniques. Sadly, intention and good intentions are on one side, the reality is that there is no free time or motivation from programmers to develop this on Sukaku explainer. I hope that this would change.

Anybody wishing to join the project is more than welcome the madness that is programming sudoku explainer.

Re: The hardest sudokus (new thread)

by sxxxxxxx » Wed Feb 26, 2020 1:06 pm

CODE: SELECT ALL

12030000034001000000500600020000050001000002000700809000500607000030040000007900 ED=11.7/11.7/2.6

Re: The hardest sudokus (new thread)

by champagne » Sat Feb 29, 2020 3:46 am

“ pjb wrote:
Hi Tarek

You wrote "I'm assuming that - without evidence to the contrary - that Sukaku explainer is doing a good job!", and no one should dispute this, given how it has given us such valuable structure to the daily practice of sudoku. However, it has been mentioned more than once that its methods, some of which are astonishingly complex, could be augmented by newer ones such as exocet, msls to name a couple. For example, the 11.8 puzzle mentioned above in denis_berthier's post is solved by an MSLS and 2 simple xy chains. I imagine it would be a massive undertaking, but is there any move to re-engineer sudoku explainer ?

Cheers, Phil

Hi phil and tarek,

some late reactions to this post.

First of all, as I already wrote to tarek, as I have no skill in JAVA, I can not contribute that much to the job.

Introducing new solving rules in the field of "exotic patterns" is something that I have done in my solver as others.

Willing to do this in the rating machine techniques, you have to face many problems here some of them:

what is the intrinsic difficulty of the identification of a given exotic pattern.

What is the list of pattern searched (for example, I am using generic rules to produce exocets and eliminations derived from an exocet, David developed a deep analysis "on pattern" for the Junior Exocets, including derived effects of the abi loop).

Another fact is that exotic patterns and more precisely exocets don't produce always many eliminations at the start.

If I wanted to go in this direction, I would select first patterns known as having a strong effect in terms of eliminations

JExocet 3 digits, often leading to one pair active
conjugated JExocets
SKloop

Regarding big rank 0 logics, the selection of patterns to study is still tougher. I am currently re visiting my old code and I have to cut the search in specific sub fields to cover the main cases seen here and there. (Phil, this is a topic on which we could share our recent experiences)

Just random thoughts so far

Re: The hardest sudokus (new thread)

by champagne » Sat Feb 29, 2020 3:54 am

“ sxxxxxxx wrote:
CODE: SELECT ALL

12030000034001000000500600020000050001000002000700809000500607000030040000007900 ED=11.7/11.7/2.6

confirmed new in the data base

Re: The hardest sudokus (new thread)

by m_b_metcalf » Mon Mar 09, 2020 10:51 am

In the dying days of the Patterns Game, two old records have been smashed. The current Table of highest rating by clue count is now as shown.

CODE: SELECT ALL

ER EP ED Game Dealer Player

c\ues

19 10.4 10.4 3.4 301 coloin m_b_metcalf

20 11.3 11.8 3.4 169 m_b_metcalf tef

21 11.8 11.8 10.7 349 m_b_metcalf ito9only (overall highest)

22 11.7 11.2 1.2 193 coloin champagne

23 11.4 11.4 10.8 140 Mauricio tef

24 11.3 11.3 10.6 209 champagne m_b_metcalf (also in Game 212)

25 11.3 11.3 11.1 309 Patrice papy999

26 11.1 11.1 10.4 302 Patrice papy999

27 10.7 10.7 8.9 150 m_b_metcalf eleven

28 10.5 10.5 9.2 155 Mauricio champagne

29 10.4 10.4 9.9 375 m_b_metcalf jpf

Regards,

Mike

[Edited to add a third new record (19 clues).]

Last edited by m_b_metcalf on Tue Apr 14, 2020 7:43 am, edited 1 time in total.

Re: The hardest sudokus (new thread)

by dxSudoku » Mon Apr 13, 2020 4:48 pm

Those are God-level puzzles!

Re: The hardest sudokus (new thread)

by tarek » Mon May 25, 2020 6:38 pm

This scam bot "vondess" needs to be removed from this forum before further polluting threads!

Re: The hardest sudokus (new thread)

by mith » Mon Jul 20, 2020 3:09 pm

A couple 11.7s I found today:

CODE: SELECT ALL

.....1..2...3...4..2..5.6.....6...5.7..2.1..8..9.....48.....5...67..9.....3. q2=98904 FNBP C21.m/M2.3.50862 ED=11.7/11.7/2.6

.....1..2...3...4...56...7.....2..1.5.7..8..7...4....69.....7.8.....3.5..9..6.. q2=98842 FNBP C22.m/M2.3.34992 ED=11.7/1.2/1.2

Should be new in the database, unless I have massively screwed something up in my checking (which is entirely possible).

And one hard one by q2:

CODE: SELECT ALL

.....1..2...3...4...56..7.....2.3..5...8..9...4...1.6..1.....87..6...5..7..6.. q2=99385 FNBP C22.m/M3.608.874 ED=11.4/11.4/4.2

Last edited by mith on Mon Jul 20, 2020 4:21 pm, edited 2 times in total.

