



Su-Pu Studies · Lesson 05

A Puzzle Worth Remembering: Beauty Meets Ibtree

When a Hell-tier puzzle's elegant initial state meets the ibtree method's sharp forks, even a Hodoku 7820 becomes a study in creative leverage.

Written by **the Orbace Sudoku Editorial Team** · REPLACE_ME · 9 min read ·

Su-Pu Studies

Hell-tier

Ibtree

Proof by Contradiction

Extreme

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01 · UNFORGETTABLE

An Unforgettable Grid

Most Sudoku puzzles blur together in memory — a precise grid is either correct or it isn't, and misremembering a single digit makes it a different puzzle entirely. But some initial states carry such visual elegance that they lodge themselves in your mind.

					3			9
				2			8	
			1			7		
		3	2		9			6
	2			8			5	
1			7		5	4		
		9			6			
	8			5				4
7			4				6	



The puzzle that refuses to be forgotten: ascending diagonals (1–2–3, 4–5–6, 7–8–9), Box 5's 2 and 5, Box 9's 6 and 4 — a symmetry that stays with you.

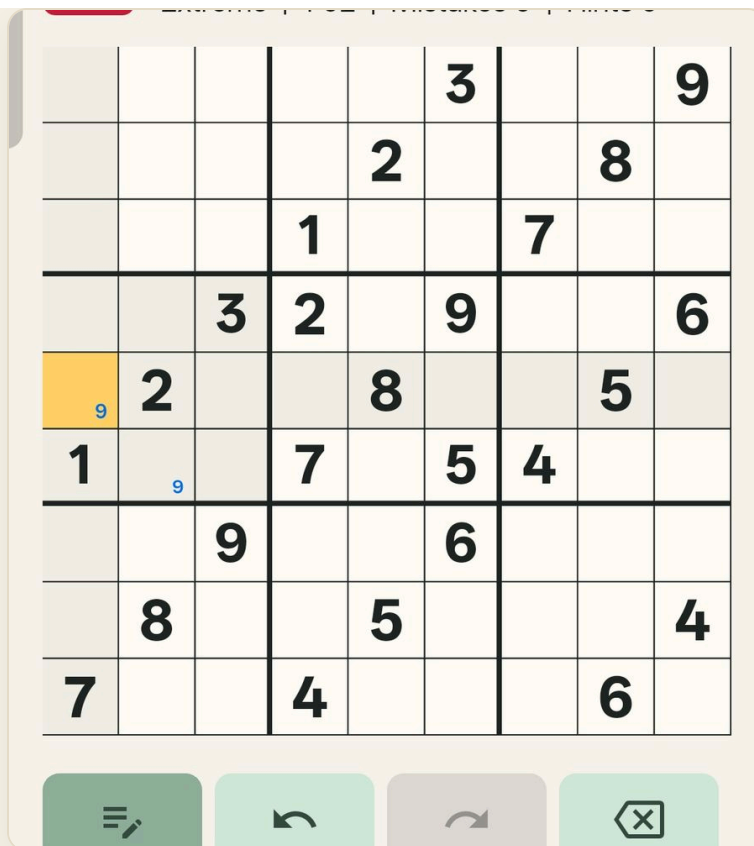
Underneath that surface beauty lies a Hell-tier beast. This puzzle carries a Hodoku rating of 7820 and a Sudoku Explainer (SE) score of 7.2 — both firmly in the expert range. The canonical candidate-reduction path demands swordfishes, 3D Medusa coloring, alternating inference chains, and an assortment of wing patterns. And there's no easy opening — no straightforward number falls into place with basic cross-hatching alone.

Why not approach it with the ibtree method instead — and a little creative leverage?

02 • FORK

First Fork: Box 4's Nine

Scanning box by box, one pattern emerges clearly: in Box 4, the digit 9 has exactly two possible homes.



Box 4's fork: two candidate positions for 9, and nowhere else.

A brief visual trace reveals that both candidates can trigger long chains — but one of them is more immediately engaging. If you place 9 in the second row of Box 4, it sets off a cascade that brings other digits around the board into play, leveraging positional clues that would otherwise sit dormant. This is the candidate worth testing.

03 • CHAIN

The False Chain Unfolds

Marking this assumption with a pencil (small-number notation), the cascade begins. Cross-hatching alone — no advanced techniques needed — fills in placement after placement. The chain runs smoothly through several boxes, each step forcing the next with clean logic.

					3			9
				2			8	
			1			7		
		3	2		9			6
	2			8			5	
1	9		7		5	4		
		9			6			
	8			5				4
7			4				6	



Steps 1–7 *The false chain: one penciled 9 triggers a long cascade via basic cross-hatching.*

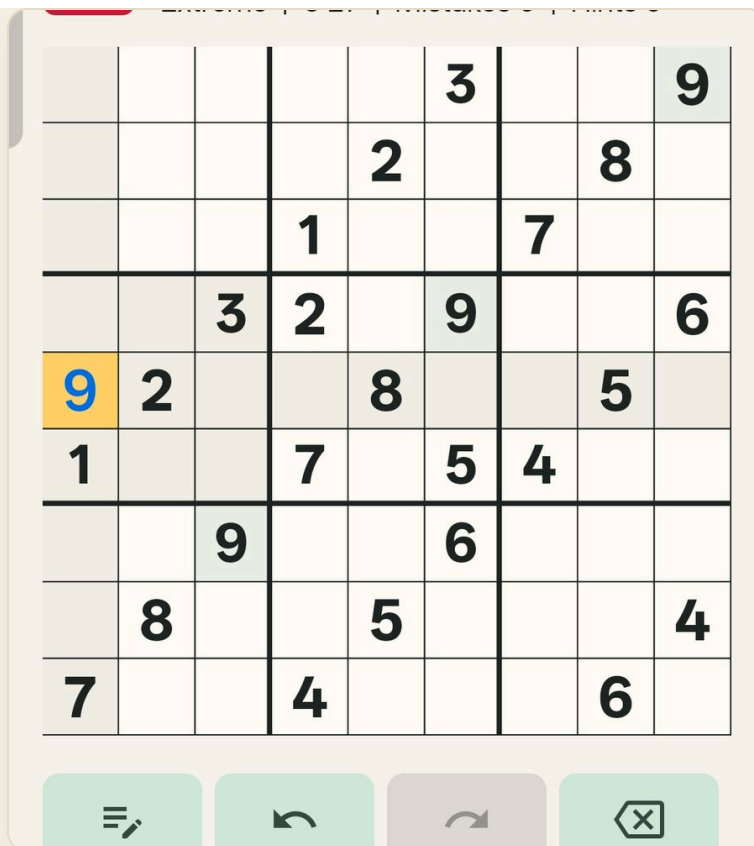
And then, reaching Box 3, the chain hits a wall.

	6		5	7	3		1	9
	1			2	4	3	8	
9			1	6	8	7		2
8	5	3	2	4	9	1	7	6
	2		6	8	1	9	5	3
1		6	7	3	5	4	2	
2	4	9		1	6	5	3	
6	8	1	3	5	7	2	9	4
7	3	5	4	9	2	8	6	1



Step 8 The conflict: Box 3 has no legal home for 6 — proof that the trial was wrong.

There is no valid cell for 6 in Box 3. The assumption was false. That means the opposite must be true: 9 belongs in the *first* candidate position in Box 4, not the second.



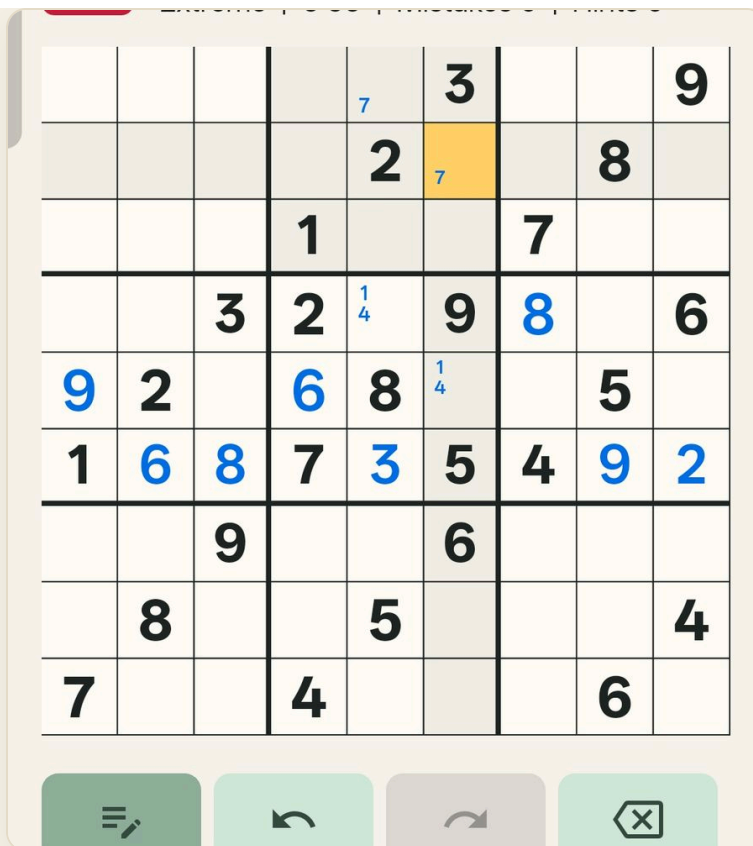
The confirmed placement: 9 locks into Box 4's other candidate cell, and a few immediate deductions follow.

A handful of straightforward placements follow — and then the board stalls again. One proof by contradiction opened a small window, but not enough to solve the entire puzzle.

04 • SECOND

Second Fork: Box 2's Seven

With the first fork resolved, attention shifts to Box 2, where the digit 7 faces a similar binary choice: two candidate cells, no others.



Box 2's fork: 7 sits in one of two cells — time for a second trial.

By the same reasoning as before, one candidate looks more promising as a chain trigger. Penciling it in and following the forced chain forward, a second long cascade unfolds across the grid, each placement locking in the next via cross-hatching.



Steps 1–9 The second false chain: testing 7 in Box 2 produces another extended sequence.

Once again, the chain reaches a conflict.

05 • BREAKTHROUGH

The Breakthrough

This time, the contradiction appears in Box 1: no valid position remains for the digit 5.

				7	3			9
				2			8	
			1			7		
		3	2	¹ ₄	9	8		6
9	2		6	8	¹ ₄		5	
1	6	8	7	3	5	4	9	2
		9			6			
	8			5				4
7			4				6	



Step 10 The second conflict: Box 1 cannot place 5 — the trial 7 was false, so 7 must belong in the opposite cell.

With both 9 and 7 now locked in — one in Box 4, one in Box 2 — the puzzle's entire character shifts. What was a Hell-tier wall becomes a straightforward solve path. The confirmed digits cascade outward, opening clean cross-hatching routes across the rest of the grid.

			5	7	3			9
			9	2	4		8	
			1	6	8	7		
5	7	3	2	4	9	8	1	6
9	2	4	6	8	1	3	5	7
1	6	8	7	3	5	4	9	2
		9	8	1	6		7	
	8		3	5	7			4
7			4	9	2		6	8



After both forks resolve: the puzzle downshifts from Hell-tier resistance to a smooth finish.

06 • TAKEAWAY

The Ibtree Advantage

Two forks, two contradictions, two confirmed placements — and a Hell-tier puzzle reduced to an approachable solve. The ibtree method didn't bypass difficulty so much as redirect it: instead of cataloging every advanced pattern the canonical path would demand, you identified the two most leveraged binary choices and traced each forward until one broke.

The creative leverage principle: when a puzzle offers no easy opening, look for the binary fork that brings the most of the grid into play when tested — the candidate whose assumption forces the longest, most interconnected chain. That chain is either your path forward or your proof that the opposite candidate is true.

This puzzle's beauty wasn't just its symmetry at the start — it was the clarity of its two key forks, and the decisiveness with which each contradiction fell. Some puzzles make you dance through twenty technique names. Others make you choose twice, trace carefully, and watch the contradictions speak for themselves.

Try it in your next solve

Find a Hell-tier puzzle with no easy opening, scan for its first clean binary fork, and trace one branch forward. Let the contradiction — or the confirmation — do the talking.

Start a Tea Moment

Reconstructed from a real personal Su-Pu replay and checked against the recorded grid. Spotted a step that doesn't hold up? [Tell us](#) — every Journal article carries an accountable byline and an open correction channel.

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