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Fritz 10's Visualization Search Feature

Some chess lessons stay with you a long time.

Quite a few years ago, shortly after I first got involved in tournament chess, I was having trouble devising long-term plans. Sure, I could come up with a couple of candidate moves and work out short variations, but I didn't know how to look at the "big picture" and determine what I was trying to accomplish over the long-term in a specific position.

Around that same time I came across a series of *Chess Life* articles by Jeremy Silman wherein he discussed the very problem that I was struggling with. One of his tips concerned *visualization*. His specific advice (greatly condensed here) was to picture the board the way you wanted it to appear. Then, with that idealized position in your mind's eye, work backwards to determine what you needed to do to make that position possible.

It wasn't necessary to visualize the whole board, just the aspect that you wanted to focus on. For example, I might have a rook on c1, but it would be more useful on g3 to put pressure on my opponent's castled king. I could advance the rook along the half-open file to c3 easily enough, but I have a d3-pawn and an f3-knight blocking the route of my proposed rook lift to g3. So the specifics of my plan would revolve around advancing the d-pawn and repositioning the knight to allow my rook access to g3. Was my plan any good? That would be determined by the future course of the game. But at least I had a specific plan, instead of dithering around by making aimless moves. I had set a definite course of action in which I was trying to make something good happen.

That lesson was a revelation to me and it's stuck with me ever since. I seldom consciously think about it anymore – it's just become a natural part of how I dissect a position – but it's certainly an important part of my thought process.

For years, I've often heard it repeated (and even said it myself) that computer chess programs are awful at long-range planning. That's true enough. But computer programs *do* plan; it's always for the short-term (around six to ten moves ahead on reasonably fast hardware), but it *is* happening.

Don't believe me? Load a middlegame position into *Fritz10*, go to the Game menu, and select "Infinite analysis" (make sure that you have *Fritz10* loaded as your engine of choice). After a few moments, you'll see something like this:



This is something quite new for a chess engine. You're looking at *Fritz's visualization process*, and it's not terribly different from the scenario I described above.

There have been other ways to look at what an engine is "thinking" and these features still exist in the program. The "Hint" feature will display a colored arrow on the board suggesting the best move that *Fritz* finds in the time you've allotted (set within the "Coach" parameters). The "Show threat" feature works in a similar manner by showing the best move for the *non-moving* side (i.e. the biggest existing threat that you need to parry). Meanwhile, the variation board (in the engine analysis pane) lets you play out the entire best variation that *Fritz* has found so far.

What sets this new "visualization" feature apart is that you're seeing *multiple moves for both sides simultaneously*, based upon the best variations that *Fritz* has found. You can see at a glance how the board will change with best play for both sides, illustrated by colored arrows (orange arrows for White and blue arrows for Black).

Note, also, that I used "variations" (plural). You can see in the illustration above that *Fritz* is considering two possible destination squares (f6 & c5)

for the d7-knight; obviously it's still working out where the knight on f6 should go.

The green squares denote the best move, displayed for both sides, in the current position. The other moves will either follow later in the variation or are alternatives that *Fritz* is still considering. In the illustration above, White's key move is Rd1 (moving to a half-open file and freeing the queen to grab control of the open c-file). Black's key move is ...Nc5 (closing the c-file and attacking White's queen, inviting an exchange of knights on c5).

If you look at this position a moment longer, you'll notice that after Rd1 and Qc4, *Fritz* is also considering Be2 setting up a battery of queen and bishop along the same diagonal. It's also possible that these maneuvers may be transposed, with the bishop moving to e2 before the queen moves.

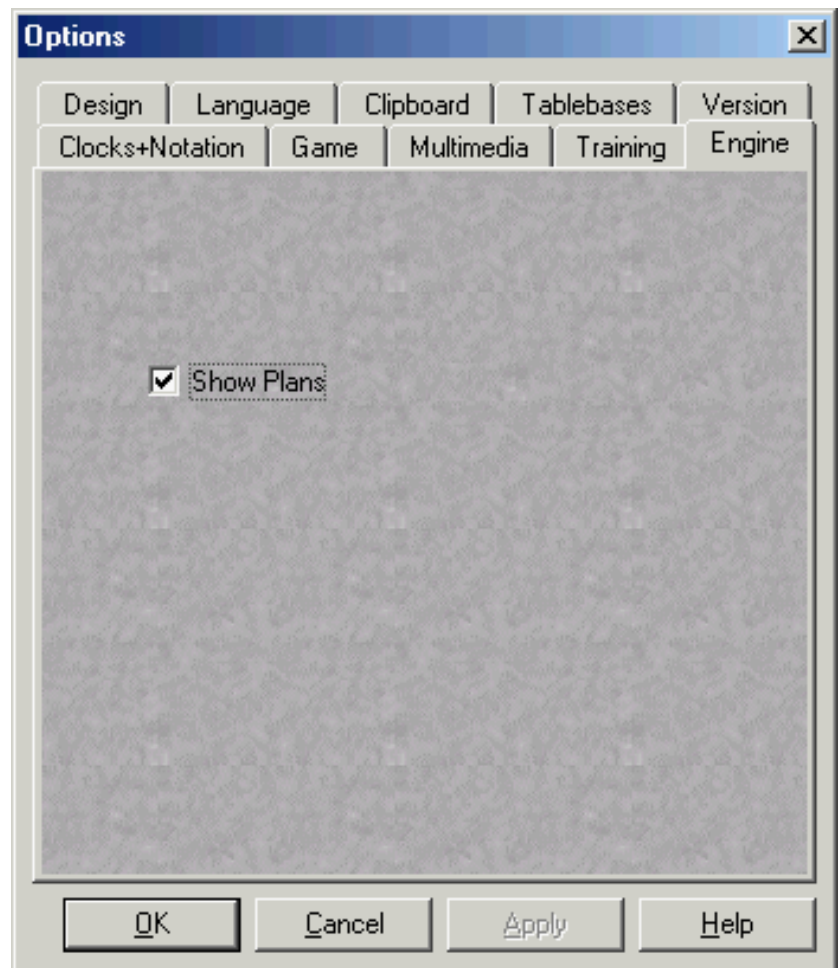
Another interesting aspect of the visualization feature is that it's not static – the moves denoted by arrows will change as *Fritz*'s search deepens. As an example, here's the same board position after *Fritz10* has analyzed a few plies deeper:



White's arrows appear in half-tone because I caught this screen shot just as *Fritz* was "changing its mind." But we can see that the Qc5 idea has been reconsidered in favor of Qf5, once a path has been opened for the queen to reach that square. This brings up another important point – since a direct move from e3 to f5 is impossible for the queen (because of the presence of the blocked e4-pawn), we can safely assume that a lateral move (after

repositioning the bishops), followed by an advance to f5 is intended. The arrow isn't necessarily denoting the path of the move, but rather just the moving piece and the target square. *Fritz's* main preferred move for White has become an a-pawn push, changed from its preferred move in the previous illustration.. Meanwhile, *Fritz* thinks that moving Black's queen from the back rank to connect the rooks is a good idea and, after the queen has moved, the a8-rook should move to the open c-file. *Fritz* would also like to push the Black e-pawn to e4, which will first require the removal of the White e4-pawn.

I find this new visualization feature to be very interesting and useful, because of the similarities between this display and the manner in which a human player visualizes a plan. However, if you find the arrows distracting, it's simple enough to turn the feature off. Just go to the Tools menu, select "Options," click the "Engine" tab, and uncheck the box next to "Show plans."



Until next month, have fun!

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