

Re: Chess boards & connections.

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- *From:* kewis@xxxxxxxxxxxxxxxx (Keith A. Lewis)
 - *Date:* Fri, 21 Apr 2006 17:37:42 +0000 (UTC)
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dynamics@xxxxxxxxxxxx writes in article

<1145600495.849018.281690@xx> dated 20 Apr 2006 23:21:35 -0700:

Ok, you might be right, I was thinking we could go through all 64 Pieces (as defined in the OP) and output a Location (0-64) like,

Location (P) = L

where P => 1 to 64 and L=>0 to 64,

to describe any possible chess board.

Is that true?

I'm not sure where "64 pieces" came from. There can never be more than 32 pieces. And if you count pawn-morphs as new pieces there are 96 potential pieces at the beginning of the game, because a pawn can be promoted into any of {queen, rook, bishop, knight}.

But knowing the location of each piece isn't the whole story. You also need the following info:

- * Which player is next to move? 1 bit.
- * King-side castle possible? 1 bit per player, zeroed when king or king's rook has moved.
- * Queen-side castle possible? 1 bit per player, zeroed when king or queen's rook has moved.
- * En passant target file 0..8 -- 0 unless last move was a pawn moving 2 spaces, then it's the file of that pawn.

That's enough info to define the legal *physical* moves. If you want to consider the procedural moves of claiming a draw due to the 50-move rule or the third-time repeat, you should keep a 50-move history.

Re: Chess boards & connections.

—Keith Lewis klewis {at} mitre.org

The above may not (yet) represent the opinions of my employer.

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