

Dabbaba

By Jens Bæk Nielsen

Dabbaba is a chessprogram I have written from May 1995. It is programmed in C and consists of 5500 lines. It runs on a 386 (or higher) IBM compatible PC and runs in DOS mode. On my 486 50 Mhz PC it searches 2.500 pos./sec. and twice as much in simple endgames. The following examples are old (from October 1996 or earlier), and the times given is related to my old 50 Mhz 486, that is 10 times slower than a Pentium 233 Mhz.

Dabbaba can be downloaded from Hans Bodlaenders chess variant pages:
<http://www.cs.ruu.nl/~hansb/d.chessvar/Icomputer.html>

The downloaded file includes detailed information in README.TXT and DABBABA.TXT, so this article will mainly focus on Dabbaba's play.

Finding deep mates...

A characteristic feature for Dabbaba is that it starts each move by using up to 20% of its allotted time on following long sequences of checks to see if it results in a mate or material gain.

See the following 3 examples.

Genius 2 cannot solve these positions or take very long to solve them. Not because Dabbaba is better or compareable to Genius 2, but because Genius 2 doesn't bother to search lines as deep as Dabbaba does. It is probably considered as waste of time to search that deep in usual play.

But I find it attractive that Dabbaba may find a very deep combination.

Diagram 1:

XABCDEFGHY
8-+-+--snk+(
7snlwvl-+ptr-'
6p+-+p+p+&
5+p+r+-+q%
4-+P+-+-\$
3zPP+PzP-zP-#
2N+-+RzP-zP"
1vLQsN-tRLmK-!
xabcdefghy

5nk1/nbb2pr1/p3p1p1/1p1r3q/2P5/PP1PP1P1/N3RP1P/BQN1RBK1/b

Black to move. Dabbaba finds a mate in 10 moves in 1.86 second.

Diagram 2:

XABCDEFGHY
8-+-snn+--+(
7+-zp-+p+k'
6-zp-zpp+p+&
5zp-+L+--p%
4r+-vL-+N+\$
3+--zP-+N#
2-+-zPKzPP+ "
1+--+-wq-!
xabcdefghy

3nn3/2p2p1k/1p1pp1p1/p2B3p/r2B2N1/4P2N/3PKPP1/6q1/w

Dabbaba does not play 1.Nxg1, but finds a mate in 12 moves in 1.04 second.

Diagram 3:

XABCDEFGHY
8q+--+-+(
7+p+-zppzpl'
6-+-+--zp&
5+P+--+-+k%
4-+-+PzP-vl\$
3+-zP-+-zPP#
2-sN-sN-+-mK "
1+--+-vL-!
xabcdefghy

q7/1p2pppb/7p/1P5k/4PP1b/2P3PP/1N1N3K/6B1/w

White could play 1.gxh4, but Dabbaba finds another move in 0.33 second that wins the black queen in 7 moves.

Solutions:

Diagram 1: 1.-,Qxh2+! 2.Kxh2, Rh5+ 3.Bh3, Rxh3+ 4.Kxh3, Rh7+ 5.Kg4,f5+ 6.Kg5, Ld8+ 7.Kf4, g5+ 8.Ke5, Nc6+ 9.Kd6, Bc7+ 10.Kc5, Nd7+ mate.

(If you use quiet moves, the position is really a mate in 8 moves)

Diagram 2: 1.Ng5+, Kg8 2.Nh6+, Kf8 3.Nh7+, Ke7 4.Ng8+, Kd7 5.Nf8+, Kc8 6.Ne7+, Kb8 7.Nd7+, Ka7 8.Nc8+, Ka6 9.Nb8+, Kb5 10.Na7+, Kb4 11.Na6+, Ka3 12.Nb5+ mate.

Diagram 3: 1.g4+!, Kg6 2.f5+, Kg5 3.Be3+, Kf6 4.e5+!, Kxe5 5.Nbc4+, Kd5 6.Nb6+ and 7.Nxa8

Playing variants of chess...

Another special feature of Dabbaba is that it besides orthodox chess can play 9 variants of chess.

In 4 of the variants the knight can also move like a fairy piece. One of these pieces is called a Dabbaba, and it is of course from that piece the program has got its name.

A dabbaba moves in the same directions as a rook, but always 2 squares and it may jump over a piece.

Here is an example from a game of **Dabbaba Chess** played by Dabbaba against itself:

```
XIIIIIIIIY
8Nsn-+-+k+0
7zpp+-+ptrp0
6-+-+--+0
5+-+--+0
4-+-+l+-+0
3+-+--+zP-0
2PzPP+-+zP0
1+-mKR+L+-0
xabcdefghy
```

Nn4k1/pp3prp/8/8/4b3/6P1/PPP4P/2KR1B2/w

17.Nc8! a6 black saved his pawn, but...

18.Ne8+! Kh8 If 18.-,Kf8 19.Nf6+ (yes, a check) and black loses his bishop. Now the program don't play 19.Nxg7 as the knight+dabbaba is a little more worth than a rook, but it plays

19.Nf6! Rg5 20.Nxe4

What happened? Why didn't the program play fx 19.-,Bg6 to save the bishop?

Because Dabbaba would have played 20.Nh6+ mate!

Another variant is **Stationary Chess**, where the kings simply cannot move.

Here is a complete game played by Dabbaba against itself with only 10 seconds pr. move. With this fast tempo there are naturally a number of errors, but the game is filled with matethreats and is quite amusing.

1.Nf3 Nf6 2.Ne5 e6 3.Nxf7 Qe7 4.Nxh8 Ne4 black now uses the same strategy as white, but white forgets to give his queen some air

5.Nc3? Nxf2 6.Nb5 Qc5? black should play 6.-,Na6. Now white gets air for his queen with tempo.

7.d4 Qxb5 8.e4 Qb4+ 9.Bd2 Nxd1 10.Bxb4 Ne3 threats mate on c2

11.Rc1 Bxb4+ 12.c3 Be7 threats 13.-,Nxg2+ 14.Bxg2, Bh4+ mate

13.Rg1 Bg5 14.Bd3 if now 14.-,Nxg2 15.Rxg2, Bxc1 16.Rf2! and white wins

```
XIIIIIIIIY
8rsnl+k+-sN0
7zppzpp+-zpp0
6-+-+p+-+0
5+-+--+vl-0
```

4-+-zPP+-+0
3+-zPLsn-+-0
2PzP-+-+PzP0
1+-tR-mK-tR-0
xabcdefghy

14...e5? black should develop his queenside. This move weakens his king.

15.g3 Nc4 threatens 16.-,Bd2+ mate

16.Rc2 Bd2+ 17.Rxd2 Nxd2 18.Be2 g6 avoids 19.Bh5+, g6 20.Rf1!, Nxf1 21.Nxg6!

19.dxe5 Nc6 20.Rg2 Nxe4 prevents white from 21.Rf2 and 22.Rf8+ mate

21.Nf7 Ne7 22.Bd3 Nc5 23.Bc4 Nf5 24.g4 b5 black is in trouble now. He cannot move Nf5 because of 25.Nd6+, cxd6 26.Bf7+ mate

25.Bxb5 Nh4 threatens mate on g2 and f3

26.Rf2 Ne6 covers f8, where white would mate after 27.Nd6+, cxd6 28.Rf8+ mate.

27.Bc4! Nf5 blacks position is hopeless now

28.Nh6 Ng5

XIIIIIIIIY
8r+l+k+-+0
7zp-zpp+-+p0
6-+-+psN0
5+-+zPnsn-0
4-+L+-+P+0
3+-zP-+-+0
2PzP-+-tR-zP0
1+-+mK-+-0
xabcdefghy

29.Bf7+! Nxf7 30.Ng8 Nxe5 31.Nf6+ mate.

Another of Dabbabas chess variants is **Nightrider Chess**, where the knight can make long moves. Here is the start of a game:

1.d4 d5 2.Ne5 Bf5 3.Bf4 e6 4.e3 Bb4+! white cannot play 5.c3, Bxb1 as the nightrider is much more worth than a bishop
5.Ke2 Bd6!

XIIIIIIIIY
8rsn-wqk+ntr0
7zppzp-+pzpp0
6-+-vlp+-+0
5+-+psNl+-0
4-+-zP-vL-+0
3+-+zP-+-0
2PzPP+KzPPzP0
1tRN+Q+L+R0
xabcdefghy

White loses a nightrider now (6.Nf3, Bg4). But why couldn't Dabbaba play 6.Ng1 to save his nightrider? Because of **6.Ng1, Bxf4 7.exf4, Bxc2!** followed by **8.-,Bxb1** (8.Qxc2?, Nxd4+! - oh, yes, there was a nightrider on b8!).

Dabbaba's play...

Here an example from a game of our usual **Orthodox Chess**.

After the moves 19.Qd1-e2 Nc6-e7 20.Nf3xe5 Rd8-f8 21.b2-b3 Qa4-e8 white has a great position, but how does he continue best? 22.Qg4+ or 22.Nc4 or 22.0-0 or.....

XIIIIIIIIY
8-+k+qtrntr0
7zppzp-snpzp-0
6-+-+--zp0
5+--PsN-+-0
4-+-+P+-zP0
3zPPvL-+-+0
2-+P+Q+P+0
1tR-+-mK-+R0
xabcdefghy

2k1qmr/ppp1npp1/7p/3PN3/4P2P/PPB5/2P1Q1P1/R3K2R/w

22.d6! cxd6 the knight cannot move because of 23.d7+

23.Nc4! Qd8 24.Bxg7...

Simple, but effective.

But don't think Dabbaba is a very strong program.

Tactical play is Dabbabas strongest side, and here the Colditz-test 'only' gives it a rating of 1830.

Dabbaba still makes too many bad positional moves and moves without any plan.

1.c4, e6 2.Nc3, e5?

Loosing a tempo. Dabbaba has no opening book and choses a little random between the moves in the opening.