nqueen.pl

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```prolog
queens(N, Queens) :-
    length(Queens, N),
        board(Queens, Board, 0, N, _, _),
        queens(Board, 0, Queens).

board([], [], N, N, _, _).
board([_|Queens], [Col-Vars|Board], Col0, N, [_|VR], VC) :-
        Col is Col0+1,
        functor(Vars, f, N),
        constraints(N, Vars, VR, VC),
        board(Queens, Board, Col, N, VR, [_|VC]).

constraints(0, _, _, _) :- !.
constraints(N, Row, [R|Rs], [C|Cs]) :-
        arg(N, Row, R-C),
        M is N-1,
        constraints(M, Row, Rs, Cs).

queens([], _, []).
queens([C|Cs], Row0, [Col|Solution]) :-
        Row is Row0+1,
        select(Col-Vars, [C|Cs], Board),
        arg(Row, Vars, Row-Row),
        queens(Board, Row, Solution).
```

d:/prolog/nqueen.pl compiled

SWI-Prolog (AMD64, Multi-threaded, version 9.0.4)

% d:/prolog/nqueen compiled 0.00 sec, -3 clauses
?- queens(8,Queens).
Queens = [1, 5, 8, 6, 3, 7, 2, 4]|