Eight Queen Problem

Program:-

```
:- use_module(library(clpfd)).

n_queens(N, Qs) :-
        length(Qs, N),
        Qs ins 1..N,
        safe_queens(Qs).

safe_queens([]).
safe_queens([Q|Qs]) :- no_threat(Q, Qs, 1), safe_queens(Qs).

no_threat(_, [], _).
no_threat(Q1, [Q2|Qs], D) :-
        Q1 #\= Q2,
        abs(Q1 - Q2) #\= D,
        D1 #= D + 1,
        no_threat(Q1, Qs, D1).

% Define a predicate to solve the N-Queens problem and print the solution.
solve_n_queens(N) :-
        n_queens(N, Qs),
        label(Qs),
        format('Solution for ~w-Queens: ~w~n', [N, Qs]).

% Example: solve the 8-Queens problem
:- solve_n_queens(8).
```

OUTPUT:-

```
% v:/CSMSS all/7th sem all notes/Ai notes/eight_queens.pl compiled 0.22 sec, 7 clauses
?- solve_n_queens(8).
Solution for 8-Queens: [1,5,8,6,3,7,2,4]
```