18BECE30558
TITHI PATEL

PRACTICAL-9

Program: Write a program to implement DFS (for 8 puzzle problem)

domains
H=integer T=integer*

predicates
safe(T)
solution(T)
permutation(T,T)
del(H,T,T)
noattack(H,T,H)

clauses
del(I,[I|L],L). /*to take a position from the permutation of list*/
del(I,[F|L],[F|L1]):
del(I,L,L1).
permutation([],[]). /*to find the possible positions*/
permutation([H|T],PL):
permutation(T,PT),\ del(H,PL,PT).
solution(Q): /*final solution is stored in Q*/
permutation([1,2,3,4,5,6,7,8],Q),
safe(Q).
safe([]). /*Q is safe such that no queens attack each other*/
safe([Q|others]):
safe(others), noattack(Q,others,1).
noattack(_,[],_)./*to find if the queens are in same row, column or diagonal*/
noattack(Y,[Y1|Ydist],Xdist):
Y1Y >Xdist,
YY1<>Xdist,
dist1=Xdist,
noattack(Y,Ydist,dist1).

OUTPUT:

goal:-solution(Q). Q=["3","8","4","7","1","6",2","5"]