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1: #include<stdio.h>
2: #include<stdlib.h>
3: #define queen 0
4: #define row 1
5: #define col 2
6: #define nwtose 3
7: #define swtone 4
8: static int count=0;
9:
10: void intialize(int Board[5][100],int n){
11:
12:     for(int i=0;i<n;++i){
13:         Board[queen][i]=-1;
14:         Board[row][i]=Board[col][i]=0;
15:     }
16:     for(int i=0;i<2*n-1;++i)
17:         Board[nwtose][i]=Board[swtone][i]=0;
18: }
19:
20: bool free(int Board[5][100],int i,int j,int n){
21:     return(Board[row][i]==0 &&Board[col][j]==0 && Board[nwtose][j-i+n-
22: 1]==0&&Board[swtone][j+i]==0);
23: }
24: void addqueen(int Board[5][100],int i,int j,int n){
25:     Board[queen][i]=j;
26:     Board[row][i]=Board[col][j]=Board[nwtose][j-i+n-1]=Board[swtone][j+i]=1;
27: }
28:
29: void undoqueen(int Board[5][100],int i,int j,int n){
30:     Board[queen][i]=-1;
31:     Board[row][i]=Board[col][j]=Board[nwtose][j-i+n-1]=Board[swtone][j+i]=0;
32: }
33:
34: void printsol(int Board[5][100],int n){
35:     for(int i=0;i<n;++i){
36:         for(int j=0;j<n;++j)
37:             { if(Board[queen][i]==j)
38:                 printf(" Q ");
39:                 else
40:                     printf(" - ");
41:             }
42:         printf("\n");
43:     }
44:     printf("\n_____ \n\n");
45: }
46:
47: bool placequeen(int Board[5][100],int i,int n){
48:     bool extendsoln=false,check=false;
49:     for(int j=0;j<n;++j){
50:         if(free(Board,i,j,n)){
51:             addqueen(Board,i,j,n);
52:             if(i==n-1)

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53:         printsol(Board,n);
54:     else
55:         extendsoln=placequeen(Board,i+1,n);
56:         if(extendsoln){
57:             check=true;
58:             return true;
59:         }
60:     else
61:         undoqueen(Board,i,j,n);
62:     }
63: }
64:
65: if(check==false)
66:     return false;
67:
68:
69: }
70:
71:
72: int main(){
73:     int n;
74:     scanf("%d",&n);
75:     int Board[5][100];
76:     initialize(Board,n);
77:     if(placequeen(Board,0,n))
78:         printsol(Board,n);
79:
80:     return 0;
81: }

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