

QUEENS (CHESS)

A chessboard has eight rows and eight columns. A queen is a piece that can capture any other piece on the same row, same column, or same diagonal. For example, on the chessboard displayed here:

1	2	3	4	5	6	7	8	(each "q" represents a queen and each "." represents an empty square)
1	.	q	.	.	.	.	.
2	.	.	.	q	.	q	.	
3	
4	.	.	q	.	q	.	.	q
5
6
7	.	.	.	q	.	.	.	q
8	q	.	.	.	.	.	.	.

The queen on (4,5) can capture any of the queens on (1,2), (2,5), (2,7), (4,3), (4,8), (7,5), (7,8), and (8,1).

PROBLEM

You are given a file CHESS.DAT containing a chessboard represented by an eight by eight matrix of zeros and ones as shown below. An entry of zero represents an empty square and an entry of one represents a square with a queen on it. You are to determine on what squares, if any, it is possible to place a queen which cannot be captured by any of the queens already on the board. If it is not possible to place a queen on the board in this manner your program should print the message "A QUEEN CAN NOT BE ADDED".

(OVER)

#15

continued

SAMPLE FILE:

0,	1,	0,	0,	0,	0,	0,	0
0,	0,	0,	1,	0,	0,	0,	0
0,	0,	0,	0,	0,	0,	0,	0
0,	0,	0,	0,	0,	0,	1,	0
0,	0,	0,	0,	0,	0,	0,	0
0,	0,	0,	0,	0,	0,	0,	0
1,	0,	0,	0,	0,	0,	0,	0
0,	0,	0,	0,	1,	0,	0,	0

Possible squares for new queens are:
(6 , 6)