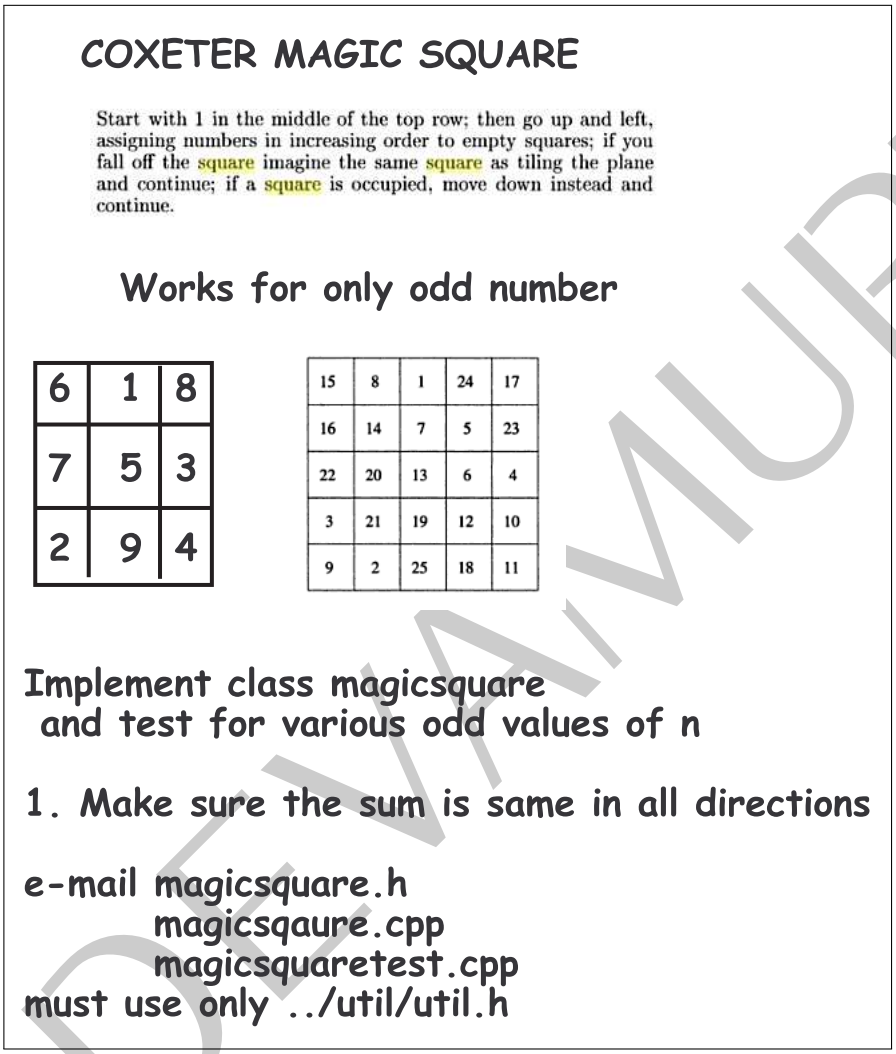


Figure 4.5: Odd Magic square

Problem 4.4.2.

Initilize the chess board as shown in the figure.
Write a display routine that prints the board configuration
SHOW SOLUTION AS BOTH STATIC AND DYNAMIC ALLOCATION

K	white king	k	black king
Q	white queen	q	black queen
R	white rook	r	black rook
B	white bishop	b	black bishop
N	white knight	n	black knight
P	white pawn	p	black pawn
–	empty square		

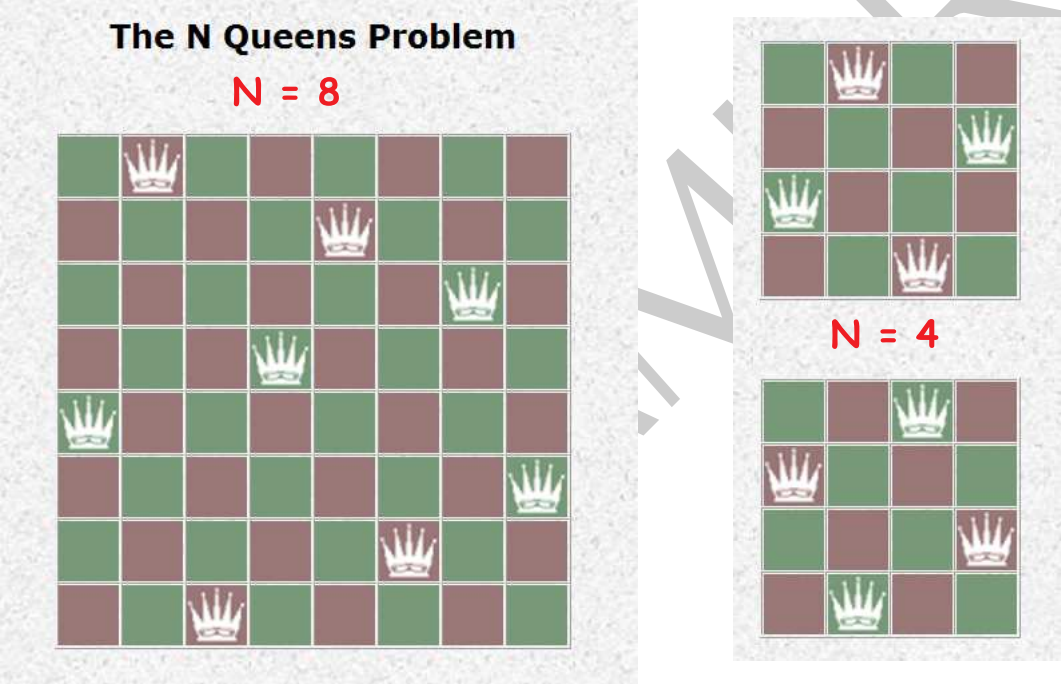
r	n	b	q	k	b	n	r
p	p	p	p	p	p	p	p
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–
P	P	P	P	P	P	P	P
R	N	B	Q	K	B	N	R

Figure 4.6: A chess board

Problem 4.4.3.

Problem 4.4.4.

The eight queens puzzle is the problem of placing eight chess queens on an 8×8 chessboard so that no two queens attack each other.
Thus, a solution requires that no two queens share the same row, column, or diagonal



For a 1 x 1 board, there is one trivial solution:

N=1

For 2 x 2 and 3 x 3 boards, there are no solutions.

Output solution

```
----1---
------1-
-1------
-----1--
--1-----
1-------
---1----
-------1
```

The eight queens puzzle has 92 distinct solutions.
If solutions that differ only by symmetry operations (rotations and reflections)
of the board are counted as one,
the puzzle has 12 unique (or fundamental) solutions.

Figure 4.7: N Queens Puzzle