N-QUEEN PROBLEM

```
#include <stdio.h>

int n, count=0;
int isSafe(char board[n][n], int row, int col)
{
   for (int i = row - 1; i >= 0; i--)
   {
      if (board[i][col] == 'Q')
      {
         return 0;
      }
   }
   for (int i = row - 1, j = col - 1; i >= 0 && j >= 0; i--, j--)
   {
      if (board[i][j] == 'Q')
      {
         return 0;
      }
   }
   for (int i = row - 1, j = col + 1; i >= 0 && j < n; i--, j++)
   {
      if (board[i][j] == 'Q')
      {
         return 0;
      }
   }
   return 1;
}

void printBoard(char board[][n])
{
   printf("\nCHESS BORAD\n");
   for (int i = 0; i < n; i++)
   {
      for (int j = 0; j < n; j++)
      {
         printf("%c ", board[i][j]);
      }
      printf("\n");
   }
}
```

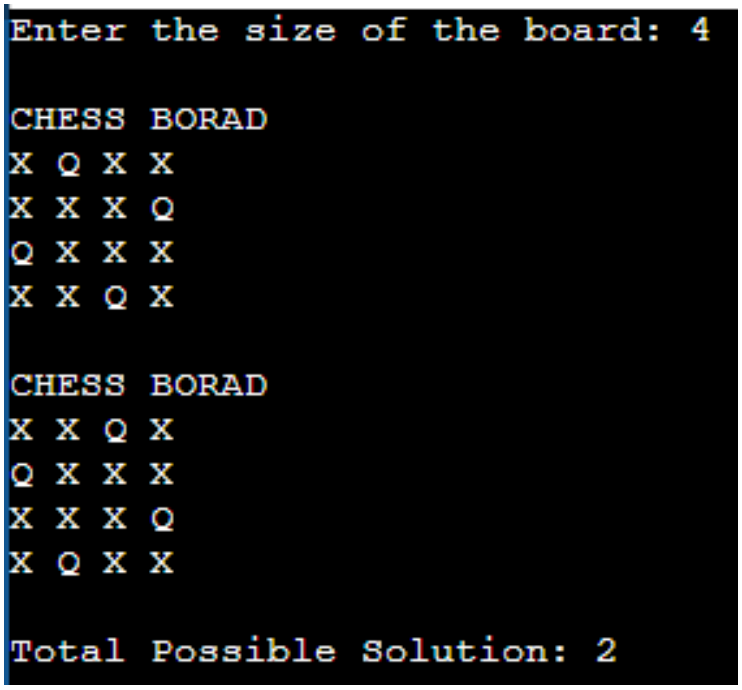
```
void nQueens(char board[n][n], int row)
{
    if (row == n)
    {
        printBoard(board);
        count++;
        return;
    }
    for (int j = 0; j < n; j++)
    {
        if (isSafe(board, row, j) == 1)
        {
            board[row][j] = 'Q';
            nQueens(board, row + 1);
            board[row][j] = 'X';
        }
    }
}

int main()
{
    printf("Enter the size of the board: ");
    scanf("%d", &n);

    char board[n][n];

    for (int i = 0; i < n; i++)
    {
        for (int j = 0; j < n; j++)
        {
            board[i][j] = 'X';
        }
    }
    nQueens(board, 0);
    printf("\nTotal Possible Solution: %d ",count);
}
```

OUTPUT:


Enter the size of the board: 4
CHESS BORAD
X Q X X
X X X Q
Q X X X
X X Q X
CHESS BORAD
X X Q X
Q X X X
X X X Q
X Q X X
Total Possible Solution: 2