#include <bits/stdc++.h>

using namespace std;

void func(int i, int n, vector<int> &col, vector<int> &d1, vector<int> &d2, vector<vector<char>> & board)

{

if(i == n)

{

cout << "\n\nSolution:\n\n";

for(int k = 0; k < n; k++)

{

for(int j = 0; j < n; j++)

{

cout << board[k][j] << " ";

}

cout << "\n";

}

return;

}

for(int j = 0; j < n; j++)

{

if(!col[j] && !d1[abs(i + j)] && !d2[n+i-j])

{

//cout << i << j << endl;

board[i][j] = 'Q';

col[j] =1;

d1[abs(i + j)] = 1;

d2[n+i-j] = 1;

func(i + 1, n, col, d1, d2, board);

board[i][j] = '.';

col[j] =0;

d1[abs(i + j)] = 0;

d2[n+i-j] = 0;

}

}

}

int main()

{

cout << "Enter the size of board\n";

int n; cin >> n;

vector<int> col(n), d1(n+2), d2(2\* n+2);

vector<vector<char>> board(n, vector<char>(n, '.'));

func(0, n, col,d1,d2,board);

}

