COSC 2007T

Programming Lab 1 (Recursion and Back Tracking)

Problem Specification:

The *4*-queens puzzle is the problem of placing *4* queens on a *4×4* chessboard such that no two queens attack each other. Queens can attack row wise, column wise or along the diagonal.
Program should return all distinct solutions to the *4*-queens puzzle.

Each solution contains a distinct board configuration of the *4*-queens' placement, where '1' and '0' both indicate a queen and an empty space, respectively. Your program might include a class called Queen which may include methods of your choice.

Output:

0	1	0	0
0	0	0	1
1	0	0	0
0	0	1	0

0	0	1	0
1	0	0	0
0	0	0	1
0	1	0	0

Note: There exist two solutions to the 4-queens puzzle as shown above.

Submission Instructions:

Please ensure you submit an original work and should not be copied or zero will be given for copying.

Please record a one minute video, showing the program execution (code and output). You must show your face and introduce yourself in the first 5 seconds of video. Longer videos cannot be uploaded therefore keep your recordings short. You can use any screen recording software which captures your face and the screen or you may start a meeting keeping only yourself in Google Meet and record.

Ensure that your code follows Java language programming style and guidelines. Your code must compile without errors and execute as per the specifications in the problem description.

Carefully write comments in the source code to have an understanding.

Marking Scheme:

Introduction	3
Complete program with comments, no compile/logical error, and correct output:	7