CS608 Programming Assignment 13

There are four assignments listed here: 13A, 13B, 13C, and 13 D.

Programming Assignment 13 requires that you any two of them. Grading is as before. Also, notice the optional assignments for extra credit.

Programming Assignment 13A

Study the LUP Problem described in my notes (Week 13 folder on BB). Implement LUP algorithm using the 3xn array described in my notes. There are plenty of implementations on the Web. Only the (3xn array) method as described in my notes is acceptable for 13A.

The file **LUPData.txt** contains several lines. Each line a sequence of integers. Your program reads the data file and prints (1) an LUP for each line and (2) the 3xn array for each

Optional: Print all the LUPs for each line.

Programming Assignment 13B

Study the LUP Problem described in notes (Week 13 folder on BB). Implement LUP algorithm using the binary tree method described in my notes. There are plenty of implementations on the Web. Only the (binary tree) method as described in my notes is acceptable for 13B.

The file **LUPData.txt** contains several lines. Each line a sequence of integers. Your program reads the data file and prints (1) an LUP for each line and (2) "hangers" for each.

Optional: Print all the LUPs for each line.

Programming Assignment 13C

Study the Sudoku Problem described in my notes (Week 13 folder on BB). Write a program to generate a Sudoku grid using the method described in my notes. There are plenty of implementations on the Web. Only the method as described in my notes is acceptable.

Rotate the original 3x3 magic square and get different Sudoku grids. Your output must contain at least 4 Sudoku grids. Don't hard code the first 3x3 magic square. Your program must generate it using the algorithm described in my notes.

Programming Assignment 13D

Study the Eight Queens Problem described in my notes (Week 13 folder on BB). Write a program to generate a solution to the Eight Queens problem. (Print the solution using a 8x8 grid with a * for the position of the queen).

There are plenty of implementations of the Eight Queens Problem on the Web. Feel free to use them (with mention of the Website in the output).

Optional: Print all the 12 solutions.

Optional assignment:

The requirement for Programming Assignment is to complete two of the four. You can do additional one or 2 programs for extra credit up to 10 points (5 points each).

Optional assignment:

Represent the Eight Queens Problem solution on a chessboard (using graphics) for extra credit up to 10 points.
