

MA/CSSE 473 – Design and Analysis of Algorithms

Trominoes Implementation problem – 50 points

For any $k \geq 1$, if $n = 2^k$, we examined two algorithms (one in class, one in problems 6-7 of HW04) for tiling an $n \times n$ deficient grid with trominoes.

Implement both algorithms. Submit it to the Trominoes drop box on ANGEL

Your implementations should be in a language (or combinations of languages) that I can easily compile and run.

Examples: Python 3 (submit your source files)

Java 6 (submit an Eclipse project)

JavaScript (embed in a web page).

Maple

Chez Scheme plus SWL.

Any compiled language (give me your source code and an executable that runs in Windows 7)

If you want to use something else, please run it by me in advance.

The program should somehow (through console or GUI interface) ask the user for the value of k , the location of the “missing” square in the grid, and which of the two recursive approaches to tiling is to be used. Then it should animate the tiling in a way that illustrates how the recursion works for that approach.

You should submit a ZIP or RAR file containing your well-documented code. If any special instructions are needed for running your code once I have unpacked it, please include those instructions in a README file. Please include your name(s) in the name of the ZIP or RAR file.

If you wish, you may do this problem with another student (from either class section). If you want to work with someone but cannot find anyone on your own, send me an email by 2 PM on Class Day 8, and I will match you with someone else who does the same thing. I will put the first and second requestors together, then the third and fourth, etc. If you do it together, only one of you should submit it, but put both students’ names in the name of your archive file.