Coloring Statistics of an $m \times n$ grid

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Abstract

You are given an $m \times n$ chess board and c cans of paint. Each can of paint has its own paint brush. The goal is to color each square of the chess board using this selection of c colors. There is one catch. Before painting each square you must shut your eyes and arbitrarily select a paint brush. When you are finished how many edge adjacent squares share the same color? This talk explains how humans *and* computers apply probabilistic methods to answer such a question.