Overview

Oriented coloring is a variant of the usual graph coloring. In the latter, adjacent vertices must receive different colors; in the former, the directions of the edges play a role.

Oriented coloring allows to attack problems of scheduling jobs on processors, when the order in which jobs can be performed is restricted. Section 1.2 in [1] explains how oriented coloring is used in such situations.

In this project, we are interested in grids (only horizontal and vertical edges). Specifically, we want to know whether 8 colors (= processors) are always enough to deal with grid-form constraints. The paper [2] proposes an algorithm which searches for a grid which need more than 7 colors.

Goals

- Familiarize yourself with the problem and its applications [1,2]
- Understand the algorithm in [2], adapt it for 8 colors
- Implement it in C
- Improve/enhance it, code some better versions

Requirements

- C
- Interest in coding graph algorithms

References

   