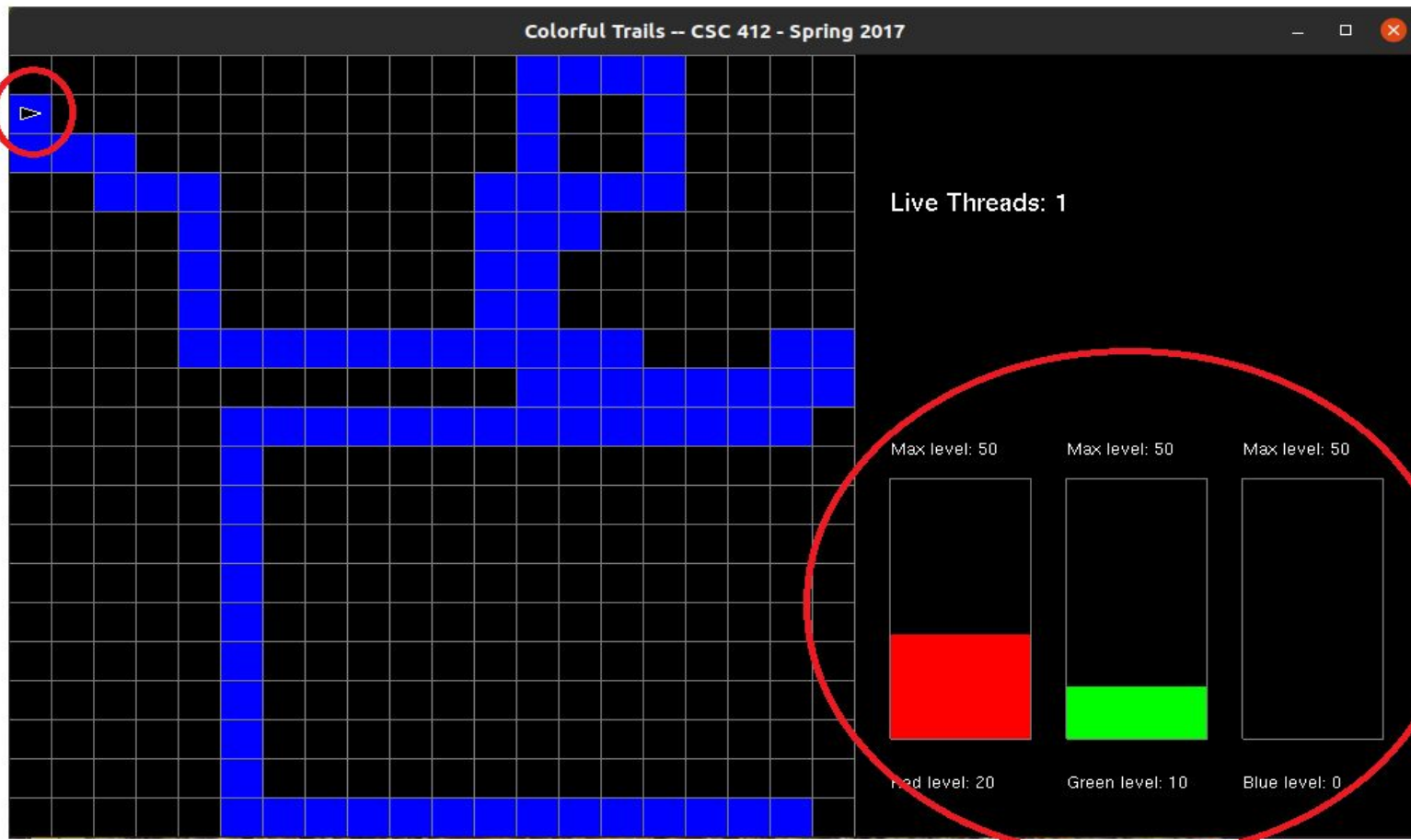The resource manager oversees all traveler movement. At each traveler iteration, the thread will ask the resource manager for approval to move x spaces. The program makes a mutex call at this point to prevent other travelers from getting permission simultaneously. This prevents a race condition from occuring.

The single traveler thread is blue. The arrow indicates where the thread position currently is and orientation of it's next move. The grid is colored based on the thread's displacement.

Colorful Trails -- CSC 412 - Spring 2017

Live Threads: 1

Max level: 50   Max level: 50   Max level: 50

Red level: 20   Green level: 10   Blue level: 0

There are six total producer threads that are allocated to create ink. Producers can only produce ink once every second and are designated to the lowest ink level at each iteration.

Mutex calls are also used here when determining the lowest ink level. This so that two or more producer threads do not attempt to access an ink level or fill ink simultaneously.