

Name:

Matr.Nr.:

Gruppe: 08:30 10:15

Abgabefrist: 26.04.2010

Abzugeben: Quellcode elektronisch.

Tutor:

Punkte:

Maximal: 24 Punkte

Threading

Implement a field for Game of Life. The rules for Game of Life can be found on:

http://en.wikipedia.org/wiki/Conway%27s_Game_of_Life#Rules

Implement the edges wrapped; such that the top joins the bottom, and the left edge joins the right edge.

Step 1) Implement a Game of Life field (*FieldImpl*), which implements the interface *Field*. (4 Points)

Step 2) Write a version of the Game of Life field (*ParallelFieldImpl*) where the method *getNext()* uses as many threads as there are processors (or cores) available on the executing system. (8 Points)

Step 3) Write a version of the Game of Life field (*ParallelExecutorFieldImpl*) where you pool the threads in an *ExecutorService*. Use a fixed thread pool with as many threads as there are processors (or cores) available on the executing system. (4 Points)

Step 4) Extend the class *JGameOfLifeView* with a thread safe queue (*FieldBuffer*). The Method *addFieldStep(Field field)* should add the field to the queue. A thread should take the field from the queue and paint it. The thread should be a daemon thread. It should be possible to start and stop the thread by calling the methods *startVisualization()* respectively *stopVisualization()*. Make sure every field gets painted (hint: think about what *repaint()* does). (8 Points)

Some skeletons for the classes to implement and some helper classes can be downloaded from <http://ssw.jku.at/Teaching/Lectures/PSW2/2010/>. TODO comments are provided where the files must be extended.

