

Deliverables:

1. Program code
2. Description of how to compile and run the program
3. Test results : baseline time for single process, 2 or 3 tests with different number of processes

Take average times over multiple runs for each process configuration (at least 5), and provide a measure of variation such as standard deviation.

You may want to increase the data size as you increase number of processes.

4. Conclusions: describe the speedup you get as number of processes and data size is changed. (Note that parallel slowdown is always possible). Comment on the ease or difficulty of programming the mode of parallelism you are testing.

Assignment: write a program to model a cellular automaton. The grid should be at least 600x600, the neighborhood around each cell should be variable, allowing radius from 1 (3x3 square) to at least 3 (7x7 square centered on a cell).

[Notes on parallelizing cellular automata](#)

<http://www.cse.csusb.edu/egomez/cs624/spatial-decomp.pdf>

Need parallelizing several algorithms, using C with MPI and OpenMP. To determine speedup, run the algorithm as a single process first, then test it on the parallel platforms and compare run time. You want to evaluate difficulty of getting it to work and how long calculating takes on three different compute platforms