Eddie Peters
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Conway's Life Test Document

Only a few functions did much with input and output, and while I tested all of my functions, some of them are much more worthy of a table than others. These are the ones I have included here. Much of my testing can be found in tests.cpp in my assignment tarball.

Function: Cell::next()

Test Case	**Input Values**	**Driver Functions**	**Expected Outcomes**	**Oberved Outcomes**
Various cells in different sized grids with various life/death values. These were surrounded by different numbers of living/dead neighbors.	5 x 5 grid, again with several different configurations. Also 22 x 80 grid. Some are available in tests.cpp	tests.cpp - main()	Alive or dead depending on the initial state of the Cell, according to Conway's rules.	Some terrible results several times, but eventually accurate results.

Function: Cell::count_neighbors()

Test Case	**Input Values**	**Driver Functions**	**Expected Outcomes**	**Oberved Outcomes**
Various cells in different sized grids with various life/death values. These were surrounded by different numbers of living/dead neighbors.	5 x 5 grid, again with several different configurations. Also 22 x 80 grid. Some are available in tests.cpp	tests.cpp - main()	A number in the range 1-8 that correctly sums up the cell's living neighbors.	Incorrect counts a number of times, until I realized that the modulus operator doesn't work exactly the way modulus works in modular arithmetic. Modulated negative numbers do not yield positive numbers.

Function: Board::next()

Test Case	**Input Values**	**Driver Functions**	**Expected Outcomes**	**Oberved Outcomes**
Various cells in different sized grids with various life/death values. These were surrounded by different numbers of living/dead neighbors.	5 x 5 grid, again with several different configurations. Also 22 x 80 grid. Some are available in tests.cpp	tests.cpp - main()	A full grid with all cells changed to the state they should be in in the next generation.	Either no grid at all or the same grid I started with. The problem was that I was not properly making copies of my vectors. Instead, I was swapping them. It took a little getting used to vector copying, which I ended up doing with the assignment operator.