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CS 162: Intro CS II

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Assignment #1: Conway’s Game of Life – Reflection

**Reflection**

**What did you learn about the problem as you went?  Why or how did you learn it?**

In this assignment, I was to create a program that would make stable configurations for Conway’s Game of Life. At the initial reading, I was not familiar at all with the zero player game, so research was necessary. The instructions for the assignment linked to a Wikipedia site were I could find some more information.

As I decomposed the problem, I had found there were 5 problems that needed to be addressed and each of those needed to be further broken down to a certain extent to create the design plan. Three of the problems were trying to figure out what were a oscillator, glider and cannon configuration. Once I had figure out what and how to make them, the next problem with the rules of the game would do the work for me of the game. The last problem was how to get the borders to ‘stitch’ together to make a world, where the configurations, once moving beyond the border can appear on the other side.

**What tests didn't work out the way you expected?  What alterations did you have to make to your program due to failed tests?  How could your planned tests have been more complete?**

I had a class object, that I initially thought if I had just updated each cell, that everything would be good. The trouble was when I had updated a cells contents, the next cell would die when it wasn’t supposed to because there were less neighbors and eventually the whole thing would die. One of the rules stated that cells would be updated instantaneous. I decided to create a two dimensional array which would take the decisions from the rules based on what was current on the world. Then, take each cell from the 2-D array and update it to the world.

I think some more complete tests, could have included some special cases where live cells reach both the horizontal and vertical corner borders and need to be able to wrap to the other side of the world. Also, I think some more complete test cases, could have been to test each of the rules.

**What was missing or needed to be altered from your initial design, and why?**

From the initial design, I was missing an array of two dimensions to be used to store the updated cells based on the decisions from the rules. Once I had the array filled with the decisions made, I could then for each row and column in the array transfer the data to the world class. I had thought from the initial design that updating the world as I go through decisions that everything would be taken care of.

**What problems did you encounter during implementation?  How were you able to solve those problems?  What outside sources (sites, books, or other materials) did you find helpful?**

I found it helpful to look at some of the content on Wikipedia to get an idea of what Conway’s Game of Life is all about. There were also some helpful links within Wikipedia where I could see a still gif of both the glider and cannon configurations to create in my code.

I did look at some sites such as cplusplus.com, rosettacode.org, and stackexchange.com just to get an idea of what other people did to create the game.

**Can you generalize any parts of your problem solving experience in a way that might help you on future assignments?**

In this assignment, I thought what really helped me was decomposing each of the problems into smaller workable problems. Once that was complete, I would work on a problem in pseudocode, then implement to code. Then I would take another problem, write it in pseudocode, implement the code, and see if it works. This process would continue till there were no problems left to be solved. I’m not sure this is the ideal way to complete work for the is course and whether it is efficient, but I find it is helpful to complete the program.