asgn4 writeup

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Lessons Learned

Conway's game of life simulates the evolution with cells constantly living and dying. If a live cell is next to 2 or 3 live neighbors, it survives. If a dead cell is next to 3 live neighbors, it becomes a live cell. Else, cells die from overcrowding or loneliness. Following these rules, game of life passes through generations where cells will constantly live and die following these 3 rules and produces interesting patterns.

For asgn4, I learned a lot due to it being much different than the previous assignments. First of all, in universe.c, we had to use pointers as arguments in universe.c function parameters and I had to learn how that worked. I also had to learn how to access variables in the Universe structure as well as how to free, return, ad set them as true or false. The file universe.c also taught me how accepting files as arguments worked and how to print into an outfile from the uv print fuction. I rarely worked with accessing files like this before and it was meaningful knowledge to pick up.

For the life.c file, I learned how to declare files and char variables that were able to accept the file names as get opts using optarg. In this file, I was also introduced to ncurses for the first time and learning how to make the window appear as well as learning how to print the game was satisfying. I learned how to initialize the screen, hide the cursor of the user, clear the screen, refresh the screen, and to sleep the screen when needed. By using ncurses, I was able to animate the game of life. I also learned how to swap universe pointers as well as fscanning infiles. Overall, I learned a lot of new knowledge while accepting and scanning files and later implementing the game of life.

In addition to learning on how to work with pointers, files, and ncurses, I also expanded my logic on coding. The game of life is not overly complicated but there are still rules to it. For example, the 3 rules that cells must follow, finding the number of neighbors in uv census, and making it all fit together in life.c as a complete game implementation took some learning of game and coding logic.

For compiling and linking, experimenting with using pointers taught me a lot

about how pointers work. Specifically, I had to use pointers for file inputs and for universes and when I swapped them. I improved on my knowledge of linking when I used universe.c functions in life.c by including the universe.h file in my life.c. Everything I learned in this assignment was fun and satisfying overall.