Conway's Game of Life Using C and OpenMP

A C program that implements Conway's Game of Life. The program reads an input file that contains the initial state of the game and then simulates the game based on the rules of the game until it reaches a specific generation.

The program uses OpenMP, a library that supports multi-threading in C and C++, to parallelize some of the operations to improve performance.

The Life_printer function is used to print the current state of the game. The replica_to_array and replica_to_array_int functions are used to copy the contents of one array to another. The setOrClear function is used to update the neighboring cells' counts based on the state of the current cell.

In the main function, the program reads the input file, initializes the arrays, and sets the counts of the neighboring cells to zero. It then simulates the game using nested loops and calls the setOrClear function to update the counts of neighboring cells. Finally, it updates the state of the game based on the counts of the neighboring cells and prints the current state of the game.

The program also takes command-line arguments, where the first argument is the input file name, the second argument is the number of generations to simulate (optional), and the third argument is the output file name (optional).