Data Structures Assignment 1: Conway's Game of Life

Instructor: Benjamin Geiger (`begeiger@mail.usf.edu`)

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Assignment

Download the `LifeProject.tar.gz` file from Canvas and extract it. You will find several source files.

Several methods in `Life.cpp` are incomplete; the gaps are marked with a comment that begins with `//TODO`. Your task is to complete the implementation.

Details

The `Life` class implements Conway's game of life and variants, with a grid size that is initialized at runtime (not constant, but not expanding), and a 'hedge' as discussed in class.

To compile your program in Linux, simply type `make` at the command prompt. The included `Makefile` should handle the rest.

A sample input file (`input0`) and output file (`correct0`) have been provided. To test your code:

1. Compile your code, as above.
2. Enter at the command prompt:
   `./game < input0 > test0`

   This runs the program and tells it to accept input from `input0` and save output to `test0`.
3. Compare the output to the correct output:
   `diff -u test0 correct0`

   Lines where your output differs from the correct output will be printed; your lines will be prefaced with `-` and the correct lines will be prefaced with `+`. (Lines with no characters are common to both and are included for context.)

Administrivia

- Include your name in the comment at the beginning of the `Life.cpp` file.
- Submit only `Life.cpp`. The other files should not be modified.
- Your code will be tested on a Linux system; other Unix systems are likely to work properly, but Windows (specifically Visual Studio) often causes problems. If in doubt, test your code on the C4 lab PCs or on CIRCE.

  Submissions that do not compile will be given a grade of 20%.
- Your code will be tested on several input files other than those provided.
- Please properly indent your code. Most code editors contain an automatic indentation feature.