Cellular Automaton Assignment 2 Report - Group 8

Module: Computer Systems 2A
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Approach

From the very beginning we decided to create a single C file which contains a Main Menu that allows the user to choose the rules to be displayed in the terminal. We managed to get some of the rules working, but for unexpected memory addressing errors, some of the rules ended not working, but we made them work in the last minute.

Problems

We have encountered some problems at the beginning of our project, as before we coded our Main Menu we tried to make our first rule (rule 30) work. After some days of struggling with the structure of the for loops and the data validation, we made it work. Once we had our first rule working we decided to code more rules basing the structures of the following rules on our first rule.

Our next step was to allow the user to convert numbers from decimal to binary and vice versa, we did not find too many problems coding this options, as we managed to make them work in less than an hour. We also allowed the user to set the width and the height of all the rules, so this way the user could visualise the output of the rules easier.

Another problem we have encountered was dealing with saving the output to a file, as we did not know how to approach the problem. After some days of research we managed to make it work and implement it to the Main Menu C file. The method to open a file fOpen() has a couple of different modes to open a file.

We had some last minute problems with our C file the day before the due date. The issues we have had were the result of joining code from different C files, as some of the rules stopped working due to memory addressing problems. After several hours going through the code we tried to solve some of the errors in the code and we managed to make it work again.

We also tried to change the way the rules were outputted to the user, we tried to change the 0s and the 1s to become black squares and spaces but due to lack of time, we did not manage to change it, as we were a bit afraid that another last minute change will make the rules stop working again.

Finally we decided not to try to code the Game of Life extension for our project, also due to the lack of time, even if we would have liked attempting to code that extension.

General thoughts

In general the environment in the group has been really positive, even during the times when we have struggled to make some of the rules work again. All members of the group have participated into the assignment actively and everyone has attended to the meetings for the assignment, which made working on the assignment easier and more productive.
We are proud to say that all members in the group have learnt from the assignment and how a Cellular Automaton behaves.