**Daily Diary for Computer Challenges Module**

**11/01/2022**

* Received the email from John that confirms my first choice of the industry simulation project

“F.1.i Industry from Data Analysis course. A number of industries have been examined in detail, including interviewing experts from the industry, to identify what are the most important positive and negative events that occur within them. Also, data sources that provide real metrics that can be used to quantify the simulations are also available. These include Farming, Youtuber/Social media creator and many more.”

* John sent a few folders with an example simulation of a coffee shop which isn’t complete. Hard to get to grips with it as I’ve never used js before so finding it a bit difficult to follow what’s going on.
* Another folder that John sent to me included lots of data analysis, several documents talking about the beef farming industry
* Being from a beef and arable farm that is the industry I would like to create the simulation on however I know firsthand just how many variables come into the industry and I’m not sure I’d be able to quantify many of them in a meaningful way
* Currently thinking about doing some web scraping (which I’ve never successfully done) in order to gather data on average local weather conditions as this would help a simulation massively in its flexibility. Making it much more useful for others, which seems to be being stressed as important.
* However, I don’t feel like that’s a good place to start as I should get some of the backbones of the simulation in place. Just need to find out what the backbones might be…..

**12/01/22**

* Found a very useful python library called ‘simpy’ today, seems to do a lot of the heavy lifting for creating any simulation within python. Not sure if it would be allowed as it may take away some of the struggles of creating a program that can simulate something rather than just creating an algorithm that can accurately simulate the farming industry…. Haha ‘just’. But why invent the wheel right?
* I think I’m starting to find my starting point for the project. Need to define a rough idea of a simulation algorithm, figuring out which parameters I want to use to control the simulation. However to do this I need to narrow down what exactly I’m simulating as the entire industry wouldn’t be feasible. Needs to be something useful….
* One idea that has just came to me would be to simulate the net carbon output per unit of beef produced by a farm or something due to it being so relevant at the moment… will keep thinking of other ideas.

**17/01/2022**

* After deliberating over it for a few days the ideas of what to simulate within the industry of farming are:

Impact of fertiliser, different types of fertiliser, their impact on yield and the environment and profitability

Yield of different crop types/varieties dependant on different conditions which can be set by the user

Net carbon output per unit of beef produced by a farmer

**Outcome of First Friday Meeting**

* Meeting went well got a lot of issues ironed out
* In terms of the direction of the project we discussed that it was to become a model simulation of an entire farm, not a simulation of something to specific that occurs on the farm.
* It was also pointed out why java script would be by far the best language to develop the program in as it makes it extremely easy to use as a portfolio piece as all you need is a browser to run it within.
* Web scrapping was also immediately ruled out.
* The next stages that we discussed was to remove parts of the sample code that aren’t relevant to my simulation and start to add comments which denote an event that may happen on the farm
* These comments can then start to be turned into methods which can be called to simulate the events that occur within the working day.
* It was also pointed out that for this sort of simulation style program, procedural program would allow a much clearer approach that can be more easily modified and built upon by other users.

**24/01/22**

* As discussed in the meeting I spent some time today removing any code from the sample program that wasn’t relevant to my simulation
* I also inserted many comments referring to some of the events that occur on the farm from day to day.
* I also started to add some basic common variables to be used to help to implement functions later
* Plan is to start converting comments to rudimentary methods throughout the rest of the week.
* I’ll also continue to add many more comments as they come to me.

**25/01/22**

* Spent some time today learning some basic javascript syntax as I’ve only ever made one program in javascript and it was a mod for a game so I don’t know that it even counts!
* Had some coursework to do for webTechnologies so spent the rest of my time getting it done to enable me to spend more time later in the week on this module.

**26/01/22**

* Finally started programming properly. Feels like I’m actually making progress now
* I feel like I had been trying to plan everything out far too much before I got started as last term we were told over and over if we plan out the program properly before starting to code it will cause a lot less hassle in the long run. However for this type of project I’m realising it’s much better to get stuck in and actually have something started as then it becomes easier to see where you want to go.
* Have decided for simplicities sake I will leave all my data variables in the same js file for now, just to get something running. Perhaps will have to move them to a separate file in the future when the simulation becomes much bigger and one file just becomes impractical to read and work in.

**27/01/22**

* Getting confused now, every time I try to test the code to understand it better I’m getting completely unexpected numbers for all of my variables.
* I’m pretty sure I’m not getting how the debugger works on chrome properly and that’s causing confusion. When I attempt to step through the code by putting breakpoints I assume it stops on the breakpoint in the first iteration. At which point no variables should be changed but yet all of them have been changed as though several cycles have been ran
* Going to take some time to teach myself how to use the debugger properly and then we’ll see if that helps.
* Should have started with that. Knowing how to actually use it helped a lot and now have some working code
* Even though we were told to keep it procedural and the benefits were pointed out, it’s hard to see how you could get an accurate simulation without modelling the cows as objects and being able to control variables for individual cows rather than an entire herd. However I’m sure there’s a perfectly logical reason why this wouldn’t be practical.
* So far most of the numbers I’ve used are fairly random. I could find out some more accurate figures by discussing more deeply with my family, the variable differentiation technique that was discussed in the last meeting sounds like a much more interesting way to go about this however it sounded a lot more like something for the end of the project, so maybe I just put up with less than accurate results for now?