Name	CID	Supervisor	Assessor	Project Title
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Progress Report

As we approach our 5th week of this project, my partner (Louis) and I feel like we are making timely progress within it. We have tried to stick to our plan as much as possible and so far, we are slightly ahead of where we were expecting to be at this stage of the term.

In the first week we set out to learn how to use the networkx module and understand basic networks. This led us nicely into our second week where our focus was to start to set up basic graphs with specified sizes and shapes.

Week 3 involved finishing the time iteration for any network so we could successfully simulate a pandemic. We were able to start simulating the pandemic spread for any graph/network we wanted to input into our algorithm. We tested the simulation on a nearest neighbour (circular) graph where each node connects to its 2 closest neighbours, this was so we could visualise the pandemic spread and test for any bugs. Louis and I were able to vary infectivity, starting locations and started to create plots analysing the spread of the infection.

We are now up to week 4 (commencing 13/2), we have been focusing on splitting the probability of transmission into a probability of meeting and one of infection. We have also been working on implementing recovery and latency of transmission times into our algorithm which will hopefully more accurately represent a real-world pandemic, on top of this we have been implementing a vaccination attribute to nodes in our graph. By the end of this week, we will be able to implement our various models and analyse the effect of a vaccine and varying recovery periods on the spread of our pandemic.

Looking ahead to next week we will look to find an R-value for our pandemic through the running of our algorithm, we will also look to model factors such as immunity after recovery and the depreciation in the effectiveness of vaccination over time. I am particularly looking forward to adding mitigations to our model such as government quarantines and lockdowns.