SERP Group 9 - Retrospective Report 1

Meeting time: 6pm 16th Aug 2020
Attendees: Basil, Daniel, Josh

The meeting was conducted on the 16th of August, 3 days after the client meeting. The main items of discussion were:

- Feedback from the client meeting relating primarily to the user and technical story definition.
- Planning and strategy for future sprints and the features that will be delivered iteratively.
- Completing the core functionality of the model (v 1.0 release) with the ability to incorporate the return of susceptibility to the recovered population.
- Defining more thorough testing and evaluation methodology.

What went well:
So far we have received feedback from the client that they are happy with the progress that has been made on the epidemic model. There are a few remaining items from last semester that need to be completed, however, these are not a major concern as we are all aware of them and have a clear understanding of the criteria and plan their completion. The core features of the model have been completed, and thus, will serve as the groundwork for the rest of the model development.

Aspects of our process and project that worked well last semester, from both our perspective, and feedback from the client were:

- Our team's attitude to learning a new programming language and concepts such as design of experiment and data farming.
- Utilising the online format of the project to our advantage by scheduling additional client meetings on Zoom to discuss future plans and clarify ambiguities. Our communication methods through a combination of GitHub, Slack, Discord, and Zoom were effective.
- Flexible and adaptive distribution of development work and other tasks. Although group members were assigned tasks, we would often help each other out as much as possible, in the form of things such as pair programming, clarifications, and code reviews.

What was lacking:
What we found was lacking in our performance last semester was a few different things. One of the first and main areas which we needed to improve on was formal testing. Throughout the first semester, we really did not make any formal tests in our project but instead came up with smaller more general tests that aimed to test the overall functionality. This ultimately has not been the best way to approach this problem and we have since decided to retrospectively implement unit testing into the existing models.

The second area that we have determined needed improvement this semester is our user stories. Until this point, we have mainly treated them as technical issues or that we need to overcome and they did not contain much of a story, but instead mainly were just problems in

our project, or broad development tasks that needed to be completed. This has not really given us as good of a starting point when dividing the project between the group members. So moving forward we are planning on implementing more detailed user stories that are relevant to our project allowing for easier future development and to quantify effort and completion.

Finally, we determined that the way we handled our project sprints was not as good as we could have potentially been. This mostly follows on from the poorly written user stories, however, enough time really was not taken in planning and designing these sprints. We primarily just worked on getting the next set of features implemented before the next client meeting. While this may have been feasible for prototyping, this really has not helped us when looking at the long term development goals of the project. Along with this, our original goals have also at times been quite ambitious.

What did you learn:
Over the past semester, we have come to understand the agile development process much more profoundly then we did before. We had never had the opportunity to deliver a project in this manner and we have been slowly learning about the challenges of sprints and client communication. With recent feedback, we are beginning to understand the value of project management especially relating to deliverables in the form of user stories and sprint objectives.

In this project, we have also had the opportunity to learn about epidemic and population models. How they work and the mathematical theory behind how they are implemented. This is something none of us had exposure to so conducting literature reviews on these areas has expanded our knowledge in social services and epidemiology. In addition, whilst learning how these models are implemented we had to become familiar with Python and its various plotting and machine learning tools that we could leverage to achieve model development.

What are you planning on doing in the next sprint:
The biggest point of feedback we got from the last sprint meeting was implementing small user/technical stories for client requirements. Doing this is a big part of project management and it will play a big role in maintaining the client's confidence and managing our time effectively. By the next sprint we will have our big tasks broken down into as small and manageable pieces as we can. We also plan to have another planning session with the client outside the meetings to determine the precise details of what should be delivered per sprint, and also define some methods/processes for model evaluation. This will ensure that the clients most important requirements are met and that we give them confidence that it will be delivered.

In regards to the actual model, we plan to finish some final features of the model such as the return of susceptibility to the recovered population, allowing the ability for the parameters to change during the simulation and potentially improving the implementation of migration in the population model.