Abstract and Motivation

Motivation:

Food delivery has become more and more popular in recent years. Especially most people are not willing to go out when Covid-19 virus outbroke, and they tend to find alternative to join life. Food delivery platform makes it possible and provide thousands of choices. However, as an active Grab Food user, I always faced some unpleasant experiments, such as waiting too long to receive my order.

From the problem faced on daily life and interest to find why it happen, our group decided to build an Agent based Simulation model to simulate the Grab Food delivery process.

Abstract:

We aimed to simulate the procedure of food ordered on Grab Food. We used JavaScript to build the agent-based simulation model to mimic the process. In our simulation, the deliveryman is picked based on nearest distance policy and they are pre-assigned one of the three means of transportations (on car, bicycle, or motorcycle) to deliver the food from restaurants to customers. The rate of new order arrival and restaurant cooking rate are changeable. Moreover, in our simulation, the region size can be changed to mimic the effect of area segmented into different size of region. We can also change the number of deliveryman and number of restaurants to view the effect to model performance. We analysis the average time taken for the food to arrive and average service rate under different conditions.