SEN9110 Simulation Package: Assignment 3

Assignment to be carried out in your simulation package

Extend the simulation model of the supermarket with some more detailed logic for different objects:

- customers with carts can block each other in the aisles of departments E, F, and G; customers with baskets can always pass
- selection of the checkout lane is based on the length of the queue and the number of items in the carts / baskets in front of the customer who selects a checkout lane
- give the customers a walking speed that is different for each person, drawn from a distribution of triangular(2, 3, 5) km/h for customers with carts and uniform(4, 5) km/h for customers with baskets
- assume the floor space of the supermarket is 40 x 30 m
- make the server for checkout carry out a small process
    - in 5% of the cases, the cashier at the checkout has to walk elsewhere to ask for a price or to weigh an article (exactly 12 seconds) and check with the supervisor (between 30 and 45 seconds) whether the passport is okay.

Some of you might not have a version of the package that would allow you to save a model with more advanced enhancements – in that case just check in the manual and examples whether and how such features would have to be implemented and reflect on this in your slides.

Deadline and requirements

Hand in a small slide pack (5-10 slides) describing how you built the additional logic, and what features are supported in the package. Describe what was easy and what was difficult, compared to simulation package(s) that you know. Reflect on the object-oriented features of the package. Hand in the model as well. Make sure the teacher can run the model -- provide model and input files, and instructions if needed to run the model (e.g., requirements.txt for Python-based models).

The slides and model have to be uploaded Friday 4 October latest at 17:00 as an assignment in Brightspace.