Internet of Things Technology (Summer 2022)

Report on LAB 2

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- Date: 20/07/2022

1. Task Statement

1. Draw a room providing the space for customers and the kitchen.

2. Place guests tables. At least, 4.

3. Arrange guests' service area. At least 16 seats and the waiting area outdoors.

4. Arrange input customers flows by groups of 2,3 or 4 persons.

5. Create a robotic waiters. At least 2.

6. Simulate 2 delays of customers: reading the menu and then eating. This is a patch. Later, you will model the cooking process.

7. Arrange the activation of waiters after the customer have made the choice.

8. Arrange the transport of orders from the customer's table to the kitchen.

9. Run the model to be convinced the costomers' flow simulates correctly.

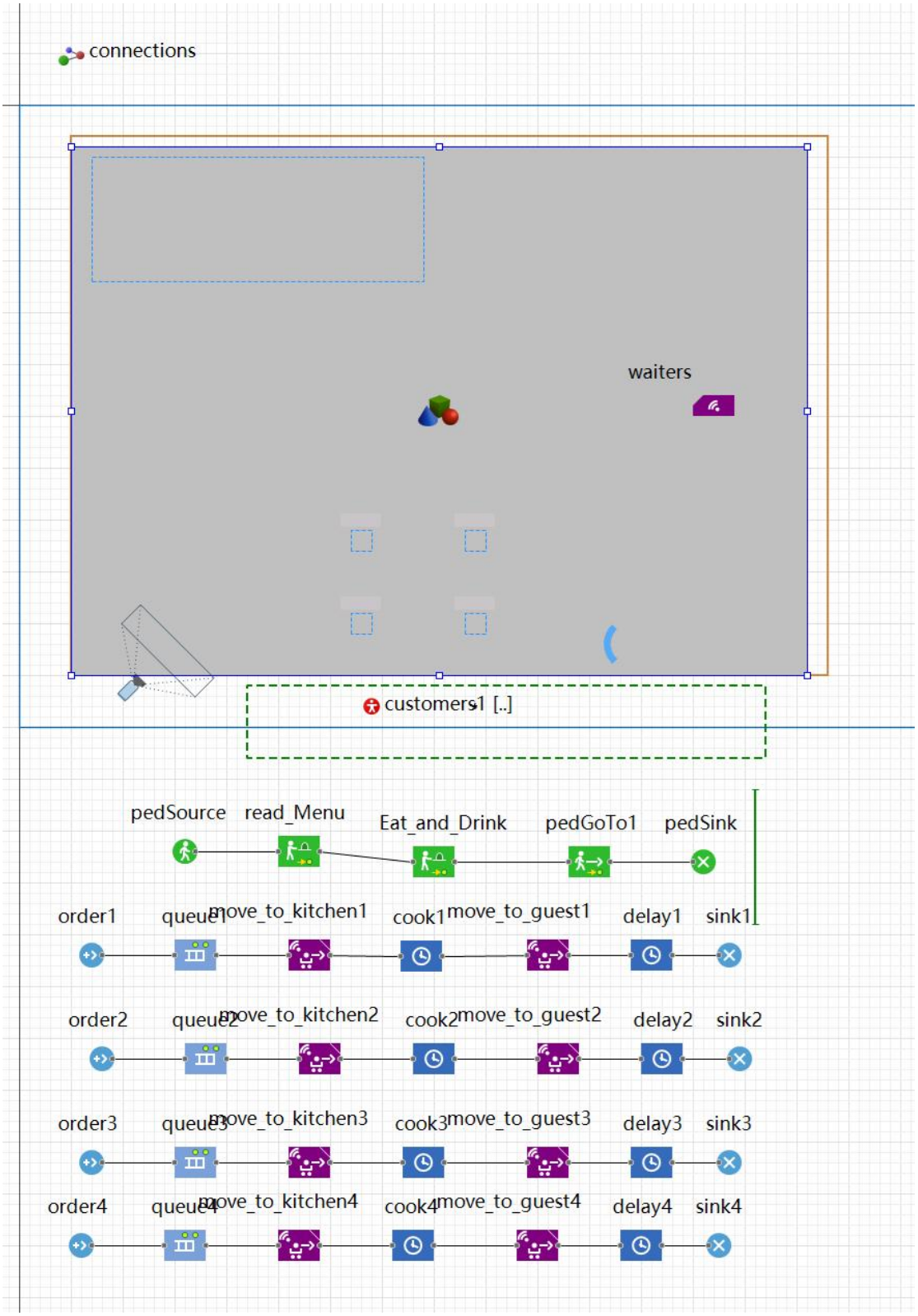
10. Write the report describing your project.

11. Send me only .PDF not .ZIP not .DOC not .ALP files.

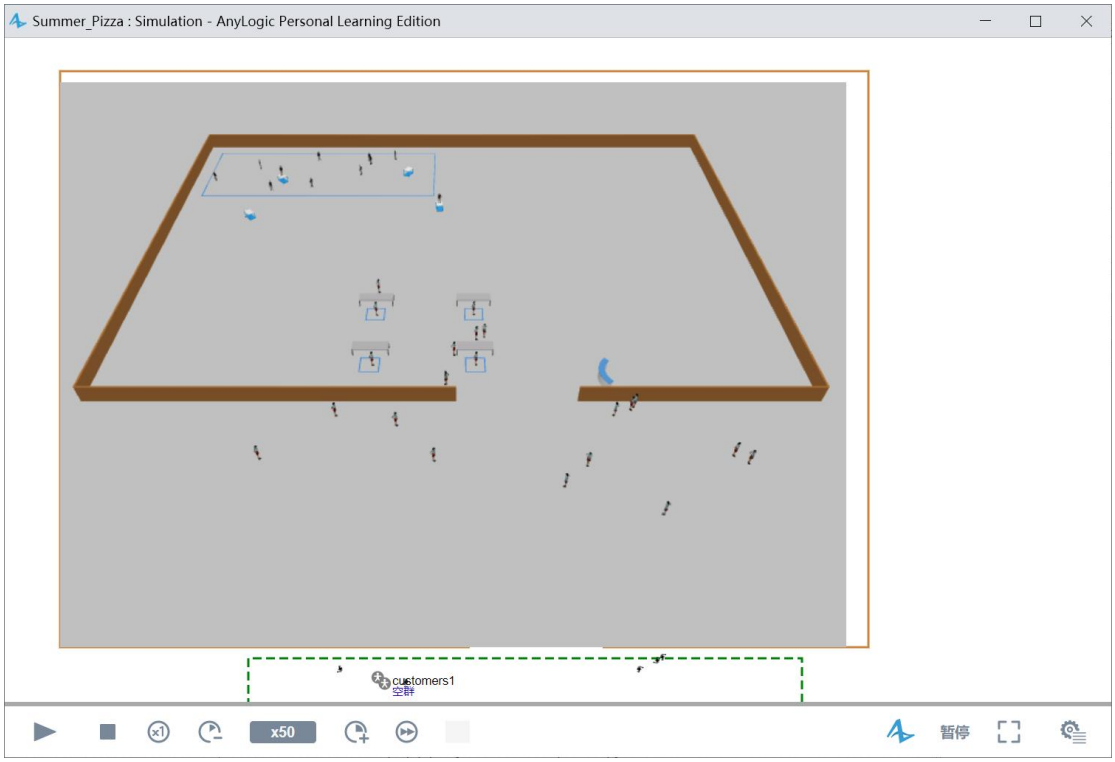
2. Environment：

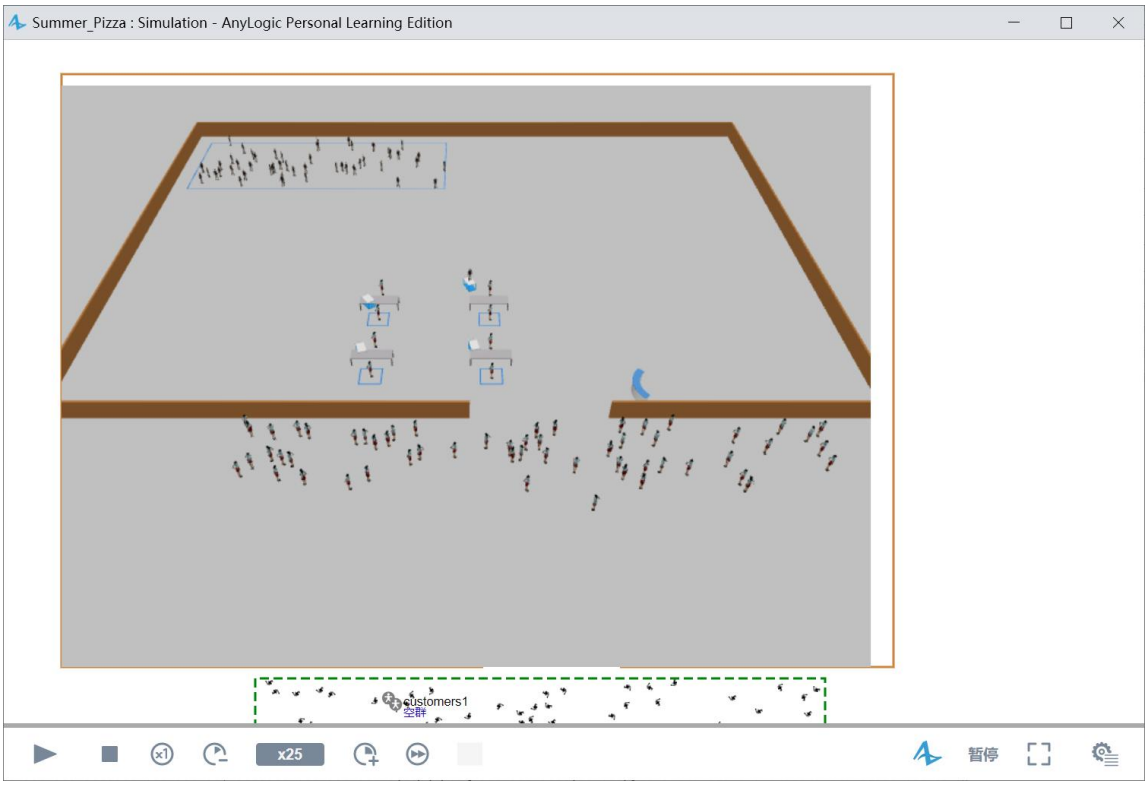
Win10, AnyLogic

3. Screenshot for lab1：

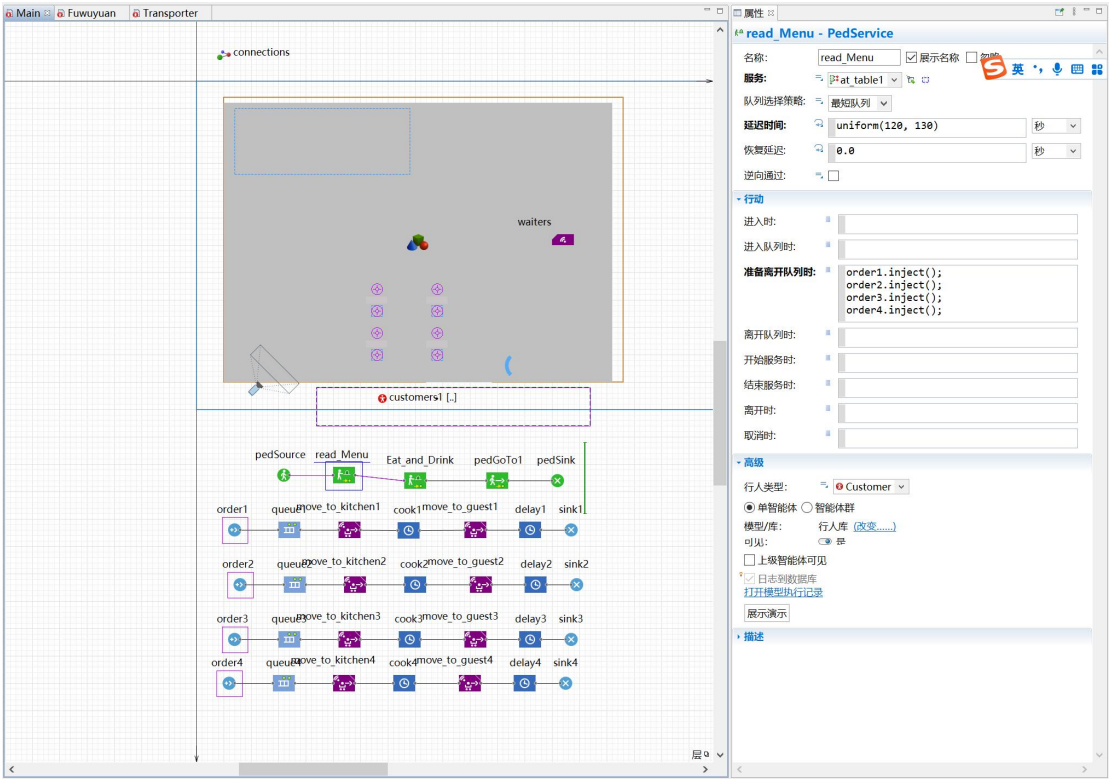


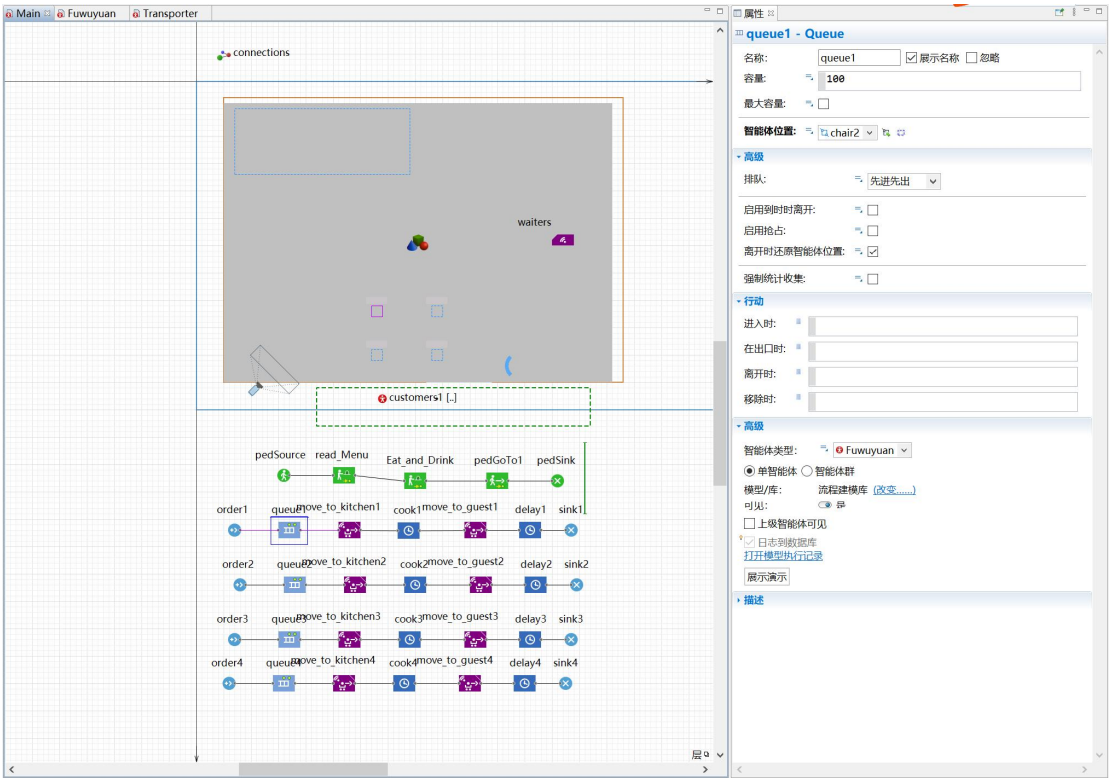
4. Screenshot for lab2：





5. Detail of Configures：


Main
Fuwuyuan
Transporter
connections
waiters
customers1 [..]
pedSource
read_Menu
Eat_and_Drink
pedGoTo1
pedSink
order1
queue1
move_to_kitchen1
cook1
move_to_guest1
delay1
sink1
order2
queue2
move_to_kitchen2
cook2
move_to_guest2
delay2
sink2
order3
queue3
move_to_kitchen3
cook3
move_to_guest3
delay3
sink3
order4
queue4
move_to_kitchen4
cook4
move_to_guest4
delay4
sink4
属性
read_Menu - PedService
名称:
read_Menu
展示名称
忽略
服务:
at_table1
队列选择策略:
最短队列
延迟时间:
uniform(120, 130)
秒
恢复延迟:
0.0
秒
逆向通过:
行动
进入时:
进入队列时:
准备离开队列时:
order1.inject();
order2.inject();
order3.inject();
order4.inject();
离开队列时:
开始服务时:
结束服务时:
离开时:
取消时:
高级
行人类型:
Customer
单智能体
智能体群
模型/库:
行人库
(改变.....)
可见:
是
上级智能体可见
日志到数据库
打开模型执行记录
展示演示
描述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delay1
sink1
order2
queue2
move_to_kitchen2
cook2
move_to_guest2
delay2
sink2
order3
queue3
move_to_kitchen3
cook3
move_to_guest3
delay3
sink3
order4
queue4
move_to_kitchen4
cook4
move_to_guest4
delay4
sink4
属性
queue1 - Queue
名称:
queue1
展示名称
忽略
容量:
100
最大容量:
智能体位置:
chair2
高级
排队:
先进先出
启用到时时离开:
启用抢占:
离开时还原智能体位置:
强制统计收集:
行动
进入时:
在出口时:
离开时:
移除时:
高级
智能体类型:
Fuwuyuan
单智能体
智能体群
模型/库:
流程建模库
(改变.....)
可见:
是
上级智能体可见
日志到数据库
打开模型执行记录
展示演示
描述

6. Summary

I arranged 4 tables for customers and for each table I arrange an array of robotic waiters, and initially the difficulty which confused me was how to arrange the activation of waiters after the customer have made the choice. Then I used “order.inject()” to solve it. Also I used two “Ped Service” to simulate 2 delays of customers: reading the menu and the eating.

The most important of All !!! This LAB reminds me that AnyLogic can be used to simulate the process of covid-19 infection and analyze the transmission speed and its possible impact. This modeling software is very practical in solving some problems in life.