



**KADIR HAS UNIVERSITY**

**COMPUTER ENGINEERING DEPARTMENT**

**CMPE 412**

**COMPUTER SIMULATION**

**LAB-PS-03**

**Simulation with AnyLogic Single Server Queue**

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**Instructor name: Albert Özkohen**

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## Task 1:

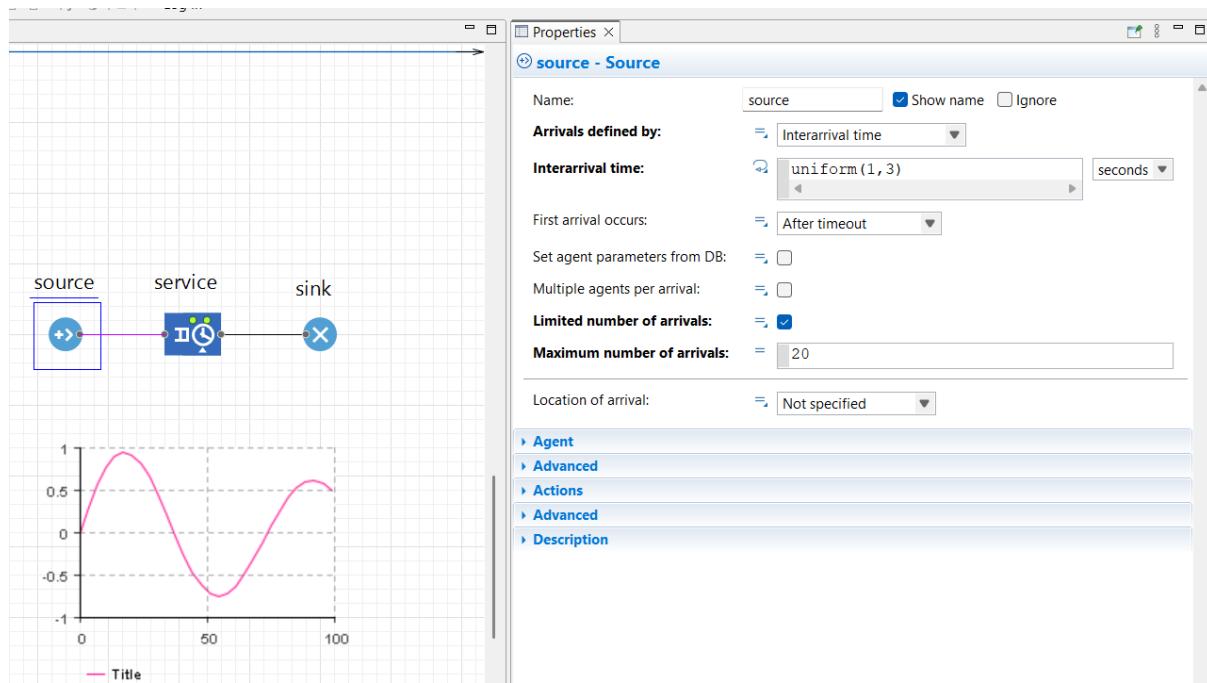


Figure 1 Source configuration for task 1

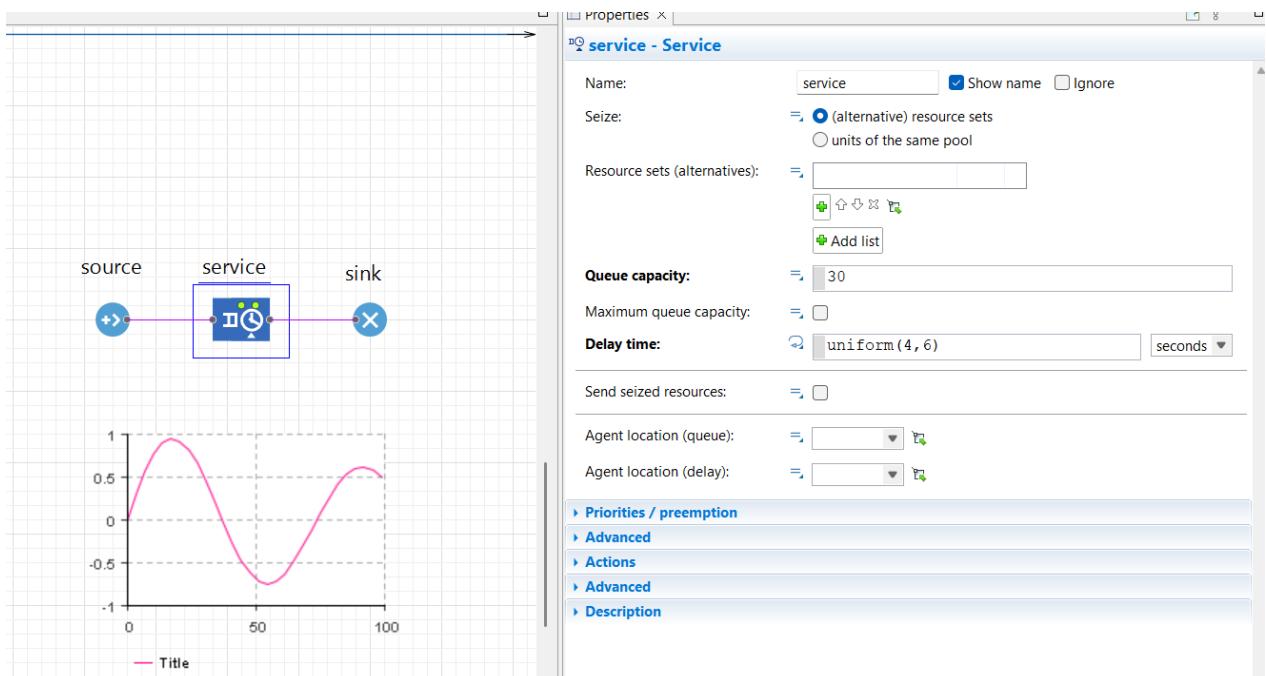


Figure 2 Service configuration for task 1

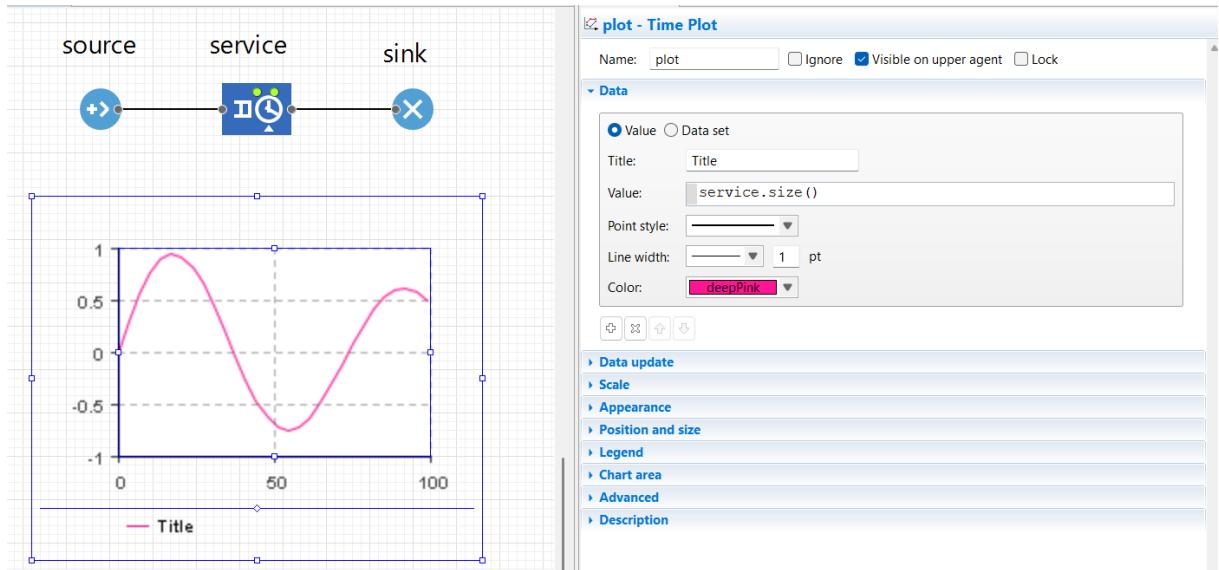


Figure 3 Time plot configuration for task 1

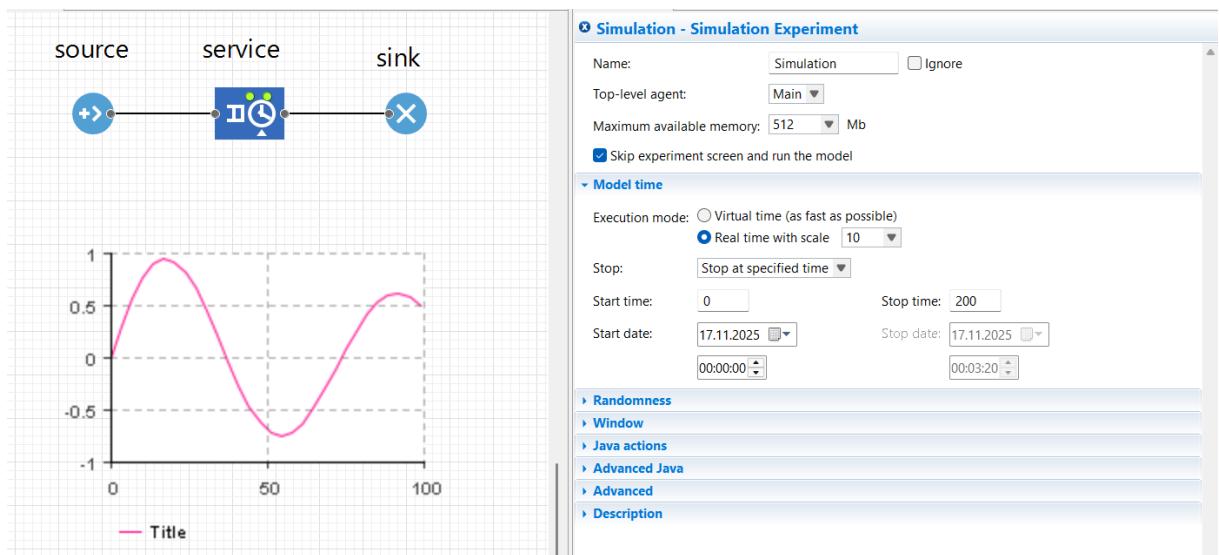


Figure 4 Simulation:Main configuration for task 1

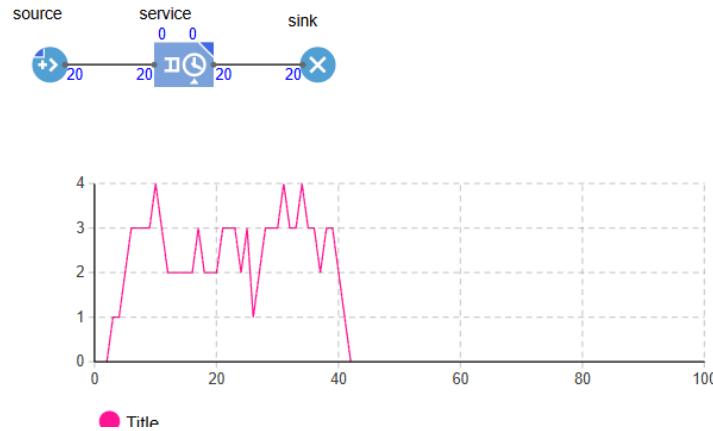


Figure 5 Service size plot for task 1

## Task 2:

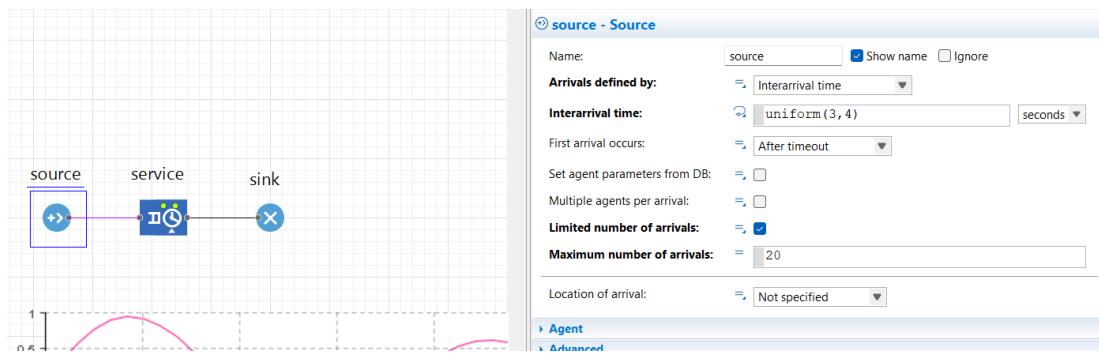


Figure 6 Source configuration for task 2



Figure 7 Service configuration for task 2

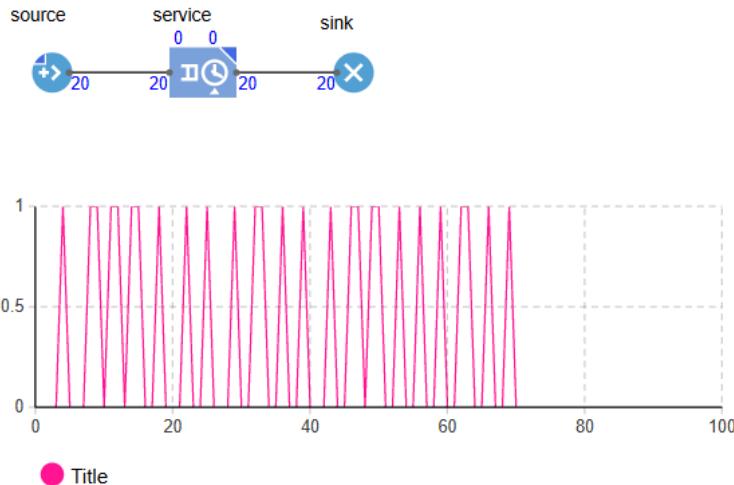


Figure 8 Service size plot for task 2

### Task 3:

The change between task 1 and task 2 is increasing average interarrival time and decreasing average service time. As a result of this, the maximum size of the service (which indicates the queue) doesn't get any bigger than one in task 2, on the other hand it was reaching four in task 1. So in short, average queue size has decreased in task 2 because both the arrival frequency has decreased and the service speed has increased.

Also the average waiting time has decreased in task 2 because the line in plot doesn't have straight phases. In task 1, it has. This indicates the customers are waiting. This is because the service delay is high.