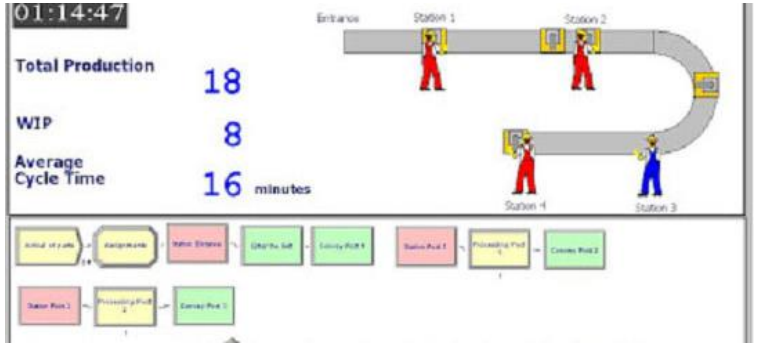
INC 364 - 2021

Production Simulation

Production Simulation Software



FlexSim problem solved.®

Arena®
Rockwell Automation

anylogic®

anylogic

INDUSTRIES PRODUCT PURCHASE RESOURCES COMPANY DOWNLOAD EN

Clients & testimonials

BRITISH AIRWAYS
Coca-Cola
intel
pwc
Ford
bhpbilliton
MOTOR HARLEY-DAVIDSON COMPANY
EY
NIKE
Deloitte.
P&G
hp
NASA
VOLVO
ROLLS ROYCE
IBM
BMW
DHL
Google
TOYOTA
AIRBUS GROUP
DB
MIURA
Rakuten
RMIT
UNIVERSITY OF CAMBRIDGE
GROHE
KAISER PERMANENTE

Terminology

1) **Entities** – anything that moves around, change status, and are affected by other entities and the state of the system.

2) **Attributes** – common characteristics of all entities, but with a specific value that can differ from one entity to another.

3) **Agents** – units of model design that can have behaviour, memory (history), timing, contacts, etc. (may refer to entities)

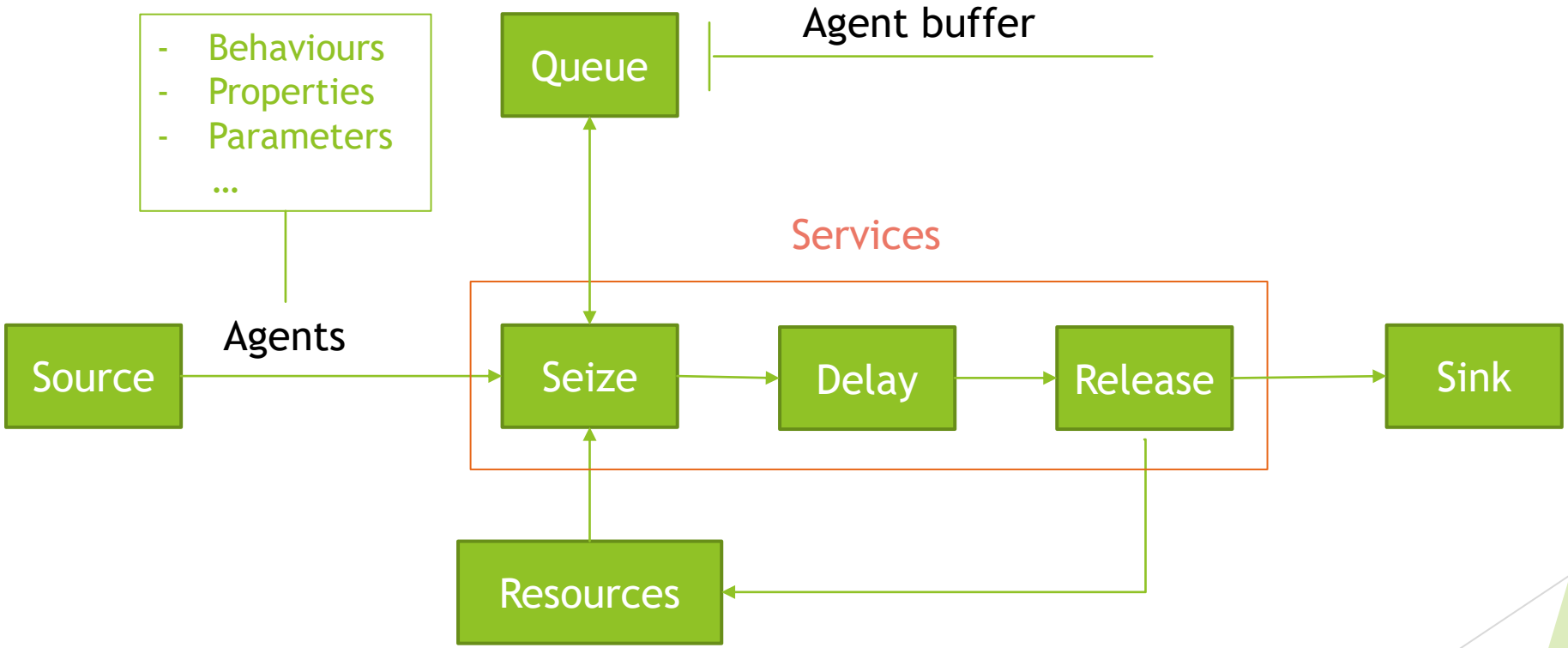
4) **Resources** – what agents complete for people, equipment, and space. There are 3 types: static, moving, and portable.

5) **Seize** – an action of agent to "seize" a unit of resource(s) when available and release it/them when finished.

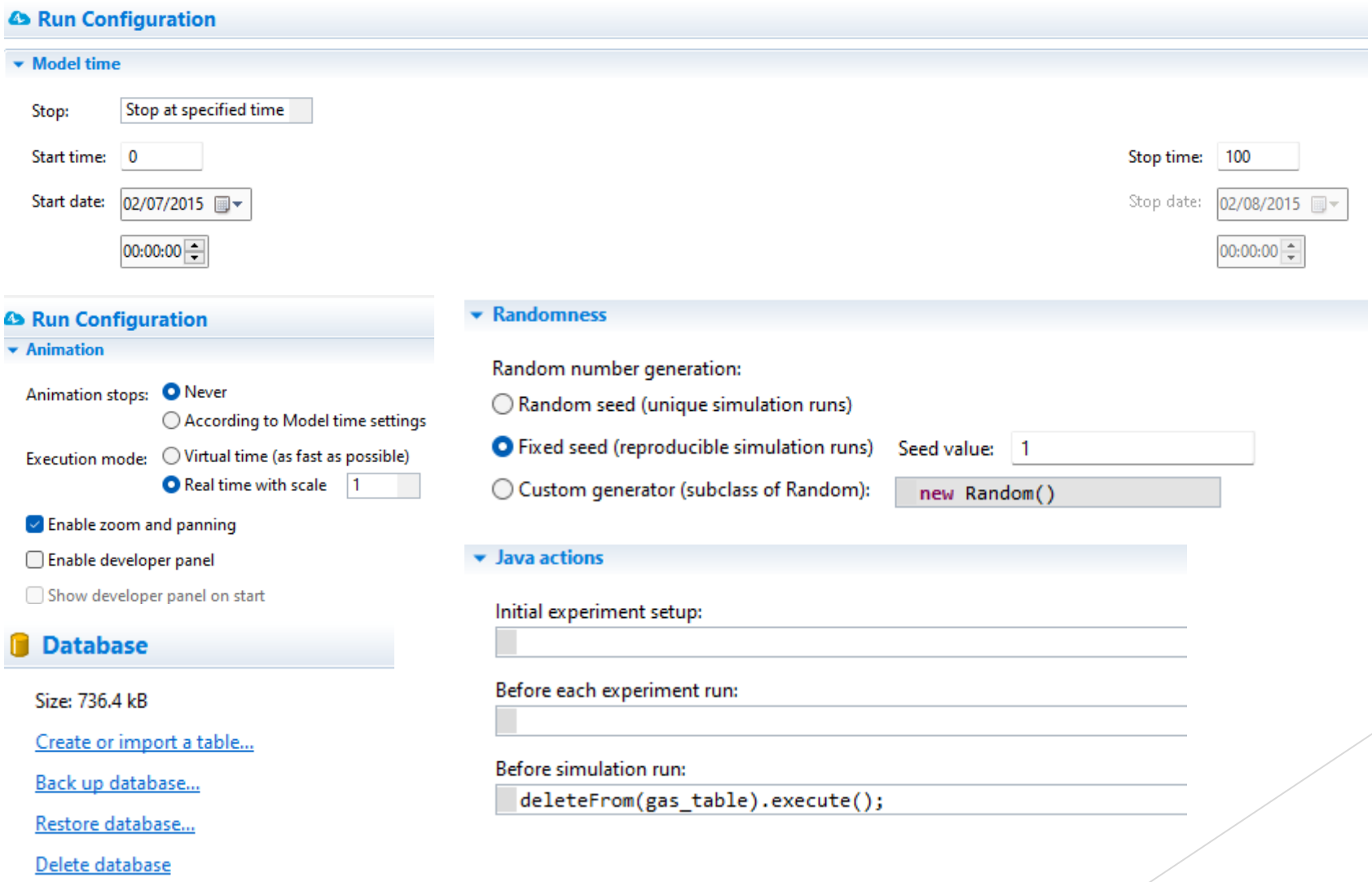
Terminology

6) **Delay –** an action to delays agents for a given amount of time.
7) **Release** – an action to release a given number of resource units previously seized by "Seize" action.
8) **Service** – seizes a given number of resource units, delays the agent, and releases the seized units. It is equivalent to a sequence Seize, Delay, Release.
9) **Source/Sink** – generates/disposes agents, respectively.
10) **Queue** – a buffer of agents waiting to be accepted by the next block(s) in the process flow.

Simple Process Simulation

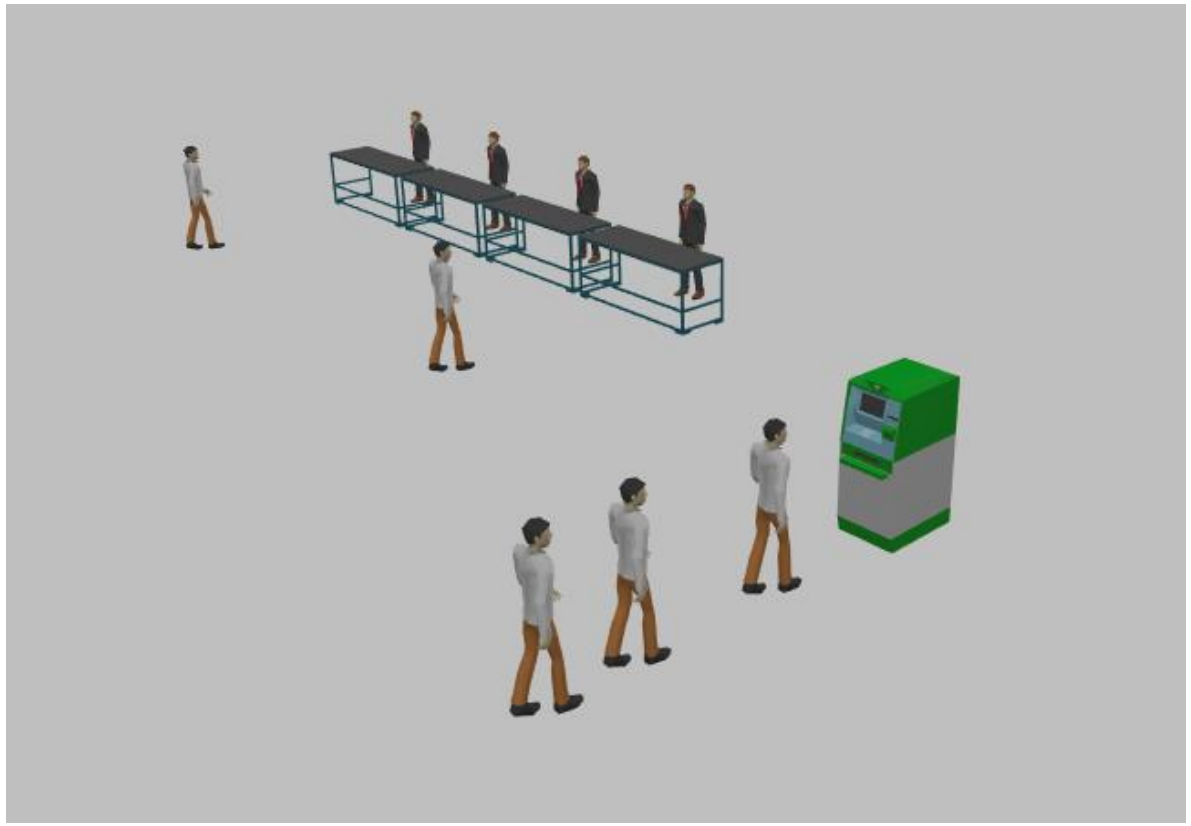


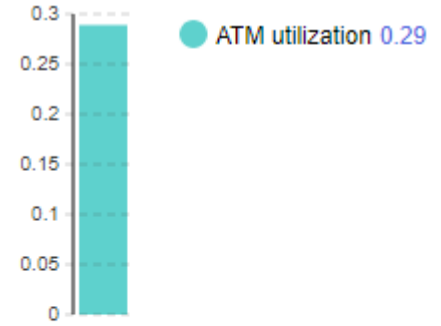
Simulation Configuration

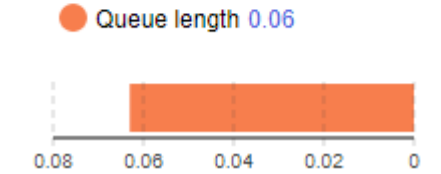


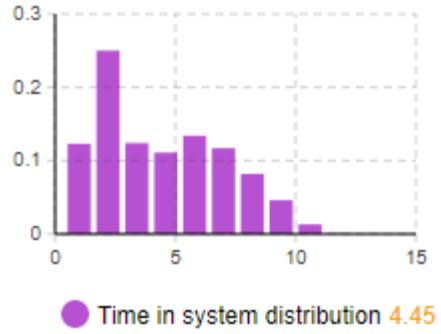
Simulation Workshop

Queuing System at Bank Office









Simulation Workshop

Queuing System at Bank Office

Customer arrive at rate 0.3 customer per minute

ATM

- One ATM
- Maximum capacity in queue: 15 people
- From the statistics report, customer take around 1.5 minutes, minimum at 0.8 minutes and maximum at 3.5 minutes.

Teller

- Four tellers that are working in the bank
- Maximum capacity in queue: 20 people
- Minimum of 2.5, average of 6, and maximum of 11 minutes.