



SE@M SimTool

Discrete Event Simulation

Aviv Elazar-Mittelman
Sofie Gonzalez
Thong Do

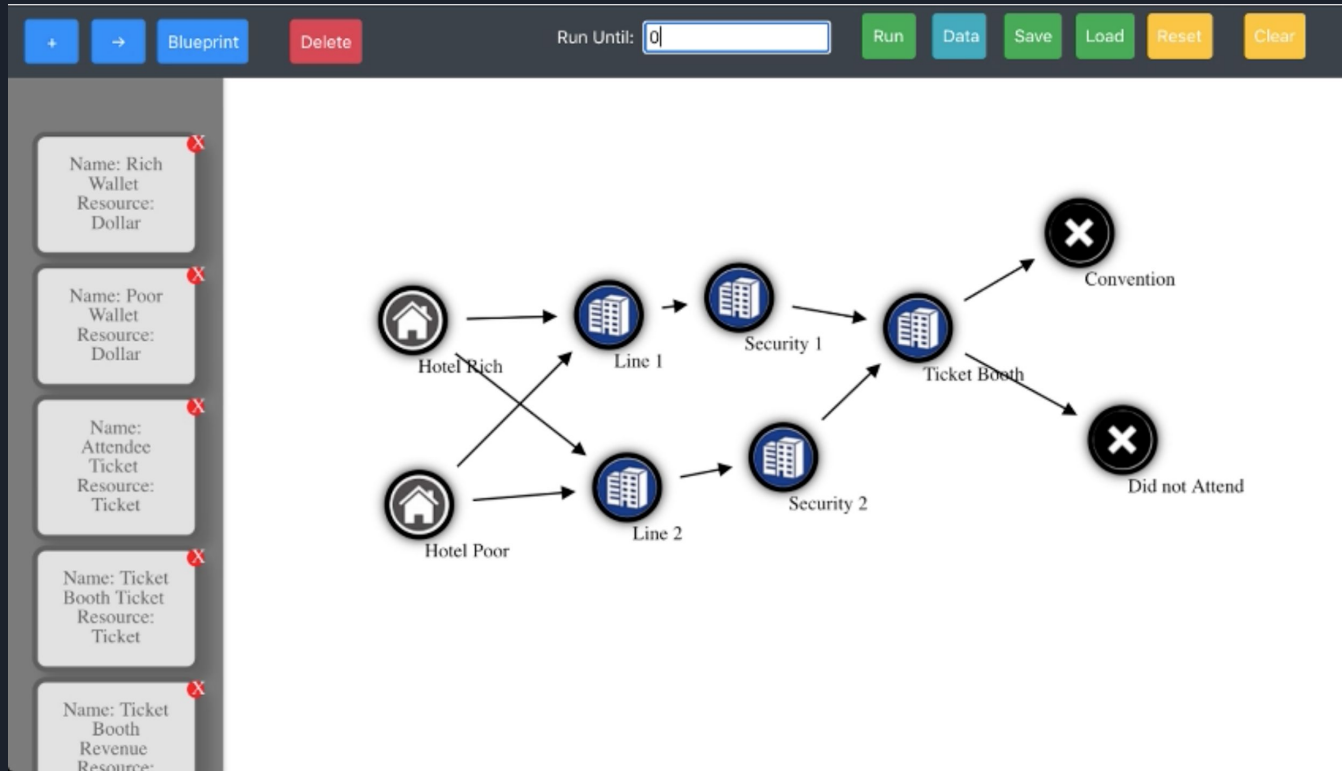


Project Summary

SimTool is an open-source discrete-event simulation tool built for small organizations and businesses to simulate potential scenarios in their workflows and make meaningful decisions

Quick way to simulate events, actions, assembly line

User Interface



Simulation Components: Nodes

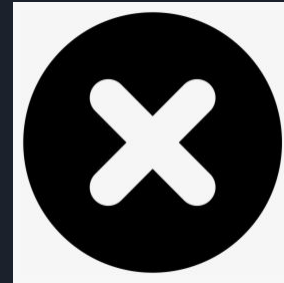
- Start Point - Where entities enter into the simulation like people and material
- Station - Where events or actions can occur
- End Point - Final destination for things traveling through the simulation



Start Node



Station Node



End Node



Containers

A holder for a specific type of resource. Can hold up to a specific quantity or be of unlimited size. Any station or entity can hold a container.

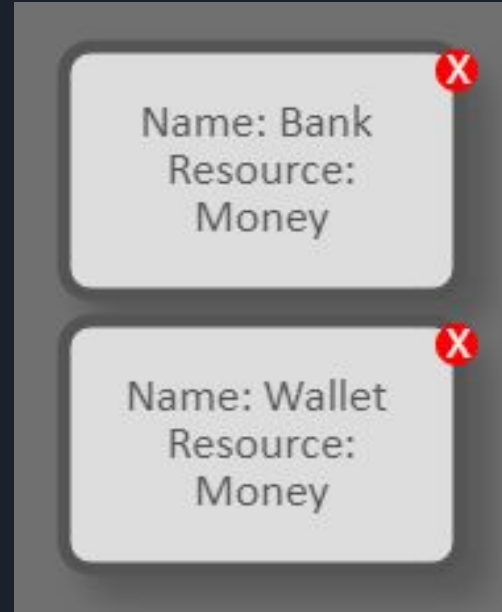
Ex. A ticket booth will have a money container to hold their revenue.
Convention attendees would have containers representing their wallets.

Blueprints

Blueprints are used to quickly create containers with the same settings.

They can be assigned as many time as user want to the start and station nodes

Two nodes can use the same blueprint to make two different containers



Logic

To control the behavior of each point in the simulation, conditions and actions can be added.

Conditions can verify a list of requirements to decide where entities should go.

Actions can move resources between containers.



The screenshot displays a user interface for configuring logic. At the top, there are three blue buttons: 'Edit Logic', 'Add Condition Group' (which is highlighted with a black border), and 'Add Action Group'. Below these, there are two more blue buttons: 'Add Condition' and 'Add Action'. The main section is titled 'Add Condition Group' in a bold black font. Under this title, there are three labels: 'Group Name:', 'Pass Path:', and 'Fail Pass:'. Each label is followed by a form element: a text input field for 'Group Name:', and two dropdown menus for 'Pass Path:' and 'Fail Pass:'. Both dropdown menus show 'Select...' as the current selection and have a downward arrow icon. At the bottom of this section is a blue button labeled 'Create Group'.



Demo of the Simulation

This simulation will simulate different attendees of a convention

Two category of entities:

- Wealthy
- Poor

Assumption:

Wealthy people are more willing to enter the convention even if price is high but there is a chance they they will not attend

Regular people may enter convention even if price is high but there is a lower probability of entering than wealthy people