Assignment 1

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Create a Basic Festival with Stores

- Create a project that simulates a festival where Guests (Agents) get hungry or thirsty. If they do, they should go to an Information Center (Agent) to ask for the nearest Store (Agent) that gives them what they need. Afterward, the Guests should simply keep doing something until they get hungry/thirsty again.
- Create 3 types of agents for the festival simulation.
- These types should be Guests, Stores and an Information Center
- Make sure they look different (shape, color)
- Add them to a simulation and make them interact with each other according to description
    - See the "Deliverables" section on Canvas.

Create a Basic Festival with Stores

X1,Y1

X2,Y2

1. Guest:Hmm.. I'm thirsty! Where should the next juice bar be?

2.
Information: Hungry or Thirsty ?
Guest: Thirsty!
Information: Ok, go to {X2,Y2}

Goals

- Introduction to the Gama platform
- Working with agents
- Learning the GAMA syntax
- Creating different types of agents
- Starting basic simulations
- Little bit of movement and behaviour

Extra Effort and Challenges!

- This assignment has two challenges!

Challenge 1: Memory of Agents - Small Brain

- When an agent visits a shop, they will remember the position. However, sometimes they would like to discover new places as well. Implement a small memory in agents so they will remember places they have been to (make his actions randomized).
- Extra - Implement this logic and compare distance traveled.
- Hint: Track distance traveled of agents with and without the brain and report on if this reduces the total distance traveled.

1 point is awarded for clear demonstration of this

Challenge 2: Removing Bad Behaviour Agents

- There are always bad apples at festivals. Some are noisy, some steal and some are just looking for a fight.
- Create a scenario where an agent should be removed (killed) from the festival.
  - Hint: Agents are removed using the die function.
- Create a new agent, Security Guard, that is able to do so.
- The only way of this happening, is that another guest reports bad guuest to Information center.
  - When the bad guest is reported, Information center calls for the Security Guard and tells him who the bad behaving actor is.
- Once the Guard reaches the agent, he should kill him. (Brutal, but that's life in the agent world!)

1 point is awarded for clear demonstration of this

Deliverables

•A continuously running simulation with:
- •1 Information center (agent)
- •+10 Festival guests (agent) with at least two attributes (THIRST and HUNGER)
- •+4 Shops (agent) with at least two different traits (FOOD and WATER)

•At some point, each guest must replenish an attribute (Hint: An attribute could simply be a float/int that is decreased by some condition.)

•Guests know the location of the information center by default

•Guests must communicate with the information center for directions to shop (Hint: Use the ask function when the center is in range)

•When guests arrive at the store location, they replenish the attribute. (Hint: Set the float/int value back to the original value)

•When replenished, they go back to being idle/doing something else until they get hungry or thirsty again.

•**Report template** is in the Assignment module.