Exercise 1.
Implementing a first Application in RePast: A Rabbits Grass Simulation.

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1 Implementation

This section describes the main assumptions that were made in order to implement the simulation described on the Moodle.

1.1 Assumptions

1.1.1 Implementation of grass and of it's growth

There can be either 1 or 0 unit of grass per cell. Initially the model is initialized with a user-set *NumInitGrass* (default 100) number of grass cells. Then at each simulation tick *GrassGrowthRate* (default 50) units of grass are added to empty cells if possible. This value is user defined and modifiable throughout the simulation.

1.1.2 Implementation of the movement of Rabbits and of collisions

At each tick each alive rabbit tries to move to a random cell picked among the 4 cells adjacent to it's location. If it tries to move to a cell where another rabbit is present, if the cell is empty it moves to it, if it is already occupied it doesn't move for this turn. Regardless of whether it actually moved or not the rabbit loses 1 energy unit per tick.

1.1.3 Implementation of feeding, energy and reproduction

Each rabbit has an energy value $e \in [0, 20]$

1.2 Implementation Remarks

2 Results

2.1 Experiment 1

2.1.1 Setting

2.1.2 Observations

2.2 Experiment 2

2.2.1 Setting

2.2.2 Observations

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2.3 Experiment n

2.3.1 Setting

2.3.2 Observations