

Exercise 1.

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

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1 Implementation

1.1 Assumptions

On top of the directions given in the exercise, our assumptions are the following :

1. Only one grass can occupy a tile.
2. Only one rabbit can occupy each tile.
3. Grass can grow on a tile already occupied by a rabbit.
4. If a rabbit is surrounded by rabbits, it simply does not move. The rabbit still has the chance to eat grass or reproduce if possible.
5. The grid is a square, so only one dimension is required.

1.2 Implementation Remarks

Here are some remarks concerning the way the simulation was implemented :

1. Eating grass increment the amount of energy of the rabbit by XXX.
2. At birth, rabbits have XXX energy.
3. Each rabbit loses XXX amount of energy per step
4. Birthing a rabbit takes XXX energy.
5. When a rabbit has enough energy to give birth but there are already too many rabbits in the space, then XXX
6. We cannot set the number of rabbits as higher than the total amount of tiles on the grid. Trying to do so informs the user that it can't be done and the last valid value is used.
7. We cannot set the growth rate of the grass as higher than the total amount of tiles on the grid. Trying to do so the user that it can't be done and the last valid value is used.
8. The simulation will stop if : xxx

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