Agent-based modelling of complex systems

Assignment 4

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Implement the original Nagel-Schreckenberg model of freeway traffic (`https://en.wikipedia.org/wiki/Nagel-Schreckenberg_model`).

1. Run the model for different probabilities p of slowing down.
2. Plot the average velocity as a function of the density ρ of cars per cell for different values of p.
3. Visualize the evolution of the system for $p = 0.3$ and $\rho = 0.1, 0.2, 0.6$.
4. (optional) Add a second lane (in the same direction) to the model and a rule that allows overtaking. Compare the results for the average velocity with the previous case.