1 Boids flocking model - till 24.01.2025

The aim of this project is to create a visualization of the Boids flocking model, developed by computer scientist Craig Reynolds in 1986. This model simulates the coordinated movement of birds in a flock and has been used in various computer games and films. We will not gather data or perform any computations. We will simply create a visually appealing animation. The model is based on three simple rules:

1. Collision Avoidance: avoid collisions with nearby flockmates
2. Velocity Matching: attempt to match velocity with nearby flockmates
3. Flock Centering: attempt to stay close to nearby flockmates

You can learn more about the model from the original paper https://team.inria.fr/imagine/files/2014/10/flocks-hers-and-schools.pdf. You can find several implementations of this model on GitHub. The model is also implemented in NetLogo - check "Flocking" in Models Library link.

Implement the model yourself and check the following:

1. What happens if you change the order of 3 rules given above. What is the "correct order"? Is it possible to answer this question?
2. What happens if birds can only see in front of them and what if they see all around them?