

Description

In this project, I wanted to make a visual representation of the Boids behavior, which is depicted in this youtube video <https://youtu.be/bqtqltqcQhw?t=83>.



This behavior which is sometimes called the flocking behavior, simulates how individual birds behave in a flock. In the image above the triangle shapes represent individual birds. Each “bird” follows three simple rules which dictate what direction it moves in:

1. Avoidance - birds should avoid each other such that they do not collide with one another.
2. Alignment - birds, should try to orient themselves so that they are facing the general direction of the flock that they are in
3. Cohesion - birds, should try to converge to the center of neighboring birds which will cause groups of birds to stick together (creating flocks)

These three simple rules combined together can result in complex and seemingly intelligent behavior by each bird.

Evaluation

It seems that the longer I run the simulation for the large the flocks of the birds become and eventually resulting in one extremely large flock of birds. In addition, the birds seem to prefer to fly towards the edge of the designated area. This is most likely caused by the various weights I set for each rule that the flock follows.

Controls

To visualize each behavior (Avoidance, Alignment, and Cohesion) or any combination of the three behaviors, simply use the three toggles located at the bottom right of the screen.