EGP-410 Assignment 3 – Flocking Project

Professor Dean Lawson

Due 1st meeting of week 5 – start of class

Implement a flocking simulation.

- Use your codebase from assignment 2.
- Implement a Cohesion steering behavior
- Implement a Separation steering behavior
- Implement a Group Alignment steering behavior
- Implement a Flocking steering behavior
- Combine the various steering behaviors to implement the "flocking" simulation as first described by Craig Reynolds. See: http://www.red3d.com/cwr/boids/ for further explanation from Reynolds himself.
- Requirements
    1. Start with no Boids
    2. 'A' key adds 10 "Boid's" which immediately start running the flocking behavior
    3. 'D' removes a "Boid" (you may choose which one to remove)
    4. 'ESC' quits the program
    5. Make sure you are still using anInputManager/MessageManager. Enhance as needed.
    6. Create the 4 steering behaviors listed above (Cohesion, Separation, Group Alignment, Flocking) as separate classes.
    7. Use the Weighted Blending algorithm inside the Flocking steering to create the steering output
    8. Tweak any parameters to get believable flocking behavior – Tweaking must be able to be done while the simulation is running and the values must be able to be saved to a file for reuse
- Grading
    - 40 points total
        - 4 Points – following coding standards
        - 4 Points – uses good OOP Architecture
        - 3 Points x 3 =9 Points total – Cohesion/Separation/Group Alignment steering behaviors
        - 8 Points – Flocking steering including implementation of the Weighted Blending algorithm

- 6 Points – Ability to tweak parameters while game is running and save them for reuse
- 4 Points – Interim check-in
- 5 Points – Behavior resembles what we are trying to simulate – a flock!