Criteria E Evaluation

Success Criteria

- The simulation approximates an ant colony by a biology-inspired algorithm
    - Behavior is not directly coded, but is an emergent property of the system
- The user is able to modify the state of the simulation directly by:
    - Adding obstacles
    - Removing objects
    - Adding pheromones
- The graphical representation is clear
    - Represents the state of the array simply and directly
    - The pheromones are represented using an alpha scale for more precise visualization.
- Error checking
    - The simulation rarely stops randomly due to errors with Java's concurrency algorithms.

Recommendations

The client stated that even though the product helped him understant ant's behavior, its size was not big enough or the parameters not as precisely tuned as to allow for a more effective solution. This was because the ant's path did not always converge, and takes a long time to do so. However, given the main algorithm improvements in this area are not straightforward, aside from making some ants behavior determnistic by always following the strongest path or something similar. I would also like to implement more features for user interaction, mainly for controlling the program's arbitrary values, such as pheromone deposition and evaporation. This could be done by importing and implementing an existing Processing GUI elements library.

Word Count: 219