**Team 7, Project 2 – Instructions for Use**

By Tyler Coppenbarger, Kat Weiss, and Chris Schiff

**How to Start**

To begin, run the executable file. The A\* and Flocking demonstrations run simultaneously. Press enter to navigate between the different camera views.

**A\***

The A\* demonstration starts waiting for user input as soon as the executable starts running. While in the top-down camera view, click on a point on the environment, and the path follower will use A\* path following to navigate to the nearest point on the graph.

**Flocking**

Flocking begins immediately on startup. The flockers begin on the small island with the houses and then cross the bridge, head to the mine, cross the second bridge, enter the forest, return to the mine, and then make their way back to the beginning island. Press 1, 2, and 3 to toggle the cohesion, alignment, and separation forces, respectively.

**Bottlenecking**

Bottlenecking, or crossing a bridge in our simulation, begins once a single flocker makes contact with a bottlenecking hitbox. Flocking then stops and bottlenecking controls take over. The bottlenecking controls send each flocker through the bottleneck, one and a time, and make them finish in the same organization as they began. After every flocker has passed the bottleneck, flocking restarts and the flock can move on to the next point. A\* flocking is simply handled through node placements and isn’t really bottlenecking since there is only one character.

**Bottleneck Issues and Resolution**

Initially we had trouble having agents have the correct height when moving across bridges. The problem was that we were just using the terrain height method to set the height during bottlenecking, but the agents kept going in the river below because the bridge is not part of the terrain. We solved this by just arbitrarily setting their heights to the bridge’s height during bottlenecking.