

Better Tower Defense – Milestone 1 Evaluation (September 30th)

Student: Jacob Dufault (jacobdufault@gmail.com)

Faculty sponsor: Professor Bernhard

Progress Matrix

Task	Completion
Requirements Document	100%
Design Document	100%
Test Plan	100%
Implement Entity System	100%
Implement networking mode; local host discovery and connection; connect to arbitrary IP address	100%
Implement unit spawning and waves	100%

Task Summaries

Requirements Document, Design Document, Test Plan

Documents completed and written.

Entity System

Involved implementing core technology that underlies all gameplay code. Required interfacing with networking logic so that everything is correctly synchronized across the network. Key features are update-order independence, uniform initialization and deinitialization of objects, and being able to diff the previous state of world with the current one (and listen for diffs).

Integration of testability is currently being investigated, but due to performance requirements the system as a whole is tightly integrated with itself (though external APIs are clean).

Networking

Implemented lock-step networking model (with a FP emulation module – the CLR/Mono does not support ‘strictfp’ ala the JVM or forcing FPU compliance with IEEE 754 (disabling 80bit temporary values)).

Also implemented LAN host discovery and a basic chat system.

Also introduced structured user input via the networking message system.

Unit Spawning and Waves

Introduced simple spawning of units. Primarily useful for testing the entity system to validate unit construction and initialization systems. Allows for spawning of a set of waves, where each wave consists of an ordered group of units. Waves control the duration between spawns, and the duration between each wave is controllable.

Next Milestone

Title	Summary
Implement locomotion	<p>If pathfinding is the process of finding a path between two nodes on a graph, then locomotion is actually navigating that path.</p> <p>Locomotion will likely use a boids-like approach (aka navigating based on a set of attractions and detractions, and then moving in the most attractive direction).</p> <p>Due to the nature of the game, paths do not need to be generated at runtime and can be specified by the designer.</p>
Implement effects	Effects are tricky because a good model needs to be designed that allows for a dependency model to be generated with minimal work.
Implement building placement	Allow for buildings to be placed on selected “buildable” areas. No resource management system yet, so resources cannot be deducted. Requires that buildings are able to be defined; potentially includes building upgrades.

Sponsor Feedback

Signature and Date: _____

Feedback:

Sponsor Evaluation – Better Tower Defense – Milestone 1

Jacob Dufault

Score (0-10):

Signature & Date: