

Better Tower Defense – Milestone 2 Evaluation (October 28th)

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Faculty sponsor: Professor Bernhard

Progress Matrix

Task	Completion
Implement locomotion	100%
Implement effects	100%
Implement building placement	100%

Task Summaries

Locomotion

Units can follow paths. Paths are hand-made and consist of a series of waypoints. Despite the nature of the game being 3D, all gameplay is done in a 2D XZ plane (with Y pointing towards the sky), so paths only consists of XZ coordinates.

Path finding is implementing using a very simple boids-like approach. The only weight mechanism is the force that points towards the next path waypoint. Dynamic obstacle avoidance can be added later via adding a force that points away from nearby enemies.

Effects

The data model for effects has been designed and implemented. Fundamentally, effects are solving multiple problems; each problem has a good solution. Breaking the problem up into this manner allows for a more elegant overall solution.

First, effects provide changes to the properties of a unit; for example, an effect can modify the fire resistance of a unit. An oil effect would decrease the fire resistance. An effect can also modify the properties of a unit over time.

Second, combinations of effects trigger events. Events are explicitly declared; for example, an event trigger reacts when both a FireEffect and OilEffect are active. It creates an explosion event on the unit, which decrements the health of the unit based on its fire resistance.

Building placement

Towers can be placed on a grid. The grid is split up into a set of grid items which can each contain exactly one tower. The grid items are hexagonal, but are not laid out in any particular grid; instead, the designer can place “groups” of hexagonal grid items together.

This allows for an extremely flexible grid system; there is no global grid, only instead regions of grids, or regions of buildable areas. This allows for very flexible control during content creation.

Next Milestone

Title	Summary
Implement resource system	The resource system innovates in regards to not allowing some players to quickly gain a runaway lead in resource acquisition. Resources will be acquired by building a small base. For example, the player can build a <i>mine</i> to acquire resources, and a <i>blacksmith</i> to mine resources from the mine faster. Building a <i>library</i> can further increase productivity, and perhaps even allow for certain tower updates to be unlocked or allow for research towards powers.
Implement power system	The power system ties directly into the effect system. Powers are essentially effects that the player can trigger directly that impact a region of the map. The power system requires that resources be implemented, as triggering them will require resources.
Implement level types	A number of level types are going to be implemented, such as endless, waves, and attack. In essence, the level type describes the way that level is going to be played; for example, will it be cooperative with your friends or against your friends? More fundamentally, the level type most controls how spawning is controlled. For this reason, level types are going to closely integrate into the spawning systems.

Sponsor Feedback

Signature and Date: _____

Feedback:

Sponsor Evaluation – Better Tower Defense – Milestone 2

Jacob Dufault

Score (0-10):

Signature & Date: