

## **Game Overview**

This will be a tower defense game of sorts, in which the player will construct towers between rounds of enemies. However, enemies will not follow a set path, but will pursue the player through the level. The player, however, is unarmed, and must therefore rely on the towers they built between rounds to defend them. Ideally, there will be several tower types, time permitting. There will be no more than three tower types:

- Targeted Tower: fires projectiles at single targets
  - Upgrades could include hitscan lasers, damage-over-time effects or triple shot
- Splash Tower: blankets areas with fire. Could be a flamethrower-like line or cone, an explosive projectile or radial bursts.
  - Upgrades could include cone-fire, radial-fire or line-fire patterns
- Healing Tower?: Time permitting, a tower that can periodically spawn health pickups for the player.
  - Upgrades could include expanded item drops such as speed boosts, defense boosts and defensive mines.

Towers can be upgraded to increase their stats, such as making them shoot faster, deal more damage or have unique abilities.

There will likely only be a single kind of low-health enemy that spawns in swarms. This should make it easier for the player to avoid enemies without having to worry about special abilities of individual enemies, as well as enable the game to be put into an endless mode if desired. Enemies may have a randomized size to visually differentiate members of the swarm. Size may also affect health and speed.

## **Win Condition**

Player survives all waves of enemies. I will likely include only 5 waves for testing purposes, though I would like to create this game with an endless mode in mind, so I will likely include an option to continue after the required first 5 rounds have been completed.

## **Lose Condition**

Player dies before 5 waves have been completed.

## **Player Actions**

- Interact (Construction Phase) - open the interaction menu for an adjacent plot
- Build Tower (Construction Phase) - construct a new tower in an open plot
- Destroy Tower (Construction Phase) - destroy a tower occupying a plot
- Upgrade Tower (Construction Phase) - improve an existing tower
- Repair Tower (Construction Phase) - if implemented, repair a damaged tower
- End Turn (Construction Phase) - end construction phase and bring in a wave of enemies
- Move (Survival & Construction Phase) - move the player controller

## **Goals**

- Build towers
- Upgrade towers

- Earn resources to upgrade towers
- Defeat minibosses?

## **Inputs**

- Move - WASD/Arrow Keys or Point-and-click
- Interact - Left Click plot or press Space while next to a plot
- Close Interact - Left Click outside of plot interaction menu or press any key
- Build Tower - Left Click tower icon in plot interaction menu
- Destroy Tower - Left Click destroy icon in plot interaction menu
- Repair Tower - Left Click repair icon in plot interaction menu
- Upgrade Tower - Left Click upgrade icon in plot interaction menu
- End Turn - Left Click the End Turn button or press Q
- Pause/Unpause - Click Pause/Unpause button or press Escape
- Quit Game: Click Quit button in pause menu
- Restart Level: Click Restart button in pause menu
- Mute Music - Click Mute button in pause menu or press M at any time

## **Theme**

The game will have a sci-fi survival theme. The player, stranded, will be fending off hordes of alien bugs to buy time for them to escape. The single-target towers could be gun or laser turrets, while splash towers could be flamethrowers, lightning guns or mortars. Enemies will be small, swarming insectoids

## **Additional Mechanics**

The special ability upgrades mentioned earlier, such as altering the way a tower attacks, will be considered additional mechanics, and will be low priority until other mechanics have been implemented.

Time permitting, the game may also include wave bosses that can attack towers directly. These wave bosses could keep the game interesting at higher levels, as players would have to struggle to not just build and upgrade towers, but keep existing towers repaired in the late game. If implemented, this also introduces a secondary lose condition, in which a player may lose if all their towers are destroyed.

## State Machine Diagram

### Necessary States

- MainMenuState
- InitializationState
- PlayerTurnState
- TowerMenuState
- AITurnState
- GameEndWinState
- GameEndLoseState
- PauseState

