

Home, Safe Home Design Document

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Abstract: Game where the player reinforces and protects their home from the elements and invading forces through careful planning and resource management.

Win/Lose Conditions:

The player loses when the houses Hit Points reaches (or passes) 0. The game doesn't have a discrete win condition though. Instead it is an endless game that scales up difficulty each round; therefore the player gets a final score equal to the number of waves they survived. The final score will also include how many resources the player had at the time of losing.

Main Game-Loop:

1. Player reads weather info and asses data/resources
2. Player builds components and reinforces house for incoming wave
3. Player fights the elements and tries to survive
4. Player earns resources
5. Return to step 1

1) Player reads Weather info and asses data/resources

- When player is assessing the info for the next wave, the GUI should show: Weather forecast for next round, resources available to spend, and a list of items that can be built to reinforce home.

2) Player builds components and reinforces house for incoming wave

- Player can purchase 3 kinds of reinforcements: Fence, Insulation, and Components
- Reinforcements are built by using up a singular resource that the player stockpiles while playing and completing waves.
- A fence (cheap-with growth) surrounds the house and provides the first layer of defense; it is in a fixed position around the house. Each round, the each enemy unit moves in a straight line towards the house (from their random spawn location). The fence stops them and forces them to destroy that section before even reaching the house; it has no health bar, instead it takes 3 hits. A player can choose to pay to repair the fence all at once (and gets 30% more expensive each time they purchase it).
- Insulation (expensive) You can get insulation for each weather type. It makes the house and components immune to any passive damage that comes from that weather for 3 waves. The insulation cannot be changed until 3 waves pass; they also cannot stack.
- Components (normal cost) are defense attachments that grow from the house. Components can only be placed in the lawn area around the house (within the perimeter of the fence) and have to be connected to the main house. There are 4 types of components that have different uses and element/weather resistances

i. Turret (fire resistance): Shoots a beam at enemies in a radius around itself. Wherever the beam hits, there is a small blast radius harming enemies within it.

- inspiration:



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a big red-hot pipe on structure

ii. Power Generator (storm resistance): Adds an energy resource to the amount available to the player.

- inspiration:



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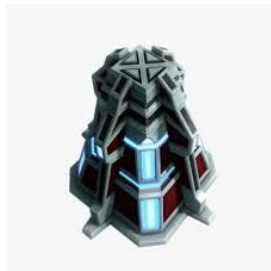


the top section of the tower ^

Battery-looking Base ^

iii. Freeze Field (blizzard resistance): Slows down all enemies that enter its radius.

- inspiration:



iv. Barbed Wall (earthquake resistance): Deals damage to enemies that attack it.

- inspiration:



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- If the player decides they are low on resources they need and/or no longer want a component, then the player can destroy a component and salvage half the resources it costs to make it.
- Once the player has built all they've wanted (or can) they press the "Next Wave" button to start the battle.

3) Player fights the elements and tries to survive

- Each weather type has a unique effect on the gameplay for the wave it is active in. They also have their own enemy units with their own abilities. The enemy units will come from off-screen at a randomized angle, always moving towards the house.

i. Drought: Slowly damages house over time if they don't have a fire insulation

a. Fire-Spitting Unit (low dmg): Any non fire-resistant unit catches fire and gets damaged over time until the player puts the fire out. The fire spreads to adjacent non fire-resistant components at a semi-random pace.

b. Bomb Unit (med dmg): Once it reaches a component, it explodes in a blast radius that harms any component and unit within the radius (and kills itself). Slow movement.

ii. Storm: The screen will flash at semi-random time intervals, making the player momentarily blind to what's happening on screen (like a flashbang effect)

a. Quick-Strike Unit (high dmg): Shoot towards house relatively fast but die as soon as they attack anything; seen as a lightning enemy striking the house.

b. Wide-Strike Unit (low dmg): can hit components that are directly ahead along with one space diagonally to the left and right; imagined as a water enemy splashing water with high pressure.

iii. Earthquake: At long semi-random time intervals non earthquake-resistant components will be damaged and not function for a short time; they also get lightly damaged if there is no proper insulation.

a. Rolling-Strike Unit (med dmg): Come rolling towards house relatively fast, but have a longer cooldown/windup between attacks; imagined as a boulder rolling towards house.

b. Slow-Strike Unit (high dmg): Move towards house relatively slow and have a longer cooldown/windup between attacks; imagined as a living tree attacking house.

iv. Blizzard: Both enemy units and player-controlled units move slowly; also components work more slowly and take light damage if no proper insulation.

a. Freezing Unit (light dmg): Attacked, non snow-resistant components get frozen at a (semi-random chance) for a good amount of time but can also be thawed out by player attack; imagined as a snowman.

b. Rolling-Strike Unit (med dmg): The same as *iii.a.* but imagined as a snowball.

- The player will have an active role in combating the wave in 2 ways:
 - i. Attacking/Defending: With the WASD keys, the player will move around the map within the yard area of the home. Pressing the space key will have the player swing a hitbox around themselves in a circle (imagined as a big hammer) that damages enemies, puts out fires, thaws out components, and repairs fences before they get destroyed.
 - ii. Managing Energy: The player will have an energy resource that equals the amount of components that are in use at one time (besides the power generator since that provides energy). The player turns a component on by clicking it with the left mouse button, and turns one off with the right mouse click. If the energy resource drops due to an Power Generator being destroyed or frozen, then the component that has been on the longest is automatically turned off.
- I believe that these two activities keep the player engaged during the waves in a different ways from most Tower-Defence games where players just build during. And these simple actions will grow in complexity, stress, and strategy as the difficulty keeps scaling up each round.

4) Player earns resources

There is one single resource throughout the game that players expend to the fence and components, as well as installing insulation. There are a few ways players can gain resources:

- Destroying Components: During the building phase, the player can destroy a component to gain half the cost of a component
- Defeating Enemies: When a player defeats enemies with their controllable character they also gain resources for each kill. The player also gains resources if a component kills the enemy, but only about half of what would have been gained if the player's character killed the enemy unit.

The player can use the Destroying Components action to gain quick resource, but also to replace damaged components before the next wave. Through this and the cost of buying more defences that may have been destroyed, the player is rewarded with a net gain if they both strategically plan components and hustle to destroy units themselves in defence of the house.

Building Health:

The main house has un-replenishing hit points, the main purpose is to have the components and fences be layers around the house that can be replenished between phases. Fence segments take 3 hits to be destroyed regardless of the damage the attacking enemy deals. Components will have individual health bars but will all have the same health (besides the steel wall).