

Our vision is to create a defense game which allows the user to build forts and navigate through map boundaries. The purpose of the game is to accumulate points by surviving waves of enemies. Survival is achieved by killing enemies, either through traps and weapons or by building structures to delay the waves of enemies. We plan to try to write the program in Java to start since team-members are most familiar with the language but we have left the option open to move to a more game-oriented language like C# if necessary.

Players will start with a small bag of supplies to last them through the first few waves, but will quickly need to prioritize crafting in order to succeed. The crafting system will allow players to build various types of equipment and medical supplies to help them achieve a higher score or to replenish health and add score modifiers or damage immunity. This game will use a database-style system to keep track of inventory items through object ids and supplies for the crafting system will be dropped by enemies after they are killed.

Enemies will be spawned at the edges of the map out of the map boundaries and will migrate towards the player position using a midpoint algorithm. We plan to manipulate the enemy AI by randomly providing spoofed player positions so that enemies will feel more like they actually have a brain. Enemy types will vary, giving them unique abilities to keep the player engaged. Some enemies may have larger health pools and/or move more quickly while others might be slower but can traverse over obstacles.

The system for building will follow a lot of the same rules as crafting but the player will drop items into the game world. Building will be allowed during and between waves but will still require time to complete the process. This gives the player a unique opportunity to decide how they will utilize their time between waves; By either crafting more survival materials or by reinforcing their structures. The building process will also include traps or deploy-able bombs to help defend an area.

**Disclaimer:** This vision is admittedly our most ambitious idea of the project. We realize that some of this might be too difficult or take too long to implement and have plans to scale back accordingly.