

# Level Design | Design Document

---

This is the design document for CS498GD MP2 - Level Design.

## Core Mechanics

---

- Player is capable of movement, jumping, and attacking.
- Player attack is a projectile that travels in a straight line and goes through objects.
- Three kinds of enemies on the map - Pursuer, Mortar, and Mine.
- Pursuer - Patrols an area in a randomized path. Run toward and follow a player when a line of sight (LOS) has been established. Damage the player when the enemy reaches the player. Stop following and return to patrol after a few seconds of LOS breakage. Pursuers have a health of 100 and can be killed in 5 player attacks.
- Mortar - Stationary enemy that shoots projectiles upward in a random direction and angle every 0.5 seconds. Mortar shells damage the player. Mortar shells have a blast radius that also damage the player if the player is in it's radius. Mortars have a health of 200 and can be killed in 10 player attacks.
- Custom enemy - Mine - Stationary enemy that explodes and deals damage when the player steps on it. Cannot be killed.
- Healthpacks on the map that heal the player and increase their score
- Player has a health of 100 and a restart screen is shown when it drops to 0
- A win game screen is shown when the player completes the level
- A restart screen is shown when the player dies or falls off the map

## Conceptual Development Plans

---

- Map has a path that the player is encouraged to follow
- Player has to get through all enemies to complete the level
- Player can choose to kill all enemies or run through
- Number of healthpacks picked up equal score, so the player is encouraged to fight and kill enemies and pick up healthpacks before completing the level

## References

---

- UI Tutorial for Widgets - <https://www.raywenderlich.com/480-unreal-engine-4-ui-tutorial>
- Unreal Engine Documentation - <https://docs.unrealengine.com/4.27/en-US/>
- Behavior Tree Guide - <https://docs.unrealengine.com/4.27/en-US/InteractiveExperiences/ArtificialIntelligence/BehaviorTrees/BehaviorTreeQuickStart/>
- Level Design Guide - <https://docs.unrealengine.com/4.27/en-US/BuildingWorlds/LDQuickStart/>