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Level design:

* I started with creating the level platform. I created the platform ground, added my player there, and added one collectible for score and one collectible for health pack. I start with the Health UI and Score UI, and write blueprint code to the collectibles to test these aspects. I introduced a damage volume such that my player takes damage when overlapping with the object. My idea is that, I want to test every functionality, make sure that everything works (score increases when collecting the object, health increases and decreases correctly, etc.) before actually starting the creation of the level. Therefore, I make these simple “unit tests”. Once the “unit tests” all work, I start creating the enemies. Like the previous step, I make enemies one by one, and test them one by one (“unit testing”), and once they all work as expected, I can leave my testing playground and actually start creating the level.
* I decide to create an exploring level, where the player has to explore and collect all coins (score collectibles) and don’t get damaged by the enemies, and reach the end level. Finally, when everything works out, I create my Game Over UI and Level Clear UI. I add all other details to the level to make it look nice.

Enemies:

* Fire: Serves as unit testing during the testing phase for me. I can test my health bar by stepping into the fire, and eat health packs.
* AI Patroller: I created the AI Patroller enemy according to the suggestions from the CS415 website. I added hitback to the player and explosion effects when hitting the player. The patrol range took me a lot of time to figure out, it turned out that my volume was not placed in the correct position, hence not allowing the AI Patroller to move.
* Mortar: Idea comes from the Clash Royale mortar, where the mortar can detect (predict) the player position.
* Machine Gun: I came up with this idea when I was designing the mortar, and I wanted to have an enemy that can frequently shoot fast straight bullets to add difficulty to the level. The implementation for the Machine gun and Mortar are completely different.

Positions: I created a spawning place for the player to move around and discover what they can do. I added one coin, one health pack, and some fire for the player to understand the basic collectibles and damage system. Once the player steps out of the beginners’ place, they will finally start the game by exploring everything. I put the machine gun and the AI patroller close to each other, so that this can create pressure to the player, they need to dodge both of them. I put the machine gun and mortar far away from the player so that they cannot easily destroy them (they could if they wanted). I added a final machine gun enemy near the finish position to add difficulty to the level.