**Design Document for MP2**

**GOAL:**

To win the game, you need to collect 10 tokens in the map and go to the destination (an enabled button).

**ACTORS:**

The player and four kinds of enemies: Pursuer, Mortar, Flyer and Summoner.

**MECHANICS:**

For the player, besides the ability to jump, fly and interact with other stuffs:

1. Whenever the player jumps and steps onto the head of enemy, the enemy will be killed.
2. We can click the left mouse button to make a bomb. The player can push the bomb to the enemies. After 5s, the bomb will explode, destroying the nearby enemy and cause 30 damage to the player if the player is too close.
3. Whenever the player is hit by enemy or anything made by enemy, the player will be knocked back, lose 10 health, and lose control of the character about 1s.

For the Pursuer:

1. When the player is not seen, the pursuer patrols in a circle loop.
2. When it sees the player, it rushes to the player and explode when hitting the player.
3. If the player runs away (fly away), it goes back to spawn point and patrols again.

For the Mortar:

1. When he sees the player, it will shoot the bullet (3 bullets per second) inside a cone area with half angle 120 degrees. When the player is shot, he loses 5 health.

For the Summoner:

1. Does not move, when it sees the player, it summons two children every 5s.
2. The child will move to the player and attack him. The child doesn’t have a patrol state.

For the Flyer:

1. Whenever it sees the player, it shoots projectiles to where the player is about to go.
2. It will always keep the distance to the player.

**Rules and features that made this game hard with above mechanics:**

1. The tokens to be collected are placed close to enemies, it is hard for the player to get them without killing any enemy.
2. I place two Summoners in front of the house. The path to the house is narrow so it is harder for the player to reach the button without destroying the Summoners.
3. For the Mortar and Summoner, they have bigger size, and it is harder for player to step on their heads. Also, they are surrounded by several Pursuers, so it is hard to destroy them.
4. Since the player can fly into the air and use bombs to destroy the enemies, I use Flyers to interfere the player.
5. When flying, the player cannot move towards the z-axis. So you have no way to destroy the flyer.
6. If the player drops off the map, or flies too far away from the map, you will lose the game.
7. It will be better for the player not to be hit by a fast-moving object, the player has a higher change to be knocked off the island and die.
8. The bullet of the Flyer and Mortar has great knock effect (being hit in the air is catastrophic).
9. The knock back effect is accumulative, so it is deadly for the player to be caught by several enemies.