

## Weekly Report 2: Senior Design Project

For this week I still have not gotten any actual coding done. I am trying to make sure that the math I plan on implementing for my game is going to work the way I imagined it so all I have gotten done is figuring out how each of my enemy entities will pursue my playable character. At this moment, I plan on having a few different types of basic enemy entities: basic, flying, shooting, and exploding. This has been roughly an hour or two each day of the week.

### Enemies

- Basic: This enemy will not be able to move away from the platform that it is rendered on and will only be able to move right or left (one-dimensional movement). This enemy will only be capable of melee attacks in the direction it is facing.
- Flying: This enemy will be able to move in two dimensions in the form of “flying” to pursue the playable character. This enemy will be capable of melee attacks and projectile attacks in the direction it is facing within a certain radius of its instantaneous position.
- Shooting: This enemy will also not be capable of two-dimensional movement and will not be able to move away from the platform it is on either. This enemy will be capable of projectile attacks: “spread”, semi-automatic, and normal. Each of these attacks will be executed in the direction the enemy is facing.
- Exploding: This enemy will be capable of two-dimensional movement but not in the same way as the flying enemy, this enemy will be grounded by gravity but will be able to “jump” between platforms if needed.

I do plan on coming up with more enemies and further implementing the necessary mathematics on paper, but this is as far as I’ve gotten as of right now. I also plan on implementing the playable character’s movement and attacks but that will be after the enemies.

Milestones for the near future (by week starting from now):

1. Get comfortable with the math for how my player and my enemy entities will move.  
Then start with creating the user input for moving the player in a prototype scene.
2. If the previous milestone is completed, then I will begin to implement the attacks for the entities and player along with a health bar system for each.
3. If that is completed, then I will study how to add power ups and terrain keys to my scene and program them.