Name: Benjamin Kopf   Mark_____/50
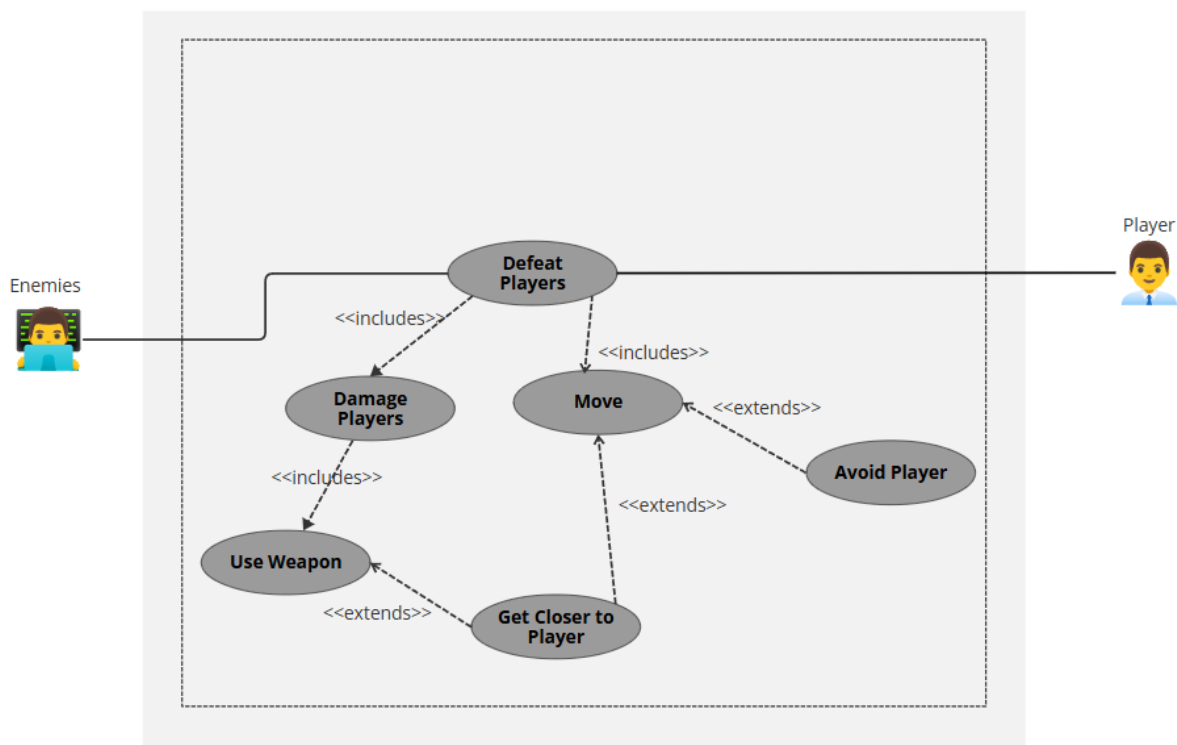
1. Brief Introduction _/3

The feature I will be working on is the implementation of enemies. I will have two different types of enemies at the minimum. Both will have different types of AI so they will react to the player in different ways and engage the player in different ways.

2. Use case diagram with scenario _/14

Use Case Diagram

Scenarios

Name: Defeat Players

Summary: The Enemy is trying to defeat the player character

Actors: Enemy, Player

Preconditions: Enemy is initialized, and level is loaded

Basic sequence:

Step 1. The Enemy targets the Player

Step 2. Enemy Moves toward the player

Step 3. The Enemy goes to damage the player

Step 4. The Enemy uses their weapon

Step 5. The Enemy Damages the player

Step 6. Player is defeated

Exceptions:

Step 2. Enemy is of type 2 and attempts to stay 4 spaces away from the Player

Step 4. The enemy is out of range with their weapon.

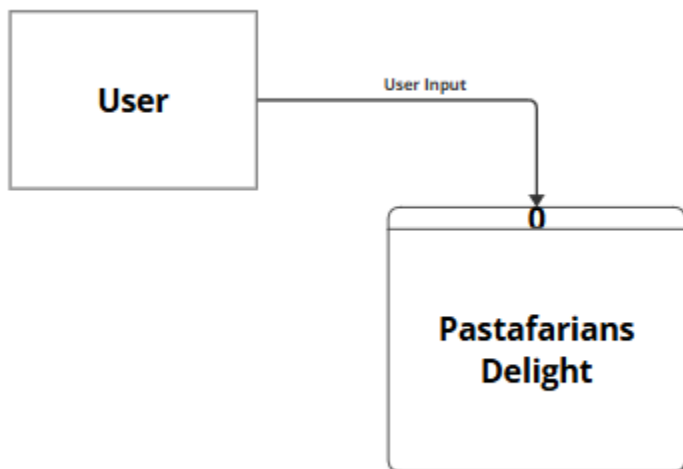Step 6. The Player has more health remaining than the damage delt

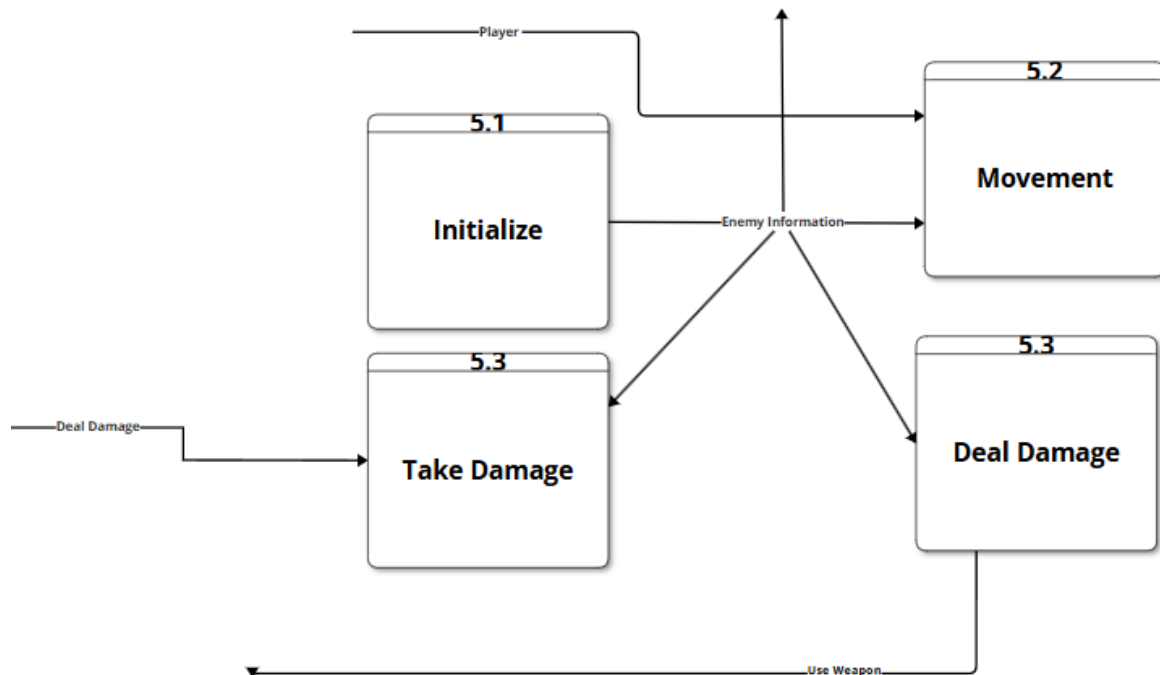Post conditions: The player is now defeated
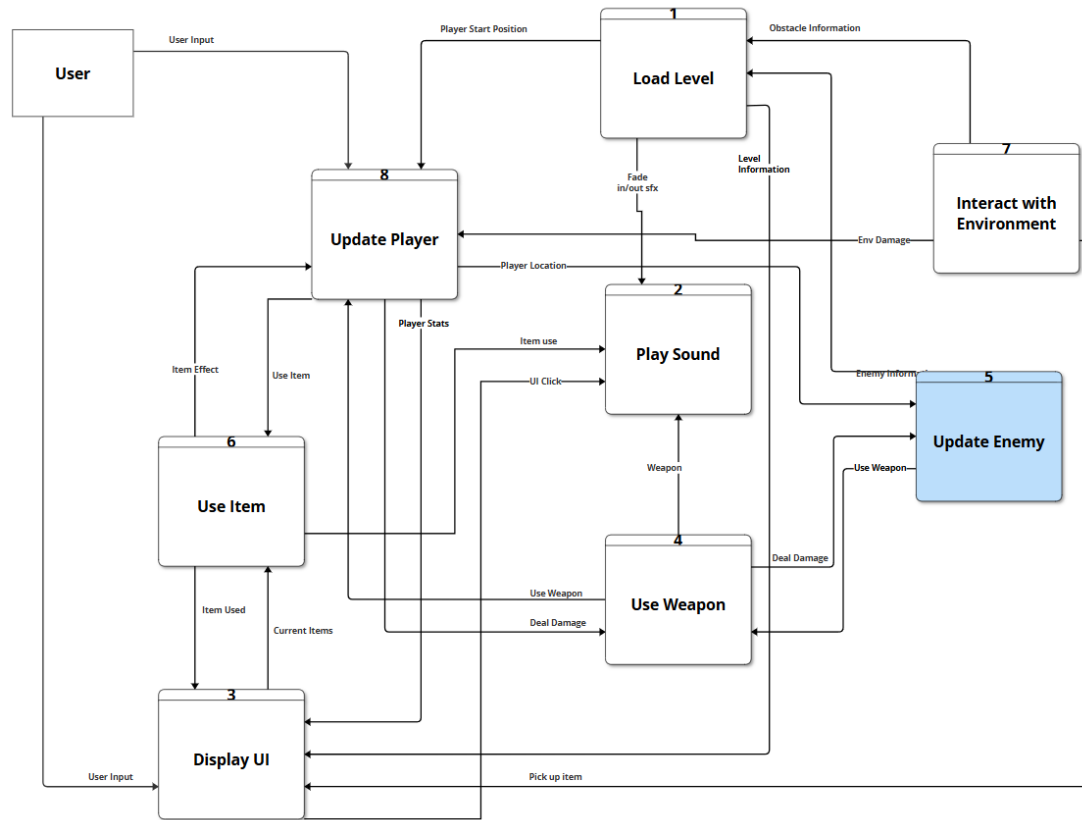
Priority: 1*

ID: E01

*The priorities are 1 = must have, 2 = essential, 3 = nice to have

3. Data flow diagrams from level 0 to process description for your feature _/14

Process Description

The process description for defeat players

```
If player is within view distance
Set target to player
While target is player
If enemy type is Aggressive
enemy move toward player
Endif
Else
enemy move stay weapon range away from player
endif
If target is within weapon range
use weapon
Endif
        endwhile
endif
Else
        enemy move idle
endif
```

4. Acceptance Tests _/9

The inputs that my processes will be taking are Player Location, and Deal Damage. There are also going to be two different movement algorithms. One to bring the enemy closer to the player, and use a melee weapon, the other to stay a distance away from the player to use a ranged weapon. Move speed will be one of the attributes that affects the distance and difficulty of an enemy.

Move speed test:

This test will require adjusting the move speed to find the appropriate speed for the enemy type and weapon type. To conduct this test we will individually pit each enemy type against the player. The goal is to get a speed for each type that makes each of them difficult in their own way. Once we have found a speed we think is appropriate we will test adjacent speeds until we find a max and min speed we should have for the given enemy type.

Weapon Use test:

When an enemy uses a weapon it should initiate the weapon use once the player is within the range of the weapon, but it shouldn't stop that action until it completes. This will allow the player to be able to dodge shots or melee attacks. We will conduct this test after the move speed is set, because enemy move speed will play a factor in how quickly they get in range of the player.

5. Timeline _/10

Task	Duration	Predecessor Tasks
1. Create Enemy Types	4 hrs	
2. Code Enemy targeting	3 hrs	1
3.Enemy Movement Types	3 hrs	1,2
4.Weapon Uses	3 hrs	1,2
5.Interacting with Players	3 hrs	1,2,3,4
6.Animation	4 hrs	1,2,3,4
7. Integration	5 hrs	1,2,3,4,5,6

Task	Predicted(hrs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Create Enemy Types	4	██	██	██	██																
Code Enemy targeting	3					1	██	██													
Enemy movement Types	3								1,2	██	██										
Weapon Uses	3								1,2	██	██										
Interacting with players	3											1,2,3,4	██	██							
Animation	4											1,2,3,4	██	██	██						
Integration	5															1,2,3,4,5,6	██	██	██	██	