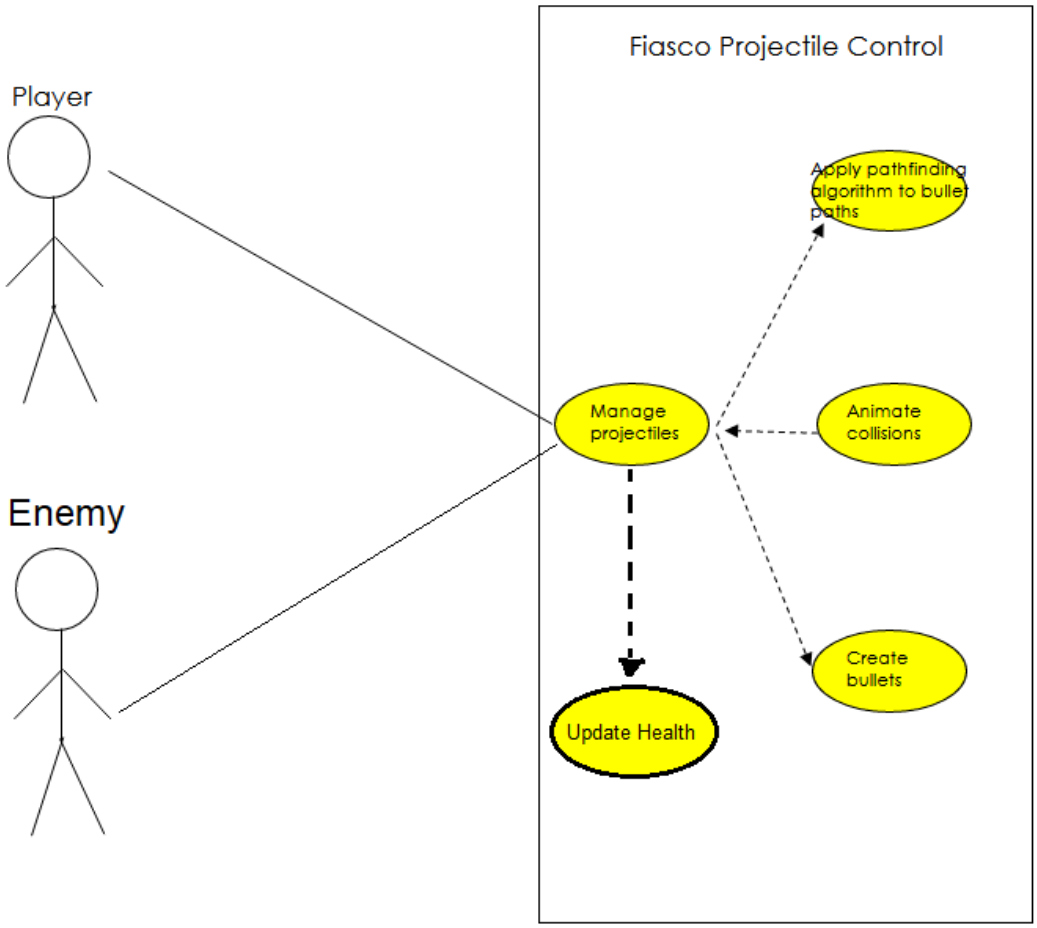
Name___Max Icardo_____ Mark _____0_____/50

1. Brief introduction _/3

Handle all projectiles and combat within the game. This includes spawning projectiles and applying a variety of paths to each projectile unique to each enemy. Projectiles may follow a straight line, others may be spawned in a radius around player or enemy and expand outward, another would be a "heat-seeking" projectile that would follow the player for a period of time, there could also be an arc projectile that may follow a similar to a boomerang. Will handle collision animation and triggering damage upon collision.

2. Use case diagram with scenario _14

Use Case Diagrams



Scenarios

Name: Manage Projectiles

Summary: Player and Enemy interact with projectiles.

Actors: Player and enemy

Preconditions: Projectile is called for by actor.

Basic sequence:

Step 1: Create bullet.
Step 2: Apply pathfinding algorithm to bullet path based on bullet type.
Step 3: Actor collides with bullet.
Step 4: Animate collision.
Step 5: Update actor health.

Exceptions:
Step 1: Projectile collides with wall.
Step 2: Projectile ceases to exist.

Post conditions: Actor takes damage and actor's health is updated.
Priority: 2
ID: MI1

Name: Update Health
Summary: Updates the health of actor.
Actors: Player and Enemy.
Preconditions: Projectile has collided with either a player or enemy.
Basic sequence:
Step 1: Update Health is passed actor health and bullet damage.
Step 2: Bullet damage is subtracted off actor health.
Step 3: Actor health is updated.

Post conditions: Actor health is updated.
Priority: 2
ID: MI2

Name: Create Bullets
Summary: A bullet is spawned.
Actors: Bullet
Preconditions: Manage Projectiles wants a bullet.
Basic sequence:
Step 1: Bullet is spawned.

Post conditions: Bullet exists.
Priority: 2
ID: MI3

Name: Animate Collisions
Summary: A collision is animated where bullet and actor collide.
Actors: Player and enemy
Preconditions: Projectile has collided with an actor.
Basic sequence:
Step 1: Animate collision where bullet and actor collide.

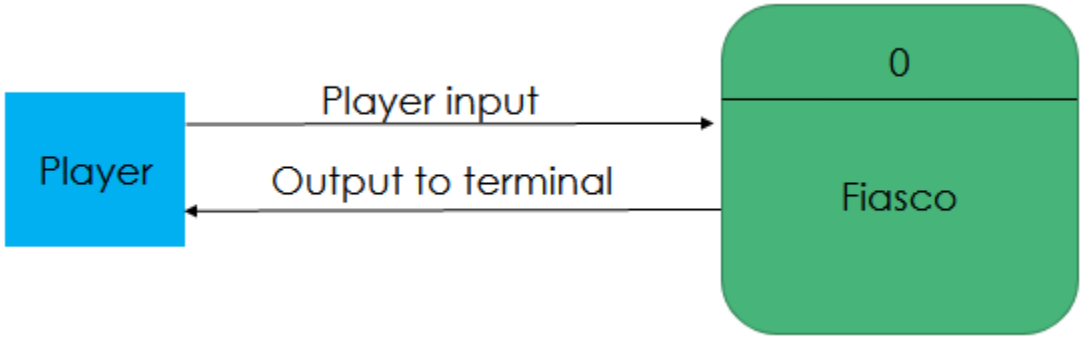
Post conditions: Collision is animated on actor.
Priority: 3

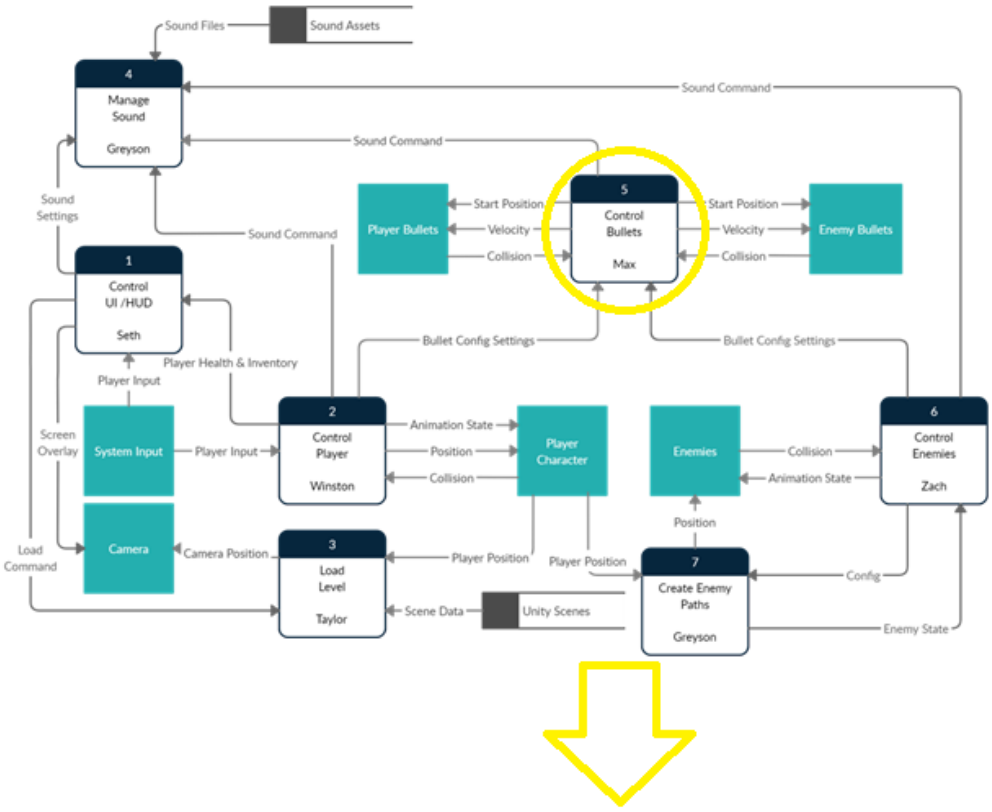
ID: MI4

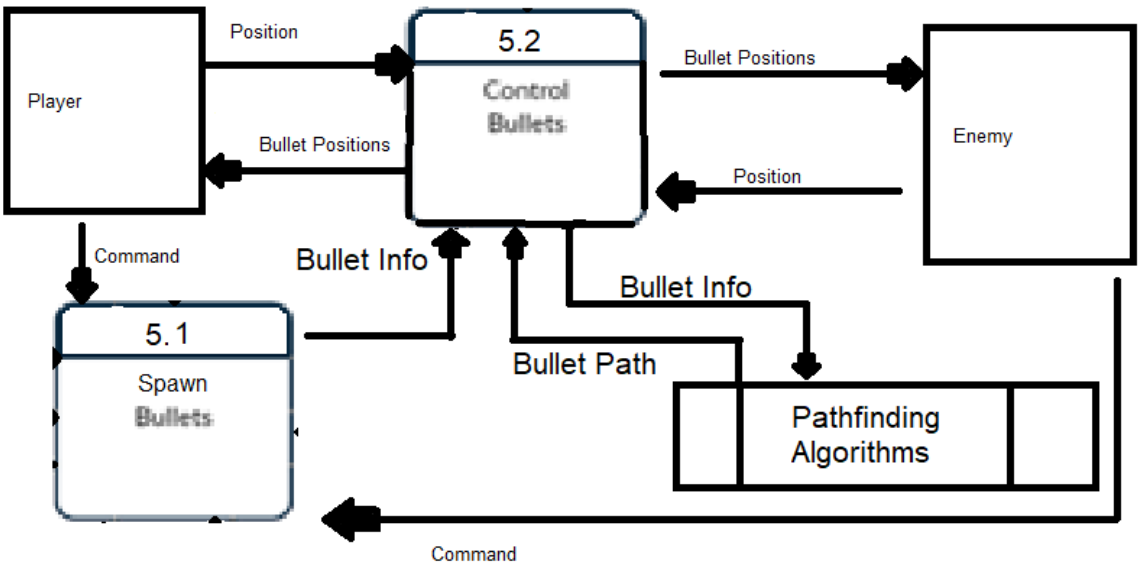
Name: Apply Pathfinding Algorithm to Bullet Path
Summary: Pathfinding Algorithm is applied to bullet.
Actors: Bullet
Preconditions: Bullet has been created.
Basic sequence:
Step 1: Pathfinding Algorithm is applied to bullet.
Step 2: Bullet zooms off on intended path.
Post conditions: Bullet has found a sense of purpose.
Priority: 2
ID: MI5

3. Data Flow diagram(s) from Level 0 to process description for your feature _____14

Data Flow Diagrams







Process Descriptions

5.1: Spawns Bullets

5.2: Controls Bullets

4. Acceptance Tests _____9

Run game with every single type of path with increasing amounts of bullets until fps begins to drop below 60 fps. If fps drops below 60 fps, rerun test with ½ difference number of bullets from test and previous test. Repeat until fps doesn't drop below 60.

- First: 100 bullets.
- Second: 500 bullets.
- Third: 1000 bullets.
- Fourth: 2500 bullets.
- Fifth: 5000 bullets.
- Sixth: 10000 bullets

Results should follow characteristics:

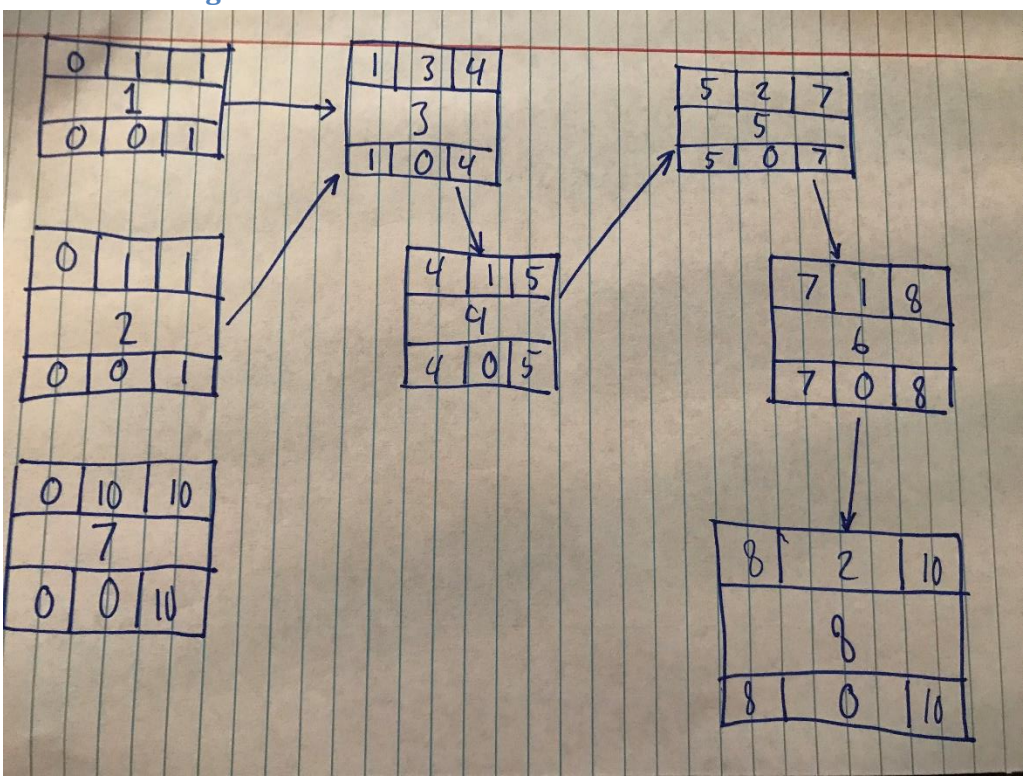
- No console errors.
- No fps dropping below 60.
- No crashing.

5. Timeline _____0__/10

Work items

Task	Duration (PWks)	Predecessor Task(s)
1. Collision Animation Creation/ Finding	1	-
2. Create Bullet Function	1	-
3. Bullet Pathfinding Algorithms	3	2
4. Update Health Function	1	3
5. Manage Projectiles Function	2	4
6.Acceptance Testing	1	5
7.Tears	10	-
8.Finetuning	2	6

Pert diagram



Gantt timeline