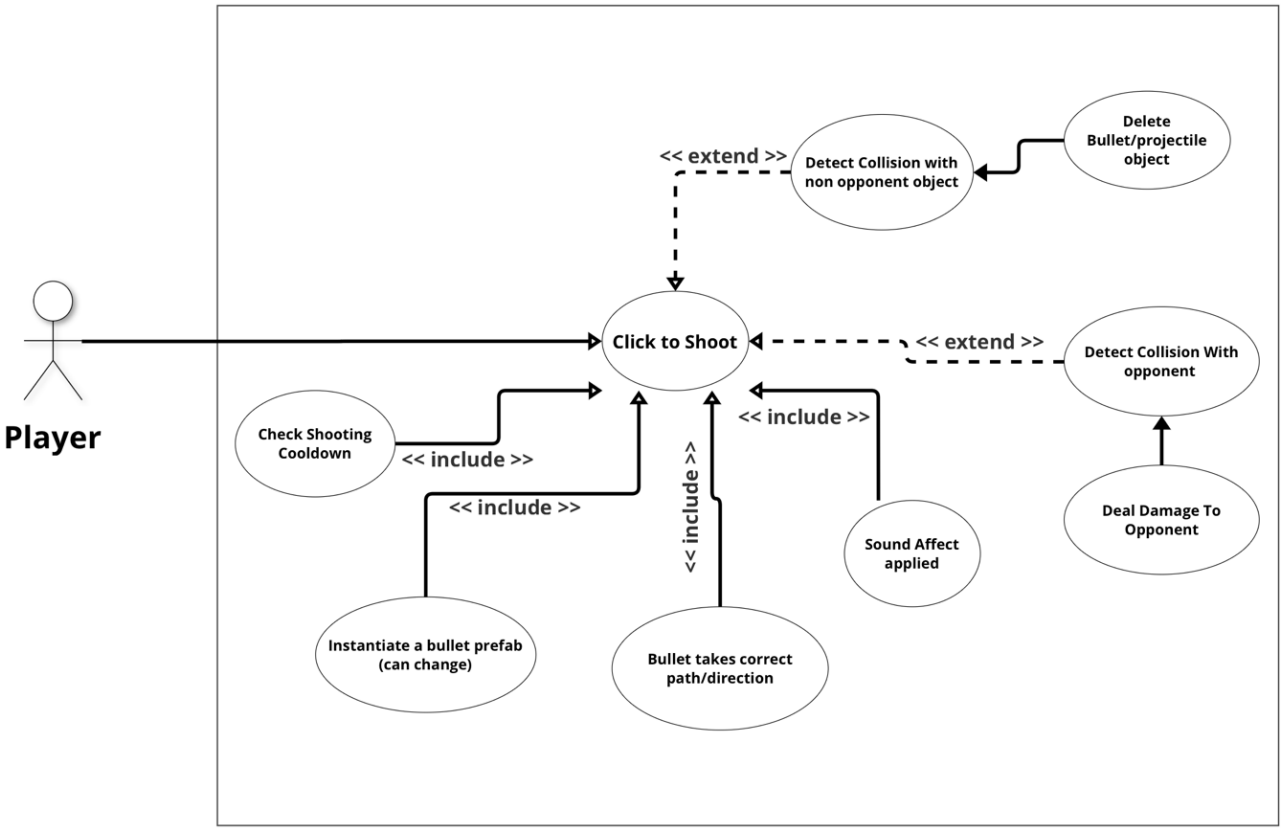
Name **Benton Wilson** Mark _____/50

1. Brief introduction _/3

My feature is going to be the shooting combat mechanics for the players. This will entail choosing our shooting method which is going to be a click to shoot where bullets travel in a line to where the mouse/crosshair is pointing, having to establish the cross hair. This is also going to have to interact with the health of other objects to deal damage when needed.

2. Use case diagram with scenario _14

Use Case Diagrams



Scenarios

Name: Shooting Mechanic

Summary: This will deal with how a player shoots and deals damage to items such as opponents.

Actors: Player

Preconditions: Objects needed to be used (bullets/projectiles) have been made and can be used. Health of other objects is initialized and can be manipulated.

Basic sequence:

Step 1: The player or opponent initiates a shooting mechanic. (Click)

Step 2: Check If cooldown on shooting.

Step 3: A bullet prefab is made

Step 4: Bullet takes correct direction (mouse)

Step 5: Sound affect is applied to launching of bullet.

Exceptions:

Step 1: Detect collision with some object

Step 2: If collides with opponent then deal damage else destroy bullet.

Post conditions: A bullet/projectile has been fired in the correct direction.

Priority: 2*

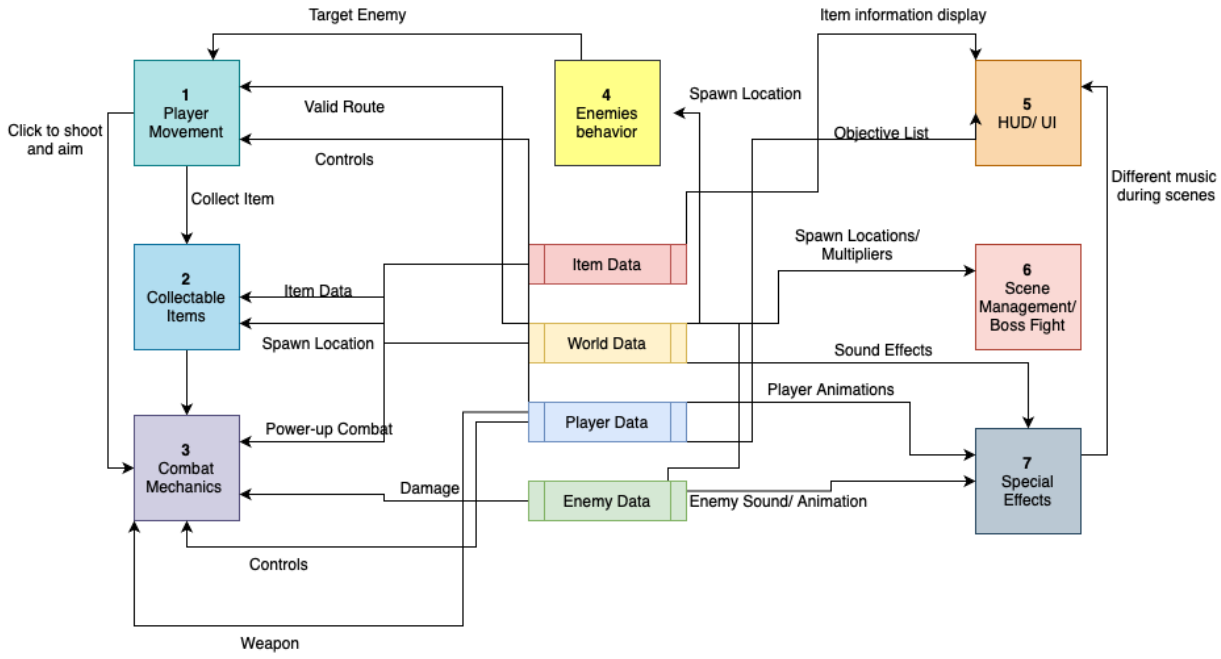
ID: C01

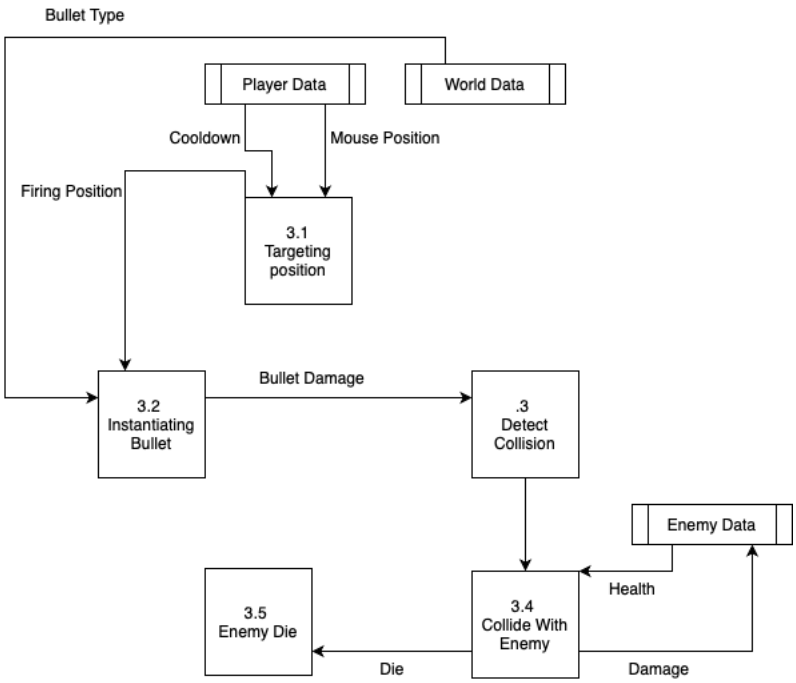
*The priorities are 1 = must have, 2 = essential, 3 = nice to have.

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

Data Flow Diagrams

STILL IN WORK





Process Descriptions

Targeting Mechanics:

IF click to shoot is triggered

Get Mouse position from player data

Get Cooldown time from player data

Send firing position to Instantiate bullet

ENDIF

Instantiate Bullet:

IF receive data from targeting position

Get bullet type from world data

Get firing position from targeting position

Create a bullet object with damage field

ENDIF

Detect Collision:

IF Bullet object sent with damage

Detect if bullet object collides with enemy on screen

Move to handle enemy collision and store damage value

ENDIF

Collide with enemy:

```
IF collision detected with enemy object
        Get enemy health from enemy data
        Get bullet damage value
        IF Health <= Damage value
                Die
                Send to enemy data
        ELSE
                Damage Enemy Object
                Send to enemy data

        END
ENDIF
```

4. Acceptance Tests _____9

Make sure that the collision detection works between a projectile and a object on screen or some opponent object.

Example for projectile collision

Run feature with two objects in scene, an ordinary “obstacle object” and an “opponent” object. Both should be tagged correctly.

Inputs:

- A projectile object on screen
- Movement towards specific objects in game
- Some assigned damage value (Ex. 10)
- Opponent with health (tagged) (Ex. 100)
- Non-Opponent object (tagged)

Outputs:

- Collides with opponent:
    - Damage dealt
    - Projectile destroyed
- Collides with non-opponent:
    - Projectile destroyed

Example for collision detection

Test Case	Description	Input	Output
1	Projectile prefab collides with an opponent tagged object	Projectile Prefab Opponent Object	Deal damage to opponent and then should be destroyed.

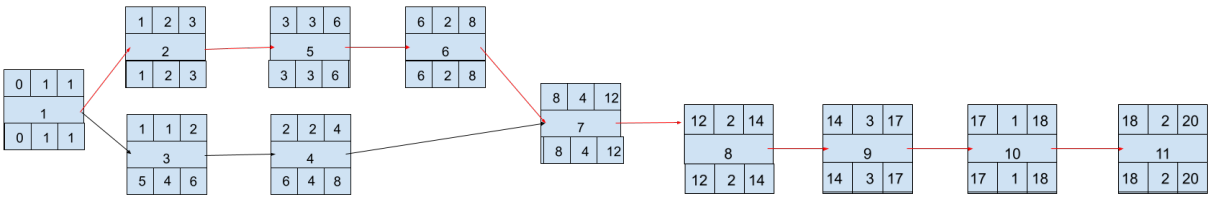
		Non-Opponent object	
2	Projectile prefab collides with a **non**-opponent tagged object	Projectile Prefab Opponent Object Non-Opponent object	Should just have the projectile be destroyed immediately.
3	Projectile misses all objects in scene	Projectile Prefab Opponent Object Non-Opponent object	There should be no course of action taken. (This should not happen in game as there will be an outer "boundary")

5. Timeline _____/10

Work items

Task	Duration (PWks)	Predecessor Task(s)
1 Requirement Definition	1	0
2 Screen Design/ Level Design	2	1
3 Create Bullet objects (sprites)	1	1
4 Program bullet class	2	3
5 Enemy creation	3	2
6 Program Enemy health class	2	5
7 Programming the shooting functions	4	6,4
8 Integration of sound effects	2	7
9 Testing	3	8
10 Creation of the crosshair interface	1	9
11 Deployment	2	10

Pert diagram



Gantt timeline