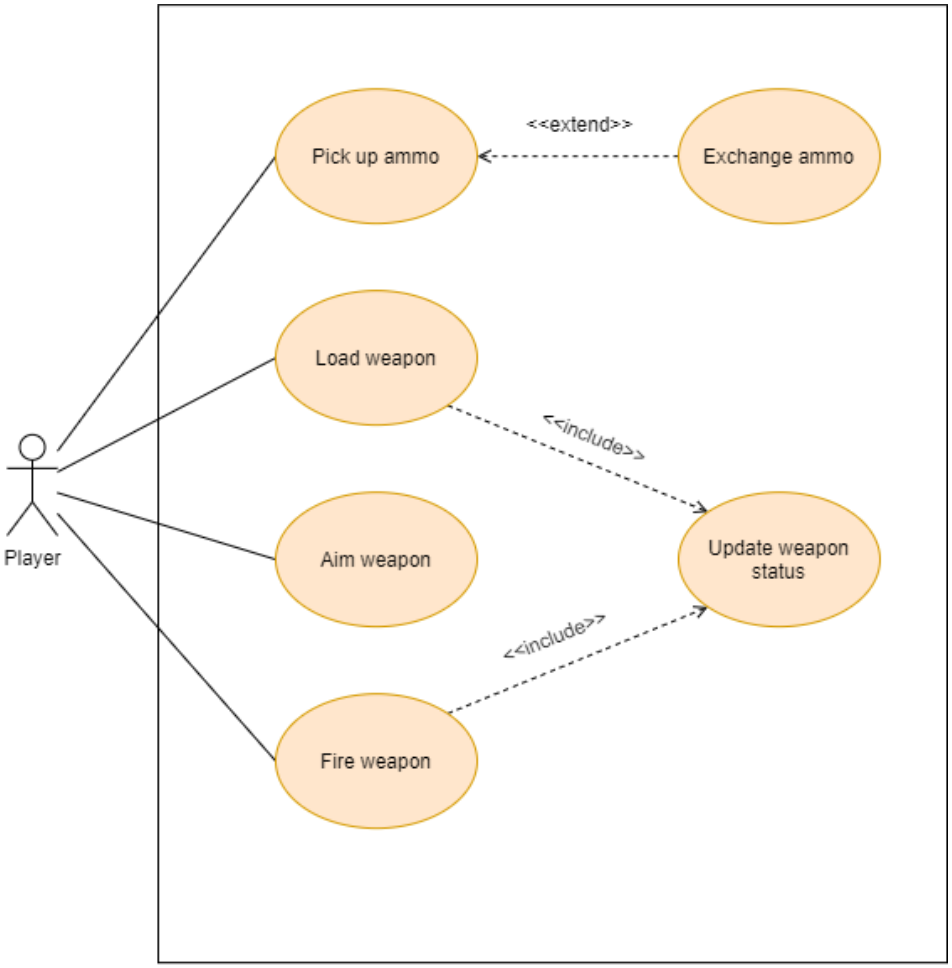
Name_____Lucas Thoms_____ Mark _____/50

1. Brief introduction _/3

I am responsible for the weapons in our game, along with the ammunition for those weapons. To fire a weapon, players must pick up ammunition, load it into the weapon, aim the weapon, then fire it.

2. Use case diagram with scenario _14

Use Case Diagrams



Scenarios

Name: Pick up ammo

Summary: The player picks up and begins carrying a unit of ammunition.

Actors: Player.

Preconditions: The player is standing near a unit of ammo.

Basic sequence:

Step 1: Remove unit of ammo from the ground.

Step 2: Place unit of ammo in player's possession.

Exceptions:

Step 1: Player is already carrying a unit of ammo: Exchange ammo (C02) instead.

Post conditions: Player is carrying a unit of ammo.

Priority: 1*

ID: C01

Name: Exchange ammo

Summary: The player places the unit of ammunition they are carrying on the ground and begins carrying another.

Actors: Player.

Preconditions: The player is standing near a unit of ammo and is currently carrying one.

Basic sequence:

Step 1: Remove unit of ammo from the ground.

Step 2: Remove unit of ammo already being carried from player's possession.

Step 3: Place player's ammo on the ground.

Step 4: Place new unit of ammo in player's possession.

Exceptions:

Post conditions: Player is carrying a unit of ammo.

Priority: 3*

ID: C02

Name: Load weapon

Summary: The player loads a unit of ammunition into a weapon.

Actors: Player.

Preconditions: The player is standing near a weapon and is carrying a unit of ammunition.

Basic sequence:

Step 1: Remove unit of ammo from player's possession.

Step 2: Place unit of ammo into weapon.

Exceptions:

Post conditions: Weapon is loaded and ready to fire.

Priority: 1*

ID: C03

Name: Aim weapon

Summary: The player adjusts the angle of the weapon.

Actors: Player.

Preconditions: The player is standing near a weapon.

Basic sequence:

Step 1: Once triggered, enter adjustment mode, locking out player movement.

Step 2: Accept directional input, updating the angle of the weapon as adjustments are made.

Step 3: When player signifies adjustments are complete, exit adjustment mode and reallow player movement.

Exceptions:

Step 2: A button other than directional input or "finish adjustments" is pressed: Ignore input.

Post conditions: The angle of weapon has been changed to match user desires.
Priority: 2*
ID: C04

Name: Fire weapon
Summary: The player fires a weapon in the direction it is currently facing.
Actors: Player.
Preconditions: The player is standing near a weapon which is currently loaded.
Basic sequence:

Step 1: Launch projectile from weapon.

Step 2: Update weapon status (C06)

Exceptions:

Step 1: Weapon was fired too recently and is still cooling down: Ignore input.

Post conditions: Weapon is not loaded.
Priority: 1*
ID: C05

Name: Update weapon status
Summary: The status of a weapon—whether it is currently loaded—is updated.
Actors: Player.
Preconditions: Weapon has been initialized.
Basic sequence:

Step 1: If ammo is being added to a weapon, update its status to loaded.

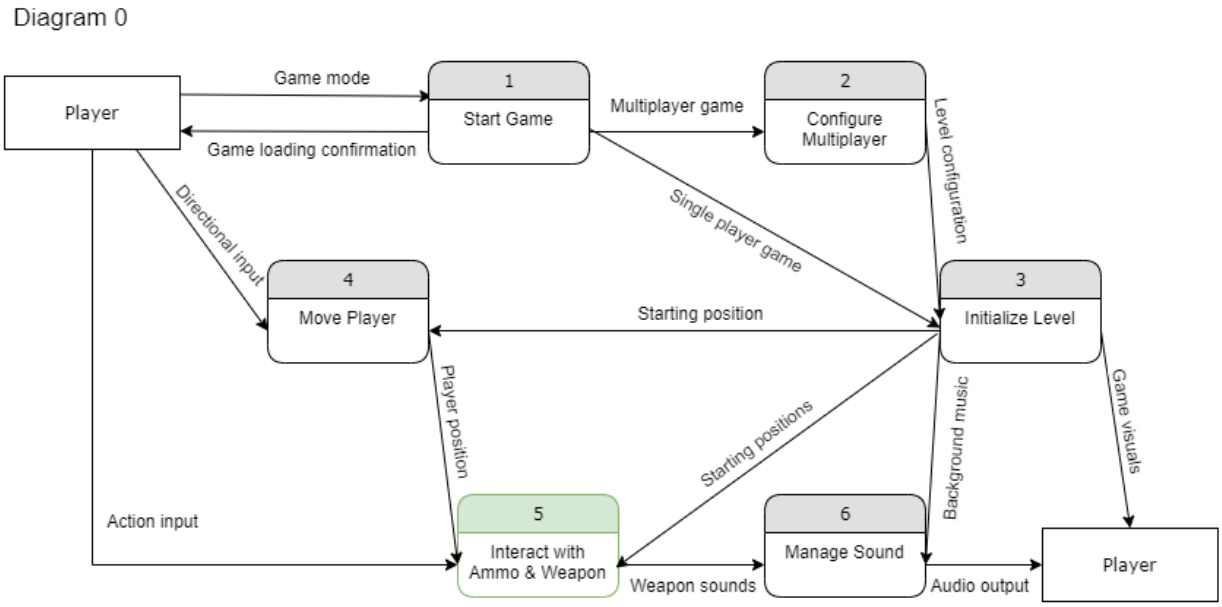
Step 2: If ammo is being fired from a weapon, update its status to unloaded.

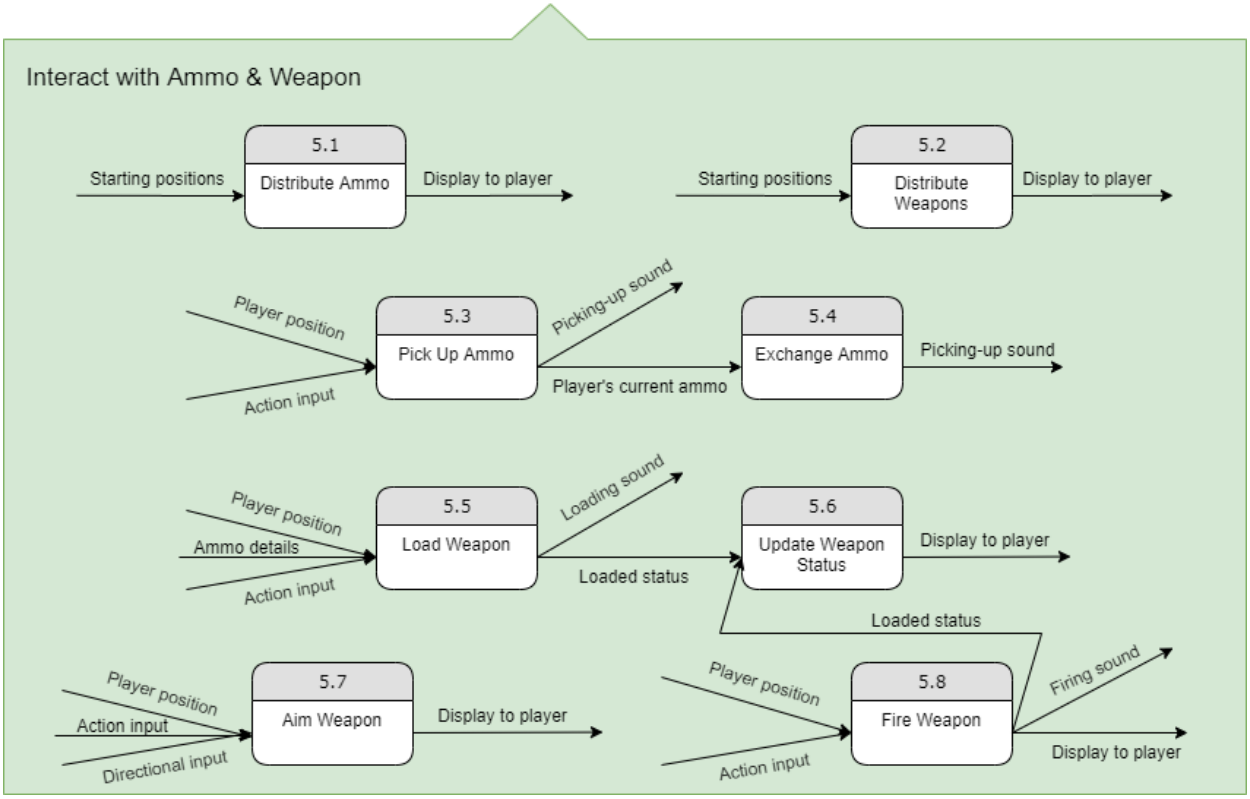
Exceptions:
Post conditions: Weapon status has been updated to reflect its ammunition (or lack thereof).
Priority: 2*
ID: C06

*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





Process Descriptions

5.1 Distribute Ammo:

Receive starting positions for all units of ammunition
REPEAT for each starting position
Place a unit of ammunition at that starting position
END REPEAT
END Distribute Ammo

5.2 Distribute Weapon:

Receive starting positions for all weapons
REPEAT for each starting position
Place a weapon at that starting position
END REPEAT
END Distribute Weapon

5.3 Pick Up Ammo:

Receive current position of player and signal that player wishes to pick up ammo
IF player is NOT near a unit of ammunition
Do nothing
ELSE
IF player is currently holding ammunition
Exchange Ammo (5.4)
ELSE
Remove ammunition from ground
Place ammunition in player's possession
Trigger picking-up sound
END IF
END IF
END Pick Up Ammo

5.4 Exchange Ammo:

Receive current position of player, signal that player wishes to pick up ammo, and ammo currently in player's possession
IF player is NOT near a unit of ammunition OR player does not currently possess any ammunition
Do nothing
ELSE
Remove ammunition from the ground
Remove ammunition from player's possession
Place player's ammunition on the ground
Place new unit of ammo in player's possession
Trigger picking-up sound
END IF
END Exchange Ammo

5.5 Load Weapon:

Receive current position of player, player's current ammunition and signal that player wishes to load weapon

IF player is NOT near a weapon OR the player is near a loaded weapon

Do nothing

ELSE

Remove ammunition from the player's possession

Place ammunition into weapon

Update Weapon Status (5.6) to loaded

Trigger loading sound

END IF

END Start to Load Weapon

5.6 Update Weapon Status:

Receive new status for weapon

Update status of weapon

END Update Weapon Status

5.7 Aim Weapon:

Receive current position of player, signal that player wishes to aim weapon, and directional input showing needed aim changes

IF player is NOT near a weapon

Do nothing

ELSE

WHILE signal that player wishes to aim remains set

Suppress player movement

Adjust angle of weapon by directional input received

END WHILE

Restore player movement

END IF

END Aim Weapon

5.8 Fire Weapon:

Receive current position of player and signal that player wishes to fire weapon

IF player is NOT near a weapon OR player is near an unloaded weapon

Do nothing

ELSE

Update Weapon Status (5.6) to unloaded

Fire Projectile

Trigger firing sound

END IF

END Fire Weapon

4. Acceptance Tests _____9

Picking up and exchanging ammo

Preconditions	Outcome	Notes
Player is standing near ammo A and is not holding any	Player is holding ammo A and there is none on the ground	Player picks up the nearby ammo
Player is standing near ammo A and is holding ammo B	Player is holding ammo B and ammo A is on the ground	Player exchanges current ammo with nearby. Holding 2 ammos is not allowed
Player is not standing near any ammo and is not holding any	Player is not holding ammo and there is none on the ground	Nothing happens
Player is not standing near any ammo and is holding ammo A	Player is holding ammo B and there is none on the ground	Player continues to hold current ammo. Dropping is not allowed

Loading weapon

Preconditions	Outcome	Notes
Player is standing near unloaded weapon and is holding ammo	Player is not holding ammo and weapon is loaded	Player loads the nearby weapon
Player is standing near unloaded weapon and is not holding ammo	Player is not holding ammo and weapon is unloaded	Nothing happens
Player is standing near loaded weapon and is holding ammo	Player is holding ammo and weapon is loaded	Nothing happens. Swapping ammo in loaded weapons is not allowed
Player is standing near loaded weapon and is not holding ammo	Player is not holding ammo and weapon is loaded	Nothing happens. Unloading weapons is not allowed

Firing weapon

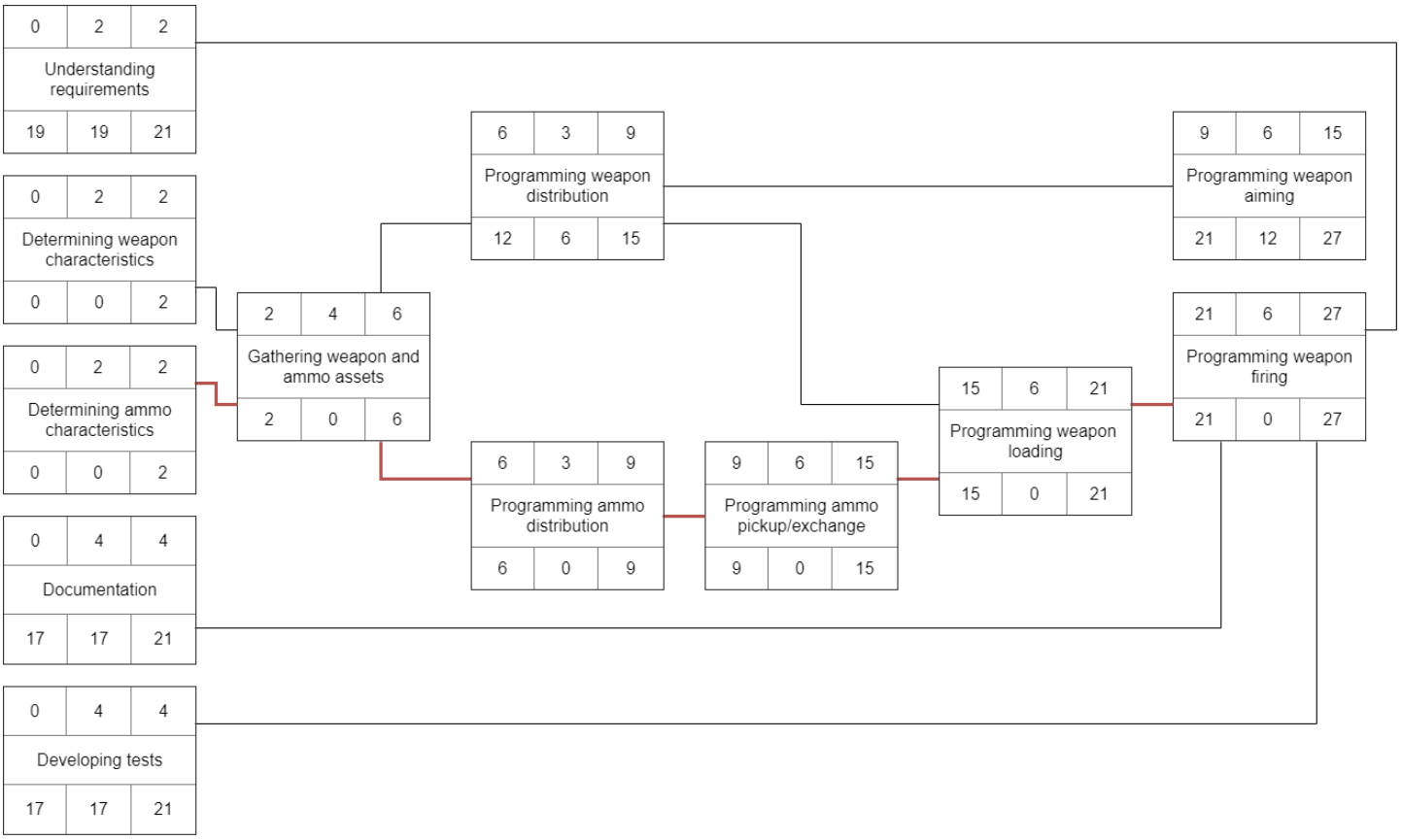
Preconditions	Outcome	Notes
Player is standing near a loaded weapon	Weapon is unloaded	Weapon has fired
Player is standing near an unloaded weapon	Weapon is unloaded	Nothing happens

5. Timeline _____/10

Work items

	Task	Duration (hrs)	Predecessor Tasks
1	Understanding requirements	2	
2	Determining weapon characteristics	2	
3	Determining ammo characteristics	2	
4	Gathering weapon and ammo assets	4	2, 3
5	Programming weapon distribution	3	4
6	Programming ammo distribution	3	4
7	Programming ammo pickup/exchange	6	6
8	Programming weapon loading	6	5, 7
9	Programming weapon firing	6	8
10	Programming weapon aiming	6	5
11	Documentation	4	
12	Developing tests	4	

Pert diagram



Gantt timeline

	Task	Hour																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
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