

Enemy design

Roles

- **Emphasizer:** No specific mechanics are required. The key is to have positive reinforcement. The player is not penalized if they use the wrong method of approach, and they have more life and damage than Smashers
 - They help the player to: experiment, stay in the flow of gameplay, feel oppressed
- **Enforcers:** require mechanics from the player, and if the player does not use them they will have a hard time progressing.
They are rare and almost always in specific places or almost always recognizable
 - They help the player to: learn, master and force strategies
- **Challengers:** bosses, difficult enemies, those for which you use all available tools to defeat them.
 - They help the player to: test themselves, feel the challenge but also lose
- **Smashers:** smaller, weaker and easier enemies to eliminate, rarely alone, almost always together with other enemies
 - They help the player to: feel strong, try new strategies or powers, be overwhelmed

Archetypes

- **Fodder:** meat for the slaughter
- **Tank:** slow but with a lot of damage
- **Striker:** fast movements, life and moderate damage
- **Elite:**
 - the previous categories but with different life damage and movements
 - encountered the first time they will be stronger than “normal” enemies
 - encountered a second time, they will become “normal” enemies
- **Boss:** challenging enemy that forces the player to change approach from the enemies encountered so far

Biomes

- **Forest:** the biome of the tutorial and early levels in the game, with simple enemies
- **Industrial Zone:** intermediate area of the run, with enemies that intermediate allowing you to prepare for the next part
- **City:** final area where you have the more advanced enemies that combine mechanics and characteristics of those in the previous biomes

Nudges

- **Flashing red blink:** Symbol that appears above the enemy's silhouette when a powerful attack is about to start
- **Off-screen:**
 - projectiles off-screen “miss” MC, giving the feeling of being targeted anyway
 - Enemies spawned off-screen, slow down or immediately stop chasing the player
- If the player is too close to ranged enemies, they may **move sideways and back** instead of firing immediately
- If there are too many melee enemies, the game may replace some of them with ranged or vice versa
- If MC is about to receive fatal damage, time slows down for x seconds, allowing the player to run away or kill enemies (Last Chance type)
- DDA



Finite State Machine

The architecture of an FSM every time it wakes up and executes a cycle first checks if one of the conditions related to the exit **transitions** of the state it is in is verified, if so then it executes exit action of the current state and then executes the state change, consequently triggering the entry action of the next state.

The **actions** are simply the behaviors to be performed by the actor in the scene and can be as simple as performing a single attack or moving to a point-which resolves in a single cycle of FSM-or as complex-such as climbing to the roof of a building-which requires step planning (possibly hierarchical) ex:

1. move to the door of the building
2. use the door
3. teleport to the top of the roof
4. reach the firing position

The description of actions the AI performs go within states and can be further differentiated into:

- **Entry actions** (they are performed only when entering a state from a different state and are executed first)
- **Stay actions** (actions at each cycle of the state machine if the AI remains in the state it was in at the previous cycle)
- **Exit actions** (like Entries, but executed upon exiting the state - if I exit a state that has an Exit and enter another state that has an Entry, the Exit will be executed first and then the Entry)

Enemies

Enemy 1 - Lumberjack with axe

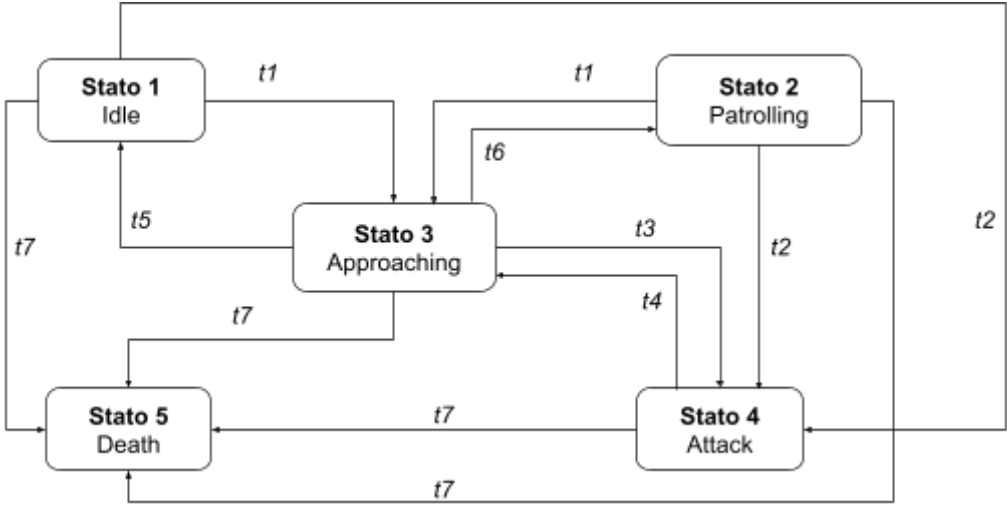
Role	Smasher	
Archetype	Fodder - Fills space and forces the player to move and be responsive Weak on its own, in a group it becomes dangerous	
Biome	Forest	
Narrative description	- Just a Lumberjack with axe - Classic lumberjack appearance with flannel, jeans and trusty axe - Clumsy and awkward in his movements - Animations should give the idea of a clumsy simpleton	
Statistics	Hp: 120 Speed: 2 u/s Damage: 12 Attack speed: 1 a/s Range: weapon dimension + 0.2 u Weakness: n/a Resistances: n/a	
Abilities	n/a	
Friendly fire	No	
Variables	[vision_cone] float size of the cone of vision [hear_circle] float size of hearing radius [spotted_player] bool to trigger animation and state transition [moving_to_player] bool to indicate state and any transitions [attacking] bool to indicate state and any transitions [is_dying] bool to indicate that the NPC is dead and death animations are to be played and any transitions [initial_state] bool to indicate whether the initial state of that entity is Idle or Patrolling [health] variable for life [damage] Damage that the enemy brings to the player. [attack_rate] Rate at which single damage is applied [speed] Speed of movement when running toward the player [patrolling] bool to indicate status and any transitions	

AI	<pre> graph TD S1[Stato 1 Idle] -- t1 --> S2[Stato 2 Patrolling] S2 -- t2 --> S4[Stato 4 Attack] S3[Stato 3 Approaching] -- t3 --> S4 S4 -- t4 --> S3 S3 -- t5 --> S1 S2 -- t6 --> S3 S4 -- t7 --> S5[Stato 5 Death] S3 -- t7 --> S5 S1 -- t7 --> S5 S2 -- t7 --> S5 </pre>
Transitions	T1: MC sighted and not in range of attack T2: MC sighted and in range of attack T3: MC in range of attack T4: MC not in range of attack T5: MC out of the cone of vision for 5 seconds and initial state is Idle T6: MC out of vision cone for 5 seconds and initial state is Patrolling T7: NPC life less than or equal to 0
States	State 1 - Patrolling • Entry action ◦ n/a • Stay action ◦ NPC performs “idle” animation • Exit action ◦ If exit condition are not those of T7, NPC performs “alert” animation State 2 - Patrolling • Entry action ◦ n/a • Stay action ◦ NPC performs “observe” animation by remaining stationary at a generic point A ◦ After the “observe” animation is finished, NPC stays in place for 0.5 s ◦ NPC moves by walking to a generic point B ◦ Reached B, NPC performs “observe” animation by remaining stationary at a generic point B ◦ Finished the “observe” animation, NPC stays in place for 0.5 s ◦ NPC moves by walking to a generic point A ◦ The previous steps are repeated • Exit action ◦ If exit condition are not those of T7, NPC performs “alert” animation State 3 - Approach • Entry action

	○ n/a ● Stay action ○ NPC comes running up to MC ● Exit action ○ n/a State 4 - Attack ● Entry action ○ n/a ● Stay action ○ NPC attack the player ● Exit action ○ NPC ends attack animation if running State 5 - Dead ● Entry action ○ NPC falls to the ground ● Stay action ○ NPC stays on the ground ○ After some seconds NPC disappears ○ After NPC disappears, his FSM is turned off ● Exit action ○ n/a
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Enemy 2 - Boscaiolo a mani nude

Role	Enforcers	
Archetype	Tank ○ He charges the player slowly but with high damage. ○ Forces the player to use the heavy attack	
Biome	Forest	
Narrative and visual description	● Experienced woodsman using hands ● More dangerous appearance, physically larger and wearing protective helmet ● Slow in movements ● Animations should give the idea of a big, powerful man as he moves ● They laugh the first time they are hit by a light attack	
Statistics	● Hp: 200 ● Speed: 1 u/s ● Damage: 25 ● Attack speed: 1 a/s ● Range: weapon dimension + 0.2 u ● Weakness: a heavy attack stuns him for 2s	

	• Resistances: light attack inflicts -10% damage
Abilities	n/a
Friendly fire	No
Variables	• [vision_cone] float size of the cone of vision • [hear_circle] float size of hearing radius • [spotted_player] bool to trigger animation and state transition • [moving_to_player] bool to indicate state and any transitions • [attacking] bool to indicate state and any transitions • [is_dying] bool to indicate that the NPC is dead and death animations are to be played and any transitions • [initial_state] bool to indicate whether the initial state of that entity is Idle or Patrolling • [health] variable for life • [damage] Damage that the enemy brings to the player. • [attack_rate] Rate at which single damage is applied • [speed] Speed of movement when running toward the player • [patrolling] bool to indicate status and any transitions • [patrolling points] array of locations to indicate where the NPC moves • [attack_cooldown] float for timer for damage cooldown • [recovery_state] bool to indicate when NPC is recovering • [recovery_stun_time] float to indicate how long the recovery period lasts after being stunned
AI	 <pre> stateDiagram-v2 [*] --> Stato1 Stato1: Stato 1 Idle Stato1 --> Stato2: t1 Stato1 --> Stato3: t1 Stato2: Stato 2 Patrolling Stato2 --> Stato3: t6 Stato2 --> Stato4: t2 Stato3: Stato 3 Approaching Stato3 --> Stato1: t5 Stato3 --> Stato4: t3 Stato3 --> Stato5: t7 Stato4: Stato 4 Attack Stato4 --> Stato3: t4 Stato4 --> Stato1: t7 Stato4 --> Stato5: t7 Stato5: Stato 5 Death Stato5 --> Stato1: t7 </pre>
Transitions	T1: MC sighted and not in range of attack T2: MC sighted and in range of attack T3: MC in range of attack T4: MC not in range of attack T5: MC out of vision cone for 5 seconds and initial state is Idle T6: MC out of vision cone for 5 seconds and initial state is Patrolling T7: NPC Life less than or equal to 0
States	Stato 1 - Idle • Entry action

- n/a
- **Stay action**
 - NPC follows "idle" animation
- **Exit action**
 - If the output condition are not those of T7

Stato 2 - Patrolling

- **Entry action**
 - n/a
- **Stay action**
 - NPC performs "observe" animation by remaining stationary at a generic point A
 - Finished "observe" animation, NPC remains in place for 0.5 s
 - NPC moves by walking to a generic point B
 - Reached B, NPC performs 'observe' animation by remaining stationary at a generic point B
 - Finished "observe" animation, NPC remains in place for 0.5 s
 - NPC moves by walking to a generic point A
 - Previous points are repeated
- **Exit action**
 - If the output condition are not those of T7

Stato 3 - Approaching

- **Entry action**
 - n/a
- **Stay action**
 - NPC comes running up to MC
- **Exit action**
 - n/a

Stato 4 - Attack

- **Entry action**
 - n/a
- **Stay action**
 - NPC attacks the player
- **Exit action**
 - n/a

Stato 5 - Death

- **Entry action**
 - NPC falls to the ground
- **Stay action**
 - NPC stays on the ground
 - After some seconds, NPC disappears
 - After NPC disappears, his FSM is turned off
- **Exit action**
 - n/a

Enemy 3 - Boscaiolo lancia accetta

Role	Emphasizers	
Archetype	Ranged Striker • Lancia asce da lontano • Veloce nei movimenti • Danno moderato • Costringe il giocatore a muoversi	
Biome	Forest	
Narrative and visual description	• Minute and short Lumberjack compared to the other two • Headpiece and shirt sleeves pulled up • Belt with many small axes	
Statistic	• HP: 80 • Speed: 4 u/s • Damage: 6 • Attack speed: 1 a/s • Range: min = 0.5; max = 6 u • Weakness: n/a • Resistance: n/a	
Abilities	n/a	
Friendly fire	No	
Variables	• [vision_cone] float size of the cone of vision • [hear_circle] float size of hearing radius • [spotted_player] bool to trigger animation and state transition • [moving_to_player] bool to indicate state and any transitions • [attacking] bool to indicate state and any transitions • [is_dying] bool to indicate that the NPC is dead and death animations are to be played and any transitions • [initial_state] bool to indicate whether the initial state of that entity is Idle or Patrolling • [health] variable for life • [damage] Damage that the enemy brings to the player. • [attack_rate] Rate at which single damage is applied • [speed] Speed of movement when running toward the player • [patrolling] bool to indicate status and any transitions	

	• [patrolling points] array of locations to indicate where the NPC moves • [in_range] bool to indicate whether NPC is in range to attack • [distance_to_player] float indicating distance between NPC and player • [min_range] Minimum attack distance • [max_range] Maximum attack distance
AI	<pre> graph TD S1[Stato 1 Idle] -- t1 --> S2[Stato 2 Patrolling] S2 -- t2 --> S4[Stato 4 Attack] S2 -- t3 --> S3[Stato 3 Approaching] S3 -- t4 --> S4 S3 -- t5 --> S1 S3 -- t6 --> S2 S4 -- t7 --> S5[Stato 5 Repositioning] S5 -- t8 --> S4 S4 -- t9 --> S6[Stato 6 Death] S5 -- t9 --> S6 S3 -- t9 --> S6 S1 -- t9 --> S6 S2 -- t9 --> S6 </pre>
Transitions	T1: MC sighted and not in range of attack T2: MC sighted and in range of attack T3: MC in range of attack T4: MC not in range of attack T5: MC out of the cone of vision for 5 seconds and initial state is Idle T6: MC out of the cone of vision for 5 seconds and initial state is Patrolling T7: Line of sight obstructed T8: Line of sight clear T9: NPC life less than or equal to 0
States	Stato 1 - Idle • Entry action ◦ n/a • Stay action ◦ NPC follows “idle” animation • Exit action ◦ If the output condition are not those of T7 Stato 2 - Patrolling • Entry action ◦ n/a • Stay action ◦ NPC performs “observe” animation by remaining stationary at a generic point A ◦ Finished “observe” animation, NPC remains in place for 0.5 s

	○ NPC moves by walking to a generic point B ○ Reached B, NPC performs 'observe' animation by remaining stationary at a generic point B ○ Finished "observe" animation, NPC remains in place for 0.5 s ○ NPC moves by walking to a generic point A ○ Previous points are repeated ● Exit action ○ If the output condition are not those of T7 Stato 3 - Approaching ● Entry action ○ n/a ● Stay action ○ NPC comes running up to MC ● Exit action ○ n/a Stato 4 - Attack ● Entry action ○ n/a ● Stay action ○ NPC Attacks the player by targeting the center of his chest ● Exit action ○ n/a Stato 5 - Repositioning ● Entry action ○ n/a ● Stay action ○ NPC moves to the right, left or backward by randomly choosing from free ones within 1 unit ○ After the first interaction, the possibility of being able to move forward as well is added ● Exit action ○ n/a Stato 6 - Death ● Entry action ○ NPC falls on ground ● Stay action ○ NPC stays on the ground ○ After tot seconds NPC disappears ○ After NPC disappears, its FSM goes off ● Exit action ○ n/a
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Enemy 4 - Boscaiolo con motosega

Role	Emphasizers	
Archetype	Melee Striker • He moves with a high speed but he deals moderate damage • Forces the player to move	
Biome	Forest	
Narrative and visual description	• Experienced lumberjack using chainsaw • Most dangerous appearance Physically larger and with protective helmet • Fast and precise in movements • Animations should give the idea of a prolific professional in chainsaw use and tree felling • His single attack lasts a certain time and then he pulls the chainsaw away	
Statistics	• HP: 150 • Speed: 3.5 u/s • Damage: 15 • Attack Speed: 2 a/s • Attack sequence duration: 1 s • Cooldown between attack sequences: 0.5 s • Range: la dimensione dell'arma in uso + 0.2 u • Weakness: n/a • Resistance: n/a	
Abilities	n/a	
Friendly fire	No	
Variables	• [vision_cone] float size of the cone of vision • [hear_circle] float size of hearing radius • [spotted_player] bool to trigger animation and state transition • [moving_to_player] bool to indicate state and any transitions • [attacking] bool to indicate state and any transitions • [is_dying] bool to indicate that the NPC is dead and death animations are to be played and any transitions • [initial_state] bool to indicate whether the initial state of that entity is Idle or Patrolling • [health] variable for life • [damage] Damage that the enemy brings to the player. • [attack_rate] Rate at which single damage is applied • [speed] Speed of movement when running toward the player • [patrolling] bool to indicate status and any transitions	

	• [patrolling points] array of locations to indicate where the NPC moves • [attack_cooldown] float for timer for damage cooldown • [recovery_state] bool to indicate when NPC is recovering • [recovery_stun_time] float to indicate how long the recovery period lasts after being stunned • [attack_duration] float attack duration • [attack_cooldown] float for attack cooldown timer
AI	<pre> graph TD S1[Stato 1 Idle] -- t1 --> S2[Stato 2 Patrolling] S2 -- t2 --> S4[Stato 4 Attack] S3[Stato 3 Approaching] -- t3 --> S4 S4 -- t4 --> S3 S3 -- t5 --> S1 S2 -- t6 --> S3 S4 -- t7 --> S5[Stato 5 Death] S3 -- t7 --> S5 S1 -- t7 --> S5 S2 -- t7 --> S5 </pre>
Transitions	T1: T1: MC sighted and not in range of attack T2: MC sighted and in range of attack T3: MC in range of attack T4: MC not in range of attack T5: MC out of vision cone for 5 seconds and initial state is Idle T6: MC out of vision cone for 5 seconds and initial state is Patrolling T7: NPC Life less than or equal to 0
States	Stato 1 - Idle • Entry action ◦ n/a • Stay action ◦ NPC follows “idle” animations • Exit action ◦ If the output condition are not those of T7 Stato 2 - Patrolling • Entry action ◦ n/a • Stay action ◦ NPC performs “observe” animation by remaining stationary at a generic point A ◦ Finished “observe” animation, NPC remains in place for 0.5 s ◦ NPC moves by walking to a generic point B ◦ Reached B, NPC performs ‘observe’ animation by remaining stationary at a generic point B ◦ Finished “observe” animation, NPC remains in place for 0.5

	- S ○ NPC moves by walking to a generic point A ○ Previous points are repeated ● Exit action ○ If the output condition are not those of T7 Stato 3 - Approaching ● Entry action ○ n/a ● Stay action ○ NPC comes running up to MC ● Exit action ○ n/a Stato 4 - Attack ● Entry action ○ n/a ● Stay action ○ NPC attacks the player ● Exit action ○ n/a Stato 5 - Morto ● Entry action ○ NPC falls on the ground ● Stay action ○ NPC stays on the ground ○ After tot seconds NPC disappears ○ After NPC disappears, its FSM goes off ● Exit action ○ n/a
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Enemy 5 - Forklift

Role	Challengers	
Archetype	Elite • Moves quickly and charges the player with a high-speed attack • Inflicts high damage with the “charge”, but its attack is interruptible and dodgeable • After a charge, it has a short recovery time, making it extremely vulnerable to attacks	
Biome	Forest	
Narrative and visual description	• Small industrial forklift • Red VFX appearing above the silhouette to indicate it is about to load or turn on itself • Reinforced front forks for impacts, with signs of previous damage • Black smoke from engine when accelerating to load • Squeaky metal sounds and a loud engine to signal its presence • Lumberjack's Bark when MC is “hooked”	
Statistics	• HP: 250 • Speed: 6 u/s (normal), 10 u/s charge • Charge Damage: 40 (if it hits with the charge) • Rotation Damage: 10 • Weakness: ◦ After it failed charge, it has a short time vulnerability ◦ The charge can be stopped by a certain amount of damage ◦ Ranged attack damage +10% • Resistance: n/a	
Abilities	• Charge: If MC is in range, the Forklift speed up in line • Rotation: ◦ If MC is near the Forklift for some time, it rotates on itself, striking everything around it ◦ The player must step away to not be hit ◦ After the rotation, the Forklift is slower and for a certain amount of seconds, it is motionless	
Friendly fire	Yes	
Variables	• [vision_cone] float size of vision cone • [hear_circle] float size of hearing radius • [spotted_player] bool to trigger animation and state transition	

	• [moving_to_player] bool to indicate state and any transitions • [attacking] bool to indicate state and any transitions • [is- dying] bool to indicate that the NPC is dead and death animations are to be played and any transitions • [health] variable for life • [damage] Damage that the enemy does to the player • [speed] Speed of movement when running toward the player • [patrolling] bool to indicate state and any transitions • [patrolling points] array of locations to indicate where the NPC moves • [in_range] bool to indicate whether the NPC is in range to attack • [distance_to_player] float indicating the distance between NPC and player • [charging] bool to indicate whether NPC is charging • [recovery_state] bool to indicate when NPC is recovering • [recovery_charge_time] float to indicate how long the recovery period lasts after charging • [recovery_stun_time] float to indicate how long the recovery period lasts after being stunned • [destruction_damage] damage it inflicts on objects in scene
AI	<pre> graph TD S1[Stato 1 Idle] -- t1 --> S3[Stato 3 Approaching] S2[Stato 2 Patrolling] -- t7 --> S3 S3 -- t2 --> S5C[Stato 5 Charge] S3 -- t3 --> S4[Stato 4 Recovery] S4 -- t4 --> S5R[Stato 5 Rotation] S5R -- t5 --> S5C S5C -- t6 --> S6[Stato 6 Ripositioning] S6 -- t8 --> S3 S5C -- t8 --> S3 S5C -- t9 --> S7[Stato 7 Death] S6 -- t9 --> S7 S4 -- t9 --> S7 S5R -- t9 --> S7 S3 -- t9 --> S7 S2 -- t9 --> S7 S1 -- t9 --> S7 </pre>
Transitions	T1: Forklift has not detected the player and the patrol time has expired T2: Forklift begins patrol T3: Forklift moves toward MC T4: MC is close to Forklift for too long, Rotation T5: MC is in range and visible, Charge T6: Forklift recovers from missed impact or charge is interrupted T7: NPC life less than or equal to 0
States	Stato 1 - Idle • Entry action

- Stop all movement
- Set idle animation / idle
- Start idle motor sound (low hum)
- **Stay action**
 - NPC follows "idle" animation
- **Exit action**
 - Stop idle sound
 - Stop idle animation

Stato 2 - Patrolling

- **Entry action:**
 - Select starting point and destination point
 - Set slow motion animation
 - Start slightly louder motor sound
- **Stay action:**
 - NPC performs "observe" animation by remaining stationary at a generic point A
 - Finished "observe" animation, NPC remains in place for 0.5 s
 - NPC moves by walking to a generic point B
 - Reached B, NPC performs 'observe' animation by remaining stationary at a generic point B
 - Finished "observe" animation, NPC remains in place for 0.5 s
 - NPC moves by walking to a generic point A
 - Previous points are repeated
- **Exit action:**
 - Stop motion
 - Stops the sound of the engine slightly louder

Stato 3 - Approaching

- **Entry action**
 - Block patrol
 - Set targeted movement animation toward MC
 - Fix player as target
- **Stay action**
 - Slowly advances toward the player
- **Exit action**
 - Stop movement

Stato 4 - Rotation

- **Entry action:**
 - Starts rotation animation on itself
 - Inflicts area damage
- **Stay action:**
 - Remains in rotation for two full turns
- **Exit action**
 - Stop rotation
 - Reset cooldown

	Stato 5 - Charge • Entry action ◦ Start charge and sound preparation animation • Stay action ◦ Accelerates in a straight line toward the player • Exit action ◦ Stop the acceleration once it has arrived at the maximum speed ◦ Charge animation and sound are stopped Stato 6 - Recovery • Entry action ◦ If failed charge → starts slow curve toward player, making itself vulnerable ◦ If interrupted before charge → applies stun for 2s • Stay action ◦ Remains stationary or curves slowly for x seconds ◦ Stunned: it can suffer by extra damage and it can't be defend itself • Exit action ◦ State "stunned" ends Stato 7 - Death • Entry action ◦ Disabled any movement ◦ Animation of engine explosion and tilt ◦ VFX activation of smoke and post-death visual effects ◦ Disappearance • Stay action ◦ n/a • Exit action ◦ After NPC's demise, his FSM goes out.
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Enemy 6 - Gru

Role	Challengers
Archetype	Boss • Moves slowly, forcing the player to reposition himself continuously • Inflicts high damage, but his attacks are telegraphed and dodgeable by staying away • After a charge, he has a short recovery time, making him extremely vulnerable to attacks
Biome	Forest

Narrative and visual description	• Large sawmill crane, with movable base on tracks that allows it to move slowly • Articulated mechanical boom, with logs hooked via rusty chains • Red flashing lights and metallic hydraulic sounds, signaling any movement • Black smoke and sparks when it receives damage, signaling deterioration	
Statistics	• HP: 350 • Speed: 2.5u/s • Damage: 55 • Weakness: n/a • Resistance: n/a	
Abilities	• Rotation: ◦ If MC is close for too long, it spins on itself quickly with the outstretched arm, hitting all around ◦ The player has to move away to dodge it ◦ After spinning, the crane is slower for a few seconds, creating an opening • Crash: ◦ Raises his arm and slams it hard into the ground, creating an area impact under his arm and in front of him ◦ If it hits the ground, it generates shock waves that propagate a few meters forward ◦ Attack with a large anticipation, with a 'slow loading' animation before impact	
Friendly fire	Yes	
Variables	• [spotted_player] bool to trigger animation and state transition • [moving_to_player] bool to indicate state and any transitions • [attacking] bool to indicate state and any transitions • [is- dying] bool to indicate that the NPC is dead and death animations are to be played and any transitions • [health] variable for life • [damage] Damage that the enemy does to the player • [speed] Speed of movement when running toward the player • [patrolling] bool to indicate state and any transitions • [patrolling points] array of locations to indicate where the NPC move • [in_range] bool to indicate whether the NPC is in range to attack • [distance_from_player] float indicating the distance between NPC and player • [time_for_rotation] float indicating how long MC has to stay close	

	to the Boss to do the rotation • [rotation] bool to indicate whether attack to be performed is the rotary one • [crash] bool to indicate whether attack to be performed is the crash one
AI	<pre> graph TD S1[Stato 1 Idle] --> S2[Stato 2 Approaching] S2 --> S1 S2 --> S3[Stato 3 Rotation] S2 --> S4[Stato 4 Crash] S3 --> S4 S3 --> S5[Stato 5 Death] S4 --> S5 S4 --> S3 S4 --> S1 S5 --> S1 S5 --> S2 </pre>
Transitions	T1: Crane has not detected player and approach time has expired T2: Crane approaches MC T3: MC is close to Crane for too long, Rotation T4: Crane melee attack range, crash T5: NPC life less than or equal to 0
States	Stato 1 - Idle • Entry action: ○ Stops any movement ○ Sets idle animation with arm swinging ○ Activates idle motor sound (low hum) • Stay action: ○ Stand still ○ NPC performs "idle" animation • Exit action ○ Stop idle animation ○ Save player target Stato 2 - Approaching • Entry action: ○ Hooks player as target ○ Sets slow motion animation ○ Activates motion sound (buzzing motor on) • Stay action:

- It approaches slowly the player
- **Exit action**
 - Stop motion
 - Stop animation and the sound of motion (hum of motor running)

Stato 3 - Rotation

- **Entry action:**
 - Freezes movement
 - Starts rotation animation on itself
 - Sets "close area attack" status
- **Stay action:**
 - Rotates on itself to hit MC close for too long
 - Inflicts area damage
- **Exit action**
 - Stop rotation
 - Reset cooldown

Stato 4 - Crash

- **Entry action:**
 - Block movement
 - Raise arm slowly in preparation for attack
 - Starts animation and sound of power loading
- **Stay action:**
 - At the end of the loading, the arm falls to the ground
 - Causes area damage under the arm
 - Generates a VFX of shock effect (earthquake, vibration, etc.)
- **Exit action**
 - Stop crash animation
 - Arm returns to Idle position

Stato 5 - Death

- **Entry action:**
 - Completely blocks all movements
 - Starts death animation and VFX (engine explosion + tilt to one side)
 - Disables attacks
 - Plays sound of destruction
- **Stay action:**
 - Remains inactive
 - VFX of smoke or sparks post-death
 - After a few seconds disappears
 - Remains as a walkable, non-interacting obstacle in the scenario
- **Exit action**
 - After NPC's demise, his FSM goes out.

Orthogonal Unit Differentiation

