

Hostage Mechanic

Gameplay Programming Prototype

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Gameplay mechanic

The basic idea is to make it possible for the player to grab a hostage and if the player is spotted by the enemy AI, it will not attack because the player is holding a hostage. Instead, the AI will start surrendering and rising their hands. If the hostage is released the AI will go in a fight state and start attacking the player. Which will be visualized by firing a gun.

Inspiration

The inspiration is a real hostage situation. For example, if a bank robber would take a hostage and threaten their life, the police would never try to shoot him because they would be afraid of hurting an innocent.

Or if you think about two guards which work together. They are colleagues or even friends and sympathize with each other. If one of them gets taken as a hostage, the other guard would never try to shoot the hostage-taker because he could accidentally kill his college.

What makes the mechanic special?

To grab someone in a video game is nothing uncommon. In nearly all stealth games you can grab a person. But other NPC's don't react to this event. They behave like normal, if they detect you, they will shot at you and sometimes even kill the person in your grab. In this prototype, it will be possible for the enemy AI to detect if the player took another NPC as a hostage, and instead of shooting the AI will start surrendering.

This prototype will demonstrate how a game can become more immersive. In a finished game this mechanic makes the player think twice before shooting people because he can see a relationship between the NPC's.

Controls and inputs

The basic move set of the game will be the normal first-person shooter controls.

You can press a button when you are near the NPC to take him as a hostage.

<i>Action</i>	<i>Input</i>
<i>Move forward</i>	W
<i>Move left</i>	A
<i>Move back</i>	S
<i>Move right</i>	D
<i>Grab/release hostage</i>	E
<i>Move camera</i>	Mouse movement
<i>Shoot</i>	Left mouse button

Rules and restrictions

First person camera.

Only if you are close to the NPC the grab will work.

The Enemy AI will only surrender if you are their sight with a hostage.

Enemy awareness is needed so the player has time to grab someone before the other NPC is starting to attack. The awareness can be seen in a console print.

NPC's will have no movement because it is unnecessary for the demonstration.

Parameters

Parameter	Type	Default value
grabbing	boolean	false
isSpotted	boolean	false
viewDistance	float	500,0 (cm)
awareness	float	0,0
playerHealth	float	100,0

grabbing: Shows if the player has grabbed the hostage or not.

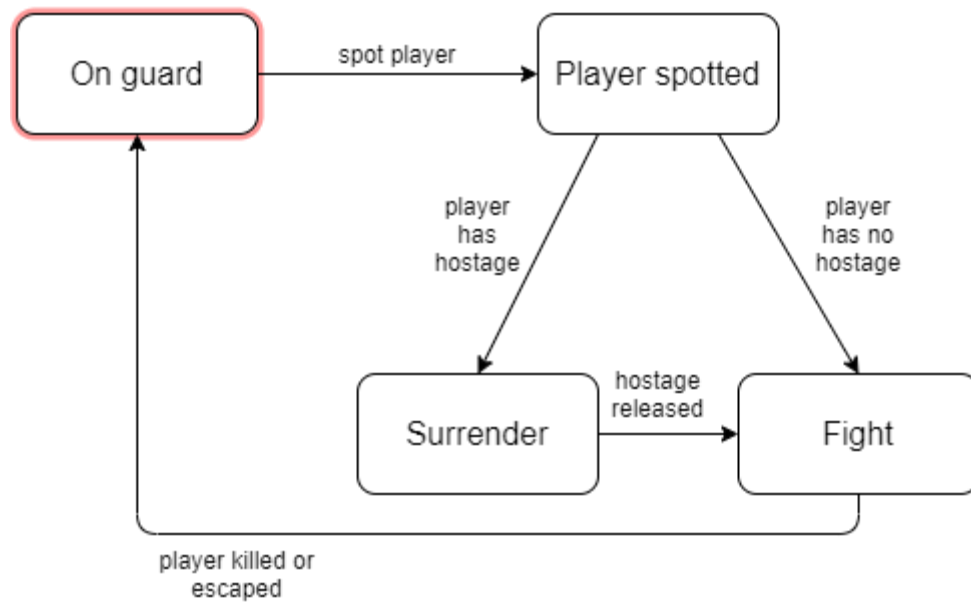
isSpotted: Indicator if the player is detected by the AI or not.

viewDistance: How far the AI can see.

awareness: Parameter will rise from 0 to 1 if the player enters the AI field of view. If it hits 1 the player is detected.

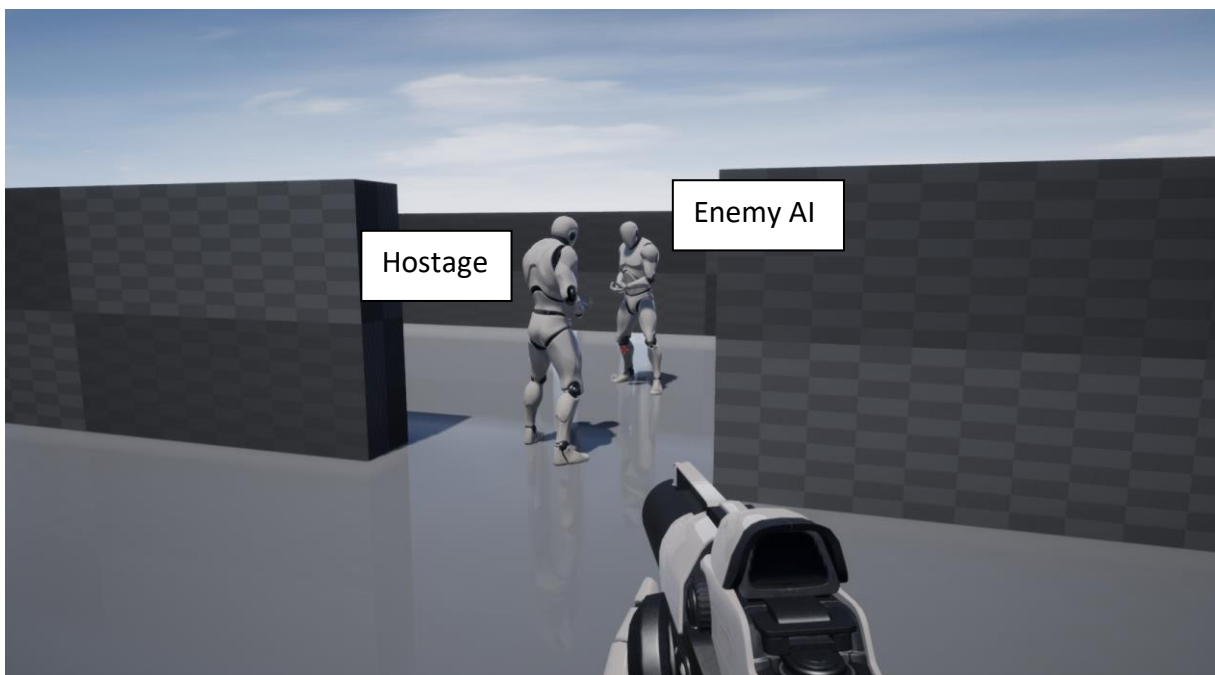
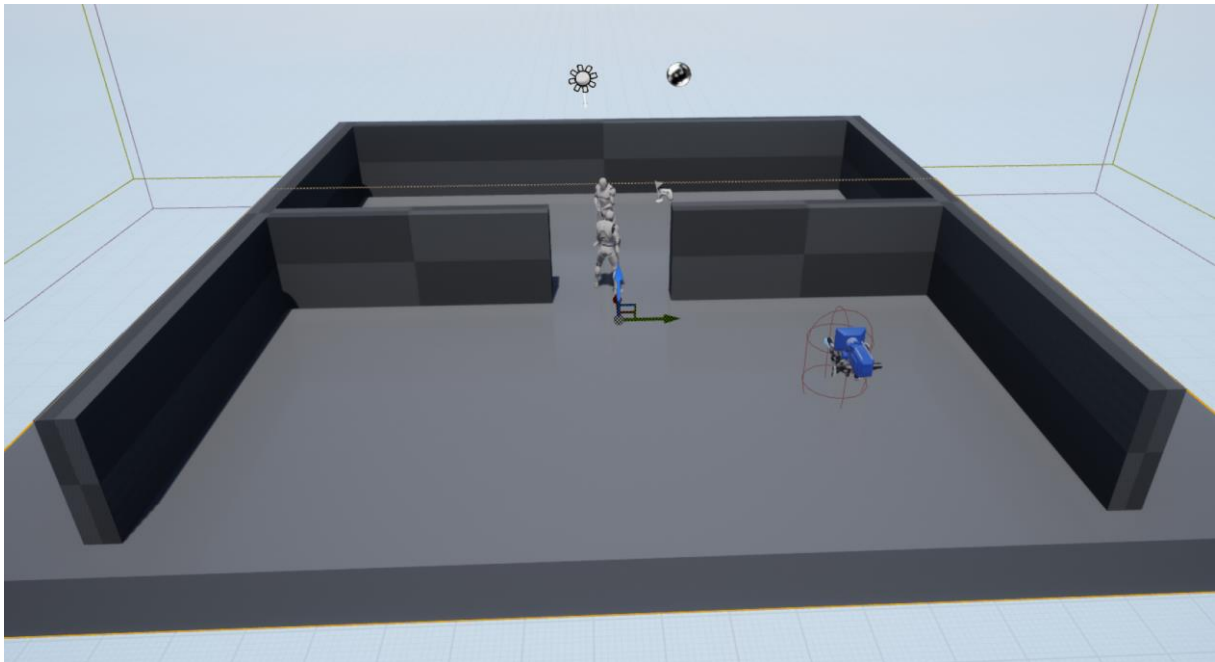
playerHealth: Amount of health the player has left. If it drops below 0 the player is dead.

Concept of enemy AI



The enemy AI will start in an on guard state in which it will try to detect the player. In the player spotted state it registers if the player took a hostage or not. If the player took a hostage, the AI changes in the surrender state. If not, it changes in the fight state. After releasing the hostage, the AI change into Fight state. When the player has been killed or escaped, the AI change back into on guard state.

Level design



In the Level will be two guards facing each other. The guard in between of the walls can be grabbed and taken as hostage. The guard in front of the Hostage is the enemy AI. The walls can also be used to hide from the AI.

Expected outcome of the prototype

It should be possible for the player to move to the hostage and grab it. As you can see in the concept of the level design, the enemy AI will start to raise awareness if the player moves behind the hostage because he entered the field of view of the AI. The AI will register if the player has grabbed the hostage or not. If not, the enemy AI will start attacking the player. In the other case the AI will start surrendering which should be visualized with animations. It should be possible for the player to release the hostage. The enemy AI will then stop surrendering and with a short delay start attacking the player if he is in the field of view.

Additional Features

- Visible view cone for enemy AI
- Visible awareness meter over the enemy AI head.
- More detailed surrendering animation
 - Throwing away the weapon
 - Raise hands
 - After hostage release pick up the weapon again
- Hostage can attack too after the player released it or the player entered their view cone (additional AI)
- Possibility for the player to kill both NPC's
- Different behavior of the AI if the player is holding the hostage but is faced backwards to the AI. In this case the AI should not surrender and instead attack instantly.