Artificial Intelligence for Games

GuardAI- Assignment UE4

5/14/2020

Group

Jouke Bertus Staring
Md Kudrat-E Khuda
Syeda Ghazal

Artificial intelligence (AI) in computer games covers the behaviour and decision-making process of game-playing opponents (also known as non player character or NPCs) similar to human-like intelligence.

Guard AI:

Functions:

1. **Patrolling -** The guard AI walks around the map in circles to try to spot the player.
2. **Chasing -** The guard AI chases the players based on the last location of the player.
3. **Attacking -** The guard AI attacks if it is in a certain range of the player. It can also attack and chase at the same time when the player is trying to run away.
4. **Searching -** The guard AI will search the last three locations where the player has been when the guard AI has lost the player out of sight. If he cannot find him he will start patrolling again at the last patrol point.

Senses:

1. **Sight sensing –** The guard AI sees the player when the player walks in the sight area of the guard AI. This will trigger the AI to start chasing the player.
2. **Damage sensing –** The guard AI registers it took damage when the player hits the guard AI.
3. **Hearing sensing –** The guard AI will hear the player when the player makes a cough noise and the AI will run to the spot where the noise came from

The behaviour tree contains:

Decorators:

1. **CanSeePlayer/CannotSeePlayer** - based on if the guard AI can see the player at that moment.
2. **HaveBeenChasing -** if the guard AI has been chasing the player but cannot see the player (due to the decorator above).

Services:

1. **ChangeNPCSpeed -** The speed of the guard AI changes based on the state of the AI (patrolling vs. chasing).
2. **PlayerIsInRange -** The guard AI will perform a melee attack if it is in a certain range to the player.

Player controls:

1. **Key arrows –** To move the player around
2. **Spacebar –** To jump on platforms
3. **Press ‘D’ –** To make a cough sound
4. **Press ‘Z’ –** To attack with a punch