AI Starter Code

This package is a starter pack for getting your AI code off the ground. It includes some common behavior states, mechanisms for customizing how your actor transitions between states, and the timings in which it checks for state transition criteria.

AI Behaviors

AI Behaviors control what actions the actor should execute and when. This is the core of the system. An actor can have multiple behaviors defined, but only would should be active at a time. The active behavior will be determined by a behavior manager that is also attached to the actor.

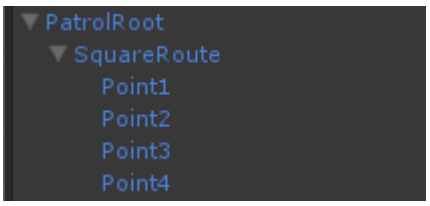
Grazing Behavior

This behavior causes the actor to move in a random direction for a short period of time with the option of looking around in place after stopping.

Patrol Behavior

This behavior will have the actor move between a set of waypoints.

The Patrol is defined with colliders placed in the positions that you want the actor to move to.



In this case the PatrolRoot object has a PatrolRoot script attached to it that allows behaviors to access the patrol paths. The SquareRoute object is an example of 1 patrol path in the scene. All available patrol paths should be a child of the PatrolRoot. Each point in a path is placed in a spot where you would like your actors to travel. Each collision with a point will cause the actor to choose the next point as its target destination. Each point has a trigger collider and a kinematic rigidbody so that they can invoke the trigger events on the PatrolBehavior class.

Enemy Patrol Behavior

This is derived from the PatrolBehavior class. In addition to the behavior of moving between waypoints it will also pursue an enemy when sensors are triggered.

Battle Behavior

This behavior is a simple combat behavior that will move towards the player position and attempt to attack the player via the AttackController implementation that is attached to the actor. The attack

controller will determine criteria for if the enemy is allowed to attack and will execute the actual attack if allowed.

Sensors

A sensor detects certain criteria in the scene and is either in a triggered or not triggered state depending on if that criteria has been met. AI states and Behavior managers can look to see if a sensor is triggered to determine new actions or change between AI states.

Vision Cone Sensor

Triggers when the target is clearly seen by the enemy. This game object includes a Sphere collider that represents the vision range of the enemy. While the target is within range the sensor checks if the angle between the target and self is within the field of view defined in the inspector window. If the target is within the field of view then a raycast is done to determine if there is a clear line of sight between itself and the target.

Proximity Sensor

When an object with a matching tag comes within range of the actor the sensor becomes triggered.

Movement Controllers

Movement controllers are components through which the AI behaviors can control the actor's movement.

Nav Mesh Movement Controller

A movement controller used when your actor uses a Nav Mesh Agent for pathing.

Root Motion Movement Controller

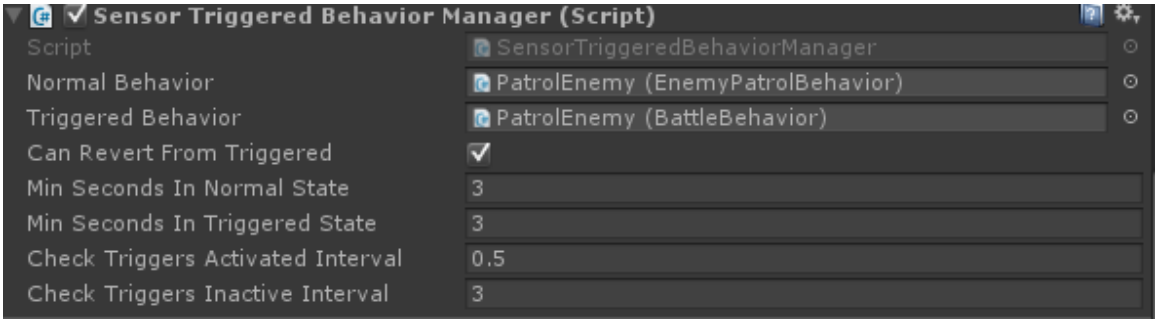
A movement controller used when movement is drive from a root motion enabled animation. This is just an example of how one would look and should be tailored to whatever root motion based animation controller your actor is using.

Behavior Managers

Behavior managers are responsible for changing the active AI behavior.

Sensor Triggered Behavior Manager

This behavior manager will switch between a normal and triggered state depending on whether or not any of the sensors in the object hierarchy are triggered.



AITransitionBehaviors

These are decorators that can be provided to each AI state. They will execute TransitionEnter and TransitionExit methods when AI state transitions occur. You can provide as many custom actions to each AI state as fits your scenario.