

## Questions for Lab1

1- A state is essentially what the ai is doing or can do. State patrolling for example means that the ai is currently patrolling, another state could be in our lab scenario is chasing which would mean the ai would chase after the player.

2- Basically conditions. We want a reason for the ai to switch to another state (to do something else), for example the ai sees the player, or player is in detection range. Or the player is in attack range, or we want the ai to stop and heal for example if its under a certain amount of health, the hp value would trigger the transition into heal state.

3- I think its for predictability and control over the ai. Most game ai doesn't want/need basically another player, they want the ai to do something specific. This could be being an enemy to slow down the player. Or we want the difficulty options for ai, so that its adjustable and accessible, like in a racing game. If we implement deep learning to every ai it would be problematic because the devs would lose control of too many aspects of the ai and in certain cases the ai would be too strong to the point of unbeatable as ai doesn't have input lag like players do. Deep learning racing ai at some point will never be beatable by players for example.

4- Forward is the blue axis and green is up

5- FixedUpdate will be executed once every time step is done so movement with rigidbodies and physics will be more consistent. Update is executed every frame and frame dependency can cause inconsistencies and bugs for this kind of thing. Also it executes many more times which would mean if were moving something up by 1 every update and fixedupdate they will have vastly different speed.

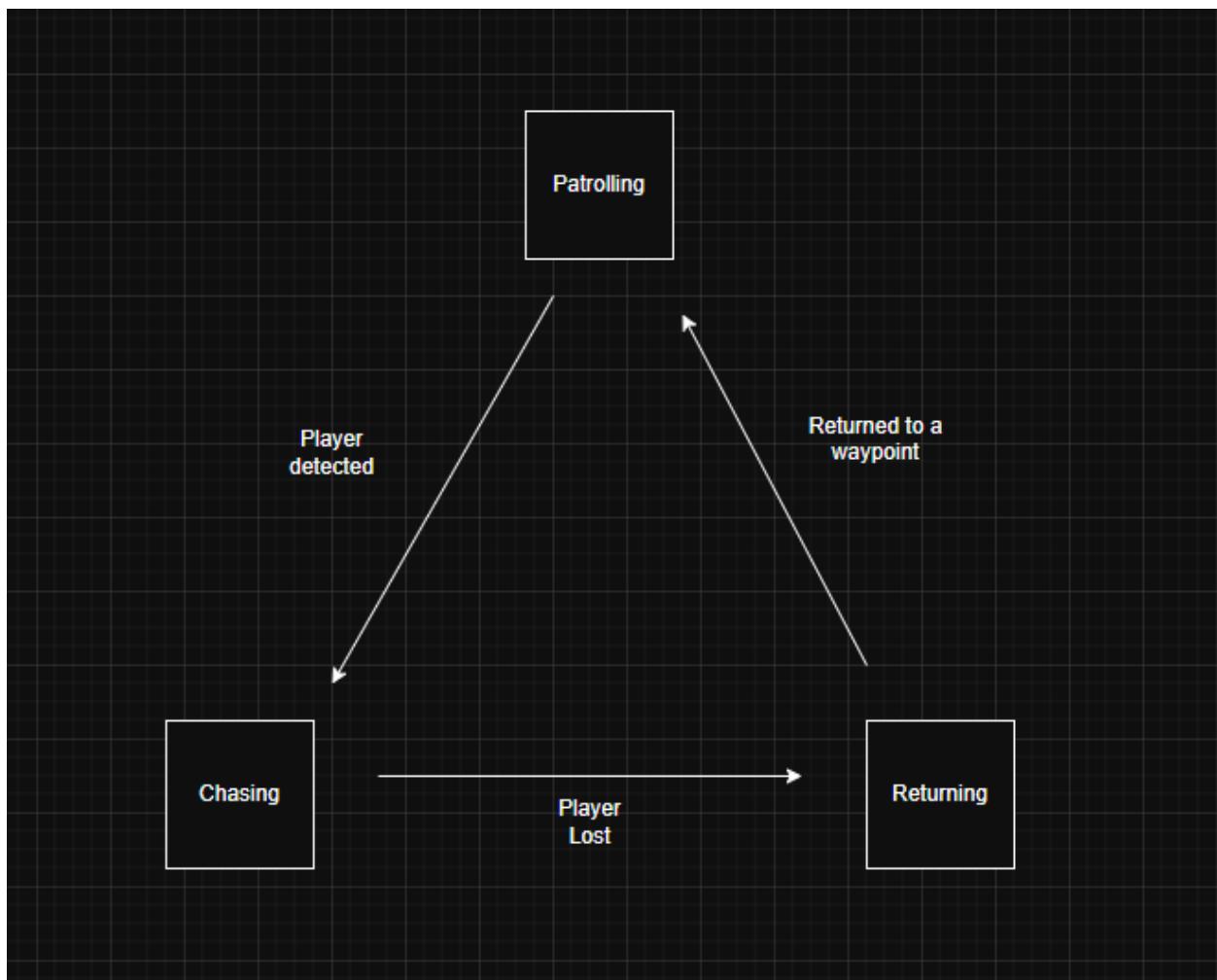
6-It will not do anything, you will get an error asking for a valid navmesh.

7-A path is the way the ai will walk or can walk and movement is actually going through with that path depending on the speed, width of the agent etc.

8- distance remaining can be unreliable so we make sure the agent is not on its way still.

9- we would go out of bounds

10-



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Our switch case would be `switch(isPatrolling, isChasing, isReturning)` and we would have to manually make each case specific for what we want and we would have to manage each bool in every scenario, it would be very hard to manage, bugfix and improve or extend it.