C# breakdown of scripts:

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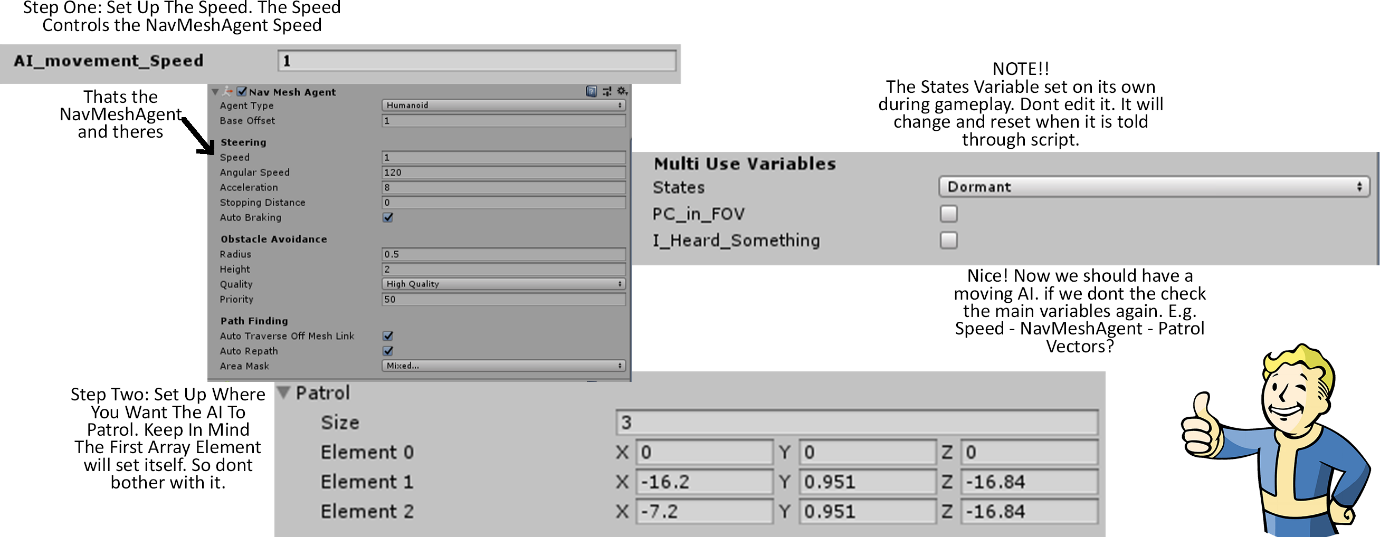
# Key Classes:

## AI Script:

How the script works:

### AI\_Movement:

The AI can move in 3 separate ways – Patrolling / Searching for the player and chasing the player. The main movement we can manipulate is patrolling. There is a Array of Vector3 which tells the object to move towards.



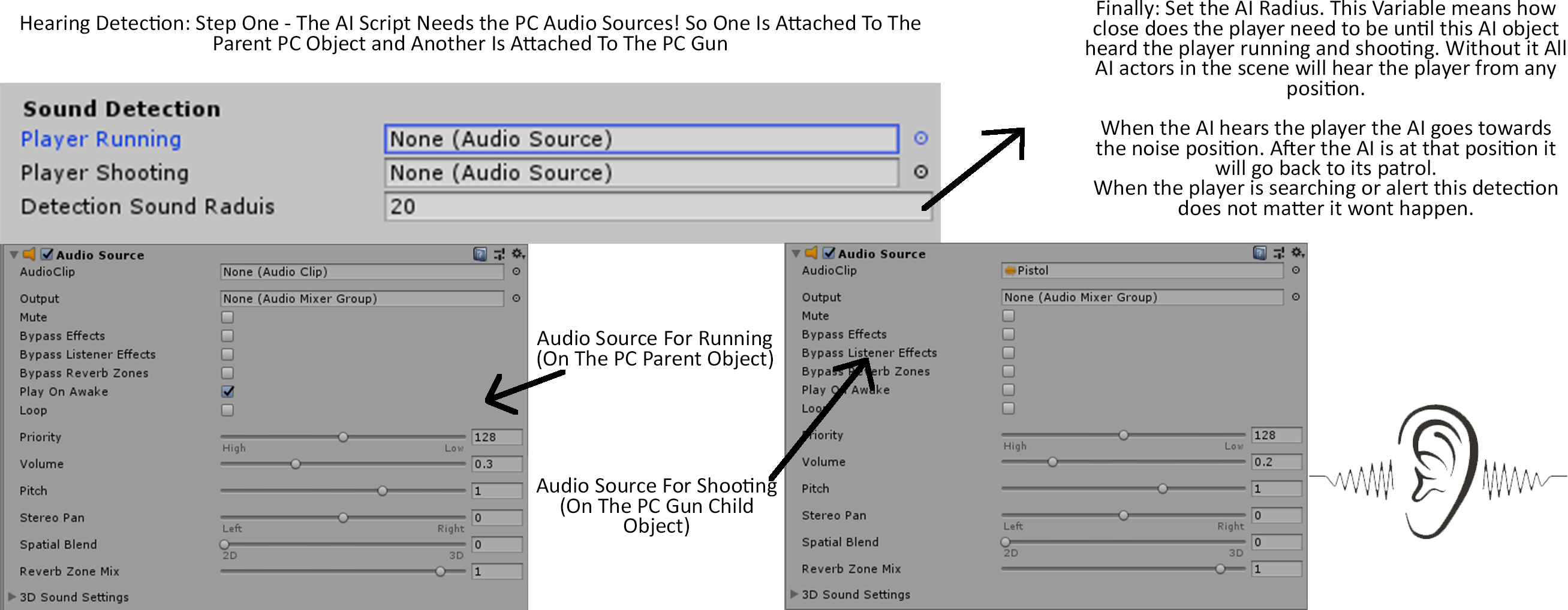
### AI\_Behaviours:

The Behaviour Logic in this script also known as Game States or Enum controls the behaviour of the AI. If it’s Dormant we are patrolling. If we are searching then we are trying to find the player and if we are Alert well then AI can start action with the player. The behaviours change depending on howlong the player is in sight (In The FOV “Field Of View”).



#### AI\_Hearing\_Detection:

The Hearing detection allows the AI detect the player’s sound presence depending on a distance. If the player is close enough to the AI and runs or shoots the gun then the AI goes towards the player.

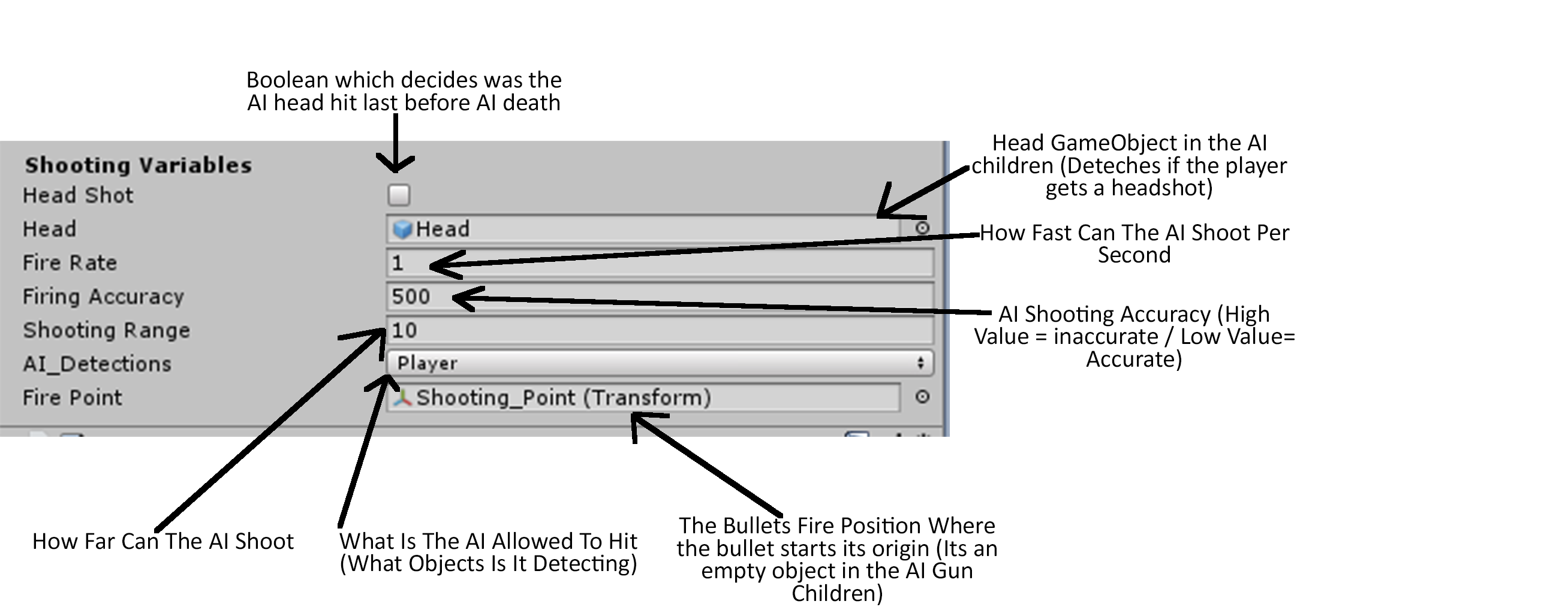


### AI\_Shooting:

The AI shooting logic is executed when the Searching and Alert states are active.

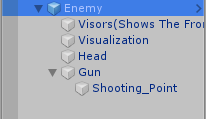
Searching allows for less accurate shots giving the implementation of AI fear and random shooting whereas

Alert Shooting is more accurate and more aimed towards the player.



### AI\_Structure

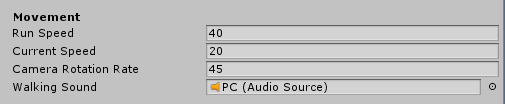
The AI Structure is just how the Object prefab is set up in the hierarchy. The Visors are just a indeicator on where the simple object is facing. (This is the simple concept breakdown). This will change when there are 3D models to use with animations.



## Player Controller:

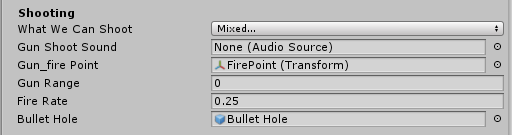
The Player Controller is the script which holds all the relevant logic for our characters actions (“Moving, Shooting, Camera Movement etc”).

### Player Movement:



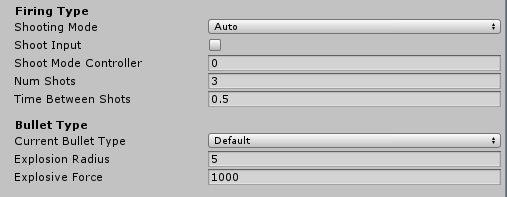
For Player movement the player can move with a set speed for Current Speed. However when holding down “Shift” The PC will run this value can also be set ad changed to whatever speed you wish to go. The camera rotation is a value which allows you to change how sensitive the player camera movement is. The camera moves with mouse movement on the X and Y. So (Up, Down, Left and right). The Up and Down rotation is clamped so the player can only rotate so high and low.

### Player Shooting:



This is the shooting logic at its core:

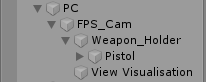
There is a layer mask “What We Can Shoot” which can be filled with layers so we know what the player can shoot. Walls or ground AI actors etc. There is a sound effect which player’s every time that the player shoots with the left mouse button and can aim with the right mouse button. The Ray that gets shot starts at the Fire point which is childed to the gun object which you can see in the object structure. The Gun Range allows the bullet to be shot from whatever value is given and the fire rate is how fast we can shoot a second. The Bullet hole prefab is just something that spawns at the end of the raycast.



The Players have the power to change Firing modes on the gun as well as bullet types. Currently we have shooting modes {Auto (Fully automatic like a machine gun) Semi (Simple one bullet at a time) Burst/Fly (3+ Bullets fire all at once)}. To Do This Press Q on the keyboard to change firing types and to change bullet types press B. We have default and explosive bullet types.

### Player Structure

The Player Prefab holds 2 key and important scripts which make it function: Firstly there is the Player controller. Which controls the player movement and camera functionality this will always be on the parent. However the Pistol holds all the shooting logic. Which allows players to shoot what is detected change fire modes and bullet types.



The Weapon Holder is also for scrolling though weapons if there is several we can go through them with the scroll wheel.