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| Class Information |
| **Class Name**: AI Brain  Abstract Type: No Persistence: No |

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| Trace-ability Information | | |
| **Use Case ID** | **Use Case Name** | **Steps** |
| 065 | Enemy AI | N\A |

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| Public Methods | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| Void Update() | While the level is running | Calls InRangeOfPlayer, MoveToPostion, TeamatesInRange, AlertTeamates, ResetAlertState, PredictPlayerMovement |
| Vector3 PredictPlayerMovement() | Called By Update | Tries to predict where the player will go. |
| Bool InRangeOfPlayer() | Called By Update | Calls CanSeePlayer, CanHearPlayer |
| Bool CanSeePlayer() | Called By InRangeOfPlayer | Updates LastKnowPlayerPos, LastKnowPlayerVelocety, and IsAlerted |
| Bool CanHearPlayer() | Called By InRangeOfPlayer | Updates LastKnowPlayerPos, LastKnowPlayerVelocety, and IsAlerted |
| Bool MoveToPostion() | Called By Update | Calls Enemy movement |
| Enemy[] TeamatesInRange() | Called By Update | Returns any teammates in range |
| Void AlertTeamates() | Called By Update | Alerts any teammates in range |
| Void ResetAlertState () | Called By Update | Resets HasBeenAlerted, AlertTimeOut,  TimeBeforeCanBeAlerted |

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| Protected Methods | | |
| **Signature** | **Preconditions** | **Post Conditions** |
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| Private Methods | | |
| **Signature** | **Preconditions** | **Post Conditions** |
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| Attributes | | | | | |
| **Name** | **Type** | **Object(Y/N)** | **Instance/Static** | **Visibility** | **Description** |
| WayPoints | Vector3[] | N | Instance | public | A list of way points for the enemy to follow |
| LastKnowPlayerPos | Vector3 | N | Instance | private | The last know position of the player |
| LastKnowPlayerVelocity | Vector3 | N | Instance | private | The last know Velocity of the player |
| IsAlerted | bool | N | Instance | private | Is this enemy alerted |
| HasBeenAlerted | bool | N | Instance | private | Has this enemy been alerted by another enemy |
| AlertTimeOut | float | N | Instance | public | Time tell the alert wears off |
| TimeBeforeCanBeAlerted | float | N | Instance | public | Time before this enemy can be alerted |

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| Concurrency | |
| **Threading Issue** | **Description** |
| N\A |  |

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| Major Exceptions | | |
| **Name** | **Trigger** | **Action** |
| N\A |  |  |

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| Instance Information | | | |
| **Minimum** | **Maximum** | **Mean** | **Fixed** |
|  |  |  | 1 |

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| --- | --- | --- |
| General Comments | | |
| **Author** | **Date** | **Comments** |
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