Appendix A:

* PDD

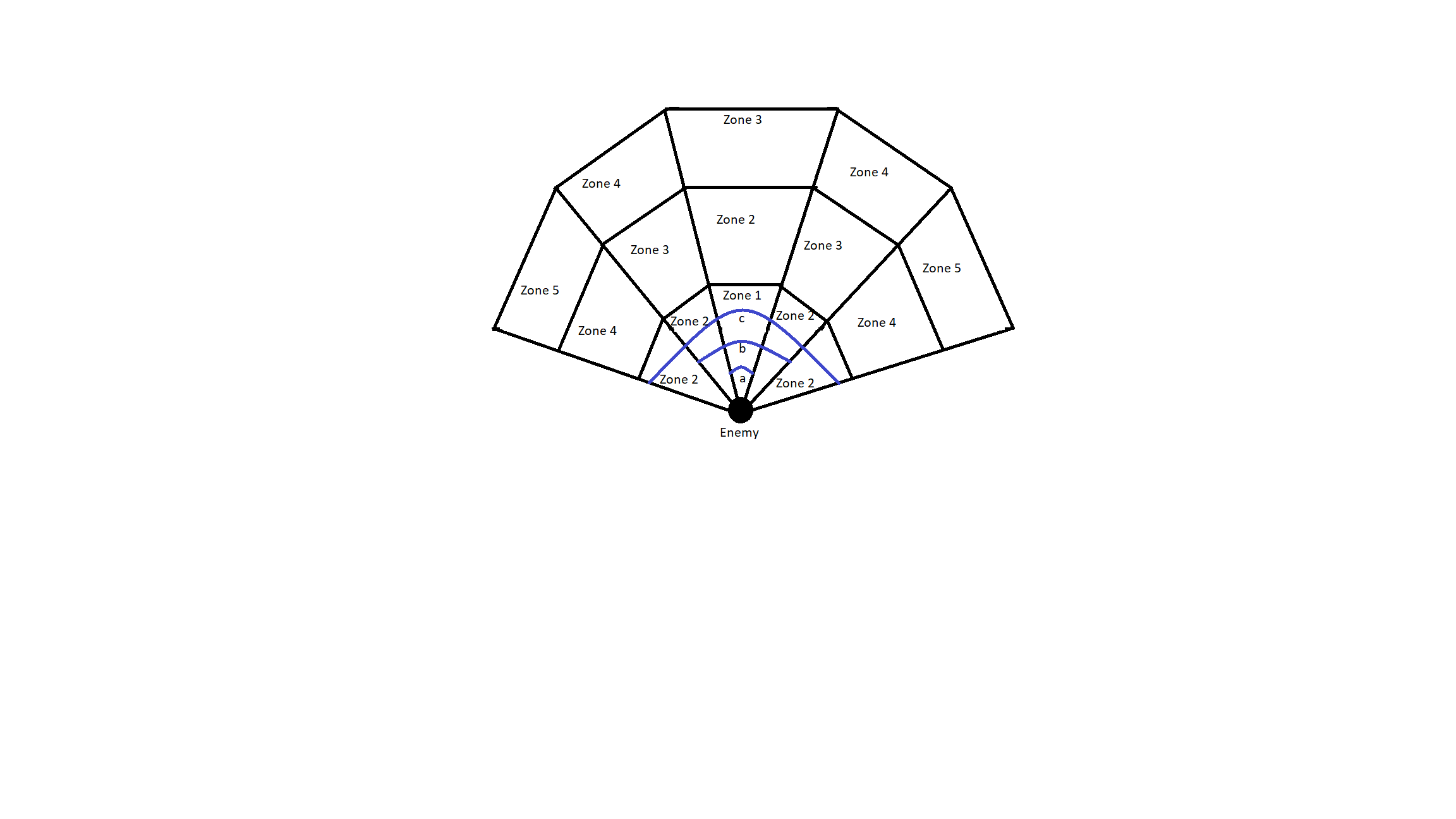
Appendix B:

REUSE SUMMARY

* Unity
* MS Paint
* Visual Studio
* Adobe Behaviour Tree Visual Editor

Appendix C:

MODELS/DIAGRAMS



*An example of an Enemy Vision Cone. 15 vision zones, split into 5 zone types. The higher the zone type, the slower the detection. 'a', 'b' and 'c' are the close, medium and wide angles respectively, displayed with the blue lines.*

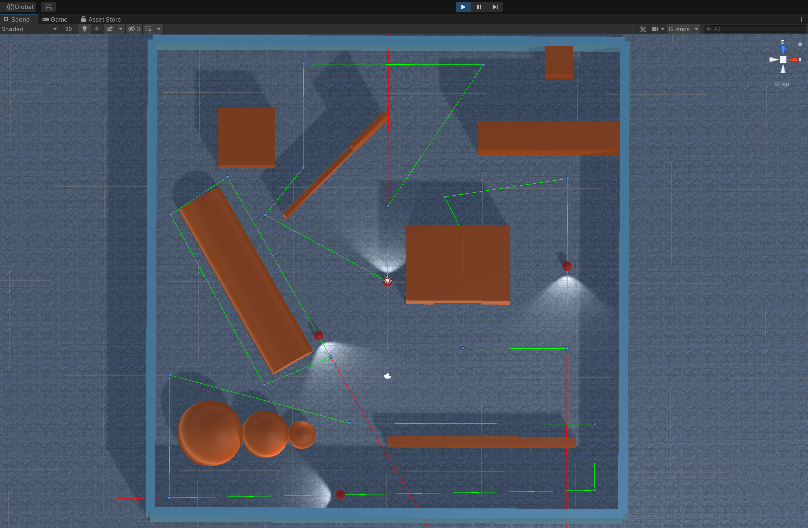
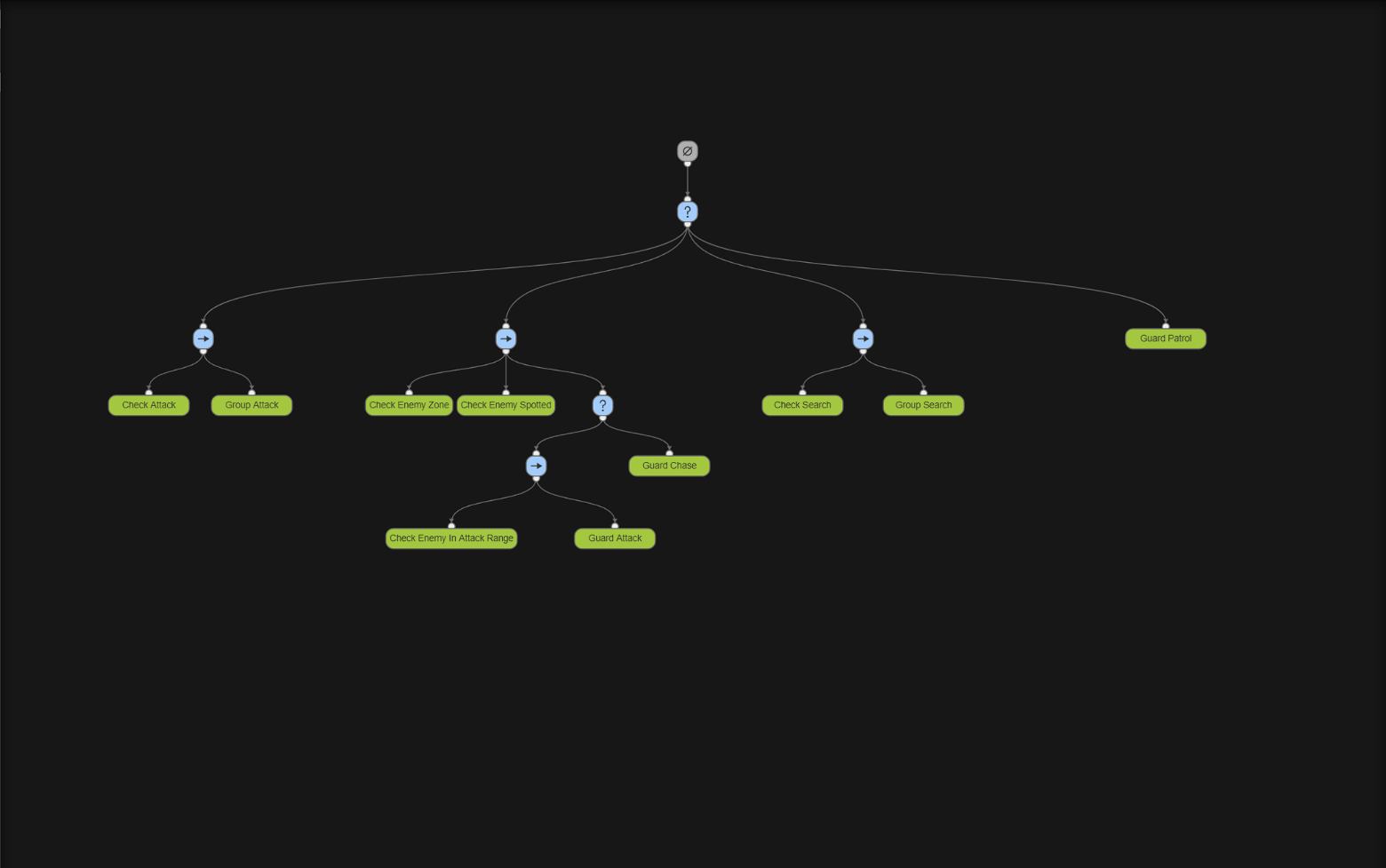


Diagram showing guards on patrol paths indicated by green lines and small blue dots.

Behaviour Tree Diagram showing the Guard Behaviour Tree layout and classes. (The topmost node is the root node. The ‘?’ nodes are selector nodes. The ‘->’ nodes are sequence nodes. The green nodes are leaf nodes.)



Appendix D:

REQUIREMENTS

|  |  |
| --- | --- |
| **Use Case:** Enemy Detection | **ID:** 1C |
| **Description:** An enemy will be able to detect the player slowly over time | |
| **Primary Actors:** Enemy | **Secondary Actors:** |
| **Preconditions:**   1. Player is in an undetected state | |
| **Main Flow:**   1. The use case will begin when the player enters the enemy`s field of view 2. A timer will start to check how long the player is in the enemy`s field of view 3. If the timer reaches a pre-determined endpoint, the player will be spotted 4. The timer should have a shorter pre-determined endpoint if the player is closer and more central in the enemy`s line of sight | |
| **Postconditions:**   1. The player is spotted by the enemy | |
| **Alternative Flows:** The player escapes the enemy`s field of view before the timer ends | |
| **Preconditions:**   1. The player is in the enemy`s field of view AND the timer has not ended | |
| **Alternative Flow:**   1. The player escapes the enemy`s field of view 2. The timer starts counting back down until 0 3. The player is not spotted and the timer reaches 0 | |
| **Postconditions:**   1. The enemy does not spot the player | |

Appendix E:

DEVELOPMENT TESTING

|  |  |
| --- | --- |
| **Use Case:** Enemy Detection | **ID:** 1C |
| **Test Number:** 1 | |
| **Objective:**  To test whether a player will be detected by the enemy and be detected at different speeds based on where they are in the enemy’s field of view | |
| **Set up:**  The player will take turns standing in the 5 different vision zones the enemy has. The player will start outside of the enemy’s field of view AND ensure the timer has not started. The player will then move to a vision zone and test how long it takes for the player to be spotted. The enemy’s spotlight will change to a different colour based on which zone the player has been spotted in, making it easy to visualise this test. | |
| **Expected Results:**  The player should be spotted after spending 1 second in zone 1 AND the enemy`s spotlight should go red.  The player should be spotted after spending 1.5 seconds in zone 2 AND the enemy`s spotlight should go magenta.  The player should be spotted after spending 2 seconds in zone 3 AND the enemy`s spotlight should go yellow.  The player should be spotted after spending 3 seconds in zone 4 AND the enemy`s spotlight should go green.  The player should be spotted after spending 5 seconds in zone 5 AND the enemy`s spotlight should go blue. | |
| **Test:**  The player will enter zone 1, check how long it takes for the enemy`s spotlight to go red and then leave the enemy`s field of view and wait for the timer to reset.  The player will enter zone 2, check how long it takes for the enemy`s spotlight to go magenta and then leave the enemy`s field of view and wait for the timer to reset.  The player will enter zone 3, check how long it takes for the enemy`s spotlight to go yellow and then leave the enemy`s field of view and wait for the timer to reset.  The player will enter zone 4, check how long it takes for the enemy`s spotlight to go green and then leave the enemy`s field of view and wait for the timer to reset.  The player will enter zone 5, check how long it takes for the enemy`s spotlight to go blue and then leave the enemy`s field of view and wait for the timer to reset. | |
| **Test Record:** Expected results observed | |
| **Date:** 23rd March 2023 | **Tester:** Tayyab Hussain |
| **Result:** Passed | |

|  |  |
| --- | --- |
| **Use Case:** Enemy Pathfinding | **ID:** 1B |
| **Test Number:** 2 | |
| **Objective:**  To test whether the enemies are successful in independent pathfinding in order to search for the player. | |
| **Set up:**  The enemies should be going along their patrol paths as normal, to begin with. After they spot the player, they should path find to the player’s location. Once the player has escaped and the enemies can no longer see the player, they should path find to search for the player. | |
| **Expected Results:**  The enemies should all congregate at the player’s last known location. They should then each spend 15 seconds searching a pre-determined position on the map using the pathfinding algorithm to traverse to that location. After 15 seconds they should then path find to another location on the map and search there for 15 seconds. After 30 total seconds of searching, they should path find back to their patrol paths and continue patrolling. | |
| **Test:**  The player will start in an undetected state and check that the enemies are following their patrol paths.  The player will then enter an enemy’s vision zone and be spotted.  The player will then run and hide and be completely outside of any enemy vision zone until the enemies have completed both searches and returned to their patrol paths. | |
| **Test Record:** Expected Results Observed | |
| **Date:** 22/04/23 | **Tester:** Tayyab Hussain |
| **Result:** Passed | |