**A2**

TASK 6

* **Explain the difference between Vector3.distance based code and A\* pathfinding.**

Vector3.distance formula returns the distance between a and b, an application of the Pythagorean theorem. This code lacks the ability of taking unwalkable areas into consideration, unlike the A\* pathfinding.

The A\* pathfinding is considered as a very smart algorithm. The path is finds is made of graph nodes(locations) and edges(connections from node to node). It searches a graph starting from one vertex, exploring near nodes until the destination node is reached, while finding the shortest route. A\* is built on top of the heuristic, which itself does not guarantee returning the shortest path. Despite this, A\* can guarantee a shortest path.

TASK 7

* **(Implement a high scores feature where each player’s playthrough time is saved to a file and the top ranked players are shown in the win screen.)**

**Explain the reason why the storyboard sequence needs to be saved and implemented in this way.**

When it comes to saving Data in Unity, there are 2 main levels of persistency: Session Data and Application Data. Unity comes with a built-in system of PlayerPrefs which only keeps track of simple settings between scenes, such as graphics, sound settings, login info, or any other user-related data. This is the session data. This method is not good practice to be used where saving data is crucial for user retention, such as saving score and preferences. Hence, Serialization is used. This is Application Data. It converses an object into a stream of bytes which writes to a file or possibly a database, to be restored later. It is a more complicated method. However, it provides more security and can save many other types of data. With Serialization, data is saved to JSON file formats, an easy-to-read tool for developers to examine during development. It works by taking the public variables in a class and writes them to JSON.

TASK 8

* **Implement a seeker mode in the game which highlights the search area the AI snake is using when a specific key combination is pressed.**

TASK9

* **Evaluate and justify techniques used and the final outcome.**

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