**AT01 Production Diary**

**1.1.1 Depth First Search Algorithm Research**

**Algorithm Summary**

It searches the first node out of the connected unvisited nodes to the current node.  
[DFS Pseudocode](DFS%20Pseudocode.txt)  
[DFS Code](Depth_First_Search.cs)

**DFS Terminology Definitions**

**Pathfinding:**

To find a path to a location.

**Tree:**

Tree is a data structure so in other words, it is a tree diagram.

**Parent:**

A parent means the node that connects to other nodes.

**Child:**

A child means the node that is connected to a parent node.

**1.1.3 AI Behaviour Chart**

*Insert your behaviour chart for the AI here.*

If at node

Restart game

If at root node

Player Caught

Move to Node

Find New Node using DFS algorithm

If touching player

If found player node

**1.1.4 AI Design Reflection**

(Look at the Cover Sheet Section 1 Part 1-4) The production of the NPC that uses the DFS algorithm would be pricey for the reason of how much work that needs to be put in just placing the nodes for it to use to navigate. The amount of time would depend on how big the play area is & how many nodes that are needed for the NPC to navigate.

**1.2.1 Planned HCI Device Integration Summary**

Keyboard, Mouse, Xbox Controller d-pad, & Xbox Controller joystick.

**1.2.2 C# Event System Summary**

It is to handle methods or delegates within the event. In C# events are encapsulated delegates, which means it is dependent on the delegate that it encapsulates. The class that raises the event is called a Publisher, & the class that receives the notification is called a Subscriber. A single event can have multiple subscribers.

Event

Delegate

Event Handler

Subscribe: Event += Event\_Handler

Subscriber

Publisher

Subscribe Events

Fires Events

Event handler signature must match with event delegate signature

**1.2.2 Unity GUI Library Review**

uGUI (Unity UI) is an in-game UI & IMGUI (Immediate Mode GUI) is for the Unity editor.

uGUI is for Technical Artists because it is an object-based UI system.

IMGUI is for Programmers as its main focus.

Reference: https://docs.unity3d.com/Manual/UI-system-compare.html

**1.2.3 UI Widget Example Overviews**

The UI widget for this game is for showing what direction you are trying to go & another way for the player to control their movement. A lot of mobile games use this type of UI widget or a joystick type widget, they use these for movement &or actions like attack, use an ability, & interact.

**1.2.4 UI Widget Paper Prototype**

*Insert the paper prototypes for the required UI widget here.*

The Widget works with all HCI devices mentioned in 1.2.1

This is the widget if it gets an input & can’t move in that direction

This is the widget if it gets an input & can move in that direction.

This is the UI widget in its neutral state.

**2.1.1/2.2.2 Testing Log**

*Please add rows as required.*

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case Description | Expected Results | Actual Results | Success? |
| Pressing W or up arrow makes the player move up if a node is up & makes the up widget change colour to represent if it can or not. | The up-widget changes colour & player moves if a node is above. | The up-widget changes colour & player moves if a node is above. | True |
| Pressing S or down arrow makes the player move down if a node is down & makes the down widget change colour to represent if it can or not. | The down-widget changes colour & player moves if a node is below. | The down-widget changes colour & player moves if a node is below. | True |
| Pressing D or right arrow makes the player move right if a node is right & makes the right widget change colour to represent if it can or not. | The right-widget changes colour & player moves if a node is to the right. | The right-widget changes colour & player moves if a node is to the right. | True |
| Pressing A or left arrow makes the player move left if a node is left & makes the left widget change colour to represent if it can or not. | The left-widget changes colour & player moves if a node is to the left. | The left-widget changes colour & player moves if a node is to the left. | True |
| Moving the joystick up or pressing up on the d-pad makes the player move up if a node is up & makes the up widget change colour to represent if it can or not. | The up-widget changes colour & player moves if a node is above. | The up-widget changes colour & player moves if a node is above. | True |
| Moving the joystick down or pressing down on the d-pad makes the player move up if a node is down & makes the down widget change colour to represent if it can or not. | The down-widget changes colour & player moves if a node is below. | The down-widget changes colour & player moves if a node is below. | True |
| Moving the joystick right or pressing right on the d-pad makes the player move right if a node is right & makes the right widget change colour to represent if it can or not. | The right-widget changes colour & player moves if a node is to the right. | The right-widget changes colour & player moves if a node is to the right. | True |
| Moving the joystick left or pressing left on the d-pad makes the player move up if a node is left & makes the left widget change colour to represent if it can or not. | The left-widget changes colour & player moves if a node is to the left. | The left-widget changes colour & player moves if a node is to the left. | True |

**3.1 Final Checks**

|  |  |
| --- | --- |
| **Final Checks** | **Confirmed** |
| * AI pathfinding (using the DFS algorithm) has been successfully integrated | ✔ |
| * Game over conditions have been successfully implemented | ✔ |
| * Appropriately compatible with Google Chrome web browser | ✔ |
| * Appropriately compatible with Mozilla Firefox web browser | ✔ |
| * Appropriately compatible with Windows | ✔ |
| * UI widget responds to relevant keyboard inputs | ✔ |
| * UI widget responds to relevant mouse inputs | ✔ |
| * UI widget responds to relevant controller inputs | ✔ |
| * UI set to scale with a Full HD resolution (1920x1080) | ✔ |

**3.1 AI Evaluation**

The AI works like it is supposed to (& a bit better).

**3.2 Required Amendments**

None.

**3.3 Final Client Sign-Off**

*Insert a screenshot of your email communications with the client, providing evidence of their endorsement to finish the production of the project.*

A picture containing calendar

Description automatically generatedText, letter

Description automatically generated

Where the game is: <https://stampard0.itch.io/at01-by-stampard>

Password to access: AT1Richard

Repository: [GitHub - Stampard0/3D-Game-Dev](https://github.com/Stampard0/3D-Game-Dev)