**AT03 Production Diary**

**1.1.1 A\* Algorithm Research**

A\* is one of the best path-finding algorithms for finding the shortest path to a goal.

**A\* Terminology Definitions**

**F Cost:**

This is the cost for moving to the node. It is the g + h costs

**Heuristic:**

Is the estimated movement cost.

**Priority Queue:**

The lower heuristic has a higher priority.

**1.2.1 Specifications and Software Analysis**

**3D Model Export Specifications:**

FBX file format & for the model to have an armature.

**Character Animation Specifications:**

The model should have an armature.

**Animation Features, Toolsets, and Capabilities in Unity:**

Unity animator & state machine

**1.2.2 Unity Scene Navigation**

**Panning the viewport camera:**

Left & right or A & D to pan. Left-click & drag work as well.

**Zooming the viewport camera in/out:**

Mouse Scroll wheel or Alt & right-click

**Rotating the viewport camera:**

Right-click & drag.

**1.2.3 Enhancing Workflow in Unity**

**Keyboard Hotkey/Shortcut Procedures:**

E for Rotate Tool, R for Scale Tool, Ctrl+Z for Undo

**Navigational Input Procedure:**

W,A,S,D,Q,E to move in 3D viewport. Arrow keys for menus.

**1.3.1 HCI Device Integration Research**

You would need to know the controller mapping.

**Potential HCI Devices:**

Mouse & Keyboard, Xbox Controller, PlayStation Controller

**Selected HCI Devices and Associated Control Schemes:**

Xbox Controller, Mouse & Keyboard

**1.3.2 Planned HCI Integration**

**C# Event System Summary:**

C# Event system will be used to determine what state the AI will be in:  
Wonder (is moving & not chasing the player)  
Chase (Player is in the detection area)  
Idle (is not moving & not chasing player)  
Stun (Player interacted with me)  
Force Chase (Player has all objectives)

**Unity GUI Library Reviews:**

UI Toolkit is good for all uses as long as you have the UI Toolkit package installed.

Unity UI(uGUI) is good for runtime use.

UI Toolkit is more for UI Designers, & uGUI Technical Artists.

**1.3.3 UI Widget Example Overviews**

Cross hair examples  
Objective examples

**2.1.1 AI Behaviour Chart**

*Insert your behaviour chart for the AI here.*

Idle

Chase

Wonder

Stun

**2.1.2 AI Design Review**

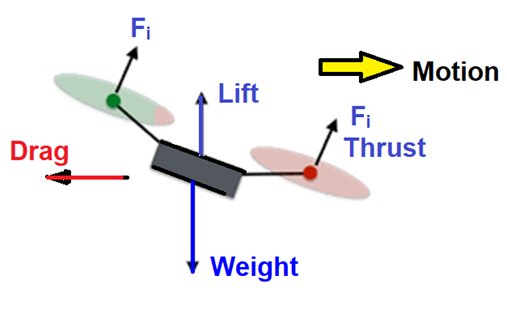
**Review of AI Design Feasibility:**

The AI is quite feasible as long as the transitions are smooth & work.

**AI Production Timeline and Cost Estimates:**

Time to make AI: 1 hour  
Time to make NPC: 3 hours  
Hourly pay = $32.90  
Total cost = $32.90 \* (1+3) = $131.6

**2.2.1 Animation Reference Materials**

[Image Reference](https://www.google.com/imgres?imgurl=https%3A%2F%2Fcfdflowengineering.com%2Fwp-content%2Fuploads%2F2020%2F09%2Fword-image-37.png&imgrefurl=https%3A%2F%2Fmappingmemories.ca%2Fpyrcezvac1042827&tbnid=q3m7n8upKgTwSM&vet=12ahUKEwiut-Ce9Yb5AhW1yaACHdxWAVsQxiAoAXoECAAQHQ..i&docid=QyNhBe7gWqKXZM&w=507&h=311&itg=1&q=how%20drones%20fly&ved=2ahUKEwiut-Ce9Yb5AhW1yaACHdxWAVsQxiAoAXoECAAQHQ)

<https://youtu.be/4kjA473swIo?t=205> <https://youtu.be/4kjA473swIo?t=328>

**2.3.1 UI Widget Paper Prototype**

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

Clicking Play would send you to the game

Clicking Help would bring up the help menu

Play

Help UI

Clicking Quit will close the game.

Help

Quit

IN game UI

**3.1.2/3.3.2 Testing Log**

*Please add rows as required.*

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case Description | Expected Results | Actual Results | Success? |
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**3.2.2 Animation Troubleshooting**

**Error Scenario Summary:**

Transitions & endless loops

**Relevant Official Unity Documentation:**

**Relevant Unity User Feedback:**

**3.3.2 Web Browser Testing**

**Web Build Running in Mozilla Firefox:**

**Web Build Running in Google Chrome:**

**4.1 Required Amendments**

**4.2 Final Review**

**AI Evaluation:**

**Final Checks:**

|  |  |
| --- | --- |
| **Final Checks** | **Confirmed** |
| * Camera movement responds to relevant inputs |  |
| * Player movement responds to relevant inputs |  |
| * Player interaction responds to relevant inputs |  |
| * AI path finding (using the A\* algorithm) has been successfully integrated |  |
| * The AI behaviour is defined by four states – idle, chase, stun, and either patrol or wander. |  |
| * The logic of all AI behaviour states aligns with the game brief |  |
| * AI successfully and appropriately transitions between behaviour states |  |
| * Chase state becomes the default state for the AI when the objective item is interacted with |  |
| * AI transitions to stun state in response to player interaction |  |
| * AI 3-D model and animations have been successfully integrated for each behaviour state |  |
| * AI audio clips have been successfully integrated for each behaviour state |  |
| * Game win conditions have been successfully implemented |  |
| * Game loss conditions have been successfully implemented |  |
| * UI prompt displays appropriate message based on game loss or victory |  |
| * 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) |  |
| * UI objective text updates appropriately |  |
| * UI ‘new game’ button successfully loads game scene |  |
| * UI ‘info’ button successfully displays a window with some game information |  |
| * UI ‘quit’ button successfully closes the application |  |
| * Appropriately compatible with Windows |  |
| * Appropriately compatible with Google Chrome web browser |  |
| * Appropriately compatible with Mozilla Firefox web browser |  |

**4.3 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.*

**Repository Link:**

Itch:

Password:

Repository: