



Coalheart

Informing Design through Narrative

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My Problem

“How do you design mechanics and systems that are built to immerse the player within a character and narrative?”

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Games with arbitrary mechanics like skill trees or crafting systems often risk leaving the experience feeling less accessible, unclear, or at worst their elements can be at odds with each other, creating a ludo-narrative dissonance that takes the player out of the experience.

I was interested by the concept of ludo-narrative harmony, where narrative and design work in tandem, how this impacts immersion, and by extension its impacts on the core experience.



Assassin's Creed Origins - <https://youtu.be/CyQ0jh7LVX4>



Rise of the Tomb Raider - <https://youtu.be/wsmEuHa1eL8>

My Solution

“How do you design mechanics and systems that are built to immerse the player within a character and narrative?”

My solution was to explore these ideas in my artefact “Coalheart”. For Coalheart I wanted to create a unique narrative, world, and characters. When designing mechanics and systems for this experience, I would consider these narrative elements, considering only what is required to immerse the player within the story, the world, their character, and their role. I wanted to make an effort not to add design any mechanics that I felt were unnecessary for that goal, as it would distract from the core experience.

My hope was that with these elements each working together to accomplish the same goal, the core experience would be greater than the sum of its parts; a lasting experience that would be more memorable, engaging, and meaningful to the player.

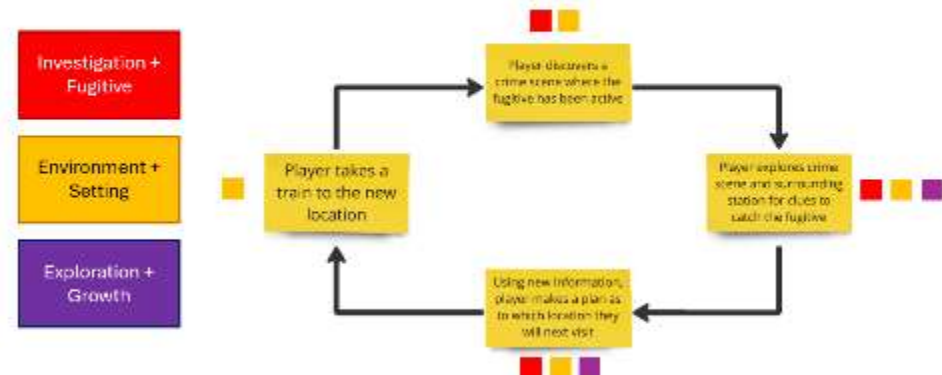
Game Demo Idea: Coalheart

- Inspiration from a D&D steampunk setting idea I wanted to pursue
- **Coalheart** is a game about a detective finding his way through an unforgiving world of steam power. As he searches for a dangerous fugitive, he learns more about his own place in the world

High Concept Statement



Core gameplay loop



Coalheart

These images show my initial proposal for the artefact, its narrative through my high concept statement, and a core gameplay loop with pillars of gameplay attached that I wanted to prioritize

High Concept Statement:

"Coalheart is a game about a detective finding his way through an unforgiving world of steam power. As he searches for a dangerous fugitive, he learns more about his own place in the world"

Core Gameplay Loop:

Discover a crime scene where the fugitive has been - explore and search for clues - using that information determine your next location to visit - travel to new location by train

Pillars:

Investigation, Environment, and Exploration

Game Demo Idea: Coalheart

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High Concept Statement



Core gameplay loop



Aim and Objectives

Aim: To inform design through narrative, creating an immersive core experience.

Objectives:

- **Immersion** – Immerse the player in their role and narrative to create a meaningfully engaging core experience.
- **Accessibility** – Mechanics that are clear and accessible allow the player to focus on the core experience.
- **Player Agency** – Allowing the player to tackle the game at their own pace and make meaningful choices allows them to relate closer to their character and role.

Deliverables – What did I set out to make?

Narrative

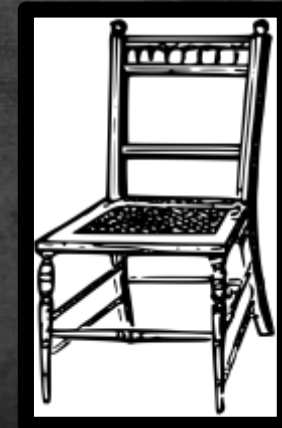
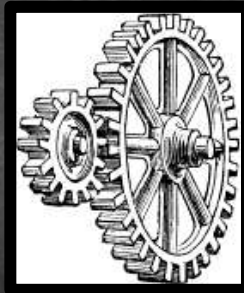
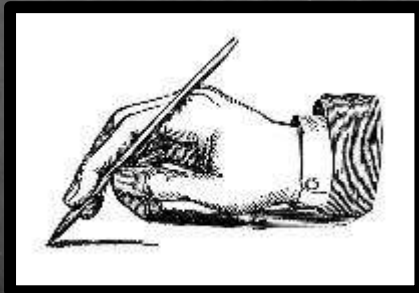
- Create a narrative document
 - Themes
 - Worldbuilding
 - Factions (Religion and Government)
 - The fugitive (backstory, goals, motivations)
 - The detective (goals, motivations, characterization)

Design

- Create a design document
 - Investigation System
 - NPCs, Dialogue, and Quests
 - Train system
 - Real-time clock and events
- Implement these designs into an Unreal Engine 5 project.
- Level layout and blockout
- Create a 15-minute playable demo

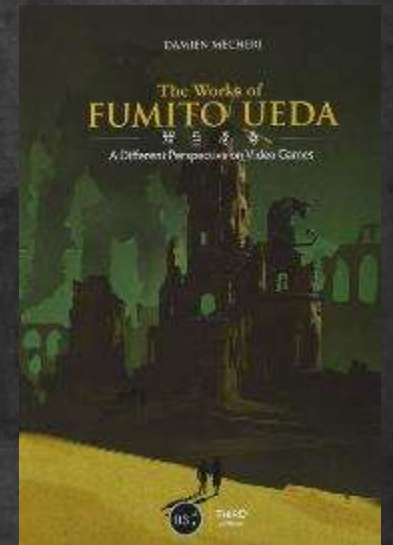
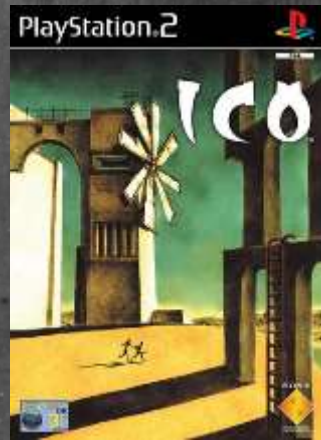
Aesthetics (Polish)

- Develop a basic art style to bring the game together with minimal art and animation assets
- Create some low poly art assets in 3ds Max for the purpose of conveying ideas effectively



Research – Key Influences

- Lucas Pope's "Papers, Please" and "Return of the Obra Dinn"
- Fumito Ueda's "ICO", "Shadow of the Colossus", and "The Last Guardian"
- "The Works of Fumito Ueda: A Different Perspective on Video Games" by Damien Mecheri

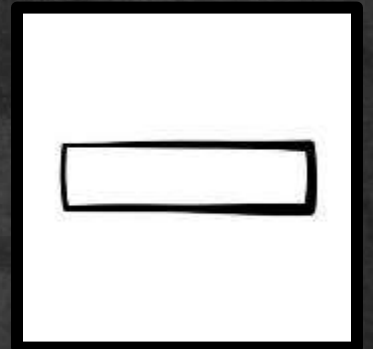
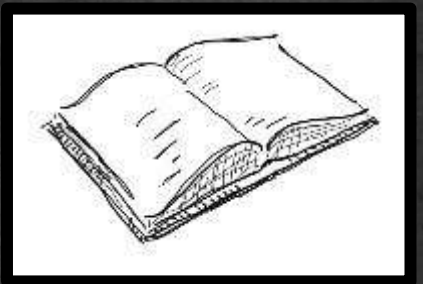
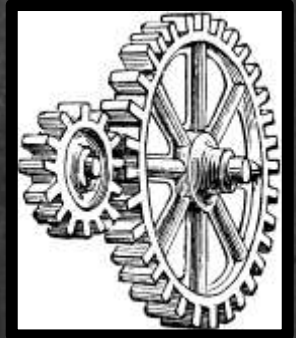


Research - What did I Learn?

Mechanics as a device for storytelling – By telling the story of the game through the mechanics you have designed, you give those mechanics more purpose and create an experience that feels cohesive. This helped me understand that if I am to tie my mechanics to the narrative, I must use the mechanics to tell that narrative, instead of through cutscenes

Mechanics that Reflect Narrative - Mechanics are given narrative purpose by reflecting character traits, character roles, emotions, setting, and themes. By considering the emotions, or aesthetic qualities (MDA Framework) elicited by a mechanic, you can better reflect your narrative, which in turn immerses the player further within that narrative: the player is really feeling the effects of their character, or the presence of the world.

Design by subtraction – Design theory of Fumito Ueda, where elements of a game are stripped back to its essential core. Without distractions, the player can immerse themselves further into their character and the setting and focus on the core experience without distraction. For those reasons, this theory was integral to my goal of creating a meaningfully engaging core experience.



Research – Evaluating my Approach

In order to evaluate the approach informed by my research, I used playtesting. I planned to observe a playtester as they went through my demo without any input from me, and ask them to fill in a questionnaire afterwards.

For my questionnaire, I planned to evaluate gameplay, level, and narrative design using a mix of quantitative and qualitative feedback. Most importantly, I planned to ask them to rate their immersion, their engagement with the gameplay, and to assess whether they would play again based on their experience

6. To what extent did you feel gameplay was engaging? (1 = not engaging at all, 5 = very engaging)



7. Comments on Engagement of Gameplay

Enter your answer

19. Do you feel you would want to play this game again and/or further based on this experience?

Enter your answer

15. To what extent did the game as a whole immerse you in your character and setting?



16. Comments on immersion

Enter your answer

17. Did you feel any elements of the game were unnecessary for this goal?

Enter your answer

Research – Utilizing my Results

From my questionnaire results, I hoped to specifically evaluate how close I had come to creating a core experience that met my objectives

- Was the gameplay immersive, and did this correlate to a more engaging and enjoyable experience?
- Was the gameplay accessible, and how did this effect players' enjoyment / engagement?
- Did the gameplay provide the player with meaningful agency, and how did this impact their enjoyment / engagement?

From these answers, I hoped to extract an evaluation of whether I attained my goal. If I did attain my goal, since I would be employing learnings from research of my key influences in the industry, then that would suggest those methods are effective.

4. To what extent did you find Coalheart's mechanics intuitive? (1 = Not intuitive at all, 5 = very intuitive)

☆☆☆☆☆

5. Comments on Intuitiveness of Mechanics

Enter your answer

8. Did you feel your deductions were meaningful, or that the game held your hand? How did this affect your experience?

Enter your answer

Level Design

9. How intuitive would you rate your experience with the level's layout / navigation? (1 = not intuitive at all, 5 = very intuitive)

☆☆☆☆☆

10. Comments on navigation and layout

Enter your answer

11. How would you rate your experience with the level's pacing and flow? (1 = Pacing and Flow was poor, 5 = Pacing and flow was excellent)

☆☆☆☆☆

12. Comments on Pacing and Flow

Enter your answer

Development – Initial Stages

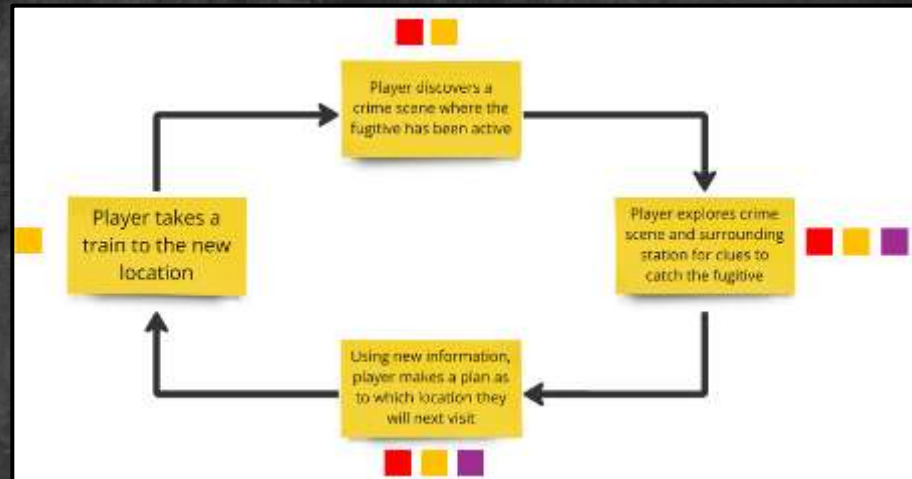
The initial stages of my development were to create a narrative. This began with my high concept statement

Inspired by an idea I had for a D&D adventure, I used this high concept statement to inform design pillars for myself as further direction, and finally a game loop I felt was appropriate by ensuring it adhered to those pillars.

Pillars:

- **Investigation and the Fugitive** – The primary objective of the game, presented by the character and their role.
- **Environment and Setting** – These elements further immersion into the setting, as opposed to the character. Mechanics informed by this pillar help make the world feel lived in.
- **Exploration and Growth** – These elements focus on immersion through the player relating to their character, not just their role. Interacting with NPCs or exploring the world are game elements that give the player agency to choose how the detective experiences the world and how he grows from it.

- **Coalheart** is a game about a detective finding his way through an unforgiving world of steam power. As he searches for a dangerous fugitive, he learns more about his own place in the world



Development – Narrative Document

With my initial pitch complete, I began to develop the narrative further:

- **Worldbuilding** – Creating a unique setting for the player to experience
- **Themes** – Narrative themes that give further direction to what experiences I want the player to feel. Overall, I chose for the game to explore connection through a world that is overwhelmingly isolating and materialistic
- **The Fugitive** – What are the ideals, characterizations, and motivations of the fugitive, and what is his backstory?
- **The Detective** – What are the ideals, characterizations, and motivations of the detective (the player character). Does he have a backstory? Or does leaving it vague allow the player to immerse themselves more?

I developed this document to have a foundation to design mechanics from, which would in turn allow me to experiment with answering my project's question

Themes

There are three **themes** I want to focus on for Coalheart. They are as follows:

Connections. The relationships between people and their unseen consequences throughout daily life.

Isolation. The feelings of isolation that the modern world of Coalheart encourages and reinforces.

Material. The material attachments that Coalheart's society revolves around, that people need, and how it can tear people apart

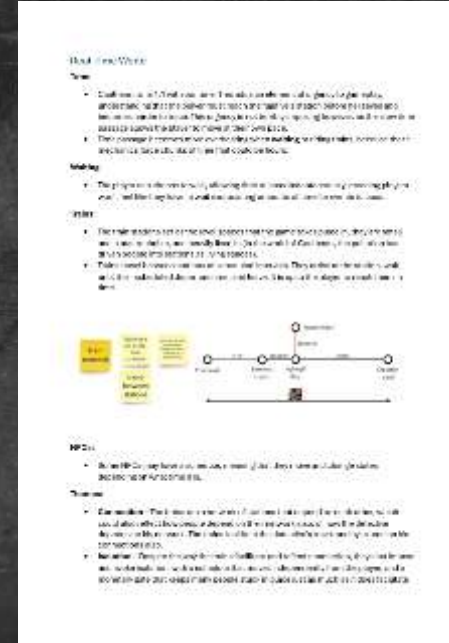
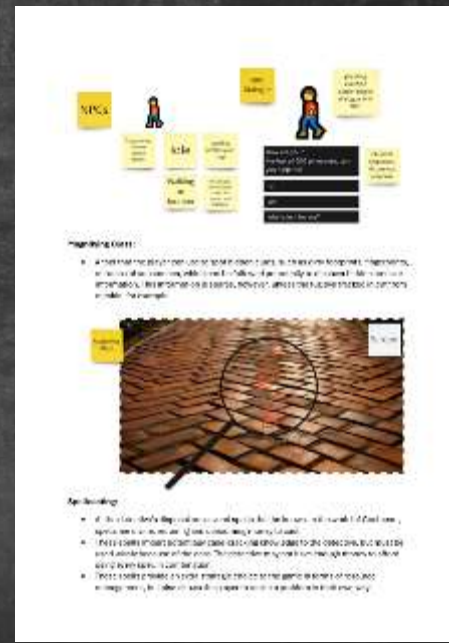
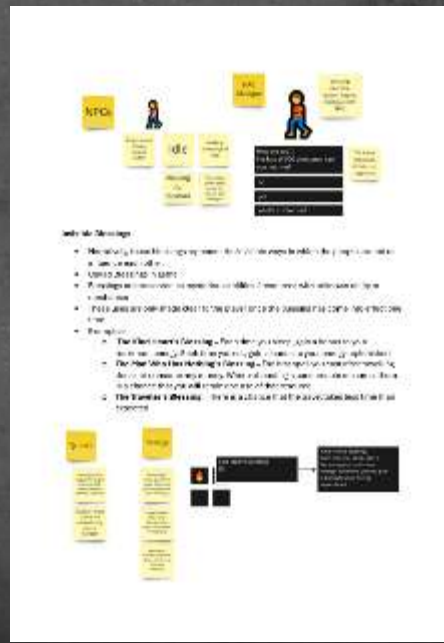
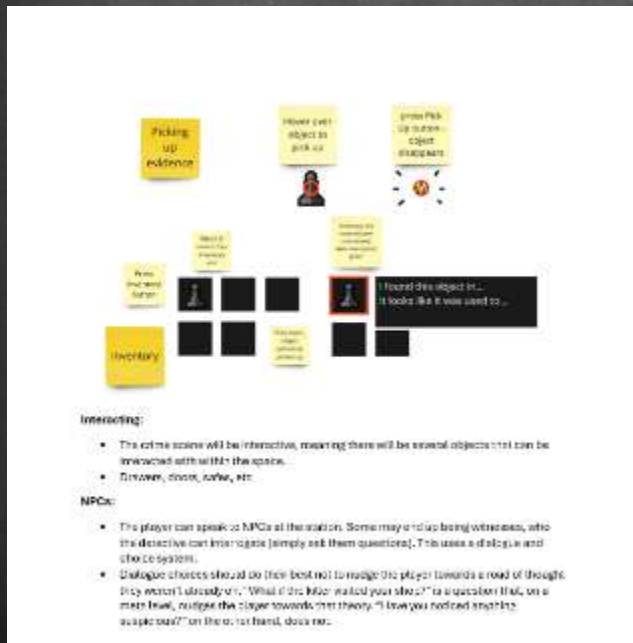
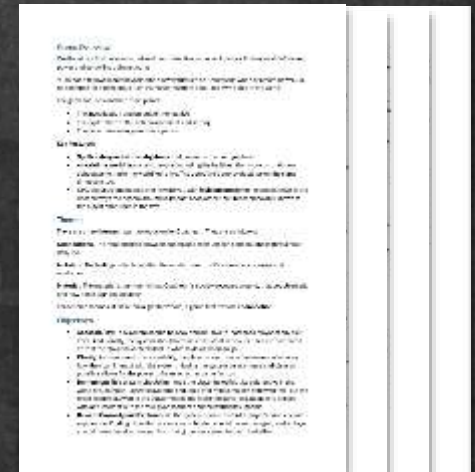
These three themes all fit within a greater whole, a game that explores **connection**.



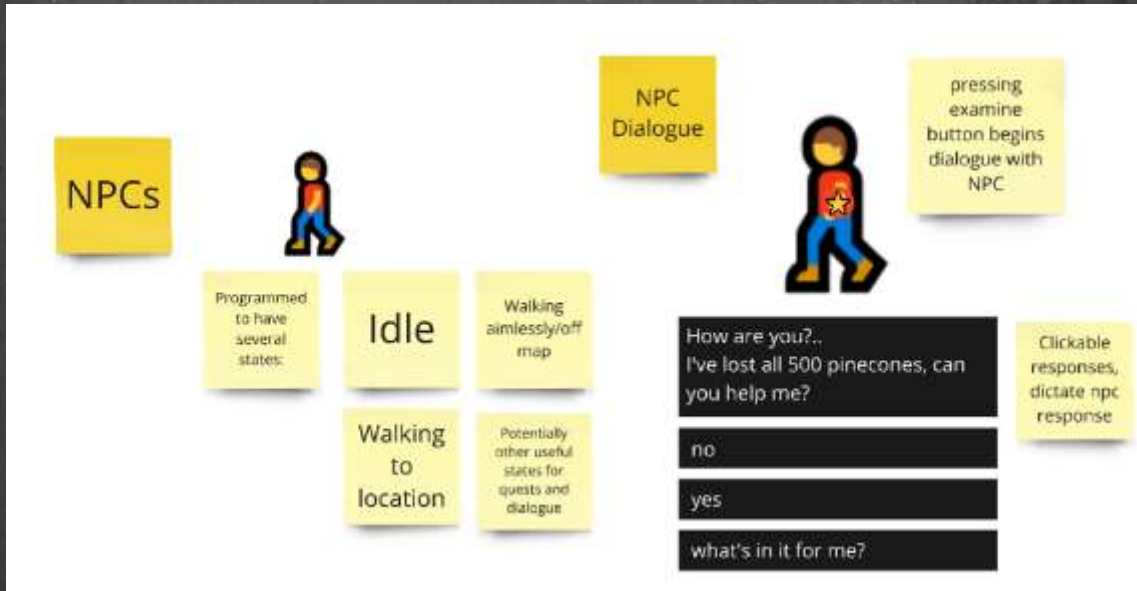
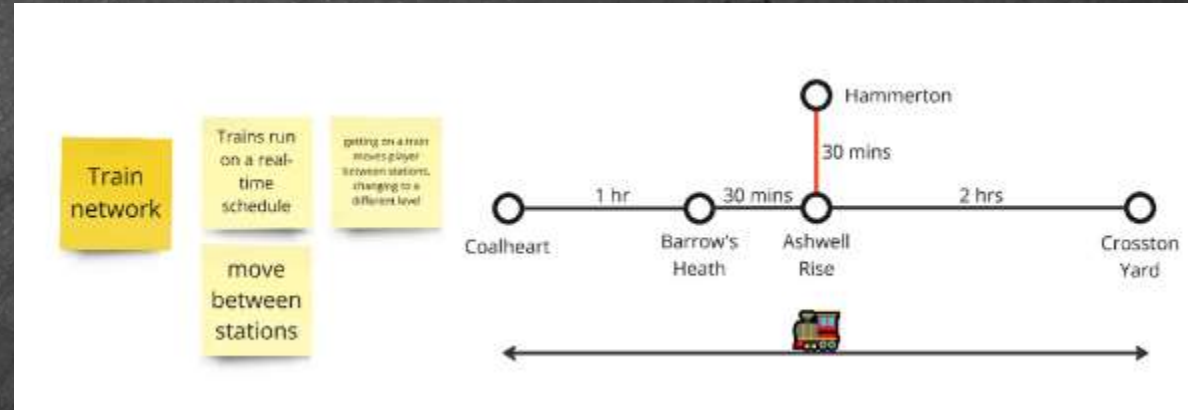
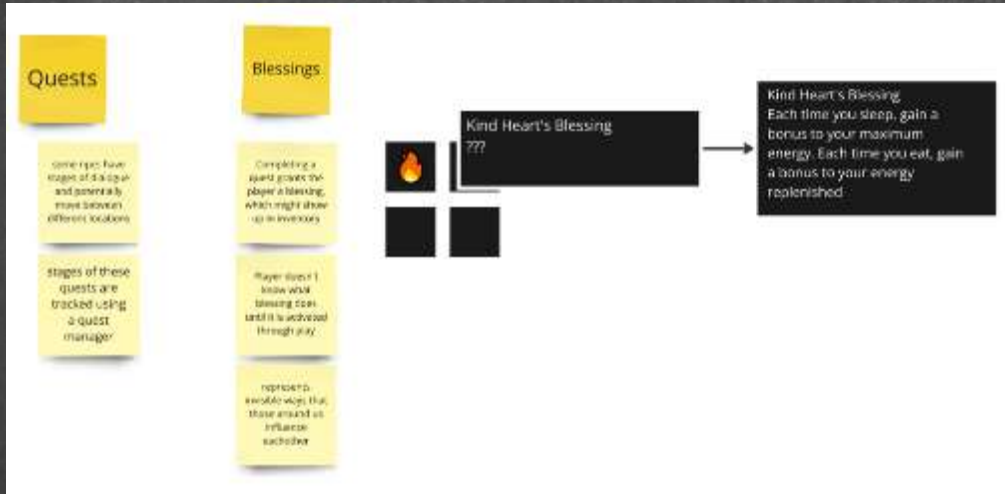
Development – Design Document

With a narrative foundation to build from, I wrote my design document, which focused on the mechanics I wanted my game to have.

The document focused on the design intention, how each mechanic proposed related to my narrative themes, how it contributed to immersion, and how it behaved. Each mechanic was represented through design diagrams created in Miro.



Development – Design Document

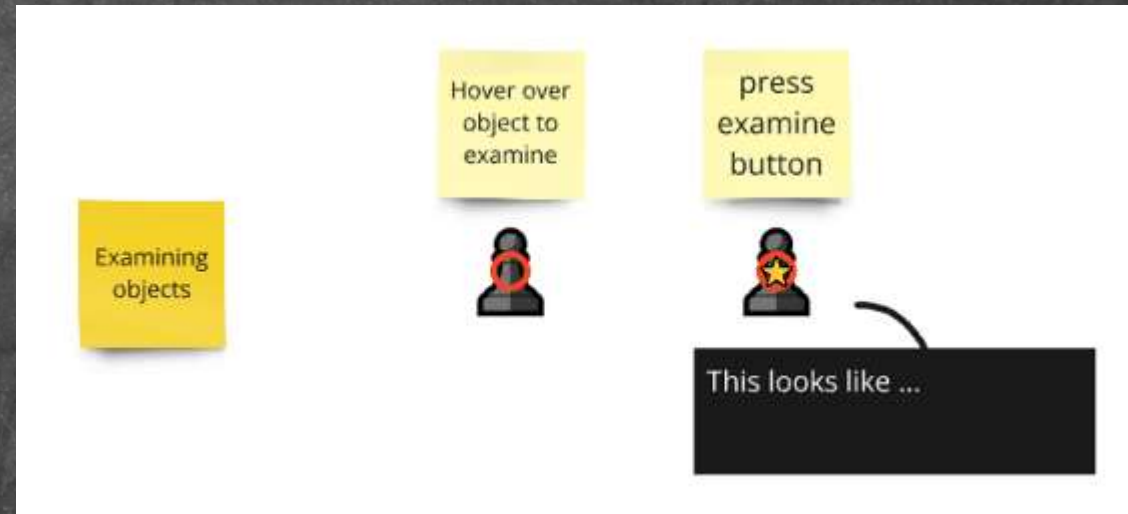
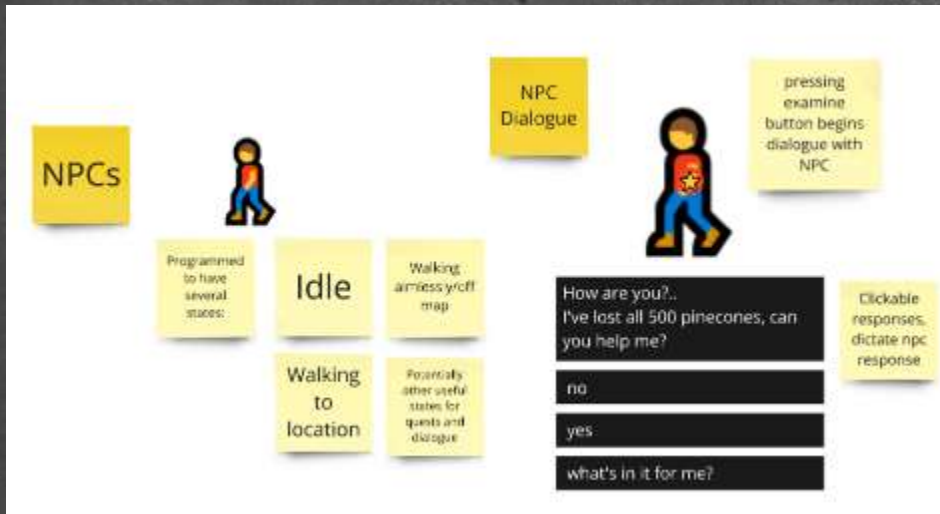


Magnifying Glass:

- A tool that the player can use to spot hidden clues, such as dirty footprints, fingerprints, or traces of substances, which can be followed potentially to discover hidden areas or information. This information is sparse, however, unless the fugitive tracked in dirt from outside, for example.

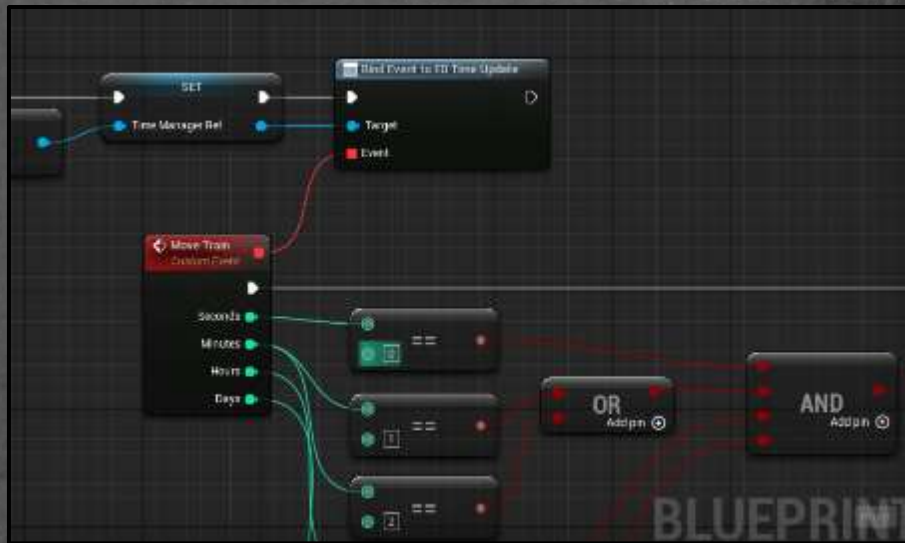


Development – Design Document



Development – 1st Implementation

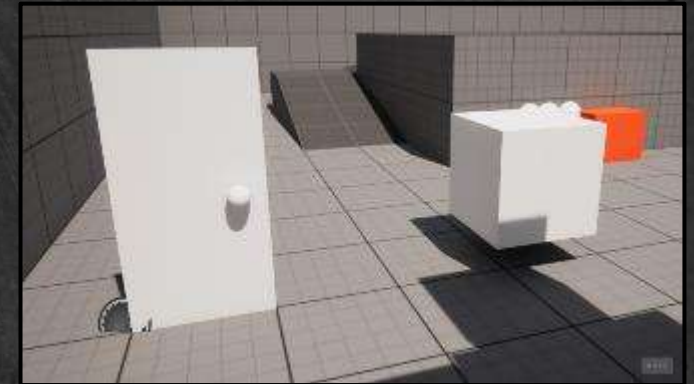
With an extensive list of mechanics in my design documentation and planning, I began implementing these systems and mechanics:



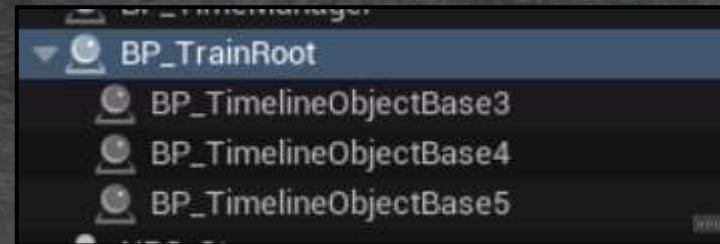
Train moving on event dispatcher



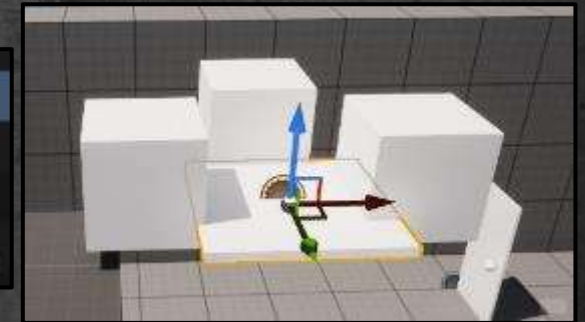
Clock



Doors and other movable objects



Early stage of train using movable objects and hierarchies



Development – 1st Implementation

- Added interaction system using Blueprint Interfaces
- Added dialogue system utilizing tutorial by Michael Pattison
- added inventory system using tutorial by Code Things



Michael Pattison -

<https://youtu.be/88xikHeYQDA>

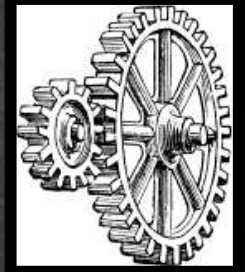


Code Things -

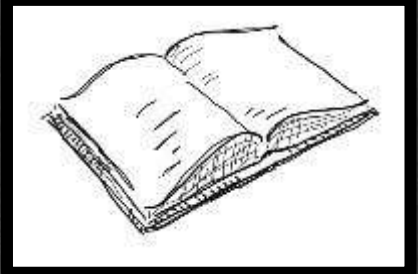
https://youtu.be/v8uq_20LFG0

Development – Research Report

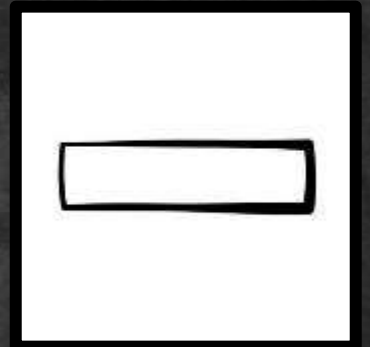
Leading up to my midpoint review, I summarized my research thus far in a report detailing the design philosophies of Lucas Pope and Fumito Ueda, and the 3 key learnings that I mentioned earlier.



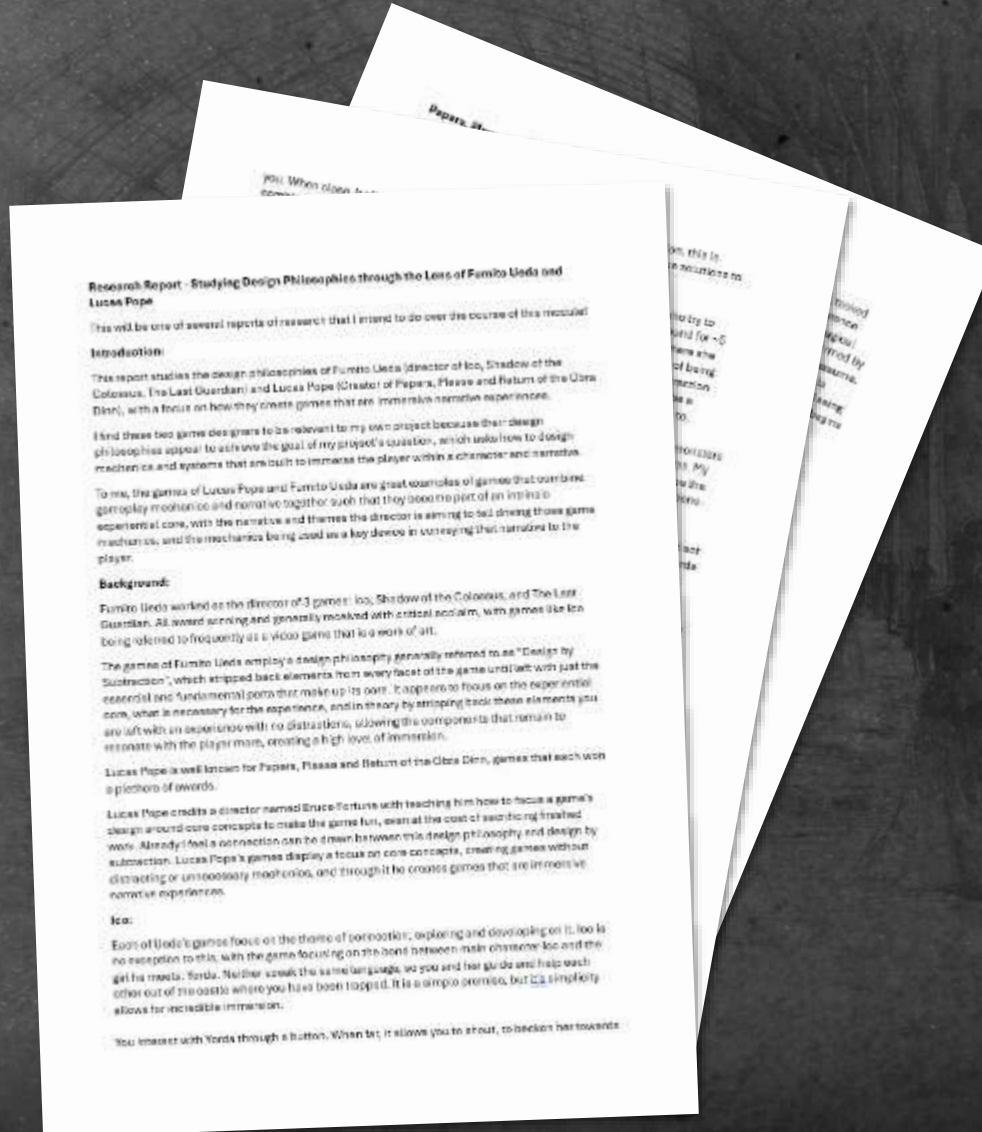
Mechanics as a device for storytelling



Mechanics that Reflect Narrative



Design by subtraction

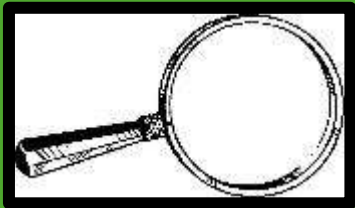


Development – Mechanics

It was at this point I started to consider further what my priorities were, as through the midpoint review, I assessed that my scope was very large.

In accordance to my research of Design by Subtraction, I re-assessed which mechanics I should ensure are highest priority, and which mechanics were non-essential to the core gameplay loop.

Essential



Investigation



Real Time



Trains



NPCs

Non-Essential



Energy



Spellcasting

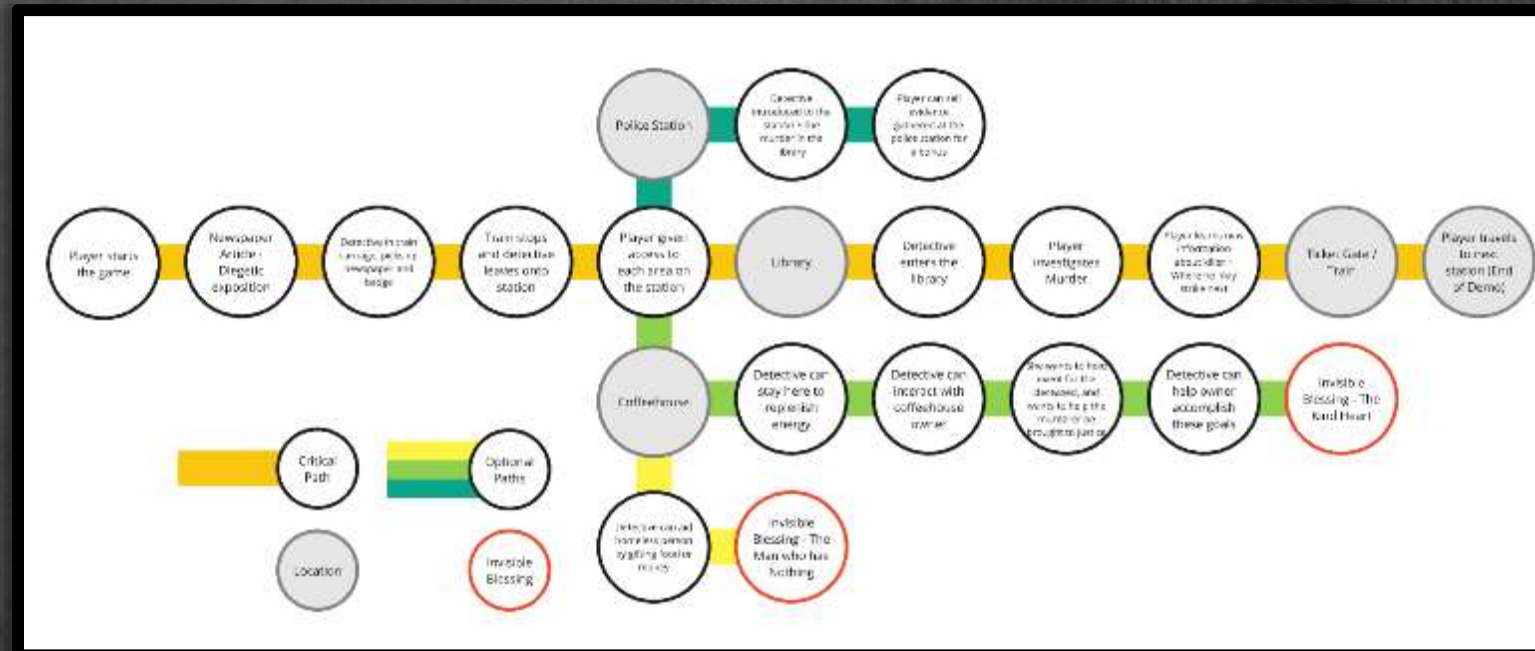


Blessings

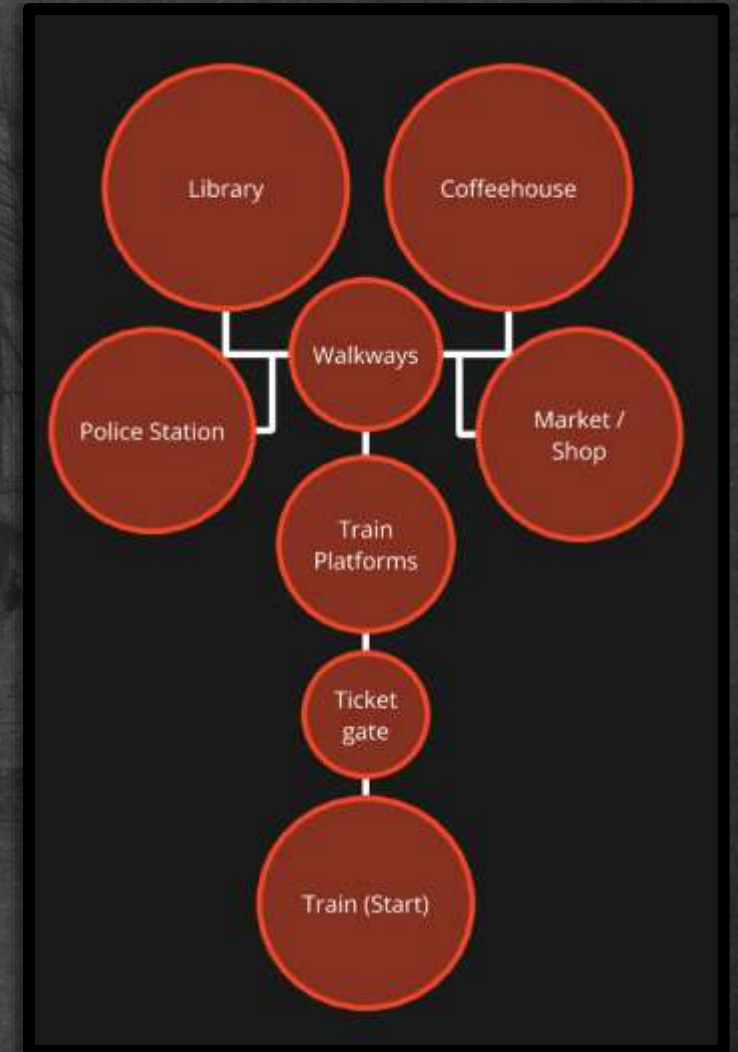
Development – Level Design Layouts

Once I was happy with the implementation of my mechanics, I began working on the layout of the level, and how I wanted it to play.

I was sure on how I wanted it to start, but I was unsure of how I wanted it to branch out from that point, which is why I developed these diagrams



Bubblemap / Tube map for representing critical path alongside optional paths



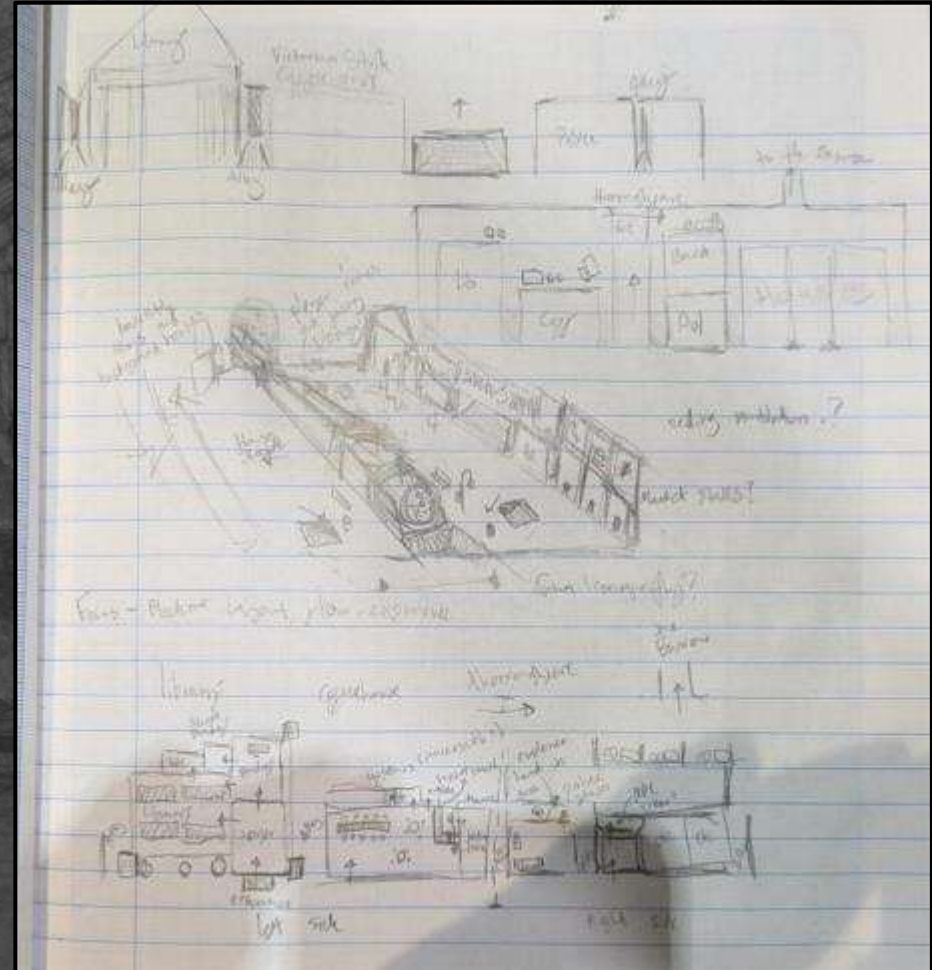
Bubblemap focusing on overarching areas and their significance

Development – Level Design Layouts

Using a book I had gotten myself the year before at the recommendation of a level designer, I began working on the layout, blockout, and architecture of my train station level

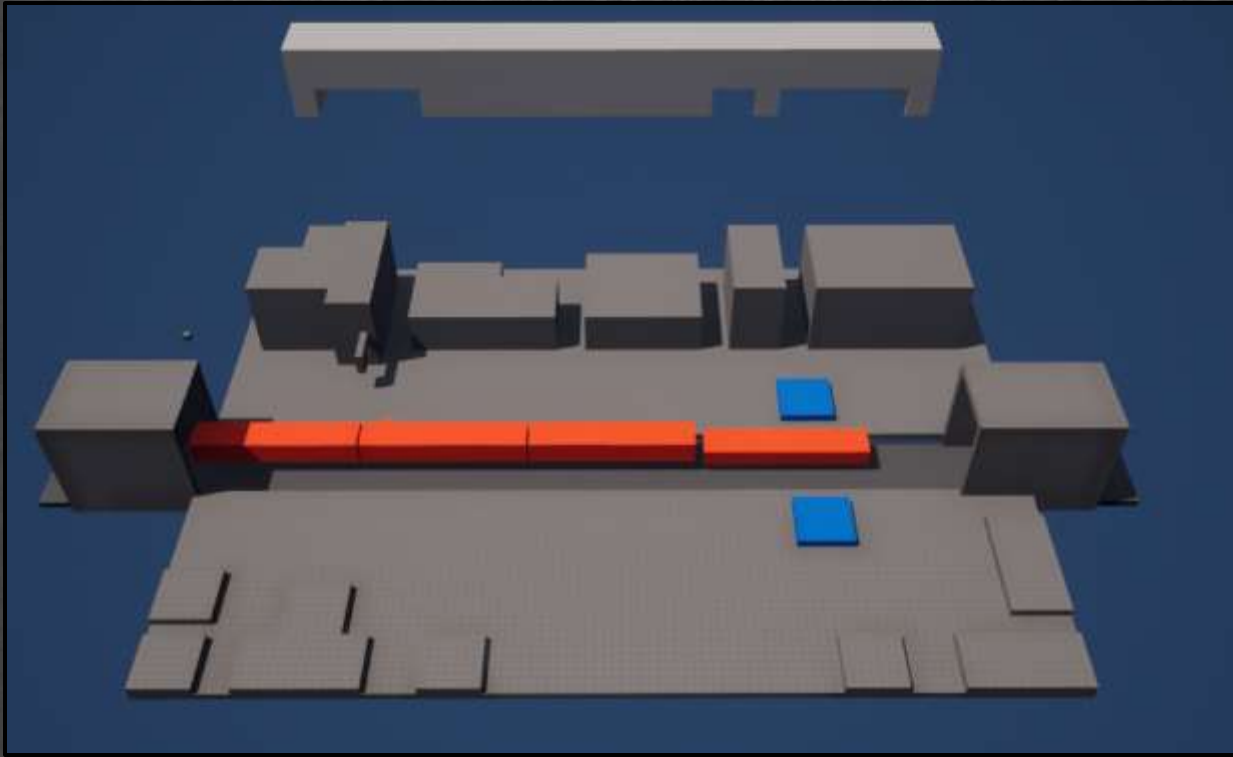


"101 Things I Learned in Architecture School" – Matthew Frederick

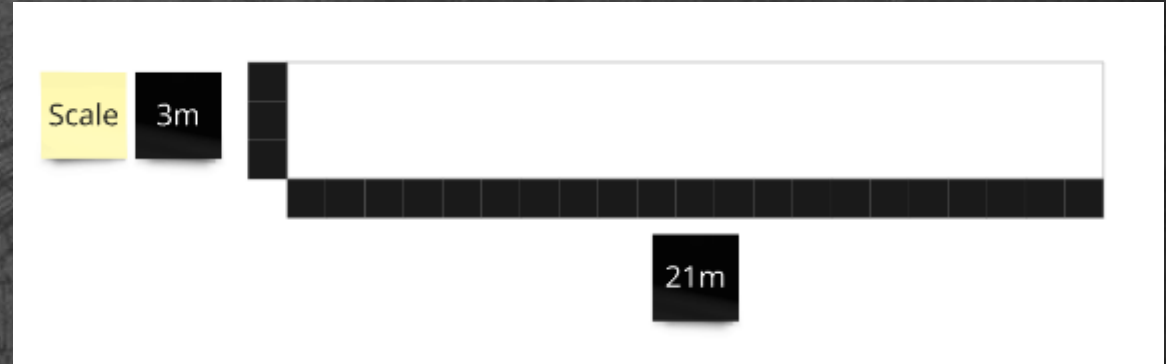


Drawn layout for level

Development – Blockouts

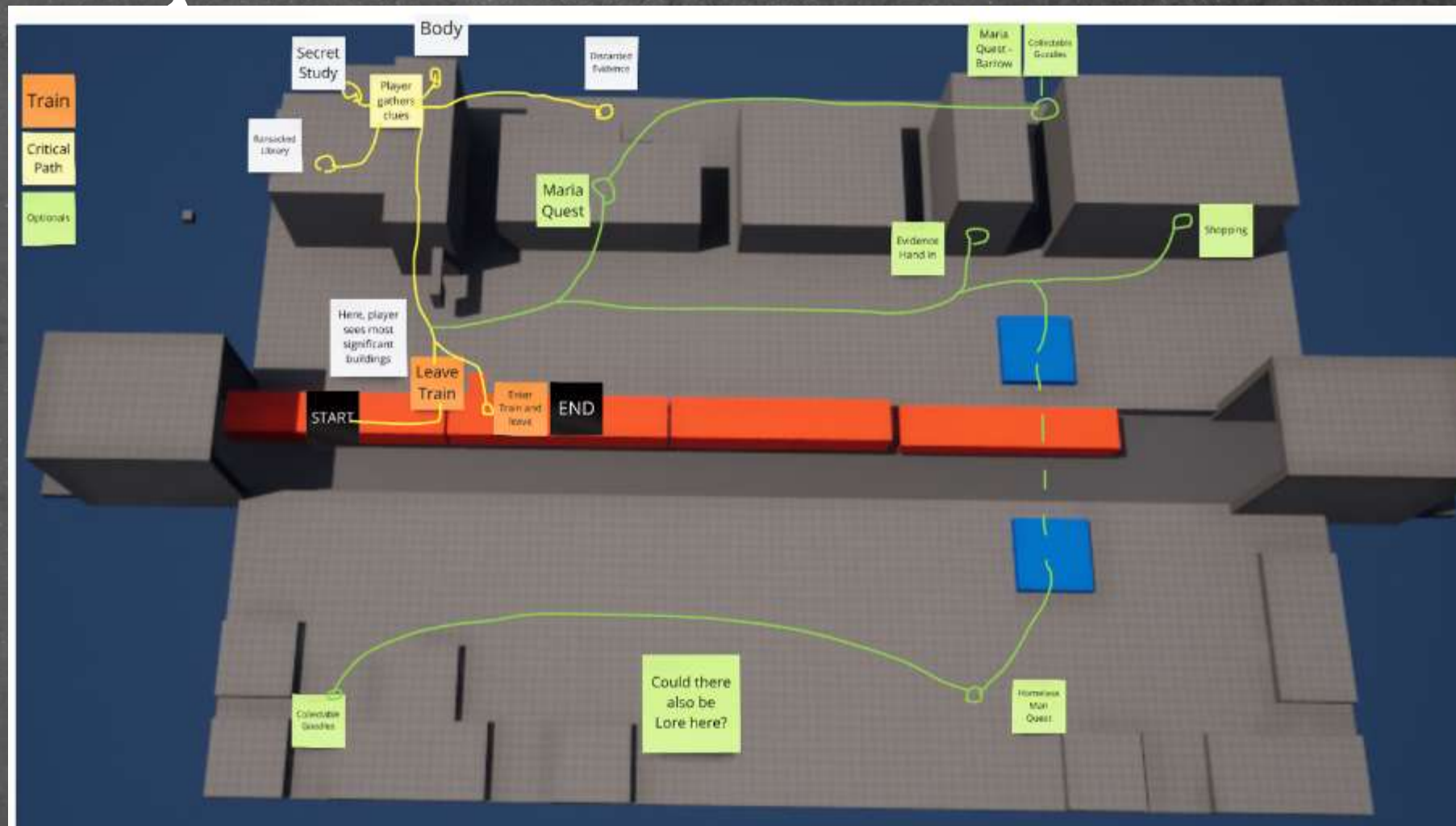


Top-down view of initial blockouts



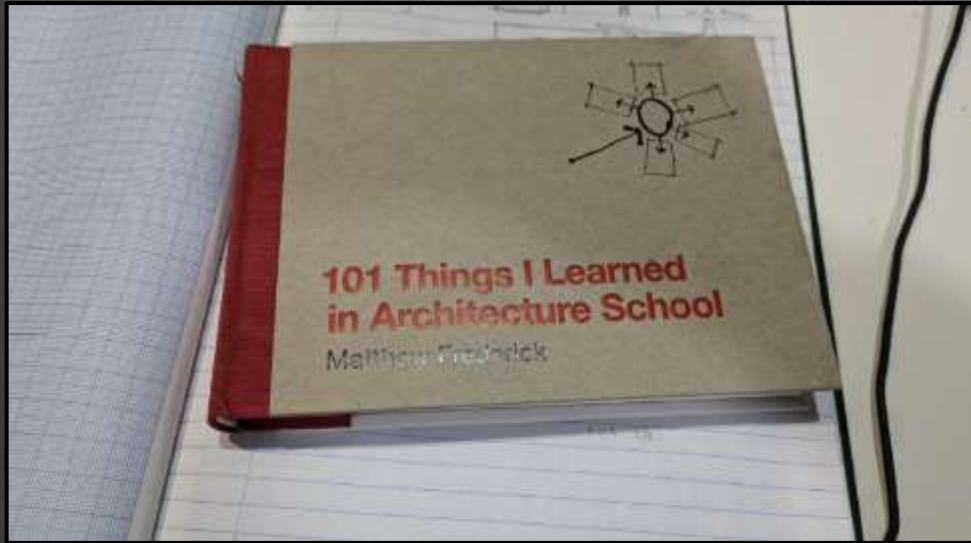
Working out a realistic scale for my level using train cabin dimensions from real life

Development – Blockouts

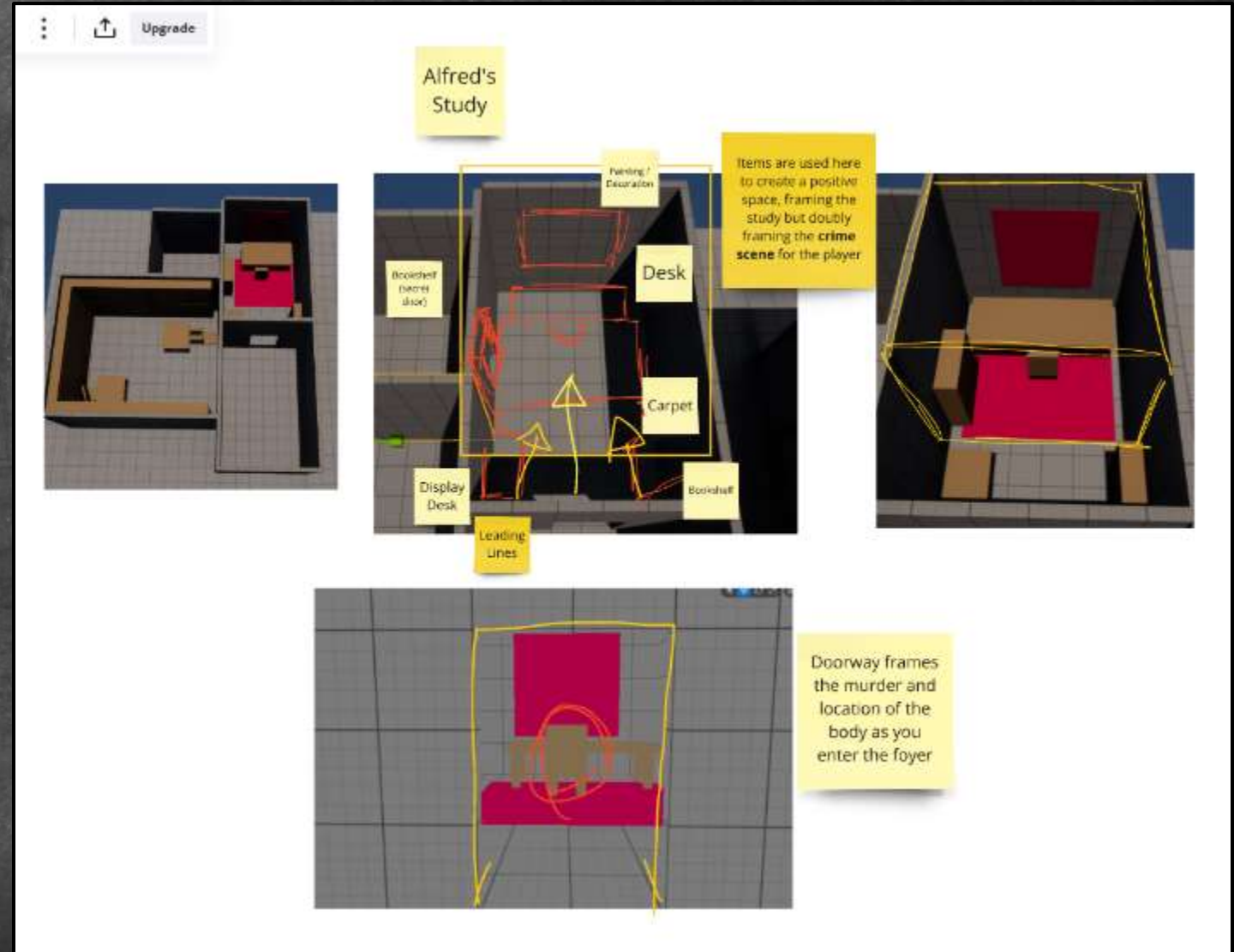


Mapping out critical and optional paths over my blockout view in Miro

Development – Blockouts



Applying my learnings from my architecture design book to building out Alfred's Library, and the crime scene.



Development – Art Style

Over Christmas, I wanted to create a unique stylization for my game, based off of Victorian newspaper crosshatch drawings that were commonplace around the mass media frenzy surrounding Jack the Ripper.

I felt this stylization was appropriate, as it thematically fell in line with the story I was telling, of a Victorian fantasy setting and a fugitive/murderer.

It was my hope that developing a style using a post processing shader would bring my projects parts and tie them together, selling the narrative quite well and further immersing the player in the setting.



Development – Art Style

Here are the two tutorials I followed, built upon, and merged for my Victorian drawing crosshatching / outline shader:



Visual Tech Art:

https://www.youtube.com/watch?v=3Q6Ik1V75I8&ab_channel=VisualTechArt

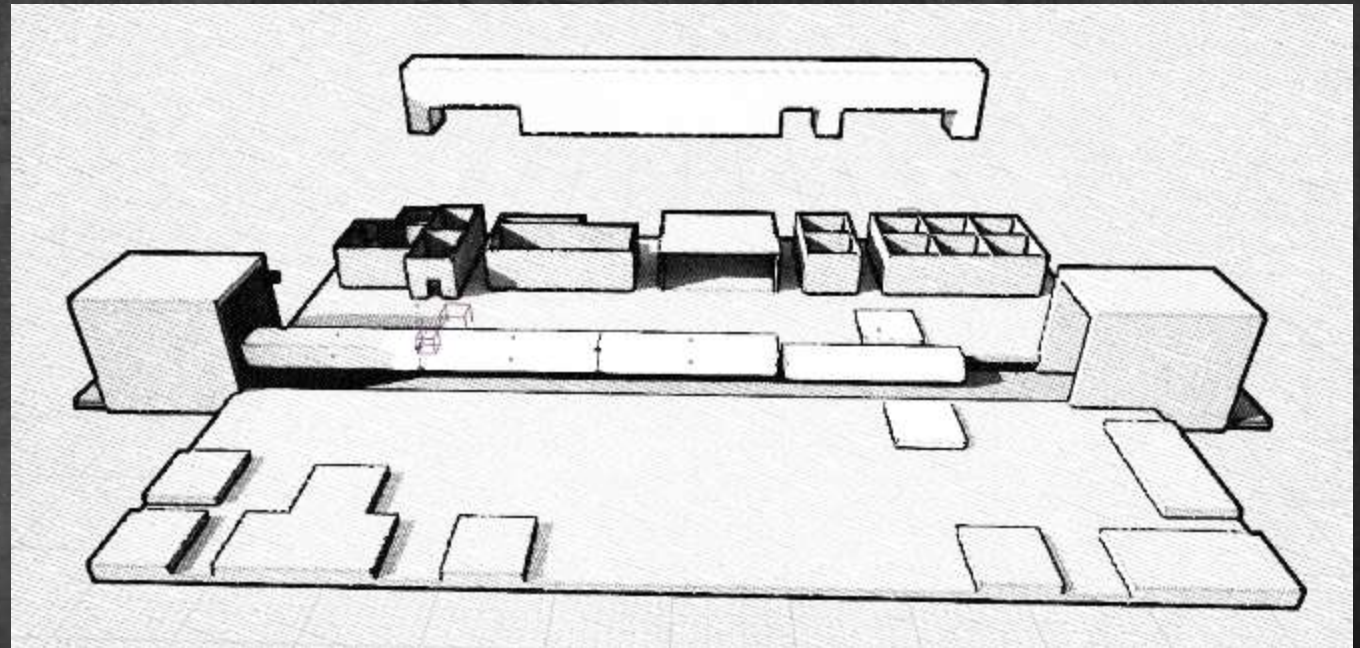
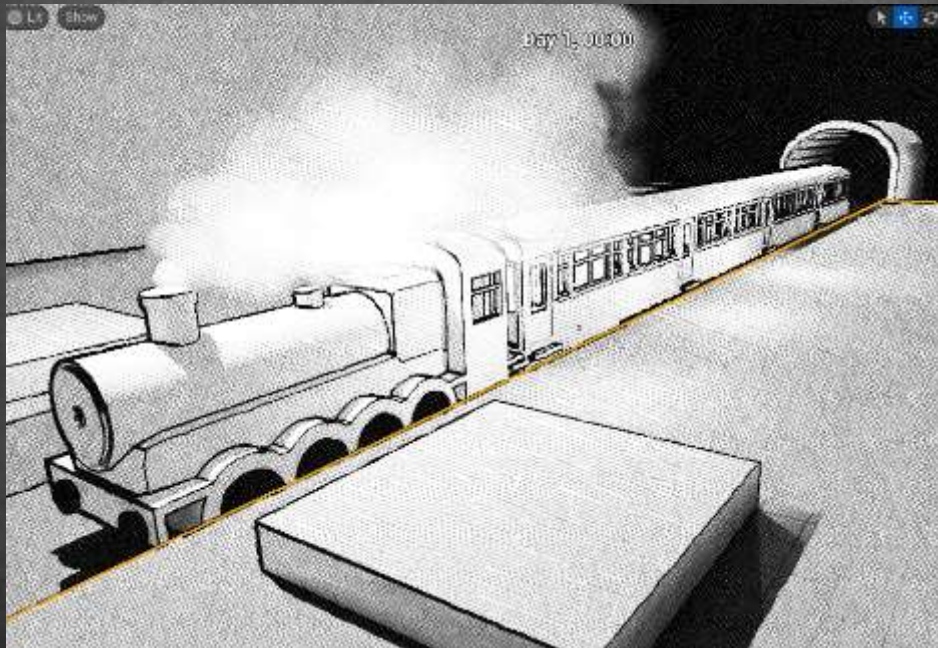


Kamil Hepner:

https://www.youtube.com/watch?v=pJ42ylVyDpc&ab_channel=KamilHepner

Development – Art Style

The final results! (I would end up tweaking curve values to create the shadows I wanted in the scene)



Development – Mapping Deduction

One of the major aspects of my detective game is deduction, but as I realized that I hadn't any clue where to start with that, I began researching deduction in games

This lead me to map out the elements of my crime scene, and to map out the questions and deductions the player would be facing as they played through the level



Gamemaker's Toolkit:

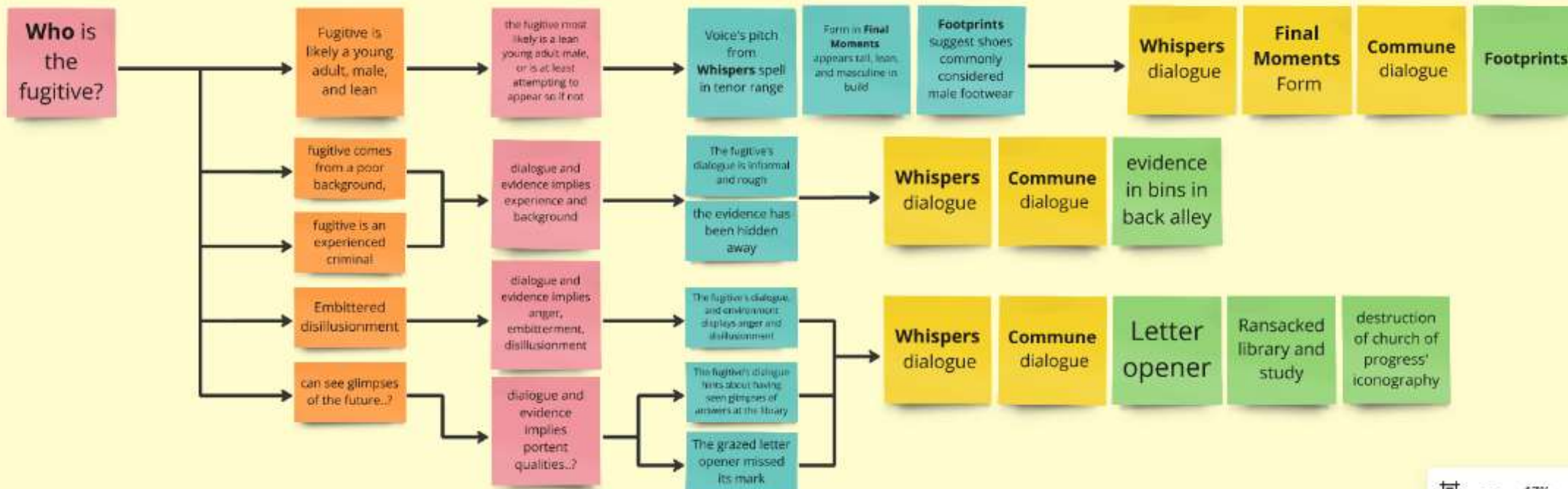
https://www.youtube.com/watch?v=I7q363Ic26o&ab_channel=GameMaker%27sToolkit

Development – Mapping Deduction

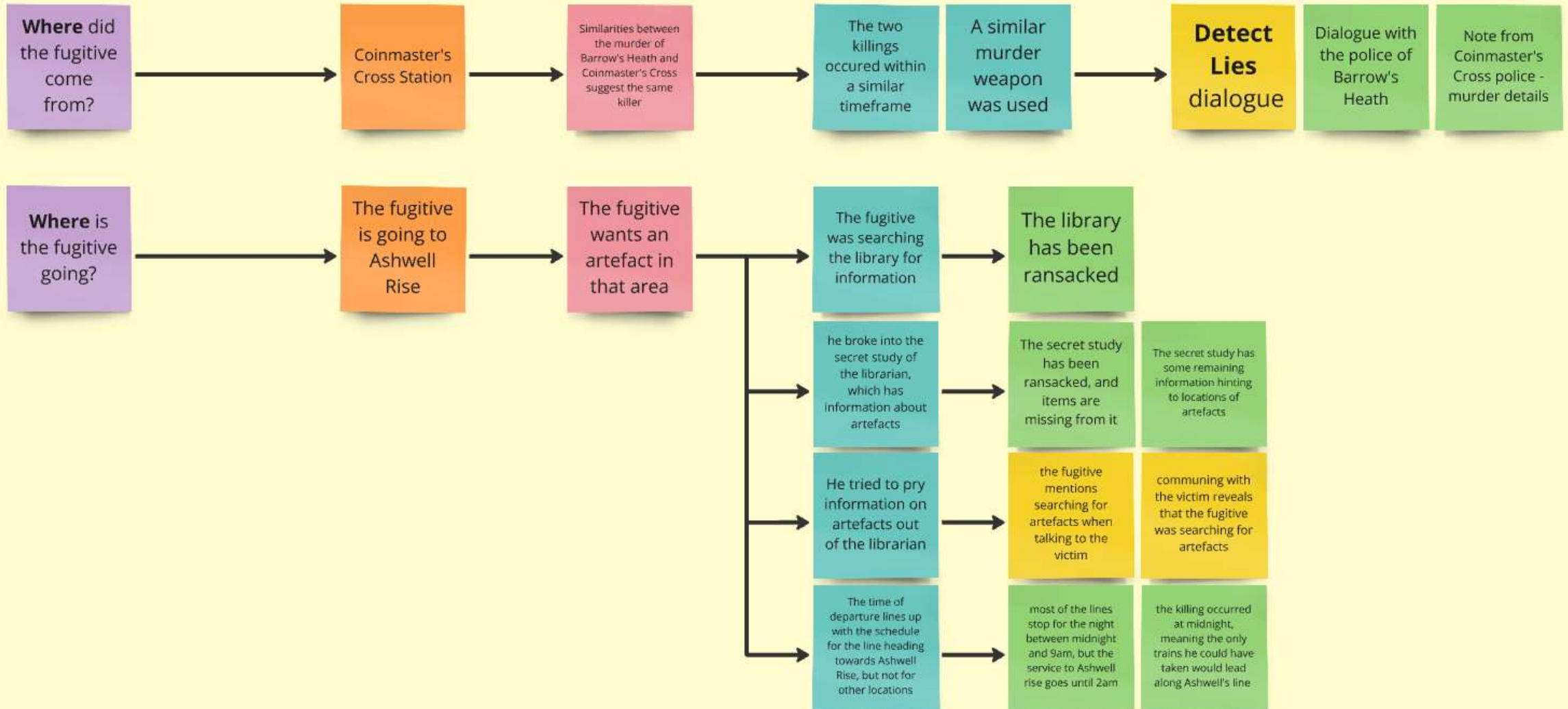
Question
Guide -
Barrow's
Heath

Answer
Reasoning
Facts
Clues

Spellcasting Clues



Development – Mapping Deduction



Development – Mapping Deduction



Development – Mapping Deduction

Felix wants:

Felix Neale is searching for divine artefacts created using silver (currency)

Any information regarding ancient and powerful artefacts

any documents of the Silver Sun unsanctioned by the Church of Progress

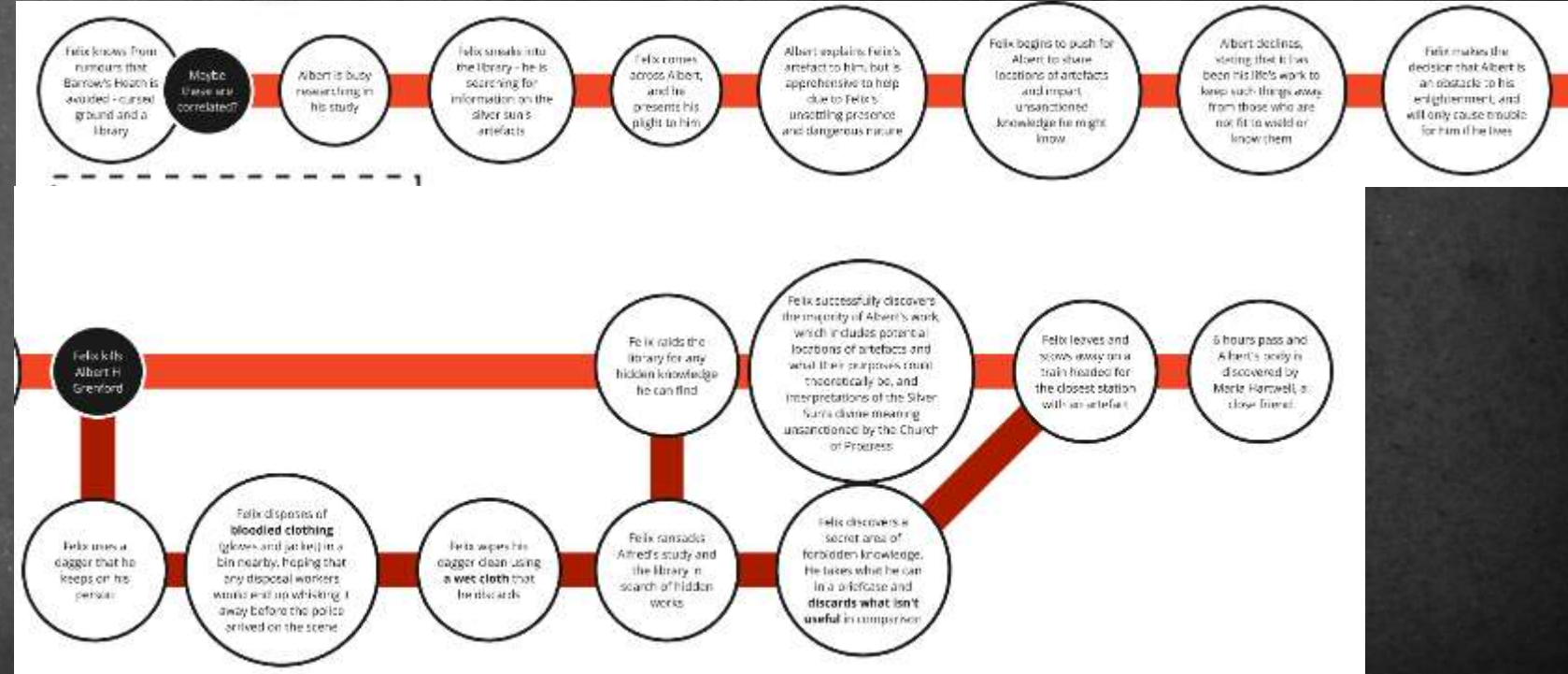
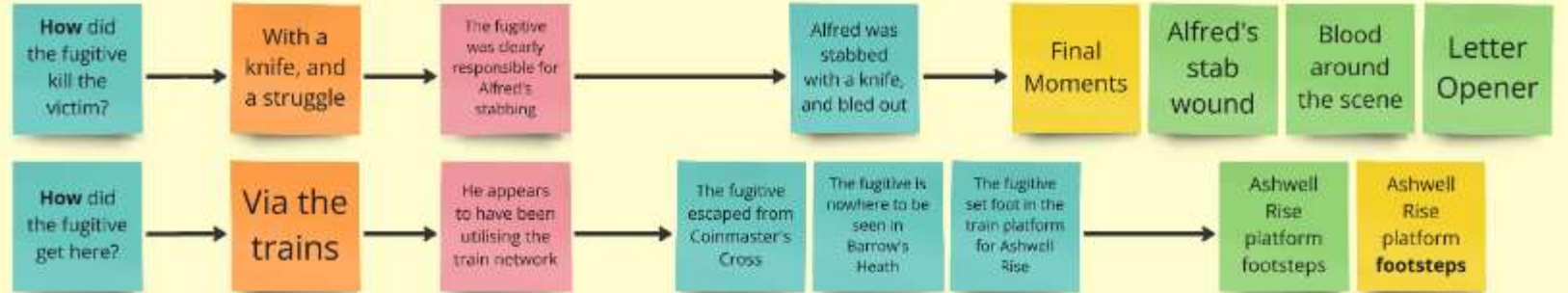


End goal of:

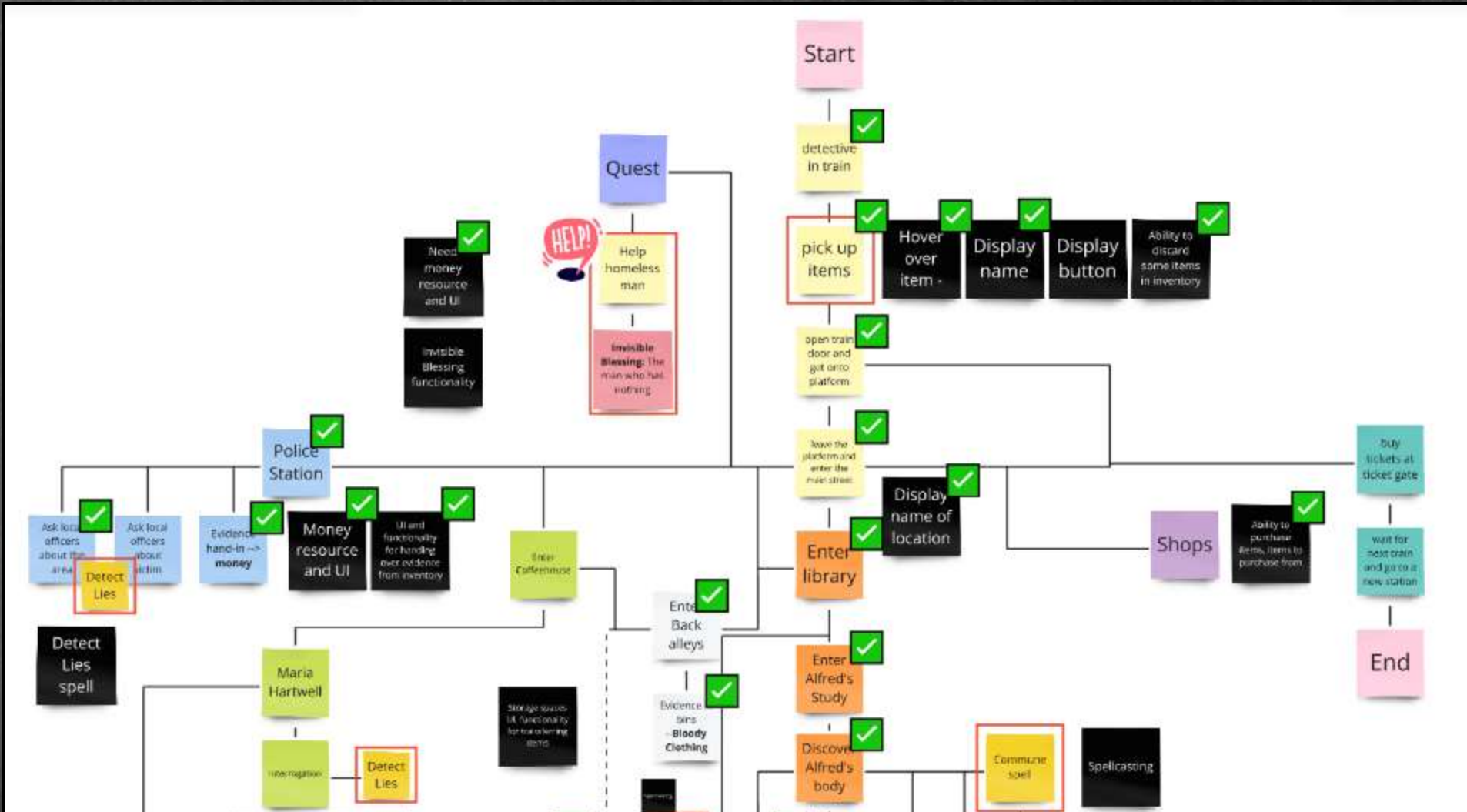
Becoming closer to the Silver Sun

Changing the world in the "true" ideals of the Silver Sun

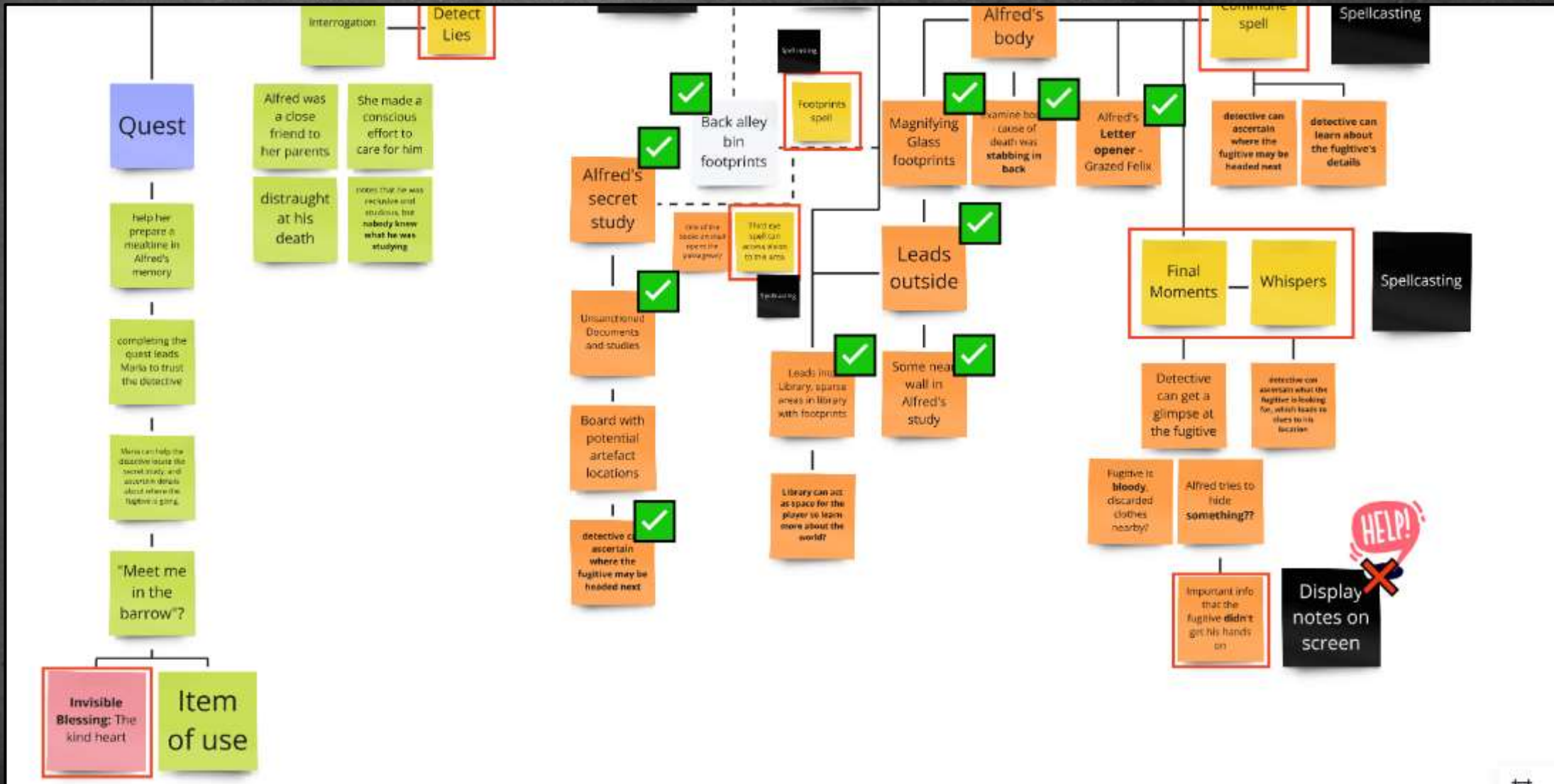
(who he believes saved him and that he owes his gratitude)



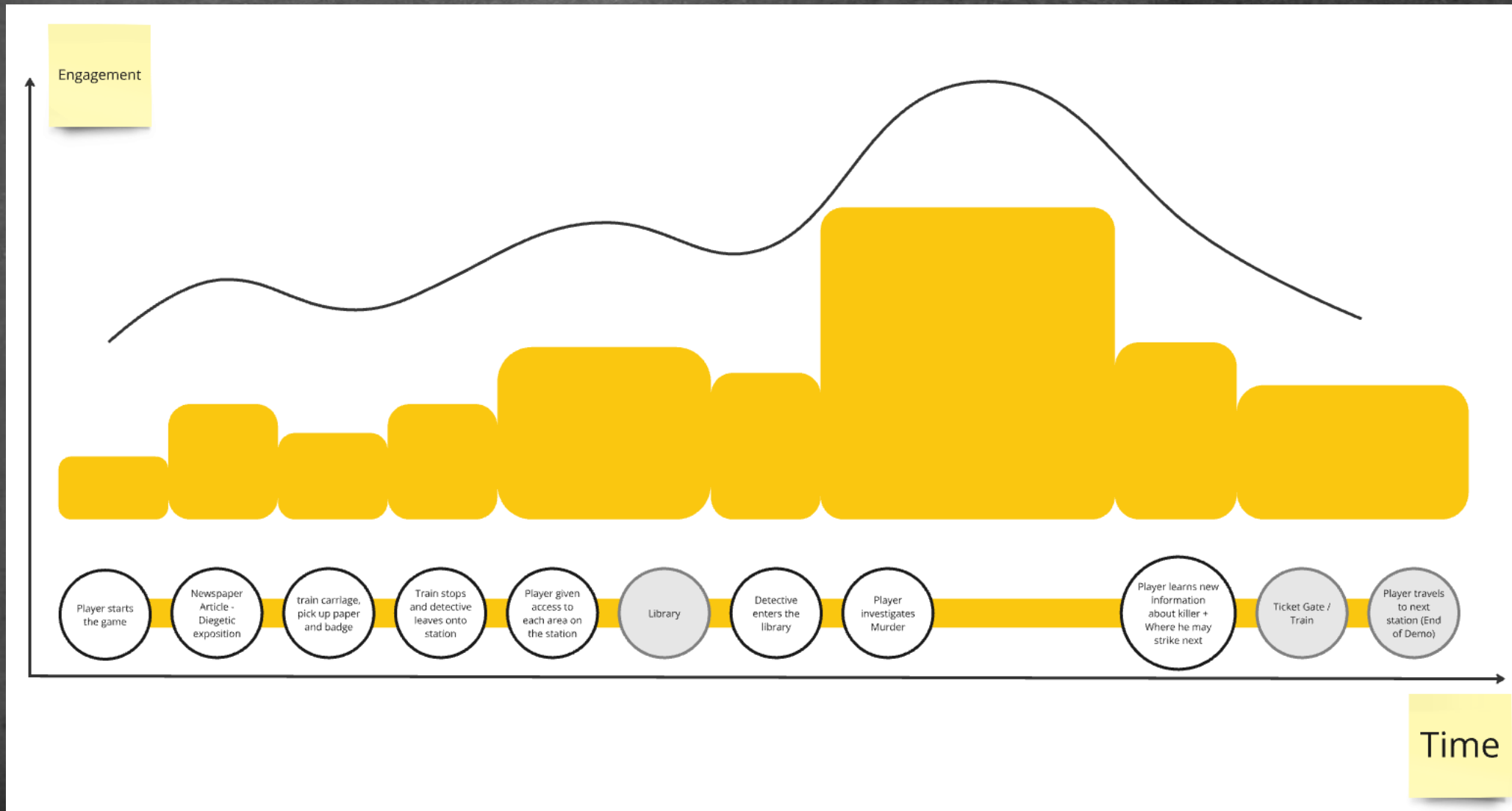
Development – Mapping Player Choices and Discoveries



Development – Mapping Player Choices and Discoveries



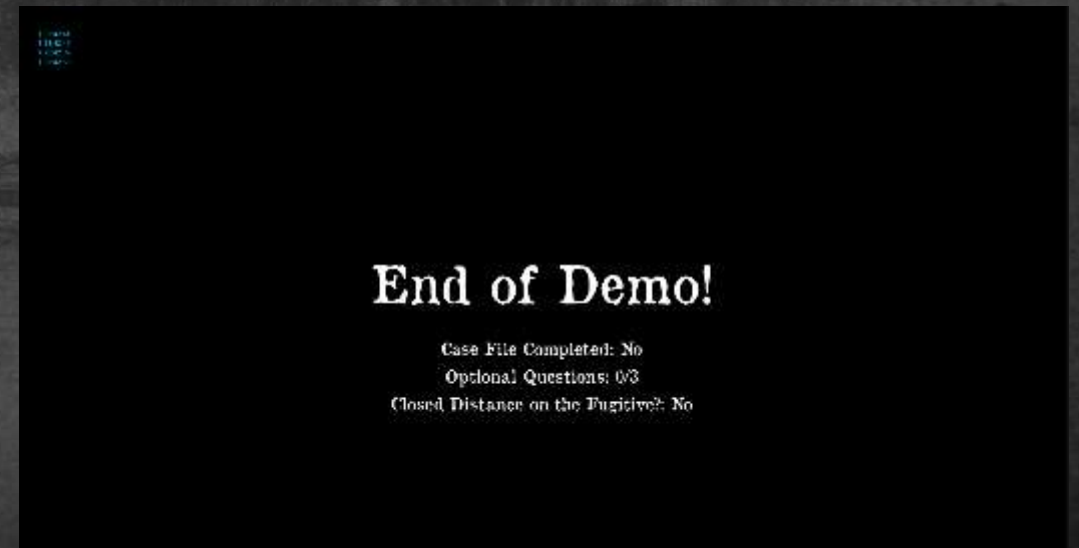
Development – Beats and Pacing of Critical Path



Development – Lead-up to Playtesting

One thing that went quite wrong during the project was the approval of my ethics forms. Unfortunately, they were approved fairly late into the 2nd semester. I feel as though I could've gotten more time to playtest had I been more diligent with getting issues sorted.

That being said, it gave me a good amount of time to polish my build, With a solid intro, end of demo screen, tangible goals, and robust gameplay, which I felt were important to consider.



Development – Lead-up to Playtesting

Case File: The Murder of Alfred H. Grenford
Location: Barrow's Heath Station Library

Back

1:23:36:15
1:23:30:14
1:23:30:13
1:23:30:12

Train Schedule

Barrow's Heath has a stall full of station manuals. I grabbed a copy; the schedule could provide some useful information.

Crime Scene

Alfred's body was found in his study, within the Barrow Heath Station Library. His body was found lying against the table, still in his seat.

Footprint

Beside Alfred's body is a bloody footprint, visible even without a magnifying glass.

Letter Opener

There was a letter opener on the floor.
There was a hint of blood on the tip of it.

Where is the
Fugitive
headed
next?

**Mandatory - Answer this question
to complete the case file**

£50

How did the
victim die?

**Optional - Answer these questions
for a bonus**

£50

When did
the fugitive
leave?

£50

What does
the Fugitive
Want?

£50

NOTE -
Complete as
soon as possible,
and hand into
nearest police
station for
payment

The fugitive
MUST be found
as soon as
possible

Development – 1st Round of Playtests and Iteration

4. To what extent did you find Coalheart's mechanics intuitive? (1 = Not intuitive at all, 5 = very intuitive)

[More details](#)

4.00

Average Rating



Comments on Intuitiveness of Mechanics

2 Responses

ID ↑	Name	Responses
1	anonymous	Most of the mechanics were very intuitive, but it wasn't clear what was interactable and the inability to drag items in the menu made me accidentally swap items while trying to inspect something.
2	anonymous	Quite intuitive with a "hover and click" feel to it; it was the first approach I tried and it worked. I also very much enjoyed holding down the right mouse button to use the magnifying glass (although I didn't know what RMB was, so the name wasn't very intuitive itself)

6. To what extent did you feel gameplay was engaging? (1 = not engaging at all, 5 = very engaging)

[More details](#)

4.00

Average Rating



Comments on Engagement of Gameplay

2 Responses

ID ↑	Name	Responses
1	anonymous	Walking to and from sides of the station could feel dull at points. Populating the station with background people (in grey to indicate they aren't interactable) or having the detective mutter to themselves a little bit while going under the tunnel would be nice!
2	anonymous	The world and aesthetic feels very fitting with the gameplay and setting presented, and the mystery is gripping while having a clear enough goal to keep the player invested and going. There was very few times where I stopped confused in my tracks as to where to go. I personally don't think there's anything lacking on the gameplay side of things - what broke the loop for me was struggling to navigate my inventory, and this meant I was spending a long time trying to open the correct documents without moving things around which became annoying and tedious.

Development – 1st Round of Playtests and Iteration

9. How intuitive would you rate your experience with the level's layout / navigation? (1 = not intuitive at all, 5 = very intuitive)



10. Comments on navigation and layout

2 Responses

ID ↑	Name	Responses
1	anonymous	There were some alleyways which felt like corridors to nowhere. Having these is good in my opinion as it feels like a part of the world so it's more "lived in" as a result, but ideally there should be "something" there - it doesn't need to even be a clue, just something to reward exploration.
2	anonymous	I think the internal navigation of the Library building was quite intuitive. But the outside area very quickly got very hard to navigate. Especially initially when I went of the train. I think having more signs, like you did with the "POLICE" box would help! Like a cafe sign over the cafe and a "CLOSED" sign at its door, and a book sign over the library. Maybe a sign by the under path with an arrow saying "to platform X". I also struggled knowing which part form I was on because the number was so far away too, personally. That being said the environment FEELS good, it's just tricky to know what it what initially.

Did you feel your deductions were meaningful, or that the game held your hand? How did this affect your experience?

2 Responses

ID ↑	Name	Responses
1	anonymous	I don't feel the game held my hand at all. If anything, I think some clues could have been clearer - specifically the body which had multiple different parts but were all the same shade of black. I couldn't solve anything for a while because I didn't realise the head was a clue in itself.
2	anonymous	I felt like my deductions were pretty meaningful. I also felt like the game did not try to aid me in my deductions which I really appreciated; as a player I absolutely hate playing a mystery type game where I am given hints as to how I should solve it (or being given a clear idea of what I should interact with). Maybe it's because I come from a background of being a huge mystery media consumer; I've grown up watching mystery shows, reading mystery books, and reading mystery comics. The reason I enjoy these pieces of media is because I get to try and guess what's happened alongside (or before!) the main character of the story; that's what's engaging to me. So when I play a mystery game, where I myself is able to solve a mystery firsthand (which is a wonderful opportunity as a mystery fan), I want to solve it MYSELF. I hate games where within X amount of time it gives me a hint because it thinks I'm struggling - it feels like a spoiler, or like I'm being looked down upon. I want to struggle! I want to solve it myself!!! So YOUR game solves this issue (for me at least)! I get to interact with whatever I want to see if I can find clues from it AND I get to write in the answers by text! It opens up SO many opportunities for solutions and approaches to what might have happened. And yes, the deductions did feel very meaningful as in the game the main character is chasing the murderer and trying to catch up to them; the ticking clock was thrilling yet terrifying to watch tick as I realised TIME matters (it's cool, I like it).

Development – 1st Round of Playtests and Iteration

Proud of
this one!

11. How would you rate your experience with the level's pacing and flow? (1 = Pacing and Flow was poor, 5 = Pacing and flow was excellent) [More details](#)

4.50

Average Rating



2. Comments on Pacing and Flow

1 Responses

ID ↑	Name	Responses
1	anonymous	I really enjoyed the pacing; it's slow start w the news paper and train ride, then straight into action with investigating the scene and such. The footprints were a great way to continue the pacing as well, beyond the station library.

13. To what extent did you feel your goals/objectives were intuitive? (1 = not intuitive at all, 5 = very intuitive)

5.00

Average Rating

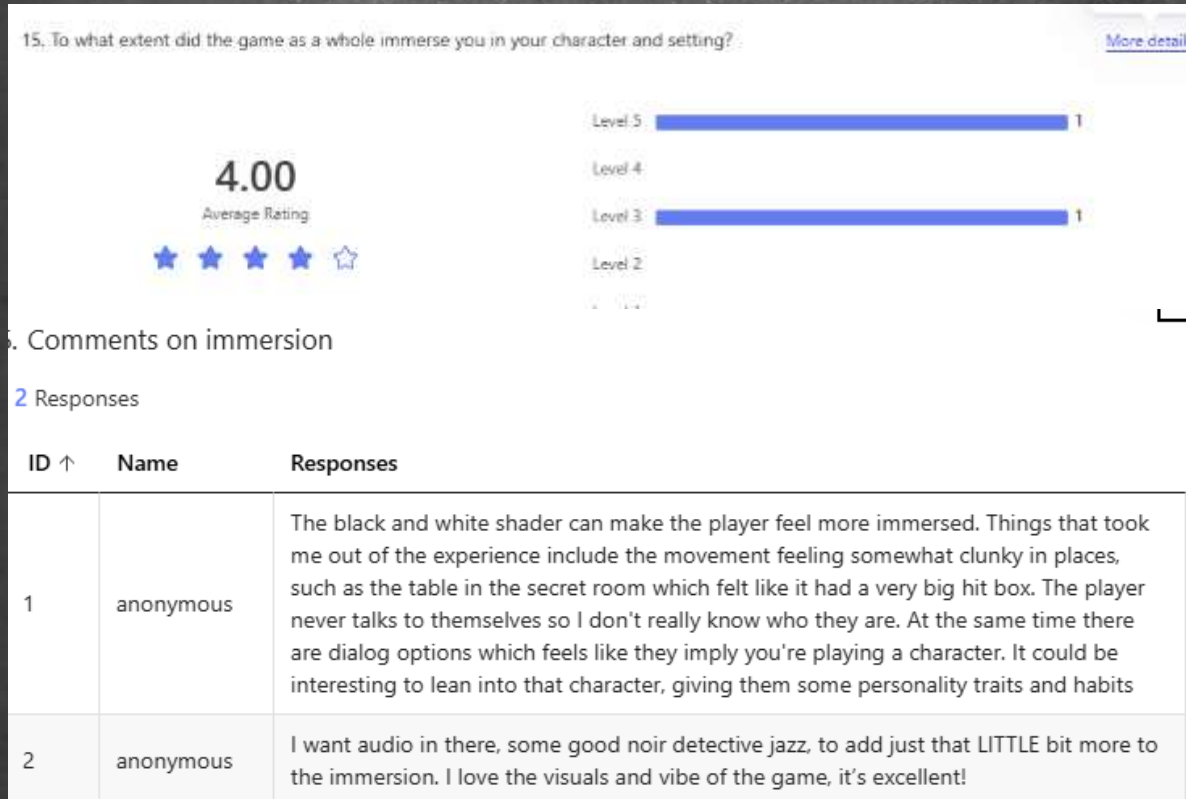


4. Comments on Goals/Objectives

1 Responses

ID ↑	Name	Responses
1	anonymous	With a murderer being on the loose and the player being a detective, it felt very natural to chase them. Seeing the money price I also very quickly assumed we, as the character, are in need of money haha (and may be a very broke detective). As we get closer to the truth, new questions emerge, which provides new natural objectives to follow; why was Albert killed? What did the killer want from him? Where did the killer go? Why did they leave the jacket behind the cafe (is this a red herring)? Additionally, the File Menu nicely clarified which goals were Gameplay focused and could be guessed for rewards. This also helped give me additional objectives, such as when I realised that the murder maybe wasn't as straightforward as I'd guessed when I typed in "Stab to the back" and it came back as "incorrect".

Development – 1st Round of Playtests and Iteration



19. Do you feel you would want to play this game again and/or further based on this experience?

2 Responses

ID ↑	Name	Responses
1	anonymous	Yes, the premise is compelling. With some small bits of polish to make the world and player character feel more alive, this could be thoroughly engaging!
2	anonymous	Yes! I would very much like to play it more!

Development – 1st Round of Playtests and Iteration

From my feedback, I iterated upon the following:

- Fixed bugs:
 - A menu sticking on screen when it shouldn't
 - Falling through world when entering a house
 - Fixed issues with the inventory deleting certain items
- Police report player can get is meant to detail the murder that happened in the newspaper, not the murder the player is trying to solve. It was unclear, so I had the NPC who says it clarify further
- Readables are zoomed closer now for more accessibility when reading them.
- Removed janky geometry that took a player out of immersion
- Clarified 24-hour time with train schedule
- Put a closed sign on the coffeehouse so players know they can't enter
- Added new variations of answers to questions that should be allowed but weren't
- Clarified interactables on the dead body using decals to depict wounds that draw the players eye and pointer better, as players felt this was frustratingly unclear that it was an important clue.

Development – 2nd Round of Playtests and Iteration

Testing with less experienced players

1. How would you rate your prior experience with video games? (1 = none at all, 5 = experienced in a variety of games)



4. To what extent did you find Coalheart's mechanics intuitive? (1 = Not intuitive at all, 5 = very intuitive)



2	anonymous	Initially I had missed one of the clues which would have explained how to use the magnifying glass.
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6. To what extent did you feel gameplay was engaging? (1 = not engaging at all, 5 = very engaging)



The npc's were very real to talk to and the way you could explore.

I was engaged in the narrative throughout.

Did you feel your deductions were meaningful, or that the game held your hand? How did this affect your experience?

2 Responses

ID ↑	Name	Responses
1	anonymous	Yes, it was great.
2	anonymous	I felt I was able to make connections to clues that didn't have to get spelled out in order for me to understand them.

Development – 2nd Round of Playtests and Iteration

9. How intuitive would you rate your experience with the level's layout / navigation? (1 = not intuitive at all, 5 = very intuitive)



Comments on navigation and layout

1 Responses

ID ↑	Name	Responses
1	anonymous	It came naturally to me where I should go next, although the alleyways felt slightly disconcerting as I couldn't see the turning/if it went futher initially.

11. How would you rate your experience with the level's pacing and flow? (1 = Pacing and Flow was poor, 5 = Pacing and flow was excellent)



[More details](#)

12. Comments on Pacing and Flow

[More details](#)

1
Responses

Latest Responses

"I didn't feel at any point that it was rushing me or taking too long."

13. To what extent did you feel your goals/objectives were intuitive? (1 = not intuitive at all, 5 = very intuitive)



15. To what extent did the game as a whole immerse you in your character and setting?



Development – 2nd Round of Playtests and Iteration

6. Comments on immersion

2 Responses

ID ↑	Name	Responses
1	anonymous	It was a vibe, plus, the npc's were like real people.
2	anonymous	Stylisation felt very fitting for the genre. Making the world look more lived-in would have improved my immersion.

2	anonymous	The leaving of the platform which would end the game should have been clearer. A question box which I had open stayed on screen when I clicked out of the inventory.
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19. Do you feel you would want to play this game again and/or further based on this experience?

2 Responses

ID ↑	Name	Responses
1	anonymous	Hell yeah, I loved it
2	anonymous	Yes, I want to catch this murderer!

Development – 2nd Round of Playtests and Iteration

From my feedback, I iterated upon the following:

- Fixed bugs:
 - The back doors on the train opening when they weren't meant to
 - Train schedule clues duplicating
- Per feedback about trains being very unclear, I added an announcer who announces the arrival of a new train, what the time is, what the platform is, and where it's going
- Added a very obvious tooltip about opening the case file if a minute or two pass without you opening it once you can, as one player completely ignored
- Added more possible answers that can be input after a player got it right but input it wrong
- An item used a he pronoun regarding the fugitive, despite not knowing what gender the fugitive is, so I changed it to they.
- Fixed grammatical errors pointed out to me

Development – 3rd Round of Playtests

4. To what extent did you find Coalheart's mechanics intuitive? (1 = Not intuitive at all, 5 = very intuitive)



Comments on Intuitiveness of Mechanics

2 Responses

ID ↑	Name	Responses
1	anonymous	easy to understand and navigate i enjoyed opening all the train doors
2	anonymous	Certain mechanics and features could have been explained better (foot prints) and reminding of the button prompts would have been nice.

Did you feel your deductions were meaningful, or that the game held your hand? How did this affect your experience?

2 Responses

ID ↑	Name	Responses
1	anonymous	game did not hold thine hand, and there was a sense of accomplishment when deducting answers
2	anonymous	Deductiond felt meaningful, wish the game held my hand a bit more

6. To what extent did you feel gameplay was engaging? (1 = not engaging at all, 5 = very engaging)



Comments on Engagement of Gameplay

2 Responses

ID ↑	Name	Responses
1	anonymous	its engaging once you figure out what you're supposed to do though some direction though prompts every now and again maybe useful to the fully developed game, though i liked the realism of having to figure everything out by myself, though for some people they may not find that as engaging
2	anonymous	Mystery made sense, questions lead to their answers and I was focused on solving it

Development – 3rd Round of Playtests

9. How intuitive would you rate your experience with the level's layout / navigation? (1 = not intuitive at all, 5 = very intuitive)



10. Comments on navigation and layout

2 Responses

ID ↑	Name	Responses
1	anonymous	cant get hit by train samd :(navigation was good though as was witnesses there was a couple of bugs within the map both visual and fall through the map-y
2	anonymous	Lighting to help guide could have been better

11. How would you rate your experience with the level's pacing and flow? (1 = Pacing and Flow was poor, 5 = Pacing and flow was excellent)



12. Comments on Pacing and Flow

2 Responses

ID ↑	Name	Responses
1	anonymous	decent pacing and the following of clues to come to genuine deductive reasoning made it so it had a very nice flow to it
2	anonymous	Pacing and flow were fine

13. To what extent did you feel your goals/objectives were intuitive? (1 = not intuitive at all, 5 = very intuitive)



14. Comments on Goals and Objectives

2 Responses

ID ↑	Name	Responses
1	anonymous	goals were simple (not a bad thing) though i would say lacked a little direction, it was easy to get lost on what you were doing
2	anonymous	Answers wanted for some questions didn't feel intuitive, but was mostly fine

Development – 3rd Round of Playtests

15. To what extent did the game as a whole immerse you in your character and setting?

4.50
Average Rating
★★★★☆



1	anonymous	pretty decently it was genuinely enjoyable to find the clues all by myself! >:3
2	anonymous	Things felt immersive, character felt slightly bland. Maybe more internal monologue could help

17. Did you feel any elements of the game were unnecessary for the goal of immersing the player?

2 Responses

ID ↑	Name	Responses
1	anonymous	not particularly
2	anonymous	Selling evidence felt unneeded

18. Did you experience any bugs / technical issues?

2 Responses

ID ↑	Name	Responses
1	anonymous	Y E S i fell through the map and there were a couple visual glitches like holes in the map where you could observe the train, there was also some objects that werent solid though idk if that was a bug or not
2	anonymous	Yes the prompt about selling items wouldn't leave the screen

19. Do you feel you would want to play this game again and/or further based on this experience?

2 Responses

ID ↑	Name	Responses
1	anonymous	oh absolutely yes, i actually beg you to finish it, i wanna play pleasepleasepleasepleasepleasepleasepleasepleasepleasepleasepleasepleasepleasepleaseplease
2	anonymous	Yes

20. Additional Feedback

1 Responses

ID ↑	Name	Responses
1	anonymous	v good game, quite enjoyable, could use a hint system so the player knows kinda what theyre doing maybe after a while of walking around the MC could mutter something to himself to read the stuff he has

Development – Playtesting Conclusion

Overall, I feel very happy with the feedback from my playtests. It is to be expected that accessibility has several aspects that need improving, but I feel happy that every person was able to complete the project.

What has been most reassuring is the results of immersion – Near enough every player has rated immersion very highly (4s and 5s). Considering immersion was the primary question of my project, this has given me lots of confidence that I'm on the right track.

The results of the 3rd playtest have given me a lot to work with leading up to GradEx, even if I can't iterate on it one last time before hand-in.

Evaluative Review - Deliverables

Overall, I feel fairly happy with the state of my project.

In terms of deliverables, I believe I have delivered every segment I intended to

- My Narrative document contains every section I mentioned wanting to include
- I have a complete design document of each mechanic I wanted to implement, and implemented each of the core systems I mentioned in my initial proposal earlier this year.
- I have showcased the development of my level from layout to blockout
- I have created a demo that takes me ~10 minutes to beat, but playtesting sessions each took 30-60 minutes, which is vastly better than I was hoping to achieve with just the critical path alone
- Aesthetics wise I am very proud of my project so far, to me it feels like it brings in everything really well, and it adds a layer of polish that I did hope to achieve in my initial proposal document

Narrative

- Create a narrative document
 - Themes
 - Worldbuilding
 - Factions (Religion and Government)
 - The fugitive (backstory, goals, motivations)
 - The detective (goals, motivations, characterization)



Design

- Create a design document
 - Investigation System
 - NPCs, Dialogue, and Quests
 - Train system
 - Real-time clock and events
- Implement these designs into an Unreal Engine 5 project.
- Level layout and blockout
- Create a 15-minute playable demo



Aesthetics (Polish)

- Develop a basic art style to bring the game together with minimal art and animation assets
- Create some low poly art assets in 3ds Max for the purpose of conveying ideas effectively



Evaluative Review – Did I Answer my Question?

I believe that the playtesting results confirm that the actions I took to design mechanics that immersed the player, as shown by these ratings of immersion below:



This is in no small part thanks to the design philosophies I employed when designing my mechanics. The main issues present in playtesting were in vast majority concerning bugs and accessibility, but the gameplay loop present in my project has proven to engage each player throughout, such that each of them completed the project despite playing for 30 to 60 minutes each.

In short, gameplay *was* immersive, and this correlated to a more engaging and enjoyable experience.

Gameplay was mostly accessible, and goals were clear to most players, but affordance issues did affect engagement on occasion

Gameplay provided the player with meaningful agency, and this may have contributed to immersion. Nearly every player has expressed that they were happier that their hand wasn't held but agreed that a hint option would make the game more accessible for those who want it.

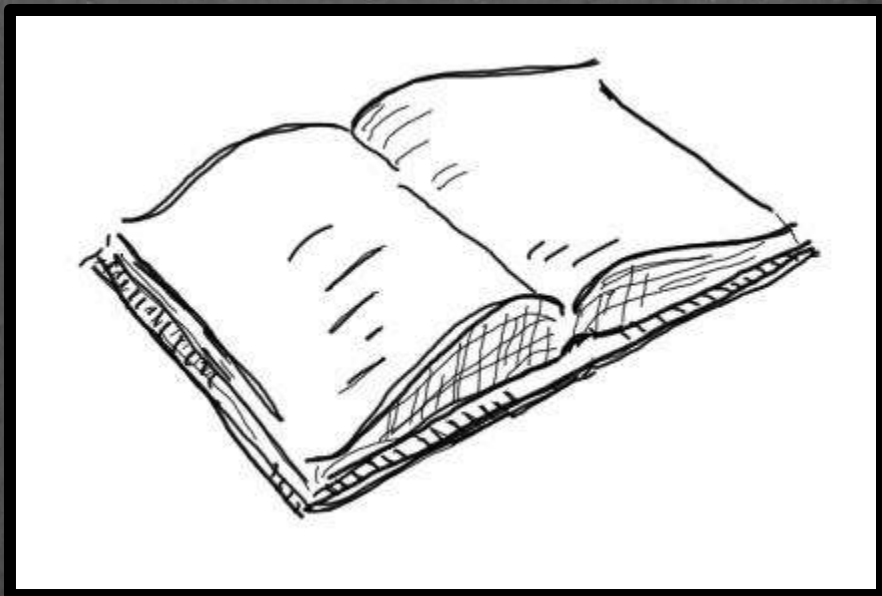
Evaluative Review – What Went Wrong?

In terms of what I feel could have gone better, I intended to playtest earlier than I did, and the ethics forms were a difficult stepping-stone to overcome.

Another element I feel could have been improved was the implementation of optional paths and further mechanics. Ultimately, I wanted to go further, but I think it's important to consider that it may be that my mistake was overscoping, not that I could've gotten more done. Were I to do it over, I feel I would start with that core in mind and only develop more designs for extra content once I felt the core gameplay was polished.

Future Plans

- Iterate upon everything and **KEEP PLAYTESTING** up to GradEx.
- Introduce the optional paths I planned to include for GradEx.
- Develop more art and animation elements for polish purposes.



Bibliography

Assassin's Creed Origins. (2017). PC, Console [Game]. Saint-Mande, France: Ubisoft.

Rise of the Tomb Raider. (2015). PC, Console [Game]. Redmond, Washington: Microsoft Studios.

ICO. (2001). Playstation 2 [Game]. Tokyo: Sony Computer Entertainment.

Shadow of the Colossus. (2005). Playstation 2 [Game]. Tokyo: Sony Computer Entertainment.

The Last Guardian. (2016). Playstation 4 [Game]. Tokyo: Sony Computer Entertainment.

Papers, Please (2013). PC [Game]. 3909 LLC.

Return of the Obra Dinn (2018). PC [Game]. 3909 LLC.

Mecheri, Damien. (2018). The Works of Fumito Ueda: A Different Perspective on Video Games, 3rd Edition. Toulouse, France: Third Editions

Frederick Matthew. (2007). 101 Things I Learned in Architecture School. London, England: The MIT Press

Pattison, Michael. "UE5 | Ultimate Dialogue System - Tutorial - Pt1." YouTube, uploaded by Michael Pattison, 17 March 2023, https://www.youtube.com/watch?v=88xikHeYQDA&ab_channel=MichaelPattison.

Code Things. "How to Make An Inventory System in Unreal Engine 5 | Resident Evil & Horror Game Mechanic" YouTube, uploaded by Code Things, 22 Nov 2024, https://www.youtube.com/watch?v=v8uq_20LFG0&ab_channel=CodeThings.

Visual Tech Art. "Cross-Hatching material Post Process [UE5, valid for UE4]" YouTube, uploaded by Visual Tech Art, 7 Aug 2023, https://www.youtube.com/watch?v=3Q6Ik1V75I8&ab_channel=VisualTechArt.

Hepner, Kamil. "Stylized lines and outlines - Unreal Material" YouTube, uploaded by Kamil Hepner, 2 Mar 2022, https://www.youtube.com/watch?v=pJ42y1VyDpc&t=11s&ab_channel=KamilHepner.

Brown, Mark. "The 3 Types of Detective Game." YouTube, uploaded by Game Maker's Toolkit, 11 Aug 2023, https://www.youtube.com/watch?v=I7q363Ic26o&ab_channel=GameMaker%27sToolkit.



The End

Thank you for Reading!

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