



# FRACTURED MEMORIES

0012499M

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# Introduction



Many modern games rely on lengthy cutscenes or text-heavy exposition, which can interrupt player immersion. *Fractured Memories* addresses this by embedding storytelling directly into gameplay through environmental details and puzzle mechanics. The game is set in a fog-covered mansion where players uncover the protagonist's past life by interacting with objects, solving puzzles, and exploring the space.

A key focus is visual storytelling using lighting, props, and level design to guide the player's understanding of the narrative. The mansion itself tells a story, with each room offering clues about the protagonist's past. The core mirror-room puzzle reinforces this theme, allowing players to experience fragmented memories through gameplay.

This project explores how puzzles and level design can enhance narrative engagement, creating a more immersive experience without relying on traditional storytelling methods. Through iteration and playtesting, the game refines these elements to ensure clarity, engagement, and emotional impact.

# Aim's, Objectives and Deliverables



- Create an engaging narrative-driven puzzle game
- Enhance storytelling through environmental design
- Balance gameplay and narrative immersion



- Develop engaging puzzles that enhance narrative depth
- Design a mansion layout that supports exploration and discovery
- Use environmental storytelling to immerse players in the game's world



- Playable demo showcasing the mirror-room puzzle
- Polished level design with environmental storytelling
- Documentation of development and design choices

# Research Methodologies (Industry Relevance)

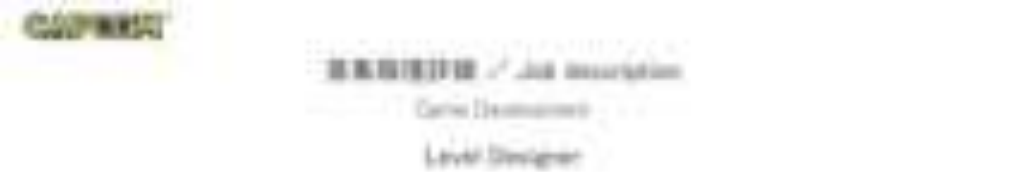
- Aligns with industry trends in immersive storytelling and puzzle design
- Inspired by Capcom's level design techniques in horror games
- Utilizes Unreal Engine, a widely used industry-standard tool
- Balances player guidance and freedom to explore

Key:

Confident Skills/Requirements

Gainable Skills during assignment

Potential Skills Development



Job duties	<ul style="list-style-type: none"><li>• Partner with the Creative and Art Directors to design levels to enhance the overall gameplay experience</li><li>• Design levels and layout gameplay related elements to match the Creative and Art Director's vision</li><li>• Prototype level layouts in the game engine, ensuring the playability of the level</li><li>• Play test and iterate on level designs to refine the player experience</li><li>• Write design documentation and communicate level designs and prototypes to other disciplines</li><li>• Collaborate with designers, artists and engineers to bring the level environments and interactive elements to life</li><li>• Partner with Engineers and Technical Artists to improve workflows</li></ul>
Qualifications	<div><div>【Skills and Requirements】</div><ul style="list-style-type: none"><li>• Minimum 3+ years level design experience</li><li>• In depth understanding of level design and gameplay theory and practices</li><li>• Experience using modern game editors to layout levels and design scenarios gameplay</li><li>• Ability to run play tests, collect and act upon feedback</li><li>• Self-motivated team-player with great communication skills</li><li>• Passion for making and playing games</li></ul><div>【Preferred Skills】</div><ul style="list-style-type: none"><li>• 5+ years of level design experience</li><li>• Working knowledge of 2D and 3D art packages</li><li>• Proficiency with scripting languages</li><li>• Japanese language proficiency or willingness to learn</li><li>• Knowledge of Capcom franchises</li></ul></div>

# Research Methodologies

## Primary Research

To ensure an engaging and intuitive player experience, I conducted qualitative and quantitative research methods, focusing on playtesting, user feedback, and expert insights.

### Microsoft Forms Surveys:

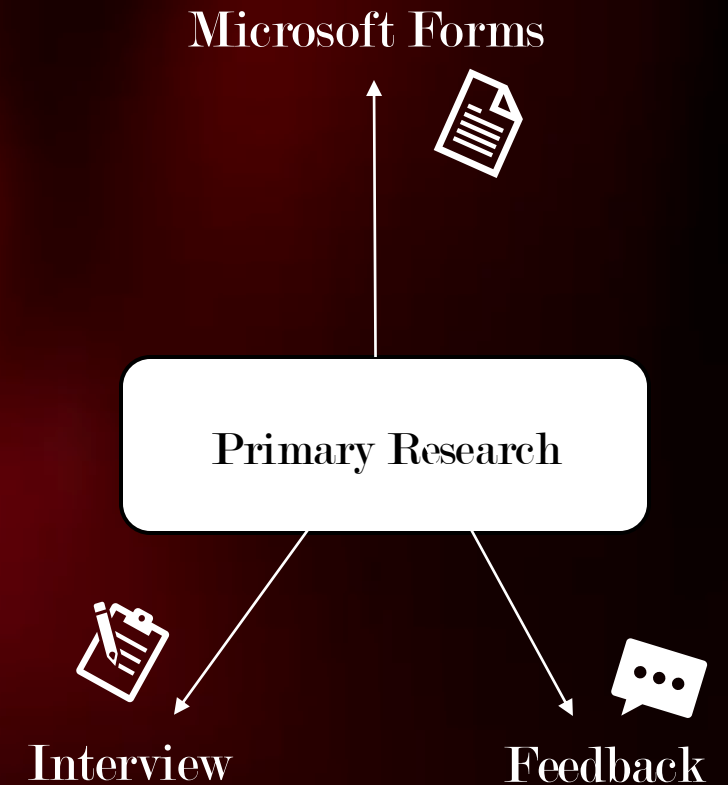
- Gathered feedback on puzzle difficulty, visual clarity, and player expectations.
- Aimed to identify potential accessibility issues and points of confusion.

### Interviews with Playtesters:

- Observed real-time interactions to assess how players approached puzzles.
- Noted where players struggled and whether the game effectively guided them.
- Feedback influenced adjustments in puzzle design, UI, and interactions.

### Supervisor & Peer Feedback:

- Regular supervisor meetings provided critical design insights.
- Peers tested the mechanics, highlighting potential issues with level design flow.





# Research Methodologies: Primary Research Examples

## NieR: Automata

"The game's desolate landscapes and remnants of human civilization create a melancholic atmosphere, reinforcing its existential themes."

*NieR: Automata: A Visual Analysis* (2024)

## Ico

"Ico's minimalist visuals and use of light and shadow create a sense of isolation, enhancing its emotional storytelling."

GameExhibition. (2017)

## Undertale

"Undertale's retro visuals subvert expectations, using familiar RPG elements to challenge traditional storytelling."

YouTube. (2025).

## Shadow Of Colossus

"The game's minimalist narrative and vast, desolate landscapes evoke a profound sense of solitude and melancholy."

GameExhibition (2017)



# Research Methodologies: More Examples



"*Final Fantasy XVI*, environmental storytelling is employed to enhance the narrative." **TechRadar. (2023)**



"*Crystar* uses gothic visuals and color palettes to reflect the protagonist's emotional journey, immersing players in themes of loss and redemption." **Lily's Corner Reviews (2023)**



The feudalistic setting creates a very intricate political web that the students at the monastery often have a difficult time navigating. **fcaasi. (2020).**



"In *Persona 5*, each Palace is a manifestation of an individual's distorted desires, symbolizing their inner turmoil and perceptions." **Lindgren, S. (2024)**



# Research Methodologies

## Technical Research

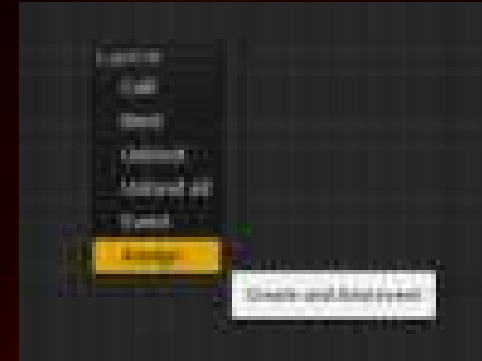
To refine mechanics and optimize performance, I explored technical documentation and relevant industry resources.

## Magica Voxel for Prototyping:

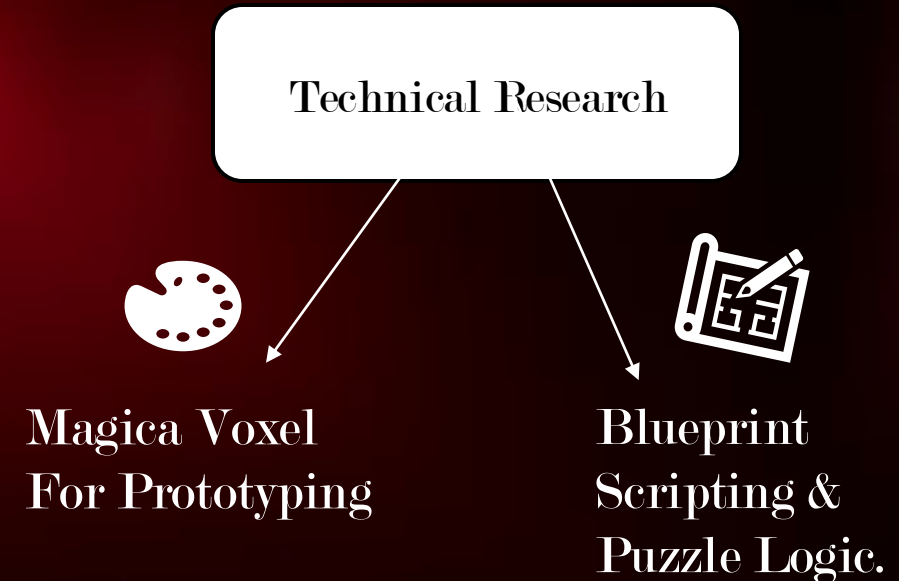
- Created early block outs to visualize level layouts and test spatial design.
- Helped refine scale and object placement before implementing in Unreal Engine 5.

## Blueprint Scripting & Puzzle Logic:

- Studied previous puzzle-based games for best practices.
- Researched camera positioning and fixed-camera perspectives to enhance the horror atmosphere.
- Looked into Unreal Engine documentation for event dispatchers for clone movement.



[https://dev.epicgames.com/documentation/en-us/unreal-engine/event-dispatchers-/delegates-quick-start-guide?application\\_version=4.27](https://dev.epicgames.com/documentation/en-us/unreal-engine/event-dispatchers-/delegates-quick-start-guide?application_version=4.27)



# Research Methodologies

## Evaluation & Validation

### Iterative Playtesting:

- Players struggled with interaction hitboxes being too large, leading to accidental activations.
- Adjusted trigger areas for better accuracy.

UI adjustments made after confusion with interactive elements.

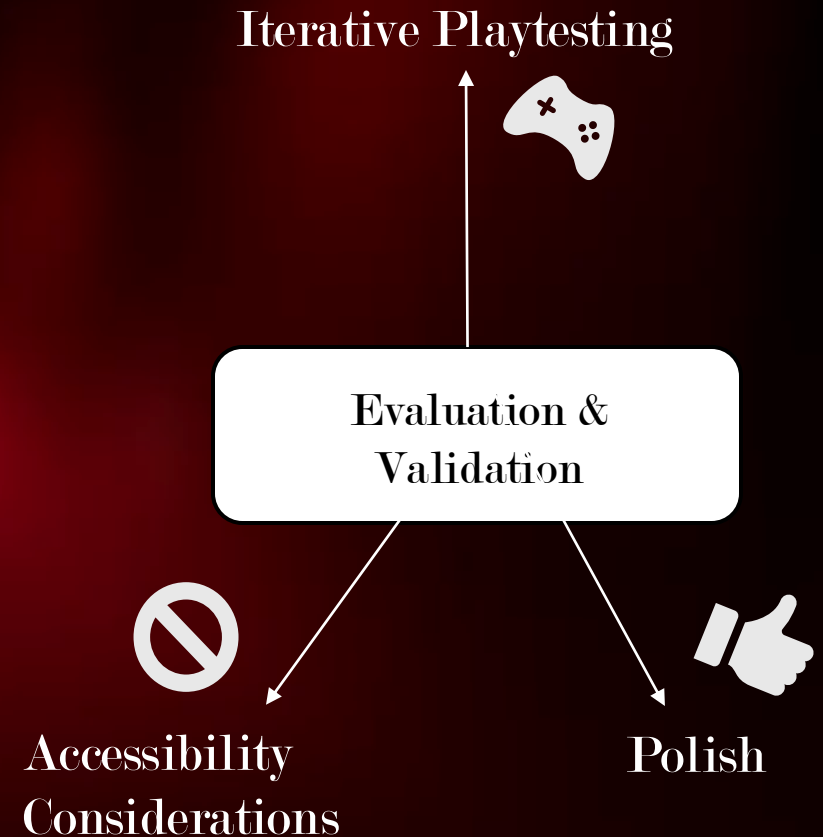
### Accessibility Considerations:

- Text clarity improved based on feedback from users with visual impairments.
- Adjusted interaction prompts to ensure better player guidance.

### Polish:

- Puzzle flow adjusted based on feedback, ensuring logical progression.
- UI reworked for better readability and interaction clarity.

By combining primary and technical research, I ensured that Fractured Memories delivered an engaging and immersive player experience while addressing usability concerns.



# Documentation of Production: Planning (Gantt Chart)

## Stage 1: Research, Planning, Documentation, Testing

- Conducted interviews, surveys, and literature reviews.
- Used various sources: academic articles, YouTube, and library research.
- Created level documentation, planning layouts, and asset lists.

## Stage 2: Development, Creation, Testing

- **Blockout & Meshing:** Initial level structure, refined visuals.
- **Character & UI Implementation:** Integrated models, animations, and interactions.

## Puzzle Creation & Testing:

- **VFX & Audio:** Added atmosphere and immersion.
- **Final Touches & Iteration**
- Last polish phase for UI, animations, and sound.
- Addressed feedback and refined mechanics.

## Constant Looping & Feedback

- Iterative testing throughout development.
- Adjustments based on playtesting results.



# Documentation of Production: Planning (Gantt Chart)

## Planning & Research

- Initial planning, project pitch, and puzzle concept design.
- Ethics form delayed progress, impacting early scheduling.

## Development

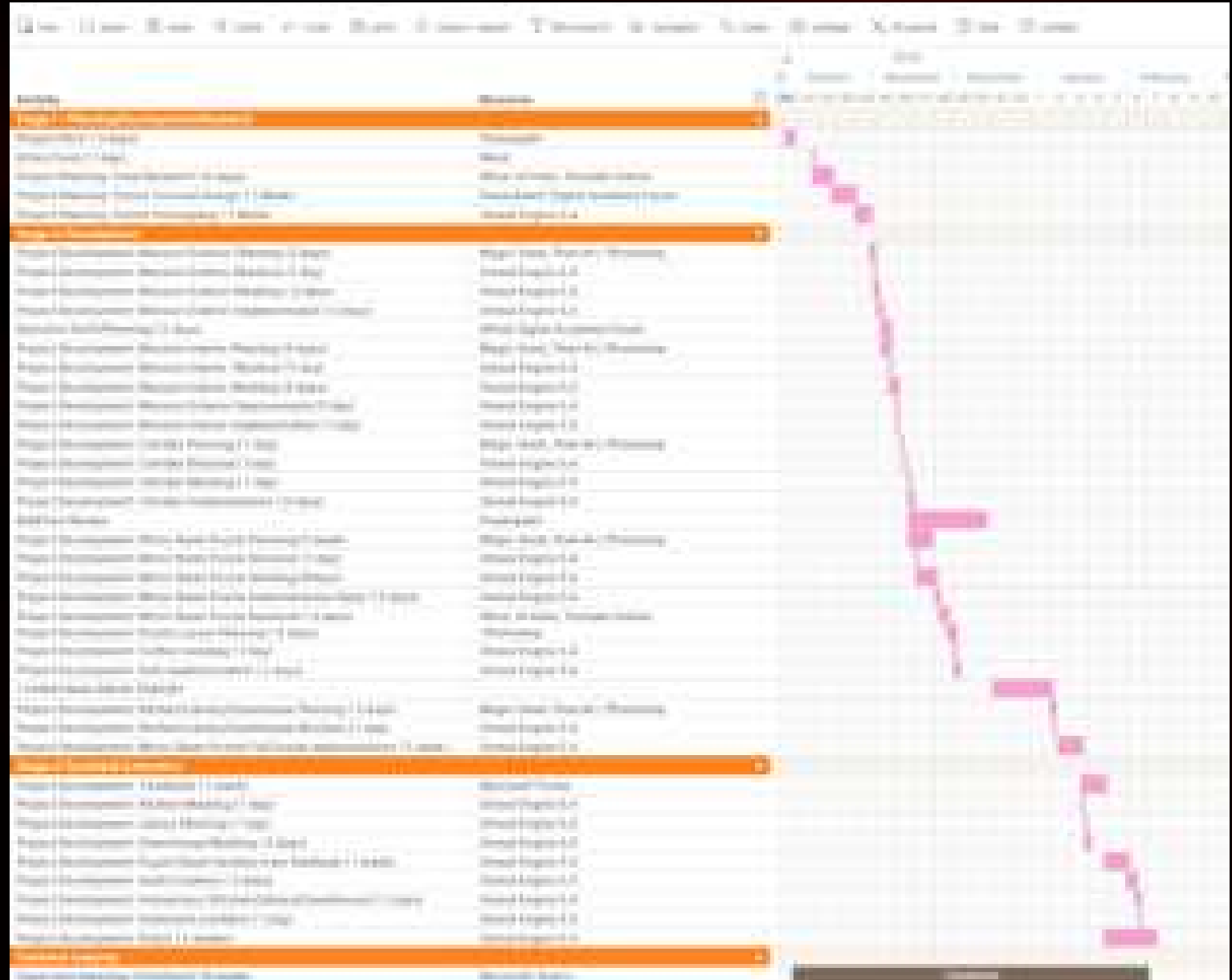
- Mansion interior/exterior, kitchen, library, and greenhouse designed and meshed.
- Mirror room puzzle implemented in phases, with multiple iterations.

## Feedback & Iteration

- Playtesting and adjustments based on supervisor and player feedback.
- UI, audio, and final polish applied before submission.

## Constant Supervision & Refinement

- Weekly supervisor meetings ensured continuous improvements.





# Documentation of Production: Planning (Art Style)

- Inspired by gothic horror and classic haunted mansion aesthetics
- Dark, atmospheric lighting to enhance immersion
- Semi-realistic textures for environmental storytelling
- Influence from games like Resident Evil 8, Cry star and Yuki and Witches House



# Documentation of Production: Planning (Prototypes)



Original Version

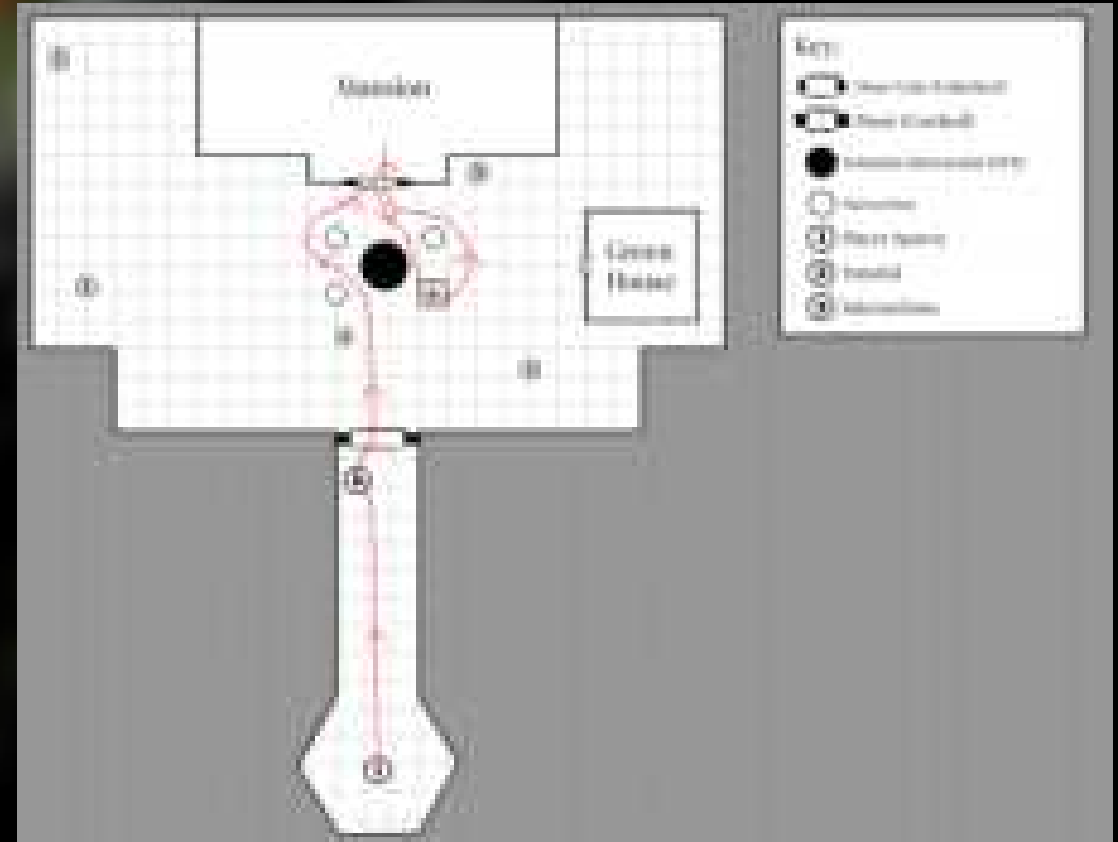
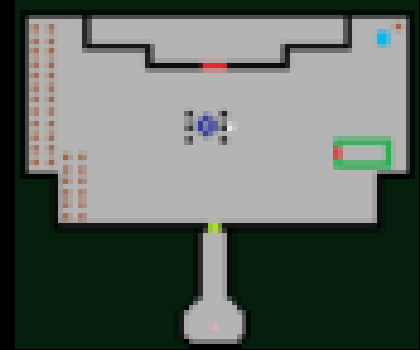


# Documentation of Production: Planning (Prototypes)



# Documentation of Production: Mansion Exterior

- Created bubble maps to plan the overall layout and player navigation.
- Developed pixel art sketches to visualize the mansion's structure.
- Designed key landmarks to aid player wayfinding and environmental storytelling.
- Used a modular approach to allow for flexibility and iteration.





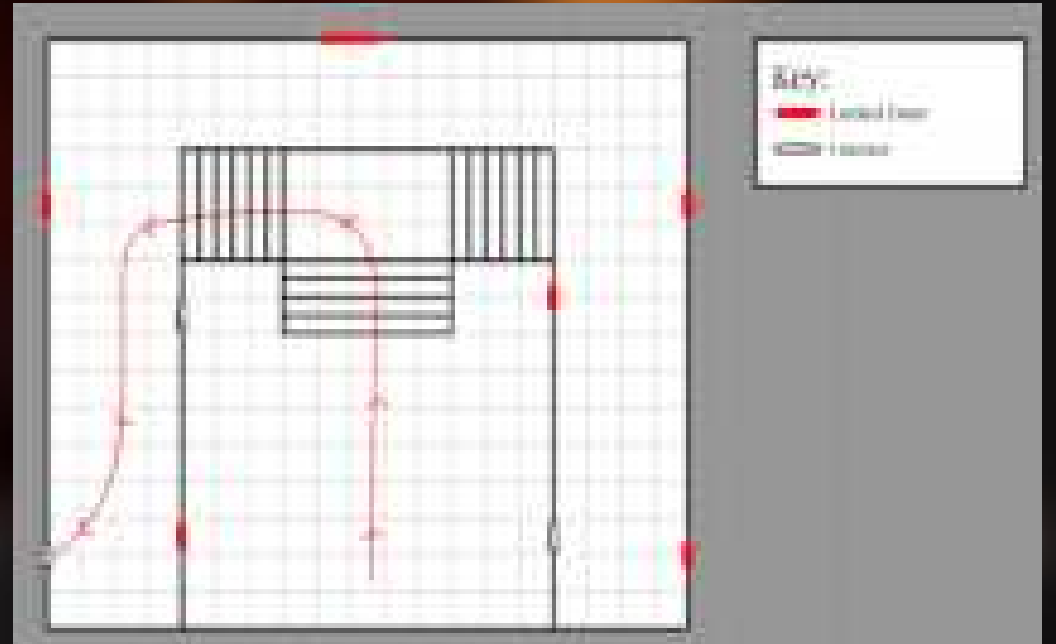
# Documentation of Production: Mansion Exterior

- First level block out, later reworked after plugin issues
- Early lighting experiments for atmosphere
- Added guiding elements (context clues, dialogue, cutscenes)



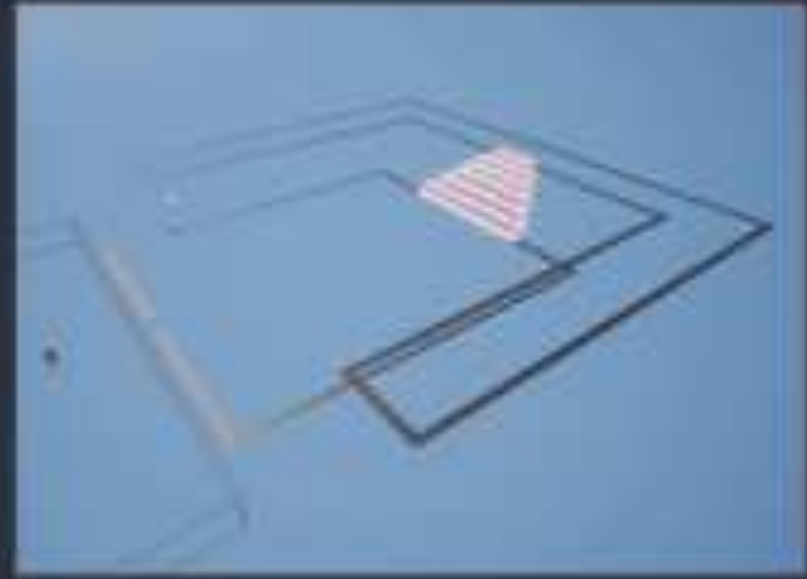
# Documentation of Production: Mansion Interior

- Created a detailed bubble map to plan room layouts and flow.
- Designed the space to feel grand yet eerie, reinforcing the narrative.
- Considered lighting and furniture placement to guide player movement.
- Ensured logical room connections to support exploration.



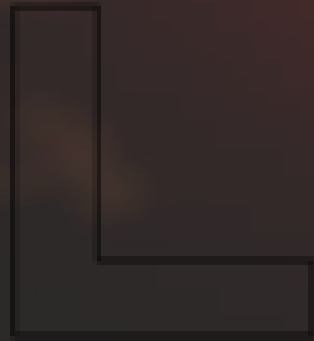
# Documentation of Production: Mansion Interior

- Faster block out process compared to exterior
- Iterated layouts for dynamic angles and better flow
- Improved door interactions (VFX indicators, cutscenes to guide players)



# Documentation of Production: Corridors

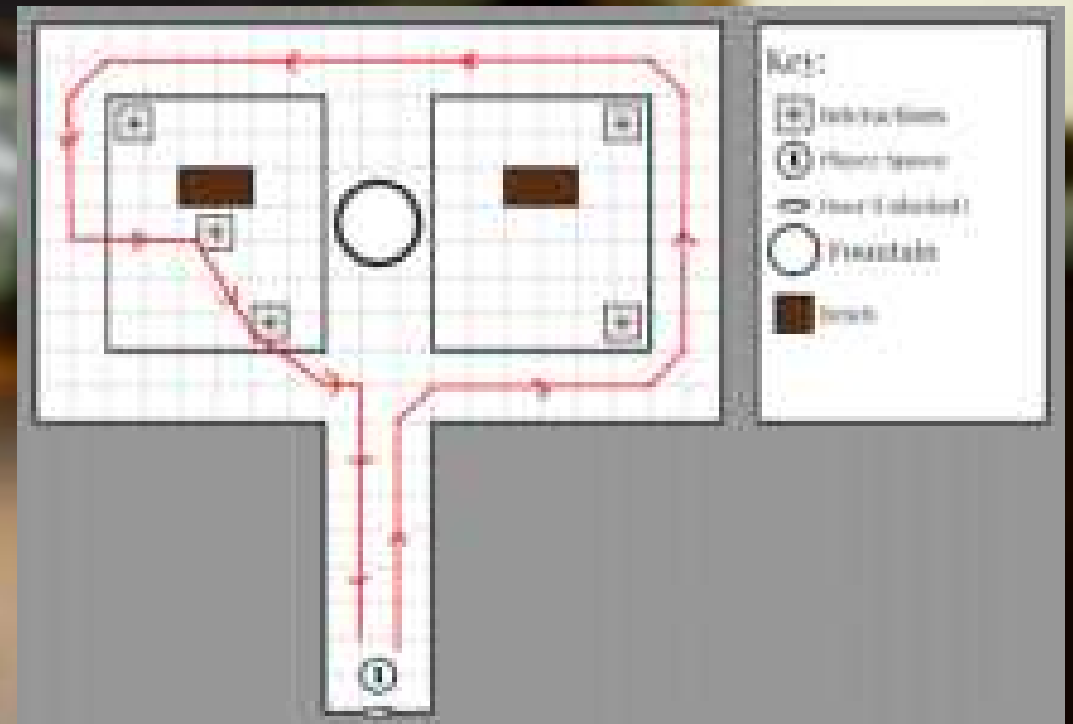
- Designed as transitional spaces to build tension and atmosphere.
- Used lighting and sound cues to create an unsettling feeling.
- Incorporated broken furniture and debris for storytelling.
- Planned sightlines to lead players toward key locations.
- Simplified corridor layout for navigation ease
- Static camera angles inspired by *Resident Evil*
- Additional corridors added later for expanded exploration





# Documentation of Production: Greenhouse

- Concepted as an overgrown, abandoned space to contrast interiors.
- Used plant overgrowth to create mystery.
- Planned Enviromental storytelling
- Designed lighting to filter naturally through cracked glass panels.
- Mapped out layouts rough sketch/magica voxel.



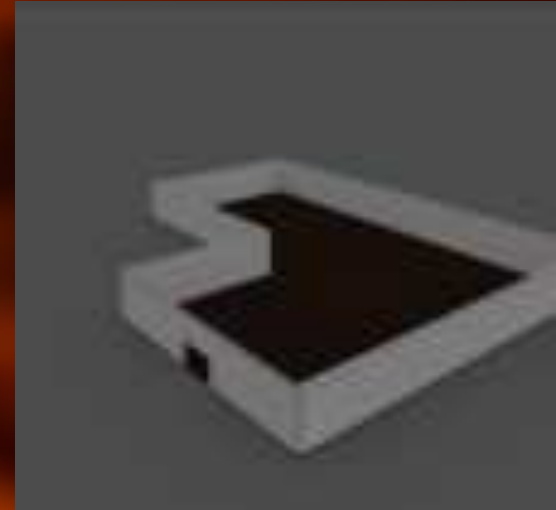
# Documentation of Production: Greenhouse

- Created initial block out with pathway in mind for interaction.
- Added interactable elements like fallen planters and a broken bench, flowers ect.
- Adjusted player navigation to ensure smooth movement through dense foliage.
- Implemented ambient VFX to indicate what could be interacted with.



# Documentation of Production: Kitchen

- Focused on a cluttered, aged design to reinforce past events.
- Planned interactable elements to enhance immersion.
- Mapped out layouts rough sketch/magica voxel.
- Planned distinct visual themes for each area to enhance atmosphere.



# Documentation of Production: Kitchen

- Blockout and implementation went smoothly.
- Placed cluttered props strategically to tell a story of past use and decay.
- Adjusted post-processing effects to create a dimly lit, eerie atmosphere.
- Iterated on lighting to ensure visibility while maintaining tension.





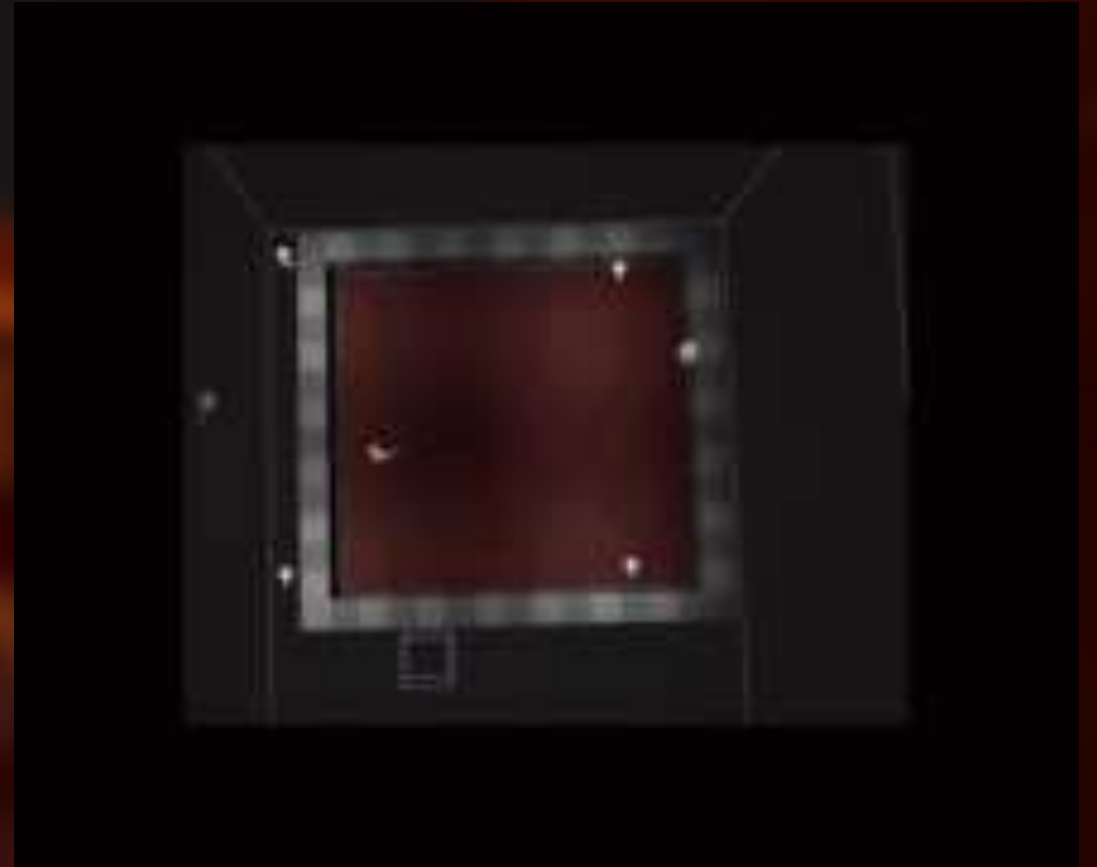
# Documentation of Production: Library

- Mapped out layouts rough sketch/magica voxel.
- Placed lore-relevant books and notes as environmental storytelling elements.
- Looked into storytelling elements of relevance for this area
- Planning player path.
- Planning use of lighting.



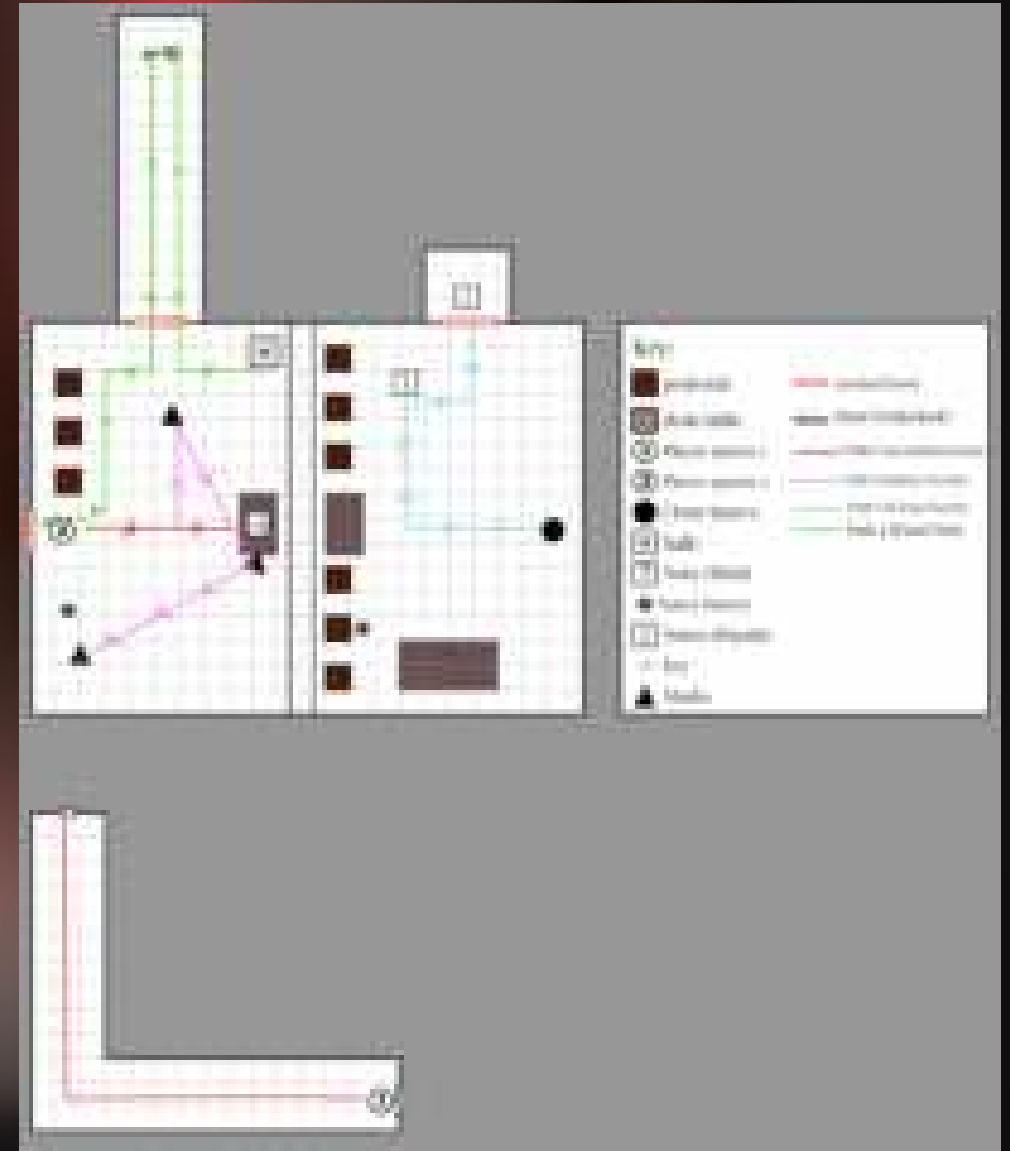
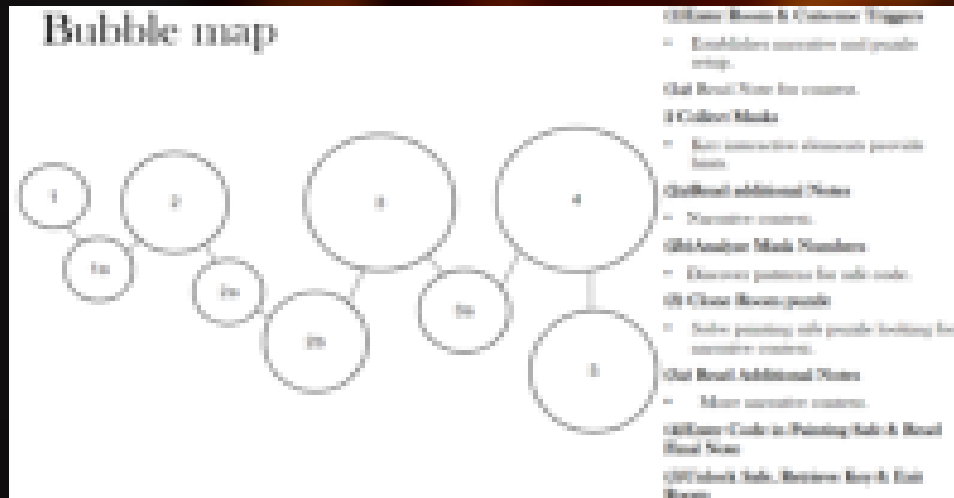
# Documentation of Production: Library

- Designed as a key storytelling space filled with old books and notes.
- Blockout and implementation went smoothly.
- Player input had to be changed to fit camera angle.
- Needed to change to fixed camera angle.
- Iterated on room design and layout.
- Added interaction VFX to help guide players on what can be interacted with.

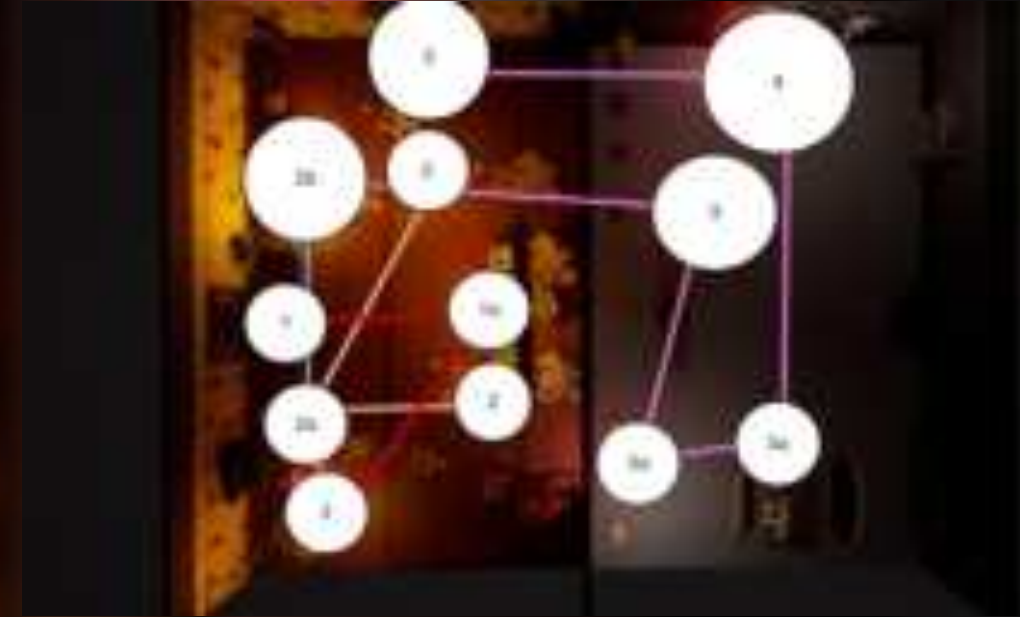
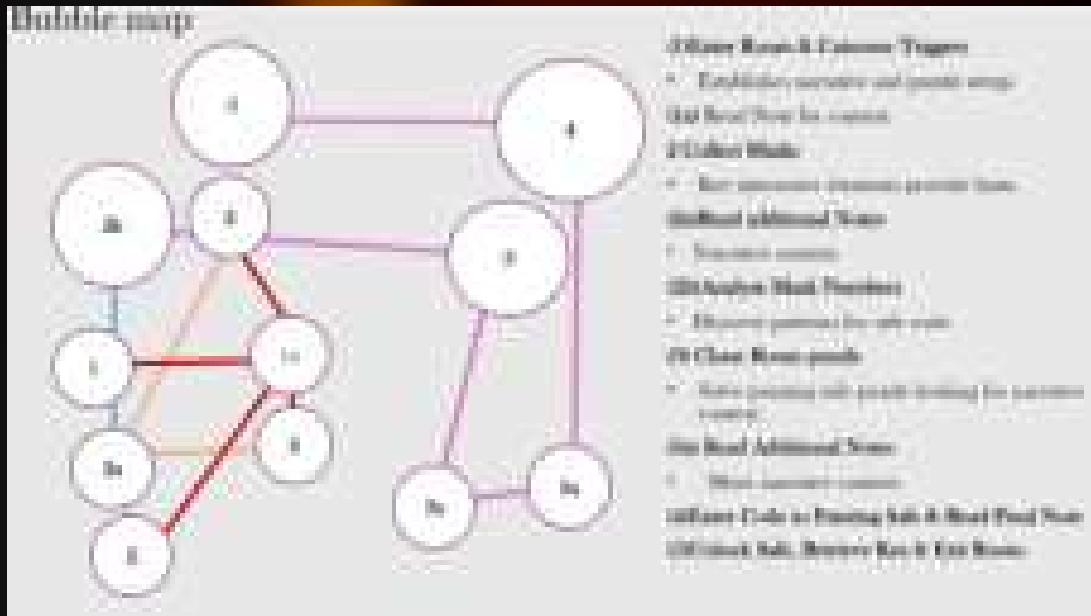


# Documentation of Production: Puzzle Room

- Designed a puzzle where the room is split between past and present.
- Created a bubble map to outline interactions and key puzzle elements.
- Developed the concept of a 'clone' that mirrors the player's movements.
- Planned environmental storytelling through notes, objects, and visual contrasts.
- Considered accessibility by ensuring clear visual cues and readable text.



# Documentation of Production: Puzzle Room



# Documentation of Production: Puzzle Room

- Blocked out the room layout and tested player movement.
- Implemented the clone mechanic using event dispatchers in Unreal Engine.
- Added interactive elements, including the safe, mask puzzle, and notes.
- Adjusted lighting and materials to differentiate past and present sections.





# Documentation of Production: Puzzle Room

## Feedback:

- The note interaction overlapped with the player hitbox, making movement difficult fixed by adjusting interaction zones.
- Some players struggled with the mask-number order, so added clearer hints.
- Fixed UI overlapping issues that prevented movement after solving the puzzle.
- Improved clone responsiveness to ensure accurate mirroring of player actions.
- Added sound effects and environmental audio for better immersion.

anonymous

Sound design will make a huge impact on this style of game, making the opening screen more in line with the theme. (think resident evil)

anonymous

my suggestion for letter presentation is for the letter to appear when you interact with it as a normal letter, if that makes sense, with handwriting on it and whether or not that handwriting is legible doesnt matter bc beside it or in front of it or whatever will be the letter's content written out plainly in the game's main font, like i think a lot of games do this like resident evil or lies of P

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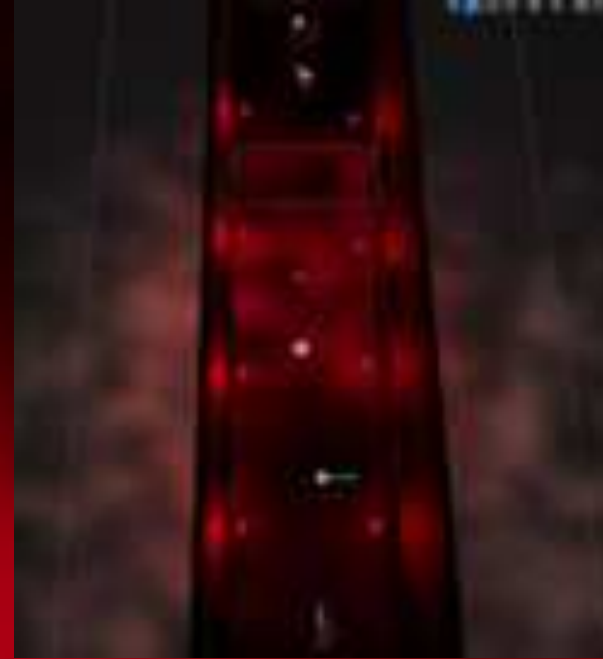
anonymous

Good job, it shaping up well got a bug one were the UI would not go away so I had to restart the game, also the for the mirrored version of yourself are a little bit funky sometimes.

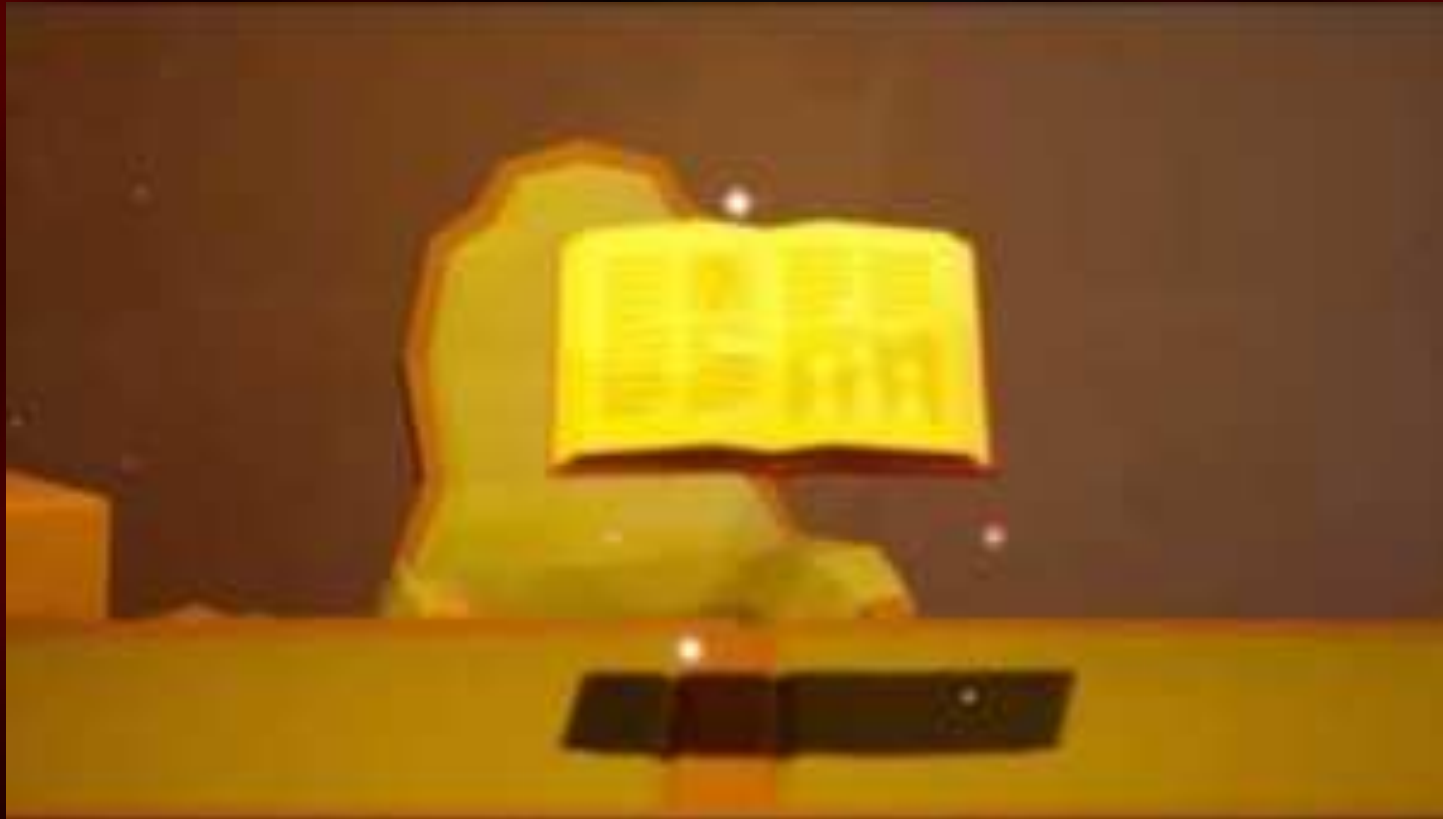


# Documentation of Production: Ending Corridor

- Added after supervisor feedback to enhance narrative closure
- Short cinematic to maintain mystery and tension
- Designed as the final atmospheric build-up to the climax.
- Used narrowing space to create a sense of unease.
- Incorporated environmental storytelling elements like old portraits.
- Experimented with dynamic lighting to emphasize tension.



# Final Artefact



# Evaluate Review



- Engaging mirror puzzle that reinforces the narrative.
- Strong environmental storytelling through visual and interactive elements.
- Effective iteration process through playtesting and feedback.
- UI inspired by *Gone Home* improved note readability and accessibility.
- Lighting and VFX enhanced atmosphere and player immersion.



- Debugging clone movement and interaction zones.
- Balancing puzzle difficulty to ensure clarity without making it too easy.
- UI overlap issues affecting interaction clarity, requiring adjustments.
- Ensuring the environment guided players without excessive hand-holding.
- Time constraints limited the scope of additional puzzles and mechanics.



## Future Improvements

- More puzzles to expand gameplay depth and variety.
- Reset mechanic for better player control in the mirror puzzle.
- Additional environmental interactions for deeper storytelling.
- Refining UI further for a more polished user experience.
- Expanding the narrative with more rooms and interactive elements.

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# Closing Page

I would like to express my gratitude to my supervisor, David Murphy, for his invaluable guidance and support throughout this project. I also appreciate the feedback provided by Jamie Nicholas during the midpoint review. Their insights have helped shape this project into what it is today.

