

# **Escape Nexus — Software Requirements Specification (Part 1)**

Document Type: Software Requirements Specification

Team Name: Name Needed

Team Members: Lance Kimani, Madhav Punjabi, Shakti Kaver, Tanish Patel, William West

Date: August 31, 2025

Version: 0.3

## Table of Contents

- Escape Nexus — Software Requirements Specification

1. Introduction	3
2. Stakeholders	3
3. Constraints	6
4. Overall Description	6
5. Business Use Cases	7
6. Functional Requirements	8
7. Non-Functional Requirements	8
9. Competitive Analysis	9

# 1. Introduction

## Purpose

Escape Nexus is a browser-based, story-driven virtual escape room designed for fast, fun sessions—solo or co-op. Players solve themed puzzles, uncover secrets, and chase leaderboards. The project’s goal is to deliver accessible, replayable escape experiences with strong production value and low friction. The ‘business problem’ we address is that many escape games are either too long, too punishing, or not collaborative enough; Escape Nexus offers short, fair, beautifully themed rooms with optional teamwork and social features.

# 2. Stakeholders

- Primary Players
- Co-op Groups / Party Hosts
- Streamers & Content Creators
- Game Designers / Puzzle Authors
- QA / Playtesters
- Community & Support Moderators
- Marketing / Partnerships

## 2.1 Personas

### David — Competitive Puzzle Speedrunner

Speedrunner	Leaderboard	Precision
-------------	-------------	-----------



— Stock image provided by team

“Give me a clever twist and a timer—I’ll be back to beat my own record.”

### About

David discovered escape rooms at a campus charity event and now treats them like speedruns. He loves crisp UI, fast feedback, and puzzles that reward pattern recognition—no pixel hunting. He plays solo to learn the room, then races friends for leaderboard spots.

### Quick Facts

- Age 21 • CompSci junior • Lives with roommates
- Nightly 20–30 minute sessions
- Laptop + phone • Shares times on Discord

### Accessibility

- Keyboard-only path • Focus outlines
- Color + shape cues (not color-only)
- Low-latency interactions

### What Delights Me

- Tight, fair logic with minimal text
- Skippable cutscenes, instant retries
- Leaderboards & ‘ghost’ replays

### What Frustrates Me

- Cluttered UI or tiny hitboxes
- Unfair RNG, hidden-object pixel hunts
- Unskippable intros

### Design Hooks

- Speedrun mode with split timers
- Action heatmaps after runs
- Cosmetics for no-hint clears

### Success Metrics

- Rooms cleared without hints
- Time improvement per attempt
- Leaderboard percentile

### Emily — Narrative Sleuth & Aesthetic Lover

Story-first

Cozy co-op

Aesthetic



— Stock image provided by team

*“I’m here for the story and the ‘aha!’—surprise me without stressing me out.”*

### About

Emily hosts cozy puzzle nights and gravitates to rooms where clues make narrative sense—diaries, props with purpose, and earned reveals. She takes screenshots, explores optional lore, and prefers a gentle difficulty curve over timers.

### Quick Facts

- Age 23 • Marketing grad student
- Weekend sessions 40–60 minutes
- Ultrabook • Co-op with a friend on voice chat

### Accessibility

- Readable fonts ( $\geq 14\text{pt}$ ) • Captions
- Adjustable brightness & motion
- Mouse-first with keyboard backup

### What Delights Me

- Strong theme, music, and art direction
- Diegetic hinting via in-world characters
- Photo mode + collectibles

### What Frustrates Me

- Tiny fonts or too-dark scenes
- Timers that punish exploration
- Locks that don't tie into the story

### Design Hooks

- Story Mode difficulty toggle
- Lore gallery of found artifacts
- Spoiler-free nudge hints

### Success Metrics

- Completion of story paths
- Lore items found
- Post-session mood rating

### Henry — Strategic Problem-Solver & Team Lead

Team Lead	Strategy	Co-op
-----------	----------	-------



— Stock image provided by team

*“Give me a fair puzzle that rewards teamwork and I’ll rally the group.”*

## About

Henry treats escape games as collaborative brainteasers. At work he runs retros; in games he assigns roles, tracks clues, and keeps everyone calm. He values clarity, fairness, and steady challenge escalation.

### Quick Facts

- Age 32 • Operations lead • Two kids
- After-work co-op 30–45 minutes
- Desktop + tablet • Shared voice chat

### Accessibility

- Captions for audio clues
- Color-blind safe palettes
- Remappable keys • Controller support

## What Delights Me

- Puzzles with parallelizable steps
- Visible teamwork payoffs
- Clear victory conditions

### What Frustrates Me

- Single-player bottlenecks in co-op
- Audio-only clues with no text
- Inventory clutter

### Design Hooks

- Roles with complementary abilities
- Shared notebook & pinboard
- Post-room debrief with per-player stats

### Success Metrics

- Co-op completion rate
- Hint requests per puzzle
- Balanced contribution index

## 3. Constraints

- Schedule: 8–10 week alpha; 2–3 week content updates post-launch.
- Budget: Prioritize open-source stack; lightweight hosting for launch.
- Platforms: Modern desktop & mobile browsers (Chromium/WebKit/Gecko); optional controller support.
- Accessibility: WCAG 2.1 AA targets for captions, contrast, motion reduction, keyboard navigation.
- Dependencies: Payment (if premium), analytics, auth, image/CDN services.
- Content/Legal: Licensed fonts/assets; age-appropriate content guidelines.

## 4. Overall Description

### System Context

Escape Nexus runs as a web app with optional account sign-in. Players access themed rooms, progress is saved in the cloud, and leaderboards aggregate best times. Co-op rooms synchronize state over WebSockets.

### Key Components

- Front-end SPA (puzzle UI, inventory, hinting)
- Puzzle/Room Engine (gates, logic, timers)
- Session Service (progress, saves, leaderboards)
- Co-op Sync (lobbies, roles, comms)
- Content Authoring (templates for designers)
- Analytics & Telemetry (heatmaps, drop-offs)

### External Interfaces

- Auth (email/SSO), optional payment
- Social sharing (images/links)
- Email/push notifications (optional)

## User Environment

- Devices: laptops, desktops, recent tablets/phones
- Network: typical home/campus Wi-Fi
- Browsers: latest two stable versions

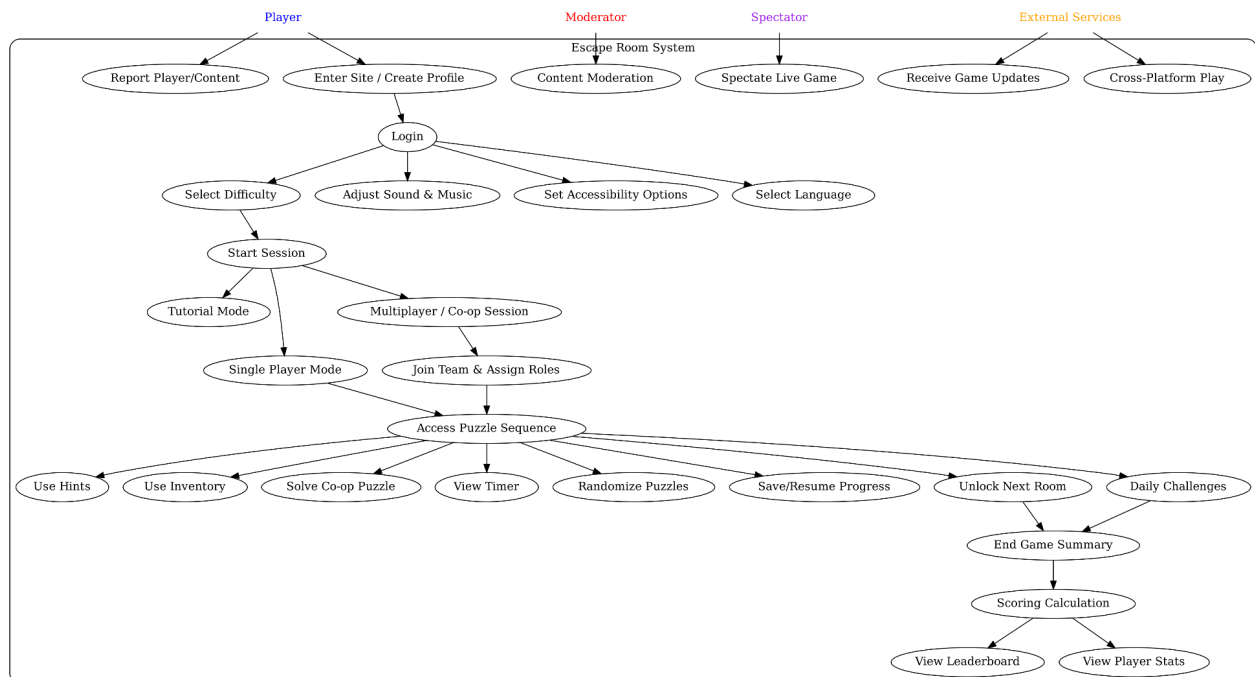
## Assumptions

- Target room length 20–45 minutes; hint system is optional and gentle.
- Minimal PII stored; privacy-first analytics.
- Content shipped in seasonal theme packs.

## Open Questions

- Paid vs. free-to-play model?
- Seasonal live-ops cadence?
- Which co-op roles and max party size are ideal?

## 5. Business Use Cases



## 6. Functional Requirements

[Requirements Spreadsheet](#)

## 7. Non-Functional Requirements

### Look and Feel Requirements

- The user interface of the escape room will have a simple layout that allows players to easily navigate puzzles and menus.
- The visual design will use immersive themes (e.g., mystery, adventure, horror) to match the escape room's storyline.
- The system will ensure that text, buttons, and interactive elements are clearly visible and distinguishable.

### Usability Requirements

- The system will be accessible to users with a wide range of abilities, from beginner to advanced gamers.
- The escape room will include a tutorial mode to guide first-time users through the controls and features.

### Performance Requirements

- The system will load each room or puzzle within 5 seconds on a stable internet connection.
- The system will support smooth gameplay for multiple players simultaneously in a multiplayer session.
- The system will maintain stable performance on devices.

### Maintainability and Support Requirements

- The escape room will be compatible with Windows, Linux, Mac, iOS, and Android operating systems.
- The system will allow for regular updates without disrupting saved player progress.
- The system will include in-game reporting tools so users can report bugs or issues directly.

### Security Requirements

- The system will encrypt user data, including login credentials and game statistics.
- The system will prevent unauthorized access to private game rooms and accounts.
- The system will have moderation tools to monitor and remove inappropriate chat content.



## Legal Requirements

- The system will make sure that all third-party assets (music, images, puzzles) are licensed.
- The system will comply with data protection regulations when storing and processing user information.

## 9. Competitive Analysis

Product	Strengths	Weaknesses	Audience/Notes
Escape Simulator (Pine Studio)	Room editor, strong community workshop, tactile object interactions.	Less curated narrative; puzzle quality varies; desktop-first.	PC puzzle fans; creators who enjoy building rooms.
Keep Talking and Nobody Explodes (Steel Crate Games)	Brilliant asymmetric co-op; high replayability; party hit.	Niche format; reading-heavy; not a traditional 'room' experience.	Local/streamer co-op groups, party nights.
The Room series (Fireproof Games)	Premium tactile puzzles, gorgeous art direction, atmospheric storytelling.	Primarily single-player; limited social/leaderboards.	Story-first solo players on mobile/PC.