



Virtual Escape Room Proposal

Software Requirement Specification

Winston Jiang Li, Adrian Alvarez, Jaylin Huges, Laurence Zhang

The Tetragram

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Introduction

The purpose of this project is to design and develop a text- and picture-based virtual escape room game. The product will be designed to simulate the excitement of puzzle-solving and problem-solving in real-world escape rooms virtually. It will provide interactive storytelling through narrative text and images, challenging users to collaborate, think critically, and unlock new levels.

Goals

- Design and develop an immersive, interactive puzzle experience that's accessible to everyone with varying knowledge.
- Allow for both single-player and team play.
- Provide replayability and content expansion by allowing multiple puzzle paths and randomized challenges.

Stakeholders

- **Primary Stakeholders**
 - **Player / Participants**
 - Core users; they engage with puzzles, solve challenges, and progress through storylines.
 - **Game Designers / Developers**
 - The people building the puzzles, writing the storylines, and programming it.
- **Secondary stakeholders**
 - **Corporate Trainers / HR Teams**
 - Use the escape room as a modern, interactive tool for team-building and workplace problem-solving
 - **Entertainment Event Organizers**
 - Incorporate the escape room into parties, social gatherings, or community events to entertain groups.
- **Tertiary Stakeholders**
 - **Content Creators / Streamers**
 - Showcase the escape room on platforms like Twitch or YouTube to boost visibility and audience engagement.
 - **Technology Platforms**

- App stores, online hosts, or distribution channels that provide the infrastructure for releasing, updating, and maintaining the product.

Persona 1

TASHA

PROFILE


Gender : Female

Age : 19

Personality : Thrill seeker

Occupation : College student

Address : 334 Ongblong st., Phoenix AZ



“

You only live once!

BIOGRAPHY

Bio: Hello! I'm an undergraduate in college.

I love anything horror and thrill-seeking! My favorite things to do are play games, eat new foods, and explore new places with friends!

MOTIVATIONS

Incentive

Achievement

Fear

Growth

Power

Social

GOALS

- Become a successful twitch streamer
- Travel the world
- Find the ultimate scary game!

FRUSTRATIONS

- Bored with predictable puzzles
- Wants immersive storytelling, not thoughtless slop.
- Finds some escape rooms too short or not scary enough.

PERSONALITY

Introvert ● Extrovert

Thinking ● Feeling

Judging ● Perceiving


Sensing ● Intuition

TECHNOLOGY

Software

Social Media


Mobile App

BRANDS


Persona 2

ALEXANDER

PROFILE
 Gender : Male
 Age : 20
 Education : Undergraduate
 Occupation : College Student
 Address : New York, NY



BIOGRAPHY
 Hello, I am a student studying Information Technology. I am interested trying new experiences. I enjoy exploring different hobbies, and find a lot of excitement in online games. I am a big fan of mystery stories.


MOTIVATIONS
 -Incentive
 -Achievement
 -Fear
 -Growth
 -Power
 -Social

GOALS
 Wants to find a creepy escape room with some challenge to play once in a while
 Make new friends
 Find new hobbies

FRUSTRATIONS
 Likes medium scariness, but finds some escape rooms unsettling.
 Bored with uncreative / simple things
 Can't find an escape room to discuss with friends

PERSONALITY
 Introvert ————— Extrovert
 Thinking ————— Feeling
 Judging ————— Perceiving
 Sensing ————— Intuition


TECHNOLOGY
 Software
 Social Media
 Mobile App

BRANDS


Persona 3

SEPTEMBER

PROFILE
 Gender : Female
 Age : 18
 Education : Undergraduate
 Occupation : College Student
 Address : Columbia, SC



BIOGRAPHY
 Hi, I am a student learning Computer engineering. I am not really an outdoor person, I enjoy spending my time at home with my pets.
 I like to occasionally play brain teasers or things that get my head up and going.


MOTIVATIONS
 - Achievement
 -Incentive
 -Fear
 -Growth
 -Family
 -Social

GOALS
 Enjoy an immersive challenge
 Build confidence through small wins
 Relax and escape reality

FRUSTRATIONS
 Overly group-focused mechanics
 Confusing or unfair puzzles
 Time pressure and performance anxiety

PERSONALITY
 Introvert ————— Extrovert
 Thinking ————— Feeling
 Judging ————— Perceiving
 Sensing ————— Intuition

TECHNOLOGY
 Software
 Social Media
 Mobile App

BRANDS


Constraints

- **Time**
 - Must be completed by December 5th.
- **Budget**
 - Zero allocated budget; all resources must be free or open-source.
- **Technical**
 - Developed in Java
 - Must run on desktop environments.
 - Should support text and static images for puzzle prompts.
- **Content**
 - Puzzles and artwork must be original or royalty-free.

Overall Description

The virtual escape room will operate as a Java application with a console or lightweight GUI interface. Users progress through story-driven puzzles by inputting text commands, decoding visual clues, and collaborating (optional multiplayer). The system should allow modular puzzle additions, enabling developers, educators, or trainers to customize content.

Functional Requirements

Requirement Sheets

-  Requirement
- https://docs.google.com/spreadsheets/d/1e_IPYQQYbm1RDAeQy-fhuBL4hOt9Rfr7agy32VhHjkh/edit?usp=sharing

Non-Functional Requirements

Look and Feel Requirements

- The system shall maintain a consistent horror/mystery theme throughout the interface.

- Colors and fonts shall create an atmospheric escape room experience.
- Interface shall appear professional and polished.

Usability Requirements

- New users shall be able to start playing within 2 minutes without instructions.
- All buttons and controls shall be clearly labeled and intuitive.
- Error messages shall be helpful and guide users toward correct actions.
- Text shall be large enough to read comfortably (minimum 12pt font).

Performance Requirements

- The application shall start within 10 seconds on standard computers.
- User actions (clicking buttons, submitting answers) shall respond within 1 second.
- The game shall run smoothly without lag or freezing.
- Minimum system requirements: Java 11, 4GB RAM, 1GB disk space.

Maintainability and Support Requirements

- Code shall be well-organized and commented for future updates.
- Puzzle content shall be easy to modify without changing core code.
- The system shall create log files to help diagnose problems.

Security Requirements

- User save files shall be protected from accidental corruption.
- No personal information beyond usernames shall be collected.
- All user inputs shall be validated to prevent crashes.

Cultural Requirements

- Content shall be appropriate for 18+ horror rating.
- Language shall be clear and professional.
- Content warning shall be displayed before gameplay.

Legal Requirements

- All artwork, sounds, and text shall be original or royalty-free.
- All open-source libraries used shall be properly credited.
- The system shall be free for educational use.

Compatibility Requirements

- The system shall run on Windows, macOS, and Linux operating systems.
- The application shall work with Java 11 and newer versions.
- The interface shall display properly on common screen resolutions (1024x768 and higher).

Competitive Analysis

Website 1: [Online-Escape-Room.com](https://www.online-escape-room.com)

Platform Overview:

[Online-Escape-Room.com](https://www.online-escape-room.com) offers completely free online escape rooms for adults and kids, with immersive virtual escape room experiences. The platform provides multiple themed adventures, including ancient tomb exploration, inheritance mysteries, and curse scenarios. Players can enjoy games individually or as groups of 2-4 players.

Features:

- Completely free access with no subscription required
- Web-based platform accessible on mobiles, tablets, and PCs
- Multiple themed storylines
- Individual and team play options
- Direct web links for multiplier access without screen sharing
- Hint system available with no time penalties
- Compatible with Chrome, Safari, Firefox, and Edge browsers
- Optional donation system for continued support

Strengths:

- Completely free with no hidden costs or account requirements
- Well-designed immersive storylines with engaging themes
- Cross-platform compatibility across multiple devices and browsers
- Simple multiplayer setup without requiring screen-sharing technology
- Excellent quality graphics and user interface design
- An effective hint system that doesn't penalize players for using assistance
- Clear instructions and a smooth gameplay experience

Weakness:

- Limited number of available escape rooms compared to educational platforms
- Requires an internet connection for all gameplay
- No customization options for creating personal content

- Limited educational integration or curriculum alignment
- No progress tracking or badge/certificate systems
- Dependent on web browser compatibility and performance.

Implications:

- Opportunity to provide offline capability
- Need for engaging, professionally designed storylines to match quality expectations
- Importance of multi-device compatibility and smooth user experience

Website 2: VirtualEscapeRooms.org

Platform Overview:

[VirtualEscapeRooms.org](https://www.virtualexiterooms.org) provides free digital escape rooms with diverse themes, including Harry Potter, Valentine's Day, Halloween, and educational subjects. The platform is primarily designed for educational settings and offers digital badges upon completion, featuring extensive content created by educators.

Features:

- Completely free access to an extensive library of 40+ escape rooms
- Wide variety of themes
- Digital badges and printable certificates for completion
- Teacher support materials, including answer keys and explanations
- Multiple difficulty levels for different age groups and skill levels
- Google Forms and Google Sites integration
- Educational curriculum alignment across subjects
- No account creation required for basic access
- Step-by-step creation guides for educators

Strengths:

- Extensive free content library with dozens of ready-to-play escape rooms
- Created by educators ensuring pedagogical soundness and age-appropriateness
- Comprehensive teacher resources, including solutions and implementation guides
- Appeal to various age groups from elementary through adult
- No barriers to entry - entirely free and accessible
- Covers a wide range of subjects and themes

Weakness:

- Basic visual design and interface compared to commercial platforms
- Limited interactivity and animation compared to more advanced platforms
- Primarily, education focuses limit entertainment and commercials' appeal

- Dependent on external platforms for functionality
- Static content with minimal multimedia integration
- No advanced features like team communication or progress tracking

Implications:

- Opportunity to provide better visual design and user experience
- Importance of a comprehensive content library at launch
- Native application advantage over web-form dependencies
- Consider community gestures and content sharing capabilities

Website 3: Enchambered Free Online Escape Rooms

Platform Overview:

Enchambered offers free multiplayer online escape rooms, including “ALone Together” and its sequels, designed for challenging cooperative gameplay. These games feature advanced graphics, interactive elements, and communication-based puzzles that can be played from anywhere in the world with friends or family.

Features:

- Multiple free pre-made escape rooms
- Advanced graphics with moving parts, sounds, and interactive elements
- Two-player cooperative gameplay with communication requirements
- Cross-platform compatibility
- Real-time multiplayer functionality without screen sharing
- Excellent quality visual design and animations
- Various themed puzzles and scenarios
- Sequential game releases building on previous experiences

Strengths:

- High-quality graphics and interactive elements that rival paid platforms
- Innovative two-player communication-based puzzle design
- Professional visual appeal with smooth animation and sound effects
- Unique cooperative gameplay requiring constant player interaction
- Free access to well-designed, complete escape room experiences
- Strong focus on teamwork and communication skills development

Weakness

- Limited to two-player gameplay only
- Small library of available games


- Requires an internet connection and modern browser capabilities
- No single-player options available
- Limited customization or user-generated content options

Implications

- Show demand for innovative multiplayer communication mechanics
- Highlight opportunity for broader team sizes and sign-player options
- Native applications could provide better performance.

Competitive Analysis Summary Table

Feature	Online-Escape-Room.com	VirtualEscapeRooms.org	Enchambered Free Games	Our Product Opportunity
Cost	Free	Free	Free	Free base + potential premium features
Platform	Web-based games	Web-based games	Web-based games	Native Java application
Target Audience	General entertainment	Casual gamers/Students	Cooperative gamers	Broad appeal entertainment
Content Type	Pre-made adventures	Pre-made games	Pre-made co-op games	Both pre-made and customizable
Team Size	2-4 players	Individual focus	2 players only	Flexible team sizes
Offline Support	No	No	No	Yes
Visual Quality	Professional	Basic	High-quality	Enhanced Java graphics
Customization	None	None	None	Modular puzzle system
Content Volume	Limited	Extensive	Small	Scalable content library



Technical Features	Basic web	Form-based	Advanced graphics	Native app advantages
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Our Competitive analysis revealed essential market opportunities which will direct our product development process. The present market forces users to choose between platforms which deliver premium experiences through limited content or broad content selection with fundamental features. The market lacks a platform which enables offline gameplay thus creating a substantial unmet need.

The research indicates users seek both high-quality content and extensive selection yet every free platform currently available fails to meet this requirement. The platform Online-Escape-Room.com delivers expert-level escape room experience yet its game selection remains very restricted. Enchambered delivers advanced visual elements and cooperative gameplay but restricts gameplay to two players while maintaining a very limited game collection. VirtualEscapeRooms.org offers numerous escape rooms but users experience basic visual presentation and restricted interactive features.

The technical restrictions of web-based platforms create specific business opportunities for development. All competing platforms need internet access and browser restrictions create navigation problems and performance issues which users frequently report in their reviews. Our Java-based virtual escape room platform should lever the mark voids by offering offline desktop access which no competitor provides while delivering VirtualEscapeRoom.org's extensive content selection and Enchambered's visual excellence and Online-Escape-Room.com's user-friendly interface. Our product will deliver various premium escape rooms with adjustable team sizes and enhanced user interface to attract users from all current platforms while offering exclusive features that outperform all competitors.