

Puzzle Palace



Software Requirements Specification

Git Pushers

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1.Introduction

Purpose

Puzzle Palace is an interactive game designed for the ages 12 and above, where players can solve puzzles and work together/individually escape virtual escape rooms. The goal of the project is to create a fun, accessible, and educational experience that builds problem solving and teamwork skills that can keep teens engaged. This app addresses the business problem of limited, affordable, and age-appropriate entertainment options by offering a digital alternative to costly, in-person escape rooms. Resources should be invested into this as it meets a growing demand for interactive, youth-focused digital entertainment that blends learning with fun.

2.Stakeholders

- Younger Generation
 - Pre-teens
 - Teenagers
- Game Publisher
 - Publishing Manager

Personas

SARAH JANE

Age : 16
Student : Currently in High School
Occupation : Works part-time at Coldstone
Character : Team Player
Hometown : Atlanta, Georgia

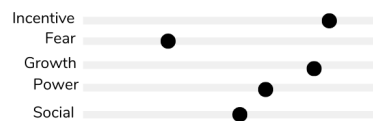


"I want to play something that challenges me and let's me play with my friends."

BIOGRAPHY

Sarah is currently a rising junior in high school, balancing academics with a part-time job at an ice cream shop. Outgoing with a strong extroverted side that makes teamwork natural and enjoyable. Known for being dependable, approachable, and a team player who thrives in collaborative environments. She loves being on social media and her favorite places to hang out are Starbucks and Macy's.

MOTIVATIONS



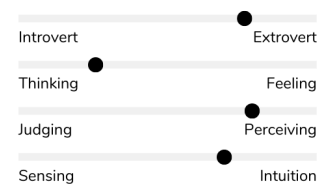
GOALS

Sarah hopes to strengthen her problem-solving and teamwork abilities, and one way she enjoys doing that is through interactive challenges like virtual escape room apps. By working with others to solve puzzles and think creatively under pressure, she builds skills that translate directly into her academic, work, and future career goals. She sees these experiences as fun opportunities to sharpen her collaboration, communication, and critical thinking in engaging and practical ways.

FRUSTRATIONS

Sarah's biggest frustrations is when communication breaks down in group settings, especially during fast-paced challenges like a virtual escape room app. She finds it challenging when team members talk over each other or when important clues are overlooked because everyone is focused on different things. These moments can feel overwhelming, but they also push her to practice patience and find better ways to keep the group organized and on track.

PERSONALITY



BRANDS



AIDEN JOHNSON

PROFILE

Gender : Male
Age : 13
Occupation : Student
Address : 245 Rosewood Dr, Columbus, Ohio



"

"The key to any puzzle is knowing that you have the tools to solve it, you just have to figure out how to use them."

BIOGRAPHY

Alex is a middle school student who loves a good challenge. He spends most of his free time playing video games on his PC and tablet, especially puzzle and adventure titles. Alex enjoys a good story and gets bored easily with repetitive games. He often plays with friends online and likes to feel a sense of accomplishment by solving tough problems on his own.

MOTIVATIONS

Alex is motivated by a good challenge and the feeling of accomplishment from solving tough puzzles. He also loves the social aspect of playing with friends, so the chance to collaborate and celebrate successes together is a big draw. Finally, he's more likely to stay engaged if there's an immersive story to make the puzzles feel meaningful.

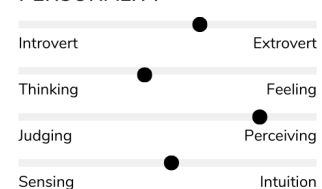
GOALS

- To find a challenging game that feels rewarding to complete.
- To be able to play with his friends and feel a sense of teamwork.
- To stay engaged with an interesting story and unique puzzles.
- To feel a sense of accomplishment by solving tough problems.

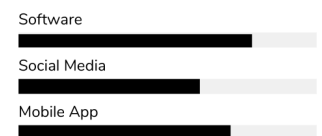
FRUSTRATIONS

- Puzzles that are illogical or just require random guessing.
- A user interface that's confusing or feels slow and clunky.
- Games that are too short or lack any real replay value.
- Being forced to play a multiplayer game alone due to a lack of other players.

PERSONALITY



TECHNOLOGY



BRANDS



KATIE JEANINE

PROFILE

Gender : Female
Age : 34
Education : Master's Degree
Occupation : Marketing
Address : San Francisco, CA
Character : Empathetic Leader



“

I need this project to be engaging, properly structured, and ready on time. My job is to make sure this investment delivers real value and isn't a flop.

BIOGRAPHY

Katie is a 34 year old women who is the publishing manager of games targeted towards kids. She wants to find games that can be lucrative for her company.

MOTIVATIONS

Katie is motivated by working hard towards a goal that can be seen through fully with her team. She wants to publish games that will become world famous which in turn will help her get a promotion.

GOALS

Deliver a product that meets business objectives

Stay within budget & timeline

Satisfy stakeholders and maintain professional credibility

Prefers a scalable, maintainable product that can evolve over time.

FRUSTRATIONS

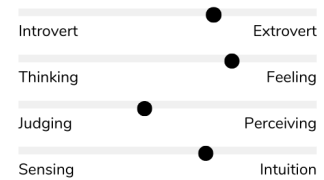
Dislikes unclear requirements that lead to delays or extra costs.

Worried the development team might focus too much on fun

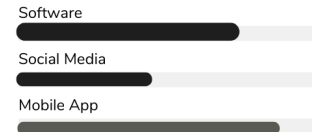
Gets frustrated by poor communication

Needs evidence of progress or will get frustrated

PERSONALITY



TECHNOLOGY



BRANDS



JAFARI WILSON

PROFILE

Gender : Male
Age : 16
Education : 11th Grade
Occupation : High School
Hometown : Detroit, MI
Character : Leader



“

I would love to be able to play a game that allows me to make me feel like I'm inside an escape room without having to leave my house

BIOGRAPHY

Jafari is a 16 year old 11th grader from Detroit, Michigan. He loves competing, working with teammates and playing outdoor games while also relaxing at home and playing video games.

MOTIVATIONS

Jafari loves a game that challenges him but also makes him feel like he is a part of the game. He also wants a game that he thinks can make him smarter. However, he does not want to feel alone in this game.

GOALS AND WISHES

Wants a fun, exciting game that feels like he is truly on an adventure.

Wants the puzzles to make him feel like he is in a movie with good visuals.

Wants a game that can also help him become smarter in real life.

Likes to see rewards for playing games, such as points or achievements.

FRUSTRATIONS

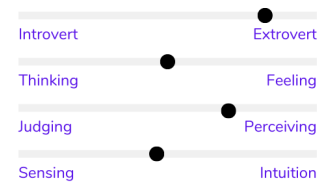
Can get very bored quickly if he is not engaged.

Does not like when games have complicated setups, making it hard to play.

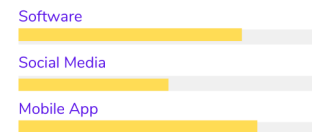
Gets frustrated easily if the puzzles are too hard and don't give hints

Doesn't like games that requires too much deep thinking.

PERSONALITY



TECHNOLOGY



BRANDS



3.Constraints

Time Constraints

- This project is to be completed in the span of 4 months

Budget Constraints

- No money was allocated to this project

Schedule Constraints

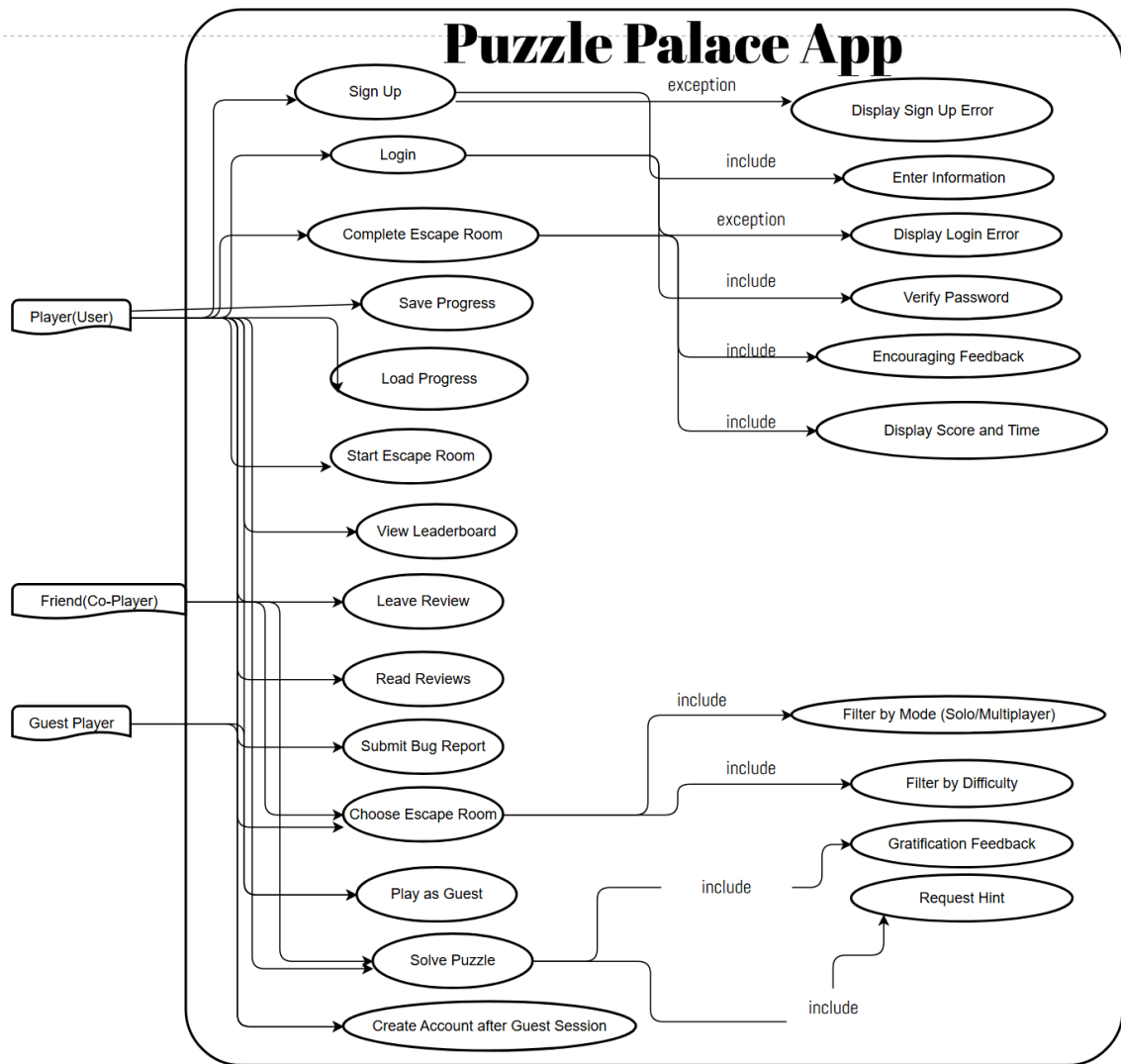
- There will be times where everyone cannot meet and work on the project

4.Overall Description

The app must be accessible on all mobile devices. Players will be able to choose from a variety of themed escape rooms that are fun and age-appropriate. The app will keep track of players progress, such as which puzzles they have completed and how long it took them to finish. Users will be able to sort escape rooms based on things like difficulty level or whether they want to play with their friends or alone. This app will also include a section where players can leave reviews and read about the experience of others, helping them decide which escape rooms they would like to try next.

5. Business Use Case

Business Use Case Diagram



6. Functional Requirements

https://docs.google.com/spreadsheets/d/15xcZl8WWn1_hlyF3JMn8MJCX3D_RmZnNm5wM162A9T0/edit?usp=sharing

7. Non - Functional Requirements

Look and Feel Requirements

- The interface shall minimize the need for written instructions
- The visual design shall be appropriate for the selected age group

Usability Requirements

- The system shall provide navigation throughout the game

Performance Requirements

- The system shall operate without requiring an internet connection
- The system shall load each puzzle within 10 seconds

Maintainability and Support Requirements

- The system shall allow bug reports to be submitted by users
- The system shall allow settings to be modified by the user

Security Requirements

- The system shall prevent unauthorized access to user accounts
- The system shall protect leaderboard data from tampering

Legal Requirements

- The system shall comply with age rating standards for digital games
- The system shall comply with intellectual property rights if using licensed content
- The system shall comply with data protection regulations for user accounts

9. Competitive Analysis

	Mission School Blackout
Strengths	<p>The virtual escape room is free to access, which lowers the barrier for both schools and families to try it without cost concerns.</p> <p>Players navigate through a series of rooms using a flashlight to uncover clues and solve puzzles—this interactive mechanic enhances engagement.</p> <p>The activity is self-checking and provides immediate feedback, which keeps the game flowing smoothly and maintains momentum.</p>
Weaknesses	<p>The puzzles, while varied, are relatively straightforward and may not fully meet the expectations of older teens craving narrative depth or complexity.</p> <p>Because the puzzles follow a fixed sequence with one solution path, replay value is limited once the escape has been completed.</p> <p>The storyline is functional but very basic, lacking the depth and immersion that would keep older teens fully engaged.</p>
Audience/Focus	This escape room is clearly intended for upper

	elementary and middle school students (around ages 10–14), with a particular emphasis on classroom settings and simple deployment.
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	Escape the Library of Doom!
Strengths	<p>It is structured so that players progress through six puzzles in sequence, and each puzzle must be solved correctly to unlock the next, creating a sense of accomplishment with every step forward.</p> <p>The self-paced format allows participants to work at their own speed, making it flexible for different age groups, classroom schedules, or group sizes.</p> <p>The form also advises players to sign in to Google to save their progress, which helps avoid frustration and ensures that longer games can be paused and resumed.</p>
Weaknesses	<p>Because the game is delivered through Google Forms, the design is very simple and static, which may feel underwhelming to teens who expect more polished, interactive experiences.</p> <p>The “Library of Doom” theme, while entertaining, may seem too basic or generic for older teens, particularly those in the 16–18 age range who often look for more layered storytelling.</p> <p>The puzzles follow a single linear path, which means that once the escape room is completed, there is little incentive to play again since the content remains unchanged.</p>
Audience/Focus	This escape room is aimed at middle school and younger high school students, providing a straightforward, low-prep activity for teachers,

	librarians, or families.
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	Among Us
Strengths	<p>Easy to Learn: The game has simple rules and controls. Players learn by doing, so anyone can jump in and understand the goal in just a few minutes, which is key for a new user.</p> <p>Accessibility: It's a low-cost game available on most devices, including phones and PCs. This allows a wide range of people to play together, removing common barriers to entry.</p> <p>High Social Engagement: The game's main draw is its focus on communication and deception. It encourages players to talk, argue, and lie to each other, making every round a unique and highly social experience with friends.</p>
Weaknesses	<p>Lack of Narrative: The game has very little story. Its focus is on social gameplay, so there's no plot or character development, which is a major difference from a narrative-driven escape room.</p> <p>Limited Puzzle Depth: The "tasks" are simple and repetitive. They're designed as quick distractions, not as complex, thought-provoking puzzles, which is the main goal of your app.</p> <p>Reliance on Social Interaction: The game is not built for single players. It loses its appeal if you're not playing and communicating with a group of friends. Your app, however, needs to be compelling for both solo and group play.</p>
Audience/Focus	This game is targeted for young people and friends who want a fun, social experience based on team work and deception. Its simple and casual layout makes it accessible to a pretty large demographic.

Product	Strengths	Weaknesses	Focus
Mission School Blackout	Free access lowers barriers, flashlight mechanic increases engagement,	Puzzles are too simple for older teens, fixed solution path reduces replay value, basic story	Upper elementary and middle school, classroom-focused

	self-checking feedback		
Escape the Library of Doom	Sequential puzzle structure builds accomplishment, self-paced for flexibility, progress saving	Static Google Form, basic theme may bore older teens, linear gameplay limits replay	Middle school and younger high school students, teachers, librarians, families
Among Us	Easy to learn, accessible across devices, highly social and engaging with friends	No real narrative, tasks are not shallow, not puzzle-based, relies heavily on group interaction	Teens and young adults seeking casual, social gameplay with friends

The competitive analysis reveals that current virtual escape room products have strengths, but they also have significant weaknesses that limit their appeal to a much younger audience. Mission School Blackout and Escape the Library of Doom are easy to access and use, but their puzzles are simple and linear, lacking narrative depth. This makes them less interesting to older teens and reduces replay value. In contrast, Among Us creates a highly social and accessible experience, but it is not based on puzzles and offers little narrative or solo play options. This sets it apart from a true escape room. These gaps suggest a clear opportunity for Puzzle Palace to stand out. It can combine the best features of its competitors while addressing their weaknesses. By offering engaging storylines, challenging puzzles that suit the age group, and multiple pathways to improve replay value, the app can connect with teens more effectively than current options. Additionally, features like solo and group play, leaderboards, reviews, and progress tracking can support both individual growth and community interaction. Overall, the analysis indicates that Puzzle Palace can fill a unique space in the market by giving teens an escape room experience that is fun, accessible, engaging, flexible, and rewarding enough to encourage repeat play.