

Rights-Quest

System Requirements Specification

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for

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1. Introduction

1.1 Purpose

The purpose of Rights-Quest is to revolutionize the educational gaming landscape by leveraging the Unity game engine alongside Adobe Animate, Adobe Audition, and Adobe Photoshop to create an immersive and engaging platform. This educational game is meticulously designed to instill a profound understanding of child rights in young minds through interactive scenarios, fostering critical thinking and ethical decision-making skills.

1.2 Document Conventions

Throughout this Software Requirements Specification (SRS) document, conventions such as italicized text for emphasis, [brackets] for optional elements, and CAPITALIZATION for key terms will be consistently employed.

1.3 Intended Audience and Reading Suggestions

Rights-Quest is tailored for educators, parents, and guardians seeking an innovative and effective tool to impart knowledge about child rights to children aged 4-12. The game is structured to appeal to a diverse audience, promoting inclusivity and awareness.

1.4 Product Scope

Rights-Quest extends beyond traditional educational tools, offering a dynamic, story-driven experience within a modern setting. The game introduces players to realistic scenarios where they navigate challenges, making decisions that impact the virtual world while learning about their rights in the process.

1.5 References

1. Sakka, T., & Gouscos, D. 2023. "Children's Rights Education via Game-based Activities: An Intervention in Kindergarten." Journal Proceedings, Volume 10, Page Numbers 1-24
2. Øygardslia, K., Weitze, C. L., & Shin, J. 2020. "The Educational Potential of Visual Novel Games: Principles for Design." Journal Proceedings, Volume 2, Page Numbers 1-10.
3. Hussein, M. H., Ow, S. H., Cheong, L. S., Thong, M.-K., & Ale Ebrahim, N. (2019). Effects of Digital Game-Based Learning on Elementary Science Learning: A Systematic Review. IEEE Access, 7, 62465-62478. doi: 10.1109/ACCESS.2019.2916324.

2. Overall Description

2.1 Product Perspective

“Rights-Quest” aims to develop an interactive and educational game for children, designed to promote kindness, empathy, and good manners in a safe and engaging environment. The project aims to teach and encourage children to make right choices that prioritize their interest and safety while being socially acknowledged and supportive. It also teaches them the consequences of making the wrong choice.

2.2 Product Functions

- Decision-Making Scenarios: Present players with various situations requiring moral choices related to kindness and manners. Provide branching narratives based on player decisions, with consequences affecting the outcome of the story.
- Different Game Modes: Include mini-games, puzzles, and challenges that promote children to think creatively and out of the box at a young age.
- Character Customization: Allow players to create and customize their own avatars, fostering a sense of ownership and personalization. Include options for clothing, accessories, and other cosmetic features.
- Educational Content: Integrate lessons on kindness, empathy, social responsibility, and manners into gameplay through quizzes, videos, and character dialogues.
- Progression System: Implement a scoring or reward system that incentivizes positive behavior and encourages players to strive for continuous improvement.

2.3 User Classes and Characteristics

I. Children (Players):

- Age: 4-12 years old.
- Varied levels of gaming experience and skill.
- Diverse backgrounds and interests.

Needs and Expectations:

- Engaging and entertaining gameplay.
- Clear instructions and guidance.
- Opportunities for personalization and self-expression.
- Educational content is presented in a fun and accessible manner.

II. Parents (Guardians):

- Concerned about their child's well-being and development.

- Seek educational and age-appropriate entertainment options.

Needs and Expectations:

- Assurance of child safety and privacy protections.
- Access to parental controls and monitoring features.
- Visibility into the educational content and learning outcomes.
- Engagement opportunities to participate in their child's gaming experience and reinforce positive behaviors.

2.4 Operating Environment

- The game should be compatible with the latest versions of Android operating systems, as well as older versions to ensure broad device support.
- If the game targets a global audience, localization services may be needed to translate text, audio, and other content into multiple languages.
- Game should operate properly and efficiently offline in cases of poor network coverage.
- The game should be playable in different lighting conditions, from well-lit indoor environments to outdoor settings with varying levels of brightness.
- The game should be playable in environments with different levels of ambient noise, ensuring that audio cues and instructions are audible to players.

2.5 Design and Implementation Constraints

- Mobile devices may have varying hardware capabilities, requiring optimization for performance and resource usage.
- Limited availability of resources (e.g., time, budget, personnel) for creating artwork, animations, audio, and educational content.
- Translating and adapting content for different languages and cultural contexts may require additional time and resources.
- Addressing potential psychological effects of gameplay, such as promoting empathy and prosocial behavior without inducing stress or anxiety in players.
- Ensuring the game is intuitive and easy to navigate, especially for young children who may have limited reading or cognitive skills.
- Balancing the expectations and priorities of various stakeholders, including developers, educators, parents, and regulatory authorities.

2.6 User Documentation

- Frequently Asked Questions (FAQs) document addressing common queries or concerns that players may have about the game. Troubleshooting guide providing solutions to technical issues, error

messages, or gameplay problems that players may encounter. Includes information on how to contact customer support for further assistance or reporting bugs and glitches.

- A comprehensive document that provides step-by-step instructions on how to play the game. Includes information on game controls, mechanics, objectives, and gameplay features. Provides tips, hints, and strategies to help players navigate through the game and overcome challenges.
- Patch notes detailing bug fixes, gameplay adjustments, and new features introduced in each update.

2.7 Assumptions and Dependencies

- Market Acceptance:

The target audience (children aged 6-12 and their parents/guardians) will embrace the game positively and engage with it regularly.

- Educational Impact:

The game will effectively influence children's behavior and attitudes towards kindness, empathy, and manners.

- Technical Feasibility:

The development team possesses the necessary technical expertise and resources to implement the desired features within the project timeline and budget

- Market Research and Validation:

Ongoing market research to understand user preferences, competitive landscape, and emerging trends in children's entertainment and educational games.

- Content Creation:

Timely creation and integration of educational content, including decision-making scenarios, interactive activities, and character dialogue.

3. External Interface Requirements

3.1 User Interfaces

- The game features an intuitive user interface with responsive controls, catering to both mouse/keyboard and touch-screen inputs.
- Interactive menus are designed using Adobe Animate, ensuring a visually appealing and child-friendly interface.
- Educational tooltips and visual cues are incorporated to enhance learning engagement.

3.2 Hardware Interfaces

- Rights-Quest is compatible with standard mobile hardware specifications, ensuring accessibility for a wide range of users.
- Touch-enabled devices, such as tablets, are supported to facilitate a multi-platform experience.

3.3 Software Interfaces

- Developed on the Unity game engine, Rights-Quest seamlessly integrates with various operating systems, including iOS and Android mobile platforms.
- Adobe Audition and Adobe Photoshop are utilized for high-quality audio and visual assets, enhancing the overall gaming experience.

3.4 Communications Interfaces

- The game may incorporate online features for progress tracking and additional content updates, requiring a secure communication interface to protect user data.
- Social media integration is considered for sharing achievements and promoting the educational aspects of the game.

4. System Features

4.1 Required Features

- Decision-Making Scenarios:

Present players with various situations requiring moral choices related to kindness and manners.

- Interactive Activities:

Include mini-games, puzzles, and challenges that promote teamwork, empathy, and cooperation among players.

- Educational Content Integration:

Integrate lessons on kindness, empathy, social responsibility, and manners into gameplay through quizzes, videos, and character dialogues.

- Offline Activities:

Include offline activities or mini games that players can enjoy without an internet connection, ensuring uninterrupted gameplay.

- Parental Controls:

Include features that allow parents or guardians to set limits on playtime, restrict in-app purchases, and monitor their child's progress and interactions within the game.

4.2 Optional Features

- Progression System:

Implement a scoring or reward system that incentivizes positive behavior and encourages players to strive for continuous improvement.

- Helpline Contact:

A helpline to childcare and protection service is provided to further promote child safety in case of any issues that may harm the child.

- Character Customization:

Allow players to create and customize their own avatars, fostering a sense of ownership and personalization.

- Virtual Pet Companion:

Include a virtual pet companion that players can nurture and interact with, teaching them about empathy, responsibility, and caring for others.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The game maintains a constant frame rate (FPS) to ensure smooth and enjoyable gameplay.
- The game should load within few seconds from launching to the main menu in order to minimize waiting time
- The game will accommodate an increasing number of on-screen objects or characters without affecting the performance of the game.

5.2 Safety Requirements

- The game will not contain any content of harmful behavior that promotes violence.
- The game will also not cause any overheating of the player's phone; therefore, the phone's internal components will not be damaged.
- Ensure that the game does not contain excessive flashing lights that could affect the eyes or other adverse reactions in susceptible individuals.

- Provide clear safety guidelines within the game, including tips for avoiding eye strain or fatigue, and information on how to report safety concerns or inappropriate content.
- Ensure that the game's content, including visuals, audio, and themes, is suitable for the target age group to prevent exposure to inappropriate material.

5.3 Software Quality Attributes

- Usability:
Right Quest graphical user interface should be intuitive and easy to navigate, allowing players of all skill levels to enjoy the game without frustration.
- Reliability:
The game should be stable and free from crashes, with glitches that could disrupt gameplay.
- Flexibility:
Rights Quest will automatically save the player's progress after every level completion.
- Portability:
The game should be compatible with multiple platforms, including PC, consoles, and mobile devices, to reach a wider audience of players
- Security:
No personal information will be shared with or sold to any other third party companies.
- Maintainability:
The game code should be well-structured and documented to facilitate future updates, patches, and bug fixes by developers

5.4 Business Rules

- Fair Play Policies:
Guidelines to ensure fair gameplay and discourage cheating or exploiting. This could include rules against using third-party hacks or bots etc.
- Privacy and Data Protection:
Guidelines for collecting, storing, and handling player data in accordance with privacy regulations. This includes obtaining consent for data processing, safeguarding sensitive information, and providing transparency about data practices.
- Customer Support Procedures:
Handling player inquiries, feedback, and complaints. This may include reporting of bugs, delay in response time

6. Other Requirements

1. Internationalization Requirements:

- Rights-Quest aims for global accessibility, and as such, the game interface will be designed with localization in mind, supporting multiple languages.
- Cultural sensitivity will be considered in the creation of scenarios to ensure that educational content is relevant and respectful across diverse backgrounds.

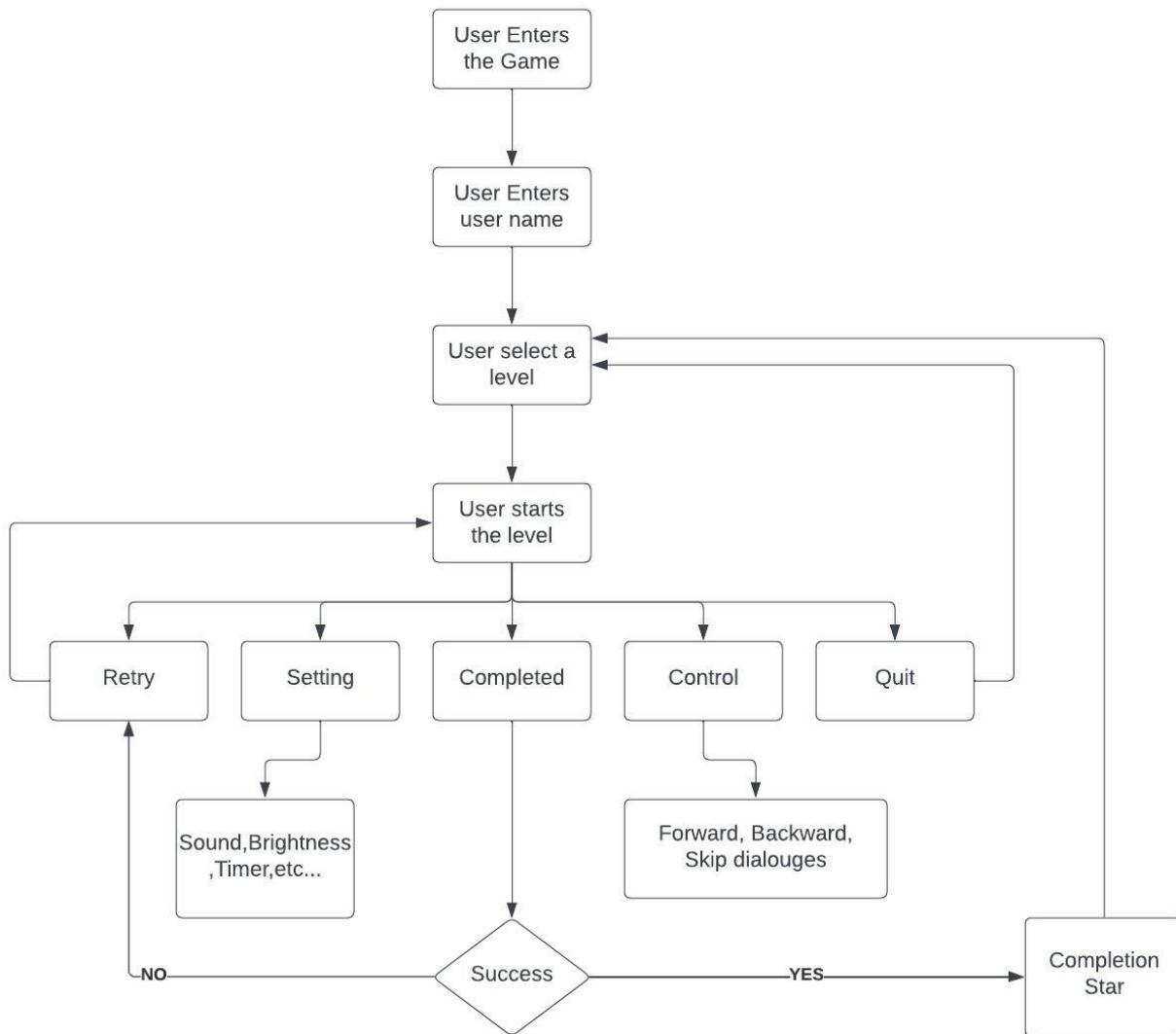
2. Legal Requirements:

- Data storage must comply with industry-standard encryption practices to ensure the security and privacy of user information.
- The development and distribution of Rights-Quest will adhere to international and local laws regarding child protection, privacy, and online safety.
- Licensing agreements for the usage of Adobe software components will be obtained and adhered to.

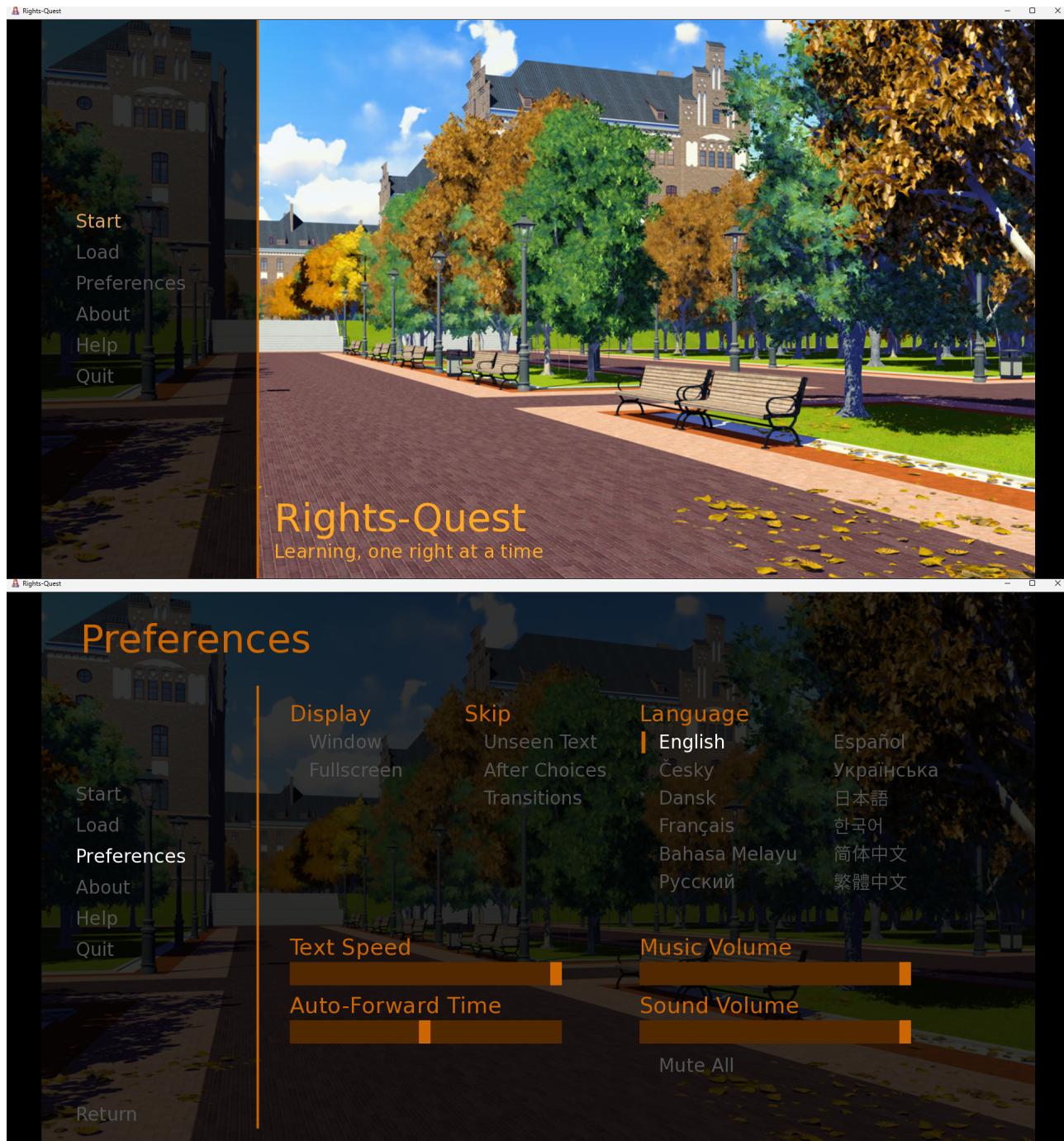
3. Reuse Objectives:

- Code modularization and documentation practices will be implemented to facilitate future reuse of specific game components in other educational projects.
- Art assets and educational content may be considered for reuse in subsequent versions or adapted for related educational materials.

7. Activity Diagram



8. UI/UX



Appendix A: Glossary

- UNCRC: United Nations Convention on the Rights of the Child
- FPS: Frames Per Second
- PC: Personal Computer

Appendix B: Analysis Models

Analysis models, such as data flow diagrams, class diagrams, and entity-relationship diagrams, will be created during the development process. These will be included in the appendix to provide a detailed overview of the system architecture.

Appendix C: To Be Determined List

- Localization Requirements:
The specific languages to be supported for localization of text, audio, and other content within the game.
- Parental Control Features:
Detailed specifications for the parental control features, including the exact functionalities such as playtime limits, and progress monitoring.
- Additional Educational Content:
Specific topics and lessons to be integrated into the game as part of the educational content, including quizzes, videos, and character dialogues.
- Social Media Integration:
The extent of social media integration, including which platforms will be supported and the nature of interactions (e.g., sharing achievements, inviting friends).
- System Testing Procedures:
The specific procedures and criteria for testing the game, including functional testing, performance testing, and compatibility testing across android devices.
- Regulatory Compliance:
Detailed information on regulatory requirements and compliance measures, including age ratings, content guidelines, and legal disclaimers.