Software Requirements Specification

for

ANIMAL SHELTER WEBSITE

Version 1.0 approved

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28 July,2023

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of our website is to rescue and protect the lives of countless dogs and cats facing homelessness and potential harm each year. By creating a robust online community of animal enthusiasts and caretakers, we aim to provide a centralized platform for locating and supporting these vulnerable animals. Through donations, volunteering, and essential resources, our web app strives to reduce the heartbreaking number of animal casualties and ensure that every animal finds a safe and loving forever home.

1.2 Document Conventions

Important points have been underlined to provide emphasis. Headings and Subheadings have been written in bold font to provide emphasis. The points in all sections have been written in the order of their priority, from higher priority points to lower priority points, so that important points are not missed out. Abbreviations are used in some places which will be understood by the developers of the application.

1.3 Intended Audience and Reading Suggestions

The intended audience is the team of developers who will be designing and implementing the Pet Finder Website. Also, the document is to be utilized by the testing team who will be testing and evaluating the performance and design of the application. The document consists of all the necessary information that will be required by the team of software engineers who will be working on the project.

1.4 Product Scope

The Animal Shelter Website aims to create a user-friendly platform that simplifies pet adoption, connects pet lovers, and facilitates rescue operations. The web-based application will be mobile responsive, ensuring accessibility on all electronic devices. Key features include a report and rescue function, allowing users to report distressed animals and coordinate rescue efforts. A chatbot will assist visitors in answering queries and guiding them through the adoption process. The website will have a dedicated community page, fostering connections among pet enthusiasts, while a merchandise and donation page will offer opportunities to support the cause. Future enhancements will introduce a payment gateway for transactions and an online pet adoption agreement feature, streamlining the adoption process and promoting responsible pet ownership.

1.5 References

Websites:

- *NodeJs Documentation: https://nodejs.org/en/docs*
- *ExpressJs Documentation: https://expressjs.com/en/5x/api.html*

2. Overall Description

2.1 Product Perspective

The Animal Shelter Website provides a modern and efficient alternative for pet adoption, connecting pet lovers, and coordinating rescue efforts without the need for intermediaries. The application aims to streamline the process of reporting and rescuing distressed animals through its "Report and Rescue" feature. A chatbot will enhance user experience by providing instant assistance and guidance during the pet adoption process. The platform will serve as a vibrant community hub for pet enthusiasts, fostering connections and interactions. Additionally, the website will feature dedicated sections for adopting pets, purchasing merchandise, and making donations, empowering users to support the cause directly. By eliminating intermediaries, the website ensures that interactions and agreements between adopters and shelters are more direct and transparent.

2.2 Product Functions

- "Report and Rescue" function to enable users to report distressed animals and coordinate rescue efforts.
- Chatbot feature providing instant assistance and guidance during the pet adoption process.
- Pet adoption section allowing users to browse and adopt pets from the shelter.
- Community page for pet lovers to connect, share experiences, and engage in discussions.
- Merchandise page offering pet-related products for purchase to support the shelter.
- Donation page to facilitate direct contributions to the shelter's cause.
- Transparent and direct communication between adopters and shelters for clarifications and agreements.
- Mobile responsiveness for convenient access on all electronic devices.
- User-friendly interface for effortless property searching and finding potential pet adopters.
- Streamlined platform that eliminates the need for intermediaries, reducing costs for both parties involved.

2.3 User Classes and Characteristics

The Animal Shelter Website anticipates the following user classes:

1. Pet Seekers and Adopters:Individuals seeking to adopt a pet from the animal shelter. They may have varying technical expertise but should be comfortable navigating the user-friendly interface. Their primary goal is to find and adopt a pet.

2. Animal Welfare Volunteers and Rescuers:Experienced animal welfare volunteers or rescue organizations proficient in using reporting and rescue functionalities. They may require elevated security privileges for coordination.

3. Pet Enthusiasts and Community Members:Users interested in engaging with a supportive pet-loving community. They contribute to discussions and share experiences.

4. Donors and Supporters: Individuals making monetary donations or purchasing merchandise to support the shelter's cause. They require secure payment options and straightforward procedures.

5. Administrators and Staff:Shelter personnel responsible for website management, processing adoptions, and moderating discussions. They need high-level security privileges and technical expertise.

The most critical user classes for the product are Pet Seekers and Adopters, Animal Welfare Volunteers and Rescuers, and Donors and Supporters, as they directly contribute to the primary goals of pet adoption, rescue operations, and fundraising. Pet Enthusiasts and Community Members add value by fostering a supportive environment, while Administrators and Staff play a vital role in website management and coordination.

2.4 Operating Environment

Since the application is a web application it can work on any device having a browser.

- *Device: Mobile Phone, Computer, Laptops, Tablets.*
- *Operating System: Windows, Linux distributions, Mac OS, Android*
- *RAM: 64 MB or more*
- *Disk Space: 20 MB or more.*
- *Browsers: Mozilla Firefox 30+, Google Chrome 27.0+, Microsoft Edge. Other browsers can also be used.*
- *Internet connection: Strong internet connection with speed of at least 1 Mbps for best experience.*

2.5 Design and Implementation Constraints

CO-1:
The time allotted for this project is at most 3 months.

CO-2:
The front end of the application will be made using HTML, CSS and JavaScript.

CO-3:
Node.js will be used as the language for the backend of the application and MongoDB will be used for the database of the application.

CO-4:
The website will be in English language. Users who do not know English will face difficulties in using the website.

2.6 User Documentation

The Animal Shelter Website is designed to provide a seamless user experience, and appropriate instructions will be available at every step to ensure users encounter no difficulties while navigating the

application. Future enhancements will include the addition of a helpful chatbot, providing guidance to users if they encounter any challenges. Throughout the process of filling out forms, adding photos, and specifying locations, detailed instructions will be provided to facilitate smooth interactions. In case of any inadvertent errors or incorrect information input, the application will display clear and informative error messages to guide users towards corrective actions. Our user documentation is aimed at making the adoption process, community engagement, and supporting the shelter's cause accessible and straightforward for all users.

2.7 Assumptions and Dependencies

AS-1:
It is assumed that users accessing the website have basic computer literacy and internet connectivity to navigate the application.
AS-2:
The successful implementation of the "Report and Rescue" map feature depends on the availability and proper functioning of the Google Maps API. Any changes or disruptions to the API might impact the map functionality.
AS-3:
The application supports only English language. We assume the users of the application will be well versed with English.

AS-4:
The users of the application should have basic knowledge of uploading images and location.

DE-1:
The frontend interface is built using HTML, CSS, and JavaScript, and their proper functioning is dependent on browser compatibility and adherence to web standards.
DE-2:
The "Report and Rescue" map feature requires the integration of Google Maps API to enable users to locate and report distressed animals accurately. The proper functioning of this feature depends on the reliable availability of the Google Maps API.
DE-3:
The backend of the application relies on Node.js and Express for server-side operations, routing, and handling user requests.

3. External Interface Requirements

3.1 User Interfaces

UI-1:
The website will start with a landing page. The landing page will have all information about the animal shelter
UI-2:
There will be a navigation bar at the top of the web page which will help users to navigate to different web pages.
UI-3:
Instructions will be provided to the users on top of forms to be filled.
UI-4:
The user will have to login in order to access the report, rescue, and community page.
UI-5:
The interface will be responsive for all screen sizes as much as possible to provide the users a seamless experience.

3.2 Hardware Interfaces

N/A

3.3 Software Interfaces

- *Browsers: Mozilla Firefox 30+, Google Chrome 27.0+ are the preferred browsers.*
- *Operating System: Android, Windows 7, 8, 10, Mac OS, Linux distributions*

3.4 Communications Interfaces

*The application will be using **HTTPS** protocols.*

4. System Features

4.1 Report and Rescue Feature

4.1.1 Description and Priority:

The "Report and Rescue" feature allows verified users to report injured or distressed animals by uploading relevant details and marking the location on a map, utilizing Google Maps APIs for accuracy. This feature enables the animal shelter to promptly respond to rescue requests and coordinate rescue operations effectively.

4.1.2 Response Sequences:

1. User logs in or signs up as a verified user.

2. User navigates to the "Report and Rescue" section.

3. User provides information about the distressed animal, including species, condition, and any relevant details.

4. User marks the animal's location on the integrated Google Maps.

5. The system verifies the user's credentials and the submitted information.

6. Upon successful verification, the system registers the rescue request and sends a notification to the animal shelter.

4.1.3 Functional Requirements:

REQ-1: The system shall authenticate users before allowing them to access the "Report and Rescue" feature.

REQ-2: Users must provide mandatory details about the distressed animal, such as species, condition, and location, when submitting a rescue request.

REQ-3: The system shall integrate Google Maps APIs to enable users to mark the precise location of the distressed animal on the map.

REQ-4: The system shall validate and verify the submitted information and the user's credentials before processing the rescue request.

REQ-5: If the user is not a verified user, the system shall prompt them to complete the verification process or sign up as a verified user.

REQ-6: In case of invalid or missing information, the system shall display appropriate error messages guiding the user to provide the necessary details.

REQ-7: Once a rescue request is successfully submitted, the system shall send real-time notifications to the animal shelter, notifying them of the emergency.

4.2 Chatbot Feature

4.2.1 Description and Priority:

This feature will help to enhance user experience by offering instant assistance, answering queries, and clearing doubts about the website's features and functionalities.

4.2.2 Response Sequences:

User initiates a conversation with the Chatbot by clicking on the "Chat" button.The Chatbot greets the user and prompts them to ask any questions or seek help. User asks a specific question or requests assistance related to pet adoption, report and rescue, community page, merchandise, donations, or any other feature. The Chatbot provides relevant responses, guiding the user through the requested information or directing them to the appropriate sections of the website. If the Chatbot encounters an ambiguous query or cannot provide an answer, it prompts the user to rephrase the question or suggests contacting support staff for further assistance.

4.2.3 Functional Requirements:

REQ-1: The Chatbot must be continuously updated with the latest information to provide accurate responses to users' questions.

REQ-2: It should offer an option for users to switch to live human support if needed, with appropriate contact details provided.

Note: TBD (To Be Determined) for any missing or unspecified requirements.

4.3 Community Feature:

4.3.1 Description and Priority:

The Community Page feature allows users to interact with other pet lovers through posting and accessing relevant information such as pet blogs and veterinarian details. Users will need to log in to access this section, ensuring a safe and engaging environment for pet enthusiasts to connect and share experiences. The priority for this feature is set to Medium, as it plays a significant role in fostering community engagement and enhancing user experience on the website. However, it is not as critical as features directly related to pet adoption or rescue operations.

4.3.2 Response Sequences:

1. User logs in to the website.

2. User navigates to the Community Page section.

3. User posts a message or engages in discussions with other pet lovers.

4. User accesses pet blogs, veterinarian information, and other relevant content.

4.3.3 Functional Requirements:

REQ-1: The website shall have a secure user authentication system to enable login and access to the Community Page feature.

REQ-2: Users must be able to post messages and engage in discussions on the Community Page.

REQ-3: The website should provide access to pet-related blogs and veterinarian details for logged-in users.

REQ-4: When a user attempts to access the Community Page without logging in, a prompt to log in or create an account should be displayed.

REQ-5: User posts and discussions should be subject to content moderation to ensure a safe and positive user experience.

REQ-6: The website should support real-time updates or notifications for new posts and responses on the Community Page.

4.4 Adoption Page Feature:

4.4.1 Description :

The Adoption Page is a high-priority feature that provides a visually appealing and user-friendly interface showcasing pictures of pets available for adoption. It includes essential information such as breed, age, and other relevant details to help potential adopters make informed decisions. Additionally, the page offers options for users interested in volunteering at the animal shelter.

Priority: High (Benefit: 8, Penalty: 2, Cost: 5, Risk: 4)

4.4.2 Response Sequences:

1. User navigates to the Adoption Page.

2. System displays a grid layout with pictures of available pets and their details.

3. User clicks on a pet to view more information.

4. System presents detailed information about the selected pet, including breed, age, and temperament.

5. User selects the "Volunteer" option.

6. System redirects the user to the volunteering section, prompting them to fill out necessary details for volunteering.

4.4.3 Functional Requirements:

REQ-1: The Adoption Page must display a grid layout of pet pictures with their respective details, including breed, age, and any special notes.

REQ-2: Clicking on a specific pet should lead to a dedicated page with comprehensive information about that pet, assisting users in making an informed adoption decision.

REQ-3: The "Volunteer" option must redirect users to a separate section with a form to capture their details and interest in volunteering at the animal shelter.

REQ-4: The system should handle error conditions gracefully, displaying appropriate error messages if users encounter issues while browsing or attempting to volunteer.

REQ-5: The Adoption Page should have an intuitive and responsive design to ensure compatibility with various devices and screen sizes.

REQ-6: The adoption details and pet pictures should be regularly updated by the system administrators to reflect the most current availability of pets for adoption.

REQ-7: Users should be able to filter pet listings based on criteria such as species, age, and location to streamline their search process. (TBD - To Be Determined)

4.5 Support Us Feature:

4.5.1 Description and Priority:

The "Support Us" feature allows users to contribute to the animal shelter's cause by either purchasing merchandise or making monetary donations. Users will have the option to click on the "Merchandise" link to be redirected to the merchandise page, where they can purchase pet-related products to support the shelter. Alternatively, users can choose to donate money directly to the shelter's cause.

Priority: Medium

4.5.2 Response Sequences:

1. User clicks on the "Support Us" option from the main navigation menu.

2. The system presents two choices: "Merchandise" and "Donate Money."

3. If the user clicks on "Merchandise," they are redirected to the merchandise page.

4. If the user selects "Donate Money," the system displays the donation page.

4.5.3 Functional Requirements:

REQ-1: The system shall provide a clear and accessible "Support Us" option in the main navigation menu.

REQ-2: The system shall offer two choices, "Merchandise" and "Donate Money," within the "Support Us" feature.

REQ-3: If the user clicks on "Merchandise," the system shall redirect them to the merchandise page.

REQ-4: If the user selects "Donate Money," the system shall direct them to the donation page.

REQ-5: The merchandise page shall display a variety of pet-related products available for purchase.

REQ-6: The donation page shall allow users to enter the desired amount they wish to donate.

REQ-7: The system shall process donation transactions securely using an integrated payment gateway.

REQ-8: In case of errors during transactions, the system shall display informative error messages to guide users through the correction process.

REQ-9: The system shall record and store transaction details for administrative purposes and provide donation receipts to users upon successful transactions.

REQ-10: The "Support Us" feature shall have a secure connection (HTTPS) to ensure the privacy and safety of user data during transactions.

Please note that the requirements listed above are placeholders (TBD) and need further specification, especially regarding the integrated payment gateway and transaction processing details.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Performance Requirements for the pet finder website should focus on delivering a fast, reliable, and scalable platform to effectively reunite missing pets with their owners. The system should ensure quick response times during user interactions, smooth handling of simultaneous searches, and efficient data processing. The website must be able to handle a growing user base and increasing search queries without compromising performance. Load times for pages and search results should be optimized to enhance user experience. Additionally, the system should be robust and capable of handling peak traffic periods, ensuring that pet owners and shelters can access and contribute to the platform seamlessly.

5.2 Safety Requirements

- *Conduct regular security audits and vulnerability assessments to identify and address potential security weaknesses.*
- *Backup power supply should be present for server, so that it does not stop functioning in case of power failure.*
- *Limit access to website administration functions only to authorized personnel.*
- *Code backup should be taken at regular time intervals.*

5.3 Security Requirements

- *The passwords of the users are hashed and then stored in the database so that no person can access the passwords of the Users.*
- *The passwords should be at least 8 characters long and must have at least one uppercase character, one digit and at least one special symbol.*
- *The website should HTTPS protocol for security.*

5.4 Software Quality Attributes

5.4.1 Usability:

The user interface should be simple to use and not cluttered with a lot of information.

5.4.2 Availability:

- *The system should be available at all times.*
- *The system should be reliable and there should be no loss of data in case the server breaks down when operations are going on.*

5.4.3 Maintainability:

- *The code for the application should be written cleanly and should be well documented.*
- *The code should contain comments to help new programmers and developers make changes in the application.*

5.4.4 Testability:

- *The code should be written with proper test cases to be tested upon so that no errors during production take place.*

5.5 Business Rules

The administrator of the application has full permission of controlling the system.

6. Other Requirements

Appendix A: Glossary

- *HTTPS: Hypertext Transfer Protocol Secure*
- *API: Application Programming Interface*
- *GUI: Graphical User Interface*

Appendix B: Analysis Models