Software Requirements Specification

for

Stray Animal Tracking App

Version 1.0 approved

Prepared by Group 4

EMU

November 15th 2023

Table of Contents

Table of Contents ii

Revision History ii

1. Introduction 1

1.1 Purpose 1

1.2 Document Conventions 1

1.3 Intended Audience and Reading Suggestions 1

1.4 Product Scope 1

1.5 References 1

2. Overall Description 2

2.1 Product Perspective 2

2.2 Product Functions 2

2.3 User Classes and Characteristics 2

2.4 Operating Environment 2

2.5 Design and Implementation Constraints 2

2.6 User Documentation 2

2.7 Assumptions and Dependencies 3

3. External Interface Requirements 3

3.1 User Interfaces 3

3.2 Hardware Interfaces 3

3.3 Software Interfaces 3

3.4 Communications Interfaces 3

4. System Features 4

4.1 System Feature 1 4

4.2 System Feature 2 (and so on) 4

5. Other Nonfunctional Requirements 4

5.1 Performance Requirements 4

5.2 Safety Requirements 5

5.3 Security Requirements 5

5.4 Software Quality Attributes 5

5.5 Business Rules 5

6. Other Requirements 5

Appendix A: Glossary 5

Appendix B: Analysis Models 5

Appendix C: To Be Determined List 6

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| StrayAway | 11/27/23 | Initial version | 1.0 |
|  |  |  |  |

# Introduction

## Purpose

The driving purpose for this SRS document is to define all the system's goals through team analysis of what the system needs, it'll help stakeholders understand the system and its objectives. The SRS document will outline draft functions, function ideas which are not yet solid, as well as established functions, moreover it'll help developers and designers to assist in the SDLC.

## Document Conventions

IEE Standards are the standards to stick by in this SRS report. The format used is MLA, which will ease readability due to its use of font and spacing guidelines by use of a clear font as well as consistent line and paragraph spacing.

## Intended Audience and Reading Suggestions

This SRSs intended readers are the development team, testers, UI designers, documenters, DB administrators and other stakeholders. The contents of the SRS range from more important to less along the way, the aim is to familiarize the product to the audience to ease use of it.

## Product Scope

The product is an application that will assist users in helping stray animals off the street as well as adopting them, finding their breed, scheduling a veterinarian appointment and many more with much ease. The product aims to meet the growing demands in the animal application market.

## Reference

The IEEE Standard Glossary of Software Engineering Terminology is IEEE Std 610.12-1990.

 IEEE Standard for Software Quality Assurance Plans, IEEE Std 730-1998.

IEEE Recommended Practice for Software Requirements Specifications, IEEE Std 830-1998.

The IEEE standard for software configuration management plans is IEEE Std 828-1998.

# Overall Description

## Product Perspective

Stray Away is a mobile application combined with a supporting website that revolutionizes the way we take care of helpless stray animals. The following figure sums up the outline, displaying the stakeholders and system interfaces. The system will be in mobile application form, as it is the device that will most likely be with our users when they need to report a stray animal sighting.



## Product Functions

* Log in
* Create an account /sign in
* View home page
* AI camera
* Search
* Cart
* Adoption
* Help
* About us
* Learn about animals
* Report
* Setting
* Donation
* Contact

## User Classes and Characteristics

* **App Administrators** are instrumental in keeping up the general well-being, safety, and usefulness of the stray creature following the app, making their part basic for the victory of the application
* **Local Authorities** play an important role in adopting stray animal tracking applications to suit their operational needs this includes providing the necessary tools for effective coordination
* **Customers** would likely be Pet Proprietors, Volunteers, and Creature Welfare Organizations. These clients specifically contribute to the center capacities of the app, which incorporate detailing, protecting, and planning endeavors to assist stray creatures.

## Operating Environment

The system requires the following software and hardware requirement platforms to run ideally:

* Operating Systems: Windows 7 and above, macOS version 10 and above, Android version 7.0 and above, IOS 11 and above.
* Web Browsers: Google Chrome, Mozilla Firefox, Brave Browser, Safari, Microsoft edge, Opera.

## Design and Implementation Constraints

Hardware limitations:

**Processor:** Intel core i3 equivalent or higher required

**RAM:** 2GB minimum

**HDD/SSD storage:** 5GB minimum

**Other limitations:** Java and JS embedded in HTML should be used to create the application, to be available through IntelliJ IDE then eventually displayed to the public through a server.

## User Documentation

The application will be delivered along with a user-guide for amateurs, guiding them throughout the functions of the system. A help guide will also be provided to address issues in future use.

## Assumptions and Dependencies

**Assumptions:**

* The User is assumed to have an internet connection at least occasionally.
* The Users system meets Hardware compatibility.

**Dependency:**

* Web Brower compatibility for the website and device used.
* App store and google play compatibility with the App and device.

# External Interface Requirements

## User Interfaces

* Homepage will prompt the user to login or register
* The system will notify the user if wrong credentials are entered.
* New users will be provided with a tutorial (could be skipped).
* There will be a unique homepage for each user.
* There will be a navigation bar showing links to different sections for user-friendly exploration.
* All interfaces will have a back button and a help button
* Custom pages for 404 errors or other common issues, providing guidance.

## Hardware Interfaces

Hardware should have internet access through LAN, WLAN, WAN and other network types. The Hardware should also meet the minimum Hardware limitations mentioned in **2.5** to enable them to reach the minimum required versions mentioned in **2.4** which ensures compatibility with StrayAway. The device should have location tracking capabilities in order to report the location of the stray animals and collect data more accurately\.

## Software Interfaces

The StrayAway initiative is designed to work seamlessly with Windows 7 and later, macOS 10 and later, Android 7 and higher, as well as IOS 11 and newer. It utilizes a (RDBMS) for a user-friendly operation, and to simplify the process of maintaining, controlling, and updating the database.

## Communications Interfaces

To ensure efficient data transfer between StrayAway servers and the client application, HTTPS is used. HTTPS is used over HTTP due to its additional security. For other efficient file transfers as well as encryption FTPS is used. To send efficient emails, verification codes and others SMTP is used, on the other hand IMAP is used to receive messages. SSL is incorporated through the use HTTPS and FTPS as previously mentioned.

# System Features

## User Registration and Profiles

4.1.1 Description and Priority

Client enrollment and profiles are pivotal components of the StrayAway app. They play a critical role in building up a user's identity, empowering communication, and keeping up a strong community interior. The requirements of client enrollment and profiles are long and have got to be among the starting highlights executed inside the StayAway app.

4.1.2 Stimulus/Response Sequences

 It makes a difference in recognizing potential focuses of interaction and responding, guaranteeing that the app reacts fittingly to client activities, though some functions may be automatically triggered.

4.1.3 Functional Requirements

REQ-1: New users shall be able to register a new account.

REQ-2: Users shall be able to change their profile username

REQ-3: Users shall be able to change their pet Wishlist.

REQ-4: Users shall be able to provide new contact information or edit it.

REQ-5: Users shall be able to turn on 2 factor authentication

REQ-6: Users shall be able to change the language of the app/website.

## Notifications and Alerts

 4.2.1 Description and Priority

 This helps in keeping the users updated and informed about the stray animal tracking app and overall priority is high, allowing users to customize their notification preferences is essential to avoid overwhelming them with information and ensure a positive user experience.

4.2.2 Stimulus/Response Sequences

The effectiveness of these sequences contributes to the overall success of the app in facilitating community engagement and improving the welfare of stray animals. Functions such prompting the user to turn on notifications will be done automatically by the system.

4.2.3 Functional Requirements

REQ-1: The user shall be able to customize the content of notification

REQ-2: The user shall have the option to receive notifications via email.

REQ-3: The user shall be able to provide feedback on the advantage of notifications

REQ-4: The user shall receive notifications promptly for timely information.

REQ-5: The notifications should be delivered in the user’s preferred language.

REQ-6: The user shall be able to turn off notifications and alerts.

REQ-7: The system shall provide clear instructions on how to enable and disable notifications.

**4.3 Donation and Fundraising**

 4.3.1 Description and Priority

The donation and fundraising module are a high-priority module component of the StrayAway project, incorporating key features such as donation collection, donor management, reporting analytics, safety and security measures, user notifications, accessibility, user experience improvements, and considerations for performance and scalability. Its purpose is to establish a secure and user-friendly environment for streamlined donation management and successful fundraising initiatives, aligning seamlessly with the project's comprehensive objectives.

4.3.2 Stimulus/Response Sequences

We create a social media post that show stray animal in need of help to call the attention of people how are interested and then we provide a link to a donation page

4.3.3 Functional Requirements

REQ-1: user shall be able to view their donation history.

REQ-2: user shall be able choose the amount they want to donate.

REQ-3: user shall be able to choose what payment method they want to use in the donation.

REQ-4: The user shall be able to share their donations on social media.

REQ-5: The user shall be able to see the donation goal and its current status.

REQ-6: The user shall be able to donate anonymously

REQ-7: The user shall have the option to make recurring donations.

# Other Nonfunctional Requirements

## Performance Requirements

* The app should be able to run within a short time frame
* The system must be able to handle increasing numbers of concurrent users and transactions
* The system should be able to process a high volume of data efficiently
* The system should ensure that multiple users do not face significant delays
* The system should ensure that security measures do not have an undue impact on performance.
* The system should have the ability to handle hardware and software failure
* The system should have an availability of 95% to ensure the app is consistently available for customers

## Safety Requirements

* Encryption is required for any communication between the information server of the framework and its clients that happens remotely.
* The system should include educational resources to educate users about responsible pet ownership, animal welfare, and the importance of accurate reporting.
* The system should be saving and backing up data in case of system failure to the clouds.
* The system should provide tips and guidelines to educate the user on how to use this app.
* The system should encrypt communication channels to protect unauthorized access to data.
* The system should implement secure account recovery to ensure legitimate users can regain the account if needed.

## Security Requirements

* The system should encrypt sensitive data which includes user information, animals' data and others stored in the database.
* The system should allow users to share their location when necessary
* The system should regularly backup data to ensure secure data.
* The system should provide tips to educate the user on how to protect the account.
* The system should create comprehensive logging to track user activity.

## Software Quality Attributes

**5.4.1 Availability:**

* The system should be available during all hours of the day.
* The system should not be unavailable for more than 5 minutes a day.

**5.4. Usability:**

* The system should have a user-friendly user interface.
* The system should have a FAQ page to help guide users in using the system.
* The system should be efficient.
* The system should provide multi-language support.

**5.4.3 Maintainability**

* The system should easily adapt to changes
* The system maintenance should be cost efficient
* The system should not have to be changed frequently

**5.4.4 Robustness**

* The system should retain its essential functionalities if other functionalities are not working.
* The system should function properly in all smartphones OS and platforms.

## Business Rules

<List any operating principles about the product, such as which individuals or roles can perform which functions under specific circumstances. These are not functional requirements in themselves, but they may imply certain functional requirements to enforce the rules.>

* The system should allow only verified user to add a report
* The system should only update health status and vaccination records by authorized personnel
* The user can only report loss or found animals in he/she provide accurate information.
* The system should only accept donations from verified donors who have completed the registration process.

# Other Requirements

* The system must provide accurate real-time information regarding the location of the animal being tracked.
* The system should be able to report stray animals in places with no internet connection.
* The system should display the animal’s breed once it has been scanned

Appendix A: Glossary

* SRS Report: Software Requirements Specification Document
* HTML: Hypertext Markup Language
* IDE: Integrated Development Environment
* IEE: Institute of Electrical and Electronics Engineers
* OS: Operating System
* UI: User Interface
* HTTP: Hypertext Transfer Protocol
* DB: Database
* JS: JavaScript
* RDBMS: Relational Database Management System

Appendix B: Analysis Models

<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams.>

Appendix C: To Be Determined List

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>

Source: http://www.frontiernet.net/~kwiegers/process\_assets/srs\_template.doc