

**SOFTWARE**

**REQUIREMENTS SPECIFICATION**

**For**

# PET ADOPTION SYSTEM

**Prepared by:-**

Afreed S

Haritha R

## 1. Introduction

### 1.1 Purpose

The main objective of this document is to outline the requirements for the development of a Pet Adoption System. It aims to provide a comprehensive understanding of both functional and non-functional aspects as specified by the client. This project is designed to create a user-friendly platform facilitating the management of pet adoption listings, details, and adoption inquiries. The system will serve as an interface for both animal shelters and potential adopters.

### 1.2 Document Conventions

* Entire document should be justified.
* Convention for Main title

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* Convention for Sub title

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* Convention for body

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### 1.3 Scope of Development Project

The Pet Adoption System seeks to create an extensive online platform, revolutionizing conventional pet adoption methods. Its primary goal is to connect animal shelters with prospective adopters, establishing a user-friendly space for streamlined pet management. Both shelters and individuals interested in adopting pets can take advantage of the system's offerings, which include comprehensive pet listings, inquiry submission functionalities, and access to vital information like pet details, images, and medical histories. The project places emphasis on incorporating access controls, recommendation criteria, and user feedback mechanisms, aiming to elevate the overall adoption experience for all users involved in the process.

The system ensures easy navigation for both shelters managing pet listings and adopters exploring adoption opportunities. The Pet Adoption System strives to streamline and modernize the pet adoption process, promoting transparency, accessibility, and positive user engagement within the realm of pet welfare.

### 1.4 Definitions, Acronyms and Abbreviations

JAVA -> platform independence

SQL-> Structured query Language

ER-> Entity Relationship

UML -> Unified Modeling Language

IDE-> Integrated Development Environment

SRS-> Software Requirement Specification

### 1.5 References

* Books

 Software Requirements and Specifications: A Lexicon of Practice, Principles and

Prejudices (ACM Press) by Michael Jackson

Software Requirements (Microsoft) Second EditionBy Karl E. Wiegers 

Software Engineering: A Practitioner’s Approach Fifth Edition By Roger S. Pressman

* Websites
* [**http://www.slideshare.net/**](http://www.slideshare.net/)
* [**https://www.petfinder.com/developers/**](https://www.petfinder.com/developers/)

## 2. Overall Descriptions

### 2.1 Product Perspective

The Pet Adoption System operates within a broader system context, facilitating interactions between various actors and components. The use case diagram provides a high-level view, illustrating the primary functionalities and relationships within the system.

Pet shelters, responsible for managing pet listings, can add, edit, or remove pet details, ensuring accurate information. Potential adopters interact with the system to submit inquiries, access comprehensive pet details, images, and medical histories, facilitating informed decisions. The system features administrative functions for authorized users, overseeing user management, system configuration, and data maintenance. Integrations with external systems, such as payment gateways and veterinary databases, enhance functionality.

### 2.2 Product Function

Entity Relationship Diagram of Pet Adoption System

The system provides an interface for shelters to post pet listings, manage details, and handle adoption inquiries. Adopters can access pet information, submit inquiries, and participate in the adoption process.

### 2.3 User Classes and Characteristics

The system provides different types of services based on the type of users [Shelters/Adopters]. Shelters are responsible for managing pet listings, handling adoption inquiries, and interacting with potential adopters.Adopters are potential pet owners seeking to adopt a pet from the system.

The features that are available for the Shelters are:-

* Create and manage pet listings with detailed information.
* Update pet listings with status changes and additional information.
* View and respond to adoption inquiries from potential adopters.
* Access and manage their shelter account information

The features that are available to the Adopters are:-

* Search for pets based on various criteria, such as pet type, age, location, and breed.
* View detailed pet profiles, including photos, videos, and descriptions.
* Submit adoption inquiries to shelters expressing interest in specific pets.
* Secure Communicate with shelters regarding adoption inquiries and procedures
* Access and manage their adopter account information.

### 2.4 Operating Environment

The product will be operating in windows environment. The Pet Adoption System is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer,Google Chrome,and Mozilla Firefox.Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.

The hardware configuration includes Hard Disk: 40 GB, Monitor: 15” Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

### 2.5 Assumptions and Dependencies

The assumptions are:-

* The coding should be error-free to ensure system stability and functionality.
* The system needs to prioritize user-friendliness for easy navigation and usage.
* All user, pet, and shelter information must be stored in an accessible database linked to the website.
* The system should have ample storage capacity and ensure fast access to the database for efficient operations.
* The platform should support a search facility and facilitate quick transactions for inquiries and adoptions.
* The Pet Adoption System operates continuously, available 24/7.
* Users can access the system from any internet-enabled computer.
* Secure user authentication via correct usernames and passwords is necessary for access and actions within online accounts.

The dependencies are:-

* Specific hardware and software configurations are necessary to run the system effectively.
* Development and execution of the project will be based on predefined listing requirements and specifications.
* End-users, specifically administrators, need a proper understanding of the system's functionalities.
* General reports and system records must be appropriately stored and accessible.
* All user and pet-related data must be stored in a database accessible by the Pet Adoption System.
* Any updates or changes in pet listings or shelter information should be accurately recorded in the database to maintain data integrity.

### 2.6 Requirement

Software Configuration:-

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database. Operating System: Windows NT, windows 98, Windows XP

Language: Java Runtime Environment, Net beans 7.0.1 (front end)

Database: MS SQL Server (back end)

Hardware Configuration:-

Processor: Pentium(R)Dual-core CPU

Hard Disk: 40GB

RAM: 256 MB or more

### 2.7 Data Requirement

The inputs to the system entail user-initiated queries directed at the database, such as account creation, pet selection, and adoption inquiries. Outputs generated from these inputs include solutions to the queries, along with the provision of account details to the users. For instance, upon request, users will receive information regarding their adoption inquiries, including timestamps, dates, and details about the pets currently associated with their account. This system ensures that user interactions yield specific outputs, providing comprehensive account details as requested by the users.

## 3. External Interface Requirement

### 3.1 GUI

The Pet Adoption System offers an intuitive graphical interface catering to both users and administrators, facilitating essential tasks such as creating, updating, and viewing pet listings. Administrators can seamlessly navigate the system to manage various aspects of the adoption process.

* Users can access quick reports, such as adoption status within a specific time frame..
* Features include stock verification and a search facility with various search criteria.
* The administrator can customize the user interface according to specific preferences.
* All modules integrated into the software should conform to the graphical user interface standards.
* The design emphasizes simplicity, ensuring a standard template for different interfaces.
* Seamless interaction between the user management module and the login/logout module is essential.

Login Interface:-

Users can register by entering their details to create an account.

Once registered, users can log in by inputting their username and password. Incorrect entries prompt an error message.

Search:-

Potential adopters or shelters can search for pets based on criteria like species, breed, age, and location.

Categories View:-

Displays different pet categories available and allows shelter administrators to add, edit, or delete categories from the list.

Shelter's Control Panel:

The control panel enables shelter administrators to manage pet listings, inquiries, and account information. It facilitates the addition, editing, or removal of pet listings, handles inquiries, and provides account management features.

## 4. System Features

The system features for the Pet Adoption System to ensure security and accountability while maintaining a user-friendly environment:

* Unique credentials authenticate users, ensuring shelters and adopters have authorized access to their respective accounts.
* Administrators monitor system activities, updating account statuses and receiving alerts for policy breaches.
* Strict account isolation maintains user privacy, while only administrators manage all accounts, ensuring confidentiality and accountability.
* Shelters manage inquiries promptly within a secure platform, maintaining confidentiality for potential adopters.
* Strong encryption and regular audits fortify the system, preventing unauthorized access and ensuring ongoing protection for user data.

## 5. Other Non-functional Requirements

### 5.1 Performance Requirement

The proposed system that we are going to develop will be used as the Chief performance system within the different campuses of the university which interacts with the university staff and students. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the university.

* The system prioritizes fast and accurate performance, catering to interactions between shelters, potential adopters, and administrators across multiple campuses.
* Inbuilt error testing ensures efficient handling of both expected and unexpected errors, specifically identifying and resolving issues like invalid credentials promptly.
* The system is designed to handle a significant volume of pet listings, inquiries, and user interactions without compromising system efficiency, ensuring faultless operation and responsiveness.

### 5.2 Safety Requirement

Implementing a robust backup system is essential to prevent data loss in the event of database crashes caused by viruses or operating system failures. Additionally, ensuring a reliable UPS/inverter facility is crucial to mitigate the impact of power supply failures, safeguarding continuous system operation and data integrity.

### 5.3 Security Requirement

* Utilization of a secured database infrastructure to ensure data safety and confidentiality.
* User access control limiting regular users to read-only access, with editing privileges restricted to personal and specific information.
* Implementation of varied user types, each with distinct access constraints, ensuring controlled system entry.
* Implementation of robust user authentication mechanisms to prevent unauthorized access.

⮚ Ensuring password security protocols to prevent hacking attempts and breaches.

* Maintenance of separate admin and member accounts, granting exclusive database update rights to administrators while restricting member access to database entries.

### 5.4 Requirement attributes

* Multiple administrators possess system modification rights, while regular users are restricted from making alterations.
* The project structure adheres to an open-source approach, ensuring accessibility and community contribution.
* Database quality prioritizes user-friendliness, facilitating ease of use for all database users.
* Users are provided with an easy download and installation process for system setup and access.

### 5.5 Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data.This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor member should cross the rules and regulations.

### 5.6 User Requirement

The Pet Adoption System caters to two main user categories: members and administrators, where administrators take on the responsibility of system maintenance. Members are expected to possess basic computer and internet browsing skills, while administrators require a deeper understanding of the system's internal workings to address potential issues arising from disk crashes, power failures, or similar disruptions. The system provides comprehensive user support through a user-friendly interface, detailed manuals, online help resources, and installation guides, ensuring a seamless user experience. Educational materials are designed to equip all users with the necessary knowledge to navigate and utilize the system proficiently, mitigating potential challenges in its use.

The system administrator offers various user facilities within the Pet Adoption System, including:

* Backup and Recovery services ensuring data protection and retrieval in case of system disruptions.
* Forgot Password feature for users to reset their access credentials securely.
* Data migration functionality that stores user data upon initial registration onto the server.
* Data replication capabilities ensuring redundant data storage, safeguarding against data loss across different system branches.
* Auto Recovery mechanisms frequently saving user information to prevent data loss during system interruptions.
* File Organization tools aiding in maintaining a structured and accessible file system.
* Regular server maintenance and timely updates to ensure optimal system performance and security.

## 6. Other Requirements

### 6.1 Data and Category Requirement

There are different categories of users such as shelters, potential adopters, administrators, etc.Access privileges are determined by user category; administrators possess extensive data manipulation rights, including modification, deletion, and appending data. Other user types, barring specific limitations imposed on the Shelter Profiles, have restricted access, primarily for retrieving database information.

Likewise, the system categorizes pets available for adoption into different types or breeds. Each category showcases relevant data associated with the pets, such as breed, age, medical history, etc. These categories and their respective data are structured and stored in a specified format within the system for streamlined access and display.

### 6.2 Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Books, Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; N: Non-functional Requirement; O: Operating environment; P: Performance, Pets, Perspective, Purpose; R: Requirement, Requirement attributes; S: Safety, Scope, Shelters, Security, System features; U: User, User class and characteristics, User requirement;

### 6.3 Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

* Administrator: A login id representing a user with user administration privileges to the software
* User: A general login id assigned to most users
* Client: Intended users for the software
* SQL: Structured Query Language; used to retrieve information from a database
* SQL Server: A server used to store data in an organized format
* Layer: Represents a section of the project
* User Interface Layer: The section of the assignment referring to what the user interacts with directly
* Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed
* Data Storage Layer: The section of the assignment referring to where all data is recorded
* Use Case: A broad level diagram of the project showing a basic overview
* Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system’s cases, their attributes, and the relationships between the classes
* Interface: Something used to communicate across different mediums.
* Unique Key: Used to differentiate entries in a database

### 6.4 Class Diagram

A class is an abstract, user-defined description of a type of data. It identifies the attributes of the data and the operations that can be performed on instances (i.e. objects) of the data. A class of data has a name, a set of attributes that describes its characteristics, and a set of operations that can be performed on the objects of that class. The classes’ structure and their relationships to each other frozen in time represent the static model. In this project there are certain main classes which are related to other classes required for their working. There are different kinds of relationships between the classes as shown in the diagram like normal association, aggregation, and generalization. The relationships are depicted using a role name and multiplicities. Here ‘Shelters’, ‘Adopters’ and ‘Pets’ are the most important classes which are related to other classes.