ANIMAL'S DELIGHT

PROJECT REPORT

submitted by

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JOSMI C.J (Reg. No: CAATSCS003)

under the guidance of

Mr. RENNI P. MATHUNNI

(*Assistant Professor*)

in partial fulfilment for the award of the degree of

Bachelor of Science in Computer Science

University of Calicut

Department of Computer Science

College of Applied Science, Malampuzha

(Affiliated to the University of Calicut)

(Managed by Institute of Human Resources Development)

Kalleppully, Palakkad – 678005

March 2022

ACKNOWLEDGMENTS

CONTENTS

DECLARATION

We hereby declare that this submission of our project entitled **" ANIMAL'S DELIGHT "** submitted to the University of Calicut is a record of an original work done by me under the guidance of **Mr. RENNI P.MATHUNNI** and project work is submitted in the partial fulfilment of the Degree **B.Sc. COMPUTER SCIENCE** and to the best of our knowledge and belief, it contains no material previously published or written by another person or material which has been accepted for the award of any other degree or diploma of the University or other institute of higher learning, except where due acknowledgment has been made in the text.

Place: **Palakkad**

Date: **00 March 2022**

MOHAMED ASIF.A (Reg. No.: CAATSCS024)

JISHNU E.V(Reg. No.: CAATSCS022)

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CERTIFICATE

This is to certify that the project entitled **ANIMAL'S DELIGHT** submitted by **MOHAMED ASIF.A** (Register Number: **CAATSCS024**) to University of Calicut for the award of the degree of Bachelor of Science (B.Sc.) in Computer Science is a bonafide record of the project work carried out by him/her under my supervision and guidance. The content of the report, in full or parts have not been submitted to any other Institute or University for the award of any other degree or diploma.

Project Guide   **Principal**

Place: Palakkad

Date: 99 March 2022

Certified that the candidate was examined by us in the Project Viva Voice Examination held on .... and his/her Register Number is ....

Examiners:

1.

2.

COLLEGE OF APPLIED SCIENCE, MALAMPUZHA

(Affiliated to the University of Calicut)

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Date: 99 March 2022

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Kalleppully, Palakkad – 678005

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This is to certify that the project entitled **ANIMAL'S DELIGHT** submitted by **JOSMI C.J** (Register Number: **CAATSCS003**) to University of Calicut for the award of the degree of Bachelor of Science (B.Sc.) in Computer Science is a bonafide record of the project work carried out by him/her under my supervision and guidance. The content of the report, in full or parts have not been submitted to any other Institute or University for the award of any other degree or diploma.

Project Guide   **Principal**

Place: Palakkad

Date: 99 March 2022

Certified that the candidate was examined by us in the Project Viva Voice Examination held on …………………………………………… and his/her Register Number is …………………………………………

Examiners:

1.

2.

CERTIFICATE

CERTIFICATE FROM THE PROJECT CENTRE

ABSTRACT

The **ANIMAL'S DELIGHT** is a solution for the pet licensing web websites. ANIMAL'S DELIGHT is Publicly accessible. ANIMAL'S DELIGHT will be one stop solution for all kinds of Pet Care needs like Pet Licensing, Pet related shopping, Online doctor consultation or doctor booking, Pet Grocery Section, Decease Diagnose, Pet Medicine shopping, Video formatted section for beginners. The Unique feature of our website will be that the User or Public can use the entire facilities provided in the website with no restrictions and without no additional costs. Also, speciality of the website is that user or Public can access the veterinary hospital, veterinary doctors, online booking facility and can shop Pet Medicines, Pet related Products. Direct E-Payment facilities were provided in the web site.

Hospital, Doctors and Shops will be working on contract basis with us and we will create connections with Hospital, shops, Doctors so the User only need to visit our web site for all needs and enquiries. Front end Materialise CSS and HTML, Back end JAVASCRIPT, MONGO QUERY LANGUAGE and Frameworks Node.js and Express.js are used to develop this application.

There are Five modules in this web application as follows:

1. ADMIN MODULE
2. USER MODULE
3. DOCTOR MODULE
4. HOSPITAL MODULE
5. SHOPS MODULE

1.INTRODUCTION

The ANIMAL'S DELIGHT is an extension and solution for the pet licensing web websites .ANIMAL'S DELIGHT is Publicly accessible .ANIMAL'S DELIGHT will be one stop solution for all kinds of Pet Care needs like Pet Licensing ,Pet related shopping ,Online doctor consultation or doctor booking ,Pet Grocery Section , Decease Diagnose, Pet Medicine shopping, Video formatted section for beginners. The Unique feature of our website will be that the User or Public can use the entire facilities provided in the website with no restrictions and without no additional costs. Also, speciality of the website is that user or Public can access the veterinary hospital, veterinary doctors, online booking facility and can shop Pet Medicines, Pet related Products. Direct E-Payment facilities were provided in the web site.

Hospital, Doctors and Shops will be working on contract basis with us and we will create connections with Hospital, shops, Doctors so the User only need to visit our web site for all needs and enquiries. Front end Materialise CSS and HTML, Back end JAVASCRIPT, MONGO QUERY LANGUAGE and Frameworks Node.js and Express.js are used to develop this application.

2. PROBLEM DEFENITION AND METHODOLOGY

2.1. PROBLEM DEFINITION

The problem is to provide the complete information about the pet breeding, pet licensing and its needs. This helps in providing an environment for the customers, to get knowledge of pet licensing. The obstacles to pet licensing registration are difficult access to veterinary department, the cost of registering a pet license, long distance to registration centres and the loss of license.

Additionally, many people do not prioritize domestic and pet animal licensing.

2.2. OBJECTIVES

The main objective of pet licensing is to prevent violence against animals, allow licensed breeders to keep their dogs, and we will be able to prevent abuses against them to some extent. Violence against animals is one of the biggest problems facing our society today, especially against dogs. The Kerala High court (HC) has considered some of the vicious incidents that have taken place in Kerala, and in a new order directed all to register their domestic and pet animals at the concerned local bodies so as to take license within six months with the intention of protecting them.

2.3. MOTIVATION

The Project Animal's Delight will benefits animal protection in many ways. This system helps to promote responsible and protectable license so that it will allow licensed breeders to keep their pets. It also gives all pet related information for the license breeders.

2.4. METHODOLOGY

The project Animal's Delight is developed by using traditional approach involves a series of consecutive stages in the project management process. It is a step by step sequence to design, develop and deliver a product service. The stages included are initiation, planning

and design, constructing and coding, control and integration, validation and deployment and maintenance.

2.5. SCOPE

The system provides the detailed structure of the pet licensing system, its facilities and activities. This system helps to promote responsible and protectable license so that it will allow licensed breeders to keep their pets. We develop this system to create and promote forms of licensing that provide protection for animals and increase better understanding of animal husbandry, different breeds and animal feeding.

3.REQUIREMENT ANALYSIS AND SPECIFICATION

3.1. REQUIREMENT ANALYSIS

It is the analysis of all aspects of a project along with ways to collect information about the operation of its parts. Before the development of any system can begin, a project proposal is prepared by the users of the potential system and/or by systems analysts and submitted to an appropriate managerial structure within the organization. Although there are no hard and fast rules as to the form system analysis, the analyst should definitely go through the following points.

• The significance of the problem to the organization i.e., pet licensing in this case

• Alternative solutions

• The possible use of computer information systems to solve the problem.

• The various people interested in or possessing knowledge relevant to the problem

Requirement analysis has been done successfully and collected requirements for licensed breeders, and admin of the system. Major activities involved in the system analysis are fact findings & requirement analysis. There are many fact-finding techniques. An analyst can collect date from two principle sources: written documents & personnel who are knowledgeable about or involved in the operation of system under study. The most appropriate five fact finding techniques are:

• Data Collection

- Correspondence & Questionnaires

- Personnel Interviews

- Observations

3.1.1. DATA COLLECTION

Collected and organized the documents related to data such as record, reports, manuals etc. of the present system of the pet licensing systems. The recent information is collected through correspondence including questionnaire, personal interviews and direct observation.

3.1.2. CORRESPONDENCE & QUESTIONNAIRES

Correspondence defines the subject area & specific topics to be reviewed. It also explains the purpose of investigation activities. Correspondence informs license breeders what is expected from them in the interviews. Questionnaires are an important & effective type of correspondence. Questionnaires are made related to the present system and this information can be used to solve the disadvantages of the present system

3.1.3. PERSONAL INTERVIEWS

It is the one of the fruitful methods of obtaining information. Personal interviews conducted with the resource persons and it is able to collect many useful data regarding the facilities required for the proposed system.

3.1.4. OBSERVATIONS

The operations of the current system of pet licensing has been observed and formulated questions and drawn conclusions on the basis of what I observed.

3.2. EXISTING SYSTEM

The existing system to get a license renewed applicant should approach their respective civic agencies (municipal/corporation/local body) of their respective area from where they obtained license for pets. This takes lot of time and commitment. The pet breeders may not receive the specific requested information from these departments, and the breeders may also be mistaken. It is tiring for a breeder to apply a license for their pets.

3.3. PROPOSED SYSTEM

The proposed system will easily handle all the data and the work done by the existing system. The proposed system provides facility to manage all works in an efficient and accurate way of keeping information about different pet animals and their respective details.

The suggested framework is a web-based program that maintains a consolidated archive of all related information. The system allows one to quickly access the appropriate details and to make the required animal related services. User will select which service they want to make online pet licensing and animal services and veterinary services. The proposed system eliminates the disadvantages to great extent. After understanding the existing system and understanding the need for developing a new system different people involved in the related activities have been consulted. The data needed for the study has been collected from veterinary department. The system helps the user to see any documents, source code, tasks, activities, team information with details at the click of a button. The recorded data is maintained and backed up such a way that data is not loss. The speed of the system could also increase and also as it is web application the details of pets and pet licensing i.e., organisers, customers, and other activities can be accessed from anywhere anytime and updating can be also done in easy manner.

3.4. REQUIREMENT SPECIFICATION

3.4.1. FUNCTIONAL REQUIREMENTS

The functional requirements for the proposed system have been collected. The proposed system will have provision

- For admin to login using credentials.

- For admin to register new User.

- For admin to register new Hospitals.

- For admin to send notifications, upload files and data to gallery.

- For Hospitals to view User details.

- For Veterinary Doctors to chat with User.

• To view pet related information by anyone (public).

• For User to send feedback.

• For User to view various breeds.

• For User to view various facilities provided by the service Hospitals, Doctors, Shops

• For User to order the functionalities and services through Shop.

• For User to chat with Hospital and Shops through the Websites.

• For public to view to various services provided by Doctors, Hospitals, Shops

3.4.2. NON-FUNCTIONAL REQUIREMENTS

Non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviours. Non-functional requirements are often called qualities of a system. The non-functional requirement includes the data of pet licensing system. In this system, authentication of the user is an important factor. In this system, user authentication will be done by login using username and password and classified by user types. User will get access to the system as permissions are classified for that type of user. The system has a consistent interface so that the system is easy to use and in the interface of us system buttons and forms are used to enter data related to a specific module.

3.4.3. ENVIRONMENT DETAILS

3.4.3.1. SOFTWARE REQUIREMENTS

• Visual studio IDE

• Mongo DB Atlas

• Node

• Chrome browser

3.4.3.2. HARDWARE REQUIREMENTS

• Pentium processor or above

• 2 GB RAM or above

3.5. FEASIBILITY ANALYSIS

Feasibility study is a procedure that identifies, describes and evaluates candidate system and selects the best system for the job. An estimate is made of whether the identified user needs may be satisfied using current software and hardware technologies. The study will decide if the proposed system will be cost effective from a business point of view and if it can be developed given existing budgetary constraints. The key considerations involved in the feasibility analysis are economic, technical, behavioural and operational.

3.5.1. TECHNICAL FEASIBILITY

The technical feasibility assessment is focused on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. The proposed system satisfies the technical feasibility. The technical feasibility assesses the details of how you intend to deliver the product or services of the system. The proposed system is going to develop and uploaded shared server which can be accessed by the user using system with internet and browser.

3.5.2. ECONOMICAL FEASIBILITY

The economic analysis is to determine the benefits and savings that are expected from a candidate system and compare them with costs. The system is economically feasible, as the organization possesses the hardware and software resources required for the functioning of the system. Any additional resources, if required, can also be easily acquired. This feasibility study checks whether the system can be developed with available funds. The proposed system can be developed using available fund.

3.5.3. OPERATIONAL FEASIBILITY

The system operation is the longest phase in the development life cycle of a system. So, operational feasibility should be given much importance. The users of the system don't need thorough training on the system. All they are expected to know to operate the system is the basic net surfing knowledge. System has a user-friendly interface.

3.6. PROJECT PLANNING AND SCHEDULING

A project schedule is a document collecting all the work needed to deliver the project on time. For example, most tools have task lists, which enable the manager to schedule multiple tasks, their due dates, sometimes the planned effort against that task, and then assign that task to a person.

Project scheduling is a mechanism to communicate what tasks need to get done and which organizational resources will be allocated to complete those tasks in what timeframe. A project schedules is a document collecting all the work needed to deliver the project on time.

3.6.1. PERT CHART

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┌─────────┐
│  Start  │
└────┬────┘
     │
     ▼
┌──────────────┐      ┌──────────────┐
│   Business   │      │ Requirement  │
│   Analysis   │      │  Elicitation │
│              ├─────▶│              │
│ 001-10 days  │      │  002-7 days  │
│              │      │Jan 27-feb7,2022│
└──────────────┘      └──────┬───────┘
                             │
                             ▼
           ┌──────────────────┐      ┌──────────────────┐
           │ High Level Design│      │  Detailed Design │
           │                  │      │                  │
           │   003-5 days     ├─────▶│   004-7 days     │
           │ Feb 7- Feb 12,2022│      │Feb 12 – Feb 19,2022│
           └──────────────────┘      └────────┬─────────┘
                                              │
                                              ▼
                    ┌──────────────────┐      ┌──────────────────┐
                    │  Implementation  │      │     Testing      │
                    │                  │      │                  │
                    │  005 – 35 days   ├─────▶│   006-6 days     │
                    │ Feb 19-Feb 24,2022│      │Feb 24- Mar 1,2022│
                    └──────────────────┘      └────────┬─────────┘
                                                       │
                                                       ▼
                              ┌──────┐    ┌──────────────────┐
                              │ Stop │◀───│ Write user manual│
                              └──────┘    │                  │
                                          │   007-7 days     │
                                          │ Mar 1-Mar 8,2022 │
                                          └──────────────────┘
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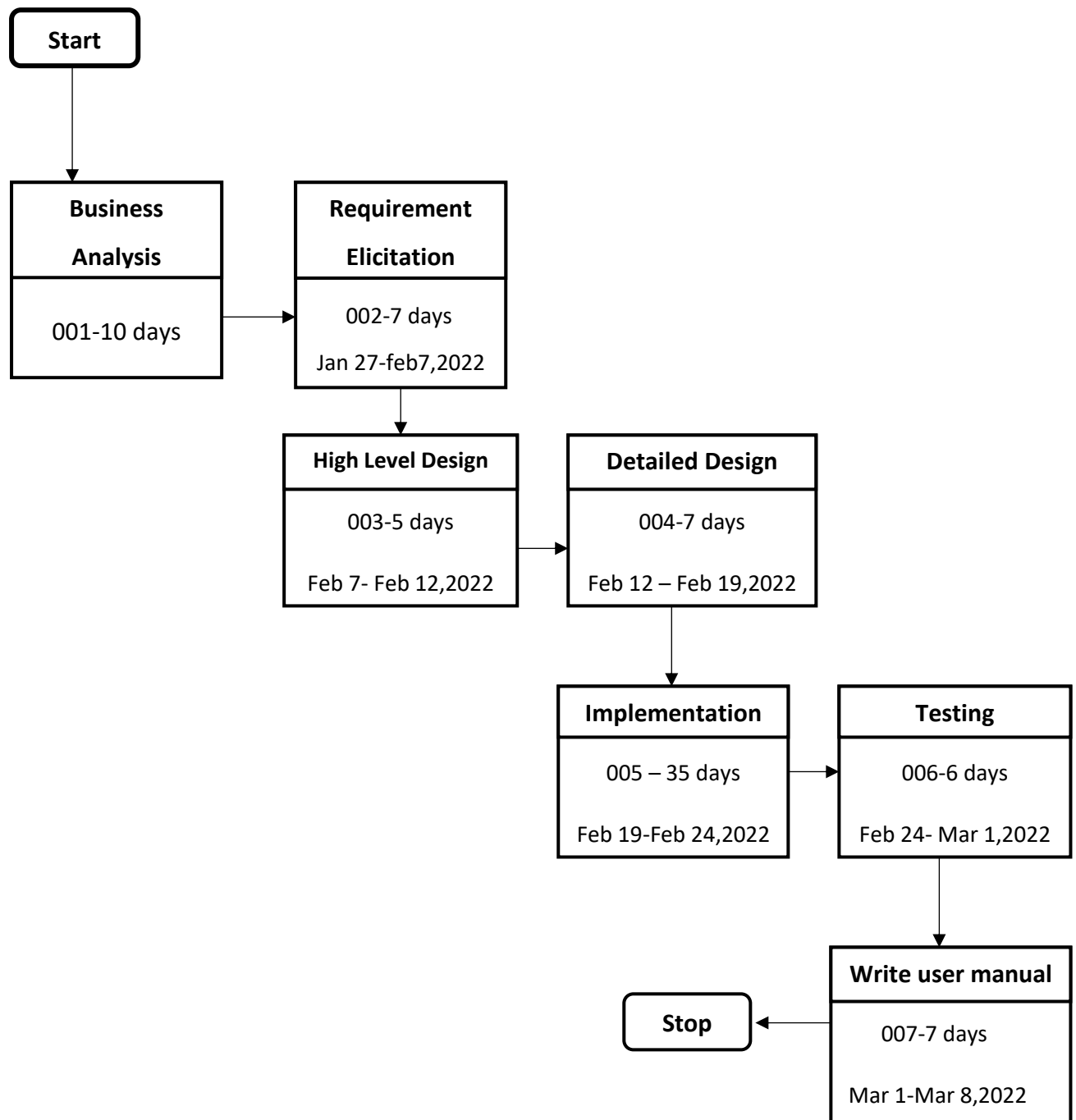
3.7. SOFTWARE REQUIREMENT SPECIFICATION

3.7.1 INTRODUCTION

3.7.1.1. PURPOSE

Animal's Delight is an online web application which provides services related to pets and pet licensing like pet license registration, animal husbandry, different breeds, and animal feeding. This system lets people know that your pet is up to date on its rabies vaccinations. This system helps to promote responsible and protectable license so that it will allow licensed breeders to keep their pets. It also gives all pet related information's for the public. The intended audience of the Animal's Delight system who use the SRS includes software developers, project consultants, and team managers.

3.7.1.2. DOCUMENT CONVENTION

This document follows MLA format. Bold-faced text has been used to emphasize section and sub-section headings. Highlighting is to point out words in glossary.

3.7.1.3 INTENDED AUDIENCE AND READING SUGGESTIONS

While the software requirement specification (SRS) document is written for a more general audience, this document is intended for individuals directly involved in the development of Animal's Delight. This includes software developers, project consultants, and team managers. This document need not be read sequentially; users are encouraged to jump to any section they find relevant. Below is a brief overview of each part of the document.

Part 1 (Introduction) -This section offers a summary of the Animal's Delight project, including goals and objectives, project scope, general system details, and some major constraints associated with the intended platform.

Part 2 (Overall Description) -Readers interested in what is the perspective and functions of product Animal's Delight should consult this section, which covers user classes and characteristics, operating environment, design & implementation constraints and assumptions and dependencies of the system.

Part 3 (External Interface Requirements) -This section describes the Animal's Delight in interface forms, which also describes about the hardware and software interfaces used by this system.

Part 4 (System Features) -This section covers all of the details related to functional requirements of all the user classes of the Animal's Delight system.

Part 5 (Other Non-Functional Requirements) -This section discusses the performance, safety, security and software quality attributes imposed upon the project.

Part 6 (Appendices) -This section includes any additional information which may be helpful to readers like glossary which includes acronyms and abbreviations used.

3.7.1.4. PRODUCT SCOPE

This system is an extension of pet licensing websites which provides way for to view all details of pets and pet licensing needs and also helps to provide various services related to pets. It includes all the features and functions needed to efficiently manage all general details of pet licensing for public access and also helps to provide easy for communication between organisers and users. It includes an administrator account which is used to handle/control all the entire system functionalities. The system keeps records of user's personal information, detailed structure of the pet licensing system, its facilities and activities and related information in a well-maintained database. The administrator can easily manage and change database content. The system also allows users and public to send feedbacks. This also allow organisers to upload new information such as new breeds, laws etc. and user can access this just by signing into the system. The system helps admin to manage pet details i.e., dog parks, animal services, veterinary services, etc.

3.7.1.5. REFERENCES

(a) Roger S, 'Software Engineering'

(b) IEEE Recommended Practice for Software Requirements Specifications – IEEE Std.

(c) IEEE Standard for Software Test Documentation – IEEE Std.

(d) www.W3schools.com

3.7.2. OVERALL DESCRIPTION

3.7.2.1. PRODUCT PERSPECTIVE

This product is aimed at User who want to know about the detailed structure of the pet licensing system, its facilities and activities and other related information. This is also aimed at organisers, and users who want to keep track of all the activities corresponding to their role. This product also aimed towards the Public who don't want to take license for pets and want to get general information about the pets.

3.7.2.2. PRODUCT FUNCTIONS

•Automatic calculation of license fees.

•Import from shelter management software Photo and file attachments.

•Built-in animal enforcement and case management.

• Flexible query and reporting capabilities.

•Automatic address validation and jurisdiction assignment.

•Email or paper renewal/delinquent notices and letters.

•Date and time stamps of all entries, including name and source.

•Flexible payment options and unparalleled support.

3.7.2.3. USER CLASSES AND CHARACTERISTICS

There are Five classes of users in the system.

• Admin

Using a web browser admin can login and manage the general details to be displayed for User access. Admin can also manage other four users of the system. Admin register all users of system. And also manage all other data (like they can add, modify and delete the data in the website).

• Hospital

Using a web browser and credentials, hospital can login and keep track of information regarding their services and location.

• Doctor

Using a web browser and their credentials, User can login and view all the registration details and other functionalities.

• User

Using a web browser people can access general information about pets like animal husbandry, different breeds, animal feeding, decease diagnose etc.

• Shops

Using A web browser and credentials, agents can login and keep track of information regarding their services and Location

3.7.2.4. OPERATING ENVIRONMENT

- • OS: Windows
- • Front end: Materialize CSS, Html
- • Back end: JavaScript, Mongo Query Language
- • Normalized data base

3.7.2.5. DESIGN AND IMPLEMENATION CONSTARINTS

Memory: Device will have 2 GB memory, Software and database cannot exceed this amount.

Internet: Internet connection is required.

Operation system: Windows operating system.

3.7.2.6. USER DOCUMENTATION

For User documentation and information refer External interfaces requirements and attached user manual.

3.7.2.7. ASSUMPTIONS AND DEPENDENCIES

• It is assumed that the hardware designed will work correctly with the third-party operating system and the developed software.

• All users have a system with a browser and internet.

3.7.3. EXTERNAL INTERFACE REQUIREMENTS

3.7.3.1 USER INTERFACES

• Pet Licensing Registration/Login

- Licensing process

- Validity period

- Terms and conditions

- General Do's and Don'ts

• Animal Husbandry

- How to care farm animals

- Genetic qualities

- Behaviour

• Different breeds

- Dog breeds

- Cat breeds

- Breeds availability

- Characteristics

- Breeds other than dogs and cats

• Animal feeding

- Types

- Basic nutrients and additives

- Political economy of feeds

- Health implications of feeding

- Types

• Animal services

- Vaccination requirements

- Ownership limitation requirements

- Animal shelter

- Public education

- Unsanitary conditions

- fees

• Veterinary services

- Doctor consultation

- Animal training

- Available days

- Cost

- Location

• Cart

(For those customers who have placed their orders)

- Details of selected Breed

- Details of selected Animal Services

- Details of selected Animal's feeding

- Details of selected Veterinary Services

• About us

Details of our website

3.7.3.2. HARDWARE INTERFACES

• System: Intel Core i3

• Hard Disk:120 GB

• Monitor: 15'' LED

• Input Devices: Keyboard, Mouse

• Ram:4 GB

3.7.3.3. SOFTWARE INTERFACES

• Operating system: Windows.

• Tools: Eclipse (Editor/IDE)

• Front end: HTML, CSS, JavaScript

• Back end: JavaScript, Mongo Query Language

• Browser: Any browsers

• Server: IIS

3.7.4. SYSTEM FEATURES

Use Case ID	1
Use Case Name	Registration and License
Use Case Description	User is permitted to register their pet's details and also the license holder details. Approved license download link will be send to the user's registration profile.
Actors	• Admin • User • Network Provider
Triggers	
Preconditions	
Basic Flow (Main Success Scenario)	
Alternative Flow (Extension)	
Post-condition	
Business Rules/Validations	
Exceptions	

Use Case ID	2
Use Case Name	Livestock and Disease Diagnose
Use Case Description	This section provides user with the detailed information about the diseases causing to the pet and domestic animals, also provide necessary precautionary steps to taken care of their pets. Special video formatted interface for new pet licensors to train their pets.
Actors	• Admin • User • Authorised Pet Trainers
Triggers	
Preconditions	
Basic Flow (Main Success Scenario)	
Alternative Flow (Extension)	
Post-condition	
Business Rules/Validations	
Exceptions	

Use Case ID	3
Use Case Name	Pet Doctor
Use Case Description	In this section user is allowed to locate the nearby pet care facilities, veterinary hospitals and video formatted interface for doctor's assistance for diseases and pet caring.
Actors	• Admin • User • Hospital Authorities
Triggers	
Preconditions	
Basic Flow (Main Success Scenario)	
Alternative Flow (Extension)	
Post-condition	
Business Rules/Validations	
Exceptions	

Use Case ID	4
Use Case Name	Pet Grocery
Use Case Description	This section consists of pet food information, online pet food shopping, standard food menu for pets and also user will able to locate nearby pet shop details. Video formatted interface for food recommendation by specialised doctors for new beginners are provided.
Actors	• Admin • User • Hospital Authorities • Bank Authorities
Triggers	
Preconditions	
Basic Flow (Main Success Scenario)	
Alternative Flow (Extension)	
Post-condition	
Business Rules/Validations	
Exceptions	

Use Case ID	5
Use Case Name	Pet Food Reminder
Use Case Description	In this interface user or license holder will be able to set up food timing for their pets and domestic animals. Notification will be sent to the user on the respective food time. User can customize their pet's food time in this interface.
Actors	• Admin • User
Triggers	
Preconditions	
Basic Flow (Main Success Scenario)	
Alternative Flow (Extension)	
Post-condition	
Business Rules/Validations	

3.7.5. OTHER NON-FUNCTIONAL REQUIREMENTS

3.7.5.1. PERFORMANCE REQUIREMENTS

The system requires use of Google chrome, internet explorer, or Firefox as web browser. Any of these browsers must be used to get good performance by the system. The System is be accessible on and off campus via internet connection and using required user id and password. Any number of users can access this web application at time that is different user can access this system simultaneously and all will be getting services according to their request. The performance depends on speed of internet of users too. The system will complete 95 percentage of task in less than one second.

3.7.5.2. SAFETY REQUIREMENTS

There are no special safety requirements for the system.

3.7.5.3. SECURITY REQUIREMETS

User can enter password which including letters and numbers but excluding spaces. The user id and the password should not be shared with anyone. The user should periodically change the password.

3.7.5.4. SOFTWARE QUALITY ATTRIBUTES

The content is the responsibility of users of the system. They are responsible for the accuracy and correctness of the system. The validation for information used for registration will be done using coding. The portal will be periodically unavailable due to necessary maintenance upgrades. The users of system will be notified in advance about maintenance. The software is developed in user friendly manner so that it can be used by any of the users in an easy way. The different users will get services according to their request which ensures correctness. The system is developed using coding standards so that any maintenance can be done easily which ensures maintainability of the system.

3.7.5.5. BUSINESS RULES

The system follows business rules. These are the rules which must be followed to maintain the integrity of data or system. The validations are implemented to ensure that data are entered correctly and satisfies the format of data which ensures integrity of data in the database, normalization of tables are done and also primary key constraints are ensured to integrity of data.

APPENDIX A: GLOSSARY

- IEEE - The Institute of Electrical and Electronics Engineers, Inc.

- SRS - Software Requirements Specification

- OS - Operating System

- HTML - Hyper Text Mark-up Language

- PWA - Progressive Web Application

- URL - Uniform Resource Locator

- SSL - Secure Socket Layer

4. SYSTEM DESIGN

4.1. USERS OF THE SYSTEM

•Admin

Using a web browser admin can login and manage the general details to be displayed for public   access. Admin can also manage other three users of the system. Admin register all users of system. And also manage all other data (like they can add, modify and delete the data in the website).

• Hospital

Using a web browser and credentials, hospital can login and keep track of

information regarding their services and location.

• Doctor

Using a web browser and credentials, doctor can login and keep track of information regarding their services and profile.

• Shops(agents)

Using a web browser and credentials, agents can login and keep track of information

regarding their services and location.

• User

Using a web browser and credentials users can login and view all the animal services and other functionalities and they can order whatever they want.

4.2. SYSTEM ARCHITECTURE

A system architecture or systems architecture is the conceptual model that defines the structure, behaviour, and more views of a system. An architecture description is the formal description and representation of a system, organized in a way that supports reasoning about structures and behaviours of the system.

4.2.1. SYSTEM ARCHITECTURE DIAGRAM
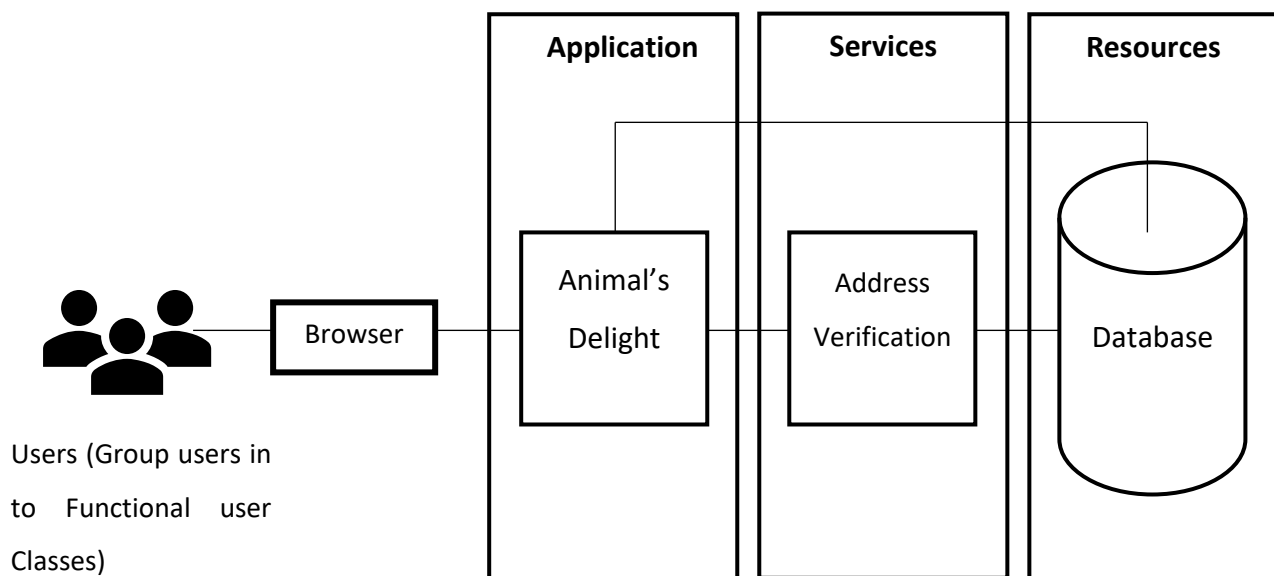
4.3. INPUT/OUTPUT DESIGNS

This project has a large number of Web server page to take inputs. The titles, button names and labels are more user-understandable. So, the users can insert corresponding information without any confusion. Form validation is performed to avoid insertion of invalid data into the database. We have tried our level best to validate the input data. So that most of the invalid input data can be reduced.

A large number of Web server page are created to display the relevant information to the users. The required data is loaded from the database and it will be displayed in a user-friendly format. The captions and headings are more understandable to the users.
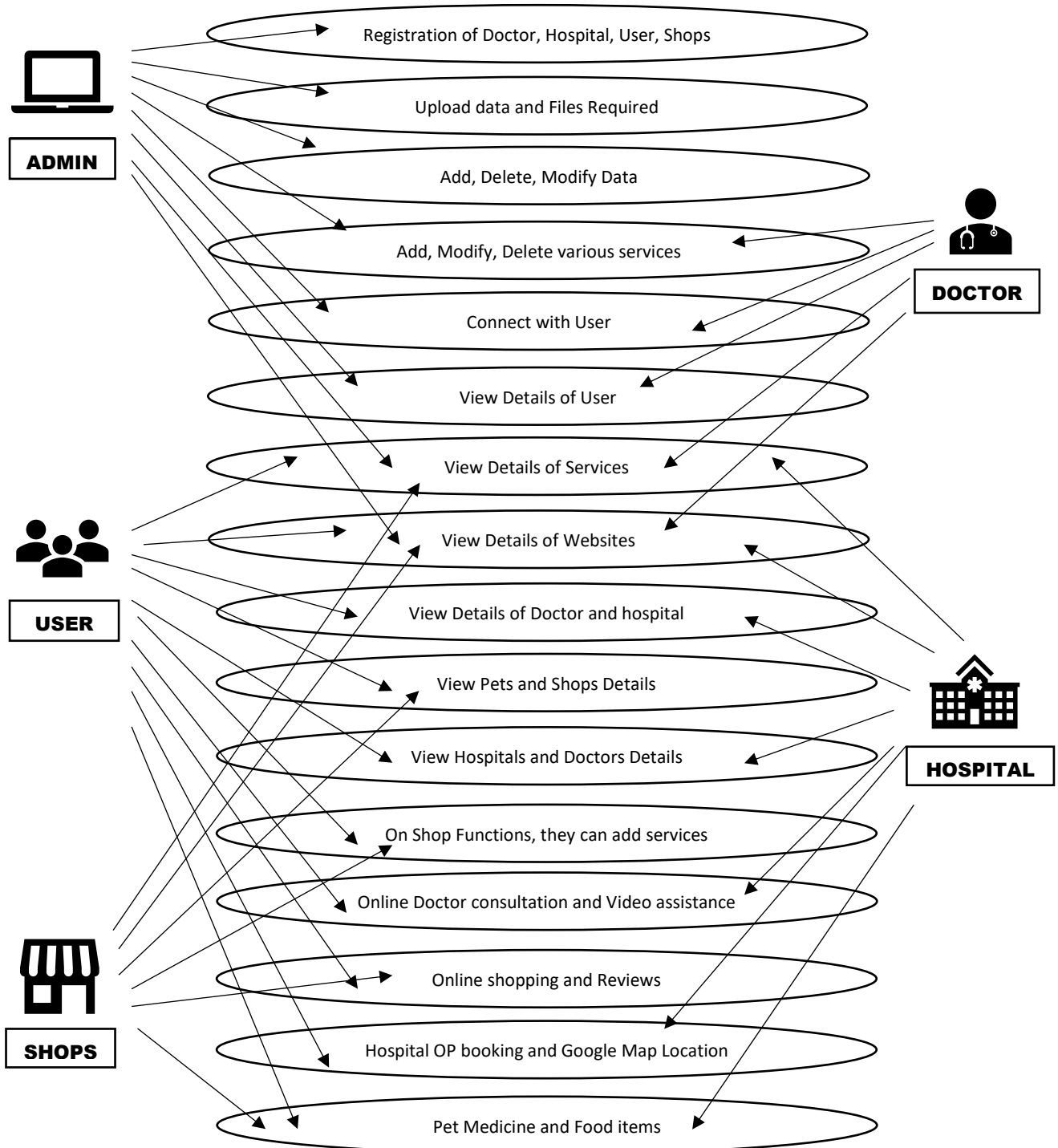
4.4. DATABASE DESIGN

4.4.1. CLASS DIAGRAM

4.4.2. STRUCTURE OF TABLES

4.5. DETAILED DESIGN

4.5.1. USED CASE DIAGRAM

4.5.2. DATA FLOW DIAGRAM

Data Flow Diagram is a pictorial representation of the path which data takes from its initial interaction with the existing system until it completes any interaction. The diagram will describe the logical data flows dealing the movements of any physical items.

4.6. SECURITY ARCHITECTURE

System Architecture is one component of a products/systems overall architecture and is developed to provide guidance during the design of the product/system. These controls serve the purpose to maintain the system's quality attributes such as confidentiality, integrity and availability.

A Security Architect is responsible for designing, building, testing and implementing security systems within an organization's IT network.ie in this case to implement security for the user's data.

This application can be accessed by admin, using credentials. Only hospital, doctor, agents and users registered by admin can access this application. Not only is that gateway also there in the server to ensure security for this system. Data is organised and managed in well-structured format and also certain constraints are maintained to maintain confidentiality and integrity of the system.

4.7. PERFORMANCE

A software application's performance like its response time, reliability, resource usage and scalability do matter. The goal of Performance Testing is not to find bugs but to eliminate performance bottlenecks. Scalability - Determines maximum user load the software application can handle. Performance Optimization of a programs and software is the process modifying a software system to make it work more efficiently and execute more rapidly.

All measures and standards are followed to maintain the system performance to deliver the correct services to all five users of the system which ensure reliability, resource usage, and scalability and also response time for service requested by users is evaluated and if required performance optimization is done.

4.8. SYSTEM INTEGRITY CONTROL

System integrity controls are used to ensure that a system and its data are not illicitly modified or corrupted by malicious code. The two key components of system integrity are system authenticity and the assurance of user identity. In this application, only Service providers, users registered by admin can access data. These 2 users will be provided username and password and also admin can block the users in this way ensure system integrity. In this way strong logging and authenticity are ensured.

5. DEVELOPMENT

5.1. SOFTWARE/TOOLS USED

5.1.1. FRONT END

Materialise CSS

In this project Materialise CSS with html is used as front end. Materialize CSS is an UI component library which is designed by Google.

Materialize CSS is a UI component library which is created with CSS, JavaScript and HTML. It is created and designed by Google. Materialize CSS is also known as Material Design. It is a design language which combines the classic principles of successful design along with innovation and technology. Google's goal is to develop a system of design that allows for a unified user experience across all their products on any platform.

It is used to construct attractive, consistent, and functional web pages and web apps while adhering to modern web design principles such as browser portability, device independence, and graceful degradation.

Features of Materialise CSS

o It is a standard CSS with minimal footprint.

o In-built Responsive Design

o It is free to use and requires jQuery JavaScript library to function properly.

o It is cross-browser, compatible, and can be used to create reusable web components.

o It contains enhanced and specialized features such as cards, tabs, navigation bars, toasts etc.

o It provides new versions of common user interface controls such as buttons, checkboxes, and text fields adapted to follow Material Design concepts.

Materialize has in-built responsive designing so that the website created using Materialize will redesign itself as per the device size. Materialize classes are created in such a way that the website can fit any screen size.

The websites created using Materialize are fully compatible with PC, tablets, and mobile devices.

Materialize is by design very minimal and flat. It is designed considering the fact that it is much easier to add new CSS rules than to overwrite the existing CSS rules. It supports shadows and bold colors. The colors and shades remain uniform across various platforms and devices. And most important of all, it is absolutely free to use.

HTML

First developed by Tim Berners-Lee in 1990, **HTML** is short for **Hypertext Mark-up Language**. HTML is used to create electronic documents (called pages) that are displayed on the World Wide Web. Each page contains a series of connections to other pages called hyperlinks. Every web page you see on the Internet is written using one version of HTML code or another.

HTML code ensures the proper formatting of text and images for your Internet browser. Without HTML, a browser would not know how to display text as elements or load images or other elements. HTML also provides a basic structure of the page, upon which Cascading Style Sheets are overlaid to change its appearance. One could think of HTML as the bones (structure) of a web page, and CSS as its skin (appearance).

Because HTML is a mark-up language, it can be created and viewed in any text editor if saved with a .htm or .html file extension. However, most find it easier to design and create web pages in HTML using an HTML editor.

Once the HTML file is created, it can be viewed locally or uploaded to a web server to be viewed online using a browser.

HTML files use either the .htm or .html file extension. Older versions of Windows (Windows 3.x) only allow three-letter file extensions, so they used .htm instead of .html. However, both file extensions have the same meaning, and either may be used today. That being said, we recommend sticking to one naming convention as certain web servers may prefer one extension over the other.

Features of HTML:

HTML is the most common used language to write web pages. It has recently gained popularity due to its advantages such as: -

1. It is the language which can be easily understood and can be modified.

2. Effective presentations can be made with the HTML with the help of its all-formatting tags.

3. It provides the more flexible way to design web pages along with the text.

4. Links can also be added to the web pages so it helps the readers to browse the information of their interest.

5. You can display HTML documents on any platforms such as Macintosh, Windows and Linux etc.

6. Graphics, videos and sounds can also be added to the web pages which give an extra attractive look to your web pages.

5.1.3. BACKEND

In this project JavaScript and Mongo Query language are used in back end.

JAVASCRIPT

JavaScript is a lightweight, interpreted programming language. It is designed for creating network-centric applications. It is complimentary to and integrated with Java. JavaScript is very easy to implement because it is integrated with HTML. It is open and cross-platform.

JavaScript is the most popular programming language in the world and that makes it a programmer's great choice. It helps you developing great front-end as well as back-end software using different JavaScript based frameworks like jQuery, Node.JS etc.

JavaScript is everywhere, it comes installed on every modern web browser and so to learn JavaScript you really do not need any special environment setup. For example, Chrome, Mozilla Firefox, Safari and every browser you know as of today, supports JavaScript. JavaScript helps you create really beautiful and crazy fast websites. You can develop your website with a console like look and feel and give your users the best Graphical User Experience. JavaScript usage has now extended to mobile app development, desktop app development, and game development. Great thing about JavaScript is that you will find tons of frameworks and Libraries already developed. There are many useful JavaScript frameworks and libraries available: Angular, React, jQuery, Ext.js, Ember.js, Meteor, Mithril, Node.js, Polymer, Aurelia, Backbone.js Applications of JavaScript Programming Client-side validation - This is really important to verify any user input before submitting it to the server and JavaScript plays an important role in validating those inputs at front-end itself. Manipulating HTML Pages - JavaScript helps in manipulating HTML page on the fly. This helps in adding and deleting any HTML tag very easily using JavaScript and modify your HTML to change its look and feel based on different devices and requirements. User Notifications - You can use JavaScript to raise dynamic pop-ups on the webpages to give different types of notifications to your website visitors. Back-end Data Loading - JavaScript provides Ajax library which helps in loading back-end data while you are doing some other processing. This really gives an amazing experience to your website visitors. Presentations - JavaScript also provides the facility of creating presentations which gives website look and feel. JavaScript provides Reveal JS and Bespoke

JS libraries to build a web-based slide presentation. Server Applications - Node JS is built on Chrome's JavaScript runtime for building fast and scalable network applications. This is an event-based library which helps in developing very sophisticated server applications including Web Servers. Node.js

Node.js is a server-side platform built on Google Chrome's JavaScript Engine (V8 Engine). Node.js was developed by Ryan Dahl in 2009 and its latest version is v0.10.36. The definition of Node.js as supplied by its official documentation is as follows − "Node.js is a platform built on Chrome's JavaScript runtime for easily building fast and scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices." Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux. Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent. Node.js = Runtime Environment + JavaScript Library Features of Node.js Asynchronous and Event Driven − All APIs of Node.js library is asynchronous, that is, nonblocking. It essentially means a Node.js based server never waits for an API to return data. The server moves to the next API after calling it and a notification mechanism of Events of Node.js helps the server to get a response from the previous API call. Very Fast − Being built on Google Chrome's V8 JavaScript Engine, Node.js library is very fast in code execution. Single Threaded but Highly Scalable − Node.js uses a single threaded model with event looping. Event mechanism helps the server to respond in a non-blocking way and makes the server highly scalable as opposed to traditional servers which create limited threads to handle requests. Node.js uses a single threaded program and the same program can provide service to a much larger number of requests than traditional servers like Apache HTTP Server. No Buffering − Node.js applications never buffer any data. These applications simply output the data in chunks. License − Node.js is released under the MIT license.

Express.js

Express is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications. It is an open-source framework developed and maintained by the Node.js foundation.

MONGODB

MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server-Side Public License (SSPL).

MongoDB, the most popular NoSQL database, is an open-source document-oriented database. The term 'NoSQL' means 'non-relational'. It means that MongoDB isn't based on the   table-like

relational database structure but provides an altogether different mechanism for storage and retrieval of data. This format of storage is called BSON (similar to JSON format). SQL databases store data in tabular format. This data is stored in a predefined data model which is not very much flexible for today's real-world highly growing applications. Modern applications are more networked, social and interactive than ever. Applications are storing more and more data and are accessing it at higher rates. Relational Database Management System (RDBMS) is not the correct choice when it comes to handling big data by the virtue of their design since they are not horizontally scalable. If the database runs on a single server, then it will reach a scaling limit. NoSQL databases are more scalable and provide superior performance. MongoDB is such a NoSQL database that scales by adding more and more servers and increases productivity with its flexible document model.

5.2. MODULES

There are Five modules in this project:

1. *ADMIN MODULE*
2. *USER MODULE*
3. *HOSPITAL MODULE*
4. *DOCTOR MODULE*
5. *SHOPS MODULE*

5.2.1. MODULE DESCRIPTION

1. ADMIN MODULE

The admin module provides facility for pet licensing, shopping, online doctor consultation or doctor booking, Grocery section disease diagnose, medicine shopping, video format section for beginners. User can select any feature from this module.

2. USER MODULE

The user module provides the facility to register their pets and access pet related services*.*

3. HOSPITAL MODULE

The hospital module provides the facility for users to communicate with their respective hospital and fix their OP*.*

4. DOCTOR MODULE

The doctor module provides the facility for users to online consultation.

5.SHOPS MODULE

The shops module provides the facility for users to shop pet related medicine and grocery items

6. TESTING AND IMPLEMENTATION

6.1. TEST PLAN

A test plan is a document detailing a systematic approach to testing a system such as a machine or software. The plan typically contains a detailed understanding of the eventual workflow. A test plan documents the strategy that will be used to verify and ensure that a product or system meets its design specifications and other requirements. A test plan is usually prepared by or with significant input from test engineers.

A test plan is made to check that all users of the system **ANIMAL'S DELIGHT** will get required service as mentioned in requirements and plan has been also made regarding the inputs that must be provided to system to deliver the services.

6.2. TESTING PROCEDURES

Testing is an activity to verify that a correct system is being built and is being performed with the intent of finding fault in the system. However, it is not restricted to being performed after the development phase is complete. Testing has been carried out successfully in parallel with all stages of development ANIMAL'S DELIGHT system, starting with requirement specification. Testing results, once gathered and evaluated, provide a qualitative indication of software quality and reliability and serve as a basis for design modification if required. A project has been properly tested using standards of steps that should be followed. It includes steps as follows.

- • Test cases

- • Test data

- • Test results

System checking is process of checking whether the development system is working according to original objectives and requirements. The system has been tested experimentally with test data so as to ensure that system works according to the required specification of the services required by various users of the system. The system found working for test data, and then it is tested it with actual data of college and checked performance of the system.

The different types of test cases that are needed to perform are given below:

• Unit Testing

• Integration Testing

• Validation Testing

• User Acceptance Testing

• Output testing

UNIT TESTING

Unit testing tests the minimal software component, or module. Each unit of the software is tested to verify that the detailed design for the unit has been correctly implemented. In an object-oriented environment, this is usually at the class level, and the minimal unit tests include the constructors and destructors.

INTEGRATION TESTING

Integration testing exposes defects in the interfaces and interaction between integrated components. Progressively larger groups of tested software components corresponding to the elements of the architectural design are integrated and tested until the software works as a system.

I have integrated the modules after the creation of separate ones. Then I tested for its working of certain functionality which includes set of asp forms. I have found that it is working without any problems. So, the integration testing was a success.

VALIDATION TESTING

I have validated all the text fields, check boxes, and dropdown list and radio buttons. The bootstrap properties and also .net validators are used to ensure proper validation. Invalid data insertion has been   prevented.

USER ACCEPTANCE TESTING

User acceptance testing is the one of the very important testing. The system also tested based on the user's view of the system and checked that the services are properly working according to their need.

OUTPUT TESTING

This is a testing technique that checks weather the output is correct against the input. Test has been successfully done for each functionality implemented in the system.

6.3. IMPLEMENTATION

It is the stage of implementation, in which it is ensured that ANIMAL'S DELIGHT system works accurately and effectively before the live operation commences. Confirmation has been made that all are correct and also confirmed that the users of the system will get services with test data and that the system will operate successfully and produce expected result under expected conditions.

In our project we properly installed our system for our client in the following way…

- The application has been built in the localhost system.

- Domain has been bought in the server for ANIMAL'S DELIGHT application.

- The system is hosted to shared server

- File has been properly uploaded to this domain

- Database has been created properly

- Path settings are corrected i.e.; connectivity has been established properly

- Access the application using the URL of domain for the collage

6.3.1. SYSTEM MAINTENANCE

Once the software is delivered and deployed, the maintenance phase starts. Software requires maintenance because there are some residual errors remaining in the system that must be removed as they discovered. Maintenance involves understanding the existing

software (code and related documents), understanding the effect of change, making the changes, testing the new changes and retesting the old parts that were not changed.

These steps have been followed while developing this application for pet licensing and services provided to reduce the needs for maintenance are:

1. More accurately defining the user's requirement during system development.

2. Preparation of system documentation in a better way.

3. Using more effective ways for designing processing logic and communicating it to project team members.

4. Making better use of existing tools and techniques.

5. Managing the system engineering process effectively.

As the use of application has been started, recommendations for new capabilities, modifications to existing functions, and general enhancements are received from users.

7. CONCLUSION

The web application ANIMAL'S DELIGHT simplifies managing the pets and also provides a way to keep, track and access records regarding student performance in accurate and user- friendly way. This system will reduce the time, effort and cost required to manage college. The website helps the users to interact with administrators. User can easily understand the happenings of this system anywhere by a single mouse-click.

This web application helps to update activities and also provides an easy and accurate way to send information to different users as it can be done just by clicks. All together this application improves and make easy management of various activities that are undergoing in the pet animal's basic needs.

7.1. FUTURE ENHANCEMENT

Future Development is very important for each project because it include latest features in the system. It reduces software bugs and problems. It creates strong relationship with user according to their feedback or choices. This system can be enhanced in the future by creating the complete mobile application for managing pet's needs. Another future

enhancement is we can create this through latest design structure with seamless flow. Any notifications alert via phone number and via all other mail type is another future enhancement of this application.

8. BIBLIOGRAPHY

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9. APPENDIX

9.1. SCREENSHOT

9.2. SAMPLE CODE