

IS5109 – IS Project for Community



Haldummulla Veterinary Services Web Portal Group 08

Department of Computing & Information Systems

Faculty of Computing

Sabaragamuwa University of Sri Lanka

September - 2025

Approval of Community Project

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2. Title of the Project: **Haldummulla Veterinary Services Web Portal**

3. Name of the Mentor: **S.T.H.K Senanayake**

4. Mentor's designation: **Government Veterinary Surgeon, Haldummulla**

5. Name of the Internal Supervisor: **Mr. P.G.P.Kumara**

6. Internal Supervisor's designation: **Lecturer (Prob.), Faculty of Computing, SUSL**

For office use only:

Approved/Not approved : Approved

Signature of the Internal Supervisor : 

Suggestions if any :

Date : 30/09/2025

Table of Contents

1. Acknowledgment	5
2. Introduction and Objectives.....	6
2.1 Introduction	6
2.2 Objectives.....	6
3. Analysis.....	7
3.1 Feasibility Study.....	7
3.1.1 Technical Feasibility.....	7
3.1.2 Operational Feasibility	7
3.1.3 Economic Feasibility	7
3.2 Diagrams	8
3.2.1 Use Case Diagram	8
3.2.2 Class Diagram.....	9
3.2.3 Activity Diagram	10
3.2.4 ER Diagram	11
4. Developing Environment.....	12
4.1 Hardware requirements	12
4.2. Software Requirements	12
5. Tables and Structure	13
5.1 Modules	13
5.2 Data Structure.....	14
6. Proposed System	16
6.1 Requirements	16
6.1.1 Functional Requirements	16
6.1.2 Non-Functional Requirements	16
6.1.3 Security Requirements	17
6.2 Uniqueness of the Product.....	17
6.3 Methodology (Agile Methodology).....	18
7. Gantt Chart	19
8. Cost Estimate.....	20
9. Conclusion.....	21

10.	References	22
11.	Request Letter for Approval.....	23
12.	Approval Letter.....	24

1. Acknowledgment

We would like to extend our heartfelt gratitude to the Haldummulla Government Veterinary Office and the Veterinary Doctor for giving us the opportunity to carry out this community project. Their support and cooperation have been invaluable in helping us understand the practical needs for developing this website. We also wish to thank the Faculty of Computing, Department of Computing & Information Systems, for providing us with the knowledge, facilities, and encouragement to take on this initiative.

Our sincere thanks go to our supervisor Mr. P.G.P.Kumara for his continuous guidance, constructive feedback, and encouragement throughout the preparation of this project proposal. His support has been instrumental in shaping our work.

Thank You!

21CIS0004 - E.M.A.K.Ekanayake

21CIS0005 - S.K.A.Sumathipala

21CIS0010 - B.M.M.Sandaruwan

21CIS0022 - G.W.P.G.M.Gunasekara

21CIS0083 - P.D.K.P.Gunawardhana

21CIS0107 - J.A.D.Nirmani

2. Introduction and Objectives

2.1 Introduction

The Haldummulla Government Veterinary Office plays a vital role in supporting livestock management and animal healthcare in the region. However, the absence of a proper digital platform limits the ability to effectively communicate with the farming community, especially dairy farmers who rely heavily on veterinary guidance for their daily operations.

Our community project aims to design and develop a user-friendly website for the veterinary office, with a special focus on addressing the needs of dairy farmers. The website will provide easy access to important services such as vaccination schedules, disease prevention guidelines, breeding information, and awareness programs. In addition, it will also cover other essential veterinary services and provide contact details for quick assistance. By creating this platform, we hope to strengthen the connection between the veterinary office and the local community, improve service accessibility, and enhance the overall efficiency of animal healthcare and dairy farming support.

2.2 Objectives

- **To provide general information** about the veterinary office, including its mission, vision, and key services, through a well-structured Home Page.
- **To enhance service accessibility** by offering details of animal treatment, vaccination services, and other veterinary care through a dedicated Services Section.
- **To keep the community informed** by publishing announcements and notices such as upcoming vaccination campaigns and government programs for farmers.
- **To improve efficiency and convenience** by enabling online appointment bookings for animal checkups and request forms for field visits.
- **To strengthen communication** by providing accurate contact details, including phone numbers, email, office location with Google Map integration, and emergency hotlines if available.
- **To support knowledge sharing for farmers, especially dairy farmers**, by publishing educational resources and informative articles that guide them in animal care, disease prevention, and improved farming practices.

3. Analysis

3.1 Feasibility Study

3.1.1 Technical Feasibility

The proposed website will be developed using React for the frontend and Node.js for the backend. These modern technologies allow for building a scalable, responsive, and interactive platform with improved performance compared to static HTML and CSS websites. React enables the creation of a user-friendly interface, while Node.js supports efficient handling of dynamic data such as appointments and announcements. Both technologies are open-source, well-documented, and widely supported, making the project technically feasible with the skills and knowledge available to the development team.

3.1.2 Operational Feasibility

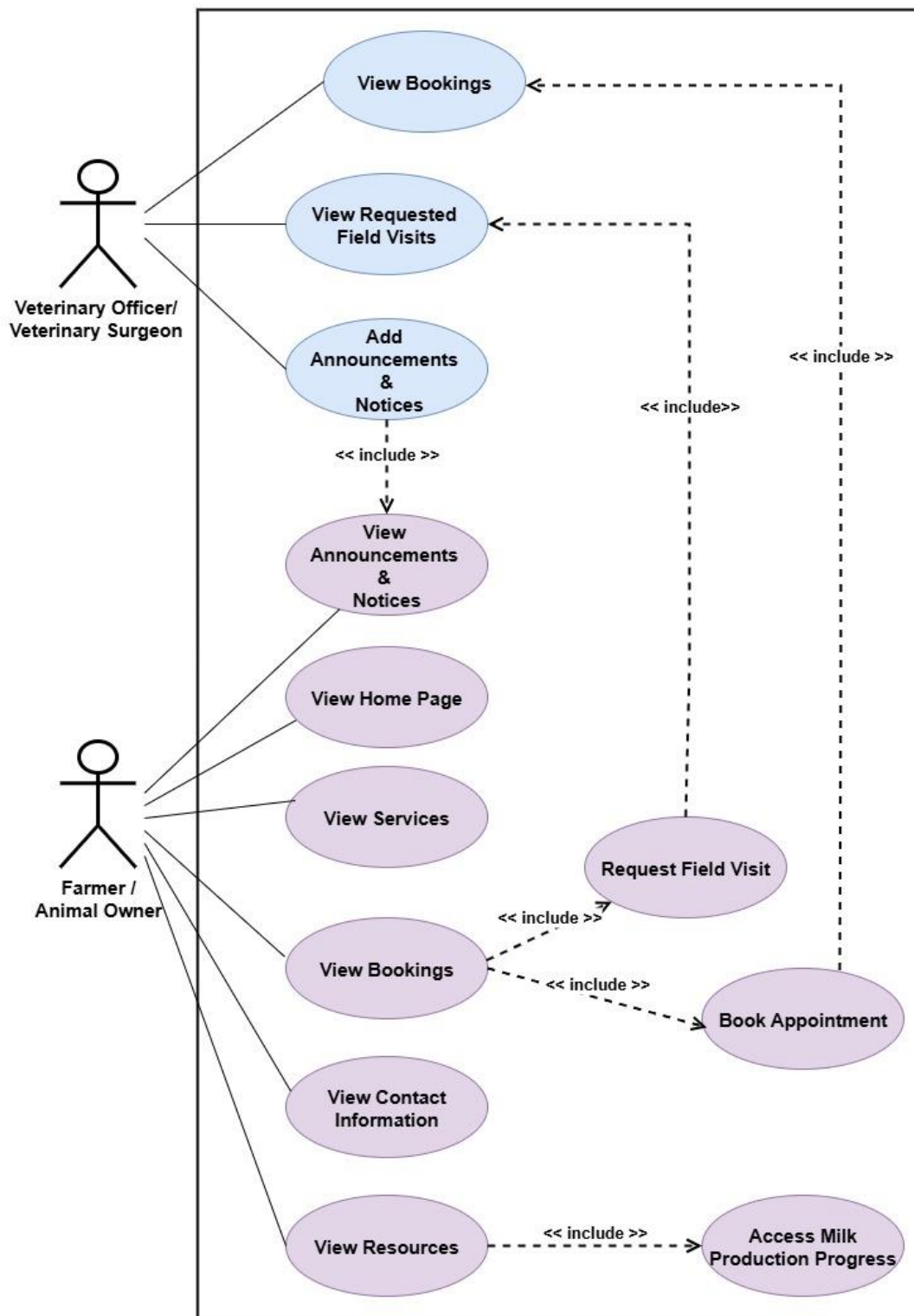
The Haldummulla Government Veterinary Office and its staff will be able to operate the website easily once it is developed. Features like announcements, vaccination schedules, and educational resources can be updated through a simple admin interface designed for non-technical users. The platform will be user-friendly for both veterinary staff and the farming community, especially dairy farmers, ensuring smooth adoption and long-term usability.

3.1.3 Economic Feasibility

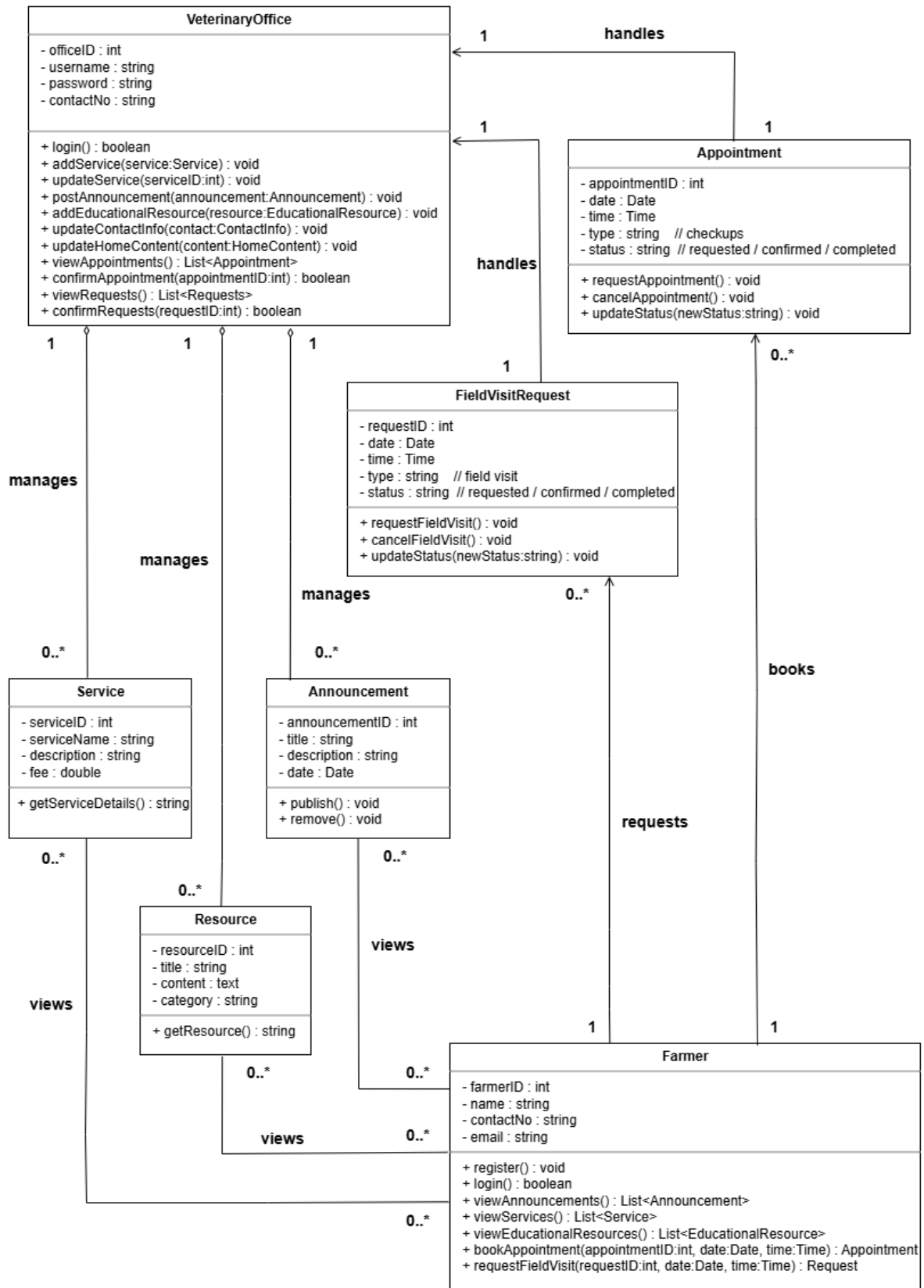
The cost of developing this website will be minimal since it is carried out as a community project. React and Node.js are open-source frameworks, which eliminate licensing costs. The only expenses will be for web hosting and domain registration. Considering the long-term benefits of improved communication, efficient service delivery, and better support for dairy farmers, the project is highly cost-effective and economically sustainable.

3.2 Diagrams

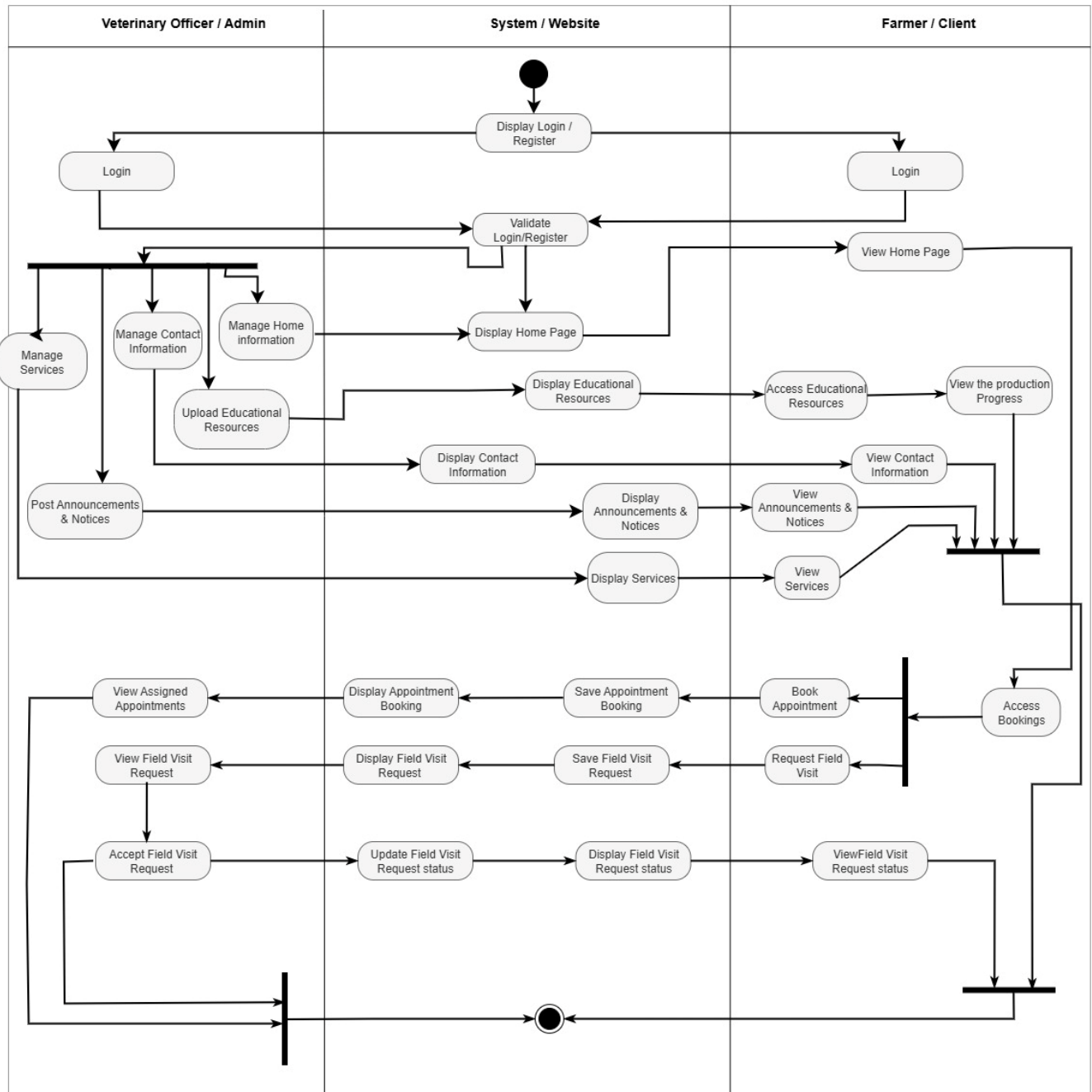
3.2.1 Use Case Diagram



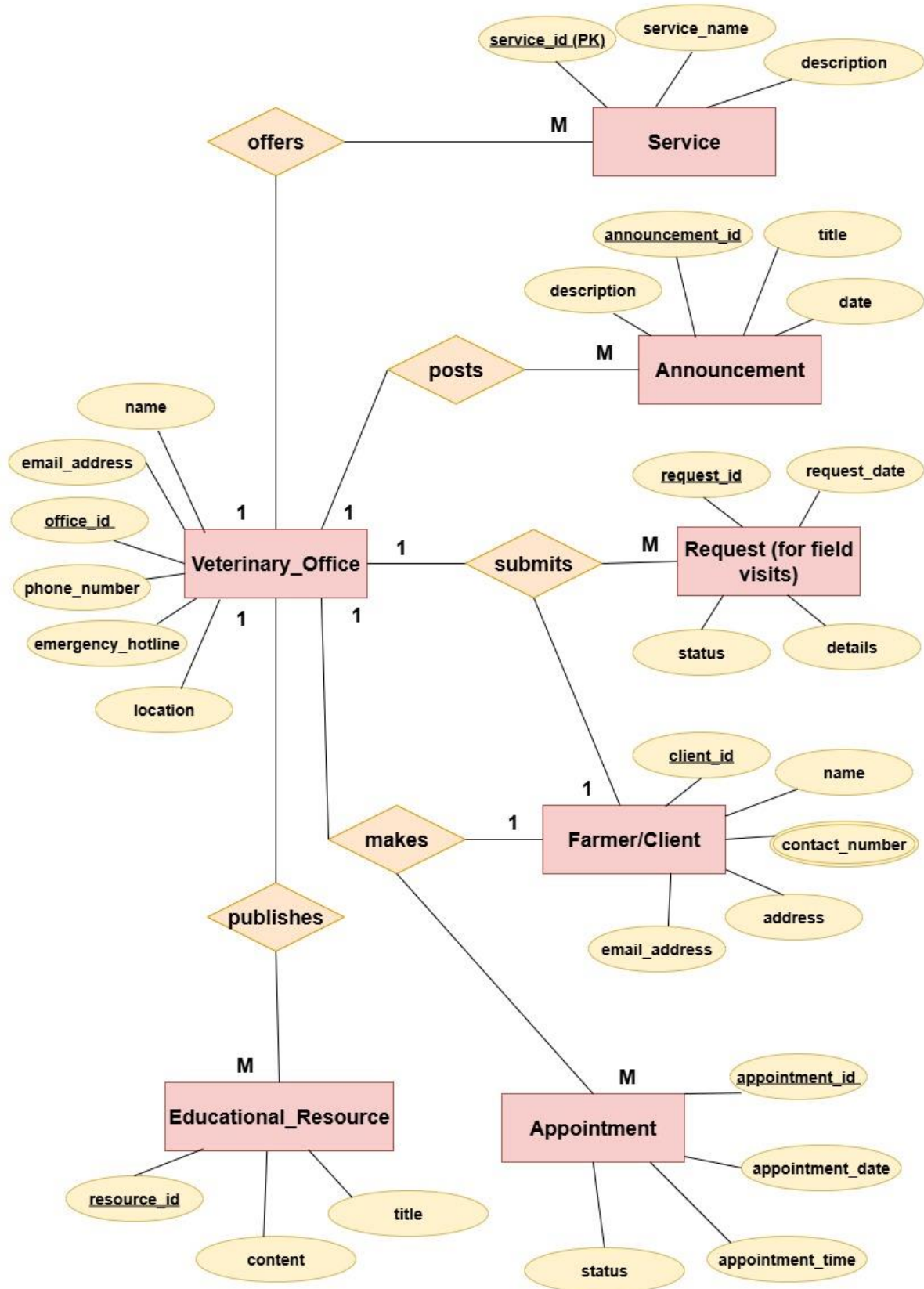
3.2.2 Class Diagram



3.2.3 Activity Diagram



3.2.4 ER Diagram



4. Developing Environment

4.1 Hardware requirements

- ❖ Processor: Intel Core i5 or Ryzen 5 or higher multicore processor
- ❖ Memory: Minimum 8 GB RAM (16 GB recommended)
- ❖ Storage: SSD with at least 256 GB (For fast software installs and builds)
- ❖ Network: High-speed internet connection for data transmission
- ❖ Operating System: High-speed internet connection for data transmission

4.2. Software Requirements

❖ Backend

- **Node.js** – JavaScript runtime for building fast, scalable server-side applications.
- **Express.js** – Lightweight Node.js framework for handling routes and APIs.
- **MongoDB** – NoSQL database for flexible and efficient data storage.

❖ Frontend

- **React.js** – JavaScript library for creating dynamic and responsive user interfaces.
- **Axios** – HTTP client for connecting the frontend with backend APIs.

❖ Development Tools

- **Visual Studio Code** – Popular editor with rich development features.
- **Git** – Version control system for managing code changes.
- **GitHub** – Platform for hosting and collaborating on repositories.
- **Postman** – Tool for testing and debugging APIs.

❖ Other Tools

- **Figma** – Collaborative tool for UI/UX design and prototyping.

5. Tables and Structure

5.1 Modules

In the veterinary office management system project, the modules would be the key components that handle different aspects of the system. Based on the project idea, here are the main modules:

1. User Management Module

This module manages the details of users in the system, including veterinary officers and farmers. It handles authentication and authorization, ensuring that only authorized officers can manage announcements, appointments, and field visit requests, while farmers can access services, resources, and booking features.

2. Appointment Management Module

This is one of the core modules responsible for handling appointment bookings. Farmers can make appointment requests through the system, and veterinary officers can view, approve, reject, or reschedule these requests. This module helps streamline veterinary visits and reduce manual scheduling work.

3. Field Visit Request Module

This module allows farmers to submit requests for veterinary officers to visit their farms for animal treatment or emergencies. Officers can review these requests, assign visits, and update the status (pending, approved, or completed). It provides an organized way to manage on-site services.

4. Announcement & Notice Module

This module enables veterinary officers to publish announcements about vaccination campaigns, government programs, or special notices. Farmers can view these updates on the platform to stay informed.

5. Service Management Module

This module maintains details of the services provided by the veterinary office, such as vaccinations, treatments, and advisory support. Farmers can view the available services to better understand how the office can assist them.

6. Educational Resource Module

This module provides farmers with access to educational materials such as guides, tips, and articles related to dairy farming, livestock management, and animal health. Officers can add or update resources to ensure farmers have access to the latest knowledge.

5.2 Data Structure

Veterinary_Office Table

office_id (PK)	name	email_address	phone_number	emergency_hotline	location

Client Table

client_id (PK)	name	email_address	contact_number	address

Appointment Table

appointment_id (PK)	client_id (FK)	office_id (FK)	appointment_date	appointment_time	status

Request_for_Field_Visits Table

request_id (PK)	client_id (FK)	office_id (FK)	request_date	details	status

Announcement Table

announcement_id (PK)	office_id (FK)	title	description	date

Service Table

service_id (PK)	office_id (FK)	service_name	description

Educational_Resource Table

resource_id (PK)	office_id (FK)	title	content

6. Proposed System

6.1 Requirements

6.1.1 Functional Requirements

The proposed web-based platform for the Government Veterinary Office, Haldummulla, will include the following core functionalities:

1. Online Appointment System

- Farmers can book appointments with veterinary doctors through a user-friendly web interface.
- Automated notifications and reminders will be sent to both farmers and staff.

2. Announcements and Notifications

- Veterinary staff can post updates on vaccination schedules, disease outbreaks, and government initiatives.
- Farmers will receive real-time alerts through the platform.

3. Educational Resource Hub

- Repository of articles, guidelines, and videos on livestock management.
- Resources will be categorized by livestock type and common issues.

4. Farmer Support and Communication

- Secure messaging between farmers and veterinary staff for consultations.
- Discussion forums for farmers to share knowledge and experiences.

5. Data Management

- Centralized storage of appointment records, reports, and uploaded documents.
- Ability for staff to track service history for individual farmers and livestock.

6.1.2 Non-Functional Requirements

1. Performance

- The system must provide quick response times for appointment booking, content access, and notifications.
- The platform should be scalable to support increasing numbers of farmers and staff.

2. Usability

- The interface must be intuitive and available in local languages to ensure accessibility.
- Compliance with web accessibility standards (WCAG) for inclusivity.

3. Reliability

- High system uptime (99.9%) to ensure availability of veterinary services.
- Proper error handling with meaningful user messages.

4. Maintainability

- Modular design to allow updates to individual components without affecting the whole system.
- Proper developer and user documentation for smooth maintenance.

5. Compliance

- Adherence to national e-governance and data protection standards.

6.1.3 Security Requirements

- ❖ Data Protection: All sensitive information (appointments, personal details, consultation history) must be encrypted using SSL/TLS protocols.
- ❖ Access Control: Different user roles (farmers, staff, administrators) with appropriate access levels.
- ❖ Regular Backups: Automated data backups to prevent data loss.
- ❖ Audit Trails: Logging of system activities to ensure accountability and transparency.

6.2 Uniqueness of the Product

The proposed system is unique because it integrates livestock-focused e-governance services into a single accessible platform tailored for the rural farming community in Haldummulla. Unlike generic hospital or appointment systems, this platform emphasizes:

- Agricultural and livestock-specific content curated for farmers' needs.
- Direct communication channels between farmers and veterinary staff, reducing delays in service delivery.

- Localized educational resources to empower farmers with knowledge that directly improves livestock health and productivity.
- Community-driven collaboration, allowing farmers to learn from both experts and peers.

This localized, agriculture-centered approach ensures that the system directly addresses the challenges of livestock management in rural Sri Lanka.

6.3 Methodology (Agile Methodology)

The development of the platform will follow the Agile Methodology, ensuring flexibility and iterative improvement. Key practices include:

- **Sprint Planning:** Defining project tasks in short, manageable cycles (2–3 weeks).
- **Incremental Development:** Delivering working features after each sprint for continuous feedback.
- **Collaboration:** Regular discussions with veterinary staff and farmers to ensure the system meets real-world needs.
- **Testing and Feedback:** Continuous testing of each feature to maintain quality and reliability.
- **Adaptability:** Incorporating stakeholder feedback and evolving requirements into future sprints.

By adopting Agile, the project ensures that the platform remains farmer-centric, adaptable, and capable of delivering value quickly.

7. Gantt Chart

[illegible]

8. Cost Estimate

- ❖ Web Hosting Fees
- ❖ Internet Connection Fees
- ❖ Hardware Costs

9. Conclusion

The proposed web-based platform for the Government Veterinary Office, Haldummulla, aims to improve communication, streamline services, and empower farmers with knowledge and tools to manage their livestock effectively. By implementing features such as online appointments, announcements, and educational resources, the project will significantly benefit both farmers and veterinary staff.

This initiative will not only enhance the efficiency of veterinary services but also contribute to the long-term improvement of livestock health and productivity, supporting the agricultural economy in the Haldummulla region.

10. References

1. Government Veterinary Office, Haldummulla - **Phone: 0572 050 747** (S.T.H.K Senanayake – Government Veterinary Surgeon)
2. Ministry of Agriculture, Sri Lanka. (2023). *Annual Report on Livestock Development*.
3. Food and Agriculture Organization (FAO). (2022). *Improving Livestock Productivity in Developing Countries*.
4. Government Veterinary Services, Sri Lanka. (2024). *Veterinary Office Guidelines*.
5. Academic resources on community web platforms and e-governance (Journal articles, textbooks).

11. Request Letter for Approval

Mrs. K.G. Lohara Chathumini
Coordinator/ IS Project for Community
2025.09.25

To:
Veterinary Surgeon
Government Veterinary Office
Haldummulla

Dear Sir/Madam,

**Request for Approval – Developing an Official Website for Haldummulla
Veterinary Office
(IS5109 IS Project for Community)**

IS5109 - IS Project for Community is a compulsory course module to complete the BSc Honors in Computing and Information Systems offered by the Department of Computing and Information Systems, Faculty of Computing. Every Student must complete the Community Project in their Semester V as a group consisting of 05 – 06 members. This course enables students to implement an IT-based solution for a community problem, preferably within the Sabaragamuwa Province, under the supervision of an internal supervisor

The following students have chosen to develop an Official Website for Haldummulla Veterinary Office, the key objective is to being streamline and enhance the efficiency of information dissemination of the Haldummulla Veterinary Office .

21CIS0004 - E.M.A.K.Ekanayake
21CIS0005 - S.K.A.Sumathipala
21CIS0010 - B.M.M.Sandaruwan
21CIS0022 - G.W.P.G.M.Gunasekara
21CIS0083 - P.D.K.P.Gunawardhana
21CIS0107 - J.A.D.Nirmani

The project will be mutually benefitting to the students as they gain hands-on experience by delivering an IT-based solution to a community problem while contributing their own region for effectively and efficiently managing the leopard conservation.

We kindly seek your consideration, approval, and guidance for initiating this project and throughout its implementation.

Thanking you.

Sincerely Yours,



Mrs. K.G. Lohara Chathumini

12. Approval Letter

Government Veterinary Office
Haldummulla
22. 09. 2025

Head of the Department
Department of Computing and Information Systems
Faculty of Computing
Sabaragamuwa University of Sri Lanka

Community Project Offer – Web Platform Development for the Government Veterinary Office, Haldummulla

Dear Madam,


I am pleased to inform you that the Government Veterinary Office, Haldummulla, has granted the opportunity to third-year undergraduate students of the Computing and Information Systems Degree Program, Faculty of Computing, Sabaragamuwa University of Sri Lanka, to develop a web-based platform.

The platform will connect our office with the community, particularly dairy farmers, while also supporting other livestock owners in the region. Its primary goal is to enhance communication, improve access to veterinary services, and assist farmers in managing the health, productivity, and welfare of their animals.

We are delighted to collaborate on this project and will extend our full support by providing the necessary information and domain knowledge required for its successful completion. We strongly believe this will be an excellent opportunity for your students to gain practical experience while also making a meaningful contribution to the farming community.

Thank you.

Yours sincerely,


.....
Veterinary Surgeon
Government Veterinary Office
Haldummulla

Gov Veterinary Office
Haldummulla