

Progress Report 01: Smart Veterinary System with AI-Based Disease Detection

Course Code: CSE 299

Section: 04

Project Group: 05

Group Members:

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Abstract—This progress report presents the current development status of the Smart Veterinary System with AI-Based Disease Detection. The project aims to develop a web-based platform that predicts possible pet diseases using symptom-based text input and image analysis. The system is being implemented using the Django framework and machine learning techniques. This report outlines the technical approach, system architecture, team responsibilities, and completed milestones.

I. INTRODUCTION

The goal of this project is to develop an AI-assisted veterinary system to help pet owners identify possible diseases through symptom input and image upload. The system provides preliminary guidance before professional consultation.

II. TECHNICAL APPROACH

We decided to implement the system using the Django web framework due to its scalability, built-in security features, and structured MVC (Model-View-Template) architecture.

The system consists of three major components:

- **Frontend Interface:** Developed using HTML, CSS, and Bootstrap to provide symptom input and image upload functionality.
- **Backend System:** Django handles request processing, database management, and integration with the AI model.
- **AI Disease Prediction Module:** Machine learning models (using Scikit-learn and basic deep learning techniques) analyze textual symptoms and images to predict possible diseases.

III. WORK DISTRIBUTION

Before starting full development, we assigned responsibilities among group members to ensure an organized workflow and efficient progress.

Rishat Bin Sultan (ID: 2312559042) is responsible for backend development, including Django project setup, database design, system architecture, and implementation of the authentication system (login and registration).

MD Tamim Hasan (ID: 2232239642) is responsible for dataset collection and preprocessing, researching suitable machine learning algorithms, and developing the AI-based disease prediction model.

Fariha Islam (ID: 2311101642) is responsible for frontend development, including homepage design, user interface implementation, layout structuring, and assisting with system testing and integration.

IV. CURRENT PROGRESS

At the initial phase of development, we focused on environment setup, architectural planning, and task allocation. The completed activities and responsible members are summarized in Table I.

TABLE I
PROGRESS AND RESPONSIBILITIES

Completed Task	Responsible Member(s)
Installation and configuration of Python and Django framework	Rishat Bin Sultan
Creation of initial Django project structure and server configuration	Rishat Bin Sultan
Basic user interface layout planning	Fariha Islam
Preliminary dataset collection planning	MD Tamim Hasan
Discussion and finalization of homepage, login/registration system, and dashboard design	All Members
Definition of system modules (User, Admin, AI Detection, Online Shop)	All Members

V. CHALLENGES AND PREPARATORY DECISIONS

At this stage, the primary challenge is collecting reliable and labeled datasets for pet disease detection. We are currently gathering datasets from open sources and planning manual data cleaning and preprocessing.

VI. FUTURE PLAN

In the upcoming phase, we plan to:

- Complete dataset preprocessing and start model training.
- Implement text-based prediction module.
- Develop dashboard and integrate AI with Django.
- Perform initial testing.

VII. CONCLUSION

The project is in the foundational stage. Environment setup and planning are completed, and responsibilities are clearly assigned. The next phase will focus on AI implementation and system integration.