

Hapivet AI: Intelligent Veterinary Chatbot System

Hackathon Documentation

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1. Introduction

Hapivet AI is a veterinary management platform designed to simplify pet healthcare for both pet owners and veterinarians. This document presents a new feature — an **AI-powered veterinary chatbot** — that enables natural, conversational support for pet-related queries.

Users can enter questions or details such as pet breed, age, disease, or symptoms. The AI model, powered by the **Google Gemini API**, analyzes the input, identifies the medical specialization, and generates veterinary-specific advice. If the pet's condition is severe, the chatbot automatically arranges a doctor appointment by checking slot availability.

2. Problem Statement

Pet owners often face difficulties identifying their pet's symptoms and finding the right specialist. Veterinary clinics also struggle with manual appointment management. Hapivet AI solves these issues by integrating a smart Gemini-powered chatbot that:

- Understands and classifies pet health problems accurately.
- Provides veterinary-based responses.
- Schedules doctor appointments according to specialization and time slots.

3. Objective

The goal is to create an **AI Veterinary Chatbot System** that:

- Provides intelligent and empathetic responses to pet-related queries.
- Identifies medical specializations automatically (e.g., Cardiology, Dermatology).
- Automates doctor appointment booking using Gemini API integration.

4. System Architecture

- **User Interface:** Chatbot UI for real-time conversation and booking.
- **AI Engine:** Uses Google Gemini API to process user questions and generate veterinary responses.
- **Doctor Management:** Stores doctor specialization and availability data.
- **Database:** Manages chat history, pet information, and appointments.

5. Prompt Design for the Chatbot

The chatbot's intelligence depends on a structured prompt that guides how it interprets user input and responds appropriately.

Final Prompt (Gemini-based Model)

You are an AI Veterinary Assistant for Hapivet AI.

Your purpose is to interact with users and provide veterinary-related responses. The user will enter questions or details related to their pet | such as disease, breed,

Follow these steps carefully for every conversation:

1. Understand and analyze the pet's details (breed, age, symptoms, etc.).
2. Based on the information, identify the problem specialization | for example:
 - Cardiology (heart-related issues)
 - Dermatology (skin-related issues)
 - Orthopedics (bone/joint problems)
 - General Medicine (common illness)
3. Analyze the condition severity:
 - If mild, suggest possible home care or preventive actions.
 - If severe, recommend a veterinary consultation.
4. Ask the user for a preferred appointment slot.
5. Check doctor availability:
 - If available, confirm the slot.

- If unavailable, suggest alternative times.
- 6. If no doctor for that specialization exists, mark the case as "on hold."
- 7. Maintain empathy, professionalism, and simplicity.
- 8. Ensure responses are short, friendly, and look like a chatbot.
- 9. If unclear about the condition, advise seeing a doctor directly.

Example:

User: "My 2-year-old cat is not eating properly and has a swollen stomach."

AI: "That sounds like a gastrointestinal issue. Based on your input, I'll connect you to our general medicine specialist. Would you like to book an appointment?"

6. Expected Outcomes

- Real-time veterinary assistance for pet owners.
- Efficient doctor appointment automation.
- Accurate specialization detection for better diagnosis.

7. Challenges and Solutions

Challenge	Solution
Mapping symptoms to correct specialization	Used keyword extraction with prompt rules.
Handling uncertain or incomplete inputs	Added clarification prompts.
Avoiding overlapping appointment slots	Implemented real-time slot checking.
Ensuring response accuracy	Used Gemini model instructions with veterinary domain prompts.

8. Future Enhancements

- Integration with Google Calendar for appointments.
- Voice-enabled veterinary chatbot.
- Image upload for skin or wound diagnosis using Gemini Vision API.

9. Conclusion

The Hapivet AI Veterinary Chatbot powered by Gemini brings intelligent, accessible, and real-time veterinary support to pet owners. By integrating conversational AI with

appointment scheduling, the system bridges the gap between symptom understanding and professional consultation.

Keywords: Veterinary Chatbot, Gemini API, AI Assistant, Pet Health Management, Appointment Scheduling, Animal Care.