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Smart Go-shala: Cow welfare solution

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Abstract: Smart Go Shala is an innovative approach to modernize traditional cow-based learn ing centers by using digital tools and technology. It aims to combine ancient Indian knowledge about cows, agriculture, and natural living with smart solutions like mobile apps, digital classrooms, and interactive learning materials. Through this system, stu dents can learn about the importance of cows in Indian culture, organic farming practices, and sustainable living in a more engaging and effective way. The Smart Go Shala helps preserve our heritage while making education more accessible, interactive, and suitable for the modern world.

Keywords: OTP (One Time Password), QR Code Scanner, Web Application, smart phone applications, Mail Confirmation, Entry System, Dr. Pannel, Admin Pannel, Cow Tretment, Milk Production, Cow Health, Financial Benefits etc.

I. INTRODUCTION

India has a rich cultural heritage that includes a deep respect for cows and nature. Traditionally, cows have played an important role in Indian society—not just as animals that give milk, but as symbols of health, agriculture, and spirituality. In ancient times, students used to learn about cows, farming, and nature in special places called Go Sha las. These were not just shelters for cows, but centers of learning where people gained knowledge about natural living, organic farming, and Indian traditions.

However, with the rise of modern education and technology, this kind of learning has slowly faded away.Smart Go Shala is a modern idea that aims to bring back the ancient values of Go Shalas using today's technology. It is a digital and interactive version of the traditional Go Shala, where students can learn about the importance of cows, sustainable farming, environment, and Indian culture in a smart and engaging way. The main goal of Smart Go Shala is to blend traditional wisdom with modern education tools.

This way, students can stay connected to their roots while also keeping up with the latest developments in science and technology.In a Smart Go Shala, learning is done using smart boards, mobile apps, videos, animations, and online classes. Students don't just read textbooks—they also watch real-life examples of how cows help in farming, how cow-based products are made, and how natural methods can improve health and the environment. For example, students can learn how cow dung is used to make organic fertilizer, how cow urine (gomutra) can be used for natural medicines, and how traditional Indian farming methods are good for the soil and the planet.

In recent years, the management of cow shelters, or Go Shalas, has faced challenges due to traditional, paper-based methods that are time-consuming, error-prone, and inefficient. With increasing awareness about animal welfare and the need for systematic care of cows, there is a strong demand for a digital solution that can streamline operations. The **Smart Go Shala App** is designed to meet this need by offering a user-friendly platform to manage daily milk production, feeding schedules, and health records of cattle.

This application provides role-based access for administrators, caretakers, and veterinary staff, ensuring each user has the tools they need for efficient management. By digitizing record-keeping and enabling real-time data entry and tracking, the app helps improve productivity, transparency, and overall animal care in Go Shalas.

The system is scalable, easy to use, and built with modern web and mobile technologies, making it suitable for both small shelters and large dairy farms. The Smart Go Shala App bridges the gap between traditional Go Shala management and digital convenience.

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II. LITERATURE SURVEY

SR No.	Author Name	Paper Name	Publication Name	Description
1	Arvind Sharma, Catherine Schuetze, Clive J.C. Phillips	The Management of Cow Shelters (Gaushalas) in India, Including the Attitudes of Shelter Managers to Cow Welfare.	*Animals* (MDPI), e-ISSN: 2076-2615, Volume 10, Issue 2, February 2020	Field study of 54 gaushalas across 6 Indian states; analyzes practices and attitudes towards cow welfare.
2	Clive J.C. Phillips	The Cow in India: Welfare Implications of Being Sacred.	*Livestock Science*, ISSN: 1871-1413, Volume 139, Issues 1–2, October 2011.	Discusses the implications of religious reverence on cow welfare and the consequences in gaushalas.
3	G. Girish et al.	Status of Cow Shelters in Karnataka	*Indian Journal of Animal Sciences*, ISSN: 0367-8318, Volume 86, Issue 9, September 2016	Survey of gaushalas in Karnataka with focus on infrastructure, feeding, and veterinary care.
4	Catherine Schuetze	Cows and Culture: The Role of Gaushalas in Indian Animal Ethics	Society & Animals, ISSN: 1063-1119, Volume 26, Issue 1, 2018	Explores cultural and ethical aspects of cow protection in gaushalas and their role in Indian society.

III. PROPOSED SYSTEM

The proposed system introduces a structured, technology-assisted framework to enhance the **management and welfare monitoring of cow shelters (gaushalas)** in India. This system is designed to address the current shortcomings in animal welfare, record-keeping, health monitoring, and resource optimization that were identified during the literature survey.

This system integrates IoT devices, RFID tags, and smart sensors to monitor vital health parameters such as body temperature, heart rate, and movement in real-time. It includes a centralized dashboard for caretakers to track individual cow health, feeding schedules, and milk production data. Automated alerts are generated in case of abnormal health readings or emergencies. The system also uses solar-powered equipment to support sustainability. By digitizing records and enabling remote monitoring, the Smart Go Shala System aims to improve operational efficiency, ensure better animal care, and promote transparency in Gaushala management. SmartGoshala is an advanced, technology-driven system designed to modernize the management of traditional cow shelters, known as *Goshalas*.

This system aims to enhance the overall welfare of cows and streamline daily operations through automation and digital monitoring. Each cow is registered with a unique profile that includes details such as age, breed, health status, and medical history.
The system supports health monitoring through IoT devices or manual data entry, helping to track vital signs, vaccination schedules, and detect illnesses early. Feeding and nutrition are managed efficiently with scheduled plans and dietary data, ensuring cows receive balanced nutrition.

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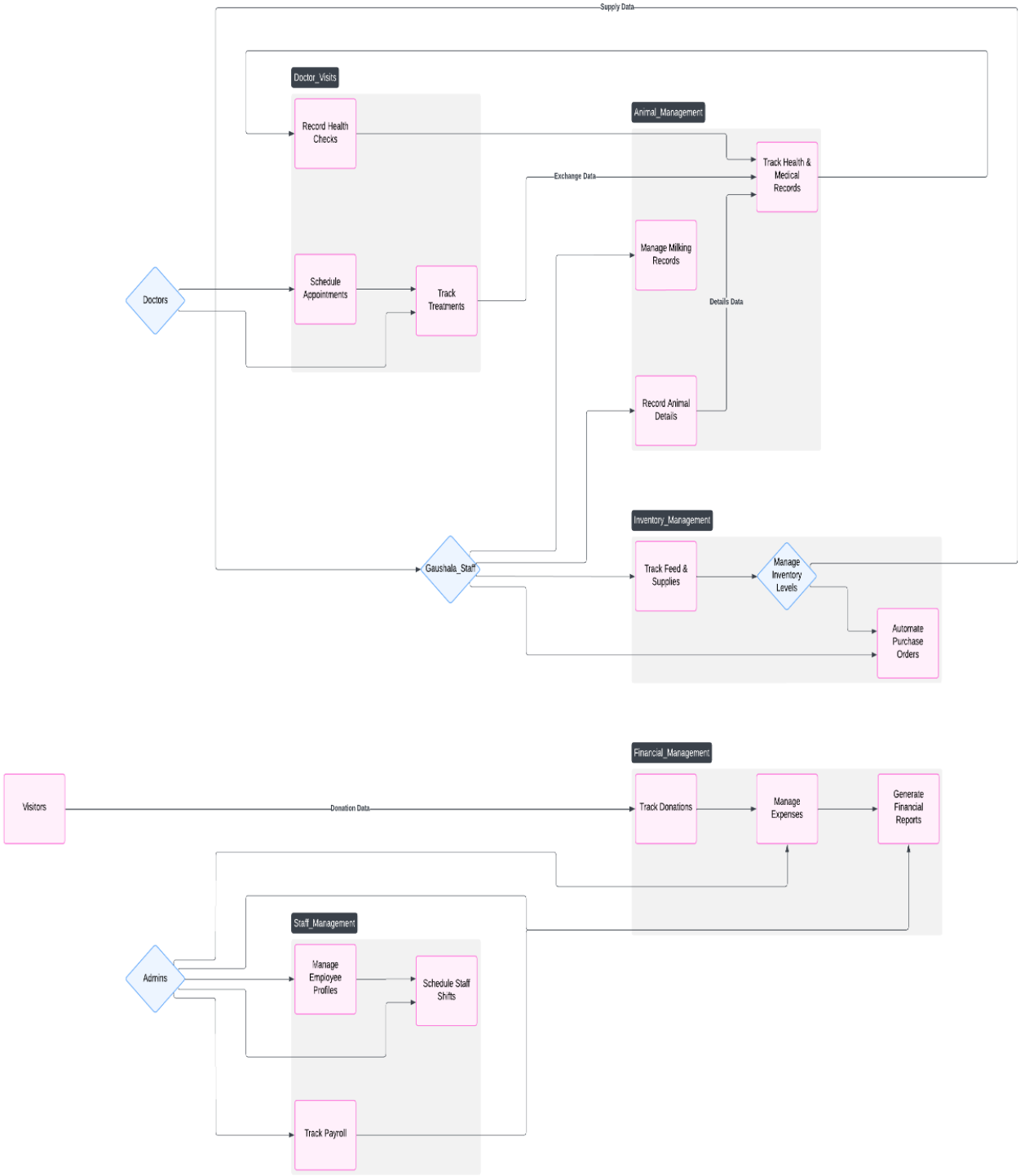
In addition, SmartGoshala provides tools for resource management, allowing caretakers to monitor and optimize the use of fodder, water, electricity, and other essentials. It also includes a donation and sponsorship module, which allows users to contribute digitally, adopt cows, and view transparent reports of their contributions. Daily activities, staff duties, and compliance reports are maintained digitally for easier management and oversight. Overall, SmartGoshala combines compassion with innovation to create a sustainable, efficient, and transparent ecosystem for cow care.

IV. SYSTEM ARCHIECTURE



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The proposed architecture for the digital Gaushala (cow shelter) management system provides an integrated framework to streamline the operations and welfare activities within a shelter. The system facilitates interactions between multiple stakeholders such as doctors, shelter staff, administrators, and visitors. Doctors are responsible for scheduling appointments, tracking treatments, and recording health checks of the animals. These records feed directly into the animal management module, which also includes the maintenance of animal details, milking records, and overall health and medical histories.

Gaushala staff are actively involved in recording animal data and managing the daily routines of care and feeding. Inventory management plays a key role in ensuring that adequate levels of feed, medicine, and supplies are maintained. The system tracks inventory levels in realtime, and in cases of shortage, it can automate the generation of purchase orders. Administrators are tasked with managing employee profiles, scheduling staff shifts, tracking payroll, and overseeing the operational flow within the shelter. The staff management module ensures efficient human resource utilization. Financial management is another essential component of the system. It records donations made by visitors and well-wishers, manages expenses, and generates financial reports to ensure transparency and accountability. The inclusion of a donation data stream allows visitors to contribute and track the impact of their support. Overall, this system ensures better resource planning, improved animal welfare monitoring, reduced manual effort, and enhanced transparency in gaushala operations. It bridges traditional shelter practices with modern technological tools for efficient and compassionate management.

V. SYSTEM REQUIREMENTS

1. Functional Requirements
- Cow Registration & Tracking
- Ability to register new cows with details like ID, breed, age, health history, photos.
- RFID tag or QR code integration for identification.

Health Monitoring
- Log daily health stats (temperature, appetite, activity).
- Alert system for abnormal parameters.
- Schedule and log veterinary visits, vaccinations, and treatments.

Feeding Management
- Define individual feeding schedules based on cow profile.
- Log feed consumption and monitor supply levels. Alerts for missed feeding or low inventory.

2.Hardware Requirements
- Server Quad-core CPU, 8 GB RAM, 250 GB SSD
- IoT Devices (optional) Temperature/humidity sensors, RFID readers
- Client Devices Smartphone or PC with internet access

3.Software Interfaces

Operating System - Linux/Windows
Backend Framework - Python (Django/Flask) or Node.js
Frontend - HTML/CSS/JS + React or simple Bootstrap
Database - MySQL / PostgreSQL

VI. ACKNOWLEDGMENT

I would like to express my sincere gratitude to all those who supported and guided me throughout the development of the *Go Shala Cow Welfare Solution* project.
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VII. CONCLUSION

The *Go Shala Cow Welfare Solution* project was developed with the objective of improving the overall management and well-being of cows in goshalas through the use of technology. By integrating features such as cow registration, health tracking, feeding schedules, shelter monitoring, and staff management, the system aims to provide a comprehensive platform that ensures better care and organization. Throughout the development process, special attention was given to usability, efficiency, and real-world applicability. The system is designed to be scalable, secure, and user-friendly, making it accessible even to caretakers with minimal technical knowledge.

REFERENCES

[1] Patel R., Sharma A., "Digital Goshala Management System Using Web Technologies", *International Journal of Scientific Research in Engineering and Management (IJSREM)*, ISSN: 2582-3930, Volume 6, Issue 2, February 2023.

[2] Yadav S., Chauhan M., "Animal Health Record System for Indian Goshala", *International Journal of Research in Engineering, Science and Management (IJRESM)*, ISSN: 2581-5792, Volume 4, Issue 10, October 2021.

[3] Ministry of Fisheries, Animal Husbandry & Dairying, Government of India, "Rashtriya Gokul Mission – Guidelines and Implementation Framework", 2022. [Online]. Available: https://dahd.nic.inStephen Lee, Srinivasan Iyengar, David Irwin, Prashant Shenoy, "Shared Solar-powered EV Charging Stations: Feasibility and Benefits" 2016 IEEE

[4] GoI, "National Programme for Bovine Breeding and Dairy Development", Department of Animal Husbandry & Dairying, [Online]. Available: https://dahd.nic.in

