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GOWCART

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ABSTRACT: The global livestock market plays a pivotal role in agriculture and rural economies, yet traditional trading methods often present challenges such as inefficiencies, high transaction costs, and communication barriers. This abstract presents the concept of a Digital Platform for Livestock Trade, designed to facilitate the buying and selling of animals in a more streamlined and efficient manner. The platform aims to digitize livestock transactions, benefiting farmers, sellers, and buyers by providing a seamless, secure, and transparent marketplace. The primary objectives of the platform are to reduce time and costs associated with livestock trading, minimize animal wastage, and enhance market reach for both small-scale and large-scale farmers. Users can register on the platform, list animals for sale, or browse listings based on specific filters such as breed, age, health condition, and location. Sellers can provide detailed animal profiles including photographs, veterinary reports, and price history to ensure informed decision-making by buyers. A key feature of the platform is its smart matching algorithm that connects buyers with sellers based on mutual preferences, ensuring faster and more relevant transactions. Additionally, the platform integrates secure payment gateways and real-time tracking of animal transportation, fostering trust and transparency in each trade. Moreover, the platform offers analytics tools that help farmers and sellers track market trends, pricing fluctuations, and demand patterns, thus enabling data-driven decisions. Additionally, the platform incorporates automated price negotiations, in-platform messaging, and real-time bidding, further streamlining communication between buyers and sellers. To ensure security and trust, the platform provides secure payment options with escrow services, safeguarding both parties during transactions. Once a sale is completed, the platform assists with logistics by offering animal transportation services, enabling buyers to track deliveries in real time, thus reducing the risk of delays and animal stress during transport.

KEYWORDS: Livestock Market, Rural Development, Agriculture, Domestic Animals

I. INTRODUCTION

Agriculture's digital transformation provides an opportunity to modernize the trade of domestic livestock, including cows, buffaloes, bulls, and goats. The Digital Domestic Platform for Domestic Animals offers an accessible, scalable online marketplace, connecting farmers and buyers beyond traditional local markets. As agriculture embraces digital transformation, the trade of domestic animals such as cows, buffaloes, bulls, and goats presents a significant opportunity for technological innovation. Traditionally, farmers and buyers have relied on local markets and in-person interactions to exchange livestock a method that can be inefficient, time-consuming, and limited in scope. This traditional approach often hampers market access, transparency, and the ability to make informed decisions. The Digital Domestic Platform for Domestic Animals addresses these challenges by creating an accessible and scalable online marketplace, serving as an intermediary between buyers and sellers. Farmers can list detailed animal profiles, including health records, breed information, and pricing, while buyers can browse, compare, and purchase animals through a secure and streamlined process. This digital platform expands the reach of farmers, connecting them to a wider market.

The platform's backend is powered by Node.js and Express, providing robust server-side functionality and ensuring efficient handling of requests. For the user interface, React is employed to deliver a dynamic, responsive experience that is intuitive for both farmers and buyers. The use of SQL databases allows the system to manage large volumes of

structured data effectively, supporting complex relationships and queries necessary for handling detailed livestock profiles and transactions.

Ultimately, this Digital Domestic Platform modernizes the livestock trade by promoting efficiency, transparency, and sustainability. It improves the economic outlook for farmers and transforms the way domestic animals are bought and sold. Maharashtra, being one of the key agricultural states in India, relies heavily on these markets for sustaining rural incomes. However, many challenges persist, particularly in terms of market transparency, price discovery, and accessibility for smaller traders and farmers. In addition, the traditional nature of these markets limits the reach of both buyers and sellers, often restricting them to local areas and preventing broader economic integration. The absence of a streamlined communication channel further exacerbates these inefficiencies. The economic impact of domestic animal markets is multifaceted. For rural farmers, the sale of livestock represents a vital source of income, often accounting for a substantial portion of their annual earnings. This income not only supports household consumption but also enables investments in agricultural inputs, education, and healthcare, thereby contributing to overall community development.

Additionally, these markets create employment opportunities, not just for livestock traders, but also for ancillary services such as transportation, veterinary care, and feed supply. With the rapid penetration of mobile technology in rural India, there is an emerging opportunity to modernize these markets and make them more efficient.

II. METHODOLOGY

Market Research encompasses several key aspects. It involves examining farmers and sellers, requirements and challenges, evaluating the market's size and potential for expansion, and studying competitors. The focus is on comprehending how the platform can minimize waste in terms of time and money, reduce animal mistreatment, and bridge communication gaps and market inefficiencies. Additionally, the research process includes collecting user preferences, evaluating a prototype, and making improvements to the platform to ensure it effectively addresses user needs.

Needs Assessment: This phase entails determining essential components like up-to-the-minute pricing, protected payment methods, and straightforward communication pathways between growers and buyers. The platform must incorporate mechanisms to enhance transaction efficiency, decrease animal waste through prompt logistics, and offer market insights to reduce inefficiencies. Furthermore, it should be easy to navigate, available on both mobile devices and web browsers, and backed by a support team to handle any emerging concerns. The architectural framework for an online animal marketplace employs a client-server model, featuring web and mobile interfaces for convenient access. The backend infrastructure utilizes micro services to handle essential functions such as user verification, animal postings, financial transactions, and user interactions. The platform incorporates features like dynamic pricing, protected payment processes, and messaging capabilities, along with integrated logistics to minimize animal waste. Data-driven insights are used to reduce market inefficiencies, while the system is engineered for expandability and ease of use. The examination of market structure involves evaluating several factors: the quantity of buyers and sellers, obstacles to market entry and exit, information accessibility, and product diversity. These structural elements shape the market environment for producers and other marketing entities. Market performance is evaluated using four criteria: technological advancement, focus on developing marketing institutions, enhanced resource utilization efficiency, improved product quality, and optimized marketing services at minimal cost.

The study gathered both primary and secondary data. Primary information was collected through direct observation and questionnaire-based interviews with respondents. Secondary data was obtained from various literary sources, including books and journals, to supplement the primary data. The collected information was processed using qualitative and quantitative methods and presented as descriptive text and numerical tables. Data analysis employed a descriptive approach.

III. SYSTEM FEATURES AND IMPLEMENTATION

Project implementation refers to the phase where the planned project activities are executed to achieve the project goals. It involves coordinating resources, managing tasks, and ensuring that the project is completed as per the schedule, budget, and quality standards. This phase also includes monitoring progress, solving issues, and adapting strategies as needed to ensure successful project delivery.

The GOWCART is structured into several key modules that work together to provide a smooth and efficient user experience. The User Registration and Login Module is the foundational component of the platform, allowing both buyers and sellers to create an account and securely log in. During the registration process, essential user details such as name, mobile number, email address, and location are collected. Once registered and authenticated, users can access the core functionalities of the website, including browsing available animals or posting listings for sale. The Animal Listing Module is designed specifically for sellers to post animals they wish to sell on the platform. Sellers are required to provide comprehensive details for each animal, including its type (such as cow, buffalo, goat, etc.), breed, age, weight, milk production capacity (if applicable), gender, and price. Additionally, the seller can upload clear images of the animal, which are stored alongside the listing in the database. This ensures that buyers get a transparent view of the animal before making any decisions.

One of the most important components is the Animal Search and Filter Module, which significantly enhances user convenience by enabling buyers to search animals based on various filters. These filters include animal type, breed, age, price range, milk production capacity, and location. This allows users to quickly narrow down the listings and find animals that meet their specific requirements without having to browse through irrelevant entries.

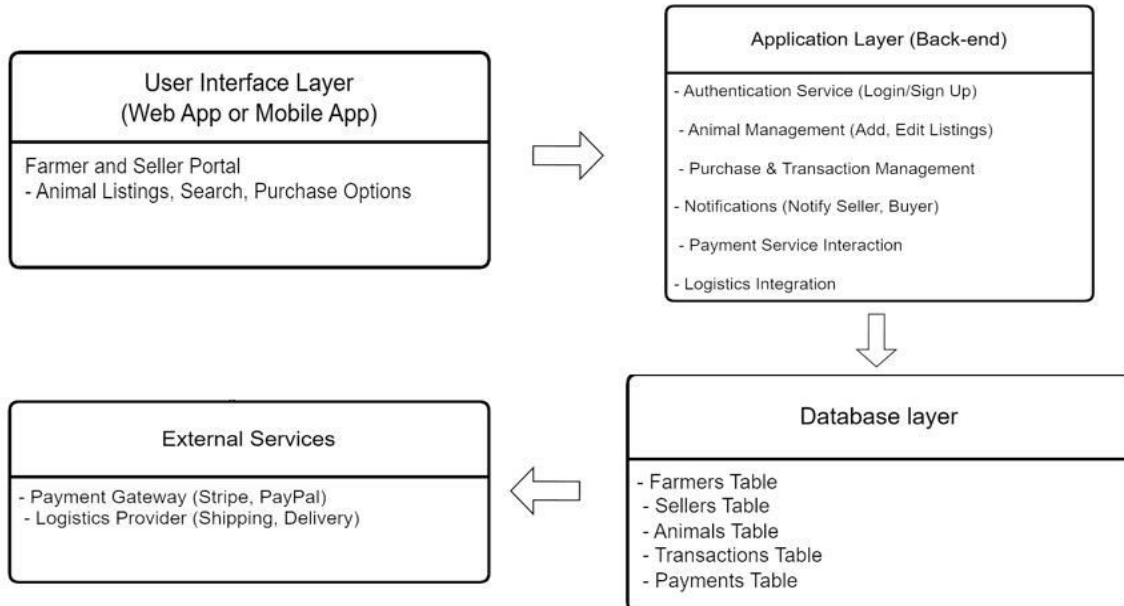


Fig 1. System Architecture

The Seller Information Display Module accompanies each animal listing and provides details about the seller to facilitate communication. The module displays the seller's name, contact number, and address or location (such as village or city), making it easier for interested buyers to identify and reach out to nearby sellers. This module plays a key role in improving direct connectivity between buyers and sellers. In future updates, this module could also incorporate a secure internal messaging system to maintain seller privacy and prevent misuse of contact details. To make the platform even more locally relevant and practical, the Location-Based Filtering Module allows users to search for animal listings that are geographically close to them. This feature supports district-level or pin code-based filtering within Maharashtra, helping users minimize travel time and transportation costs by choosing animals located nearby.

Lastly, the Image Upload and Display Module ensures that sellers can upload multiple high-quality images of the animals they are listing. This module takes care of validating images based on size and format, and ensures they are displayed correctly alongside animal details. For buyers, visual confirmation plays a crucial role in assessing the animal's health, size, and condition before proceeding with contact or negotiation.

IV. PROPOSED SYSTEM

The proposed system for GOWCART is a comprehensive mobile-based application aimed at transforming the traditional methods of livestock trading into a modern, digital experience. Specifically designed for farmers, animal breeders, and rural users, GOWCART acts as an online marketplace where users can conveniently buy and sell domestic animals such as cows, buffaloes, goats, and horses. The platform addresses the common challenges faced in traditional animal trading—like limited reach, lack of transparency, and logistical issues—by creating a centralized and user-friendly application accessible via smartphones.

The system allows users to register and log in to create a secure profile, enabling them to manage their listings and view other sellers' details. Sellers can upload detailed information about the animals they wish to sell, including type, breed, age, price, health status, and images, making the listing more informative and trustworthy. A breed dropdown and category-wise classification help buyers filter and search animals efficiently. Additionally, a location-based search feature is integrated so that buyers can find animals available in their nearby area, reducing the complexity of transport and communication.

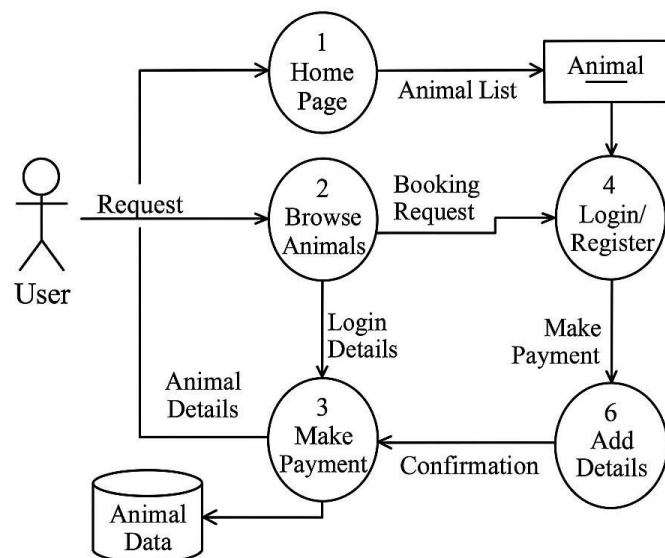
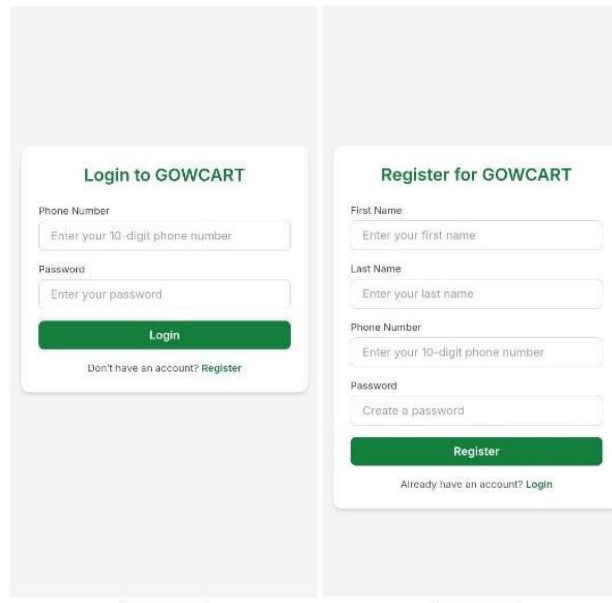


Fig 2. Data Flow Diagram

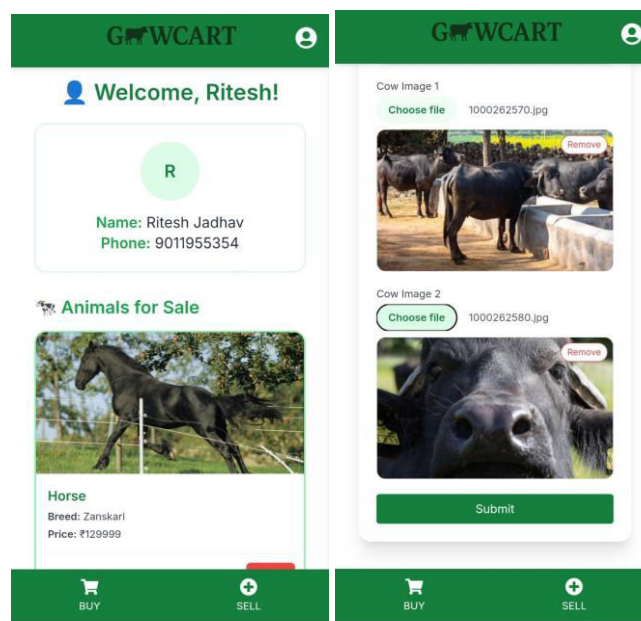
On the backend, GOWCART utilizes cloud-based databases such as Firebase or Mongo DB to store user and animal data securely and in real-time. The application architecture includes a well-organized UI/UX design for smooth navigation between functions like “Buy”, “Sell”, and “Delete” listings. Notifications and basic analytics can also be implemented in future updates to enhance user engagement.

The system aims to bridge the digital divide in rural areas by offering a simple, intuitive interface tailored for low-tech users, while still providing advanced features that ensure efficiency and reliability. By digitizing the livestock marketplace, GOWCART not only improves accessibility and speed of transactions but also fosters transparency, trust, and broader market reach for rural farmers. The proposed system represents a step forward in integrating agriculture with digital technology, ultimately empowering the farming community and improving their economic opportunities.

V. RESULTS

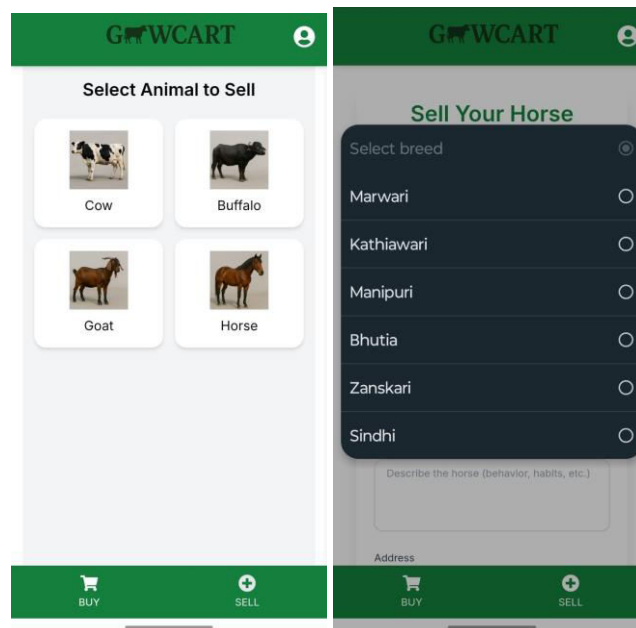


The images show the Login and Registration interfaces of the GOWCART mobile application, designed with a clean and minimalistic green-and-white theme for a modern and user-friendly experience. The Login screen includes input fields for a 10-digit phone number and password, a prominent green "Login" button, and a registration prompt for new users. The Registration screen allows new users to create an account by entering their first name, last name, phone number, and password. It also includes a green "Register" button and a link back to the login page. Both screens are clearly structured to guide users through authentication with ease and clarity, reflecting thoughtful UI/UX design practices tailored for mobile use.



The image displays the user profile dashboard of the GOWCART mobile application. It welcomes the user with their name and phone number shown below a circular avatar labelled with the initial "R." The interface features a section

titled "Animals for Sale," where the user's listed animals are displayed. In this example, a Zanskari breed horse is shown with an image, priced at ₹1,29,999. The layout is clean and organized, with a green colour scheme that aligns with the agricultural theme of the app. At the bottom, a navigation bar offers "BUY" and "SELL" options, making it easy for users to manage their listings and navigate the app. The screen is intuitive, making profile and listing management straightforward for sellers.



The images depict two key screens from the GOWCART mobile app. The first shows a "Select Animal to Sell" screen with options for Cow, Buffalo, Goat, and Horse, each in a clean, image-based card layout, making selection easy. The second screen, "Sell Your Horse," features a dropdown menu for selecting the horse breed from common Indian breeds and input fields for describing the animal and adding an address. Both screens maintain a consistent green-themed design with a fixed BUY and SELL navigation bar, offering a simple, user-friendly interface for smooth selling.

VI. DISCUSSION

A. Significance

GOWCART plays a vital role in transforming the traditional livestock trading system by introducing a digital platform specifically designed for farmers, sellers, and buyers in rural India. Traditionally, the sale and purchase of animals were done through physical markets or word-of-mouth, which limited reach and often involved middlemen. GOWCART addresses these inefficiencies by offering a mobile-based, user-friendly application that allows users to directly list, browse, and connect over livestock trades. This transition to a digital format not only streamlines the process but also enhances transparency, accountability, and access to a larger market, which is especially significant for remote communities that have limited resources.

B. Challenges

Despite its promise, GOWCART faces several challenges in its implementation and widespread adoption. One of the primary concerns is digital literacy, as many users in rural areas may not be familiar with mobile apps or internet usage. There is also the issue of trust—ensuring that listings are genuine, prices are fair, and animals are as described. Connectivity issues in remote villages can also hinder smooth operation of the app. Furthermore, the app needs to cater to a linguistically diverse audience, which means multilingual support and regional customization are essential.

C. Contribution

The application contributes meaningfully to the agriculture and livestock sector by simplifying the process of selling and buying animals. It enables users to upload animal photos, select breeds, set prices, and add descriptions and contact

details—all from a smartphone interface. Key features such as the breed selection dropdown, location-based search, and direct calling options empower both sellers and buyers to make informed decisions. Additionally, GOWCART helps farmers expand their customer base beyond local markets and facilitates quicker sales.

D. Future Direction

To improve its impact and scalability, GOWCART can explore several enhancements in the future. Integrating features such as AI-driven breed recognition, automated pricing suggestions, and animal health indicators can greatly improve user trust and efficiency. Adding secure payment systems or escrow services could help facilitate safer transactions. The platform could also incorporate educational content, such as animal care tips, veterinary contacts, and feeding guidelines, to support user knowledge.

E. Potential Impact

If effectively scaled and maintained, GOWCART could have a profound impact on the rural economy and livestock sector. It empowers farmers by providing them direct market access, which can lead to better pricing and increased income. By minimizing the role of intermediaries, it ensures fairer trade and builds trust in transactions. The digital records and structured listings bring a new level of professionalism and data-driven decision-making to animal trading. In the long term, such platforms can contribute to digital inclusion, rural development, and the modernization of agriculture, positioning GOWCART as a key enabler in India's agro-tech landscape.

VII. CONCLUSION

In conclusion, our project aims to revolutionize the traditional animal market by significantly reducing the workload of farmers. By providing a user-friendly platform where farmers can browse a comprehensive list of animals from the comfort of their homes, we eliminate the need for them to visit multiple markets or contact numerous sellers in search of the right animal. This convenience not only saves time but also enhances efficiency, allowing farmers to focus more on their core activities. Moreover, the platform is designed to facilitate timely sales of animals, ensuring that sellers can reach a wider audience quickly and efficiently. This promptness in transactions benefits both buyers and sellers, contributing to a more dynamic and responsive market environment. Ultimately, our project aims to bring a revolutionary change to the animal market, moving away from the traditional, time-consuming methods still widely practiced today. By leveraging modern technology and creating a robust, secure platform, we aspire to create a more efficient, transparent, and reliable marketplace that significantly benefits the farming community.

In the future, the platform can be expanded to include online payment integration, veterinary health records, and AI-based animal recommendations. It can also support multiple regional languages to increase accessibility for local farmers. Additionally, incorporating logistics and transport services can further streamline the buying and selling process.

REFERENCES

- [1] Aditya Vishwakarma, Saloni Bhutada, Ritesh Jadhav, Shweta Gaware, Savita Mogare, "GOWCART: A Digital Platform for Domestic Animals Market" IJIRSET, Vol.13, Issue 1, January 2025.
- [2] Nilakantha Rath, Ind. Jn. Of Agri.Econ, "Economics of Sheep and Goat in Maharashtra," IEEE Transactions on Market Systems, vol. 47, no. 1, Jan-March 1992.
- [3] R. Br. Sianturi, A. H. Daulay and E. Mirwandhono, "Marketing Analysis of Buffalo at the Animal Market in Suka Village Karo Regency", Jurnal Peternakan Integratif Vol.10, No.2, 2022
- [4] Vijay Paul Sharma. "Livestock Economy of India: Current Status, Emerging Issues and Long-Term Prospects", Ind. Jn. of Agri.Econ. Vol.59, No.3, JulySept. 2004
- [5] Pankaj Lavania, Kailash Chand Bairwa, Garbar Singh and M.P. Verma, "A case study on marketing practices of small ruminants in arid region of Rajasthan", Journal of Animal Research: v.11 n.5, p.875-879. October 2021
- [6] Abdul Samad Arief, Seprianti Eka Putri, Amat Suroso, Abdul Wahab Syakhrani, Noor Rahmini, "Digital Technology Management Challenges in Marketing Local Farm Products in Developing Countries: Analysis of International Publication Findings", Vol.6, No.2, December 2021
- [7] Emordi Promise Jude "Illegal animal trade in a globalized world: Implications for sustainable development" The Journal of Development Administration Volume 8—Issue 1—2023—ISSN 2218-4899

- [8] Leonie Jacobs, "Animal Welfare Standards and Marketing", Produced by Virginia Cooperative Extension, Virginia Tech, 2021
- [9] Bheemshetty Patil "Genomics to Systems Biology in Livestock Management: its Applications and Future Perspective" Systems Biology, Bioinformatics and Livestock Science DOI: 10.2174/9789815165616123010017
- [10] Kazi Tamim "LIVESTOCK MARKET INTEGRATION AND PRICE DYNAMICS IN THE UNITED STATES" Research Gate January 2019
- [11] Endra Rahmawati, "Online Buying and Selling Application of Sacrificial Animals Using Scrum Method During The Covid-19 Pandemic", Journal of Electrical Engineering and Computer Sciences Vol. 7, No. 1, June 2022
- [12] Hilman Fikri Wijaya, Agung Triayudi, Winarsih, "E-Commerce Sales of Qurban Animals at Bratajaya Farm Store Using Content Based Filtering Method", SaNa: Journal of Blockchain, NFTs and Metaverse Technology, Vol 2, Issue 2, August 2024
- [13] Magdalena A Czubala, Eva Eilles, Andreas Staubi, Natacha Ipseiz, Michael Vogt, Leonie Zieglowski, Lisa Ernst, Rene H. Tolba, Philip R. Taylor, Ralf ' Weiskirchen, Ralf 2022, "3R Blackboard: A platform for a nimal and organsharing". LaboratoryAnimals 56
- [14] H P Pramana, S Hastjarjo and Sudarmo, "Digital marketing as a strategy for fulfilling Eid Al-Adha beef cattle: A case study of start-up companies".
- [15] Muh Faturokhman, Liisa Firhani Rahmasari, and Fariz Am Kurniawan, "Marketing Development of Beef Cattle, Sheep, Goat and Derivative Products through the Application of Digital Marketing in Facing the Impact of Covid19 Pandemic", E3S Web of Conferences 348, 00025 (2022)ICAS 2021
- [16] Agung Triatmojo, Mujtahidah Anggriani Ummul Muzayyanah, Suci Paramitasari Syahlani, and Budi Guntoro, "DEMOGRAPHIC TARGETING OF USERS IN MOBILE APPLICATIONS FOR LIVESTOCK DIGITAL MARKETING AMONG SMALLHOLDER CATTLE FARMERS", Jurnal Sosial Ekonomi dan Kebijakan Pertanian, Special Edition: 602-613, June 2024
- [17] Budi, A. B. S., Priambodo, G., Saputra, S. W., Devianto, Y. (2020). Penerapan E-Commerce Untuk Penyalur dan Jual Beli Hewan Qurban. JATISI (Jurnal Teknik Informatika Dan Sistem Informasi), 7(3), 668-677
- [18] Pakaya, R., Tapate, A. R., Suleman, S. (2020). Perancangan aplikasi penjualan hewan ternak untuk qurban dan aqiqah dengan metode Unified Modeling Language (UML). Jurnal Technopreneur (Jtech), 8(1), 31-40
- [19] Rasyid, N., Musyaffa, T. N., Mohammad, G. A., Nuraminah, A. (2021). Perancangan dan Implementasi E-Commerce Hewan Kurban pada QurbanFactory Menggunakan Metode Rapid Application Development. PROSIDING SEINASI-KESI, 4(1), 30-37
- [20] Wulandari., Prayoga, Indiarto., Putro, Bau., Wahyuni, Resita. (2021). Rancangan Aplikasi Penjualan Hewan Qurban Dan Aqi
- [21] Y. Silviana and S. Sutarmin, "Web-Based Software Design for Livestock Sales of Qurban and Aqiqah," Jurnal Economina, vol. 1, no. 4, pp. 921–930, 2022.



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