Agribid Tracker

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Abstract — This application will help farmers to sell their products online to the highest bidder. The work will be a bidding-based system where all the merchants will bid for the product that will be posted online by a particular farmer and then the quality will be verified by the Agent and the bid will start from a certain minimum value [3]. The products will be sold to the merchant who has the highest bid. Once the auction is complete the admin managing the website will send a confirmation email/SMS to the farmer as well the merchant and sharing the contact details of both with each other. Once the contact details are shared the transportation of the products will be discussed between the farmer and the merchant [4].

Keywords: Merchant, Farmer, Agent, Auction Transportation

I. Introduction

In today's markets the traditional methods of buying and selling products can often create difficulties, for both farmers and merchants [5]. The current systems have inefficiencies such as limitations, limited market access and a lack of transparency that hinder the exchange of agricultural goods [1]. Moreover, farmers often struggle to reach a consumer base for their products resulting in income disparities and market inefficiencies.

The projects scope involves creating and implementing an Agribid Tracker which's a platform aimed at revolutionizing agricultural commerce [2]. This system will act as an interface connecting farmers directly with merchants through online auctions. To ensure access and authorization the project includes defining and managing user roles for farmers, merchants and administrators [1]. Additionally, it will feature a product listing functionality that allows farmers to showcase their products comprehensively by including multimedia elements and detailed descriptions. Moreover, the project will implement versatile payment integration to enable transactions using various payment methods [6]. Emphasizing data security, state of the art measures will be incorporated to protect user information and transactions. The main objective of the project is to establish a marketplace, for products that is fair, open and effective. This will help empower farmers and promote a competitive environment within the agricultural supply chain [2].

II. Literature survey

A. Existing Research

Agricultural Supply Chain Management Research has highlighted the importance of efficient supply chain management in agriculture, including the use of technology and data analytics to improve logistics and reduce costs [2]. Agricultural Price Risk Management Research has examined various approaches to managing price risk in agriculture, including the use of futures markets, options, and other derivatives [4].

B. AgriBid Tracker Solution

AgriBid Tracker aims to address this gap by developing an innovative agricultural bidding platform that leverages cutting-edge technology and data analytics to

- Improve supply chain efficiency and reduce transaction costs [6].
- Enhance price for farmers.
- Provide a secure and transparent marketplace for agricultural trade.

C. Precision Agriculture Technologies:

- Crop monitoring and yield prediction
- Examination of successful implementations online bidding in agriculture.
- Analysis of lessons learned and best practices.

D. Data Analytics and Visualization

Discussion of data analysis techniques and tools used in agricultural tracking, including Data visualization software [2].

E. Challenges and Limitations

Examination of challenges faced by existing agricultural tracking systems, such as:

- Data accuracy and reliability.
- System integration and interoperability
- Scalability and cost-effectiveness

F. Future Directions and Opportunities:

- Artificial intelligence and machine learning advancements.
- Edge computing and real-time data processing.
- Integration with other industries, such as logistics and supply chain management.

III. Principles used

In our AgriBid Tracker system we used various principles to make our system more dynamic. Here are the principles which we used in our system.

A. Front end technology used:

- HTML: Provides the basic structure of a webpage. It is the standard language used to create and design the structure of web pages. It provides the basic building blocks for web content and is essential for developing websites and web applications.
- CSS: It is used to control the visual presentation and layout of web pages. CSS is responsible for its design and styling.
- JAVASCRIPT: JavaScript is a versatile and widely-used programming language that plays a crucial role in modern web development. It enables dynamic and interactive features on websites and web applications.

B. *Backend technology used:*

- Python flask: Flask is a popular web framework for Python that's known for its simplicity and flexibility. It allows you to build web applications quickly and with minimal code. It is lightweight and flexible framework for rapid development and scalability.

C. *Database used:*

- JSON: JSON as a database is a lightweight and flexible way to store data, especially for simple applications or prototypes. In Python, you can easily work with JSON files for this purpose.

IV. SYSTEM ARCHITECTURE

Designing a system architecture for a bidding process specifically tailored for farmers involves several components to ensure that the process is efficient, transparent, and user-friendly.

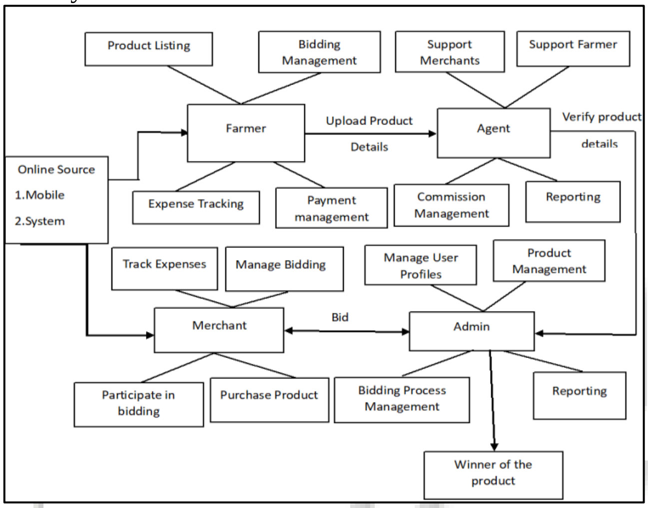

Fig. 3.1: ER Diagram

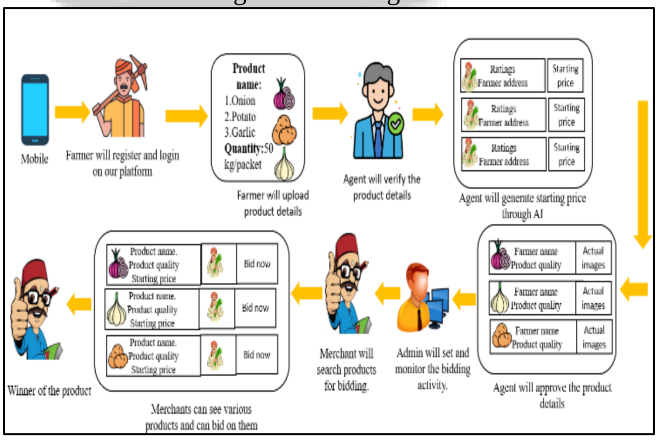

Fig. 3.2: Architectural Diagram

V. SCOPE

1) User Management: Farmer, supplier, and buyer registration, profile management, and authentication [1].
2) Product Listing: Farmers can list their products, including details such as quantity, quality, and price.
3) Bidding Mechanism: Suppliers and buyers can bid on listed products, with the option to negotiate prices [3].
4) Market Data Analytics: Provide insights on market trends, prices, and demand.

VI. OBJECTIVES

1) Data-Driven Insights: Provide market data analytics to stakeholders, enabling informed decision-making.
2) Scalability and Reliability: Develop a scalable and replicable model for agricultural marketplaces [7].
3) Efficient Price Discovery: Create a transparent and competitive marketplace for farmers, suppliers, and buyers to discover fair prices for agricultural products.
4) Improved Market Access: Provide a platform for farmers to access a wider market, increasing their chances of selling their produce at a better price [4].
5) Reduced Transaction Costs: Reducing transaction costs and increasing efficiency.

VII. FUTURE SCOPE

The online Agriculture bidding system can be enhanced further by adding additional features such as in mobile application. First thing is adding a chat room in application so that users can communicate other user. If merchants have any clarification or doubts regarding the products they can get clarified by messaging farmer [3]. Adding a secure socket layer would prevent data from third parties. More graphics can be added to attract users. Also, in future the merchants from different countries can also bid on that product [6]. Giving the farmers a big market space for their product and also a fair price for their products.

VIII. CONCLUSION

In conclusion, the Agribid tracker offers a solution to the standing inefficiencies in traditional agricultural markets. With a focus on user needs and utilizing features such as real time bidding, secure payment gateways and data analytics, the system has the potential to improve market transparency, efficiency and inclusivity [5]. The scalability of the system and its continuous improvement mechanisms ensure its long-term viability. This paper provides insights for policymakers and practitioners seeking to empower farmers in today's evolving markets, with digital solutions.

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