

u-FarmMart: Linking farmers to market

Vidya Katara¹, Priyanka Patil², Sonal Misal³, Lifna C.S⁴

^{1,2,3}Department of Computer Engineering, Vivekanand Education Society's Institute of Technology

⁴Professor, Dept. of Computer Engineering, VESIT, Mumbai, Maharashtra, India

Abstract - The objective of our auction system is that the farmer can have better value for their products as well as the consumer can have better choice for investment. Our system is aimed to resolve the issues faced by farmers while selling agro products. This application removes the middle man so the farmer can directly connect with consumers and can get higher value for their products. One of the major advantages is that it is time saving for the customers also it helps companies to buy agro products in bulk without the interference of the middle man. In our system, customers will use their id and passwords to login to our system and will get access to various products that the farmer has produced. The customers who wish to buy the products will appear for auction where the product will be sold to the customer with the highest bid.

Key Words: Auctions, Bidders, Highest Bid, Farmers, Agriculture

1. INTRODUCTION

Agriculture is one of the main occupations of India. It is one of the most important pillars of Indian Economy. Even though agriculture holds great importance in the overall economic development of our country, the share of agriculture in India's GDP is continuously declining. One of the reasons is that, farmer's can't sell their products at their own price because all commodities prices are fixed or governed by the market. Also the government is fixing the minimum price for some agri products which are yearly or season based. To overcome these flaws we are developing an android app in which the farmer will decide the price per kg for the products that he wants to sell and that value will be multiplied to the number of kgs a customer wants to buy.

The motivation for developing this project is to provide farmers a base where they can get their profits for their products. As in spite of working so hard farmers are attempting for suicide as they do not have enough money to survive. Also there are cases where a lot of farmers' production is wasted due to lack of storage measures taken for storing food. In such cases farmers sell their products at much lower prices than the original price in order to sell their products before they get spoiled. So, we thought of removing the middleman and providing direct buyers to the farmers through our app so that farmers can get all the profits of their product and also this can prevent wastage of food as the direct buyers will include companies who will buy the products in bulk.

The paper is organized as follows, Section II discusses Literature survey i.e research paper we have studied followed by proposed system architecture and Implementation details. Further section describes results we have obtained and conclusion of the paper.

2. LITERATURE SURVEY

In paper [1], various types of auction have been mentioned such as english auction, Dutch auction, first price sealed-bid auction, vickrey auction. It also describes the flow or steps of how an auction can be carried out. In addition to this cloud technology is used for hosting the website.. The author of paper [2], makes use of Big data analytics for the agricultural area. Through the concepts like big data analytics and cloud computing determining which type of agricultural product should be grown in which season and which agricultural field is suitable for which agricultural product, such analysis can be done which helps the farmer in maximum production of agricultural goods. The proposed Android application helps farmers to access wide market portals across the world. It shows how farmers can utilize this application to sell crops as a better option for sale. It gives a stage to the agriculturalist where they can know the cost of various markets and can offer their products at a better cost.

Paper [3], discusses a web based application. Through this paper, we understood the basic idea of how the bidding algorithm works. And the graph representation which shows how the application is useful for farmers instead of existing bidding. By reading the working module, we get the crystal clear idea about how the application is actually working. In this the admin will post the product for bidding. The bidding will have a specific time limit which will be set by the farmer. In future, they are trying to develop a chat room where if buyer or seller have any queries, they can ask their queries through this section also they will try to develop a payment module for the purpose of direct selling.

Paper [4], try to answer the following queries: How are farmers facing problems while selling their Agro products? How the existing auction system worked? How does online auction help the farmer to earn better? The above topics are explained in detail in the paper. This paper also covered 2 Modules of their application. The first module contains registration and sign-up phase. The second module contains a bidding system. Here the customer with the highest bid wins and the product is sold to that

customer. The admin can keep the overall data of users. The final phase of their project requires the shipment process where the winner of the bidder will get his products delivered through proper online transactions. In paper [5], Internet security is considered to be one of the most important aspects while transforming data through the internet. This paper focuses on design and implementation of sealed-bid auctions to present a secure distributed auction service. The paper focuses on various testing parameters that are to be considered for a secure auction such as there can be a case where an insider manipulates the winner or an insider manipulates the closing time or an intruder can act as an insider and close the bidding time, there can also be a case where the winner of the bid refuses to pay the bidding amount or an insider collects the payment from the people who lost the bid and various other factors are to be taken care of while bidding.

In paper [6], authors briefly review the requirements of an Internet auction application. Auction mechanisms that are supported by the application, security requirements and pre-auction post-auction interactions needed are discussed. Finally how the delay, security and easy collaboration aspects of the internet will cause auctions on the internet are also discussed. Paper [7] focuses on discussing the issues faced while performing online auctions. There are a lot of chances of frauds that can take place. This paper focuses on providing a secure auction platform by providing an online auction server for conducting auction-related research.

3. PROPOSED SYSTEM

In our application there are 3 modules i.e Authentication, Product details and Bidding module. Authentication is the first phase of our application. Here Both the customer and the farmer first will have to register by using their personal details, otherwise they won't be allowed for further process. Once the customer or farmer signs up successfully then they can login anytime by using Registered mobile number and password.

In product details module farmers can upload their products' details along with images. Then it will be displayed to the customer. On the other hand, customers can view the uploaded products. If the customer wishes to buy the product then they have to bid for the product according to the base amount and time for the bid which is decided by the farmer. The product will be sold to the winner of the bid.

In the Bidding(Auction system) module Customers can bid on the products which they wish to buy. Our application won't allow us to bid if the customer's bidding amount is less than the amount mentioned by the farmer and if the bidding time expires. The customer with the highest bid will get the product. The farmer as well as the

customer will be notified about the winner and amount of the bid.

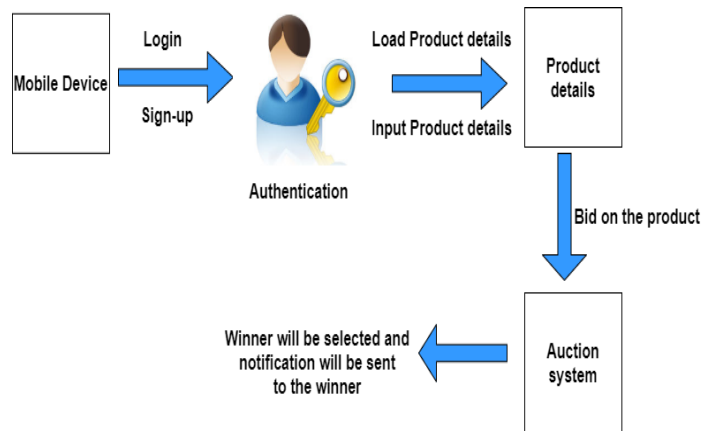


Fig-1: Block Diagram

Authentication Module: It is the second phase of our application. Both the customer and the farmer first will have to register by using their personal details, otherwise they won't be allowed for further process. Once the customer or farmer signs up successfully then they can login anytime by using Registered mobile number and password.

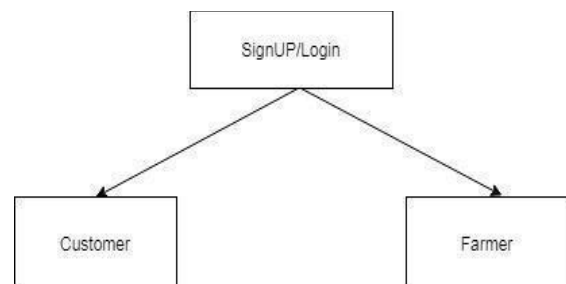


Fig-2: Authentication

Product Maintenance Module: In this module, farmers can upload their products details along with images. Before uploading the product it has to be verified by the admin .Once the admin approves the product then it will be displayed to the customer. On the other hand, customers can view the uploaded products. If the customer wishes to buy the product then they have to bid for the product according to the base amount and time for the bid which is decided by the farmer. The product will be sold to the winner of the bid

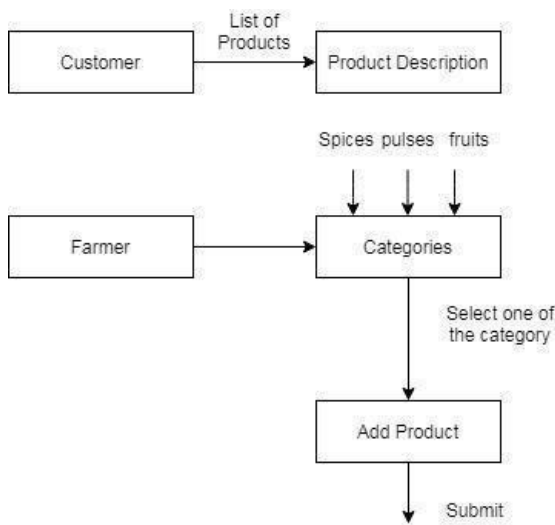


Fig-3: Product Details

Bidding Module: Customers can bid on the products which they wish to buy. Our application won't allow us to bid if the customer's bidding amount is less than the amount mentioned by the farmer and if the bidding time expires. The customer with the highest bid will get the product. The farmer as well as the customer will be notified about the winner and amount of the bid.

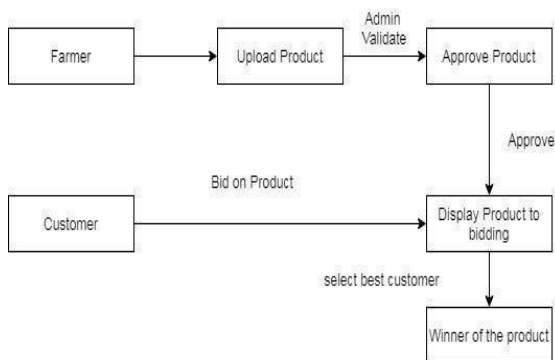


Fig-4: Bidding module

4. IMPLEMENTATION DETAILS

Implementation is the realization of an application, or execution of a plan, idea, model, design, specification, standard, algorithm, or policy. In this project we have used following tools or components:

- **Android:** Android is a mobile operating system designed primarily for touchscreen mobile devices such as smartphones and tablets. The tool used to develop an android app is Android Studio version(3.5.3).
- **Java:** Java is a general-purpose programming language that is class-based, object-oriented, and

designed to have as few implementation dependencies as possible.

- **XML:** The design goals of XML emphasize simplicity, generality, and usability across the Internet.
- **Firestore:** Firestore is a mobile and web application development platform developed by Google which is used for databases.
- Algorithm used for bidding model :

t = tstart //Set auction clock to its starting value

te=tend //Set auction clock to its ending value

winbid = -1 //Currently there is no winner

Price = BidInitialPrice // start the current price which decided by farmer

while te > 0 **do**

for all Bidders bi **do**

i=BidCurrentPrice

if t is not equal to te and i is greater than Price **then**

winbid = bi //Make bi the current highest bidder

charge(bi , i) //Charge bi the bid cost

Price = i //Increment the offer

sendItem(winbid) //Last bidder wins item

charge(winbid, Price) //Winner pays item price

5. RESULTS AND DISCUSSIONS

In our application there are two sides : Customer(Buyer) and Farmer(Seller). Firstly the farmer uploads the product by filling the details which is shown in fig.8 with the correct end date and time. The customer bids on the product by simply clicking on the product which he/she wants to bid and then entering the bid amount page will be open which is shown in fig.10. Once he bids on the product successfully, then the customer information along with the bidding amount will display on the farmer side which is shown.

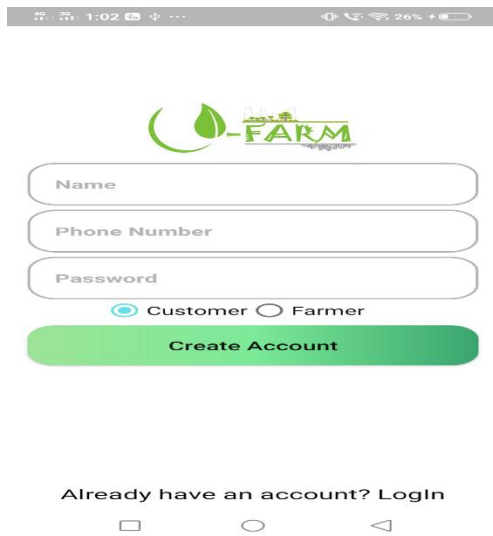


Fig-5: login /signup

Fig.5 shows Login and signup page which is used for registration by customer and farmer. If you are already registered then enter the required details and sign in and if you are a new user then you need to fill all required details as required in signup. In case you forgot the user id or password then you can generate a new id and password using your registered email-id.

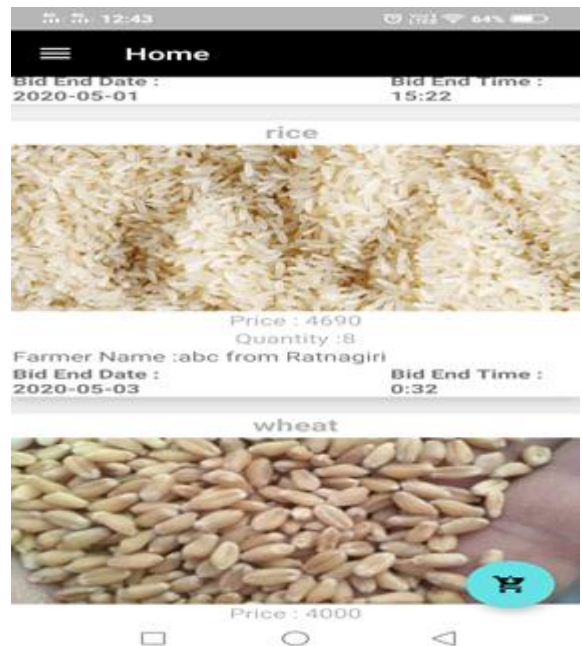


Fig-7: Customer Side Product Details

Fig.7 shows the details of the current bid product which was uploaded by the farmer.

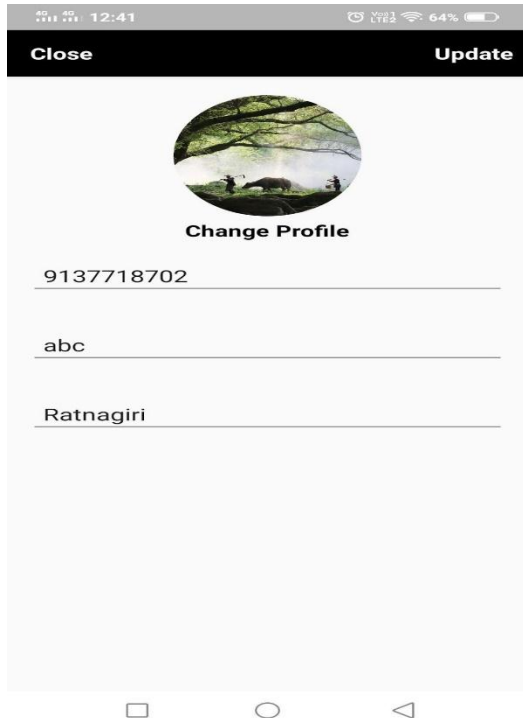


Fig-6: User Profile

Fig.6 shows after successful login you can set your profile picture or update the information such as mobile number, address and name. The winner will get the win bid SMS on the mentioned mobile number only.

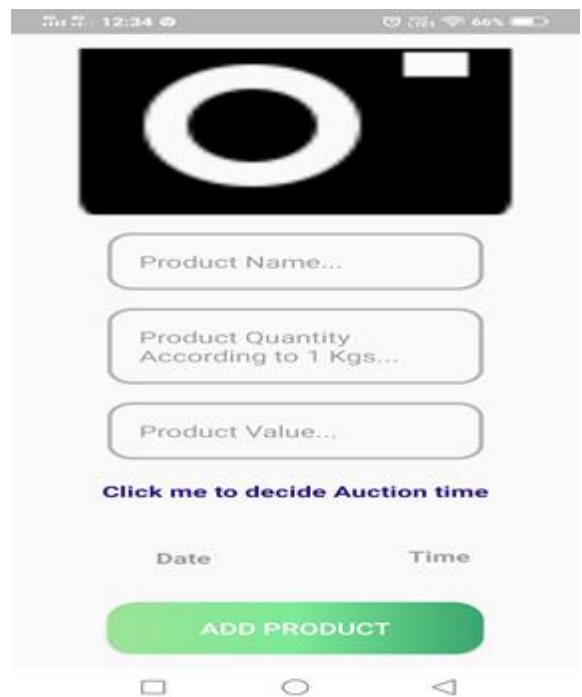


Fig-8: Upload Product

Fig.8 is for farmers, while uploading the product, the farmer will have to fill the above form with the valid product end date and end time.

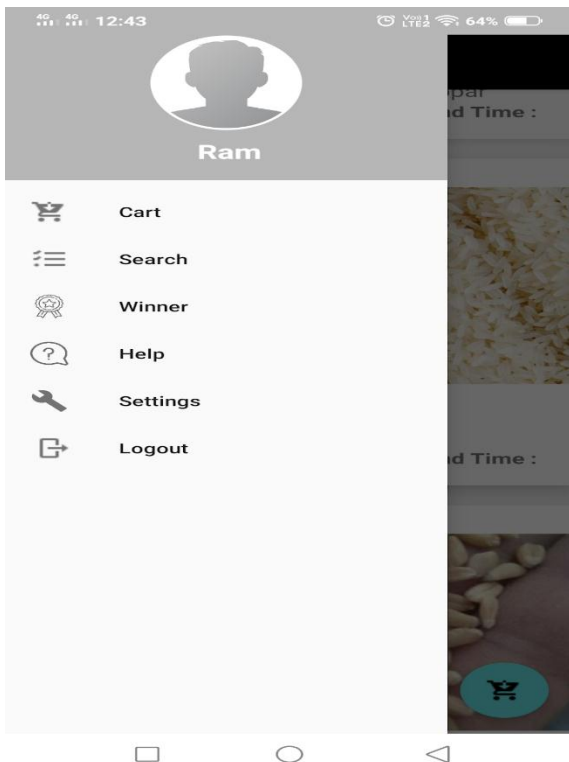


Fig-9: Navigation menu

Fig.9 shows the navigation menu, contains the cart menu which is useful for the customer to see on which items they were bid, customer can search the product according to name by using search menu, the information about the particular bid win will display in the winner section, help section is as guideline of how to use this app for customer.

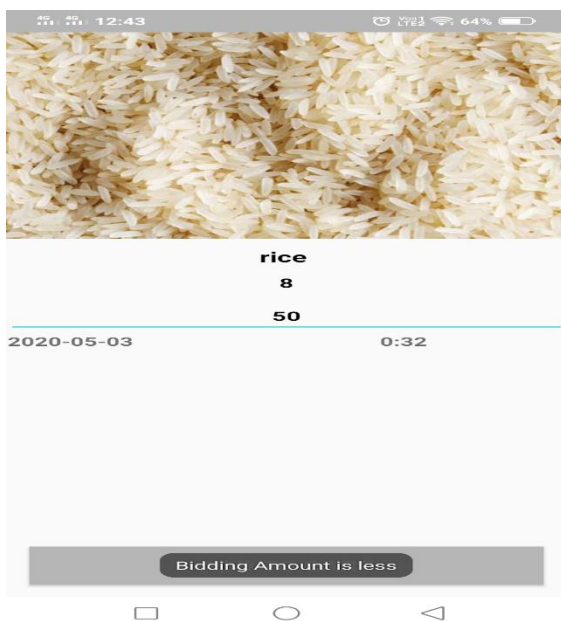


Fig-10: Product details

Fig.10 This page appears when the customer is willing to bid for a product, the customer has to put the bidding amount which will have to surely be greater than the amount decided by the farmer otherwise the system will not allow the customer to submit the bid of that particular product.

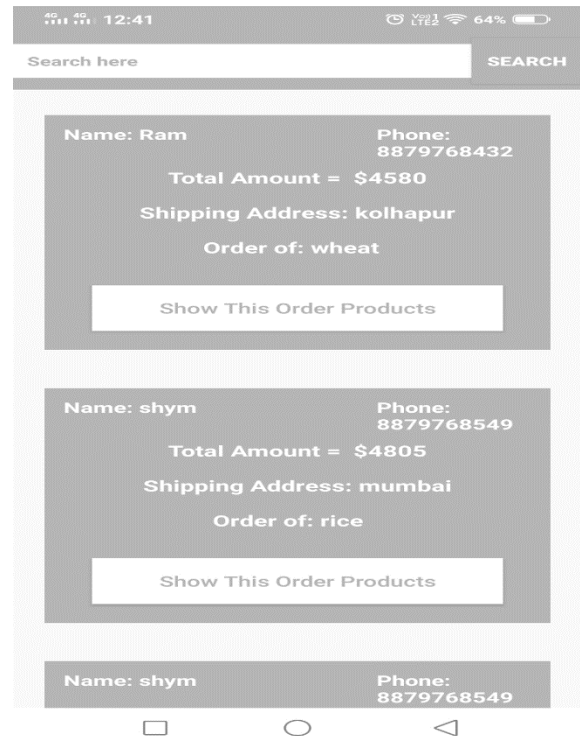


Fig-11: shipping details.

Fig.11 shows the customer information along with the bidding amount.

6. CONCLUSION AND FUTURE SCOPE

Our project aims at providing a user friendly platform for both customers as well as farmers. Our android app focuses majorly on providing a platform for farmers where they are benefitted while selling their agro products, by removing the middleman, As there are many farmers who get tricked by the middle man as farmers don't have great knowledge about the market world. It also aims at providing a secure online transaction between the winner of the bid and the farmer. Following modules are to be included as the future scope of our project

Language translation module: As farmers as well as many customers are not well educated and comfortable with particularly English language, we have thought of implementing translation modules so that language does not become a barrier and farmers can get maximum profit from all kinds of audiences.

Payment module: A secure payment module is required for proper transaction of bidding amount between the farmer and the customer.

Discussion Form: Any kind of queries by the farmer or the customer will be solved by the admin.



Priyanka Patil,
Third Year, Dept. of Computer
Engineering Student at
Vivekanand Education Society
Institute of Technology.



Sonal Misal,
Third Year, Dept. of Computer
Engineering Student at
Vivekanand Education Society
Institute of Technology.



Lifna C. S.,
Professor, Dept. of Computer
Engineering at
Vivekanand Education Society
Institute of Technology.

REFERENCES

- 1) Madhumathi, R., et al. "Bidding application in Amazon web services for the sales of agricultural products." 2016 International Conference on Recent Trends in Information Technology (ICRTIT). IEEE, 2016.
- 2) Jusing E-Auction, Mandi. "International Journal of Trend in Scientific Research and Development (IJTSRD)." IEEE, 2018.
- 3) NaliniPriya, G., et al. "Agro Bidding-A Smart Dynamic System for Enhancement of Farmer's Lifestyle." 2019 International Conference on Smart Structures and Systems (ICSSS). IEEE, 2019.
- 4) Kansagara, Ms Nirali A., et al. "An Android Application for Online Agri-Auction." (2016).
- 5) Franklin, Matthew K., and Michael K. Reiter. "The design and implementation of a secure auction service." IEEE Transactions on Software Engineering 22.5 (1996): 302-312.
- 6) Kumar, Manoj, and Stuart I. Feldman. "Internet Auctions." USENIX Workshop on Electronic Commerce. Vol. 3. 1998.
- 7) Majadi, Nazia, Jarrod Trevathan, and Neil Bergmann. "uAuction: Analysis, design, and implementation of a secure online auction system." 2016 IEEE 14th Intl Conf on Dependable, Autonomic and Secure Computing, 14th Intl Conf on Pervasive Intelligence and Computing, 2nd Intl Conf on Big Data Intelligence and Computing and Cyber Science and Technology Congress (DASC/PiCom/DataCom/CyberSciTech). IEEE, 2016.

BIOGRAPHIES



Vidya Katara,
Third Year, Dept. of Computer
Engineering Student at
Vivekanand Education Society
Institute of Technology.