International Journal of Computer Trends and Technology
ISSN: 2231-2803 / https://doi.org/10.14445/22312803/IJCTT-V67I3P103
Volume 67 Issue 3, 9-12, March 2019

Original Article

An Android Application E-Farmers To Bid-ask via Online

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Abstract *- This paper develops a portal for farmers and the government to bid-ask for seeds and fertilizers. The collected data is fed into the SQLite database so that farmers can view the products. This application is designed so that farmers will get exploited without indulging retailers. The objective is to provide the right channel for the farmers to get the seeds and fertilizers at a fair price. This is one such application where the farmers have the freedom of pricing and seeds to sow.*

Keywords *- bid-ask port, mobile application, auction algorithm*

I. INTRODUCTION

Farmers, consumers, or retailers buy and sell the required farm products without the involvement of a middleman at the right profitable price. In this paper[1], a fair price to the farming community by devising new techniques and using the online market. An application that serves as a platform for the movement of agricultural products from the farms directly to the consumers or retailers. A [2] new demand bidding framework is used to accommodate time Shiftable loads in the market. The new bidding structure increases the domain competitiveness. The new bidding structure includes both extended and self-scheduled bids. This is beneficial to power systems as a whole and to the consumers who bid a portion of time Shiftable loads. A series of middlemen traders who aggregate and transport produce from rural areas exploit information asymmetries and market inefficiencies to negotiate low prices from farmers. Farmers depend on these middlemen to purchase their goods, but they have limited bargaining power due to their low crop volumes (from small acreage) and lack of market information [3]. The product data is stored on the server and downloaded to the shop system. The customer chooses product inputs name and quantity, inputs money, or defers payment and takes the change and receipt [4]. The quantities in the consumer market with Nash equilibrium, two resellers who play an auction game who wins the game will be considered as first-price sealed-bid auction, and the other is considered as second price sealed bid auction.

The dutch auction is successfully adopted in common flowers. The notion of supply chain performance in second price and first-price auctions about rare flowers [5].

II. WORKING PROCEDURE

Initially, the government will upload all the seeds and fertilizers to the SQLite database for all seasons. This portal will help farmers view the list of products by registering their details. After the season selection by the farmers, the seeds and fertilizers, depending upon their needs, will be displayed by the government on their respective pages. The government has already fixed the product's starting price and auction dates. Farmers will do the bidding, and the notification will be sent to the one who bids for the highest amount. The farmer will be redirected to the payment page if they want the product to select the "yes" option. The next auction will be carried out once the previous bidding period is done.

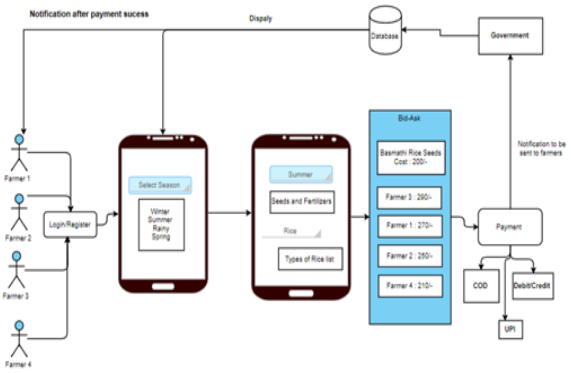

Fig. 1 System Architecture

III. ALGORITHM

A. Auction algorithm

This algorithm applies to several variations of a combinatorial optimization problem. This algorithm has been used to determine the best prices of a product that can be offered to multiple buyers. It is a form of an iterative method to find the product and price related to the sales auction where the multiple bidders will be compared to find the best offer with the final sales that goes to the highest bidder. Auction calls (i.e., fixings) are good for digesting a lot of orders in a very short amount of time. After trading suspension, the trading starts with an auction call. The auction algorithm is an intuitive method for solving the classical assignment problem. It outperforms its main competitors substantially for important problems, both in theory and in practice, and is naturally well suited for parallel computation. There have been extensions of the auction algorithm for other types of linear network optimization problems. The general approach for constructing auction algorithms for such problems is to convert them to assignment problems and then apply the auction algorithm suitably and streamline the computations.

1. Order asks first from low to high and then from early (entry) to late; to make things easy, split multi-unit orders into several orders of 1 unit
2. Order bids first from high to low and then from early to late; split multi-unit orders into several orders of 1 unit
3. This creates two columns; match orders (low asks with high bids) based on quantity as long as price(ask)< price(bid)

The clearing price CP equals either the asking price of the last match or the next bid price, whichever is greater. The price should be in a range of {ask of the last match, bid of the last match} and {next bid, next ask}. (the last match means they match with the least difference between the bid and ask price, and the next bid/ask means the bid/ask which is not matched but the closest to the matching price.) So, the price should be in a range of {max{ask of the last match, next bid}, min{bid of the last match, next ask}}, and the clearing price should be max{ask of the last match, next bid}, which is the minimum of the range.

IV. MODULES

A. Data Collection

The government will create an SQLite database for different seeds and fertilizers related to the season. To maintain the database, we use the Xampp server. To store those values JSON method in java is used.

The farmers will register with their credentials and login into their respective accounts. They will select the season initially, and then the government will display the seeds and fertilizers based on the season selected by the user on their page. XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server. PHP is a server-side scripting language. And the last Perl is a programming language used to develop a web application.JavaScript Object Notation is a minimal, readable format for structuring data.

It is used primarily to transmit data between a server and web application as an alternative to XML. Squarespace uses JSON to store and organize site content.

CROPS	FERTILIZERS
Rice	Phosphorus
	Nitrogen
	Potassium
	Sulphur
	Zinc
Wheat	Nitroge
	Urea
	Ammonia
Barley	Nitrogen
	Thosphate
	Potash
Maize	Nitrogen
	Phosporus
	Diammonium phosph
	Magnesium
Bajra	Nitrogen
	Phosphorus
	Potash
Jowar	Nitrogen
	Sulphur
Spring Onion	Nitrogen
	Ammonium Sulphate
	Ammonium Nitrate

Fig. 2a data collection

B. Creating a bid-ask portal

After the selection of products by the farmers, the bidding process is initiated. For a particular period, bidding happens. With the help of the auction algorithm, we can determine the highest bidder of that particular auction. Check subsequent match (where price(ask)>price(bid)); if the price(ask)=CP, then refer to all asks as "limit order," bids as "market order"; else, price(bid)=CP then refer to all bids as "limit order," asks as "market order"; otherwise, refer all bids and asks as "market order."In this application on the home page, the government has provided both in-stock and upcoming products. The option "My Auction " allows the farmer to view the selected products. After the auction period, the winner of this bidding will be added to the "Won" page in their account, and the notification will be sent to the government as the highest bidder.

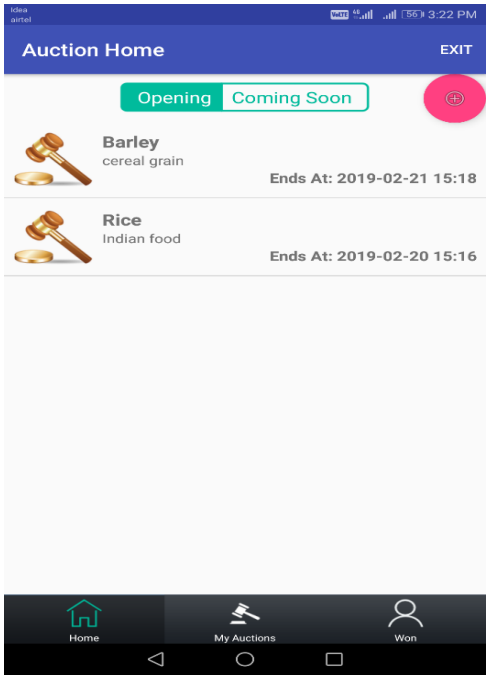

Fig. 2b Auction Home

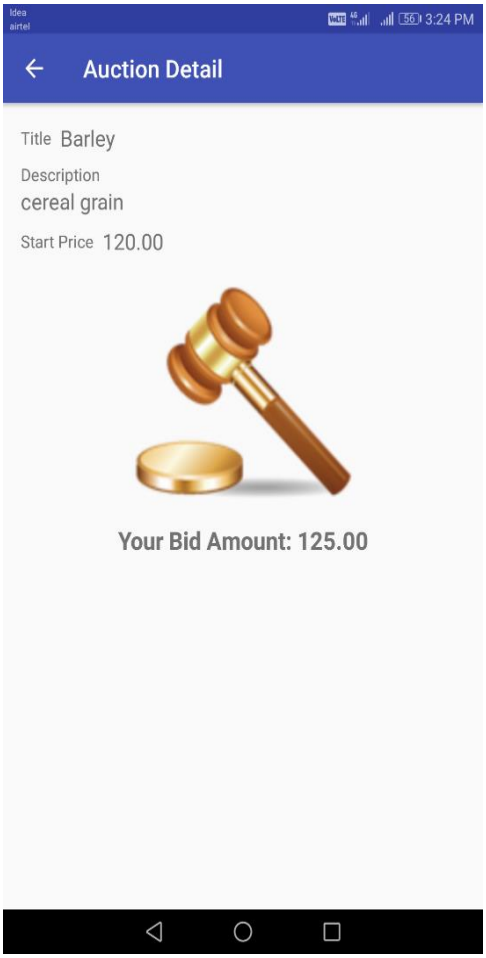

Fig 2c Auction Detail

Payment process:

The one who bids for the highest amount will receive a notification via email. The user can accept or deny the purchase order. After the acceptance, the farmer will be redirected to the payment site, and it may be cash on delivery or online payment(credit/debit card) so that they can select their mode of payment according to their choice. The shipment and dispatched details of the products will be sent to notify the farmers via email or SMS. Finally, the products will be delivered through delivery services to the farmers.

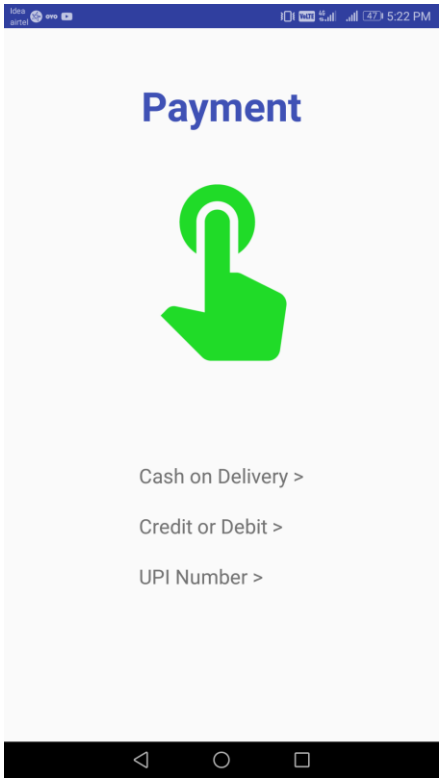

Fig 2d PAYMENT PROCESS

I. CONCLUSION

The farmers can profit by investing at a low cost through this application. Bringing all the required seeds and fertilizers and better pricing through proper management will strengthen online marketing. We are eliminating the third-party distributors. The government will sell seeds at a low cost to the farmers directly. Farmers can fix the rate for their crops to sell in bid option they can earn more amount without any loss. We can add the farmer relief fund to the government in future extensions. This will provide the right channel for the farmers to get the seeds and fertilizers at a fair price.

FUTURE SCOPE

This paper can be extended in numerous ways. We are using it as a mobile application; in the future, we can use it as a web application. We can also implement data analysis methods. As our proposed system has the option of analysis on present collected crops, we can enhance it in the future for previous crops. In future modifications, the farmers can select the seeds and fertilizers according to their needs, and the government will fix the price for the selected crops.

ACKNOWLEDGEMENT

The authors would like to thank the Department of Information Technology, Prince Shri Venkateshwara Padmavathy Engineering College, Chennai, for providing us with the facilities to carry out this work.

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