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Online Auction System in E-commerce Products using Deep Learning and Data Mining

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***Abstract:** Aims: In today's world everything is going online which effects market that are offline. Auction of any rare products are bid offline, but it's time to push this auction system online so that more buyer's will connect online and more bid options will available for them. Online auctions are the most influential e-commerce business applications. Although there have been considerable efforts in setting up market places, online trading still lays in its early stages. Online auction system is the best way to bid such a products who are rare and can't find easily anywhere. This is mostly work for archaeological old products that are rare. Methods: The most impressing concept of online auction system is you don't need to anywhere offline. It's the system where you can bid online without investing your time and bid for particular products. Results: Using this system buyers, sellers come online and connect on web-portal using this system. Conclusion: In this system using this web- portal registered user can propose or bid for new auctions, purchase and place bid product in order to buy that item.*
***Keywords:** Information System; Auction System and Unified Modeling Language.*

I. INTRODUCTION

Over the recent years, the electronic marketplace has been an exponentially grown in usability, size and worth as we know. It is expected that this trend will grow drastically in the upcoming years. As we know internet environment growing rapidly everywhere As a consequence, the customer can conveniently obtain the products that he/she bid and purchases from the online market by online auction systems. Online auctions are a main component of the electronic marketplace which makes use of electronic commerce mechanisms. Auction systems are a main constituent of the electronic marketplace, this allows users at any place to buy and sell products using online bid. The sellers needs to register on portal where they are able to set up auctions for any product they have and the bidder who bids the top amount gains the right for purchasing the auction product. A scheme for the online auction system based on the campus network was presented using the UML technique. Therefore, two steps were adopted to design the scheme of the proposed online auction system based on the use activity diagrams, case diagrams, sequence diagrams, class diagrams and deployment diagrams. Scheme provided a certain reference values for realizing the digital campus and constructing the campus electronic commerce. A Secure Online

Auction System has been analyzed, designed and implemented by Majadi. In Their work, the authors created their online auction server for carry out auction-related research method, to test the countermeasures of fraud in a controlled environment.

The designed and implemented online auction system was named the Auction System. The proposed Auction system to show the architectural model, subsystems, activity workflows, use cases, class diagram, system sequence diagrams and user interfaces. The technological revolution has influenced everything. Even the methods of marketing and business applications for the real world business influenced by changing of technology. Nowadays, Artificial Intelligence (AI) algorithms are used widely for solving several difficult problems such as image segmentations, medical image analysis, nurse roistering problem, Healthcare Monitoring, Learning Management System, patterns recognition and information retrieval, and river flow forecasting. Many researchers have used the AI algorithms and Machine Learning in marketing and business applications such as online auction system.

II. RELATED WORK

Designing and developing an online auction system which requires decision making and selecting technologies that supports those decisions for system. Here is some background information and related research on the technologies.

A. Unified Modeling Language

Traditionally, the requirement of software consist of identification of related data and function that support that software system. The data is in terms of entity- relationship diagram that handled by the system, where functions is in the form of dataflow. It utilizes new design methodologies of object-oriented software development.

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It also utilizes computer-aided software engineering tools that support new methodologies. Unified modeling languages is used to specify and visually model. Documents the artifacts of an object-oriented system under development.

B. Component-Based Programming

Component-based programming enable system to use the components that are deployed for software by reusing prefabricated components that are independent executable unit in system. Components are custom-made according to the requirement of system to meet the new requirement and can be rearranged in different composition in system. Components are reusable and maintainable that is the two in different compositions. Reusability and Maintainability are the two main advantages of component-based programming.

C. Auction Systems

Auction system is the major component of the electronic marketplace that allows user to come at site to sell and buy the products. The seller setup auction bid for the product to sell while buyer bids highest amount for the product to win the bid and purchase the product in an auction. Bid will more chances of winning bid will more.

III. DESCRIPTION OF ONLINE AUCTION SYSTEM

The UML developed to offer standardized notation to define object oriented models. To effectively apply to this notation, it must be employed with object oriented analysis and designs (OOAD) which refers to group of methodologies that produce component based software. This is what we called Life cycle development process of identifying the deliverables and task in object oriented project.

Using the both combination the life cycle development process can be reduced and system can be easily maintained, and modules reusability can be improved. Efficiently, the requirements analysis compressed of finding functions and related data that supports the software system.

The entity-relationship diagram which describe the data of the system will handle while data flow will describe the functions.

Object-oriented software development uses new method of designing that supported by computer-aided software engineering tools such as Rational Rose.

Unified modeling languages is used to specify and visually model. Documents the artifacts of an object-oriented system under development. It denotes large number of ideas unification using different methods. The UML used in the system design to improve its reusability and maintainability. Methods used by object oriented analysis are class, use case, state chart, sequence and other diagrammatic notations for building model.

UML has been employed in many projects for the use of modeling for different requirement and architectures. For user's requirement analysis use case diagram, class diagram and sequence diagram were used. Where to represent the classes in static structure class diagram were selected. Therefore this work design and needs to implements online.

Online Auction System using UML, Proposed for offering several diagrams to enables new functions need to be updated and should be added easily such as: use case, sequence, class diagrams and user interfaces. The proposed OAS will help the bidders to bid an auction in fast way and increase their chances to make a successful bid by suggesting a bid price, and will help the seller to get maximum profit from bid.

Mainly 3 actors (Admin, Bidder and Seller) will be interacting with the proposed system; each one can do the following:

A. Admin

1) Admin can manage products
2) Admin can manage the departments
3) Admin can manage users
4) Admin can manage bidding
5) Admin can create reports.

B. Buyer/ Bidder:

1) Bidder can search for a product
2) Bidder can view product details
3) Bidder can make a bid for product
4) Bidder can edit profile information.

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C. Seller

1) Seller can post a product
2) Seller can specify time and price of the bidding
3) Seller can view bidding information
4) Seller can edit profile information.

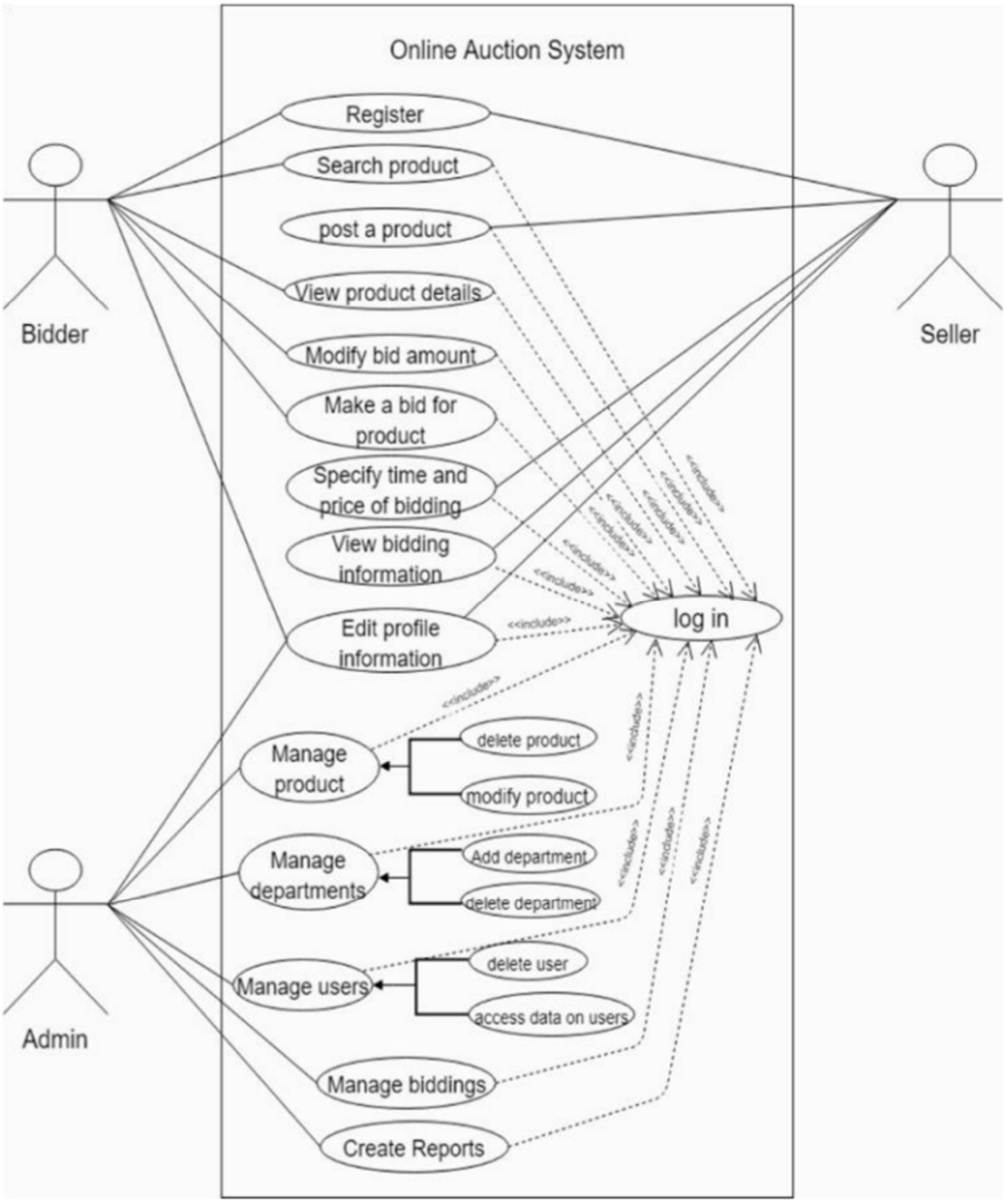


Figure 1: The use case diagram.

IV. AUCTION IN USE

Online auction system is basically a web based application where seller sell their products and buyer bid for the product they wants to buy. Seller post ads of their products to sell. This application allows to seller to post for the product and bidder can register for bid for avail that product. Using this portal easily any transection can be done and product will be hand and can bid for any available product over to the bidder who own the bid.

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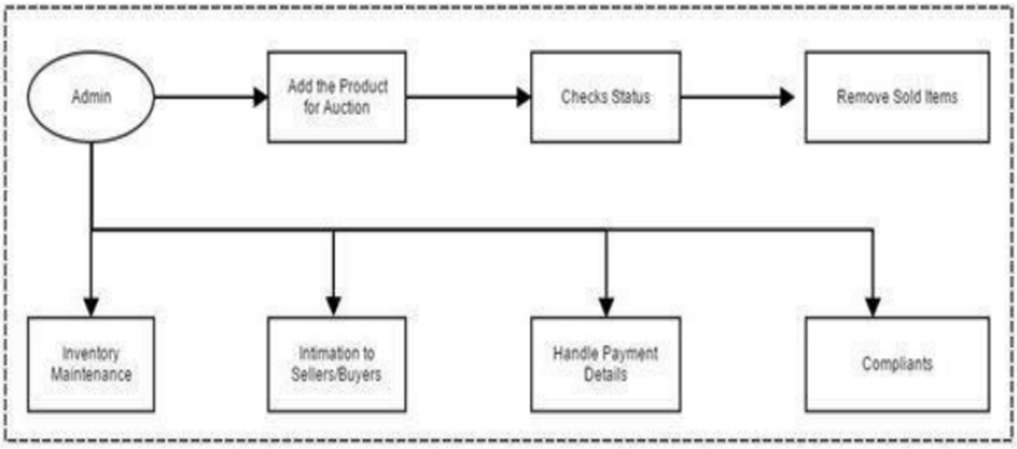
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V. SYSTEM DESIGN

System Design and architecture is the process of defining the components, modules, interfaces and data for a system to satisfy specified requirements for the auction system. The following is the architecture for the system
Module Description

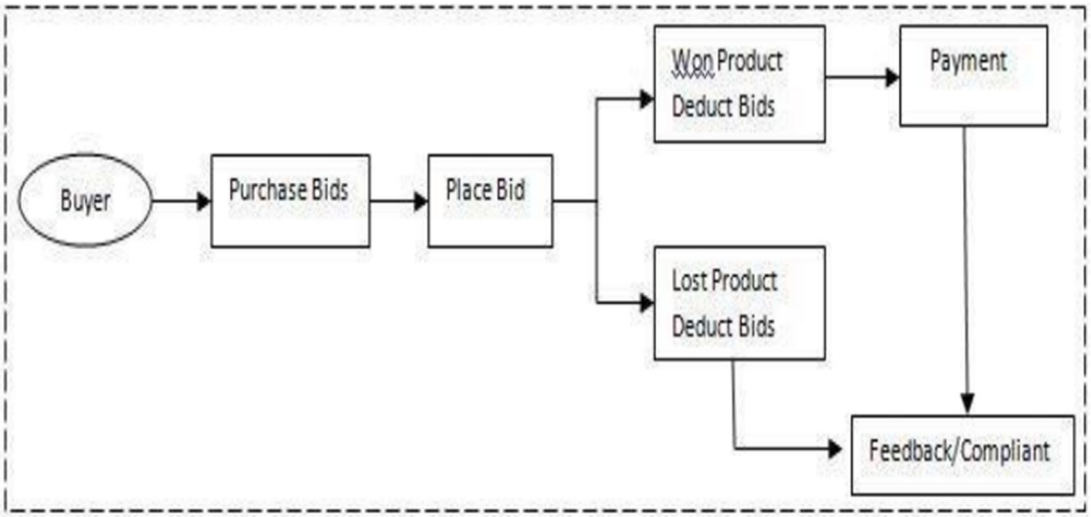
A. Admin Module

In this auction system Admin plays important role for each transection because admin have all the rights to do with the system. Admin does all the task that enables user experience for bid an item for sale or purchase. Admin have right to create and update the categories and can find different categories that are up for the auction. Admin module is responsible for handling all data and secure data from any fraudulent activity. Admin will responsible for any action done by users. Admin have authority to block any user and change privileges of the selected user. Admin can delete categories and products of that user that are up for auction. Admin responsible for the inventory and stocks that are rare and transection maintenance.



B. Buyer Module

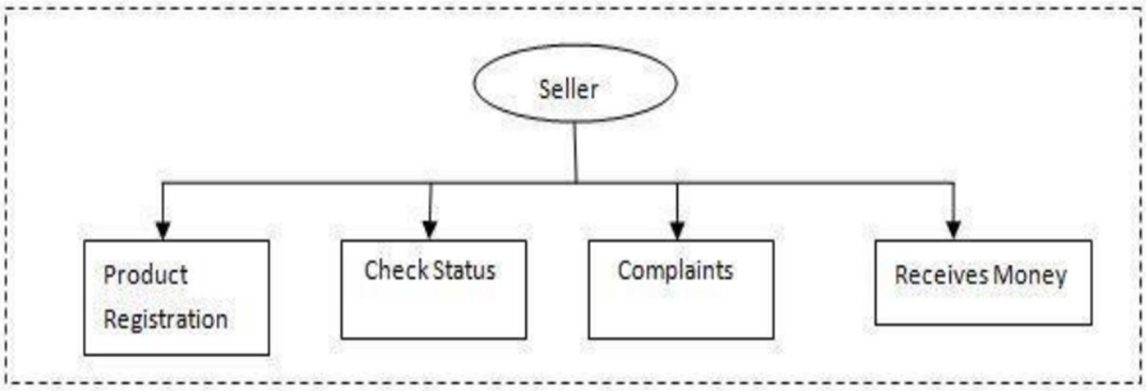
Buyer module design such a way that buyer can easily interact with the system and provide login system to bid for the product. Buyer need to register and login to the system. If the buyer wants to bid for the particular product buyer need to bid. If the bid product is unique and amount is large then the chances to win the bid raises. When the buyer win the bid he has to pay for the particular product and make payment online to the system.



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C. Seller Module

Seller module is come up with its products categories that seller wants to sell. According to that seller has to register and login for the product to sell for auction. When auction completed seller receives all information regarding to buyer and payment. Admin inform to seller about all details of the product and buyer.



VI. FUTURE SCOPE

It's impossible to fulfill all the requirement of the user in one take. System needs to get updated as it works. Changes in system will improve the security and use of system. Some enhancement can be in future in this system that are:

1) As technology changes system need to be upgraded that adaptable to desired environment.
2) Because of tit's object-oriented design, changes in the system can be done easily.
3) Technology changing so security of system is primary task and should be improved day by day.
4) Sub administrator can be added if required to reduce the load of work.

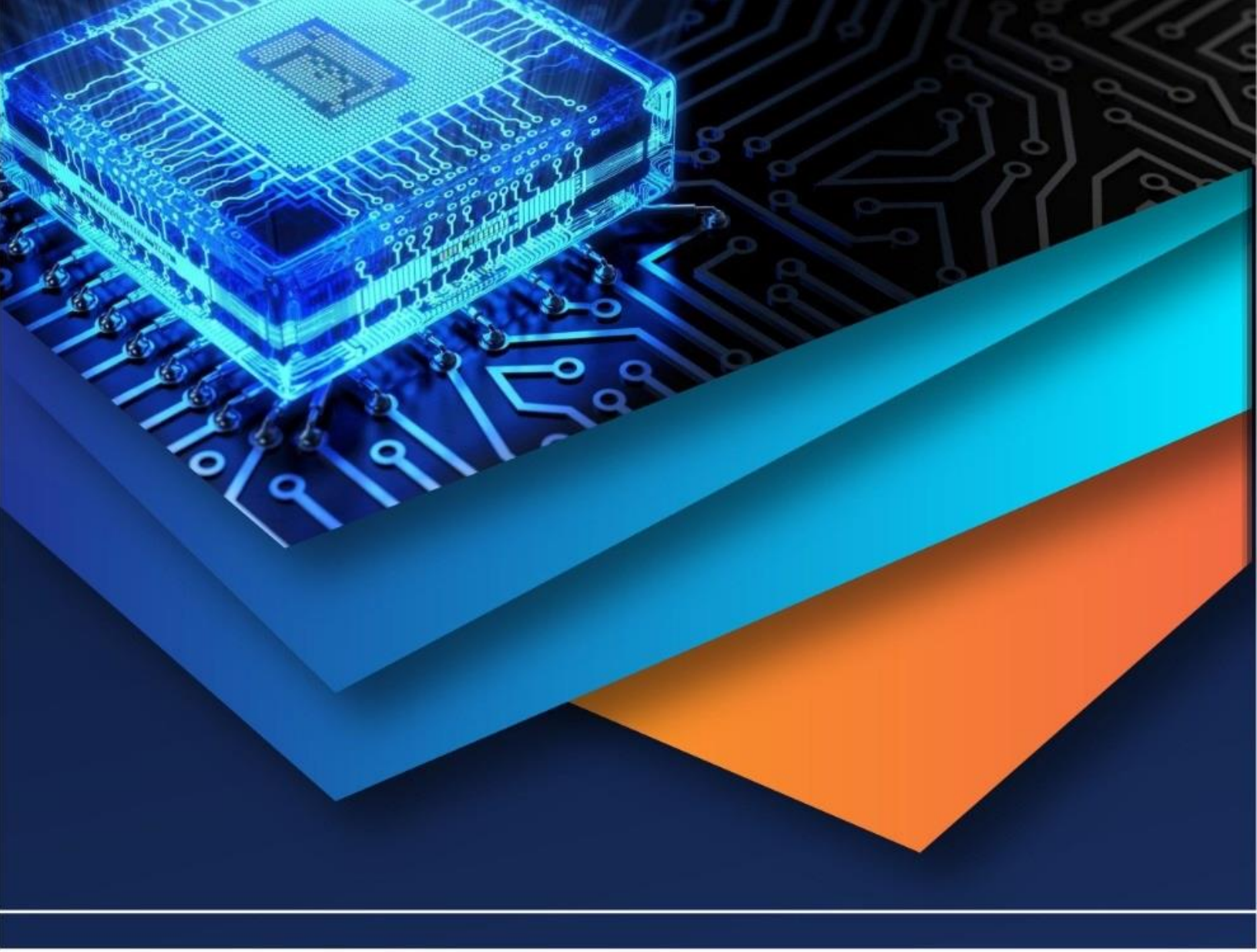
VII. CONCLUSION

Online auction system is a platform where user bid for the product or service. This system made easier for auction of any product online. There are several different categories that can be easily added for your product. This system has been designed for the large no of buyers and seller in an active auction system. This system is highly scalable and capable for large number of bidder.

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