**DEVELOPMENT OF A WEB-BASED HOUSEHOLD AUCTION SYSTEM**

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**PREPARED BY**

**ABUBAKAR ADAMU**

**CST21HND0035**

**SUPERVISED BY:**

**MR. NAJIB SADIQ MOHAMMED**

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* 1. **BACKGROUND OF THE STUDY**

In recent times, internet marketing as a means for the exchange of goods and services for monetary gains has exponentially grown in size, and this trend as expected will continue in the incoming years and has been envisioned to bring great economic growth to the country, but with the internet comes negativity that goes as far as hampering the same service it aims to provide, With no specified rules governing the internet it leaves the buyers or sellers at the mercy of fraudsters and with no means of safely purchasing products or bargaining for the price of the product customers wish to purchase. Now, an online auction system comes in by providing a convenient and safe means for obtaining products while also allowing for bidding. Bidding can be done anywhere with an internet connection to the website. This system enables users to put stuff for auction. The products will be accompanied by a description, selling price, and a visual presentation for the bidder to view. If the bidder is interested in the item, he or she will auction for it and then personally check it to approve it before concluding the transaction with the seller.

Because of the dynamic nature of the internet, this system will function on it, and anybody may access it via cellphones, laptops, personal digital assistants, and a variety of other digital devices. This is a definite guarantee that the system will assist many individuals in the country and, in the future, the entire planet.

* 1. **STATEMENT OF THE PROBLEM**

The problem with the public auction is that the participation of the general public is very limited. The auction process is faced with so many difficulties, which include time, planning of the auction event, and also the movement of items to be auctioned which can also lead to the damage of some fragile items.

Cone-men have traditionally taken advantage of the discrepancy of purchasers to give item delivery to clients. Many counterfeit things have made their way into the hands of customers, or purchasers are still in a state of scarcity since they do not receive the correct items from merchants. When purchasers are unable to locate the appropriate things, they attempt to return to their houses. On the other side, we have suppliers and company owners who are competent to provide and sell the things, but they have a limited number of individuals who can come to them, especially in the same area.

**1.3 AIM AND OBJECTIVES OF THE STUDY**

**The aim of the research work is to develop a Web-Based** household Auction System**.**

**OBJECTIVES**

The objectives of the research work are as follows:

1. Users and product dataset will be generated upon registration on the site
2. Modern technologies like Python (Django) will be employed in the development coupled with an open-source relation database; SQLite3.
3. Unit and Integration testing will be carried out to ensure the effectiveness and efficiency of the design making sure that the functionalities are error-free.
4. **LITERATURE REVIEW**

Article Title: Online Auction System.

Authors: Kokila, S., AbalinLuther, J., & Marivijayakumar, T. (2021).

**Summary of the work**

The Online Auction Management System is a web-based application designed to facilitate the buying and selling of items through online auctions. This system provides users with the ability to post their products for auction, and interested bidders can register and place bids on available products within their geographical vicinity. Unlike many online auctions where products may be located far from potential buyers, this system focuses on local proximity, allowing bidders to engage in auctions for products in their vicinity. The core objective is to create a reliable, user-friendly, and efficient platform for users to conduct auctions, providing a convenient way to buy and sell products without leaving their homes.

**Methodology**

The methodology employed for the development of the Online Auction Management System is based on a combination of web development tools, including HTML, CSS, JavaScript, Ajax, and jQuery. These technologies were harnessed to create a user-friendly web-based application. The system utilizes location-based data to list products tailored to the registered user's vicinity, ensuring that bidders can place bids on products available in their nearby geographical location. This approach streamlines the user experience and enhances the efficiency of the online auction process by delivering relevant product listings to users based on their location.

**Recommendation**

To enhance the Online Auction Management System, it is recommended to implement email and SMS notifications for notifying users when they win an auction. This will improve user engagement and provide real-time updates.

**Research Gap**

While the system facilitates online auctions and allows users to view their auction status, the absence of real-time notifications regarding auction outcomes represents an area for further investigation and development.

Article Title: Advanced and Secure Online Web-Based Auction System.

Authors: Khan, Sheharyar & Zeeshan (2022).

**Summary of the work**

This paper introduces an advanced and secure online auctioning system, designed for scalability and efficiency in serving large groups of bidders. The system aims to create a user-friendly platform for auctioning a wide range of goods, offering value-added services to both bidders and sellers. It ensures the security and verification of items, providing a safe online experience. The auction system is divided into two distinct platforms: one for developers to maintain and update the system, and another for end-users. This system stands out due to its reliability, efficiency, and security, making it a unique and distinct solution for various types of bidders, buyers, and sellers in the online auctioning landscape.

**Methodology**

The methodology for developing this system involves the use of a high-level procedural or object-oriented language, such as JAVA, for software development. The software code is primarily executed centrally on the online auction server. However, this layer can also be designed with a certain level of decentralization, where specific software components are installed on client PCs while others remain on the server. This approach allows for a flexible and adaptable system architecture to efficiently manage the online auction process.

**Recommendation**

The recommendation is to further investigate and enhance the program's security measures to protect user data and identify potential vulnerabilities. Additionally, efforts should be made to automate update processes, improving the program's adaptability and efficiency.

**Research Gap**

The research gap in this work is the need for further exploration and development of advanced security measures to safeguard user data and the identification of potential vulnerabilities in the program. Additionally, there is room for research into streamlining the program's update processes to enhance its adaptability and efficiency further.

Article Title: Online auction fraud detection in privacy-aware reputation systems

Authors: Lin, J. L., & Khomnotai, L. (2017).

**Summary of the work**

The study introduces a privacy-aware reputation system for an auction website, which safeguards buyers' identities for privacy while also addressing potential fraud. Traditional fraud detection methods face challenges when fraudsters exploit buyer-anonymized features to conceal their connections with collaborators. To counter this, the research introduces two attributes to quantify user-anonymized activities and enhance traditional fraud detection methods. Experimental results on an auction website dataset demonstrate that these attributes significantly improve fraudster detection accuracy, especially in cases with a substantial proportion of anonymized activities.

**Methodology**

The research methodology involved using DBC, HTML, JAVA, JSP, and Server-Side Script with JSP, along with a MySQL database, for developing a privacy-aware reputation system on an auction website. Two unique attributes were introduced to quantify buyer-anonymized activities and enhance traditional fraud detection methods. Experiments were conducted using an auction website dataset, showing improved fraudster detection accuracy. The study recommends integrating these attributes into auction websites with privacy-aware reputation systems.

**Recommendation**

The study recommends further research to develop a reputation system that calculates reputation scores while addressing the issue of inflated reputations, possibly by assigning different weights to anonymous and non-anonymous ratings. It suggests that reputation systems could play a significant role in evaluating buyer trustworthiness in real time. Additionally, the research suggests exploring the application of privacy-related features, like the anonymous ratio, in the detection of shill bidding on auction websites where anonymity is allowed for both ratings and bidding. This would be a promising avenue for future investigation.

**Research Gap**

The research recommends further exploration and refinement of privacy-aware reputation systems in online auctions. Future studies can focus on improving the proposed attributes for quantifying anonymous ratings and their real-world application. Additionally, researchers should investigate innovative approaches to calculate reputation scores while safeguarding user privacy and trust.

Article Title: Online Auction Management System

Authors: Business B., FZE (2019)

**Summary of the work**

The Online Auction Management System is a web-based platform enabling users to buy and sell items by posting advertisements and participating in auctions. This application offers a unique advantage by focusing on products available in the user's local area, ensuring that buyers can inspect items before bidding. Unlike existing applications that may not offer local availability, this system enhances the convenience and trustworthiness of online auctions, fostering smoother transactions and exchanges.

**Methodology**

The development of this project was undertaken using a combination of software tools and technologies, including MySQL database for data management, Visual Studio IDE for application development, Entity Framework for database interaction, SourceTree for version control, ReSharper for code quality, GitHub for collaborative code repository management, and Moqups for prototyping and user interface design. This comprehensive set of tools enabled the efficient development, testing, and management of the online auction management system, ensuring robust functionality and a user-friendly experience.

**Recommendation**

It is advisable to select a high-performance and scalable database system to handle the anticipated data traffic effectively, ensuring fast and efficient data queries. Additionally, ensuring that the online auction system is optimized for HTML5-supported browsers will enhance the user experience and accessibility.

**Research Gap**

Future research in this domain should focus on conducting in-depth performance evaluations of different database systems to identify the most suitable option for online auction platforms, taking into consideration the scale and data traffic.

Article Title: Online auctions and multichannel retailing.

Authors: Kuruzovich, J., & Etzion, H. (2019).

**Summary of the work**

This research explores the dynamics of multichannel retailing, where sellers utilize both online auctions and offline fixed-price channels to offer products. The study develops an analytical model grounded in search theory to investigate how the characteristics of offline retail demand influence sellers' pricing decisions and online auction outcomes. It delves into key factors such as optimal reserve prices, the likelihood of a successful auction, the probability of selling through auctions, and the expected sale prices. To validate their findings, the research draws on empirical data from eBay Motors auctions, specifically examining how the quality of a seller's retail location impacts their auction outcomes. The empirical analysis aligns with the predictions of the analytical model, shedding light on the intricate relationship between online and offline sales channels in a multichannel retail environment.

**Methodology**

The development of this project was undertaken using a combination of software tools and technologies, including MySQL database for data management, Visual Studio IDE for application development, Entity Framework for database interaction, SourceTree for version control, ReSharper for code quality, GitHub for collaborative code repository management, and Moqups for prototyping and user interface design. This comprehensive set of tools enabled the efficient development, testing, and management of the online auction management system, ensuring robust functionality and a user-friendly experience.

**Recommendation**

The methodology employed in this research involves a combination of analytical modeling and empirical analysis. Initially, an analytical model is developed based on search theory to investigate the influence of offline retail demand characteristics on various aspects of online auctions, including optimal reserve prices, the probability of auction success, the likelihood of items being sold through auctions, and expected auction sale prices. To substantiate the model's predictions, empirical data from eBay Motors auctions are utilized.

**Research Gap**

Based on the findings of this study, several recommendations can be made. First, sellers engaged in multichannel retailing, particularly those using online auctions in conjunction with offline sales, should carefully consider the quality and characteristics of their retail locations. A well-located and attractive offline channel can positively influence auction outcomes. Additionally, sellers should utilize analytical models like the one developed in this research to make informed decisions regarding reserve prices, thereby optimizing their auction performance.

1. **PROPOSAL METHODOLOGY**

The research approach is a rigorous investigation like this to uncover new facts or information about the existing system. The study’s research technique comprises firsthand information from the department and the internet

**3.1.1 INTERVIEW**

The primary goal of utilizing interviews as a data-gathering strategy is to collect data in a comprehensive and intensive manner. The researcher met with the project coordinators from the department and obtained trustworthy information based on the questions provided by the researcher.

**3.1.2 DIRECT OBSERVATION**

This approach was used to collect information/data for this study by examining how the manual system was carried out on business, art, and artifact vendors and online vendors that are actively involved in trading, the method provides varying degrees of control over the context in which they are used, and the careful inspection revealed the obvious flaws in the present system.

**3.1.3 INTERNET**

Internet as a method of data collection will be employed, the internet will be used in sourcing information from different events, and journals on regions that appear tough or perplexing in order to attain a workable result.

**3.2 CHOICE OF PROGRAMMING LANGUAGE**

This research work will be a web-based application and will be implemented on a relational database system (SQLite3). Django (python) will be employed in the development. The above are the modern languages used in implementing this system.

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