Bid & Hit: An Online Auction Site

Leonell Carl A. Arellano
Lyceum of the Philippines
UniversityBatangas
Rizal Ave., Macsor Site Batangas City
(0905) 417 9443
leonellcarl.arellano@lpubatangas.edu.ph

Kenwood C. Borromeo
Lyceum of the Philippines UniversityBatangas
Anilao East, Mabini, Batangas
(0998) 268 0135
kenwoodborromeo@lpubatangas.edu.ph

ABSTRACT

This capstone project was about online bidding or what was so called to be an online auction. The website was a form of electronic purchasing that has genuine workflows and was rarely to be seen in other e-commerce infrastructure forms. Since online auctioning has stirred itself into the vast phase of technology, it has matured and developed compared to eloquent selling of items in the physical market to buy, bargain, barter and sell. Bidding activity was considered to be a definite action in bidding auction sites and the popularity within its activity was a possible way to implement new designs regarding business' suitable needs and capacity of resource administration peculiar to online auction platforms. This paper considered the nature of electronic commerce and the exercises within online auction, an analysis of related sites and as result (1) provided means of exchanging information of various items available from different valid sources, (2) utilized the use of internet to lessen travel time to enable auctioneers to join online auction from anywhere and at any given time, (3) and helped ease participants with the opportunity to easily compare prices online.

Elizebelle Anne. G. Cariño Lyceum of the Philippines University-Batangas De Joya Capitol, Kumintang Ilaya, (0966) 136 7171 elizebellecarino@lpubatangas.edu.ph

Daniella Mae E. Gueta
Lyceum of the Philippines UniversityBatangas
San Isidro, Batangas City
(0915) 257 1229
daniellamae.gueta@lpubatangas.edu.ph

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1.0 INTRODUCTION

Online business had grown well favored in the market and in the past 10 years, online marketplaces were where product vendors sell, marketers promote items or services, and consumers buy sought-after items. The year 2001, Amazon started their way by launching their mobile commerce site that continued to step ahead towards successful progress in the online world of business. The past decade proved that advancements in e-Commerce changed how people see purchasing products differently through the changes brought about by technology advancements. Also, optimization of mobile electronic commerce widely impacted how companies associate to users and their products [1].

One of which related to this was the electronic auction (e-auction) which turned itself into a marketplace by performing business obligations electronically with internet connectivity.

It all started in recorded activity way back 500 BC in Greece until 193 AD hosted by the Romans. The current boom of online marketing was an unstoppable trend of all markets to switch their gameplay online for both benefits of buyers and sellers using modern advancements possible to make trade easier and faster [2].

Today, the internet has found its spot of popularity in the sense that it had made its place to buy and sell goods. It had progressively modified the way people see through usual competitive sales and had made its way into most homes [3]. Added to Megha Didwania and Suvendu that, Chattaraj from the International Journal of Innovative Research in Science, Engineering and Technology (2015), that it had gone far along to declare that in today's modern world popularity of emerging technology was mainly caused by its capability to overcome drawbacks due to interval of locations, point in time of auctions and small-scale auctioneers, influencing old scheme of bidding [4].

Cited in survey from Fortune.com (2015), online selling gained beyond 5,000 consumers generating at least two online acquisition in a three-month period. Also stated by Madeline Farber, outcomes showed that clients nowadays created 51 percent of shopping through the internet, a contrast to 48 percent in the year 2015 and 47 percent in the year 2014. In order to make more aggressive sales, this led to the proposal of the researchers and developed an online auction site, wherein the amount increased every time bidding occurred. This was to gain the even larger amount of profit. In this study, the researchers developed a website that innovated traditional and historical ways of auctioning with today's latest trend, using the internet [5].

This was a modern way of gaining broader access to the online market, providing sense to auctioneers that they need not restrict the participation to any specific area and can attract prospective buyers from anywhere nationwide. Bid & Hit! had the same concept and user interface of the most online bidding system. However, this online auction allowed people the opportunity to be involved in a marketplace where they can get gadgets, appliances, computer electronics, jewelry, accessories, fine arts and collectibles. While also being actively involved in setting their price without being geographically dispersed.

To comply with the website rules, age was required to be declared on the signup page for the website restricts users below 18 years of age. Users could only gain access, bid and sell items upon registration if they were directly connected to the internet and accompanied by a computer terminal. A working email was to be provided by all users so that winning notification is directly sent through an automated message for bidding success confirmation. Bidding activity was only provided nationwide whereas Bid and Hit! was publicized only as a local website and was not capable of making transactions beyond the Philippines. Only registered and screened potential buyers and sellers can participate in any of the auctioning activities.

1.1 OBJECTIVES OF THE STUDY

The researchers designed and developed an online system where buyers could bid on auction goods based on specifications uploaded by authorized sellers and verified by website administrators.

- 1. Developed a dynamic auction website ran by MVC framework.
- Offered auctioning with the prohibit of attending actual bidding from different places.

3. Provided quality goods that undergone screening from administrators.

2.0 LITERATURE REVIEW

To understand this study further, the researchers provided related literature and related studies to the current study.

E-Auction, a Web-Based Electronic Auctioning System Project Report

Nowadays, the continuous use of computer directly connected to the web is considered to be a key for all especially in the line of business actions done by an organization. The internet had offered immense advantages to companies that enabled them to attain customers and their satisfaction worldwide. Dealing with it was an advancement that built an electronic auctioning system. The appliance gave way for the administrator to access the website through the server including the features of registration, bidding progress, product management and settings only administrators were given permission to access [6].

Software Requirement Specification (SRS) on Online Auction

As cited by Ritin Tarpada, Sagar Paperwala and Vatsal Desai (2012-2013), their work on electronic auction systems had advancements which the researchers' project had in common. An identification and password were requested for customers to login into the system. All joining participants were provided with a report on auction results. An FAQ section was then provided for the benefit of end users as well as authentication to avail the services. While on the other hand, there were also features that lacked the researchers' project. The bidding time was not done on a real-time

basis. A password was never given a threetime succession before being locked. Also, the user was not able to see a list of accounts he/she has in the bank. Lastly, there is a page that allowed users to view current balance in an account number, settle payments, forward funds, and site automatic teller machines [7].

E-Commerce and the Digital Economy

According to Michael J. Shaw

(2015) researching about online auctions showed how the sellers and bidders collaborated through the market design and current trends available online. The research was done to study how sellers and bidders made interactions through the electronic bidding market platform. Auction analysis focused the following on three characteristics: seller's action, bidder's action, and auction design. The seller's action, investigated the seller's way of arranging plans, the opportunity for sellers, and observations done by sellers in an online system.

Bidder's action focused on how much the bidder paid, the strategy employed by the bidder, seller observations left in an online character system, buyer opportunism, and the aspect that could matter a bidder to pay more or less at the same item. Lastly, the auction design, research on online auction design typically affected the use of a detailed model that defined an optimal design of a full online auction [8].

Online Auction System

According to Nisha Neville (Oct 2012), a timeless manner was where a community would appreciate more in conjoining to real-time activities and acknowledging the idea of an e-auction due to its relevance and advantages because of the availability issues,

which was a lot of ways were contrast with the deep-rooted scheme of auctions. This recent system gathered buyers and sellers across the globe establishing only one distinct site taking no notice of travel and anything that could consume time other than the actual bidding itself. With a given time for the recording of components, bidders were also provided time to review and finalize their bids before sealing everything. Continued raising and placement of bids could also be accommodated regardless of the time. While for both parties, the purchaser and seller, the company and firm gained profit and upsurge in popularity. Because of this, electronic auction was born [9].

World's Biggest Auction Houses Adapting to the Digital Market

According to Meredith

Mendelsohin (December 2015), the client would rather scroll and browse the internet than raised their hands for bidding. As the community became connected with the rapid technology today, auction sites were dedicating more power and capturing audiences online. The people, nowadays, became used to scan online lists, register online, and provided data and information thru online aid. The same thing happened to bids being input via applications and websites [10].

Empty Auction Rooms

Daniel Grant (June 2014), claimed that raising a paddle or even hands were the traditions of making a bid at collectibles auction and it has already been forgotten very fast. Currently, auctioning blended with technology had became a trend and already caught audiences, upraising globalization in the market, easier satisfaction and convenience and being spread all over any online bidding platforms without becoming

physically hassled. Moreover, it was a simple convenience by just using their phones to call in bids anywhere across the globe. Before, people were busy so much that they never want their money spent by just flying, waiting for hours just to show up in meeting places. Instead, only by the means of staying on their houses and clicking through their phones and personal computers, they gained the capability and sent bids and competed with bidders without physically stressing themselves [11].

Importance of Auction Software in an Online Live Auction Events

Moreover. Karl Kiel from the Nonprofit Technology, Charity Auction Software stated that it aided the schools, nonprofits, and even community organizations in hosting welfare auctions to heighten funds for their cause, a software that made people plan their event in a more convenient way possible and helped make the best use of profits. Online Auction Software helped them made an auction website suited for customer modification tastes wherein customers were able to register and place bids on auctioned items. The items appeared as highlighted as a feature seen at the top of the webpage. Comprising of other software solutions were other available solutions for software reporting, sponsor capabilities, financial tracking etc. [12].

Introduction to e-Business

Cited by Gary Schneider from his authored book, e-Business, auction site in many ways informed business opportunities if perfectly fit into the web. According to him, both buyers and seller could be charged to participate and could promote advertisements on the page. He cited that the strength of technology, particularly internet, could collaboratively bring people

together having the same narrow interest but were geographically dispersed. (page 283, paragraph 1-20) [13].

How Online Auctions Work

It was added by Donna L. Montaldo, that e-commerce was a fastdeveloping business in this generation. Consumers browsed websites; purchased products and the seller remitted the order to the right destination. The change of utilizing mobile advancements for web browsing, the vast development of online web marketing and publicizing, and growth of web-enabled shops had also taken place in changing e-Commerce. Ecommerce business was popular before because it was globally available, convenient and at reach for 24 hours every day. Fewer complications and expenses; the buyers differentiated or compared the prices and products were sold cheaper. Internet auction had two types: business-to-consumer and consumer-toconsumer. Sellers of business-to-consumer auction sites had the physical control of the product and taken payments In consumer-to-consumer consumers. auctions, sellers and businesses bid their items for auction directly to consumers. The auction closed, then the seller is in control dealing with the highest bidder for payment and delivery [14].

15 Ways to Protect E-commerce Site

from Hacking and Fraud

Website protection was a form of defense from illegal access and change or loss of information on a website. As cited by Jennifer L. Schiff, e-commerce could have had a secure platform with a sophisticated programming language. She used SSL or Secure Sockets Layer verification for network and information safety and validated the business and inscribed data. Also, storing of sensitive information was restricted and old database files were

removed by just keeping the essential data needed. An address verification system or AVS was enabled and at the same time, a card verification value or CVV for credit card transaction was required which lessened deceit and scam. She also requested to require strong passwords that aided the consumers by having a least possible digit of attributes and using figures or numbers. The lengthy and even complicated accessing accounts, the more impenetrable to breach or hack a website.

For every order, there was a tracking number assigned. She used tracing digits for every purchase to prevent chargeback deception, monitored website regularly, and the chosen host for the site could monitor if there were malwares in servers, bugs and other software that might often be destructive.

The risk of site hacking was lessened by performing a regular PCI scan like Trustwaves [15].

Types of Payment Methods for ecommerce

Credit cards were the most common way of paying online and the seller could reach out to an international market. Mobile payment offered a quick solution for customers to purchase on ecommerce websites especially in countries with a low credit card and banking penetration. Customers enrolled in an internet banking facility that could do a bank transfer. It assured customers that their funds are safely used to pay for online purchases. E-wallet contained personal information and funds of customers that submitted required data needed once after acquirement. Prepaid Cards was a substitute payment method, commonly used by consumers with no bank accounts. Commonly it was found through subscription-type services like online classes or made with high-cost gain. One kind of payment method used often for goods and COD or cash-ondelivery transactions were called to be physical cash [16].

E-Auction System for Software Development Useful For Freelancers and Clients.

It was cited by D Renuka Deshpande & Prof. S.V. Pattalwar, that the form of a mono freelancer offered a service with buyers that battled to ensure the safety of the service through means of pushing the amount of bidding higher was taken away by forwarding auctions. It was far modernly understood by the public at a huge comparison to reverse auction and to how it actually ran, due primarily that the truth was it has been widely used in consumer laboratory. Forward auctions determine everything from other sites which were similar to eBay and much more auctioning art, wine, and other valuables [17].

3.0 METHODS



Figure 1. Agile Development Method

[18]

The term methodology points to a systematic way of carrying out all the activities by providing a framework for development. In this chapter, the various methodologies research that considered for this project and the ones that were used in the development of the electronic bidding system was discussed. Furthermore, this chapter tackled the most suitable methodology that had generated online auction system which also covered the details of the different methodologies that was used for this project. It was effective and timely to use software development methodologies aided the development team to progress in their work.

The researchers used Agile development method because it was a type of project management process that allowed for much more flexibility than traditional methods. It used a tool called user story which captured end-user perspective, they used it to describe the type of user, what they needed and why. It was a process of iterating through development cycles which were one capability of the Agile method, coping with changes. It covered several phases of requirements gathering, planning, designing, development, releasing, and tracking and monitoring.

Requirement Gathering

In this stage, the researchers had scrutinized ideas regarding the study and the initial planning was plotted as a proposal. Afterward, discussion of ideas was performed during class as well as schedules of meetings and deadlines of each part of the study. The researchers' adviser also elaborated the step by step structure and mechanic of the capstone project.

Furthermore, the adviser recommended other researchers various viewpoints as their basis.

This whole stage involved gaining requirements from prospect subjects like buyers and sellers from the online world and the runtime each auction took and ways for which the winners of the bid could physically gain the auctioned item. It was aided through the use of the library, particularly books, journals, and online resources available. Moreover, the researchers had fully developed the requirements of the document, it consumed a serious amount of time to formulate an initial plan based on the chosen topic. Brushing up with a lot of readings and searching articles and capstone projects that were related to their study took place, enabling them to gather insights.

Initial Planning

The project commenced with a planning which was done thru meetings and discussions attended by the researchers, gatherings were held in order to brainstorm topics for their proposal. Each of them was to supply the group with dependable insights for them to come up with a better capstone topic. Primarily, it focused on complications to be fixed or given solution for the betterment of a specific area of knowledge or society. A consultation with the dean and adviser was held that helped broaden the ideas of each member of the team and at the end required the researchers to provide a verified topic.

Analysis and Design

The researchers had figured out at this stage how to establish the system as well as connected and analyzed all the garnered information they had previously acquired from the gathering of requirement phase and planning meetings. They identified all hardware units they had used which in the

project necessitated the usage of laptops and a server as to make use of a localhost server for data storage.

The users were characterized as administrator, manager, bidder, and seller. The administrator was the one responsible overseeing and maintaining the multiuser platform of the auction site. For the manager role, he/she was assigned to evaluate user needs and system functionality. While for the bidder, a user that placed a certain amount of bid for an item provided by the seller. Lastly, the seller, the product producer and the one providing the items auctioneers place bids for.

Implementation & Development

Within the completion of the 3rd phase, Analysis and Design, the researchers dealt with the development of small programs in the auction system, which was disseminated in phases that followed. Merely, it involved them to translate the system structure into an executable program. The authors used Microsoft Visual Studio Enterprise 2017 in creating the website application by the use of ASP.Net and MVC Framework as a programming language, Microsoft SQL Management Studio 2012 for database management system that was used for data manipulation, Microsoft Visio Professional 2016 in creating the flowchart. Lastly, as for the graphical user interface design, it was aided by the use of Adobe Photoshop CC 2017.

Releasing

This stage required the researchers in running the system to further identify the defects that could possibly appear and to carry out and correct such deficiencies. They proceeded to the releasing phase which involved them to debug the program, detect a real error, solve detected error, running of website demo, functionalities and

determining what was to be added to fully integrate the project.

Tracking and Monitoring

From the previous phase, tracking and monitoring took place to ensure smooth flow within the auction platform.

This was done to make further observations for changes by tracking and continuously monitoring the website. Within this stage, the researchers maintained a complete tracking log of issues with the help of the customer feedback tool.

4.0 DISCUSSIONS

FLOWCHART

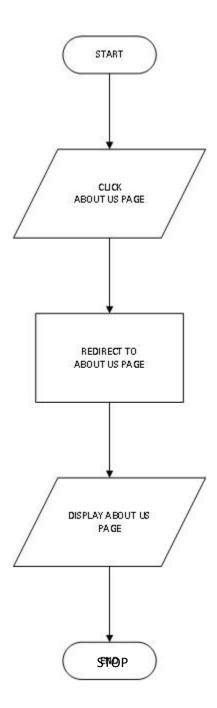


Figure 2. About Us Page

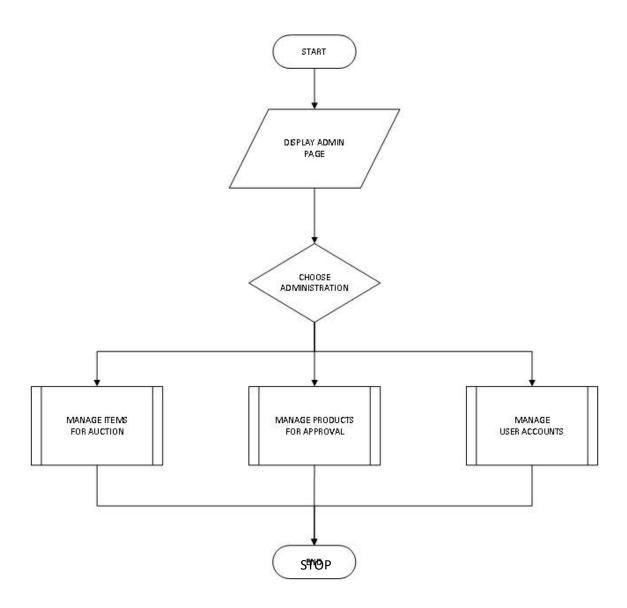


Figure 3. Administrator Home Page

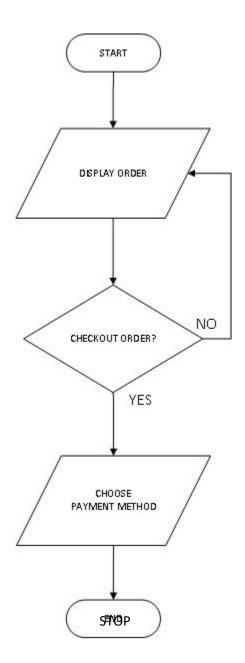
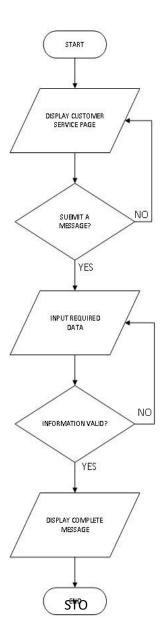


Figure 4. Checkout Page



5. Customer Service Page

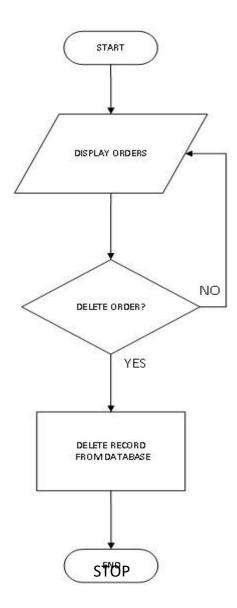
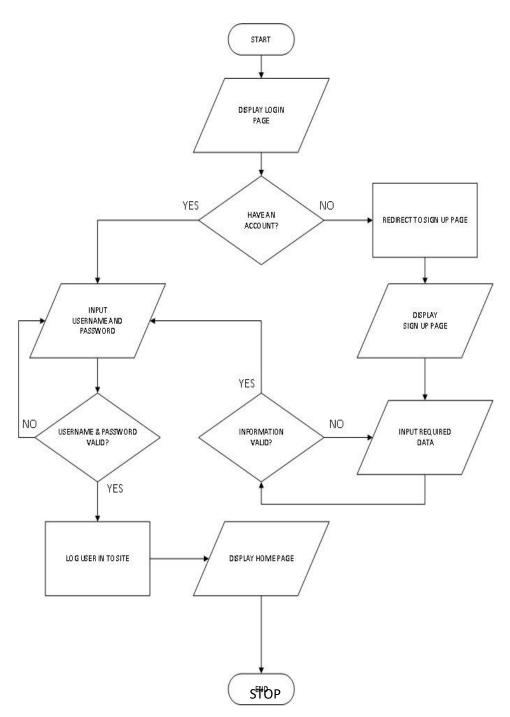


Figure 6. Delete Order Page



7. Login-Registration Page

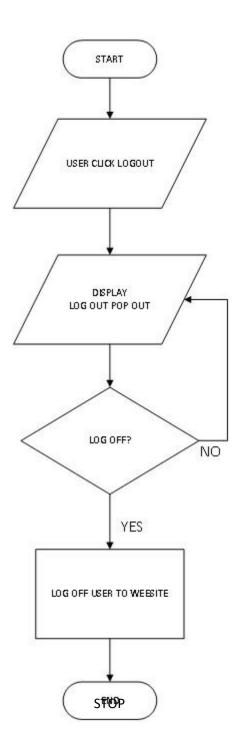
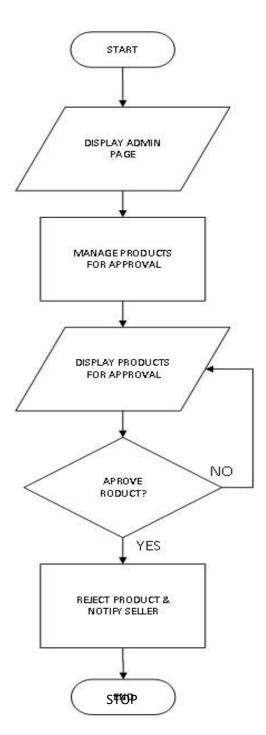


Figure 8. Logout Page



9. Manager Product Page

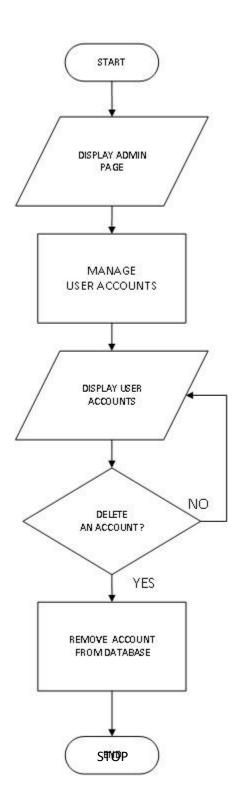
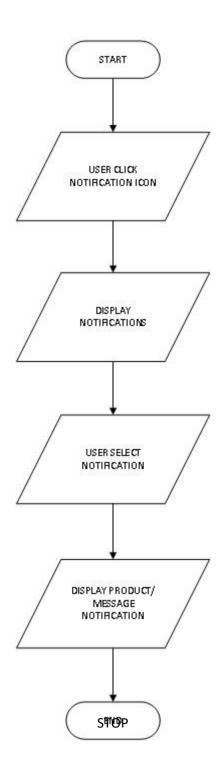


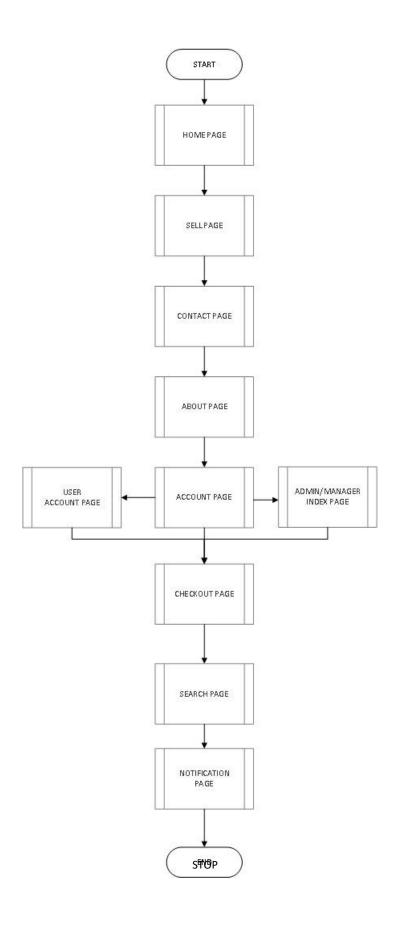
Figure 10. Manager User Account Page



START DISPLAY SELL PAGE INPUT REQUIRED DATA INFORMATION COMPLETE? NO YES DISPLAY COMPLETION MESSAGE STOP

Figure 11. Notification Page







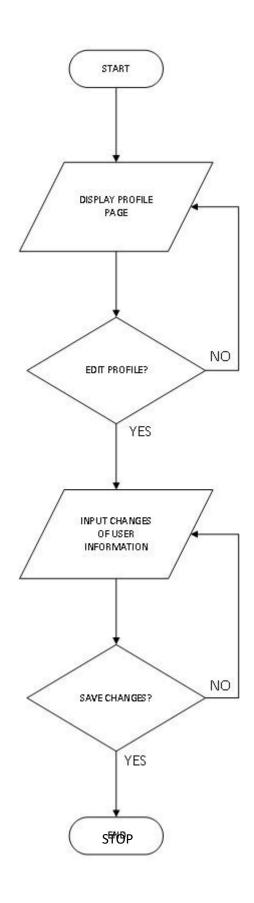


Figure 14. User Account Information Page

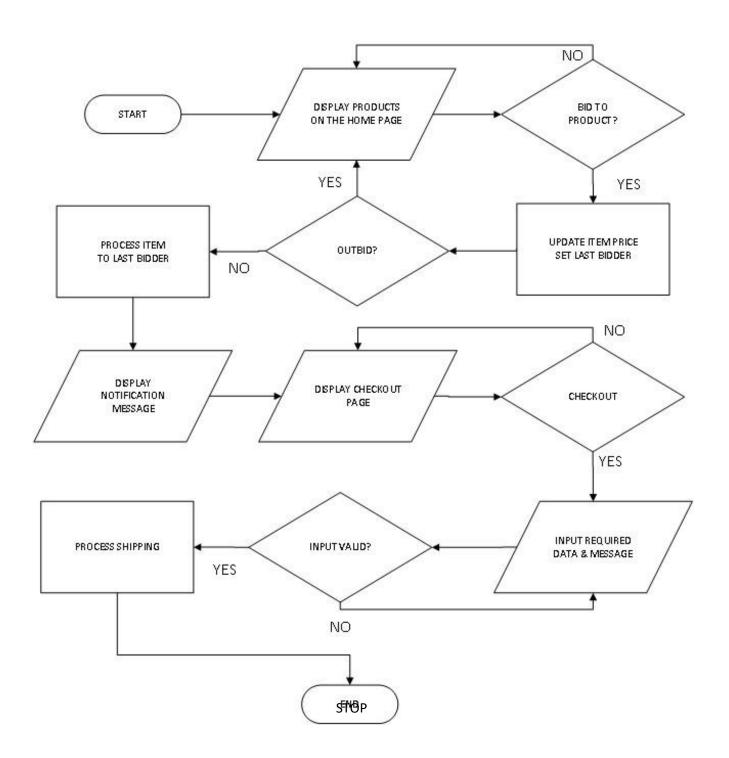


Figure 15. User Bidding Home Page SCREEN LAYOUTS

Aided by Photoshop, the researchers were able to create the Graphical User Interface of the study. This figure shows the logo of the website Bid & Hit!



Figure 16. Bid & Hit!: Auction Website Logo

A PNG image photo manipulated with the use of Adobe Photoshop CC.

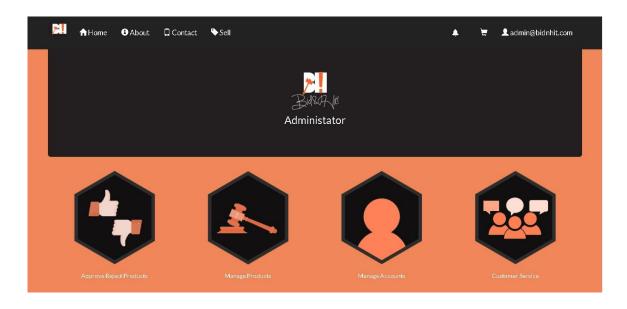


Figure 17. Bid and Hit! Home Page

In this figure, the home screen was previewed and the administrator can choose either from the four main options, approving and rejecting of products, managing of products, managing of account and the customer service option.

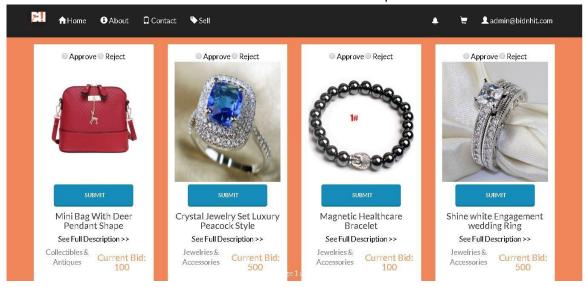


Figure 18. Administrator's Product Approval Screen

In this figure, the administrator from the developer's team was tasked on screening submitted items for auction before officially being submitted to the site. Two radio buttons were provided for the role, approve or reject.

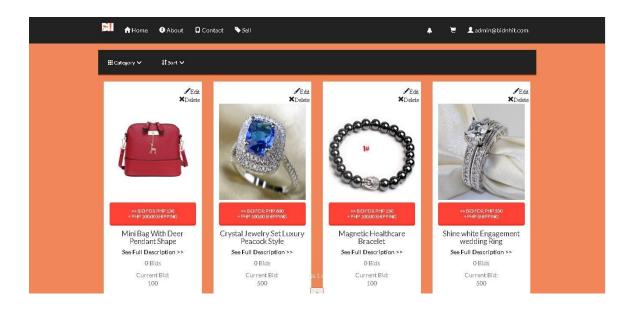


Figure 19. Administrator's Product Managing Screen

In this figure, the administrator was able of controlling any content posted within the website. This was done to discharge any item found with discrepancy, unscreened or may bear defects. This was the part of the system which allowed administrators in removing uploaded goods.

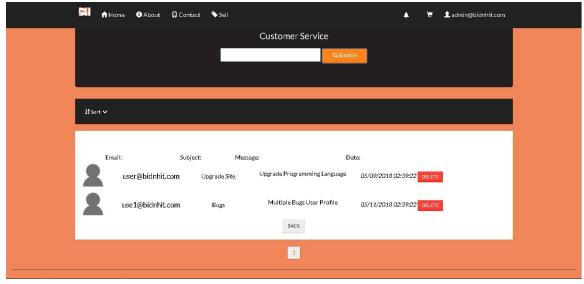


Figure 20. Administrator's Customer Service Perspective

In this figure, a lineup of feedbacks was indexed due to users who had dispatched concerns regarding the website. In this case, feedbacks gave developers the concept of change and further augmented the platform for user efficiency.

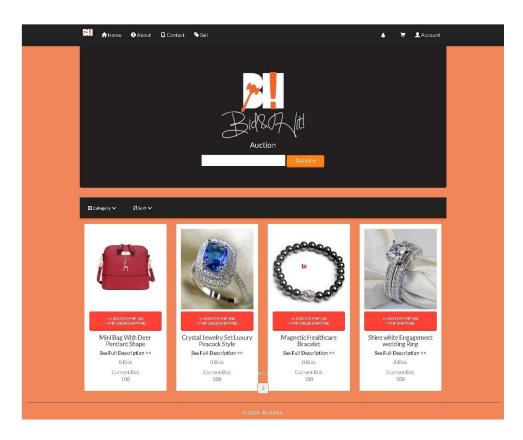


Figure 21. Non-Registered Home Perspective

In this figure, non-registered visitors could gain preview to the interface, however, they were only provided with item details and few other options unless they sign up and create an account.

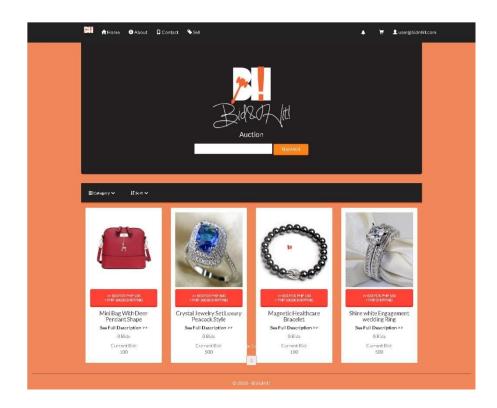


Figure 22. Registered User Perspective

In this figure, registered users were eligible in engaging from any bidding activity with the privilege of casting bids or uploading items for bidding.

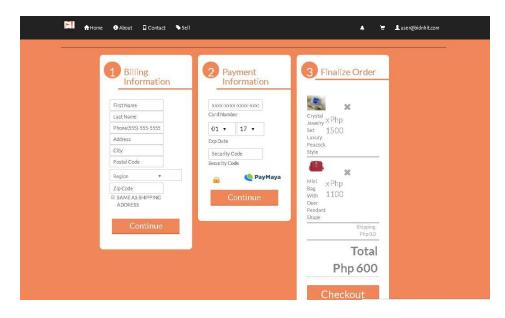


Figure 23. Auction Winner Processing Screen

In this figure, three steps were made for the process after winning the bid. First, filling out of billing information which were required to input names, address etc. Second, card number for payment information and lastly, order finalization.

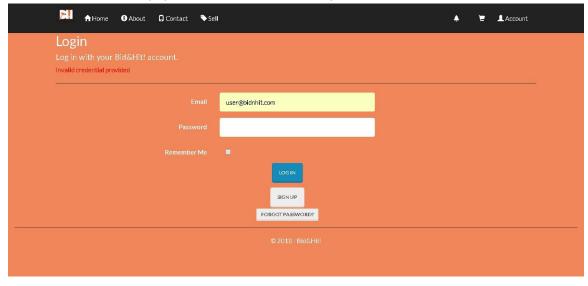


Figure 24. Login Page (Administrator and User View)

In this figure, both administrator and user had the same entry point towards the website.

However, their preferences would vary when their accounts had been read by the database. Other links below provided both administrator and user option to regain their accounts once passwords were forgotten by clicking "Forgot password" and the "Not yet registered?" for signing up.

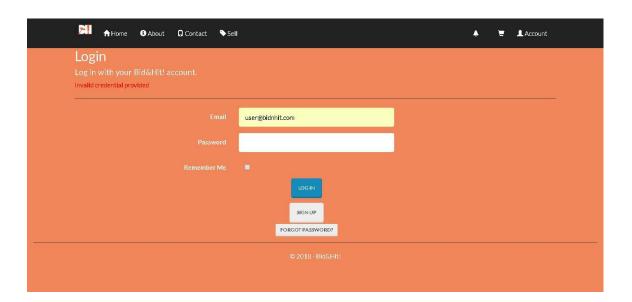


Figure 25. Login Error Prompt

In this figure, a prompt appeared on the upper left part of the screen due to an error, an unregistered user trying to penetrate inside the website without a registered account or a password entered incorrectly.

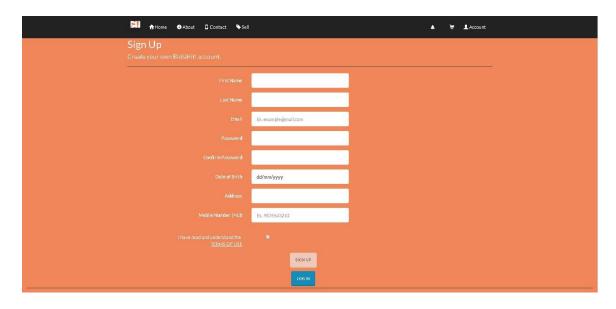


Figure 26. Sign Up Screen for Users

In this figure, filling out of valid information is required by the administrator to create an account for users/bidders. This page contains personal information textboxes, two succeeding identical passwords, an email address for account confirmation and the link of

Bid & Hit!'s terms of use.

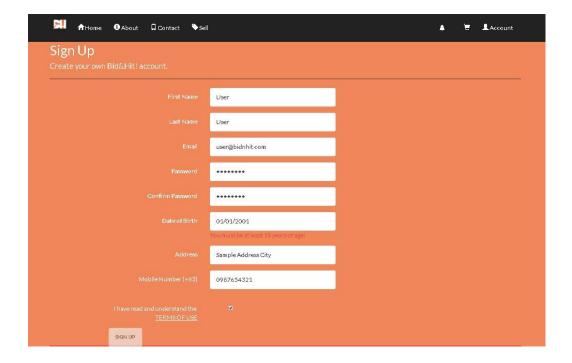


Figure 27. Age Requirement Error

In this figure, an error appeared due to an age requirement of 18 years old and above. Only users with the required age limit were allowed to create an account to sell or join bidding activities.

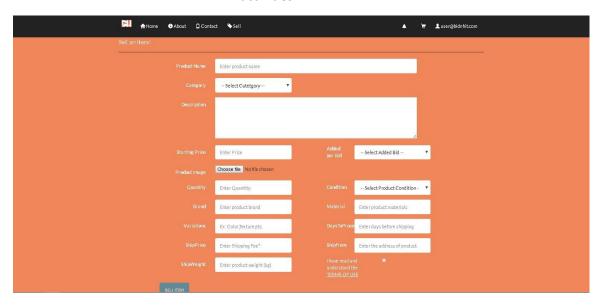


Figure 28. Product Information Error (User)

In this figure, users who wished to have items auctioned online were required to fill out this form for the item descriptions and other relevant data regarding the item.

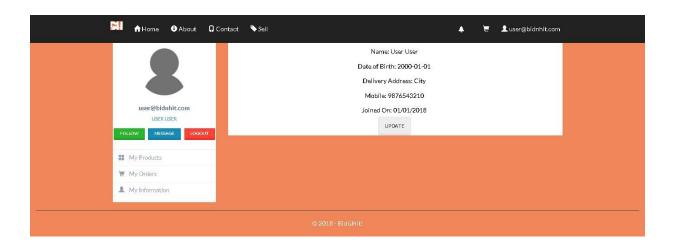


Figure 29. User Perspective for Profile Viewing

In this figure, users could preview their account given, that their information are true and correct to ensure smooth and fast transactions.

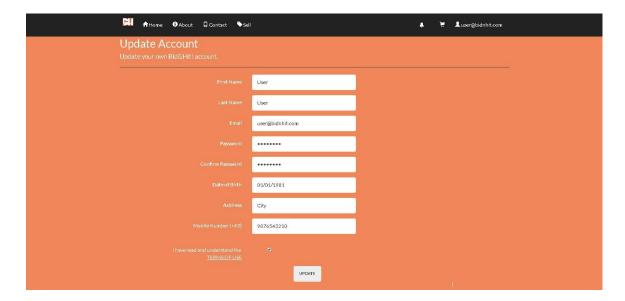


Figure 30. User Perspective for Account Modification

In this figure, users were able to update their account regarding necessary changes such as email, password, address or mobile number.

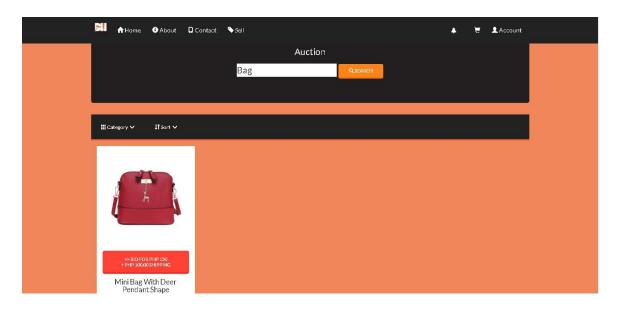


Figure 31. Search Page

In this figure, users were enabled to navigate through the database where various enlisted items and information were provided by the search button.

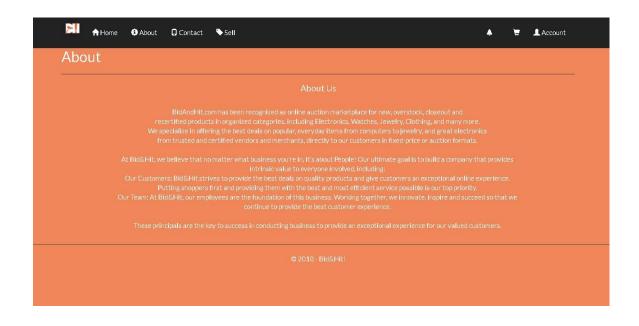


Figure 32. About Us Page

In this figure, users are provided information of the website regarding its insights and operations

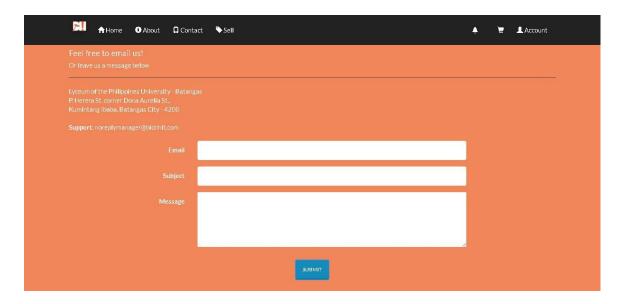


Figure 33. Customer Service Feedback Screen

In this figure, the users were allowed to send feedbacks regarding any issues or bugs, query or suggestions they wanted to ask or wished to implement in the system.

5.0 SUMMARY, CONCLUSION & RECOMMENDATIONS

Summary

Different businesses had grown well favored in the market and in the past years of its existence, online marketplaces became places where product vendor sell, marketers promote items or services, and consumers buy sought-after items. This capstone project "Bid & Hit!: An Online Auction Site"

aimed at providing a website for prospective bidders and sellers by supplying a form of electronic purchase. It was served with a matured, developed and flexible form compared to traditional way of doing auctions. Through this innovated way, the items did not need any physical location because inventories were managed online. No restraints regarding the time, location, or the contact person were faced because users could participate in any bidding activity anywhere using their computer terminal and internet connectivity. A website of

information about auction goods presented with different choices furnished with the description provided and screened by administrators. It was a dynamic platform for customers who wished to bid and sell items.

This study dealt with the development and design of an interactive website focused on the enhancement of classic bidding. For the main program, the authors used Microsoft Visual Studio Enterprise 2017 in creating the website application by the use of ASP.Net with

MVC Framework, Microsoft SQL Management Studio 2012 for the database creations and setup of a local server, Microsoft Visio Professional 2016 in creating the flowchart. Lastly, as for the graphical user interface design, it was aided by the use of Adobe Photoshop CC 2017.

Conclusion

Based on the aforementioned features and benefits of the said capstone project, the researchers had come up with the following conclusions:

1. Upon the development of the website, the researchers have provided users a lot of means to environment. However, the only difference is that bidding is far diverse than just adding items to buyer's carts on online shops because it entails a competitive skill in risking financial matters.

Future researchers who may have a likewise or related proposal may further make advancements to momentously

further understand electronic auction and the advantages it has; having no time and place constraint, rich in information regarding products and sellers, time and money wise, convenient and easy price comparison.

- 2. Through the vast phase of change technology from the few past years until now, this capstone project provides a way of treating classic auction through the utilization of modern technology. Thus, supplies easy ways of the transaction from sellers or bidders and vice versa.
- 3. The website provides an interactive and dynamic appearance with organized item categories for great finds and a good catch to prospective buyers and sellers.

Recommendations

The study is for everyone who found it a great time surfing in the internet for items similar to famous websites having the same platform structure and intention in the e-commerce

expand this studies functionality through adding more options for users and administrators, enabling a live auction feature so that sent bids are straightforwardly flashed on screens, adding other payment methods or options for billing convenience, wishlist and add to cart options, and by adding other various item categories.

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