“E-COMMERCE SYSTEM FOR MGS PC TRADING AND COMPUTER PARTS”

A Capstone Project

Presented to the Faculty of the

Information and Communications Technology Program

STI College Batangas City

In Partial Fulfilment

of the Requirements for the Degree

Bachelor of Science in Information Technology

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# November 2023

ENDORSEMENT FORM FOR ORAL DEFENSE

TITLE OF RESEARCH: “E-COMMERCE SYSTEM FOR MGS PC TRADING AND COMPUTER PARTS”

NAME OF PROPONENTS: Rose Angelica H. Balimbing

Renzo S. De Los Reyes

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In Partial Fulfilment of the Requirements

for the degree Bachelor of Science in Information Technology

has been examined and is recommended for Oral Defense.

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Program Head

# november 2023

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This capstone project titled: *“E-commerce System for MGS Pc Trading and Computer Parts*” prepared and submitted by Rose Angelica H. Balimbing; Renzo S. Delos Reyes; John Bernard M. Ebora; and Allen James D. Marasigan, in partial fulfillment of the requirements for the degree of Bachelor of Science in Information Technology, has been examined and is recommended for acceptance and approval.

Mary Rose C. Manipon

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in partial fulfillment of the requirements for the degree of

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Others <state his/her contributions to your research**>;**

# Abstract

Title of Research**:** **“E-COMMERCE SYSTEM FOR MGS PC TRADING AND COMPUTER PARTS”**

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Degree: Bachelor of Science in Information Technology

Date of Completion: <Month year of graduation>

Key words: <key words of your research>

The abstract is a summary of the whole capstone project. It presents all the major elements of your work in a highly condensed form. It must be capable of substituting for the whole capstone project when there is insufficient time and space for the full text. Currently, the recommended size for abstract is 150 to 350 words. Usually a one-pager abstract is the most ideal. The structure of the abstract should mirror the structure of the whole capstone project and should represent all its major elements. There should be one or more sentences assigned to summarize each chapter of your capstone project.

In the succeeding paragraphs, there should be no indentations, paragraphs are justified with left alignment. Delete this highlighted section and replace it with your Abstract.

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# Introduction

## Project Context

MGS PC Trading, Internet Café and Computer Parts owned by Ms. Juvy Abes. The business has two branches, the company’s main store is in Dasmarinas, Cavite and the company has a Batangas branch. Originally the company was established on June 12, 2015. The company has been almost eight years in the industry of selling computer parts and PC building. The start of the store's operation is from 9am to 7pm but the store extends its operating hours depending on the customers. The company has an overall six employees, three employees in the Cavite branch, three employees in the Batangas branch. Mr. Marvin Simeon is the person responsible for managing and monitoring the store, also he is the in-store technician. The company has cellphone and laptop repairs and a front desk to accommodate the customers. The company offers different brandings like NVISION, Kingston, DarkFlash, TeamGroup, ASUS and any other popular brands.

The company is having difficulties that affect their company. One of the main problems is losing information about the inventory in hard drive. MGS PC trading and computer parts lose some of the inventory's information due to the loss of data from their hard drive and must retrieve it in their main branch causing delays and potential errors in inventory management. In addition, the company has two branches, thus if pricing and other product information needs to be modified, the revised file must be forwarded to the other branch; if this does not happen, the other store is uninformed of any modifications or additions regarding the new product details. Furthermore, the company relies on a logbook to record daily sales, resulting in the need for manual calculations to determine sales figures over specific periods. This manual process tampers with real-time reporting and analysis, preventing timely decision-making and hindering the ability to monitor sales performance effectively. To manage their limited inventory. MGS PC Trading and computer parts manually tracking their inventory and can be time consuming and prone to errors, there having tough time back tracking of their stocks, which is time consuming to manually input the product that has not included in the inventory but the product on their display. With only one staff member available to answer inquiries about PC building, MGS PC Trading experiences delays in responding to customer inquiries. This delay occurs as customers often require assistance with unfamiliar parts or determining the appropriate specifications of their specific computing needs, resulting in prolonged response times and potential loss of sales. Due to staffing restrictions.

The proponents conduct an interview to determine the statement of the problem:

* The company once had experience corrupted data from the hard drive, including product descriptions and sales for the month. As a result of what happened, the staff requested the product details of another branch. Since the business operates two stores, whenever the pricing and other product data need to be changed, the revised file must be sent to the other branch; if this does not happen, the other store is unaware of any modifications or updates regarding the new product details.
* The company utilized a logbook to record daily sales, so whenever they needed to check sales from one date to the next, they had to manually calculate sales, which prevented real-time results.
* MGS PC Trading and computer parts manually tracking their inventory and can be time consuming and prone to errors, there having tough time back tracking of their stocks, which is time consuming to manually input the product that has not included in the inventory but the product on their display.
* Since there is only one person accessible to answer inquiries about PC building, the company takes a long time to respond to clients' enquiries because some parts are unfamiliar to the customer, and unsure about the specifications of the computer they are building or the computer requirements for their work demands.

## Purpose and Description of the Project

Our web-based system, "Ecommerce System for MGS Trading and Computer Parts," was created with the intention of giving customers a simple and convenient online platform to learn, buy, and get support for the computer parts and mobile devices offered by MGS Trading by including e-commerce capabilities, POS (Point of Sale) system and Inventory. The solution promises to speed up the customer experience, boosting client happiness and fostering business growth.

The way customers engage with MGS Trading and Computer Parts will be completely altered by our web system. Customers may browse through a variety of parts for computers and mobile devices on our comprehensive platform with ease, getting access to in-depth product information, specifications, and images. They can browse while selecting a variety of payment methods other than a credit card. Our system has a tool for making online appointments to further improve the customer experience. Customers can book technical support, request assistance, or schedule consultations for PC building, hardware repairs, or troubleshooting.

Customers will be given personal attention and support from skilled staff members, assisting them in making decisions and overcoming any obstacles they may face. Our system has a POS (Point of Sale) system to make in-store operations more efficient. Staff members can execute transactions, create payments, and manage sales effectively thanks to this functionality. The incorporation of a powerful POS system guarantees precise and seamless transactions while giving the company access to real-time sales data and analytics. Our system also features functionality for inventory management. This includes keeping an eye on stock levels, setting up automated low-stock alerts, and updating the e-commerce platform in real-time to reflect current product availability. Effective inventory management reduces the possibility of overselling or stockouts and guarantees that customers have access to correct product information.

Our technology gives clients flexibility and convenience because it can be accessed from desktops and mobile devices with web browsers and internet connectivity. A consistent and optimized experience across different devices is ensured by the responsive design. Our web solution combines e-commerce features with POS system functionality, and inventory management to improve company success for MGS Trading and Computer Parts.

## Objectives of the Study

The study aims to develop an E-commerce System for MGS PC Trading and Computer Parts. The proponents believe that the proposed system will help the said company:

* To design and implement a module that would create the company's POS system to generate a real-time report on sales and automatically adjust product quantities in stores.
* To create and develop a centralized Database of product information for all branches and an independent one for each branch’s real time sales report.
* To design and develop a system that will store the daily back-up for the product information and sales reports for all the branches.
* To design and implement a module that would enable PC customization to reduce queries and familiarize clients with the components of the computers they are making.

## Scope and Limitations of the Study

Scope

The study’s scope is to develop a user-friendly and secure online platform that allows customers to browse and purchase computer parts offered by MGS Trading. The customization should provide compatibility checks, and real-time pricing information to assist customers in selecting compatible parts for their desired configuration. Furthermore, the system can also manage and track inventory of computer parts and mobile devices, ensuring accurate stock levels, automated notifications for low stock, and real-time updates to reflect product availability on the ecommerce platform.

Admin User

* **Login** - A secure login page that requires authentication to access the admin functionalities, ensuring only authorized personnel can access the admin dashboard.
* **Dashboard** - A centralized dashboard providing an overview of key metrics, such as inventory and sales status.
* **Product List** - An interface for the admin to add, update, and delete product listings. It includes options to set product descriptions, specifications, pricing, and images. The admin can categorize products and manage stock levels.
* **Sales** - A dedicated section for the admin toview the purchase of the client and approve and decline the order.
* **POS System** – A section of the system that manages customer purchases, accepts payments, and provides receipts.
  + - **Email** – For Electronic Receipt
* **Sales Report** – A section of the system that manages the profit and income of the branch.
* **Account Settings –** A section of the system that manages the credentials like the password of the branch.
* **Store List** – A section of the system that manages the existing stores and adds a new store to the system.

Client User

* **Homepage** - The landing page of the website that provides an overview of MGS PC Trading, highlighting featured products, promotions, and company information.
* **Shop** - A categorized and searchable listing of computer parts available for purchase. Customers can browse through various categories, view product details, check pricing and reservation.
  + - **Category** – this module allows the customer to view sorted products of the store
* **Branches** – This is where the client will choose their desired branch of the store.
* **Build Your Own PC** – This is where the clients can build their own preferred PC and find the recommended PC Build that the clients need.
  + - **Email** – For User Account Verification.
* **Favorites** – the favorities tab allows the customer to review their saved product.
* **Add to Cart** – this clickable icon enables users to add items to their virtual shopping basket.
* **Product Information** - Customers can view product details and check pricing.
* **Search** - A search bar that allows customers to search for specific products by keywords, brands, or specifications, making it easier to find desired items.
* **User Registration and Login** - Options for new customers to register an account or existing customers to log in. This allows customers to track their orders, save their preferences, and manage their profile information.
* **Payment** - Secure payment gateways that enable customers to make online payments using various methods, such as cash or digital wallets.
* **Profile** - A personalized dashboard for customers where they can manage their profile information, view order history, track appointments, and access saved preferences.

Limitation

Credit card payment, home credit, are not accepted through the website system. Customers will now need to make their purchases using alternate payment options like digital wallets like G Cash, or in-person payment. The system can only be accessed through computers or mobile devices with a web browser and an internet connection. Customers may not be able to use the system properly if they do not have access to certain devices or reliable internet connectivity. The system includes PC components only, the customer cannot request a warranty on the system if not brought to the shop itself. The proposed system does not include product delivery or a delivery fee. The system does not have an online appointment for repairs. The system can only notify an online user. The PC bundle is not covered by the system when the client removes something from the bundle

# review of related literature/systems

## Review of Related Literature

**FOREIGN**

According to Kim et al. (2017), previous studies found that impulsive purchasing online could be just as common as reasoned consideration of the benefits of e-commerce. Interactive e-commerce site elements like email alerts for exceptional deals and "clickable" product arrays may encourage irrational purchasing behavior by eroding consumer self-control, although this relationship has not been scientifically proven. In this study, 174 college students were employed as a sample, and structural equation modeling methods were used to model the association between interactive e-commerce features and online purchasing behavior. The use of interactive shopping elements was anticipated by the recreational shopping orientation since it was believed that they would encourage unrestrained spending, worsen self-control, and increase online shopping. The purchase behavior was directly impacted by convenience shopping orientation, but it was unaffected using convenience shopping features. The use of recreational shopping characteristics that encouraged poor self-regulation was also influenced by a convenience shopping orientation. Overall, the model could account for 50% of the variation in online shopping behavior.

Based on the study of Reinartz et al. (2018) consumers making their purchases at the store shelf, brick-and-mortar businesses have a significant advantage in understanding consumer preferences and behavior. This long-held dominance is under danger from new rivals as e-commerce, mobile shopping, and most lately smart technologies grow in popularity. Using a value-creation lens, we examine how digitization sparked institutional retailing's decline as the key consumer interface. To advance and change the competition for this interface, we create a methodology that discovers five new sources of value generation. Stationary retailing may prevail as a significant interaction point in a multichannel choice journey, depending on the significance of the new sources of value generation (in different buying situations). But the widespread use of branded product platforms, such as connected gadgets and online retail platforms, is giving fresh players more power. It is essential for the parties engaged in this multifaceted competition to recognize the changes and actively manage their position within the changing eco-systems.

Balangoda's Wisdom Computer Technologies is a store. selling components and computers to customers' computer accessories and repairs. The shop's current system is manual process. Everyday tasks are completed and managed on paper. The store consumers' and staff' time is wasted, some tasks are performed inefficiently, and occasionally harder. For all these current system issues and to address all other Computer shop management system is suggested as a fix by the specifications. The computerized retail management system eliminates all those issues and boosts their work's effectiveness and efficiency. The proposed system offers amenities like Customers, suppliers, and all item information should be saved. Items should be sold and repaired. Calculate income and expenses, create reports, and more. The project is made up of the following modules. The following modules are included: access control module, notification module, works history module, category manage module, inventory maintain module for stock, sales module for direct sales and higher purchases, account module for calculating income and expenses, warranty claim module, repair PC module, and reporting section. (Chandrawansha, 2017)

As stated by Parveen (2019) Throughout history, project development has been accompanied by issues with time and money. This has spurred the hunt for adaptable, dependable, time- and money-efficient development. We have created an automated computer shop system to accomplish this. By fostering improved customer and staff collaboration and communication to better understand requirements, this web-based tool will assist in enhancing the entire process of purchasing goods from suppliers and selling them to customers. The suggested system focuses on automating computer shop software created to help users manage stock inventory, personnel, and purchase and sale transactions. The proposed system consists of modules for sales and purchases.

**LOCAL**

The world has become a virtual marketplace due to the internet's continued development in popularity. Many webs applications' dependability has grown in importance to users. The rapid expansion of online applications available over the internet encourages user interface designers to up their game in terms of creativity and competition. Websites are expected to provide the users with a satisfying experience at the least. Many studies have been undertaken focusing on the creation of usability criteria to assess the websites. Few studies, meanwhile, use a methodology that would provide the outcomes of a usability evaluation in a broader context. Without considering the connections between usability measurements and calculating its usability index, usability evaluation can be worthless. According to the findings of the literature research, there is no established usability index that can be used to gauge how usable a website is. This usability index is a crucial metric for assessing the management's exposure to the outcomes of the usability evaluation. This paper therefore aims to highlight the future research direction in web usability measurements that would provide a meaningful standard score for all the usability metrics. (Esmeria et al., 2017)

Based on the study of Quimba et al. (2019) the internet has developed as a major force in transforming how companies do their business, which led to the rapid expansion of electronic commerce, or e-commerce. To capitalize on the potential of e-commerce for growing Philippine enterprises, the Department of Trade and Industry established the Philippine E-Commerce Roadmap in 2016. The Philippine Statistics Authority's Survey of Information and Communications Technology and the Annual Survey of Philippine Business and Industry are used in this study to examine the determinants of e-commerce adoption in support of the Philippine E-Commerce Roadmap's first success criterion, which is having 100,000 Micro, Small, and Medium-Sized Enterprises (MSMEs) engage in online commerce. According to the study, internal factors that affect e-commerce adoption in the Philippines most are firm size, the availability of computers, internet connectivity, and company use of information and communications technology (ICT) in other areas of firm operations. Additionally, outside variables such as the company's market share and the industry it belongs to are not statistically significant influences on the adoption of e-commerce. Considering these findings, this study suggests that security concerns and uncertainty-related bottlenecks be addressed. Additionally, government organizations must encourage MSMEs to use e-commerce and aid businesses in implementing ICT. The government can assist businesses planning to implement e-commerce by facilitating access to financing. It is important to work on lowering the price and raising the caliber of internet services. The PIDS Discussion Paper Series contains studies in the preliminary stages open to future changes.

**Related Studies and/or Systems**

**FOREIGN**

This study talks about the inventory system that needs effective inventory management to handle customer procurement. The method of Supply Chain Management (SCM) concept for the inventory control process can be utilized in the management of the inventory based on the study's objectives to make observations on the research. The store needs a system for inventory management that can guarantee the supply of goods of guaranteed quality, prompt delivery, and the appropriate amount in accordance with the reservation. Supply chain management may assist control inventory, maintain stock stability, and enhance customer service by calculating the reorder threshold using safety stock. Since it can enhance customer service, market the latest items, and boost sales, a total reorder with safe stock has the impact of enhancing corporate performance. To keep stability from stock out, the XYZ Store may estimate and predict the capital that needs to be invested each year based on estimated income for the business. (Saputra etal., 2020)

The goal of this thesis, according to Yeyin (2010), is to develop and build a modest web shop for online commerce. It is designed for consumers who can shop at home by computer, and the seller can sell their products and services without the huge amount of maintenance cost for the management and marketing in the real storefront. Simply creating a Web shop system through analysis, web interface design, database construction and connection, testing, and implementation is the task at hand. It builds its implementation on Microsoft Access and employs ASP (Active Server Pages), HTML (Hyper Text Markup Language), VBScript, and JavaScript. The system is divided into frontstage and back-stage management page. Front-stage management is a friendly interface for users to browse and inquire. It includes browsing products, checking products, ordering items, view shopping cart, user maintenance and other functions. Administrators have access to backstage management, which includes user management, order management, and so forth. The administrators from the tedious manual operation freed and increased office efficiency. Additionally, the whole research and development work is based on course materials. In conclusion, I compared some existing systems (such as Ebay). After that, I looked at and updated my system in response to some genuine issues and demands from a few internet retailers. Throughout the entire project, I truly learnt how to manage a team, assess systems, compile requirements, and find solutions to issues as they arise.

Electronic commerce, or e-commerce, has exploded in popularity thanks to the rapid advancement of scientific, computer, and network technology and the convenience it offers consumers, particularly in business-to-consumer (B2C) trade. Orders can be placed at home, saving the consumer time. Online payment systems have a particularly key role in e-commerce, and they are used to complete e-commerce transactions. This thesis aims to introduce the existing situation, difficulties, and hopes for online payment systems in China, Europe, and particularly Finland. The theoretical background covers the evolution of e-commerce, its state today, and the types of online payment systems utilized in e-commerce in China and Europe. Using questionnaire surveys, the research area examines various client viewpoints on online payments. The study's findings indicate that internet payment methods are widely used today. All the respondents have experience of online payments. Debit card (Visa or MasterCard) and Net Bank are the most popular online payment systems, not only in Europe but also in China and other countries. The second one is third-party online payment systems. PayPal is more popular in Europe. AliPay, in contrast, is the most used online payment method in China. Convenience and transaction speed are the two primary considerations when choosing an online payment method. The primary benefits of using an online payment method are the lack of technical issues and vulnerability to cybercrime. The primary obstacles to online payment are malware attacks and money problems. It is crucial to have a safe, dependable, and trustworthy online payment environment. (Yang, 2017)

Based on the study of Vatrapu (2014), In today’s fast-changing business environment, it is extremely important to be able to respond to client needs in the most effective and timely manner. If clients want to view your company online and have immediate access to your goods or services. Online Shopping is a lifestyle e-commerce website that sells a variety of clothing and lifestyle items, primarily men's wear. This project allows viewing various products available enables registered users to purchase desired products instantly using PayPal payment processor (Instant Pay) and can place order by using Cash on Delivery (Pay Later) option. Administrators and Managers may easily view orders placed utilizing the Pay Later and Instant Pay options thanks to this project. To develop an e-commerce website, several technologies must be studied and understood. These include multi-tiered architecture, server and client-side scripting techniques, implementation technologies such as ASP.NET, programming language (such as C#) and relational databases. This project's goals are to create a simple website with a shopping cart application for customers and to learn about the technologies involved in creating such an application.

E-commerce, often known as online stores, is quickly becoming a recognized and utilized business model. More companies are creating websites with the capability for doing business transactions online. It is safe to argue that making your purchases online has become routine. The goal of this project is to create a product catalog where customers may examine any product from Company Name (including laptops, computers, mobile phones, electronics, and many more) and place online orders using their laptops, desktop computers, or even their mobile smart phones. Online stores are virtual shops where customers can browse the stock and select things, they are interested in. To confirm and finalize the transaction, the client will then contact the company using its contact information. (2015)

**LOCAL**

Malita E-commerce website is a system that focuses on buying and selling products online. The system is especially important to Malita, Davao Occidental to enhance the marketing strategy and it gives way to those people who have less time to visit the marketplace. The project's goal was to create a website that improves marketing through online selling and buying. Designing a webpage that will enable customers to search products online, view product descriptions and creating a web portal where consumers can purchase and order products. The administrator will be responsible for managing the user, the system, and maintenance according to the system flow. The vendor will post products at the website and the customer will visit the website, view the product, and order the product. Malita, Davao Occidental is currently using the manual method of marketing. The goal of the research is to enhance the manual marketing process through internet marketing so that consumers can readily browse the products listed by various suppliers. The researchers created an e-commerce website so that people in Malita could sell or buy goods there as a solution. (Malita, 2018)

**Synthesis**

The emergence of electronic commerce (e-commerce) systems is a result of how the internet has changed the world market. This synthesis examines the parallels between numerous domestic and international documents and systems and an online reservation, appointment, and PC construction simulator for MGS PC Trading and Computer Parts. The objective is to find common themes, approaches, and suggestions that can help with the creation and improvement of the suggested system. The materials and systems under consideration cover features of inventory management, automated computer shop systems, usability, e-commerce adoption, and online payment systems.

Esmeria et al. (2017) stress the value of usability standards for web applications and the demand for a usability index to rate the usability of websites. Like this, Quimba et al. (2019) examine market share, business size, and technological infrastructure as factors of e-commerce adoption. These results are in line with the suggested system, which is designed to give MSMEs (Micro, Small, and Medium-Sized Enterprises) an easy-to-use interface and encourage their adoption of e-commerce. The case of the Malita E-commerce website (Malita, 2018) exemplifies the value of online platforms for selling and buying in improving marketing tactics and resolving the time restrictions faced by consumers. This fits with the goal of the suggested solution, which is to enhance marketing through online purchases. In addition, the focus on inventory management in the XYZ Store (Chandrawansha, 2017) and Saputra et al. (2020) emphasizes the necessity of ensuring effective stock control, prompt delivery, and improved customer service—a crucial component for MGS PC Trading and Computer Parts to manage its inventory effectively. The creation of an automated computer store system is discussed by Parveen (2019) to speed up the purchasing process and enhance staff-customer communication. This is consistent with the planned system's emphasis on automating computer shop software to improve employee administration, purchase and sale transactions, and inventory management. Yeyin's (2010) work also highlights the advantages of web store systems, including their capacity to lower maintenance costs, manage users, and expedite administrative operations. These findings are consistent with the proposed system's goal of process automation and improved administrative effectiveness. Yang's (2017) study, which examines online payment habits in China, Europe, and Finland, emphasizes the function of online payment systems in supporting e-commerce transactions. The suggested system's incorporation of several payment methods in addition to credit cards reflects the emphasis on ease, transaction speed, and security. For MGS PC Trading and Computer Parts, the value of secure and dependable online payment platforms is essential.

The major comparisons between the proposed e-commerce system for MGS PC Trading and Computer Parts and numerous domestic and international documents and systems are highlighted in this synthesis. Common themes include usability, e-commerce adoption, inventory management, automation, and online payment systems. The proposed solution can improve user experience, encourage MSMEs to adopt e-commerce, streamline inventory management, automate procedures, and offer secure online payment choices by combining lessons learned from these papers. This synthesis lays the groundwork for next studies and innovations in web-based e-commerce platforms, fostering the expansion and development of MGS PC Trading and Computer Parts.

## TECHNICAL BACKGROUND

## Overview of Current Technologies to be Used in the System

The current technologies used in MGS PC Trading

* **Facebook –** The company has a Facebook page that acts as an advertisement and promotional purposes only.
* **Messenger –** The company uses messenger for entertaining clients’ messages and inquiries for an event.

The tools and software requirements in building the system are as follows:

* **Visual Studio Code –** Visual Studio Code is a lightweight yet capable source code editor for Windows, macOS, and Linux that runs on your desktop. It includes built-in support for JavaScript, TypeScript, and Node.js, as well as a robust ecosystem of extensions for other languages and runtimes (including C++, C#, Java, Python, PHP, Go, and.NET).
* **JavaScript –** JavaScript (JS) is a first-class programming language that may be interpreted or compiled just-in-time. While it is best known as a scripting language for Web pages, it is also used in various non-browser settings such as Node.js, Apache CouchDB, and Adobe Acrobat.
* **MySQL –** MySQL is the most widely used open-source database in the world. According to DB-Engines, MySQL is the second most popular database, trailing only Oracle Database. Many of the most popular applications use MySQL, including Facebook, Twitter, Netflix, Uber, Airbnb, Shopify, and Booking.com.

**Calendar of Activities**

In the first week, the researchers form a group. The group started to find the company that will become a beneficiary for their system. The researchers began to evaluate how the company processes and manages their products and what specific problems Barro’s Catering Services and Rentals faces every time they operate. Furthermore, the group started to document the chapters of the paper. The group showed the paper to their adviser and revised it several times.

**Gantt Chart of Activities**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| MONTH | FEBRUARY | | | | MARCH | | | | APRIL | | | | MAY | | | | JUNE | | | | JULY | | | | AUGUST | | | | SEPTEMBER | | | | OCTOBER | | | | NOVEMBER | | | |
| ACTIVITY |
| Groupings |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Searching Company |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Conducting Interview |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Thesis Title Proposal |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Re Defense |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow- Up Interview to the Adviser |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Title Proposal |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Introduction |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Purpose and Description |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Review of Related Studies/System |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Synthesis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Technical Background |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Overview of the Current System |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Appendices |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| References |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Resource Person |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Curriculum Vitae |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Mock Defense |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Final Defense Capstone 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Re-defense |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| System Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| System Development |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Quality Assurance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Debugging |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| System Implementation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Maintenance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Final Defense Capstone 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Resources

**Hardware**

* **Laptop** - When it comes to laptop needs, web design and development are demanding. But most laptops today can handle the minimum requirements of certain programs. The proponents will be using a laptop in developing the system.
* **Desktop Computer** - When it comes to personal computer needs, web design and development are demanding. The proponents will also be using a desktop computer in developing the system.

**Specs**

* Ryzen 5 3400G with built-in graphics
* GIGABYTE A320 M V2
* 256 GB M.2
* 1 Terra Byte HDD
* Thermaltake 650 Watts

**Peripherals**

* Samsung 19-inch sixty hertz Monitor
* RK 61 60% Mechanical Keyboard
* Razer Viper Ultimate Wireless Gaming Mouse

**Software**

* **Sublime Text Editor** - It contains various features, such as Syntax Highlight, Auto Indentation, File Type Recognition, Sidebar, Macros, Plug-in, and Packages, that make working with the code base simple. This lesson gives you a thorough introduction to Sublime Text's fundamentals and prepares you to utilize it confidently in software development projects.
* **JavaScript** - JavaScript is a dynamic programming language that is used for a variety of things, including web development, web apps, game creation, and more. It enables the user to add dynamic features to websites that are not possible with just HTML and CSS.
* **MySQL** - MySQL is an open-source relational database management system (RDBMS) that is supported by Oracle (SQL). MySQL is available on every platform, including Linux, UNIX, and Windows. MySQL is most linked with web applications and online publishing, despite its use in a wide range of applications.
* **jQuery** - The goal of jQuery is to make using JavaScript on user’s website much easier. jQuery encapsulates many typical operations that require multiple lines of JavaScript into methods that can be called a single line of code.
* **npm** - The default package manager for the JavaScript programming language is called npm, and it is maintained by npm, Inc. Node.js is the JavaScript runtime environment that uses npm as its default package manager.
* **SCSS** - SCSS (or Sass) is a technique to develop styles for websites with more advanced CSS syntax. It has been dubbed "CSS with superpowers.
* **Bootstrap** - Bootstrap is a responsive, mobile-first CSS framework that is available for free and open-source front-end web development.
* **Windows 10** - Microsoft’s Windows NT operating system has been updated with Windows 10. It is the immediate successor to Windows 8.1, which came out over two years ago. On July 15, 2015, it was released to manufacture, and on July 29, 2015, it was distributed to retail. Windows 10 is available for download from MSDN and TechNet, and a free upgrade for retail Windows 8 and Windows 8.1 users through the Windows Store and Windows 7 users through Windows Update. Windows 10 receives new builds on a regular basis, which are available to consumers at no additional cost, as well as additional test builds of Windows 10 for Windows Insiders. Enterprise devices can use long-term support milestones, which only receive significant updates, including security patches, over their ten-year extended support lifecycle, to obtain these updates at a slower rate.

**METHODOLOGY, RESULTS, AND DISCUSSION**

This section covers the techniques, findings, and analysis that the developers utilized within the system.

The developers conducted an interview with the company to collect and analyze the problem. The system developers observed the workplace and interviewed the owner to collect data. Through that, the system developers know what issues the MGS manager and employee faces. The data collected by the developers will be the basis to design and develop the system. The E-commerce system for MGS Pc Trading and Computer Parts is a web application that is responsive for computers, laptops, and mobile phones.

## Requirements Analysis

The developers are permitted by the manager to conduct an interview on data collection. The participants in the interview are the owner, assistant, and the technicians.

The developers conducted an interview at Pallocan West, Batangas City. The developer communicates with the manager of MGS PC Trading, Mr. Marvin Simeon. The proponents learned that they provide a PC part that the customer needs.

According to the interview, MGS PC trading and Computer Parts is located at Pallocan West, Batangas City, near SM Batangas City. They have three (3) employees who have their own roles such as the owner, manager who talks to the customers, and technicians who repair the laptops, computers, and mobile phones. They will encode the stocks supplied to the MGS Dasmarinas branch into their list. The encoded products will be sent to the Batangas branch, where the manager will likewise make a list of them by quantity and category. When the products are in the store, the manager will entertain and provide the needs of the customers. MGS use social media platforms like Facebook to promote their products like seasonal promo packages. MGS PC Trading accepts cash and g-cash payment methods for every deal between the manager and the customers.

By facilitating customers' viewing of MGS PC trading's items, the suggested solution will benefit MGS PC trading. Additionally, it aids MGS in managing their stock. MGS will be able to store its inventory in an effective and manageable database.

Inventory List – This is the list where the manager may locate the products they need to display for customers. The inventory list is an excel file containing different PC parts with brand of the products, type of products, and its prices.

A screenshot of a computer

Description automatically generated

*Figure 1.0*

Requirements Documentation

## CLIENT

Home Page – The home page shows all the modules of the system including Shop, Branches, Build Your Own PC, Favorites, and Billing. Under the Homepage, newly added and featured products are displayed. The user can also switch branches depending on their location.

A screenshot of a computer

Description automatically generated

Figure 2.0 Home Page

Log In Page - this process allows the user to enter the username and password to access their accounts. Also in this window, potential customers can create accounts that will simply get their information.

A screenshot of a login screen

Description automatically generated

Figure 2.1 Log In (Client)

Shop – In this tab, all the products are displayed by their category. It also has a search bar that can search for a specific PC component.

A screenshot of a computer store

Description automatically generated

Figure 2.2 Shop

Branches – In this tab, customers can choose their preferred branches and base on their location to avail PC components and PC builds.

A screenshot of a website

Description automatically generated

Figure 2. Branches

Build Your Own PC – In this tab, customers can build their own PC. The clients are free to build their preferred PC components. First is choosing the preferred processor for the PC build. After selecting a processor, the next window will pop up and it will display the parts of the PC and the available components.

A screenshot of a computer company

Description automatically generated

Figure 2. Build Your Own PC (Choosing a Processor Type)

A screenshot of a computer

Description automatically generated

Figure 2. Build Your Own PC (Selecting Components)

Add to Cart – In this window, the products that have been chosen by the customer will be placed in the billing details.

A screenshot of a computer

Description automatically generated

Figure 2. Billing

Payment -

Favorites – This module allows the user to save the products that the customer like and they can purchase the product in this window

A black machine with white text

Description automatically generated with medium confidence

Figure 2. Favorites

Product Information – This module allows the customer to view the stocks, compatibility, category, and description of the product.

A computer software box with text and images

Description automatically generated with medium confidence

Figure 2. Product Information

ADMINISTRATOR

Log In Page - this process allows the admin to enter the authorized username and password to access their accounts.

A screenshot of a login screen

Description automatically generated

Figure 2. Log In (Admin)

A screenshot of a computer

Description automatically generatedDashboard – This module provides an overview of key metrics, such as inventory, number of branches, and sales status.

Figure 2. Dashboard

A barcode on a white background

Description automatically generatedProduct List – In this module, admin can view the products’ picture, name, category, quantity, price, compatibility, description, and barcode. In this module, admin can also add products that have arrived at the store.

A screenshot of a computer

Description automatically generated

Figure 2. Product List

Sales – This module allows admin to view the customer's account and their purchased items. In view purchase item button, admin can approve and decline the orders of the customer.

A screenshot of a computer

Description automatically generated

Figure 2. Sales

Point of Sale – A section of the system that manages customer purchases, accepts payments, and provides receipts.

A screenshot of a computer

Description automatically generated

Figure 2. Point of Sale

Sales Report – In this module, the admin can view the sales history of the store. It has a search bar that admin can use to find a specific product that has been purchased.

A screenshot of a computer

Description automatically generated

Figure 2. Sales Report

Account Settings – This module allows that admin to change the password of his/her account.

A screenshot of a computer

Description automatically generated

Figure 2. Account Settings

## Design of Software, System, Product, and/or Processes

Iterative and flexible software development, client engagement, and teamwork are prioritized by Agile SDLC, also known as the Agile Software Development Life Cycle. It strives to provide usable software solutions in tiny increments while considering feedback and making necessary improvements.

A diagram of a system development life cycle

Description automatically generatedAgile software development is based on time-boxed, iterative cycles known as sprints. Each sprint, which typically lasts two weeks, focuses on a set of "user stories" or features the team can complete in that time. Compared to the more involved features of a waterfall project, this method enables a more manageable product development and delivery schedule.

Figure 3.0 *Agile Software Development Life Cycle*

Concept. Developers and product owners work together at the start of the Agile development life cycle to define the project's scope and priorities. To assess the project's viability, they carefully consider the expenses, the anticipated completion date, the desired features, and the needs.

Inception. The second of the six stages of the Agile development life cycle are the inception phase. The developers choose the right team members, assign duties, and provide the essential resources to start development at this period. A plan must be established, and the fundamental set of techniques and templates must be specified before the development phase can begin.

Iteration. This stage usually takes the longest and requires tight collaboration between designers and developers to make sure that all business requirements and feedback are reflected in the code. The team spends this time working through the product backlog in development sprints. The agile methodology's foundational iteration (or development) stage enables the team to create a product with a limited set of functions and then add more functionality. It is time to carry out quality assurance tasks, produce technical documentation, and end the iteration after the development stage is finished.

Testing. Several different methods of testing are included in the Agile life cycle, including:

Unit Testing: At this step, the QA team assesses the performance and functionality of each front-end and back-end component separately.

Integration Testing: This stage combines several product components to examine interoperability.

Acceptance Testing: After this stage is over, quality assurance experts evaluate how closely the digital solution adheres to end-user specifications.

System Testing: The entire system is examined to ensure all its parts are working. If the tests are successful, the QA team approves the subsequent deployment stage.

Release. Delivering a durable and effective product that satisfies client needs is the main goal of this phase. It is done by carrying out quality assurance testing to make sure the product is error-free and works well when it is released. The product is ready for launch once all final testing and verification are completed. Development teams frequently provide training on how to use the program effectively to aid users in becoming familiar with it. The committed team moves on to the last stage once they have completed all the tasks.

Review. Once an Agile software development project reaches this point, maintaining long-term success becomes the primary goal rather than striving for a successful launch. Customers routinely offer feedback, request new features, or interact with recent upgrades because the product has been successfully released.

Data Flow Diagram – A data flow diagram shows the actors, steps, and information flow within a system or process. It makes use of a set of predefined symbols, each of which stands for each of the steps and individuals required for a process to be completed correctly.

A diagram of a computer system

Description automatically generated

Figure 3.1 *Company’s Current Process*

The diagram shows the company’s current process for the customer on buying PC parts and for availing the MGS’s PC builds.

## A diagram of a computer process Description automatically generatedFigure 3.2 Client’s Process (Website)

This diagram shows the process of the client registration to buy PC parts and PC builds when using the MGS’s website.

A diagram of a product

Description automatically generated

## Figure 3.3 Admin’s Process (Website)

The diagram shows the registration of admin to access and monitor the product’s information, sales report, and Points of Sale system of the store. The admin needs to log in to their account to view all the modules needed.

Entity Relationship Diagram – Entity Relationship Diagram, also known as ERD, ER Diagram or ER model, is a type of structural diagram for use in database design. An ERD contains different symbols and connectors that visualize two valuable pieces of information: The major entities within the system scope, and the inter-relationships among these entities.

A diagram of a product

Description automatically generated

## Development and Testing

White Box Testing is a kind of software testing that involves examining a software application's core logic and operations. With access to the source code, the tester can create test cases that can validate the software's accuracy at the code level. The goal of white box testing is to assess whether the system fits the requirements.

A. Functionality

Table 4.1. *ISO 9126: Functionality Statistics*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CRITERIA | RATING | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | WD | SD | Verbal Interpretation |
| 1. Suitability. Software performs the task required. |  | 3 | 10 | 39 | 98 | 4.55 | 43.24 | Excellent |
| 2. Accurateness. The result is as expected. |  | 2 | 9 | 42 | 96 | 4.53 | 40.52 | Excellent |
| 3. Interoperability. System interacts with other system. | 1 | 3 | 12 | 44 | 91 | 4.49 | 39.77 | Very Good |
| 4. Security. Software prevents unauthorized access. |  | 5 | 6 | 50 | 89 | 4.49 | 40.24 | Very Good |

The weighted mean and standard deviation of the calculated scores from the functional survey that the respondent completed are displayed in Table 4.1. The website has received the highest rating of 4.55 for appropriateness. The website has an accuracy rating of 4.53, while interoperability and security only obtain ratings of 4.49.

B. Usability

Table 4.2. *ISO 9126: Usability Statistics*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CRITERIA | RATING | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | WD | SD | Verbal Interpretation |
| 1. Understandability. The software is easy to use. | 1 | 2 | 11 | 31 | 105 | 4.58 | 43.62 | Excellent |
| 2. Learnability. The system is easily learned. |  | 1 | 17 | 35 | 97 | 4.52 | 40.07 | Excellent |
| 3. Operability. The system is used without much effort. |  | 5 | 17 | 53 | 75 | 4.32 | 32.59 | Very Good |
| 4. Attractiveness. GUI interface looks good. |  | 8 | 27 | 35 | 80 | 4.25 | 31.30 | Very Good |

Understandability, with a weighted mean value of 4.58, has the highest grade in Table 4.2. Learnability came in second with a rating of 4.52. Operativity had a rating of 4.32, which is the second-lowest ranking. Finally, attractiveness received the lowest rating of 4.25.

C. Reliability

Table 4.3. *ISO 9126: Reliability Statistics*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CRITERIA | RATING | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | WD | SD | Verbal Interpretation |
| 1. Maturity. Most of the faults of the software have been eliminated over time. | 1 | 3 | 8 | 62 | 76 | 4.39 | 36.03 | Very Good |
| 2. Fault Tolerance. Software handles errors. |  | 2 | 22 | 52 | 74 | 4.32 | 32.28 | Very Good |
| 3. Recoverability. Software resumes working and restores lost data. | 1 |  | 14 | 56 | 79 | 4.41 | 36.28 | Very Good |

Recoverability has the highest rating 4.41 in Table 4.3. Maturity comes in second with a 36.03 rating. Finally, Fault Tolerance received the lowest rating of 4.32.

D. Efficiency

Table 4.4. *ISO 9126: Efficiency Statistics*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CRITERIA | RATING | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | WD | SD | Verbal Interpretation |
| 1. Time Behavior. The system responds quickly. |  | 3 | 3 | 37 | 107 | 4.65 | 45.65 | Excellent |
| 2. Resource Utilization. System utilizes resources efficiently. |  | 2 | 8 | 45 | 95 | 4.55 | 40.68 | Excellent |

Table 4.4 shows the system's Time Behavior, which received 45.64 ratings, indicating that the system can complete the task. The system received a rating of 4.55 for resource utilization.

E. Portability

Table 4.5. *ISO 9126: Portability Statistics*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CRITERIA | RATING | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | WD | SD | Verbal Interpretation |
| 1. Adaptability. The software can be moved to other environments. |  | 5 | 13 | 45 | 87 | 4.43 | 36.36 | Very Good |
| 2. Installability. The software can be installed easily. |  | 6 | 9 | 36 | 99 | 4.52 | 40.97 | Excellent |
| 3. Conformance. The software complies with portability standards. |  | 4 | 13 | 46 | 87 | 4.44 | 36.64 | Very Good |
| 4. Replicability. The software is easily replaced with other software. |  | 4 | 14 | 50 | 82 | 4.40 | 35.64 | Very Good |

Installability has the highest rating of 4.52 in Table 4.5. Conformance comes in second place with a rating of 4.44. It indicates that the system satisfies the requirements for portability. A rating of 4.43 was given to the system's flexibility. Replicability had the lowest rating of 4.40.

F. Maintainability

Table 4.6. *ISO 9126: Maintainability Statistics*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CRITERIA | RATING | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | WD | SD | Verbal Interpretation |
| 1. Analyzability. Faults are easily diagnosed. |  | 4 | 13 | 59 | 74 | 4.35 | 34.07 | Very Good |
| 2. Changeability. The software is easily modified. |  | 5 | 12 | 49 | 84 | 4.41 | 36.52 | Very Good |
| 3. Stability. The software continues to function if changes are made. |  | 3 | 12 | 39 | 96 | 4.52 | 39.97 | Excellent |
| 4. Testability. The software is easily tested. |  | 1 | 9 | 51 | 89 | 4.52 | 39.06 | Excellent |

Both testability and stability received a high rating with 4.52 in Table 4.6. It indicates that the responders can adjust to the system and the system is functional even if the process is changed. At 4.41, changeability receives the second-highest rating. Analyzability, with a rating of 4.35, is the lowest last.

In conclusion, the ISO 9126 software evaluation criteria helped the researchers to develop an e-commerce system.  The composite mean in different criteria shows different ratings, some of the criteria gives a very good interpretation and some of the criteria have a result of excellent. This indicates that the system performs well but still needs improvements.

# Conclusions and Recommendations

Numerous operational issues that affect data administration, sales monitoring, customer support, and inventory control are faced by MGS PC Trading. Due to a data corruption incident, sales records and product descriptions were lost, requiring manual updates of product details between branches. Real-time reporting is hindered by daily sales entered a logbook, which necessitates laborious computations for sales analysis. Manual inventory monitoring has drawbacks, including time consumption and error-proneness, particularly when stock management and retrieving shown goods not in the inventory. Additionally, because PC components are complex and standards are ambiguous, answering questions about PC assembly by a single staff member causes response to be delayed.

As for proposing a system, the proponents have a conversation first with the Company as they tell them of the difficulties they are facing. Right now, MGS PC Trading still fears another data loss cause of hard drive corruption. MGS PC Trading shows serious problems with inventory control, customer service, and data corruption. Data loss on the hard drive caused a major problem for the company, affecting sales statistics and product descriptions for a whole month. The staff started using cross-branch communication for product updates to reduce these risks. With this, the developers thought of developing a system that would be a way to solve this issue.

• The developed system ensures that will replace the usual traditional logbook into an automated inventory in computing the marketing sales of the product.

• The system ensures that the module to be developed will be user-friendly as the customers can easily adapt to the unique features regarding the pc customization to reduce the inquiries of the customers.

It becomes clear that the proposed e-commerce system for MGS PC Trading and Computer Parts is a complete answer. The seriousness and urgency of the issues at hand were made clear during the discussion with the company, particularly the worry about the potential for additional leakage events caused by corrupt hard drives. Regarding the situation, the proposed system could significantly change MGS PC Trading's working environment by providing an innovative platform that not only solves current problems but also positions the company for long-term expansion and competitiveness in the dynamic PC trading and computer parts market.

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APPENDICES

APPENDIX A. RESOURCE PERSONS

Reource Persons

Mr. Marvin Simen

(Store Manager)

A letter of a college application

Description automatically generated with medium confidence

A person sitting at a desk in a room with a computer

Description automatically generatedInterview

Building

A display of electronics in a store

Description automatically generated

A store with electronics on shelves

Description automatically generated

APPENDIX B. RELEVANT SOURCE CODE

APPENDIX C. EVALUATION TOOL/TEST DOCUMENTS

APPENDIX D. SAMPLE INPUT/OUTPUT/REPORTS

APPENDIX E. USER”S GUIDE

Admin’s Guide

In accessing the website, enter mgspctrading.tech on a browser. The home page will be shown and then click log in.

A screenshot of a computer

Description automatically generated

Put your username and password to access your admin account.

A screenshot of a login screen

Description automatically generated

A screenshot of a computer

Description automatically generatedDashboard – click this module and it will show the inventory and sales status of the store.

Product List – click this module to show the list of products that are available to the store.

A screenshot of a computer

Description automatically generated

Click Add Product and a pop-up window will appear. In this window the admin can add product’s information like image, quantity, and prices.

A screenshot of a computer

Description automatically generated

Sales – Sales module views the accounts of the customer and if you click the view purchase items the items that the customer wants to purchase will show and the admin will decide if the orders are approved or not.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generatedPOS System – POS or Point of Sale module allows admin to

A screenshot of a computer

Description automatically generated

Sales Report – this module allows admin to track the sales of the store. This shows the list of sold products and its information. The admin can also search the specific sold products.

A screenshot of a computer

Description automatically generated

Account Settings – in this module allows the admin to change his/her password. Simply put up the old password, then create a new password and confirm the new password. Click the Change Password button to change the password.

A screenshot of a computer

Description automatically generated

Client’s Guide

Home Page – This is the homepage of the website. You can see all the products that the website offers and all its features. You will first type the websites name in browser (mgspctrading.tech) to view all the available products.

A screenshot of a computer

Description automatically generated

Shop – You can see all the products that the website offers. You can select the category of the products that you want for easy navigation. For example, If you select the Motherboards tab, it will show all the motherboards and the price that the shop is selling. It will Also show the newly added products for the customers that want to follow the trend.

A screenshot of a computer store

Description automatically generated

Branches – In this tab, you can select the branch where you want to buy your computer parts. If you select the Batangas branch, it will show the products that the MGS Pc Trading Batangas branch offers.

A screenshot of a website

Description automatically generated

Log In – In this tab, you can log in your MGS Pc Trading account. You will type your Username and your password in it. Accounts are very important in this website because you can’t buy a product without an account. If you want to create an account, you can click the “don’t have an account?” button at it will bring you to the account creation tab. If you forgot your password, you can also reset it by clicking the “Forgot Password?” button.

A screenshot of a login screen

Description automatically generatedA screenshot of a login screen

Description automatically generated

A screen shot of a login form

Description automatically generated

Build Your Own PC – This is the feature that will help you build the computer build that your heart desires. You can build your own pc using this by selecting the processor, CPU cooler, Motherboard, Memory, Graphics Card, SSD, Power Supply and Computer case. If your on a budget, you can easily filter the product because it also shows the price of every components in this “Build your own PC” feature. After you build your pc, you can view the total of all the part you selected in view tabled parts and check out the items.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Payment -

APPENDIX F. PERSONAL TECHNICAL VITAE