DEVELOPMENT OF A WEB-BASED FOOD ORDERING SYSTEM AT TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES - MANILA

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CHRISTIAN LOUISE J. GELLANG
JESSICA R. PATEÑO
ROSE ANN M. YAMBAO

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Technological University of The Philippines
COLLEGE OF SCIENCE
Department of Computer Studies
Ayala Blvd., Ermita Manila,1000, Philippines
Tel. No. +632-5301-3001 local 608 | Fax No. +632-8521-4063

APPROVAL SHEET

The thesis hereto entitled:

"DEVELOPMENT OF A WEB-BASED FOOD ORDERING SYSTEM AT TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES- MANILA"

prepared and submitted by **GELLANG CRISTIAN LOUISE J., PATEÑO JESSICA R., YAMBAO ROSE ANN M.,** in partial fulfillment of the requirements for the degree **BACHELOR OF SCIENCE IN INFORMATION SYSTEM** has been examined and is recommended for acceptance.

PROF. PERAGRINO B. AMADOR, JR.
Adviser

PANEL OF EXAMINERS

PROF. ARIEL L. TOMAGAN
Member

DR. WELLANIE M. MOLINO
Member

PROF. DOLORES L. MONTESINES
Member

PROF. DOLORES L. MONTESINES
Department Head

Accepted in partial fulfillment of the requirements for the degree **BACHELOR OF SCIENCE IN INFORMATION SYSTEM.**

HADJI C. ALEGRE, Ph. D.
Dean

Date

ABSTRACT

Online food ordering systems have become increasingly popular in today's fast-paced world. The Technological University of the Philippines (TUP) Manila researchers are aware of the need to improve food services in their canteen by putting in place a web-based food ordering system to simplify the ordering procedure, raise customer happiness, and best utilize resources. This project aims to provide a user-friendly, TUP Manila-specific web-based system for ordering food. The technology will allow for easy menu browsing, food selection, customization of orders, and secure online payment for both students and staff. TUP Manila's current food service operations, including the menu selections, order administration, and payment methods, will be thoroughly examined as part of the redesign process. Based on this study, a database will be created and put into use to hold pertinent data, including menus, user profiles, and order histories. The system will also incorporate secure payment channels to make online purchases easier. The web-based food ordering system will be developed using modern web technologies, ensuring compatibility across different devices and platforms. A responsive and intuitive user interface will be designed to provide an engaging and seamless ordering experience. Additionally, the system will incorporate features such as order tracking, order history, and personalized recommendations to further enhance user satisfaction. The implementation of the web-based food ordering system at TUP Manila is expected to yield numerous benefits. It will reduce waiting times, minimize order errors, and enhance operational efficiency. Moreover, it will enable TUP Manila to collect valuable data on customer preferences, optimizing their menu offerings and improving the overall service quality. In conclusion, this project aims to create a customized web-based food ordering system for Manila's Technological University of the Philippines. The system seeks to improve the food service experience for students and staff while maximizing operational efficiency by utilizing contemporary web technologies and implementing user-centric features.

Keywords: Web-based food ordering system, Convenience, Efficiency, Ordering procedure, Customer happiness, Resource utilization, User-friendly system, Menu browsing, Food selection, Customization of orders, Secure online payment, and Modern web technologies.

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THE PROBLEM AND ITS SETTING

Introduction

The food business has shifted tremendously in recent years toward digitalization and internet platforms. Customers now prefer the convenience of ordering food online rather than visiting physical locations due to the rising prevalence of smartphones and the internet. This change has forced companies to adapt creative solutions to meet the shifting needs of their customers. In order to improve the dining experience in school, The Technological University of the Philippines-Manila intends to create a web-based food ordering system. Currently, walk-in orders and cash payments are the main techniques the school food stands use. Long lines, sluggish food preparation, and a lack of real-time information for both consumers and vendors are frequent effects of this antiquated system.

A web-based system is being proposed to overcome these difficulties and streamline the entire food ordering procedure. This system will enable students and employees to purchase food online, giving them a convenient and time-saving option by utilizing the power of technology. Additionally, it will present a chance for the food stall store owner to effectively manage their businesses, improve their inventory, and raise customer happiness.

Eliminating long queues and waiting periods is one of the main advantages of using a web-based meal ordering system. With this system, customers can place customized orders from a variety of stalls, browse their menus, and make safe payments, all from the

convenience of their places around the school. The system will include an easy-to-use interface that guarantees simple navigation and a simple ordering process.

Additionally, customers will be able to monitor the progress of their orders in real-time through the web-based system. They will be advised of the anticipated preparation time by means of this function. Allowing customers to examine and confirm their orders before submitting them will help reduce order taking errors and guarantee precise delivery of the necessary food products.

The Technological University of the Philippines-Manila's creation of a web-based food ordering system has the potential to completely transform the way that food is served at school. The institution hopes to deliver a seamless and effective platform that benefits both customers and store owners by embracing this digital change. The solution will speed up order processing, provide real-time order tracking, and facilitate efficient inventory control. In order to create and implement this cutting-edge food ordering system, this study will examine the technological requirements, user experience design, and implementation strategies needed.

Background of the Study

Buying in the school canteen is a hassle, so we are creating this kind of application so the students and employees at Technological University of the Philippines will easily buy their lunch and snack. This kind of application will allow them to do their task in school while they are ordering food in the school canteen.

Almost all information can now be accessed by computer, making computers an indispensable part of our daily lives. The twenty-first century is rife with technological advances, and it is virtually impossible for any organization to survive in this technological era without utilizing technological advances. The internet's contributions may result in the creation of an ever-expanding global knowledge database. It could also be used for internal communications. Nowadays, canteens are more concerned with fast food and takeaway than with providing a complete dining experience. This approach has several drawbacks, including the need for someone to answer phones and take orders, as well as an inconvenience for customers who require a paper copy of the menu. The goal of this study is to develop a system that can be used in any meal delivery service, such as a canteen automation system. This method greatly simplifies the ordering process for both customers and cafeteria staff.

Objectives of the Study

The general objective of the study is to develop a reliable, convenient, and accurate web-based food ordering system at the Technological University of the Philippines - Manila. Specifically, it aims to:

1. Design the system with the following features:
    a. Customizable product display.
    b. Responsive or progressive web application.
    c. Create a platform for system administrator, store owner, and student.
    d. The system can Create, Edit, Suspend, Deactivate, and Ban Accounts.
    e. Add-to-cart functionality.
    f. Placing orders of the different products in different stores.
    g. Order tracking and status updates.
    h. Store owner and user feedback/review and rating platform.
    i. Order Cancellation and refund option.
    j. Generate reports, trends, and insight (actions and searches) from store owners and students.
    k. Delivery Staff Account.

2. Create the system using the following software development tools Visual Studio Code as a code editor, HTML, CSS, Bootstrap, and JavaScript in Vue.js, and Laravel, MySQL using as a database, GitHub as a code repository and Hostinger as Web hosting, Netlify.
3. Test and improve the systems in terms of functionality, suitability, and reliability.
4. Evaluate the performance of the system using ISO 20510 criteria for quality software.

Scope and Limitations of the Study

Scope

This study will focus on the Development of a Web-Based Food Ordering System at the Technological University of the Philippines- Manila. It is a web-based digital application that supports different food stalls at the Technological University of the Philippines-Manila for users to order using their devices, then pick it up once the order is ready. The system offers a feature that allows store owners to alter or customize their products. Additionally, because the system is responsive or a progressive web application, it can adapt to multiple screen sizes, ensuring that the content looks great on any screen size. Create a platform, which refers to adding value by facilitating interactions between two or more interdependent organizations, such as the system administrator, store owner, and user. The system can Create, Edit, Suspend, Deactivate, and Ban Accounts. Add-to-cart functionality, this is another feature of the system that allows customers to choose items to purchase without actually completing the payment. Another feature of the system is the ability to order numerous items from separate stores. The system will be able to accommodate a huge number of orders at a time. The user can do this by placing an order for meals from one location and drinks from another, but once the food has been delivered, they must go to their desired location to make payment.

The user will know when the store owner receives the order or if the food is ready to pick-up or ready to deliver. Using the web app, users can provide honest reviews or feedback regarding their buying experience. If there is an issue, the user can cancel their

order while they are still able to see the cancel order button and visit the store outlet to receive a refund of what they paid (if any).

The details of the order placed by a user were easily obtained using this application. In terms of delivery, the system will have an account for the delivery person. The application system is to be developed by using Visual Studio Code as code editor, HTML, CSS, Bootstrap, and JavaScript in Vue.js, and Laravel, MySQL using as database, GitHub as code repository and Hostinger as Web hosting, Netlify.

The system will have a system administrator and a physical or virtual store outlet. The owner will post images of their menu where the user can place orders via mobile devices or any gadgets, order any products in different stores, and place orders simultaneously. Furthermore, the application functionality can only be used by the user of TUP-M by Signing-up, which will contain the following: FirstName, Last Name, Email, and Password. To order and pay for food, the user will find their preferred store, place their order, and wait for their order to be prepared. This system contains the delivery person's account, and their order will be sent directly to the delivery person if their order is ready to deliver.

Limitations

Some employees and students might not have access to the required technology, such as internet-connected cellphones or computers. This may provide a challenge for people who depend on conventional methods of ordering food. Web-based systems are susceptible to bugs, such as server outages, sluggish loading times, or compatibility

issues with specific hardware or browsers. These issues can disrupt the ordering process and lead to user frustration.

Some people can have trouble adjusting to new technology or utilizing the online ordering process. This may make it tough to place orders or comprehend how to use the system well. In a traditional food service scenario, customers can communicate with canteen employees, ask questions, and give detailed directions for their orders. The lack of this personal touch in a web-based system could result in misunderstandings or discontent. In places with poor connectivity or during periods of high usage, the internet connection may be erratic or intermittent. It may slow down or disrupt the ordering process as a result.

Operational adjustments and training for canteen personnel are necessary for the implementation of a web-based ordering system. They might need some time to get used to the new system's procedures, which could initially reduce overall efficiency. A web-based system's creation, implementation, and upkeep can be expensive. To maintain its efficient operation, it needs frequent upgrades, security precautions, and technical assistance, all of which could put a strain on the canteen's finances and resources.

The system only supports delivery if the Store offers delivery services. There may be limitations on the delivery area, which can restrict accessibility for some users. The application will only be available to the Technological University of the Philippines-Manila students and employees. Advance order is also not included.

Significance of the Study

The purpose of this application is to help the users at the Technological University of the Philippines by streamlining the ordering process. The system will significantly improve the whole dining experience. Students and employees will no longer need to wait in long queues or deal with manual paper-based processes. Instead, people can easily browse menus from the comfort of their own devices, choose the foods they want, personalize their orders, and make safe payments. Users will benefit from this simplified method's time and effort savings, increasing customer satisfaction and pleasure.

The web-based system will additionally maximize resource usage. It will assist in reducing waiting times and improve operational efficiency at the canteen by introducing an effective ordering process. This implies that students and employees should anticipate quicker service and a more seamless experience during lunch breaks or other busy times. The system will also make it possible for the canteen management to collect useful information on consumer preferences, such as the most popular menu items and ordering trends. Using this information, menu options may be improved, food quality can be raised, and the culinary services can be tailored to the needs and tastes of the TUP Manila community.

The system will also encourage accountability and openness. By building a substantial database, it will keep pertinent data, such as menus, user profiles, and order history. The administrators of the canteen will be able to track orders, keep correct records, and respond quickly to any problems or issues. Utilizing secure payment

methods will guarantee the security of online transactions, thus boosting user confidence and trust.

Overall, the TUP Manila canteen's web-based food ordering system represents a significant step towards modernizing and improving the food services offered. It guarantees a user-friendly and effective platform that boosts operational effectiveness, boosts customer satisfaction, and enables data-driven decision-making to continuously improve the general service quality. This system has the ability to alter the eating experience for students and staff, making it more convenient, personalized, and pleasurable by utilizing modern web technologies and including user-centric features. The canteen will benefit the Student, Professors, and other school stakeholders by serving more customers easily and much faster.

Chapter 2

CONCEPTUAL FRAMEWORK

This chapter presents the related literature and studies related to the project after the thorough search done by the proponents. The proponents have gathered the pertinent literature and studies from several sources, including local and foreign ones that famous and well-known fellow scholars gave. These sources include both published and unpublished materials. Additionally, it includes the study's conceptual framework and an operational glossary of terminology that is intended to support and act as a roadmap for the suggested system.

Review of Related Literature

Online Food Ordering System Samples/ Existing Systems

Features of Food Ordering System

A thorough examination reveals several themes that were taken into account by earlier Mobile Food Ordering Apps (MFOA) investigations. The most frequent theme concerns looking at such cutting-edge programs from the perspective of the user, for instance, in a qualitative study that sought to identify the primary factors that would inspire Brazilians. Mobile Food Ordering Apps (MFOA) refers to the mobile-based ordering system that allows users to place food orders using mobile devices and the relevant application systems. Although Mobile Food Ordering Apps (MFOAs) systems are widely used by customers worldwide, academic interest in studying Mobile Food Ordering Apps (MFOAs) is still in its early stages

(Okumus & Bilgihan, 2014; Alalwan, 2020). Recent research has demonstrated a strong interest in examining consumer acceptance of Mobile Food Ordering Apps (MFOAs). For instance, Pigatto et al. (2017) conducted a qualitative analysis to identify key elements influencing the use of Brazilian Mobile Food Ordering Apps (MFOAs), specifically their usability, content, and function.

Additionally, a number of academics have viewed customer views toward Mobile Food Ordering Apps (MFOAs) as a crucial element. The level of trust, product veracity, and design was found to have a significant impact on consumers' attitudes and perceptions of value toward food delivery apps in China, according to Cho et al. (2019). Customers' perceptions of differences on these apps were found to exist between single-person and multi-person families. According to Alagoz and Hekimoglu (2012), elements like innovation, trust, and utility influenced consumers' perceptions of online meal delivery. The results of applying Mobile Food Ordering Apps (MFOAs) satisfaction, namely customer conversion and customer experience, have been the focus of several studies.

A model based on the IS success model has been put forth by Wang et al. (2019) to forecast the crucial effects of customers using mobile catering applications. Consumers produce positive value for mobile catering apps when they believe that the services, systems, products, and information are of appropriate quality. Additionally, Southern Taiwanese researcher Spyridou (2017) discovered that one of the key factors influencing the prediction of CI is perceived service quality (customer revisiting intention).

Furthermore, Kapoor and Vij (2018) discovered pertinent data regarding the influence of mobile app characteristics, including information design, visual design, collaborative design, and navigation design, on the degree of consumer conversion. Further investigation is required to explore the key factors that may obstruct or support the successful implementation of Mobile Food Ordering Apps (MFOA) in the South Asian context, specifically Bangladesh, in order to understand the impact of customers' perceptions of the usefulness and confirmation on consumer's attitude, satisfaction, and continued intention to use.

Online Marketplace

Many studies on business survival have been conducted in the past, but very few have explained the survival of online stores in the "long tail" market. To address this scarcity, this study proposes a theoretical model based on the hypothesis that online social networks, structural assurance, and online word-of-mouth (WOM) influence online store survival. An empirical study of 5772 online stores in two industries was conducted to validate the model. Socialization efforts in SNS (social network site) personal space and online discussion forums were not found to be related to store survival when it came to social network factors. The status of adhering to the "faithful description" consumer rights safeguarding program, as operationalized by structural assurance, significantly impacts store life span. (Wang, 2013).

Grab Food

In order to meet shifting consumer demands, technology has been a major factor in modernizing meal delivery services from telephone-based to online ordering. Because of how dependent consumers are on technology, they can now prepare meals and have them delivered to them online. This has led to changes in consumer tastes as well. People all over the world are moving toward online ordering and more convenient ways to make purchases. The main draw for customers is convenience because placing an order only requires a few simple steps, whether utilizing a mobile device such as smartphone, tablet, or laptop. In other words, by relying on comfort and technology, young, modern customers can be accused of being "lazy."

Additionally, when customers do not have a plan for where and what to eat, the time required for food to be brought provides an excellent excuse. It has been demonstrated that due to convenience, lunch, and dinner time have the largest demand for online meal delivery. Owners of food businesses will seize chances that are viewed as potential new revenue streams from a business standpoint. The primary motivator for business owners to use online shipping services is to better meet the demands and wants of their customers. Because technology and customer preferences are always evolving, online meal delivery is strongly advised in emerging nations (Goo See-Kwong, 2017). 61% of respondents to the meredeka.com poll indicated that they ordered meal delivery services online to save time and because they could have their food in less than an hour at their homes or workplaces.

The process of purchasing and using a specific product will influence a customer's choice on whether to carry out his shopping activities, in the same manner going forward or to use alternative techniques (Suandana et al., 2016). A good experience when making an online purchase transaction has a beneficial impact on the desire to look for information and make a purchase online in the future, according to Kim et al. (2004). A higher level of trust has been demonstrated in the past while making purchases online (Suandana et al., 2016).

Customer's Satisfaction

According to Kotler and Keller (2009), satisfaction is defined as a person's sentiments of happiness or disappointment resulting from a comparison between his impression of the performance (or results) of a product and his expectations. Yuliarmi and Riyasa (2007) list the following indicators to gauge consumer satisfaction; First, whether the degree of expectations and the service quality are compatible. Second, the degree of satisfaction in relation to a similar kind. Third, there are no customer complaints or unfavorable remarks.

The Influence of Trust on Customer

The purchasing experience positively and significantly impacted trust. Customers enjoyed a positive shopping experience at Grab Food as more and more consumers purchased food items online. This demonstrated the increased consumer trust in online store transactions. The findings of this study were consistent with those of Ni Putu Widantari Suandana, Ketut Rahyuda, and Ni

Nyoman Kerti Yasa (2016), who found that the purchasing experience significantly influenced customer trust.

Prior internet shopping experiences play a significant role in future purchase intentions. If an online shopper had a positive shopping experience, they are likely to do so again. However, according to Koeswara (1995 in Adzkiya, 2017), consumers won't return if their experience is unpleasant. According to Ling et al. (2010), the following are the markers of prior online shopping experiences. First, the knowledge gained from using a website; second, accessing a website; third, using a website is convenient; and last, the user-friendly webpage.

Online Food Delivery

E-commerce has grown exponentially, making it a subject vital to research. Well-established offline businesses in conventional industries have adapted new online sales channels in an effort to boost their earnings. Due to this, brick-and-mortar businesses have traditionally operated both online and offline. According to Wang, Song, and Yang (2012), more than 80% of American merchants sold online and offline goods in 2012. One of this modern hybridization's most widespread applications is in the restaurant sector, where internet food delivery services have emerged.

According to Morgan Stanley Research (2017), delivery orders accounted for 6% of all restaurant sales in the US in 2017 and are expected to account for 40% of all restaurant sales by 2020. However, because these internet sales are so incremental, overall sales at restaurants have decreased. There is no data to indicate

whether brick-and-mortar sales will rise or fall. A classic illustration of how e-commerce is upending a traditional business is online food delivery. The total number of transactions has rapidly increased due to the influx of new meal delivery services. And income for the developing sector. Online meal delivery services provide new avenues for possible revenue, but they also risk cannibalizing brick-and-mortar sales as shoppers who once made in-store purchases have shifted almost exclusively to online shopping. Online food delivery services have been available for a while. Several chains of restaurants developed websites where customers could place takeout orders, although these services were only available at those chains' own eateries. Various restaurants created their delivery websites in response, imitating the trend. Early in the twenty-first century, even grocery businesses started to provide online delivery (Pozzi 2012; Relihan 2017). However, generic online food delivery services that provide delivery from a variety of eateries have just recently and quickly gained popularity.

This study aims to assess market expansions and potential crowding-out effects brought on by the advent of online meal delivery services and the consequent hybridization of eateries. The term "crowding-out" describes sales that once took place only in physical stores but are now taking place through various means. Market expansions are the new sales brought about by opening a purchasing channel online. Opening new internet channels may enhance restaurant sales and broaden the market, but they also have the potential to squeeze out existing offline sales by cannibalizing them. Businesses must make comparable trade-offs when

introducing new items or launching a new location (Shaked and Sutton 1990; Holmes 2011; Mitsukuma 2012).

Payment System

Payment system features

According to Rahadi et al. (2022), credit card transactions (also known as e-payments) on e-commerce platforms are common these days. Using credit cards for online purchases is quite different from using them offline in brick-and-mortar establishments; the only difference is that online transactions don't require a physical credit card or a signature. E-payments are now frequently used to complete online transactions. Customers can use the Internet to make payments through this electronic billing system. This study aimed to examine the relationships between continued e-payment intention, effort expectation, enabling circumstances, performance expectation, social impact, and actual e-payment usage. The data was scientifically tested using information gathered from 667 Malaysian Generation Z consumers of e-payments. The study's findings revealed that social influence, performance expectations, and conducive settings all affected how often e-payments were actually used. Surprisingly, effort expectation had little bearing on actual e-payment usage. The study's conclusions have several management implications and suggest areas for future investigation. To the best of the authors' knowledge, no prior empirical study has examined the impact of the Unified Theory of Acceptance and Use of Technology model on Generation Z's use of e-payments

in Malaysia. These findings offer significant contributions that can aid in the formulation or modification of e-payment strategy by decision-makers.

Web Development

According to Techopedia (2020), web development refers to the activities involved in creating websites for hosting on an intranet or the internet. The web development process entails network security settings, client-side/server-side scripting, web design, and web content development.

Web development, in a broader sense, refers to all the procedures, changes, and actions needed to create, administer, and keep up the performance, usability, and speed of a website. It could also but need not include all the preparatory steps required to guarantee its optimal positioning in search engine results. These activities typically fall under a distinct specialty, particularly search engine optimization (SEO). Web development is another name for website development, and web developers or (more generally) web devs are the people who manage websites.

Agile Methodology/Agile Web Development

Cross-functional teams are used in agile web development to adapt to the ongoing creation and enhancement of software solutions. A more efficient method of making flexible adjustments, it is streamlined.

Agile development encompasses more than the capacity to modify and advance with emerging technologies. It was developed in 2001 by a group of

experienced developers as a collection of approaches. The Manifesto for Agile Software Development provided a detailed description of their procedures. The entire approach is based on four core principles: control over procedures and tools should rest with individuals and interactions; working software should take precedence over documentation at all phases of development; and responding to change is preferable to rigidly adhering to a schedule (Vilmur, 2020).

Visual Studio Code

Pedamkar (2022) states that Visual Studio Code is a code editor. "A free editor that helps the programmer write code, aids in debugging, and corrects the code using the intelli-sense method" is what Visual Studio Code is described as. In plain English, it makes it easier for people to develop code. Although many claim that it is only partially an editor and an IDE, the choice is ultimately up to the coders. Any program or piece of software that we can see or use relies on background code to function. Coding was traditionally done in conventional editors or even in simple editors like notepad! These editors previously gave the coders some minimal assistance.

Some of them were so elementary that writing elementary English-level programs in them was quite challenging. As time passed, many programming languages required a unique structure and support to be coded and developed further, which was not achievable with these editors. One of the various types of editors developed is VI Editor, often known as Sublime Text Editor. VISUAL STUDIO CODE is the most popular one that supports practically all coding languages. Its capabilities allow the user to change the editor as needed, meaning

the user is able to download libraries from the internet and integrate them with the code as needed.

Web Hosting

As defined by Website.com (2023), A website or web page can be published on the Internet with the help of a web hosting service. A company that offers the technologies and services required for a website or webpage to be seen on the Internet is known as a web host or web hosting service provider. On specialized computers known as servers, websites are hosted or saved. All Internet users need to do to access your website is enter the domain or address of your website into their browser. Their computer will then establish a connection with your server, and their browser will start receiving your webpages. You must typically own your domain in order to host with a hosting company. The hosting firms will assist you in acquiring a domain name if you don't already have one.

Netlify

According to Clark (2020), one of the most incredible web development platforms, Netlify, is designed to increase your productivity as much as possible. The platform aids website development, testing, and deployment. A far faster method of ensuring much more responsive, scalable, and secure websites and apps is provided by Netlify by uniting the modern decoupled web parts from local development processes to sophisticated logic.

The website industry is transitioning from monolithic to decoupled techniques continually and quickly. Developers, however, are advancing with

greater force than ever. However, Netlify was created to meet the needs of this time. Both web hosting infrastructure and amazing web automation technology are available. In these areas, Netlify provides cutting-edge technologies and, most astounding, highly reasonable prices.

It will function by connecting to your GitHub repository and pulling the source code for your website. Then it will launch a build process to pre-render the pages of your website into static HTML. After that, the finished pages will be distributed and put into use over a larger selection of content delivery networks. However, your website will automatically select the closest data center whenever a user requests access to efficiently serve users.

Hostinger

A web hosting firm called Hostinger offers both individuals and companies quality and inexpensive hosting services. Since its founding in 2004, Hostinger has developed into one of the top web-hosting companies worldwide, providing services to over 29 million clients across 178 nations. Shared hosting, VPS hosting, cloud hosting, and WordPress hosting are just a few of the business's many hosting options.

Because of its reasonable prices, Hostinger is a popular choice for those on a tight budget. They emphasize providing top-notch services at reasonable prices, ensuring clients can create and maintain an online presence without going over budget. Despite being inexpensive, Hostinger doesn't skimp on efficiency or dependability. In order to provide quick loading speeds and a flawless user

experience, they make use of contemporary technology, including SSD storage, LiteSpeed web servers, and a global content delivery network (CDN).

Positive client reviews, and industry recognition bolster Hostinger's reputation. They have won multiple honors, including the 2020 PCMag Award for Best Web Hosting Service and the 2020 HostingAdvice Award for Best Value Web Hosting.

To sum up, Hostinger is a reputable web host renowned for its accessibility, dependability, and global reach. With millions of happy customers and awards from the industry, it is still a well-liked option for people and companies looking for affordable and dependable hosting options.

ISO 25010

A software quality standard is ISO 25010, "Systems and software engineering - Systems and software Quality Requirements and Evaluation (SQUARE) - System and software quality models." It provides practical advice on how to apply the quality models and describes the models, which include characteristics and sub-characteristics for both software product quality and software quality in use.

Two quality models are described by ISO 25010:

1. The quality in use model is made up of five qualities (some of which are further broken into sub-qualities) that relate to the results of interaction when a product is used in a specific usage context.
2. An eight-characteristic product quality model is further broken down into sub-characteristics that correspond to the static qualities of the software and the dynamic features of the computer system.

The characteristics and sub-characteristics offer standardized nomenclature for describing, gauging, and rating the quality of systems and software products. They also provide a list of qualitative traits that can be used to assess the completeness of the stated quality requirements (Britton, 2021).

Likert Scale

According to Solmaz (2020), a Likert scale is a type of rating scale that gauges how individuals feel about something and is frequently found on survey forms or questionnaires. It can be helpful in a variety of scenarios. This essay thoroughly examines the Likert scale and explains how to employ it effectively. Online surveys frequently employ scales.

Scales can measure audience attitudes and opinions more precisely than binary "Yes/No" questions since they are similar to upgraded versions of those questions. A Likert scale is a type of question that is commonly used. Likert scales are frequently used to assess attitudes and opinions more nuancedly than a straightforward "yes/no" question.

In general, a scale question is a sort of closed-ended question (one that offers respondents predefined response options) in which a range of words or numbers are used to reflect a broad range of audience viewpoints, attitudes, perceptions, etc.

Hypertext Markup Language 5

HTML (Hypertext Markup Language) is a text-based language used to describe the organization of material in an HTML file. The markup on a webpage instructs a web browser how to display text, images, and other types of multimedia. The World Wide Web Consortium (W3C) has made HTML a formal guideline, and most popular web browsers, including those for desktop and mobile devices, generally follow this proposal. The most recent version of the specification is HTML5.

The current standard, HTML4, has compatibility issues, which HTML5 was created to address. Older versions of HTML require proprietary APIs and plugins, which is one of the greatest distinctions between HTML5 and earlier iterations of the standard. To simplify the loading of items, HTML5 offers a single standard interface. For instance, HTML5 does not require the installation of a Flash plugin because the element runs on its own.

A text file marked as HTML should be interpreted as such by a computer and a web server since it follows specified syntax, file, and name conventions. A user can create and design a simple webpage and upload it to the internet by applying these HTML principles to a text file in almost any text editor (Lutkevich, 2023).

Cascading Style Sheets

As defined by TechTerms.com (2023), CSS stands for "Cascading Style Sheet," which is how Web pages are formatted in terms of layout. They can be used to specify text formatting, table dimensions, and other elements of Web pages that were previously only able to be specified in the HTML of a page. Using CSS, web designers may give multiple pages of a website a consistent appearance. Commonly used styles only need to be declared once in a CSS document rather than having to specify the style of every table and text block within the HTML of a page. Any page that makes reference to the CSS file can use the style once it has been defined in the CSS file. Additionally, CSS makes it simple to update styles on multiple sites simultaneously. For fifty pages of a website, a Web developer can decide to change the default text size from 10pt to 12pt. If all of the pages use the same style sheet, changing the font size there will cause the change to appear on all of the pages. CSS is useful for formatting other elements of web page layout in addition to text styles, which is wonderful. For instance, the padding around photos or other objects can be defined using CSS, as well as the style, thickness, and color of a table's border. Compared to HTML, CSS offers web developers greater precise control over how web pages will appear. Cascading style sheets are used by the majority of websites nowadays because of this.

Vue.js

According to Vue.org (n.d.), a JavaScript framework for creating user interfaces is called Vue. It provides a declarative and component-based programming model that enables you to effectively create user interfaces, whether

they are straightforward or intricate. It builds on top of common HTML, CSS, and JavaScript. The majority of the typical functionality required in frontend development is covered by the framework and ecosystem known as Vue. The web, though, is incredibly diverse, and the things created there may differ greatly in scale and form. In light of this, Vue is made to be adaptable and gradually adopted. Vue has a variety of uses that you can choose from based on your use case. Considering the range of possibilities, these use cases share a fundamental understanding of how Vue operates. Even if you are only starting right now, the knowledge you pick up along the way will be helpful as you advance and take on more challenging objectives in the future. If you are an experienced user, you may choose the best strategy to use, Vue, based on the issues you are trying to resolve while maintaining your productivity. Vue is known as "The Progressive Framework" for this reason: it is a framework that can change and develop with you as your needs change.

Laravel

The PHP-based web framework Laravel is used to create high-end online apps that make use of its elegant syntax. Taylor developed Laravel. Otwell released it more than five months later, in July 2011, many years after the Codeigniter's debut. It contains. a powerful toolkit that offers applications architecture.

Additionally, it incorporates a number of features of technologies like ASP.NET MVC, CodeIgniter, Ruby on Rails, and many others. This framework is

available for free. It helps developers by saving them a ton of time and easing the planning and thought processes involved in creating a new website.

Additionally, the application's security is also important. Laravel will handle it. Thus, all of its features might increase the speed of web creation. If you are familiar with PHP's fundamentals, some Laravel may create the PHP scripts if you have intermediate more readily perform.

Chromium Browsers/ Firefox/Safari

The researchers analyze the data sent to their back-end servers by five browsers: Google Chrome, Mozilla Firefox, Apple Safari, Brave Browser, and Microsoft Edge, while browsing the web on desktop and mobile devices. This study aims to evaluate the privacy risks associated with data exchange between a browser and its back-end servers. Concerning shared services, all browsers use a safe browsing service to mitigate phishing attacks, and our measurements show that this causes few privacy concerns. Similarly, Chromium-based browsers can access the Chrome extension update service (Chrome, Brave, Edge) (Leith, 2021).

GitHub

According to a Stack Overflow developer survey, over 87% of developers use Git. Linus Torvalds developed the open-source version control system known as Git in 2005. Git is a distributed version control system, which implies that every developer's computer has access to the whole codebase and history, making branching and merging simple.

A for-profit organization called GitHub provides a service for hosting Git repositories on the cloud. In essence, it makes it much simpler for both individuals and teams to utilize Git for collaboration and version control. Because of GitHub's user-friendly design, even newbie programmers can benefit from Git. Without GitHub, utilizing Git typically necessitates more command-line experience and technical know-how. However, because GitHub is so user-friendly, some individuals even use it to handle different projects, including writing books.

Additionally, anyone may join and host a public code repository on GitHub for no cost, which is why open-source projects are particularly fond of it. As a business, GitHub generates revenue by offering hosted private code repositories as well as other business-oriented options that simplify team management and security for businesses. At Kinsta, Github is often used to manage and create internal projects (Kinsta, 2022).

Conceptual Model of the Study

The conceptual framework shows the different phases of the processes involved in order to achieve the aims of the study. It comprises three blocks, namely, the input, the process, and the output blocks. The input block is made up of the knowledge requirements, software requirements, and hardware requirements that are necessary to successfully achieve the performance for the process block. The knowledge requirements include Web Development, Online Food Ordering System Samples, Features of Online Ordering System, Online Shopping System, Payment System, Visual Studio Code, Web Hosting, and ISO 25010. The software requirements include HTML, CSS, Bootstrap, MySQL, Vue.js, Laravel Chromium Browser/ Firefox/ Safari, GitHub, Netlify, and Hostinger. The hardware requirements include: Computer/Laptop, Windows 10/11 OS, Mobile devices, internet, and two gb Ram-Above.

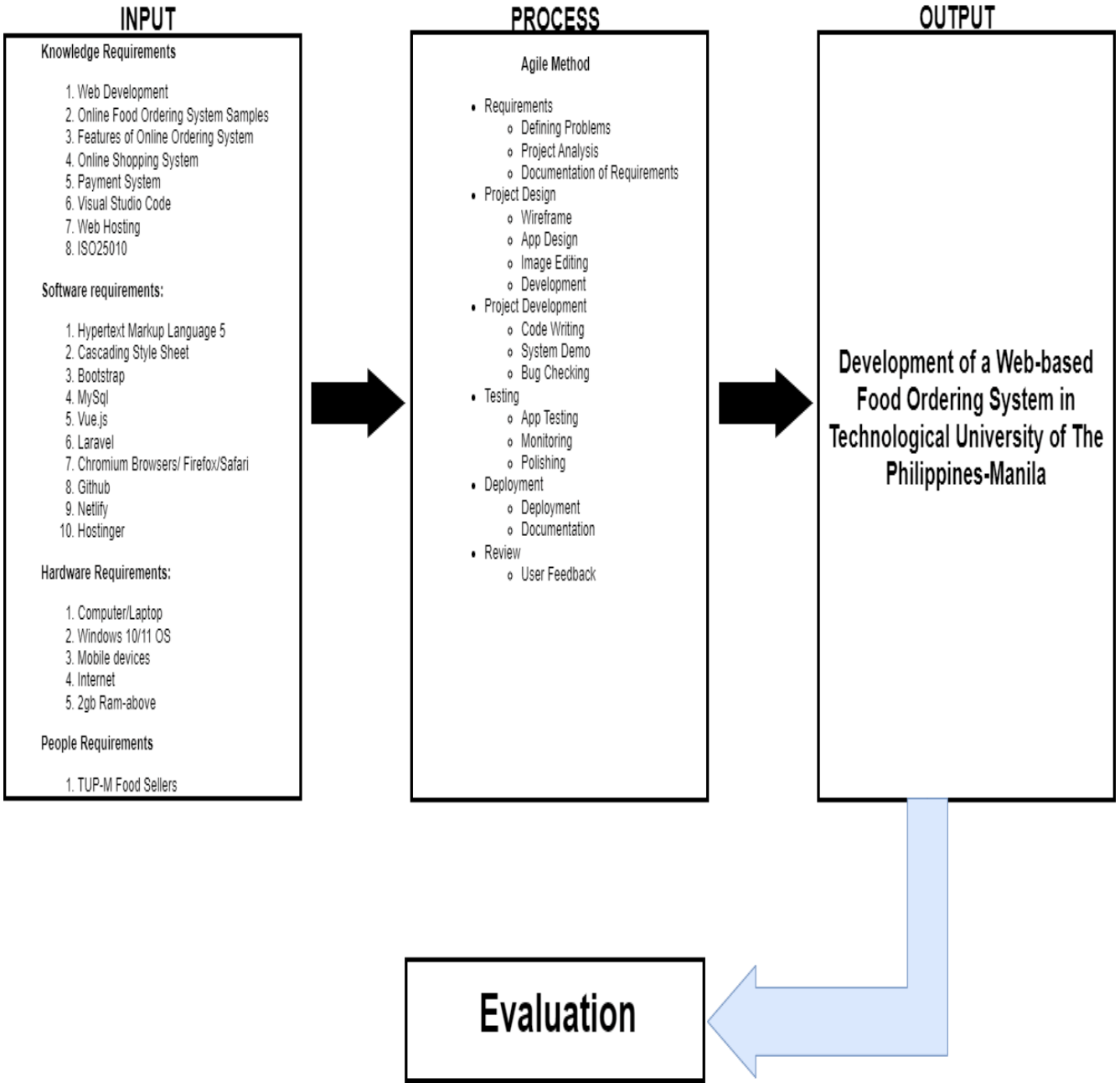

Figure 1. *Conceptual Framework of the Development of a Web-based Food Ordering System at Technological University of the Philippines-Manila*

Operational Definition of Terms

Admin

An individual who oversees and maintains the administrative duties of an online platform meant for ordering foods is referred to as a web-based food ordering system admin. They are in charge of keeping the system operational, handling user accounts, keeping an eye on transactions, working with store owners and delivery staff, assuring customer satisfaction, addressing problems, and putting upgrades or enhancements into place. The admin is essential to maintaining the web-based food ordering system's flawless operation and guaranteeing a great user experience for customers and store owners.

User

A person who uses an internet platform to order food or other food items is known as a web-based food ordering system user. The user of this web-based food ordering system can be the customer, store owner, and delivery staff because all three of them are able to use the system.

Customer

A person who uses an internet platform to order meals from numerous stalls is referred to as a web-based food ordering system customer. After logging in via a web browser or mobile application, they browse menus, choose their preferred foods, tailor options, indicate delivery or pickup preferences, and make payments. The customer benefits from the web-based system's simplicity, adaptability, and accessibility to satisfy their dietary tastes and appetites.

Store Owner

A person who runs a digital platform that enables customers to order food online is referred to as a web-based food ordering system store owner. The store owner supervises the website's operation, makes sure deliveries are made on time, and responds to questions or concerns from customers. Their primary goal is to provide customers a seamless and convenient food ordering experience through the web-based platform.

Delivery Staff

The people in charge of delivering food orders received through an online platform are referred to as the delivery staff for the system. They are often employed by the store owner, that offers delivery services connected to the system. Their main responsibility is to get prepared foods from the canteen and bring them safely to the specified delivery locations. In order to guarantee fast and effective delivery, offer top-notch customer care, and uphold customer satisfaction, the delivery staff is essential.

Canteen

A designated location on a school's property where students can buy and eat food and drinks is called a canteen. During school hours, it acts as a useful and accessible resource for students. The canteen often provides a selection of meals, snacks, and beverages to accommodate various dietary choices and nutritional needs. It acts as a gathering place for students to mingle, socialize, and refuel, establishing a sense of belonging and encouraging healthy eating practices among the student body.

Stalls

An online platform or website created exclusively for ordering food from a specific stall or store owner is referred to as a web-based food ordering system stall. Customers can explore the menu of the stall, choose their preferred goods, personalize their orders, and finish the purchase online. With this approach, ordering is simplified, there are no real lines to wait in, and customers can conveniently place their orders from any location with internet access.

Chapter 3

RESEARCH METHODOLOGY

This chapter focuses on how the study will be developed. It discusses the project design, project development, operation and testing procedure, and evaluation procedure.

Project Design

This section focuses on the development of a website that allows store owners and users to interact through this online ordering system. It includes the project design of the developed system consisting of a Data Flow Diagram, Entity Relationship Diagram, Use-Case Diagram, and the hierarchy modules of the system.

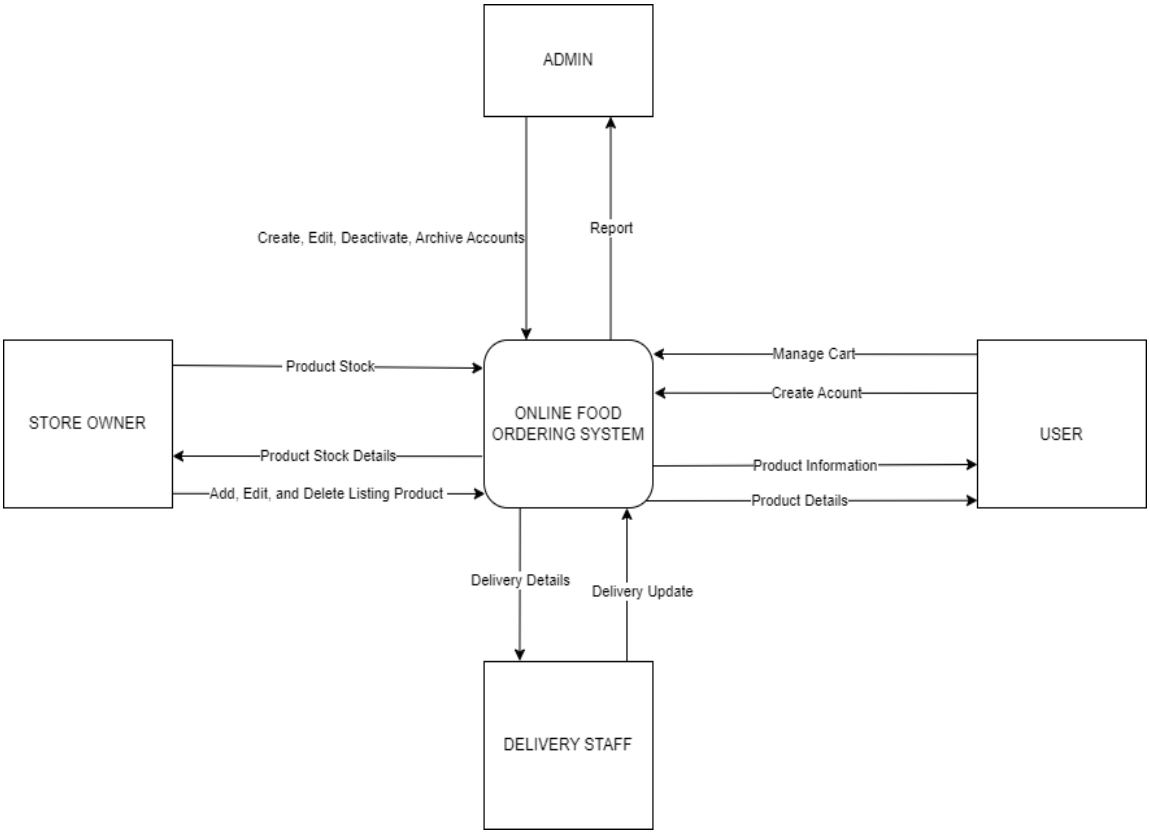

Figure 2. *Context Flow Diagram of the Development of a Web-based Food Ordering System at Technological University of the Philippines-Manila*

Context Flow Diagram

As shown in Figure 2, there are four (4) external entities: the admin, store owner, user, and rider. The admin, as the entity, is specifically responsible for the user, delivery staff, and store owner's account. They are accountable for creating, editing, and deactivating the user's account and have access to the activity logs to regulate and monitor the store owner, user, and delivery staff.

The store owners, as the entity, sells their food product that the user can view. They can add, edit, and delete their listing product and regulate inventory stock for the system to generate stock reports for all users.

The user, as the entity, can order a product from the listed product of the store owner. The user can view the product that is posted and place an order to buy the product from the store owner's product listing. Additionally, users can view the details of their orders and can manage the order, according to what the user wants.

The delivery staff, as the entity, acts as the intermediary between the user and the store and assumes a crucial role in effectively facilitating the delivery process. Their responsibility lies in transporting the user's order from a designated store to a specified location.

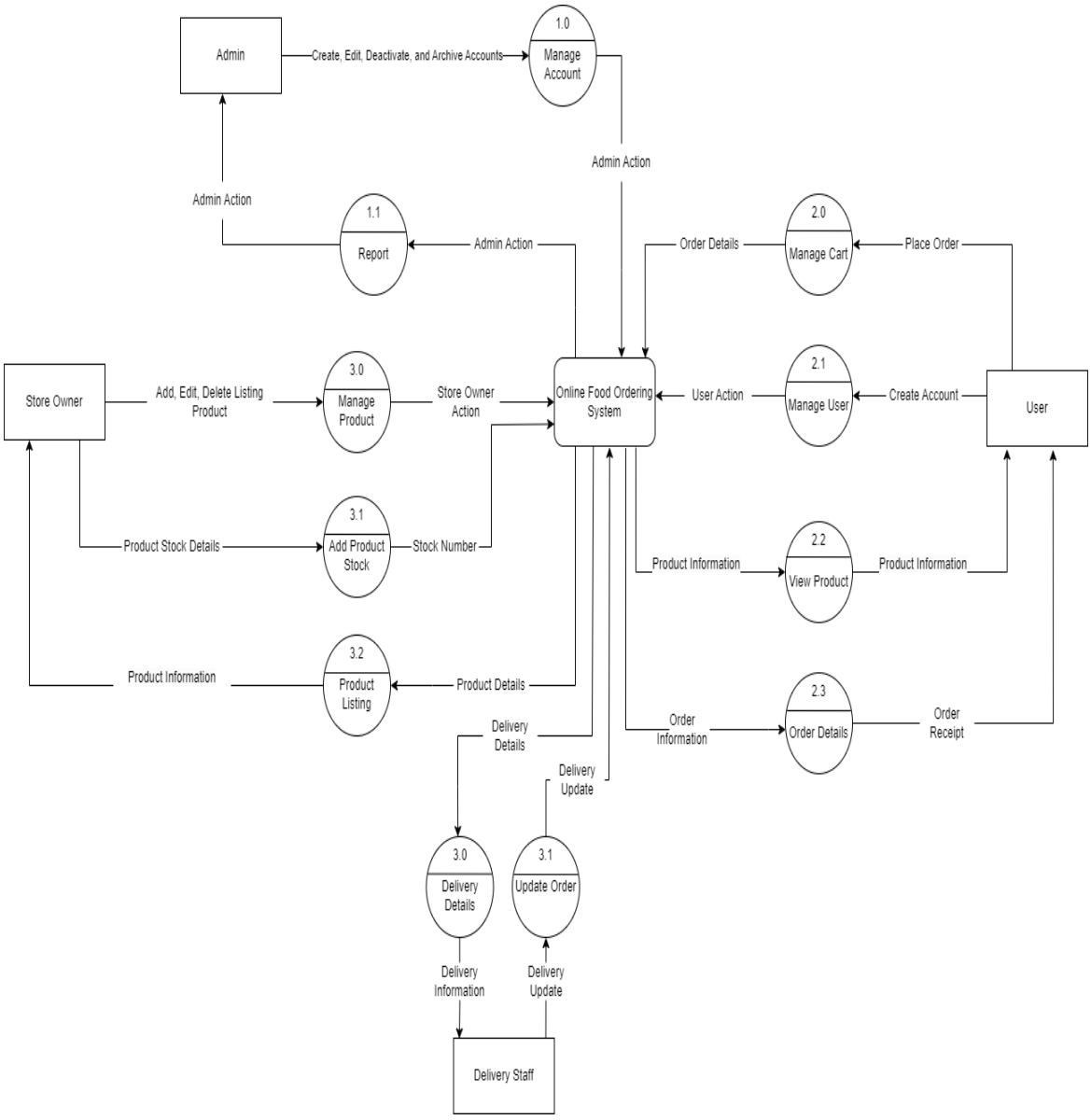

Figure 3. *Data Flow Diagram of the Development of a Web-based Food Ordering System at Technological University of the Philippines-Manila*

Data Flow Diagram

Figure 3 represents the Data Flow Diagram of the Food Ordering System that shows the information flow, process, input, and output of the system. To clearly elaborate the process, the admin is the one who manages all the accounts of the store owner, user, and delivery staff. It can create, edit, deactivate, and archive accounts. The system will report the reports on the accounts to the admin based on what the admin does.

The store owner will provide the product stock details and add the product to the system for the users to see the store's listed product. The store owner also must generate their stock reports for the dashboard panel to generate the stock details of all stores so that the user or user can know what the most food that has stock is.

The user can view products from different stores and order products for the system to send the transaction details to the store owner for the store owner to manage the transaction. The user can manage their order details, and they can edit, update, and delete their order. They can also create their account.

The delivery staff plays a crucial and varied role in ensuring a smooth and enjoyable delivery experience for the user, going beyond the mere task of delivering the order from the store to the designated location.

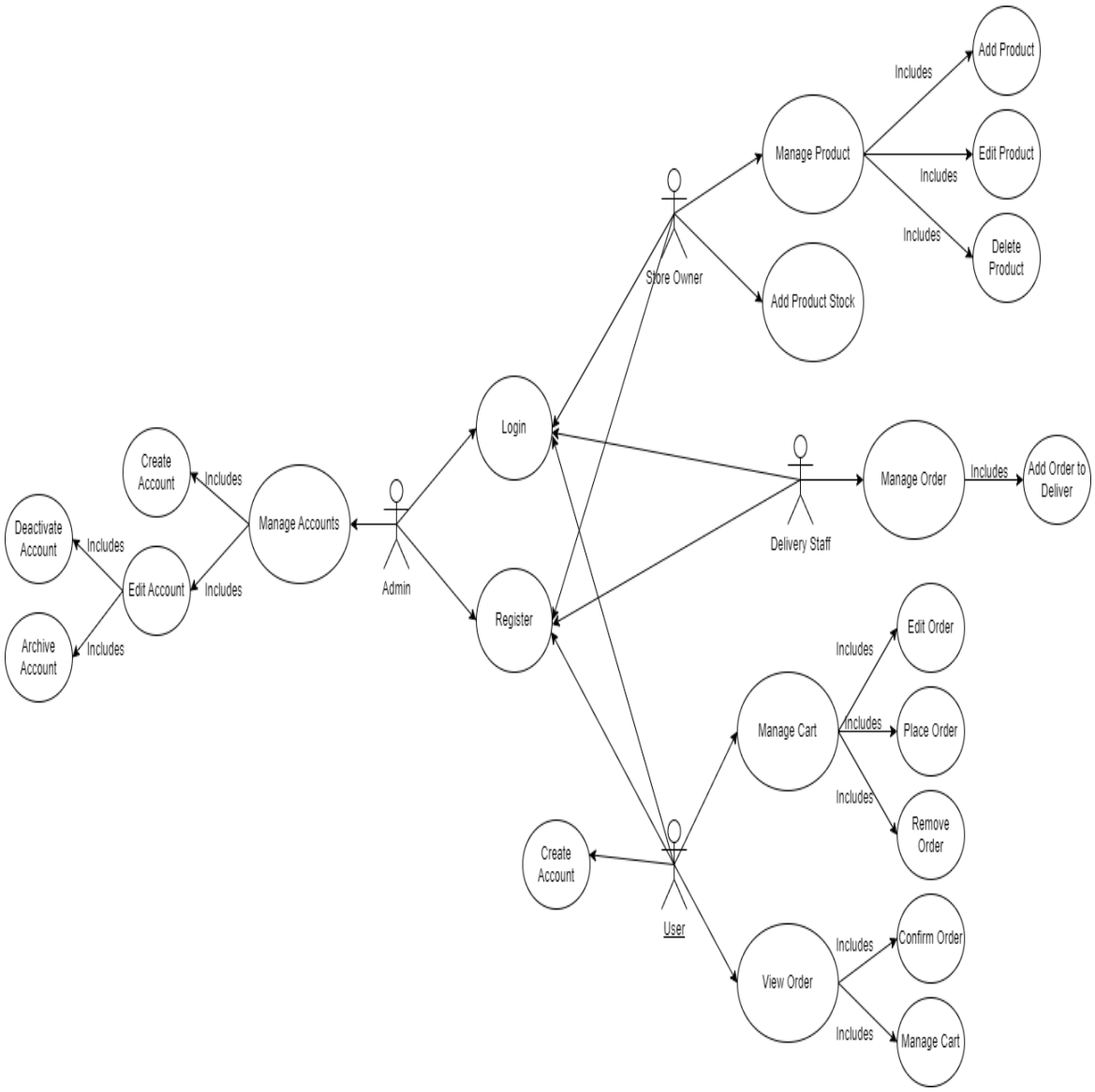

Figure 4. *Use Case Diagram of the Development of a Web-based Food Ordering System at Technological University of the Philippines-Manila*

Use Case Diagram

The Online Food Ordering System for Store Owner and User use-case diagram shown in Figure 4 defines the various external entities outside the system. It will feature four actors: the user, the store owner, the delivery staff, and the administrator, with whom they can register and log in. The user can view products, including where they can place an order and add their order to the cart. Also, the user can manage carts which can place, delete, and edit orders. The user can only create their own account.

The store owner can manage products and add the listing product they want to sell, delete the listing they posted, and edit the listing. Store owners must add product stock so that the dashboard of the website can be updated and can be seen by user, delivery staff, and store owner.

The delivery staff is the one who will deliver the order of the user from the store and deliver it to the designated location selected by the user.

The administrator is the one who manages all the accounts of the store owner, user, and delivery staff. The admin can create, edit, deactivate, and archive the account of the store owner and user.

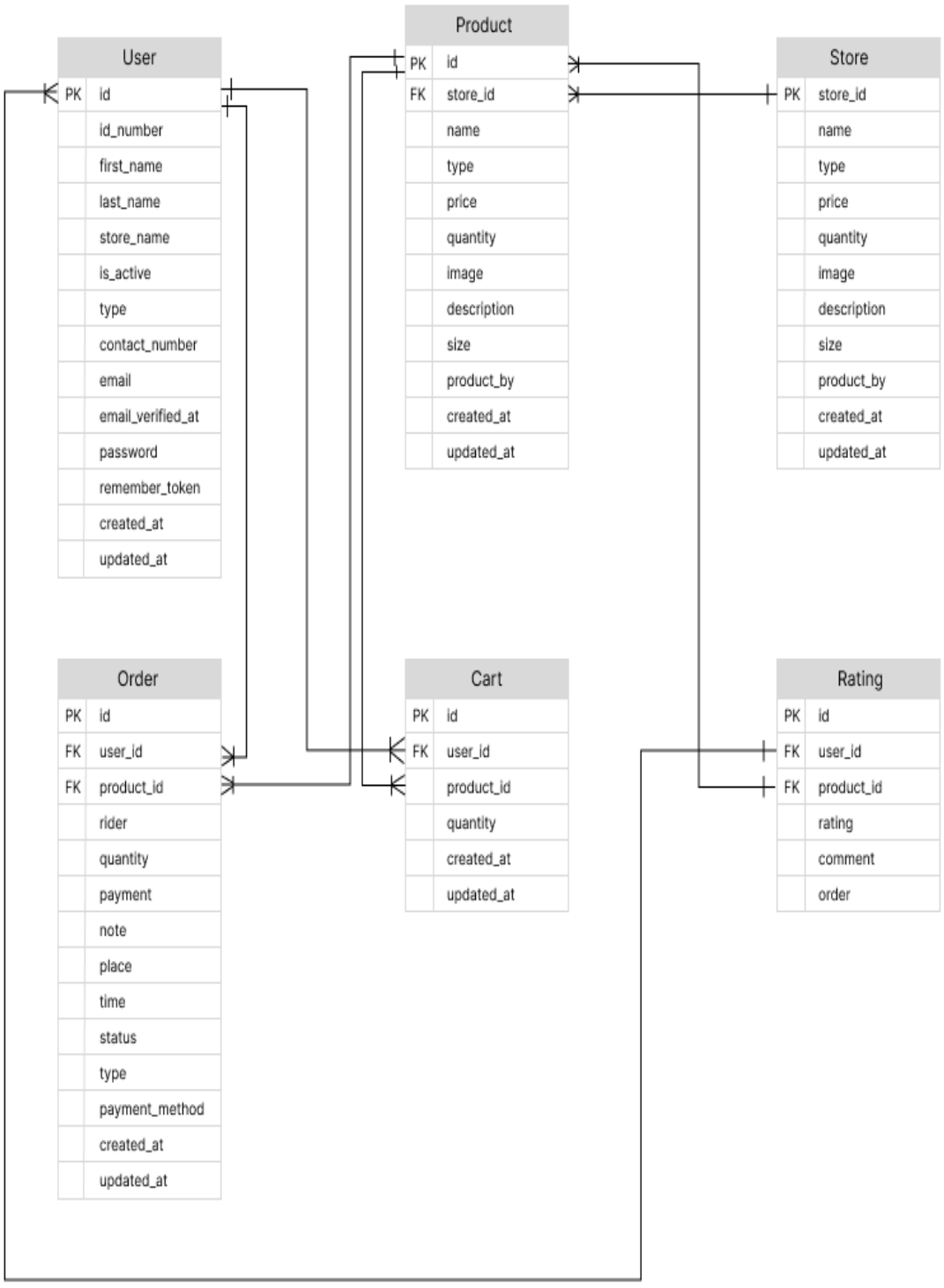

Figure 5. *Entity-Relationship Diagram of the Development of a Web-based Food Ordering System at Technological University of the Philippines-Manila*

Entity Relationship Diagram

In Figure 5 shown the Entity Relationship Diagram that visualize the relationship of the entities within the food ordering website in the application. The system's database is explained in this diagram, which also clarifies how the database will operate. Connecting lines depict the relationship between modules and indicate whether there is a one or many, many, and one link between them, illustrating the data relationship. The user has one to many orders, and cart then product has one to many orders, and store has one to many products and also, rating has one to many users and product. Each module contains the necessary data that will be used in the functionality of a particular module. Depending on how the data will be used or acted throughout the system, the module will be treated as an entity and identified as a main or foreign key. The diagram illustrates entities which contain specific attributes or characteristics such as User, Order, Product, Store, Cart, and Rating.

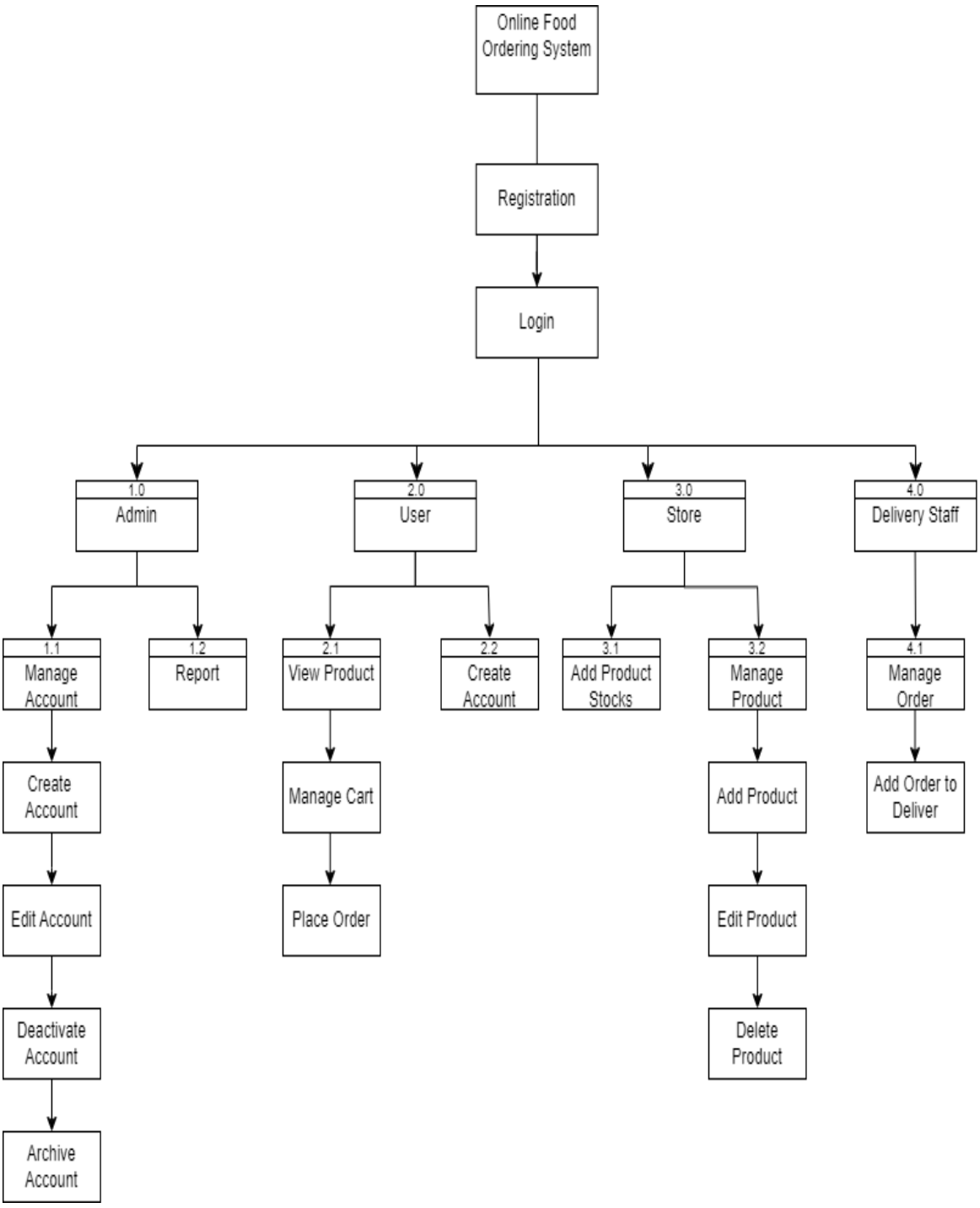

Figure 6. *Hierarchy of Modules of the Development of a Web-based Food Ordering System at Technological University of the Philippines-Manila*

Hierarchy of Modules

Figure 6 presents the hierarchy of modules of the Online Food Ordering System for Admin, User, Store Owner, and Delivery Staff. Each module is shown as a box holding the module name. Each module, which has been divided into simpler modular activities, is represented by those sub-module activities under it and connected to it. The four entities, which are the admin, user, store owner, and delivery staff, must log in first. Admin is divided into two modules: (1) manage account,' which can create an account, edit, deactivate, and archive account; (2) The other module, "report," is the admin that can view the feedback of the user.

The user is divided into two modules which are view product. After viewing a product, it can manage the cart and place an order. The second is to manage a user who can create accounts.

The store is divided into two modules: (1) first is the managed product module, where the store can add, delete, and edit listing products. The last is the generated add stock product, where the vendor must add the amount of product stock.

Delivery staff is equipped with only one module specifically designed to manage orders to be delivered from the store to the user.

Project Development

The Development of a Web-Based Food Ordering System at the Technological University of the Philippines- Manila Will be using Software Development Life Cycle Agile Model below, as shown in Figure 7. The model defines the order of stages that will be delivered completely to the management at the end of each stage.

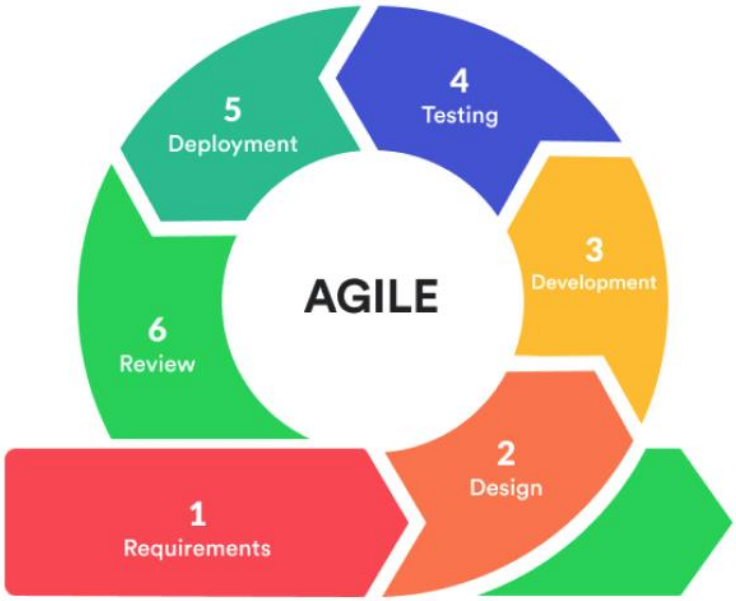

Figure 7. *Agile Methodology Model*

Source: https://indevlab.com/blog/what-is-agile-development/

Requirements

In this stage, the programmer gathers the requirements, which the team then evaluates. During this stage, requirements are outlined, and clarifications are possible. The proponents will take note of the requests of the panelist that they believe would help the system to determine the suitability of the online food ordering system.

Design

An initial design, also known as a fast design, is made for the system once the requirements are determined. Although it is not a comprehensive design, it incorporates the system's user-relevant aspects. The goal of the proponents is to design and create an online shopping platform with order details, inventory management for vendors, and stock movement to all entities to streamline Online Food Ordering System procedures.

Development

Later changes will be made to the intended system to create a web-based system. The proponents will create an online marketplace platform that can take orders, produce order reports, and implement the design. Most of the information and files used on the system will originate from the client. To ensure quality control, the developers will evaluate them for flaws and bugs while the system is being created and resolve them immediately.

Testing

The completed system is displayed to the respondents as part of the development process. In order to decide what additional features should be added to the system they are recommended; the proponents will solicit feedback from responders. For the system's upcoming version, all testing actions will be reported.

Deployment

The program is accessible for use. The completed system has already undergone all necessary testing in compliance with ISO 25010 and is ready to be put into use so that store owners and customers may begin using the website.

Review

During the evaluation, User Review that is received will be utilized to maintain and enhance the program.

Evaluation Procedure

The system evaluation consisted of two (2) stages: the project demonstration and the evaluation.

Project Demonstration

1. Send invitations to participants, which consists of 30 respondents coming from students, employees, and store owner of TUPM, Web Developers and IT Professionals.
2. Present the system to the respondents.
3. Conduct a system walkthrough and encourage participants to explore the system and use it.

Evaluation

1. Use the ISO 25010 Software Quality Metrics to prepare an evaluation tool.

2. Create google forms and distribute the evaluation form to respondents.

3. Ask the respondents to respond to the evaluation tool and rate the method using the Likert Scale.

Likert Scale

Table 1.

Numerical Scale	Descriptive Rating
4	Highly Acceptable
3	Very Acceptable
2	Fairly Acceptable
1	Not Acceptable

4. Collect the data and tabulate it.

5. Calculate the mean score of each criterion and the mean score overall.

6. Interpret, using the equivalent descriptive rating in Table 2, the result and acceptability of the system.

Descriptive Interpretation of the Mean

Table 2.

Numerical Scale	Interpretation
4	Highly Acceptable
3	Very Acceptable
2	Fairly Acceptable
1	Not Acceptable

Chapter 4

RESULTS AND DISCUSSIONS

This chapter presents the project description, project structure, project test results, project capabilities and limitations, and project evaluation results of the study.

Project Description

Tayuman is a web-based food ordering system that can be opened on smartphones and other gadgets with the use of a browser. Customers and canteens are connected through the Tayuman ordering system. It was created to make ordering food online in the Technological University of the Philippines easier. Users of Tayuman may easily find food in their school canteens and place direct orders for their preferred meals online or on a mobile device. Choosing the stall of their choice, perusing the menu options, selecting an item, and then deciding whether they want pick-up or delivery.

Payment can be made with cash in the canteen when picking up or when the delivery person arrives. While enabling canteens to manage online orders effectively, the technology strives to offer customers a convenient and user-friendly experience. Because of the large number of students and employees at the Technological University of the Philippines, the canteen frequently has long lines. With the number of students and employees at the Technological University of the Philippines, people here often experience long queues at the canteen.

The Web-based food ordering system currently supports smartphones and other gadgets that can browse. The system was developed using VSC, Vue.js, Laravel, Netlify, and Hostinger.

Project Structure

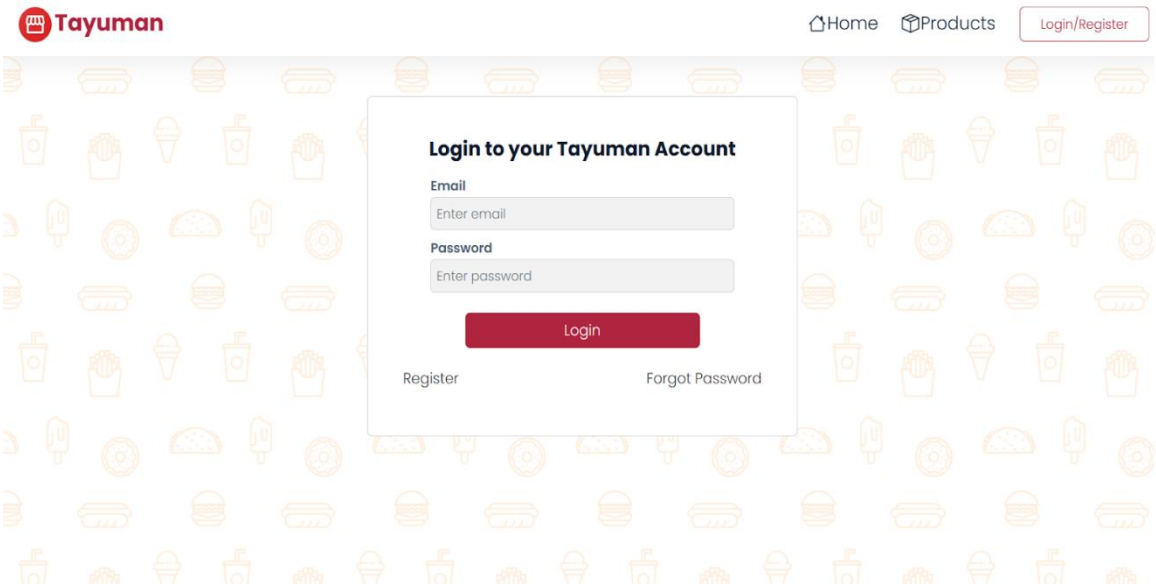

Figure 8. *Welcome Page*

Figure 8 shows a Welcome screen where users or store owners can already check the products and have the option to log in, register, and forget their password. When checking the products while in the welcome screen and you want to add to your cart, it will redirect to the welcome screen, and when logging in as a user, the system can only accept TUP email for security, and as a store owner, any valid email and the password must contain capital letters, small letters, numbers, and special characters.

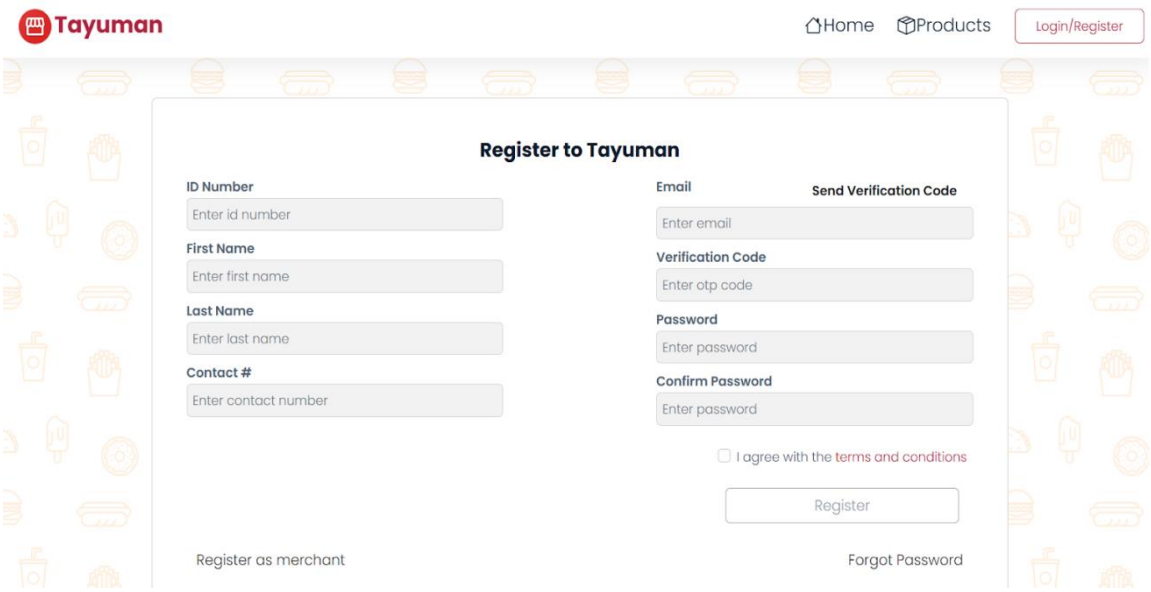

Figure 9. *Registration Page as Users*

Figure 9 showing what the user must fill in to proceed with their account.

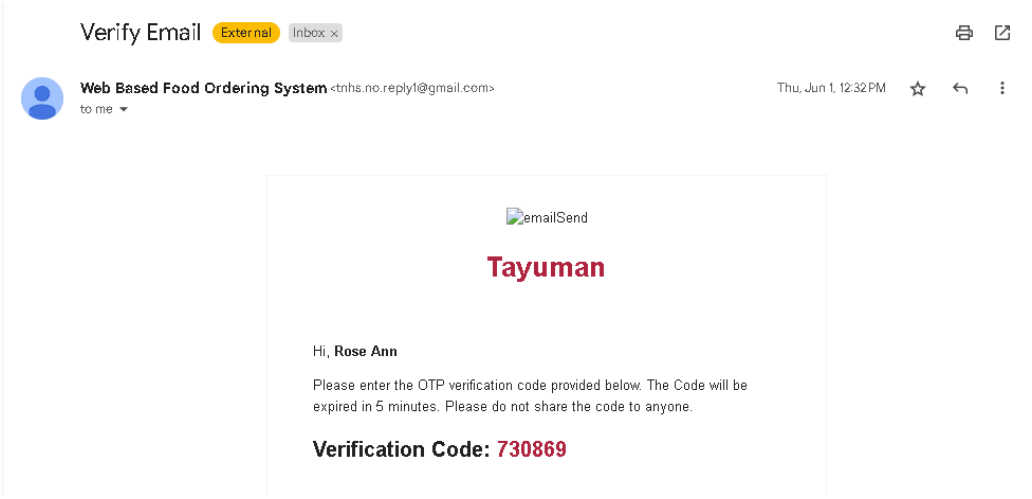

Figure 10. *Email Verification for Users*

Figure 10 shows the sample email sent to the user containing the verification code. The API used for email/notification is Laravel. Laravel uses the free feature-rich library SwiftMailer to send emails.

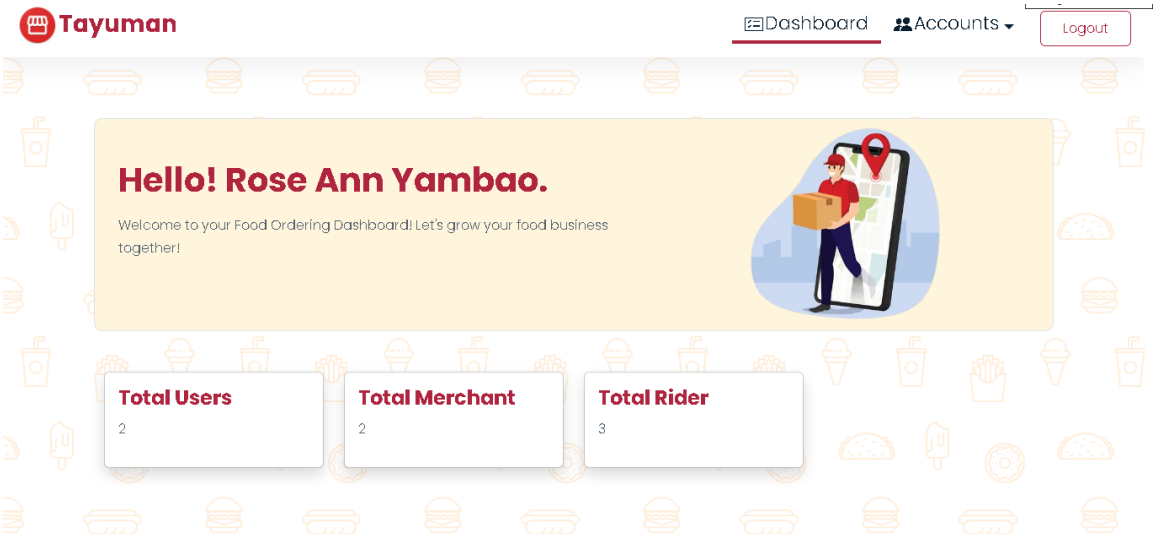

Figure 11. *Dashboard of Admin*

Figure 11 depicts the total number of Users, Merchants, and Delivery Staff.

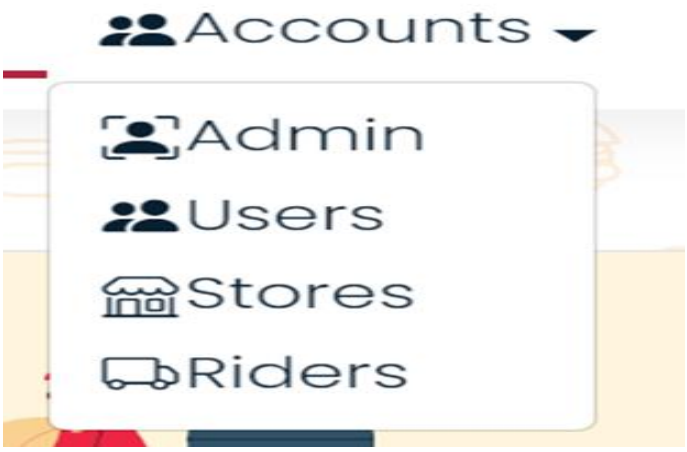

Figure 12. *Accounts*

Figure 12 shows the Admin, User, Store owner, and Delivery Staff account.

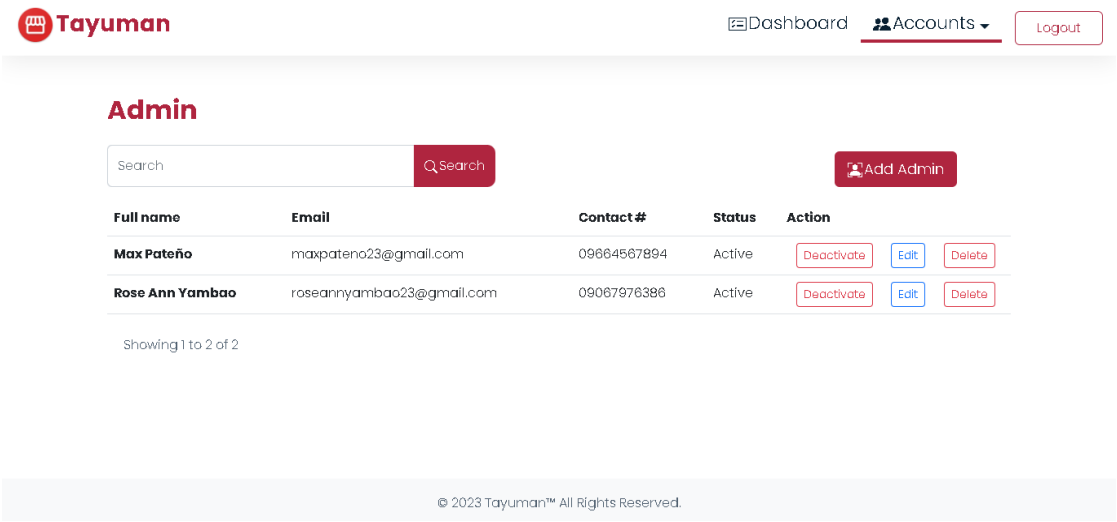

Figure 13. *Admin Account Page*

Figure 13 displays admin accounts.

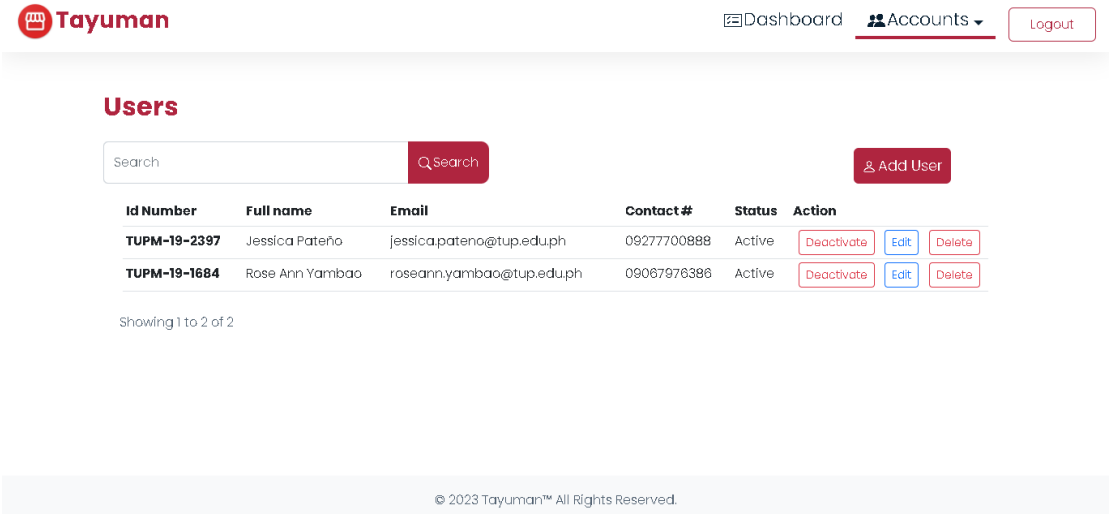

Figure 14. *Customer Account Page*

Figure 14 displays customer accounts.

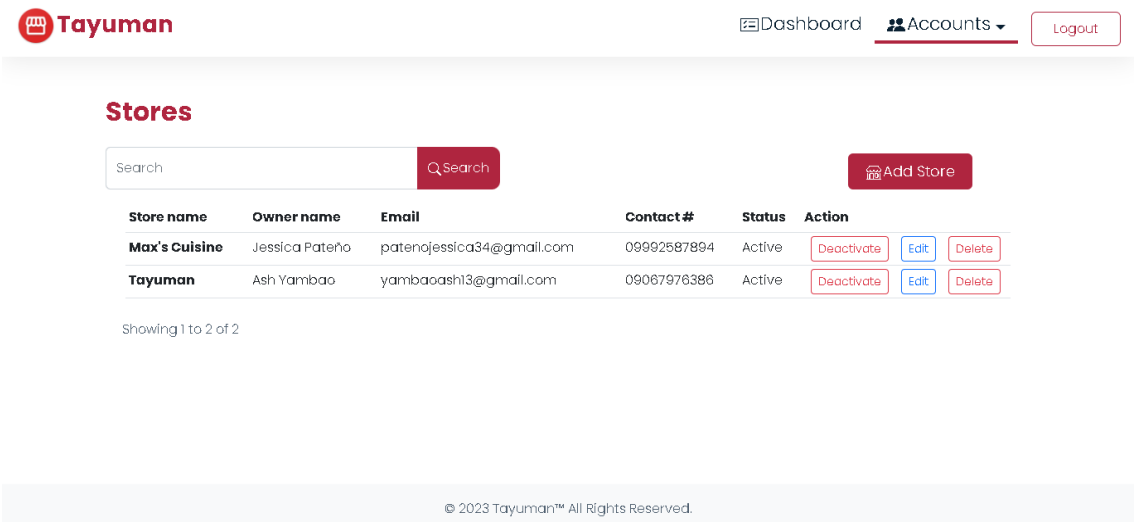

Figure 15. *Store Owner Account Page*

Figure 15 shows the store owner accounts.

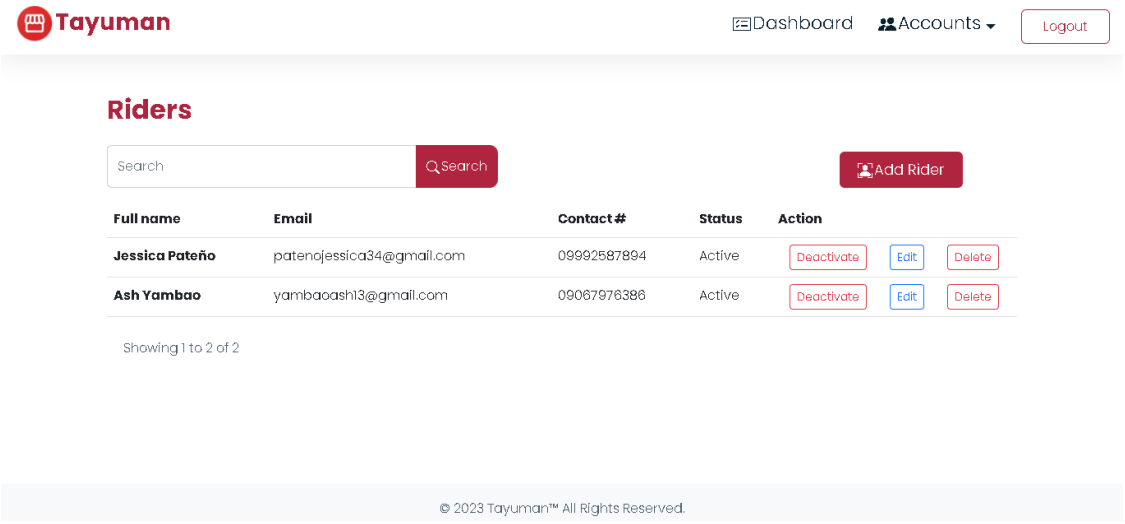

Figure 16. *Delivery Staff Account Page*

Figure 16 displays the delivery staff accounts.

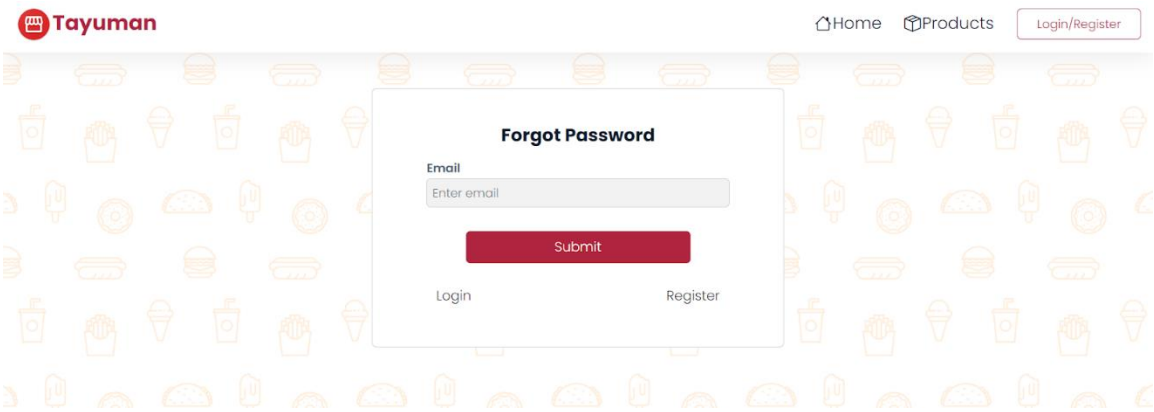

Figure 17. *Forgot Password Page*

Figure 17 shows forgot password screen. The registered email address is required to reset the password of an account.

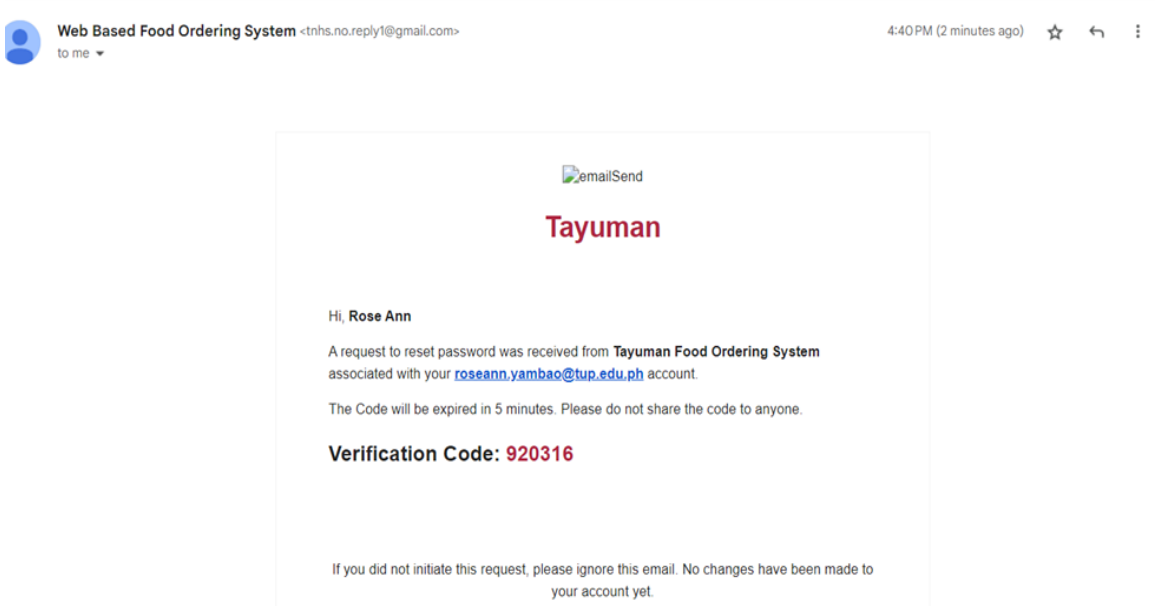

Figure 18. *Password Reset Email*

Figure 18 shows a sample email containing a password reset verification code sent to a user.

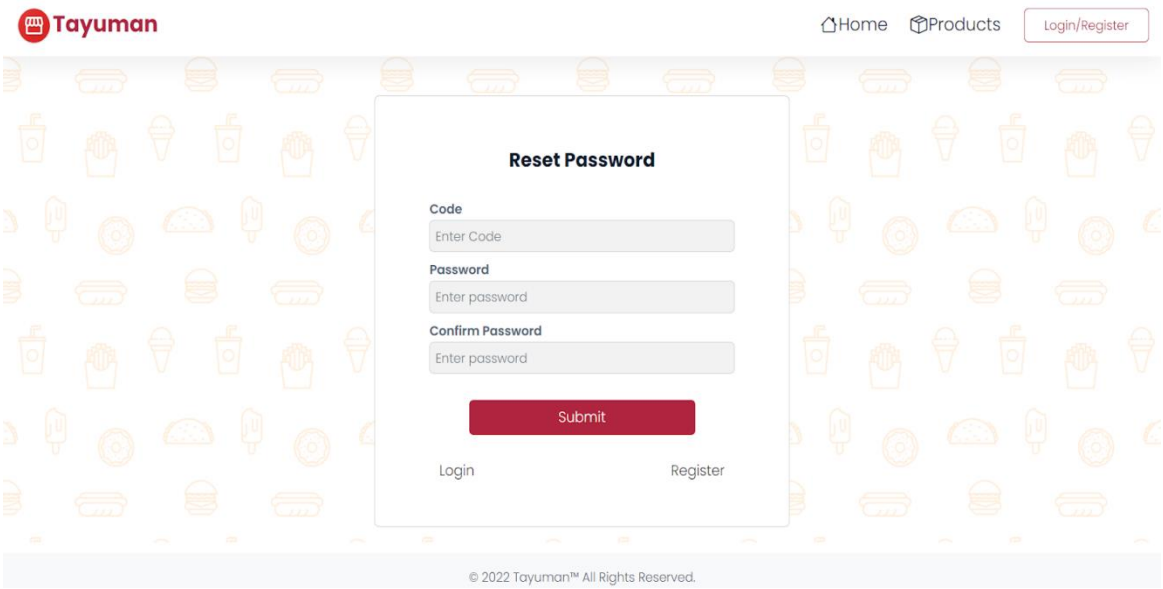

Figure 19. *Password Reset*

Figure 19 shows the reset password where a user can enter a new password and then confirm the new password.

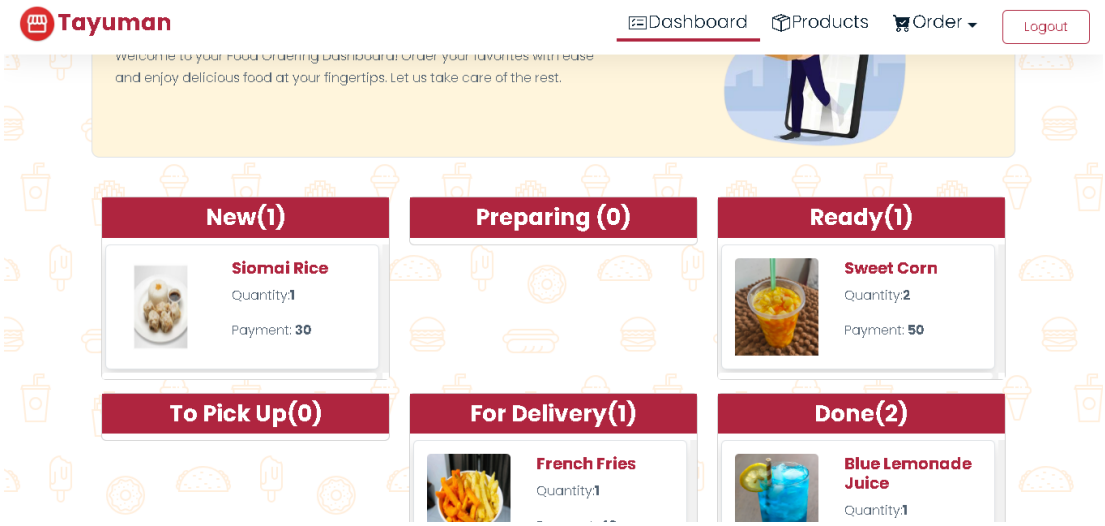

Figure 20. *Dashboard of the User*

Figure 20 shows the user's Dashboard, where they can see their order status.

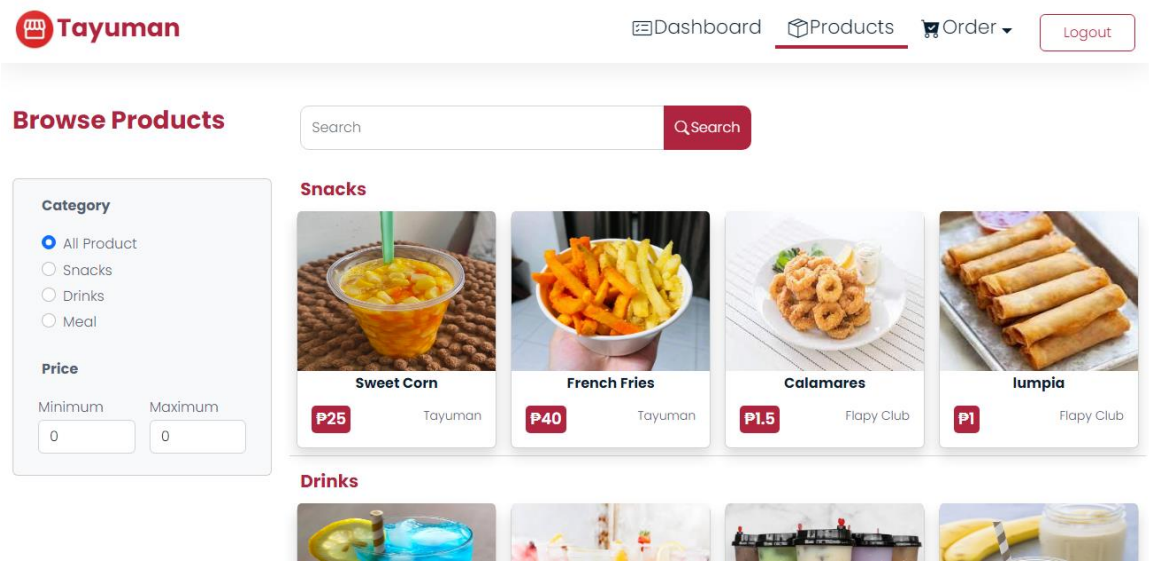

Figure 21. *Product Page*

Figure 21 shows the product categories that can be added to the user's cart.

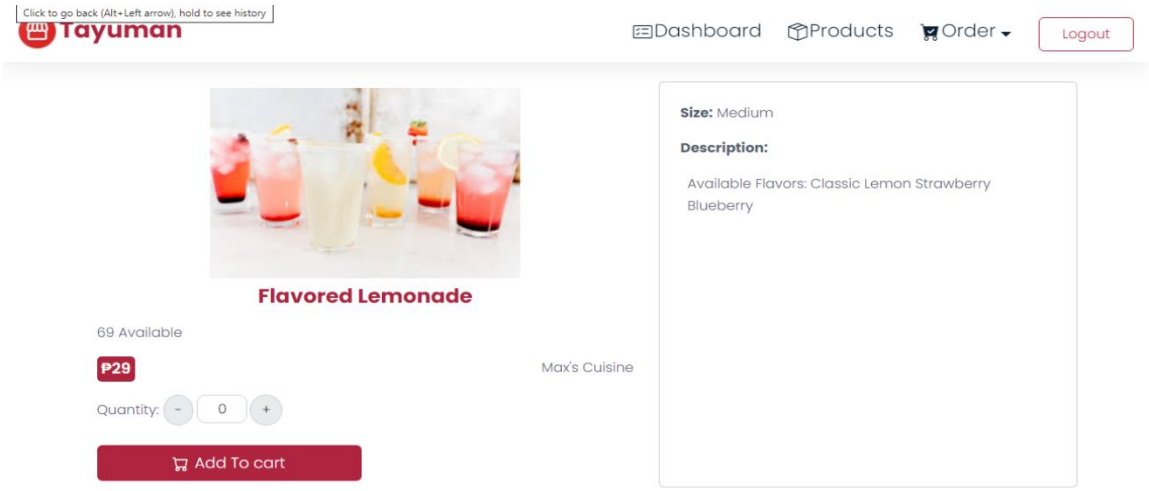

Figure 22. *Add to cart Page*

Figure 22 displays the add-to-cart bar where the customer can add or remove an order quantity.

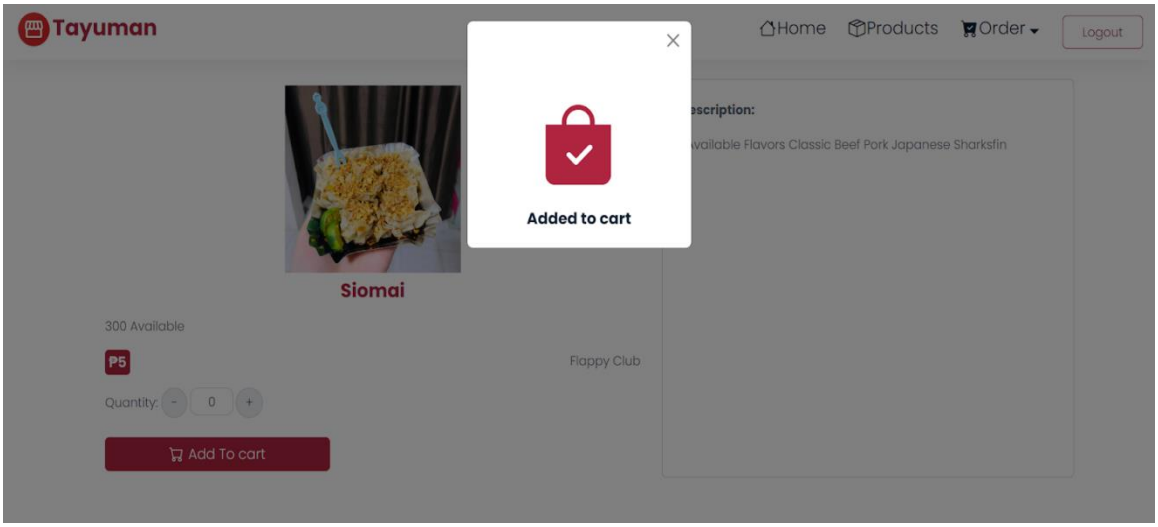

Figure 23. *Added to Cart Page*

Figure 23 shows that the “added to cart” is displayed here, where the customer can be sure that he will see what he has added to the cart on his cart screen.

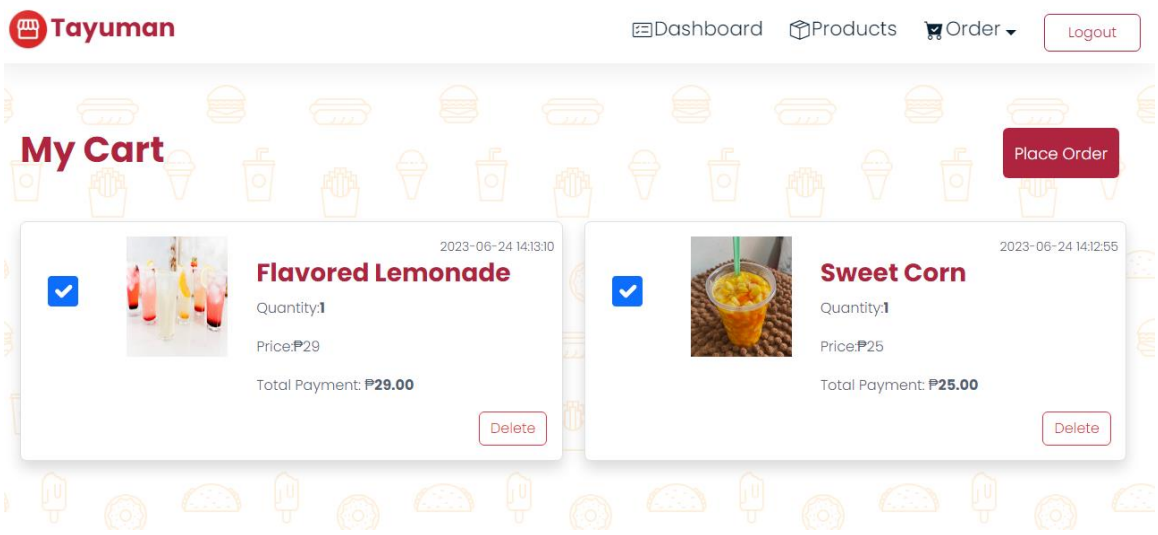

Figure 24. *Customer Cart-Page*

Figure 24 shows the user's cart, where they have the option to delete or place an order.

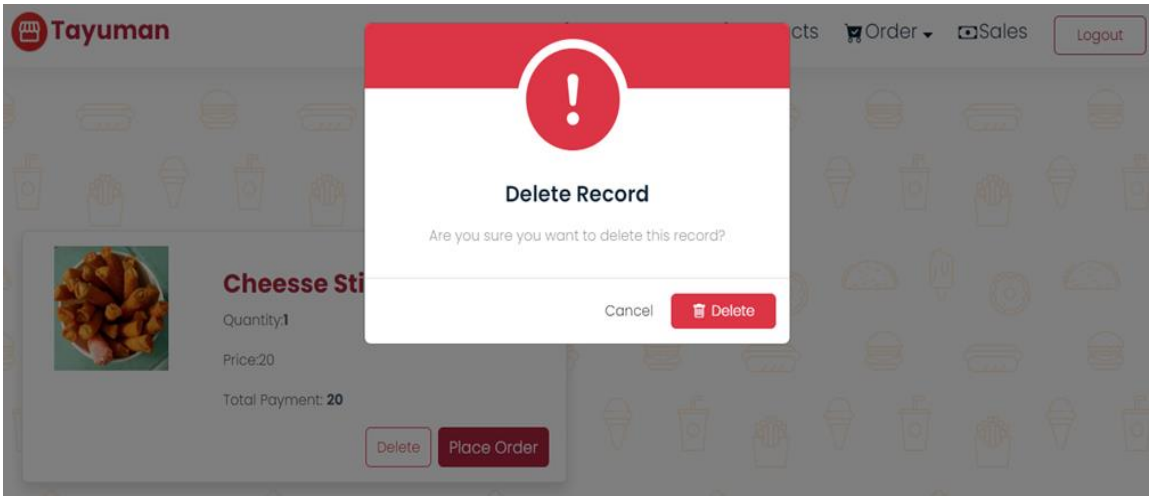

Figure 25. *Delete Order Confirmation*

Figure 25 presents the delete confirmation shown on this screen where the customer can cancel or delete what is in their cart.

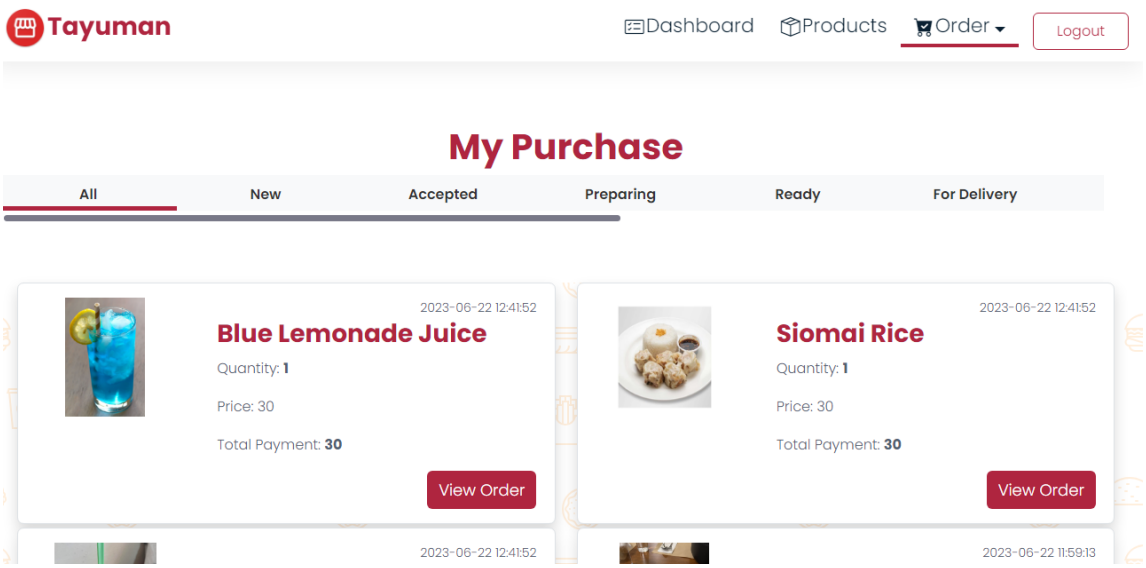

Figure 26. *Customer Purchase Page*

Figure 26 shows the user's purchases, where they can also see the status of their order.

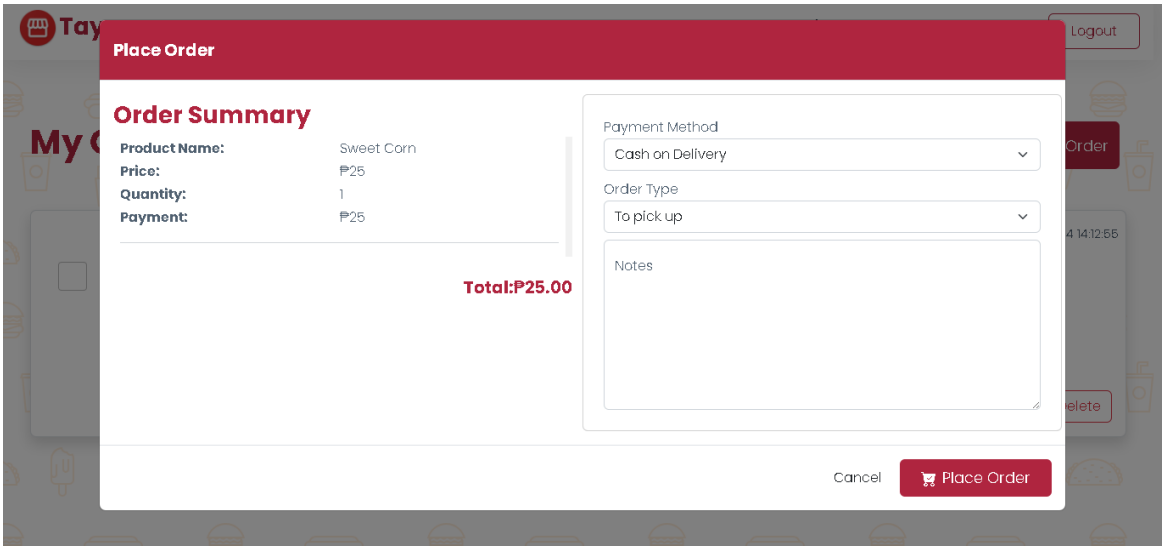

Figure 27. *Customer Order Summary Page*

Figure 27 shows the customer's order summary after placing an order.

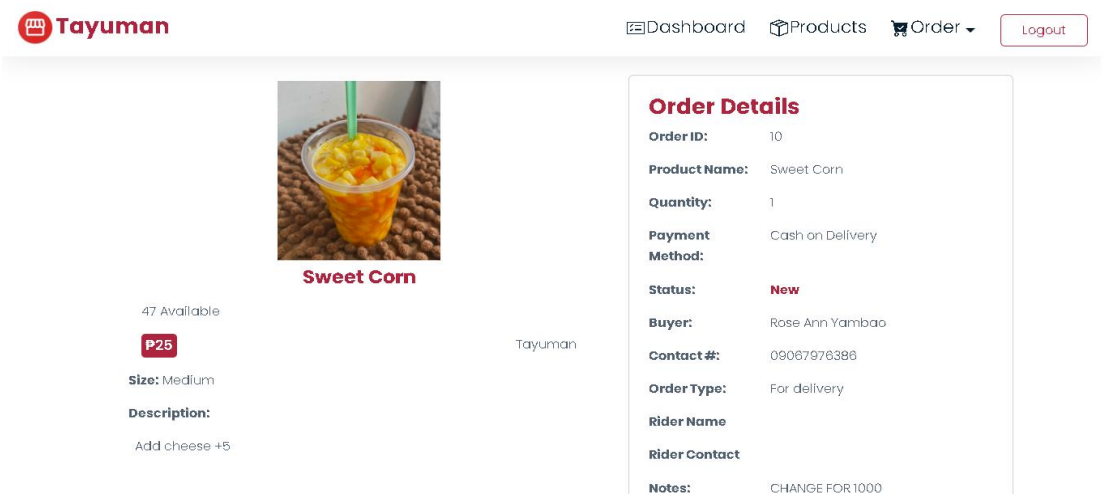

Figure 28. *Customer Order Details Page*

In Figure 28, order details are displayed here. The user can view the summary of their order here to make preparations. Also, the user can ask for a refund and rate the product.

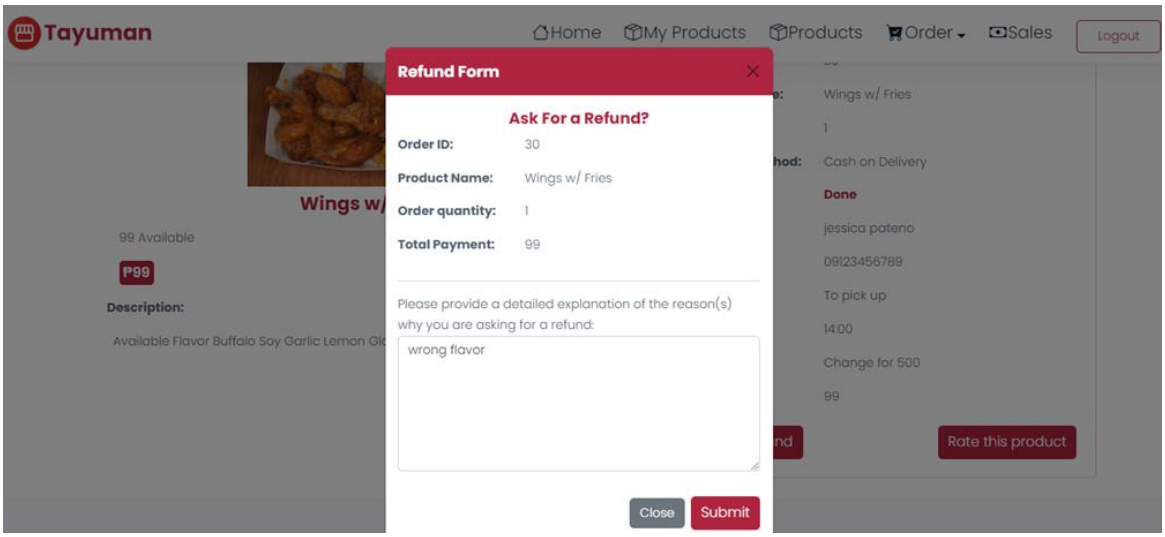

Figure 29. *Refund Form Page*

Figure 29 shows the refund form where the customer can enter why he wants a refund.

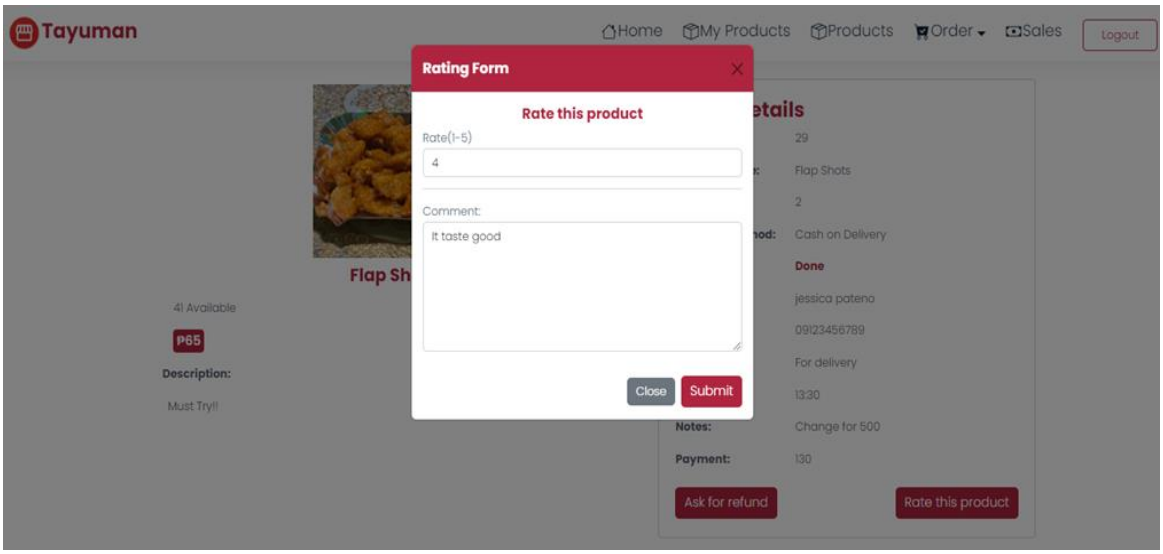

Figure 30. *Rating Form Page*

Figure 30 shows the rating form that customers can fill out, which will help merchants with what else they need to improve on their products.

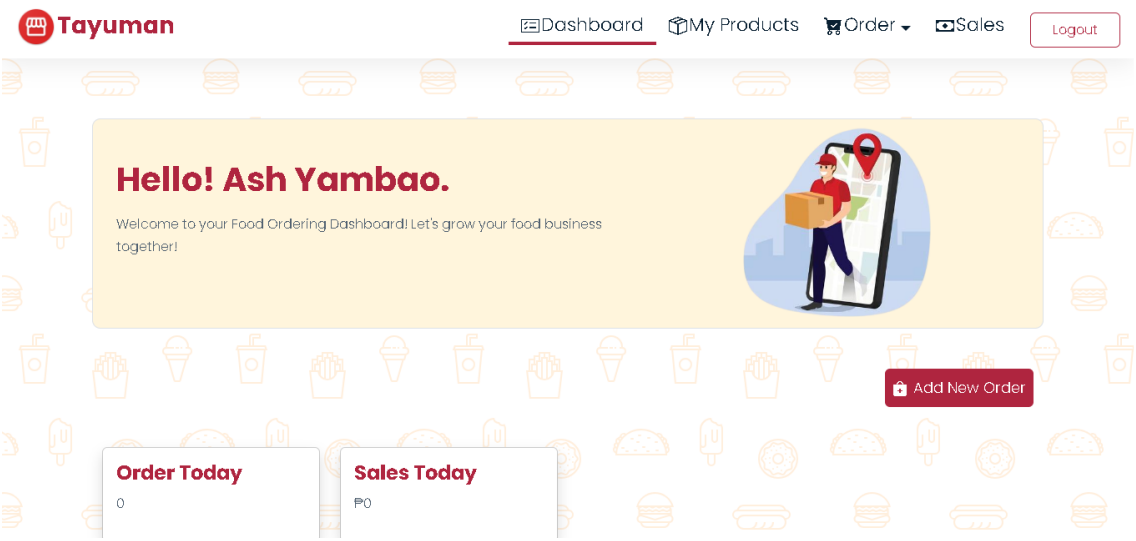

Figure 31. *Store Owner Dashboard Page*

Figure 31 shows the store owner's dashboard, where they can see the total order, they received throughout the day and how much is their total sales.

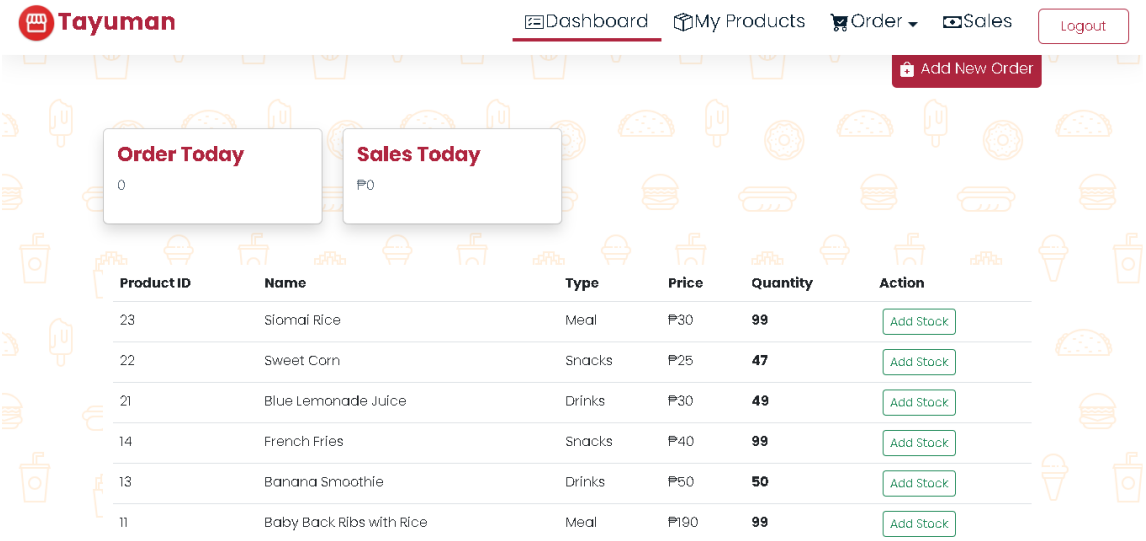

Figure 32. *Inventory page of Store Owner*

Figure 32 shows the store owner's inventory screen for walk-ins.

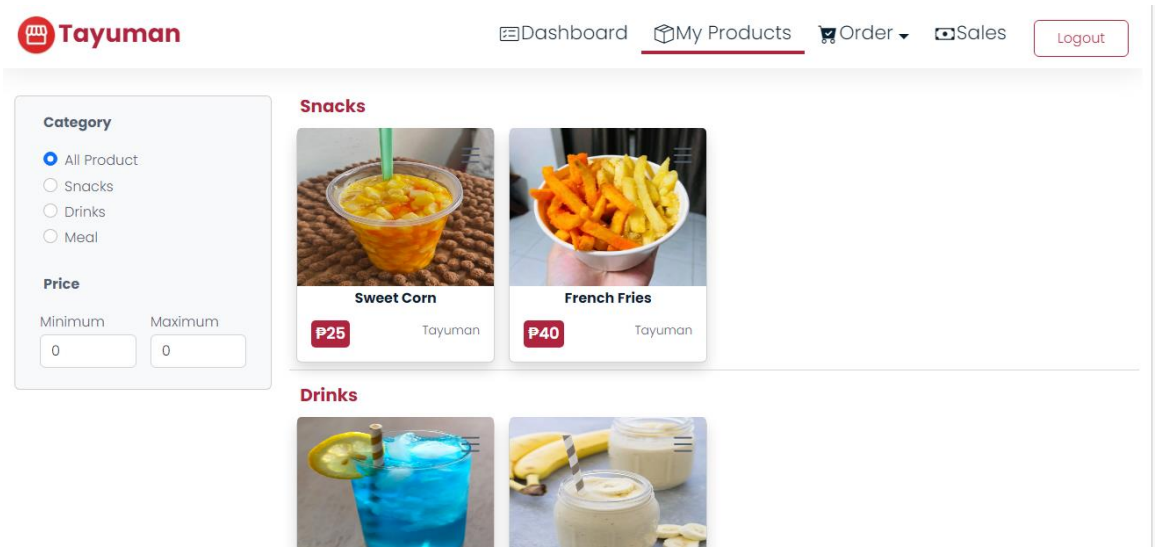

Figure 33. *Store Owner Product Page*

In Figure 33, the store owner can see the products they add.

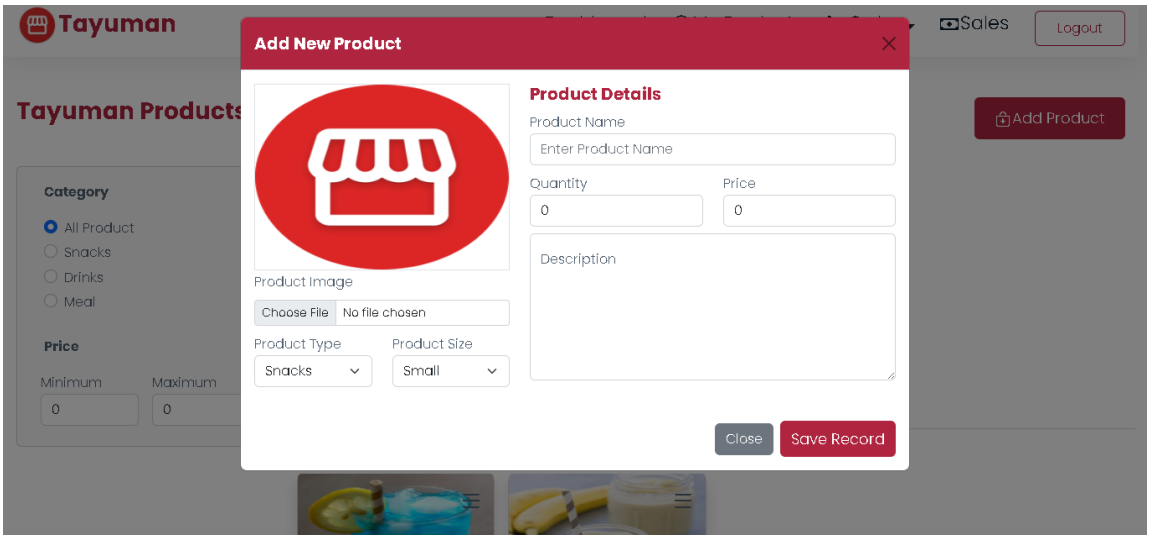

Figure 34. *Store Owner Add New-Product Page*

Figure 34 showing what the store owner must fill in so he can add a new product.

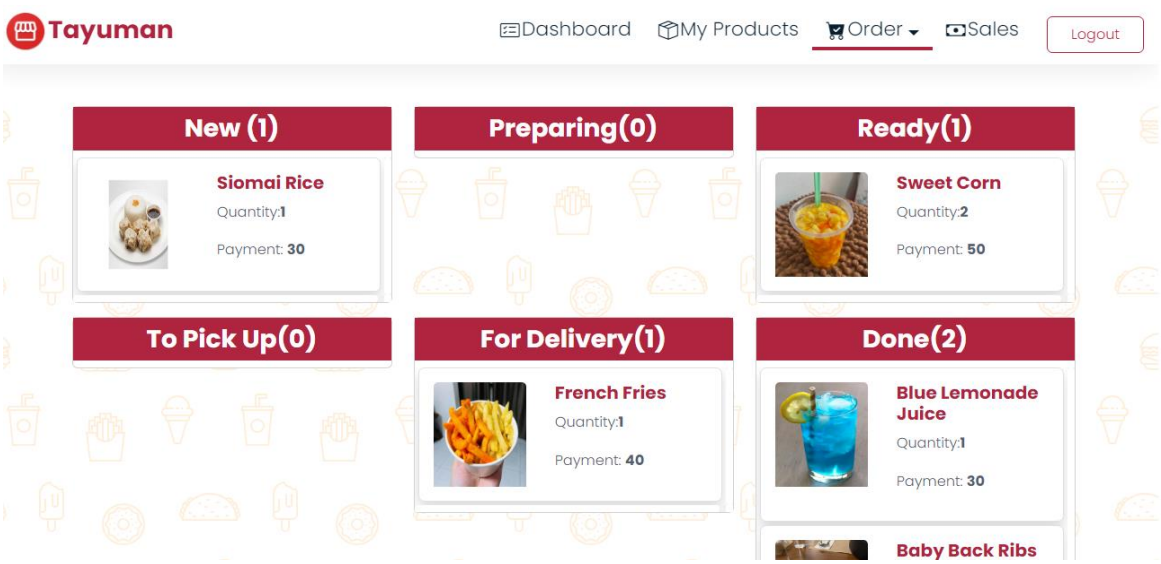

Figure 35. *Store Owner Order Page*

In Figure 35, the store owner can see the number of new orders and the status of accepted orders.

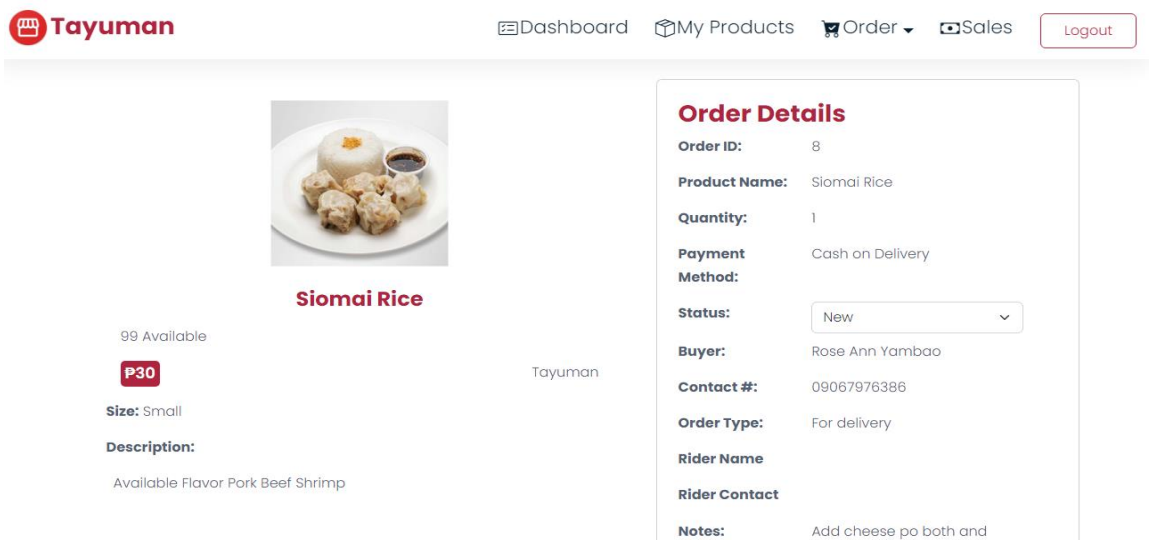

Figure 36. *Store Owner Order Details Page*

Figure 36 shows the order details of each order received by the store owners are displayed where they can edit the status to update the customers.

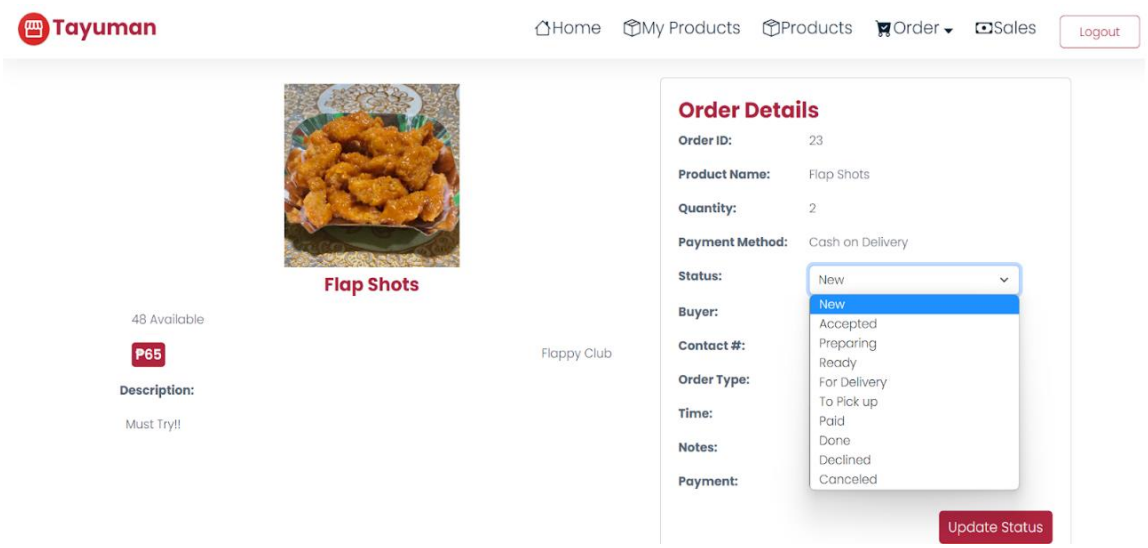

Figure 37. *Status Page*

Figure 37 shows the Store Owner's possible status choices depending on the actual status of the customer's order.

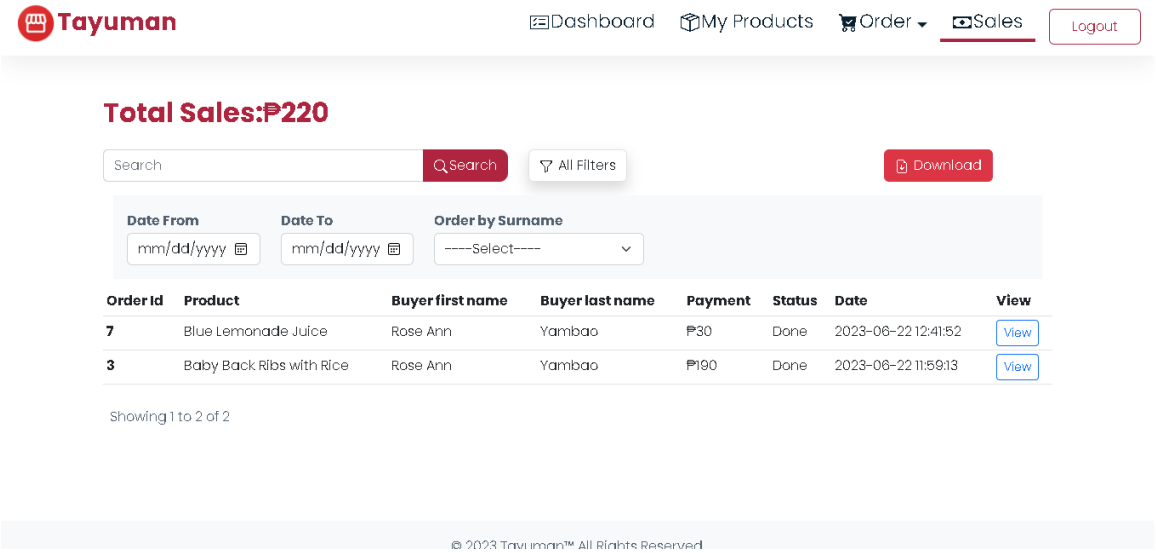

Figure 38. *Sales Report Page for Store Owner*

Figure 38 store owner sales are shown here; they can also download it as a report to immediately see the total sales.

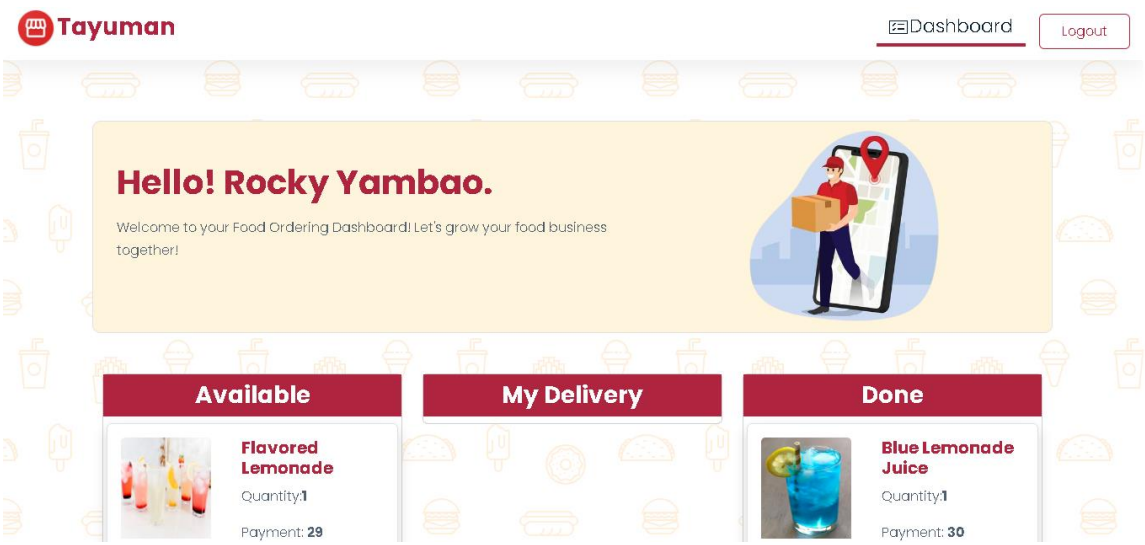

Figure 39. *Dashboard for delivery staff*

Figure 39 shows the delivery staff dashboard, where they can see the available orders that they can accept, those that they will deliver, and those that have been delivered.

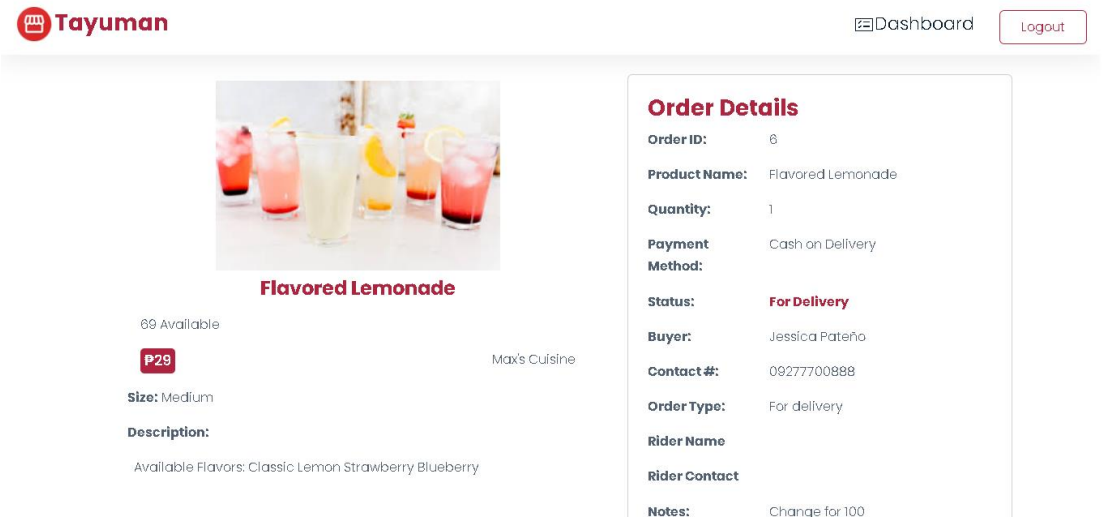

Figure 40. *Delivery Staff Order Details Page*

Figure 40 shows the delivery staff the customer's order details where he can update it so that the customer is also updated on the status of his order.

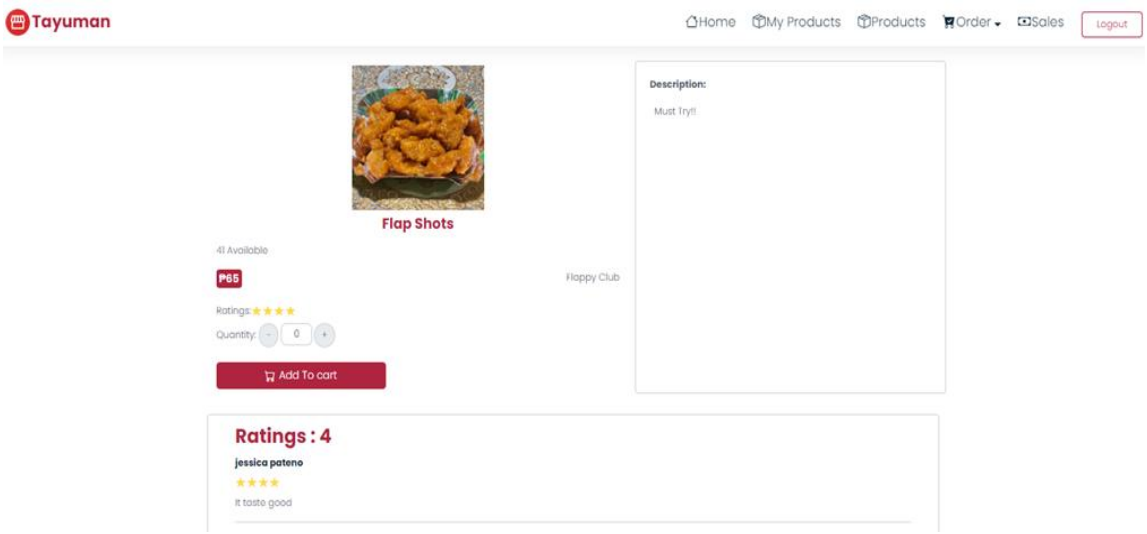

Figure 41. *Feedback Page*

Figure 41 shows each product's received ratings that will help attract customers.

Project Test Results

This section summarizes the test results executed and the data collected based on functionality, reliability, portability, and usability testing.

Functionality Test Execution Summary

Table 3.

Text Execution	Expected Results	Actual Results	
		Cycle 1	Cycle 2
No. of Test Cases Executed	100%	100%	100%
Results of Test Cases			
Passed	100%	90%	100%
Failed	0%	10%	0%
Not Executed	0	0	0

Table 3 summarizes the outcomes of the functional test that was completed. Cycle 1 demonstrates that 100% of test cases were run, with only 90% of test cases passing and 10% failing to work as intended. The result suggests that the application's general functioning was unsuccessful in the first cycle. The software was later debugged and modified based on the outcomes of failed test cases.

The test cases that failed in Cycle 1 were tested and performed again after the bug patches were applied to ensure that problems had been fixed. Cycle 2 indicates that all test

cases passed with 100% accuracy, indicating that all problems were fixed and all functionality had performed as intended.

Functionality Test Incident Logs

Table 4.

No.	Error Description	Test Case Reference
1	Encountered error when submitting a new TUP email account.	TAYUMAN - FT - 1
2	Encountered error when registering, even though the system had already sent a verification code.	TAYUMAN - FT - 1

Table 4 displays the incident logs for the functionality tests of failed test cases. Bugs and errors were corrected, then the program was tested again to address any problems.

Reliability Test Execution Summary

Table 5.

Text Execution	Expected Results	Actual Results	
		Cycle 1	Cycle 2
No. of Test Cases Executed	100%	100%	100%
Results of Test Cases			
Passed	100%	100%	100%
Failed	0%	0%	0%
Not Executed	0	0	0

Table 5 displays a summary of the reliability test's execution. There were two cycles used to verify the reliability. Cycles 1 and 2 demonstrate that every test case was run successfully in both cycles. Accordingly, the reliability testing must have been successful.

List of Devices Used in Portability Test

Table 6.

Manufacturer	Device	OS Version
Acer	Aspire E15	Windows 11 Pro
Apple	iPhone X	IOS 16.3.1
Apple	iPhone XS Max	IOS 16.3.1
Apple	iPhone 11	IOS 16.4.1
Apple	iPhone 14 Pro Max	IOS 16.4.1
Huawei	Nova 9 SE	Android 11
MSI	MSI GL63	Windows 10 Pro
Samsung	Note 10	Android 12
Samsung	A50	Android 11
Toshiba	Toshiba Tecra X40-E	Windows 10 Pro
Xiaomi	Redmi Note 11	Android 12
Xiaomi	Redmi Note 11	Android 12
Xiaomi	Redmi Note 8	Android 11

Table 6 shows the list of devices used in the portability test. The application ran smoothly without any bugs or errors on different mobile phones running different versions of iOS or Android.

Usability Testing Overall Results

Table 7.

Principles	Mean Average	Descriptive Rating
Suitability for the task	3.73	Good
Self-descriptiveness	3.76	Good
Controllability	3.71	Good
Conformity with user expectations	3.73	Good
Error tolerance	3.79	Good
Suitability for individualization	3.82	Good
Suitability for learning	3.75	Good

Table 7 summarizes the usability testing results, which shows the outcomes of the test and displays the weighted mean per principle as well as its equivalent descriptive rating.

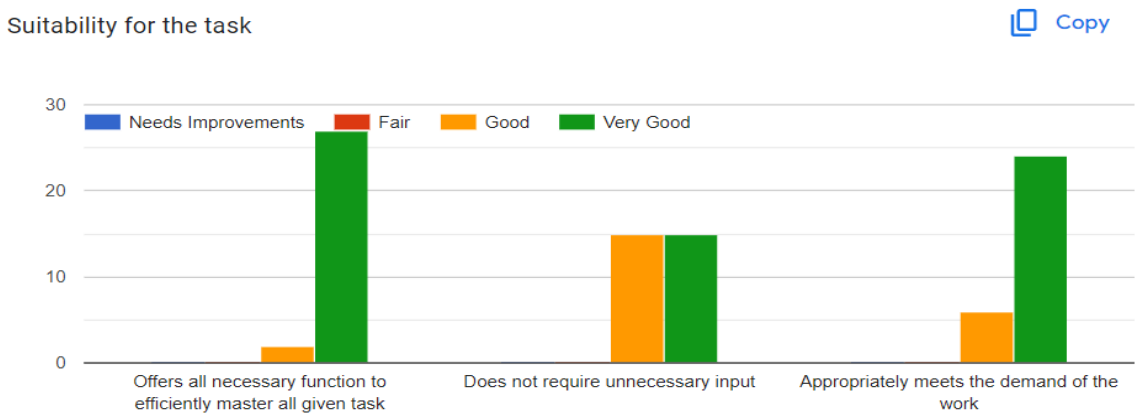

Figure 42. *Suitability for the Task result*

Figure 42 shows the graph for Suitability for the task, which received an overall good rating with a mean score of 3.73. The results demonstrate how users are successfully and efficiently assisted in carrying out specific tasks.

Figure 43. *Self-descriptiveness result*

Figure 43 shows the self-descriptiveness graph, which received a good overall grade with a mean score of 3.76. The result shows that users are given clearly explained information through clear feedback.

Figure 44. *Controllability result*

Figure 44 shows the controllability graph, which received an overall good rating with a mean score of 3.71. The result suggests that users are led through each activity phase.

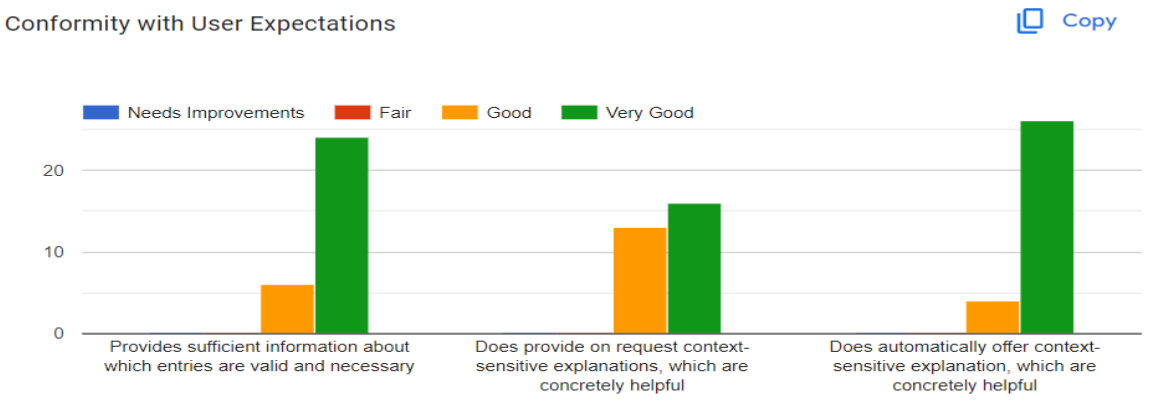

Figure 45. *Conformity with user expectations result*

Figure 45 illustrates conformity with user expectations, which was given an overall good grade with a mean score of 3.73. This indicates that the system aligns with users' background knowledge and practical experience.

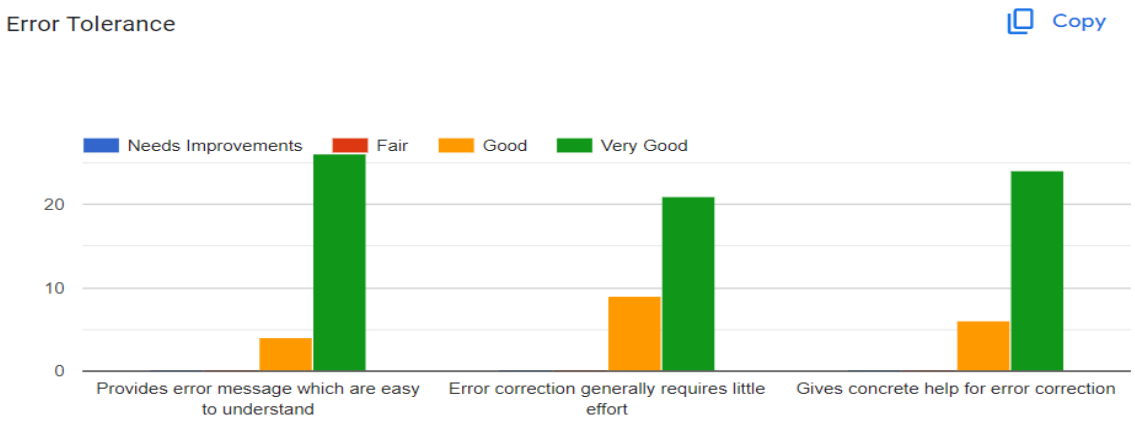

Figure 46. *Error tolerance result*

Figure 46 shows the graph for error tolerance, and it received an overall good rating with a mean score of 3.79. The result indicates that the program offers assistance and advice for potential user errors.

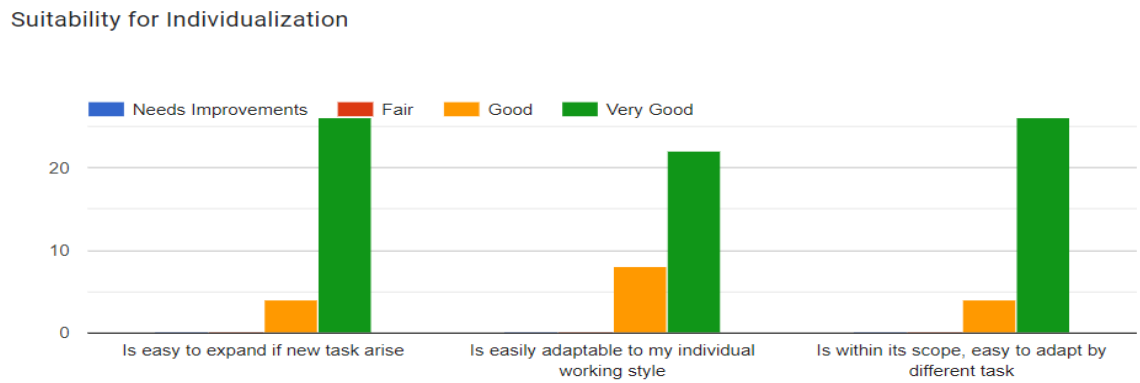

Figure 47. *Suitability for individualization result*

Figure 47 shows the graph for suitability for individualization, and it received a good overall grade with a mean score of 3.82. This indicates that people can quickly get used to using the system.

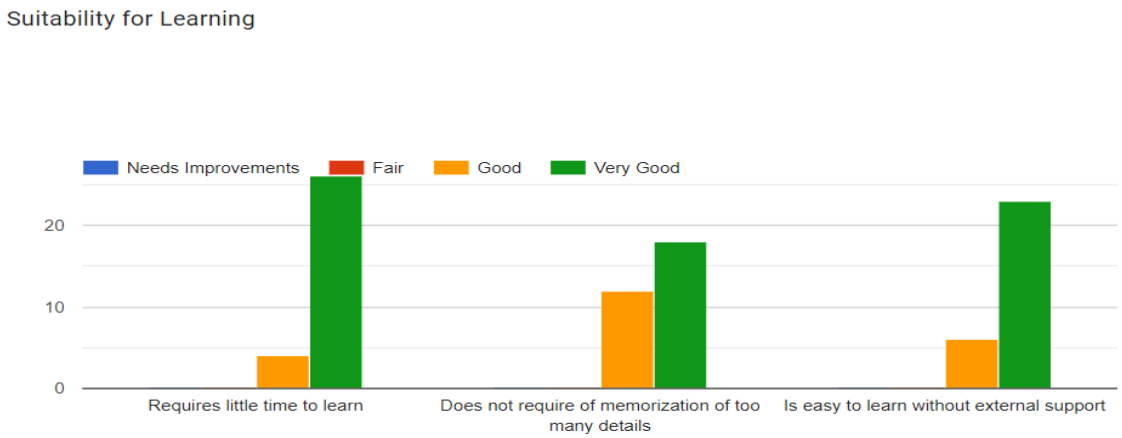

Figure 48. *Suitability for learning result*

Figure 48 shows the graph for suitability for learning, and it received an overall good rating with a mean score of 3.75. The result demonstrates how simple it is for people to understand and utilize the system.

Project Capabilities and Limitations

The following are the capabilities of the system:

1. Online Ordering: Students and Employees can place food orders conveniently from their smartphones, tablets, or computers without the need to wait in long queues.
2. Menu Customization: The technology enables consumers to add or remove products from their food orders based on dietary choices or constraints.
3. Pre-ordering: Customers can plan their food orders ahead, ensuring that their meals will be served at a specific time and minimizing wait times during peak hours.
4. User's Budget: There's a budget limit where users can set their preferred minimum and maximum budget for their orders.
5. Order tracking: Users are able to monitor the progress of their orders, including order preparation, expected delivery or pickup times, and order completion, increasing transparency and lowering uncertainty.
6. Delivery: The delivery person can access their own account on the system to view information about the customer and their order ID.
7. Feedback and Ratings: The system enables continual improvement based on user preferences by allowing users to offer feedback and ratings for the food and service.
8. Inventory Management: The system may keep track of the food items that are on hand, making sure that users can only order items that are in stock and lowering the possibility of orders not being filled.

The following are the limitations of the system:

1. Internet Dependency: The system relies on a stable internet connection. If the internet goes down, users may be unable to place orders, causing inconvenience.
2. Technical Issues: Like any web-based system, there may be occasional technical glitches or bugs that can disrupt the ordering process or lead to errors in order placement.
3. Limited Menu Options: The system may not offer the entire range of food items available in the canteen. Some items may not be available for online ordering, limiting choices for users.
4. Payment Options: The system only supports cash on delivery or gcash/cash on pick up.
5. Delivery Constraints: If the canteen offers delivery services, there may be limitations on the delivery area, which can restrict accessibility for some users.
6. Personal Interaction: A web-based system lacks personal touch and direct communication during face-to-face interactions, potentially impacting customer satisfaction.
7. Training and Adoption: The successful implementation of a web-based ordering system requires proper training for canteen staff and user adoption. Resistance to change or lack of technical skills among users may affect the system's effectiveness.
8. Maintenance and Upgrades: The system requires regular maintenance, updates, and potential integration with other systems. Failure to keep the system up to date may result in security vulnerabilities or compatibility issues.

Project Evaluation

The evaluation procedure was conducted using the standard criterion of ISO 25010 for quality software. The evaluation process involved five software engineers or developers, five information technology professionals, and 20 end users. The following are the results of the evaluation of the TAYUMAN Web-based Food Ordering System.

ISO 25010 Overall Evaluation Results

Table 8.

Criteria	Mean Average	Qualitative Interpretation
Functional Suitability	3.67	Good
Performance Efficiency	3.64	Good
Compatibility	3.59	Good
Usability	3.52	Good
Reliability	3.57	Good
Security	3.63	Good
Maintainability	3.59	Good
Portability	3.68	Good
Overall	3.61	Good

Table 8 summarizes the ISO 25010 overall evaluation results, showing the weighted mean per criterion and its equivalent qualitative interpretation.

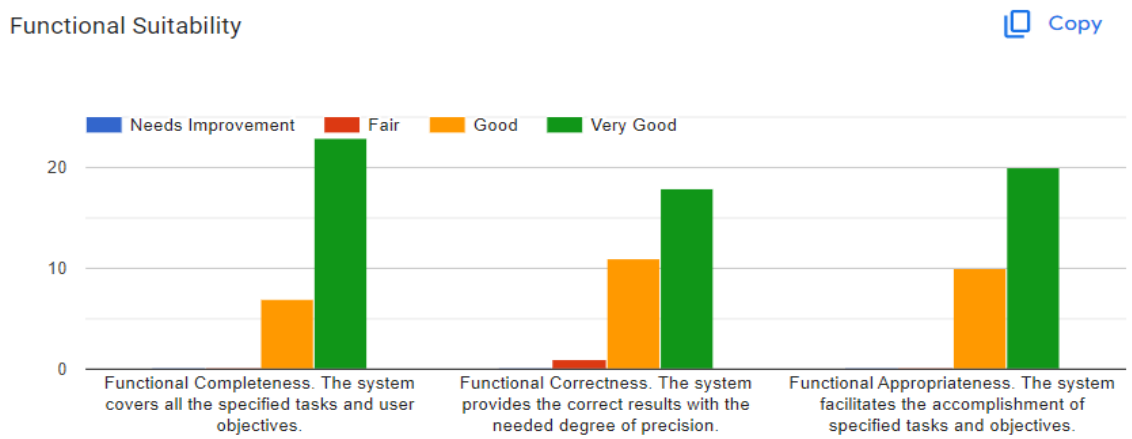

Figure 49. *Functional Suitability result*

Figure 49 shows the graph representing the functional appropriateness evaluation results. The system received a good evaluation, with a mean score of 3.67, indicating that it satisfies the needs and functionalities specified by the specification.

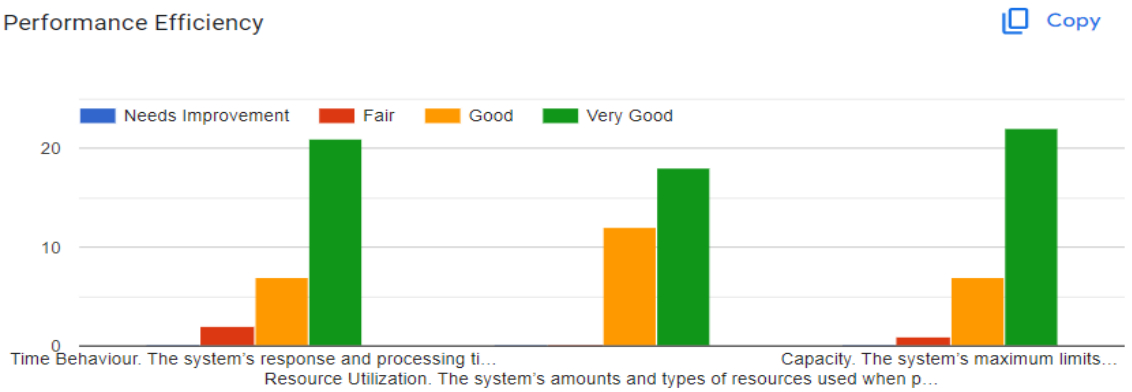

Figure 50. *Performance Efficiency result*

Figure 50 shows the graph for performance efficiency. The program received a good evaluation, with a mean score of 3.64, demonstrating that it reacts swiftly and completes its task within a reasonable reaction time.

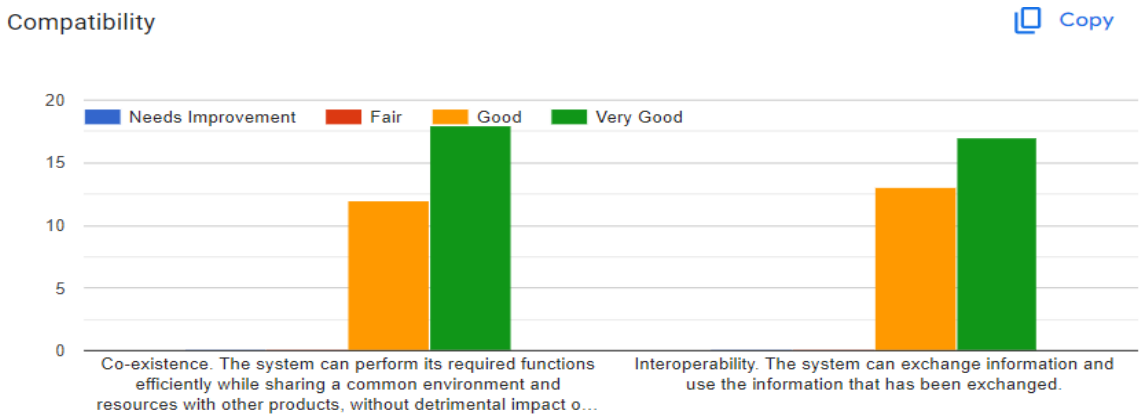

Figure 51. *Compatibility result*

Figure 51 shows the compatibility graph. The program had a positive evaluation, with a mean score of 3.59, indicating that data may be easily shared and used by a variety of users and devices.

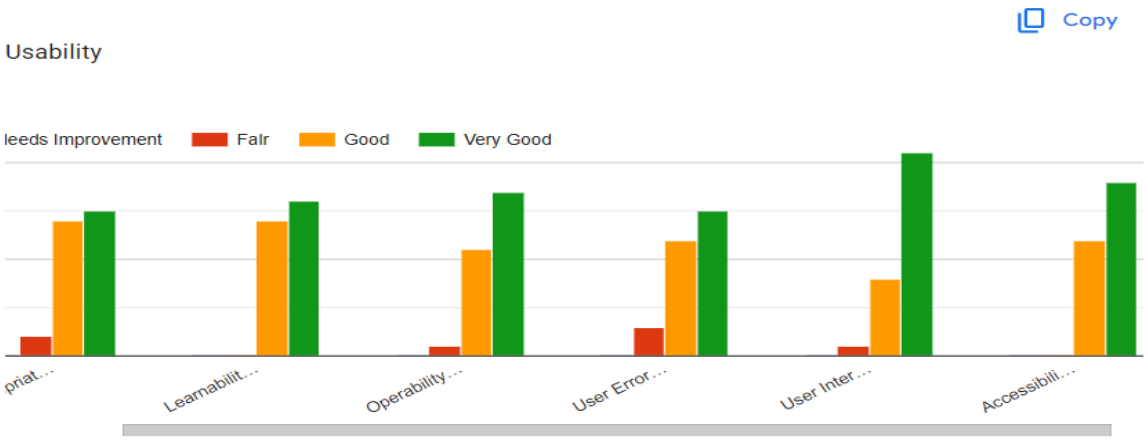

Figure 52. *Usability result*

Figure 52 shows the usability graph. The program had a good evaluation, with a mean score of 3.52, indicating that the design and interface are user-friendly and simple for any user to use.

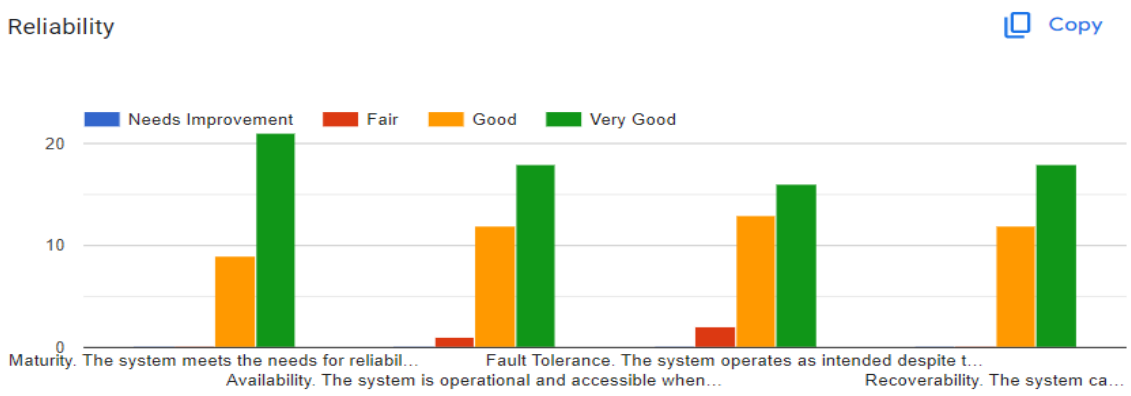

Figure 53. *Reliability result*

Figure 53 shows the reliability graph. The program had an excellent evaluation, with a mean score of 3.57, indicating that it can continue to carry out its intended functions while handling faults.

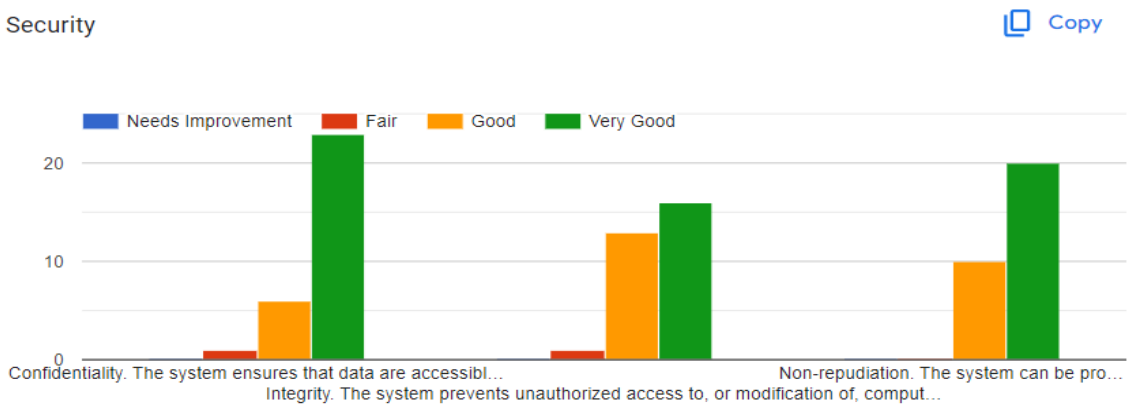

Figure 54. *Security result*

Figure 54 presents the security graph. The program's mean evaluation score of 3.63 indicates that data and information are securely safeguarded via authentications and role-based access control.

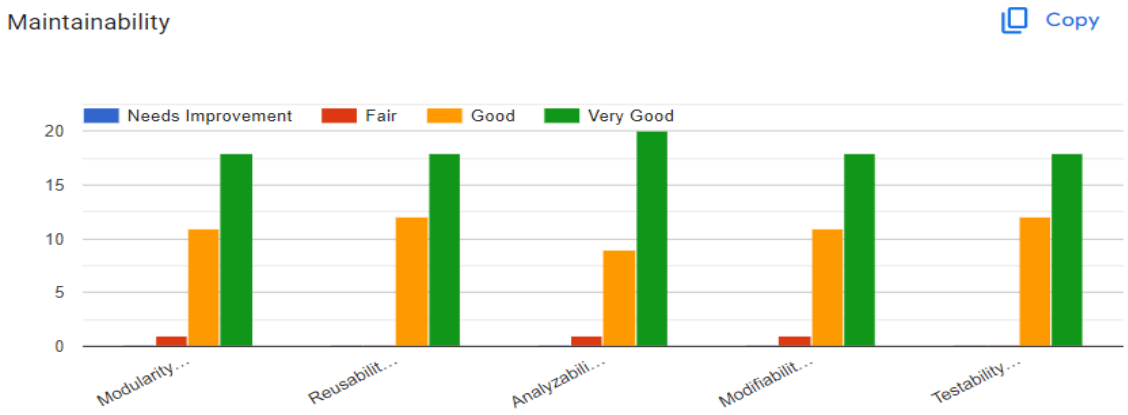

Figure 55. *Maintainability result*

Figure 55 shows the graph for maintainability. The program had a good evaluation, with a mean score of 3.59, demonstrating its easy adaptability to various situations.

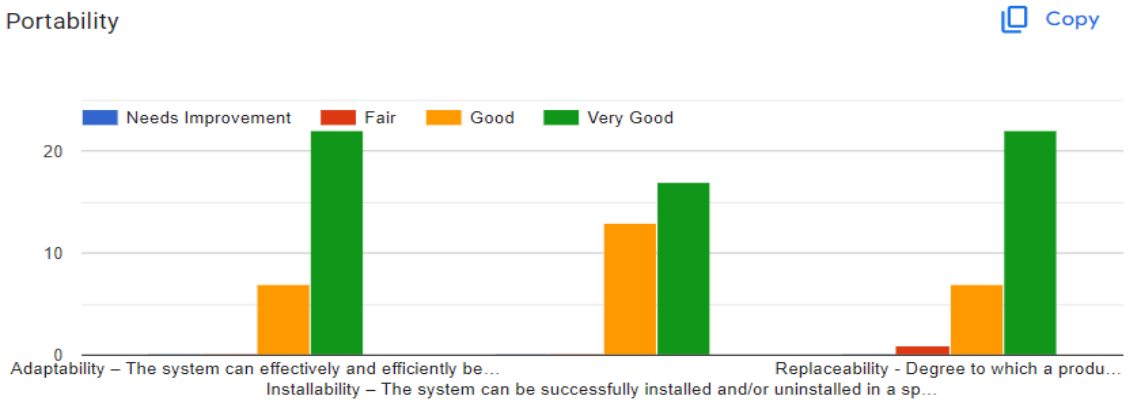

Figure 56. *Portability result*

Figure 56 shows the portability graph. The software had a good evaluation, with a mean score of 3.68, indicating that it may be browsed and used on iOS or Android devices.

Chapter 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions, and recommendations based on the results of the evaluation, comments, and suggestions.

Summary of Findings

Based on tests and evaluations conducted on the performance capability of the application, the following were the findings of the study:

The system was created in accordance with the intended design and requirements. Users can easily order meals from the canteen using the system on their desktops and mobile devices. The system offers a user-friendly interface so that users may explore a menu of available food items, choose what they want, and then add it to their virtual shopping cart. Additionally, the system keeps track of every order placed throughout the day, which the store owner can download for their sales report. The system also underwent testing and passed using the criteria or principles of ISO 25010. The result implies that users around the Technological University of the Philippines Manila can easily use and adapt the system.

- In terms of functionality suitability, the system was rated good, which indicates that it satisfies the needs and functionalities specified by the specification.
- In terms of performance efficiency, the system was rated good, demonstrating that it reacts swiftly and completes its task within a reasonable reaction time.

- In terms of compatibility, the system was rated good, which indicates that data may be easily shared and used by a variety of users and devices.
- In terms of usability, the system was rated good, which indicates that the design and interface are user-friendly and simple for any user to use.
- In terms of reliability, the system was rated good, indicating that it can continue to carry out its intended functions while handling faults.
- In terms of security, the system was rated good, which indicates that data and information are securely safeguarded via authentications and role-based access control.
- In terms of maintainability, the system was rated good, demonstrating its easy adaptability to various situations.
- In terms of portability, the system was rated good, which indicates that it may be browsed and used on iOS or Android devices.

Conclusions

In consideration of the objectives of the study and the results of the testing and evaluation undertaken, the following conclusions were derived:

1. The TAYUMAN: Web-based Food Ordering System for the Technological University of the Philippines was successfully designed with the following features:
    a. The store owner can customize the products they sell.
    b. The system is progressive and can be adapted to multiple screen sizes, ensuring that the content looks great on any screen size.
    c. Created a system, which refers to adding value by facilitating interactions between two or more interdependent organizations, such as the system administrator, store owner, and user.
    d. The system admin can Create, Edit, Deactivate, and Delete Accounts.
    e. The system has successfully implemented add-to-cart functionality.
    f. Users can track their order by reloading and then seeing the status updates.
    g. The system has created a refund option where the customer will only provide a valid reason why the store owner should accept his refund request.
    h. The store owner can generate reports of their sales, and it can also be downloaded.

2. The system was created in Visual Studio Code as code editor, HTML, CSS, Bootstrap, and JavaScript in Vue.js, and Laravel, MySQL using as database, GitHub as code repository and Hostinger as Web hosting, Netlify.

3. The functionality, reliability, portability, and usability of the software were tested and successfully improved.

4. The system performance was completely evaluated using ISO 25010 criteria and yielded an overall mean of 3.61.

Recommendations

The study has identified specific findings and conclusions, based on which the following recommendations are presented to improve the application in the future.

1. Improvements or new capabilities for the system.
2. Status of students.
3. Real-time of the system.
4. Include graphs for data analytics for the store owner and admin.
5. Improvisation of the graphics and design interface.

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Appendix A

SAMPLE EVALUATION INSTRUMENT

DEVELOPMENT OF A WEB-BASED FOOD ORDERING SYSTEM AT TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES- MANILA

SOFTWARE EVALUATION INSTRUMENT OF ISO 25010

Name: _____

Instruction: Please evaluate the software material by using the given scale and placing a checkmark (✓) under the corresponding numerical rating:

Numerical Rating and Equivalent

4 - Very Good 3 – Good 2 – Fair 1 - Needs Improvement

A. Functional Suitability					
Indicators		**4**	**3**	**2**	**1**
Functional Completeness	The system covers all the specified tasks and user objectives.				
Functional Correctness	The system provides the correct results with the needed degree of precision.				
Functional Appropriateness	The system facilitates the accomplishment of specified tasks and objectives.				

B. Performance Efficiency					
Indicators		**4**	**3**	**2**	**1**

Time Behavior	The response and processing times and				
Resource Utilization	The system's amounts and types of resources used when performing its functions, meet requirements.				
Capacity	The system's maximum limits of parameter meet requirements.				

C. Compatibility					
Indicators		**4**	**3**	**2**	**1**
Co-existence	The system can perform its required functions efficiently while sharing a common environment and resources with other products, without detrimental impact on any other product.				
Interoperability	The system can exchange information and use the information that has been exchanged.				

D. Usability					
Indicators		**4**	**3**	**2**	**1**
Appropriateness Recognizability	The system allows users to recognize if it is appropriate for their needs.				
Learnability	The system can be used by specified users to achieve specified goals of learning to use the application with effectiveness, efficiency, freedom from risk and satisfaction in a specified context of use.				
Operability	The system has attributes that make it easy to operate and control.				

User error protection	The system protects users against making errors.				
User Interaction Aesthetics	The system's user interface enables pleasing and satisfying interaction for the user.				
Accessibility	The system can be used by people with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use.				

E. Reliability					
Indicators		**4**	**3**	**2**	**1**
Maturity	The system meets the needs for reliability under normal operation.				
Availability	The system is operational and accessible when required for use.				
Fault tolerance	The system operates as intended despite the presence of hardware or software faults.				
Recoverability	The system can recover the data directly affected and re-establish the desired state.				

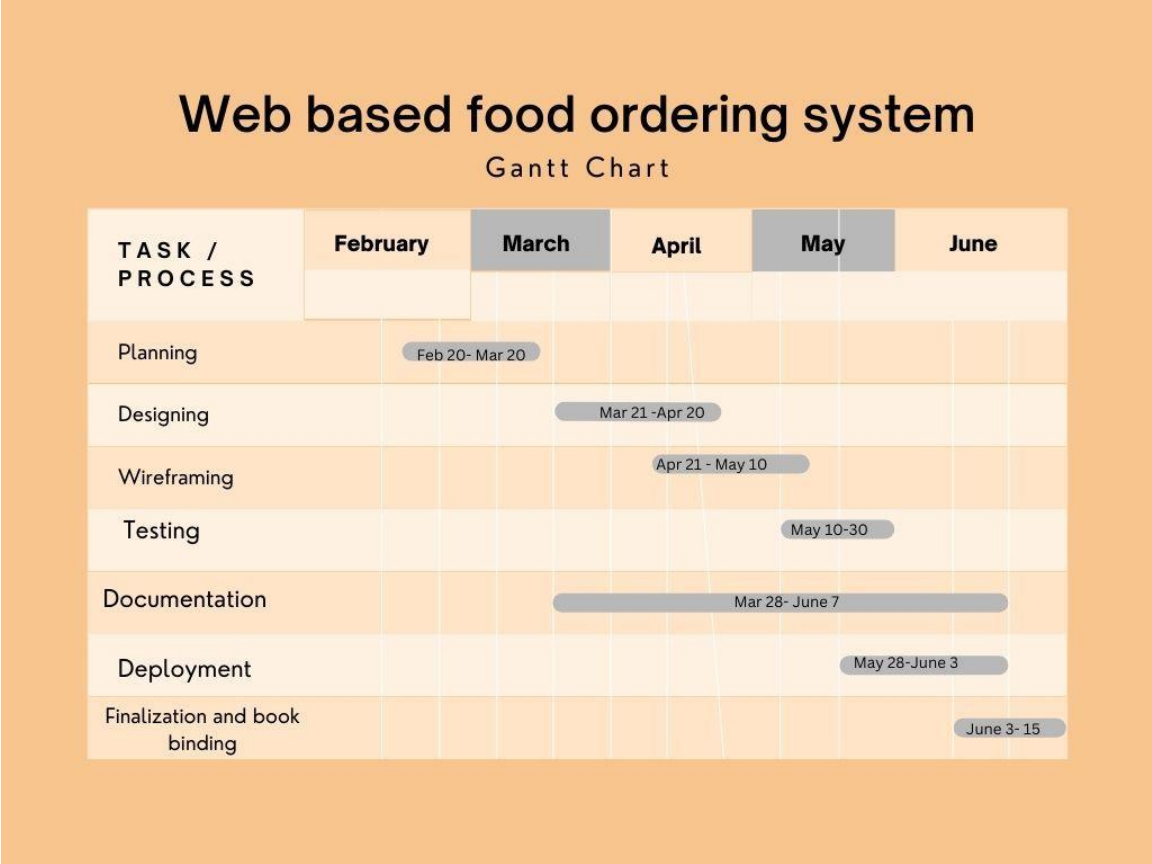
F. Security					
Indicators		**4**	**3**	**2**	**1**
Confidentiality	The system ensures that data are accessible only to those authorized to have access.				
Integrity	The system prevents unauthorized access to, or modification of, computer programs or data.				
Non-repudiation	The system can be proven to have taken place, so that the events or actions cannot be repudiated later.				

G. Maintainability					
Indicators		**4**	**3**	**2**	**1**
Modularity	The system is composed of discrete components such that a change to one component has minimal impact on other components.				
Reusability	The system asset can be used in more than one system, or in building other assets.				
Analyzability	The Systems effectiveness and efficiency with which it is possible to assess the impact on a product or system of an intended change to one or more of its parts, or to diagnose a product for deficiencies or causes of failures, or to identify parts to be modified.				
Modifiability	The system can be effectively and efficiently modified without introducing defects or degrading existing product quality.				
Testability	The Systems effectiveness and efficiency with which test criteria can be established for a system, product or component and tests can be performed to determine whether those criteria have been met.				

H. Portability					
Indicators		**4**	**3**	**2**	**1**
Adaptability	The system can effectively and efficiently be adapted for different or evolving hardware, software or other operational or usage environments.				
Installability	The system can be successfully installed and/or uninstalled in a specified environment.				
Replaceability	Degree to which a product can replace another specified software product for the same purpose in the same environment.				

Appendix B

GANTT CHART



Appendix C

CORRESPONDENCE

Dear Respondents,

Good day! We hope this letter finds you well. We are a group of students from Technological University of the Philippines taking Bachelor of Science in Information Systems conducting a survey regarding our research project entitled "Development of a Web-based Food Ordering System at Technological University of the Philippines-Manila", which the aims to enhance the overall dining experience for students and employees by providing a convenient and efficient platform for ordering food. This system aims to streamline the ordering process, reduce waiting times, minimize errors, and improve inventory management.

The web-based food ordering system can be opened on smartphones and other gadgets with browsing. Customers and canteens are connected through the Tayuman ordering system. It was created to make ordering food online in Technological University of the Philippines easier. Users of Tayuman may easily find food in their school canteens and place direct orders for their preferred meals online or on a mobile device. Choosing the stall of their choice, perusing the menu options, selecting an item, and then deciding whether they want pick-up or delivery. Payment can be made Cash on Delivery when the order is already delivered by the store delivery employee.

In this regard, may we respectfully request for your time to participate in the evaluation of the web-based system? Please be assured that your participation will be handled with utmost confidentiality and shall only be used for the purpose of the research project. Attached is the software evaluation instrument that shall be used for the evaluation.

Very truly yours,

Christian Louise Gellang

Jessica Pateño

Rose Ann Yambao

Appendix D

PROFILE OF RESPONDENTS

Respondent No.	Name	Profession
1	Cejesska Maie Alday	TUP Student
2	Archie Dantes	TUP Student
3	Jillian Claire Pel	TUP Student
4	Aubrey Ross Villamor	TUP Student
5	Luis Guerrero	IT Expert
6	Riechmann De Guzman	TUP Student
7	Isaiah Collins Abetong	Full Stack Web Developer
8	Caryl Mickyle Ching	TUP Student
9	Evander Sanchez	TUP Student
10	Jerrymih Mercado	Junior Developer
11	Jasmhine Modrigo	TUP Student
12	Jervin Gabriel Gahoy	TUP Student
13	Emmanuel Embido	TUP Student
14	Deo Angelo Navarro	TUP Student
15	Rhoubricj Idanan	TUP Student
16	Eduardo Matocdo	TUP Student

17	Ricomark Ollanas	TUP Student
18	Lalaine Costales	TUP Student
19	Jocel Duatin	Web Developer
20	Jeddan Ibardaloza	Store Owner
21	Jay R Sarmiento	Store Owner
22	Augustine Abid	Store Owner
23	Georen Cahilig	TUP Student
24	Kyle Brent Miranda	TUP Student
25	Omar Milan Bayan	TUP Student
26	Jeremy Quijano	TUP Student
27	Bryan Ivan Reyes	TUP Student
28	Joshua Rosetes	TUP Student
29	Melson John Tiano	TUP Student
30	Rencel Ivanne Bano	Junior Developer

Appendix E

SAMPLE USABILITY TEST INSTRUMENT

DEVELOPMENT OF A WEB-BASED FOOD ORDERING SYSTEM AT TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES

USABILITY TEST INSTRUMENT OF ISO 9241

Name: _____

_____

Instructions: Please evaluate the software based upon the International Standard ISO 9241-11, Part 110 "Ergonomics of human-system interaction" by using the given scale and placing a (✓) under the corresponding numerical rating:

Numerical Rating and Equivalent

4 - Strongly agree **3 -** Agree **2 -** Disagree **1 -** Strongly disagree

A. Suitability for the Task					
Indicators	**4**	**3**	**2**	**1**	**Remarks**
ıry functions to efficiently master all given task					
Does not require unnecessary input					
Appropriately meets the demands of the work					

B. Self-Descriptiveness					
Indicators	**4**	**3**	**2**	**1**	**Remarks**
Facilitates orientation due to a consistent design					

nsight regarding its current status					

Is designed according to a consistent principle					

C. Controllability					
Indicators	**4**	**3**	**2**	**1**	**Remarks**
ce the user to follow an unnecessarily rigid sequence of steps					
hing between individual menus or masks					
necessary interruptions of the workflow					

D. Conformity with User Expectations					
Indicators	**4**	**3**	**2**	**1**	**Remarks**
ides sufficient information about which entries are valid and necessary					
Does provide on request context-sensitive explanations, which are concretely helpful					
Does automatically offer context-sensitive explanation, which are concretely helpful					

E. Error Tolerance					
Indicators	**4**	**3**	**2**	**1**	**Remarks**

r message which are easy to understand					
Error correction generally requires little effort					

Gives concrete help for error correction					

F. Suitability for Individualization					
Indicators	**4**	**3**	**2**	**1**	**Remarks**
Is easy to expand if new tasks arise for me					
Is easily adaptable to my individual working style					
sy to adapt for different tasks					

G. Suitability for Learning					
Indicators	**4**	**3**	**2**	**1**	**Remarks**
Requires little time to learn					
e memorization of too many details					
without external support or a handbook					

Appendix F

USABILITY TEST RESULTS

Principles/Indicators	Tester										Average
	1	2	3	4	5	6	7	8	9	10	
1. Suitability for the Task											3.6
a. Offers all necessary functions to efficiently master all given task	4	4	4	4	4	4	4	4	4	4	4
b. Does not require unnecessary input	4	3	3	3	4	4	4	3	3	3	3.4
c. Appropriately meets the demands of the work	4	4	3	4	3	4	3	4	4	4	3.7
2. Self-Descriptiveness											3.87
a. Facilitates orientation due to a consistent design	4	4	4	4	3	4	4	3	4	4	3.8
b. Provides sufficient insight regarding its current status	3	4	4	4	4	3	4	4	4	4	3.8
c. Is designed according to a consistent principle	4	4	4	4	4	4	4	4	4	4	4
3. Controllability											3.73
a. Does not force the user to follow an unnecessarily rigid sequence of steps	4	4	4	4	4	4	4	4	4	4	4
b. Supports easy switching between individual menus or masks	4	3	3	3	4	3	4	4	3	3	3.4
c. Does not entail unnecessary interruptions of the workflow	4	4	4	4	3	4	4	3	4	4	3.8
4. Conformity with User Expectations											3.7
a. Provides sufficient information about which entries are valid and necessary	4	4	3	4	4	3	4	4	3	4	3.7

b. Does provide on request context-sensitive explanations, which are concretely helpful	4	3	3	4	4	4	4	4	3	3	3.6
c. Does it automatically offer context- sensitive explanation, which are. concretely helpful	4	4	4	4	3	4	4	3	4	4	3.8
5. Error Tolerance											3.8

a. Provides error message which are easy to understand	4	4	4	4	4	4	4	4	4	4	4
b. Error correction generally requires little effort	3	4	4	3	4	4	3	3	4	4	3.6
c. Gives concrete help for error correction	3	4	3	4	4	4	4	4	4	4	3.8
6. Suitability for Individualization											3.77
a. Is easy to expand if new tasks arise for me	4	4	4	4	3	4	4	4	4	4	3.9
b. Is easily adaptable to my individual working style	3	3	4	4	4	3	3	4	3	4	3.5
c. Is within its scope, easy to adapt for different tasks	4	3	4	4	4	4	4	4	4	4	3.9
7. Suitability for Learning											3.7
a. Requires little time to learn	4	4	4	4	4	4	4	4	4	4	4
b. Does not require the memorization of too many details	3	4	3	3	4	4	3	4	4	3	3.5
c. Is easy to learn without external support or a handbook	4	3	4	3	3	3	4	4	4	4	3.6

Appendix G

BUDGETARY REQUIREMENTS

A. DOCUMENTATION

Items	**Price**	**Quantity**	**Total**
Print (8.5x11 in.)	₱ 258.00	4	₱ 1032 .00
		TOTAL	**₱ 1032.00**

B. DEVELOPMENT

Items	**Price**	**Quantity**	**Total**
Hostinger	₱ 500.00	1 subscription	₱ 500.00
		TOTAL	**₱ 500.00**

Appendix H

FUNCTIONAL TEST CASES

Test Suite ID	Tayuman-FT-1
Test Case ID	FT-User-1
Test Case Summary	The Code must be received in the email inputted so that the user can register.
Related Requirement	None
Prerequisites	None
Test Procedure	1.Click the “Register” on the homepage. 2.Input the Email. 3.Press the “Send Verification Code”. 4.Check the code in the email inputted.
Test Data	Username: admin Username: admin
Expected Result	Code will be received by the email inputted in the form.
Actual Result	The code is not receiving the code.
Status	Passed
Remarks	
Created by	Rose Ann Yambao
Date of Creation	May 23, 2023
Executed by	Rose Ann Yambao
Date of Execution	May 23, 2023
Test Environment	Desktop: Tayuman

Test Suite ID	Tayuman-FT-2
Test Case ID	FT-User-2
Test Case Summary	The User/Store Owner will be registered after they receive the code.
Related Requirement	Users should use their TUP email. Store owners should use their personal email.
Prerequisites	None
Test Procedure	1.Click the “Send Verification Code”. 2.The inputted email should receive a code in their inbox. 3.Input the code in the “Enter Verification Code”. 4.Click the “Register”.
Test Data	Username: admin Password: admin
Expected Result	The User/Store Owner that register will be registered.
Actual Result	The User/Store Owner can’t register.
Status	Passed.
Remarks	
Created by	Rose Ann Yambao
Date of Creation	May 23, 2023
Executed by	Rose Ann Yambao
Date of Execution	May 23, 2023
Test Environment	Desktop: Tayuman

Appendix I

REALIBILITY TEST CASES

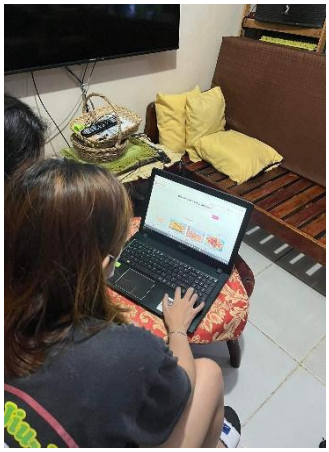
Test Suite ID	Tayumam-RT-1
Test Case ID	RT-User-1
Test Case Summary	Display the homepage that contains details about the tayuman.
Related Requirement	None
Prerequisites	None
Test Procedure	1. Copy and open the link below:
Test Data	Username: roseannyambao23@gmail.com Username: AhmedYambao@30
Expected Result	Must show the homepage and welcome screen.
Actual Result	Able to launch a website showing the homepage and welcome screen.
Status	Passed.
Remarks	Successfully launched the website.
Created by	Christian Louise Gellang
Date of Creation	June 6, 2023
Executed by	Christian Louise Gellang
Date of Execution	June 6, 2023
Test Environment	Desktop: Tayuman

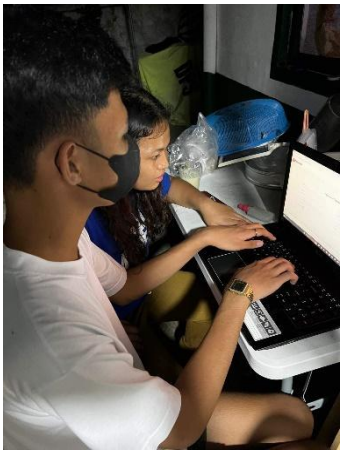
Test Suite ID	Tayuman-RT-2
Test Case ID	RT-User-2
Test Case Summary	Administrators can log in using their email.
Related Requirement	Users should use their personal email.
Prerequisites	None
Test Procedure	1. Click the “Log in/Register” on the homepage. 2. Enter Username. 3. Enter Password. 4. Click Enter. 5. Administrator will be routed to dashboard.
Test Data	Username: roseannyambao23@gmail.com Username: AhmedYambao@30
Expected Result	Must successfully log in and route to dashboard.
Actual Result	Able to log in and route to dashboard.
Status	Passed
Remarks	Successfully logged in.
Created by	Rose Ann Yambao
Date of Creation	June 6, 2023
Executed by	Rose Ann Yambao
Date of Execution	June 6, 2023
Test Environment	Desktop: Tayuman

Test Suite ID	Tayuman-RT-3
Test Case ID	RT-User-3
Test Case Summary	Users should be able to create their account.
Related Requirement	Only Students and Employees of TUPM can access the website as user.
Prerequisites	Users should provide a valid id.
Test Procedure	1. Click the “Register” 2. Click the “Sign up” 3. Fill out the information needed. 4. Attach a valid email. 6. Click the register. 7. Users will be routed to the landing page.
Test Data	Username: roseann.yambao@tup.edu.ph Password: AhmedYambao@30
Expected Result	Must successfully sign up and create an account.
Actual Result	Able to create an account and sign up.
Status	Passed
Remarks	Successfully created an account.
Created by	Rose Ann Yambao
Date of Creation	June 6, 2023
Executed by	Rose Ann Yambao
Date of Execution	June 6, 2023
Test Environment	Desktop: Tayuman

Appendix J

PICTURES TAKEN DURING FABRICATION, TESTING, AND EVALUATION





Appendix K

PROFILE OF RESPONDENTS

Respondent No.	Name	Mean Score
1	Cejesska Maie Alday	4.00
2	Archie Dantes	3.45
3	Jillian Claire Pel	3.72
4	Aubrey Ross Villamor	3.72
5	Luis Guerrero	3.69
6	Riechmann De Guzman	3.69
7	Isaiah Collins Abetong	3.72
8	Caryl Mickyle Ching	3.48
9	Evander Sanchez	4.00
10	Jerrymih Mercado	3.76
11	Jasmhine Modrigo	3.62
12	Jervin Gabriel Gahoy	3.52
13	Emmanuel Embido	3.59
14	Deo Angelo Navarro	3.45
15	Rhoubrick Idanan	3.62
16	Eduardo Matocdo	3.28

17	Ricomark Ollanas	4.00
18	Lalaine Costales	2.52
19	Jocel Duatin	3.52
20	Jeddan Ibardaloza	3.86
21	Jay R Sarmiento	3.72
22	Augustine Abid	4.00
23	Georen Cahilig	3.00
24	Kyle Brent Miranda	3.76
25	Omar Milan Bayan	3.69
26	Jeremy Quijano	3.76
27	Bryan Ivan Reyes	3.55
28	Joshua Rosetes	3.79
29	Melson John Tiano	3.59
30	Rencel Ivanne Bano	3.144

Appendix L

THESIS GRAMMARIAN CERTIFICATION

	TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES Ayala Blvd., Ermita, Manila, 1000, Philippines Tel No. +632-5301-3001 local 608| Fax No. +632-8521-4063 Email: cos@tup.edu.ph | Website: www.tup.edu.ph	Index No.	REF-COS-3.5-INT-TGC
		Revision No.	00
		Effectivity Date	06132022
VAA-COS	**THESIS GRAMMARIAN CERTIFICATION**	Page	1 / 1

THESIS GRAMMARIAN CERTIFICATION

This is to certify that the thesis entitled,

DEVELOPMENT OF A WEB-BASED FOOD ORDERING SYSTEM AT TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES-MANILA

authored by

Gellang, Christian Louise J.
Pateño, Jessica R.
Yambao, Rose Ann M.

has undergone editing and proofreading by the undersigned.

This Certification is being issued upon their request for whatever purposes it may serve them.

JENNIFER P. ALINSUNOD, CHRA, LPT, MA-English
Grammarian

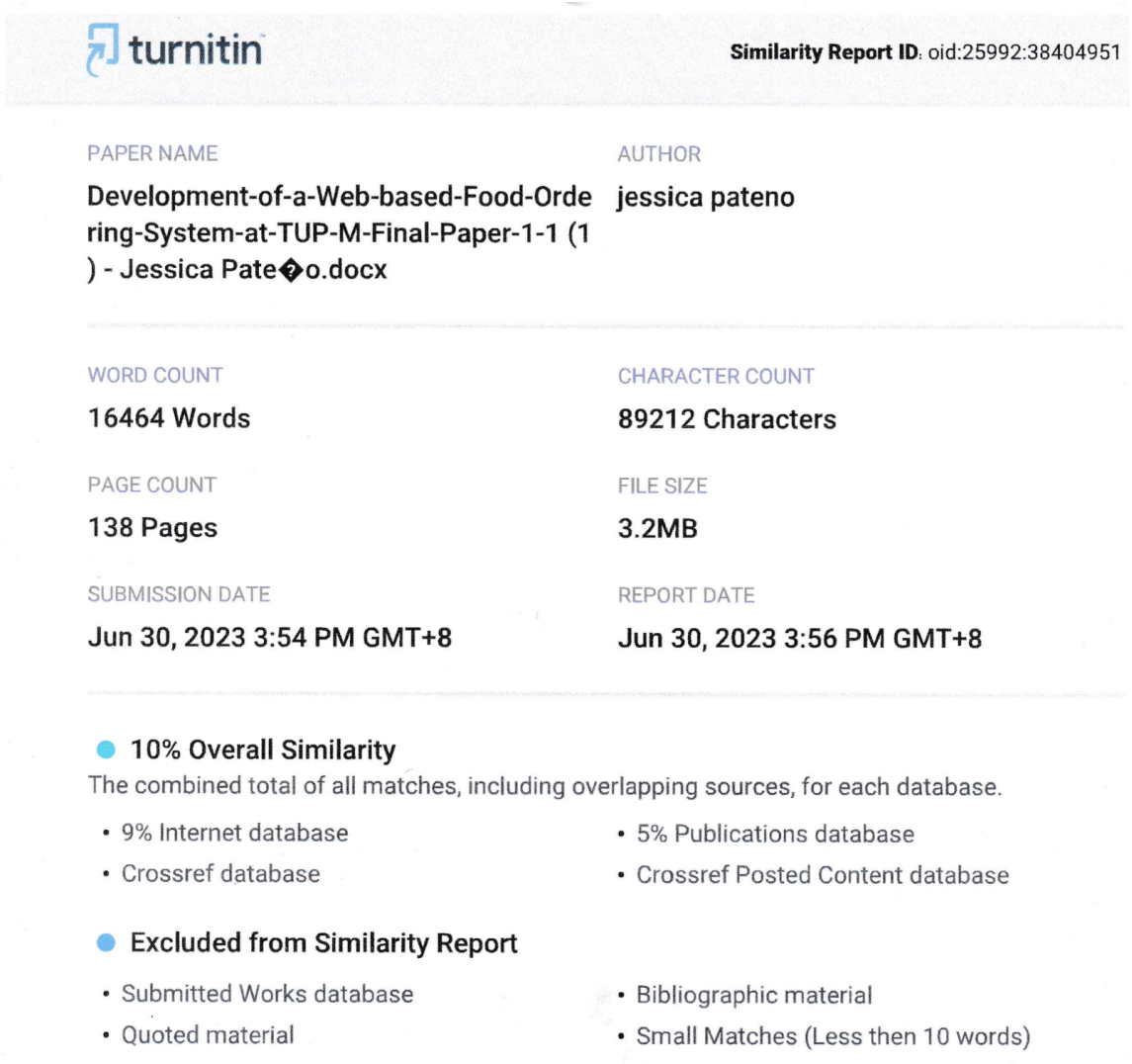
Technological University of the Philippines

July 03, 2023
Date of Issuance

Transaction ID	
Signature	

Appendix M

CERTIFICATE OF SIMILARITY INDEX USING TURNITIN



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"DEVELOPMENT OF A WEB-BASED FOOD ORDERING SYSTEM AT TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES - MANILA"

Authored by

CHRISTIAN LOUISE J. GELLANG
JESSICA R. PATEÑO
ROSE ANN M. YAMBAO

College of Science

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CERTIFICATE OF SIMILARITY INDEX USING TURNITIN FROM URDS

RESEARCHERS' PROFILE

Christian Louise Jaboneta Gellang

Taguig City, Metro Manila | gellangchristianlouise@gmail.com | +63 (968) 379 8282

SKILLS & QUALIFICATIONS

Technical:	**Proficient:** HTML, C, C++
	Familiar (Basic Knowledge): CSS, Python, React Native
	Interested: Web Development, Business Analytics and Management
	Other Tools: Proficient in using Microsoft Office applications and Google Workspace
Language:	Competent in speaking both English and Filipino

EDUCATION

Bachelor of Science in Information System **2019 - Present**

Technological University of the Philippines

Ermita, Manila

Expected Date of Graduation: August 2023

Dean's Lister: A.Y.2019-2020 (1st Sem.), S.Y. 2021-2022(2nd Sem.), S.Y. 2022-2023(1st Sem.)

PROJECTS

Development of a Web-Based Food Ordering System in TUP-M

- A web-based system that will reduce users in ordering food by making ordering food digital.

Jessica Remulta Pateño

Bacoor, Cavite, jessica.pateno@tup.edu.ph, 0927-770-0888

SKILLS & QUALIFICATIONS

Technical:	**Proficient:** HTML, CSS, JavaScript, Python
	Familiar (Basic Knowledge): C, C++, Github
	Interested: Networking, and Business Analytics
Design and Prototyping:	
Other Tools:	Skilled in using Microsoft Office Applications and Google Workspace
Language:	Can Speak both English and Filipino

EDUCATION

Bachelor of Science in Information System **2019 - Present**
Technological University of the Philippines
Ermita, Manila
Expected Date of Graduation: August 2023
(**Dean's Lister**: A.Y. 2021-2022)

PROJECTS

Development of a Web-Based Food Ordering System in TUP-M

- Develop a web-based system to help students and employers in TUP-M, where they will reduce their time in long queues just to order food. Selected users can use this project to order their food in school canteen.

Rose Ann Yambao

General Trias Cavite, roseann.yambao@tup.edu.ph, 0906-797-6386

SKILLS & QUALIFICATIONS

Technical:	**Proficient:** HTML, CSS, JavaScript, Python
	Familiar (Basic Knowledge): C, C++, GitHub
	Interested: Business Analytics and Management
Design and Prototyping:	
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PROJECTS

Development of a Web-Based Food Ordering System in TUP-M

- To develop a web-based system to help students and employers in TUP-Manila, where they will reduce their time in long queues just to order food.