

Chapter 1

THE PROBLEM AND A REVIEW OF RELATED LITERATURE

INTRODUCTION

The novel coronavirus disease (COVID-19) has impacted the daily lives of many people. In an attempt to limit the spread of COVID-19, individuals have changed how and how much they produce and consume. Expenses on air travel, grocery delivery, public transit, and other categories changed substantially from week to week during the early stage of the COVID-19 pandemic. Next to the health care industry, the food industry is arguably the most affected by the pandemic. Most eating establishments have been mandated by the government to close temporarily. However, even during the pandemic, groceries are still basic human necessities. In fact, consumer expenditure on groceries is on the rise in every type of grocery store; by far the largest increase in consumer expenditure on groceries has been experienced by online retailers. While grocery deliverers have also reported an increase in demand.

The online grocery stores take advantage of the interface to pick and deliver the online-ordered products to the consumers. An online grocery store that allows online ordering, or a standalone e-commerce service that includes grocery items. There is usually a delivery charge for this service. Online grocery delivery services are available mostly in urban centers. Online ordering is done through e-commerce websites. The COVID-19 pandemic greatly accelerated the growth of online groceries, and in the first few months of the pandemic, online grocery shopping increased by 300%. In addition, first-time online grocery shoppers accounted for 41% of online grocery shoppers.

The Internet provides consumers with a new medium of obtaining useful information and for purchasing goods, information and services. The main purpose of online grocery is to create and develop new models, and to provide a much easier process of buying goods.

Changing from shopping at the supermarket to an online grocery shopping experience will lead to a crowd-less and efficient buying of groceries. It is also timely now due to the wide spread of covid-19, due to close contacts with others who've been infected so it can prevent that kind of spreading viruses by letting them order while being safe at home. Most grocery store chains offer online shopping options with free in-store pickup; a few even offer home delivery for a small fee. In this study, the developers developed an online grocery system that will minimize all the effort and time of the customer and minimize roaming around as well. Therefore, it allows administrators to track the order of the customer so that they can prepare for it and deliver it if needed. Furthermore, in this study, the developer shall create the system that is fully computerized, user-friendly, time effective and well-organized system for our daily consumers.

Here are some of the features that will be presented for this study: a) History of purchases; this feature presents the history of purchases of the user on his/her profile section; b) Out of stocks feature, this feature will also be added to provide a somewhat guide and notification for the user to know if the desired product is out of stock for the time being; c) Categorization of the products, this inhibits the categorization of the products judging from like the dairy section and the vegetables or canned goods section; d) Also, an added feature for the profile section of the user is allows the user freely edit his or her profile depending on his or her likeness; e) and lastly and the most important one, Account Registration for the user; to be able to have his or her own account to login and browse the grocery system.

REVIEW OF RELATED LITERATURE

Consumer response to online grocery shopping

According to a survey, more than 70% cite convenience and time savings as the main reasons for buying groceries online, while 15% have physical or disabilities that make shopping at grocery stores difficult. I'm citing a problem. Also, with demographic variables that are heavily related to the main reasons behind online shopping, the willingness to buy all supermarket items online, the perception of the time spent shopping online in the store, and the experience of buying groceries online. It also provides information about online purchases.

Morganosky, M.A. and Cude, B.J. (2000)

Online grocery shopping: The influence of situational factors

Qualitative and quantitative results show the importance of contextual factors such as the birth of a baby and the occurrence of health problems as a trigger to start shopping for online groceries. Many shoppers stop buying groceries online when the original trigger disappears or there is a problem with the service. The importance of contextual factors as a catalyst for accepting online grocery shopping shows that the process of acceptance is an unpredictable process driven by the environment, rather than cognitive refinement or decision making. Hand, C., Dall'Olmo Riley, F., Harris, P., Singh, J. and Rettie, R. (2009)

Creating customer value in online grocery shopping

Researchers believe there are four ways to create value for customers in e-grocers, but whether and how well a company can provide value-added services to consumers depending on the business model chosen. The availability is limited. Nettimarket.com is a Finnish internet grocery store founded by entrepreneurs with no e-food experience. It shows the relationship between business models and customer interests in online grocery shopping and highlights some practical issues and opportunities in electronic grocery retailing. His company

is a virtual grocery store, and its business model does not reach the big companies in the industry. This paper reports on the company's experience and entrepreneurial outlook after a few years of operation. Anckar, B., Walden, P. and Jelassi, T. (2002)

The Acceptance of Online Grocery Shopping

One of the applications that has been attracting attention in recent years is the online grocery store (OGS). To enrich the limited research available in this area, this article examines Australian consumers' perceptions of online grocery shopping and includes several factors that may promote or hinder adoption. Identify. Sherah Kurnia, Ai-Wen Jenny Chien (2003)

Online grocery shopping: The impact of shopping frequency on perceived risk

Online grocery shopping is growing rapidly and this channel is expected to continue to grow exponentially over the next few years. While online shopping has attracted a lot of research interest, research into online grocery shopping behavior is still in its infancy. Online shopping is very different from general online shopping due to the perishability and variation of products and the frequency of shopping activities. There are two major gaps in this survey of online grocery shopping. This survey follows the call to survey the experience of online shoppers in the light of the frequency of online purchases. Gary Mortimer, et.al (2016)

How do shoppers behave online? an observational study of online grocery shopping

With the rapid growth of online shopping sales, retailers and manufacturers need to understand how online consumers behave differently from in-store behavior. We conducted a survey recording detailed screen behaviors of 40 shoppers during the "travel" of online shopping. While shopping, buy shopping carts from one of the two major retailers to 12 popular grocery categories. Shoppers are unfamiliar with buying groceries online. Zachary Anesbury, et.al (2015)

Extending the experience construct: An examination of online grocery shopping

The purpose of this study is to assess the factors that influence a customer's online grocery shopping experience and to assess the central role of customer service and consumer response to a satisfying grocery purchase. PLS-based analysis confirmed qualitative results and identified the importance of customer service. This, along with other testimonies such as websites, products and delivery, accounts for 68% of the overall experience gap and 42% of the customer satisfaction gap. Singh, R. and Söderlund, M. (2020)

The role of situational variables in online grocery shopping in the UK. Latest TOC RSS

Electronic grocery shopping has focused on online buying patterns and brand loyalty, but little is known about the background of these patterns. Further research is needed to determine what triggers consumers to buy groceries online. The purpose of this study is to understand the motivations and perceptions of those who shop at online grocery stores in the United Kingdom. This exploratory study used a qualitative method using four discussion groups with Internet grocery shoppers. Life events have proven to be catalysts for starting or stopping online shopping. Robinson, Helen; Dall'Olmo Riley, Francesca; Rettie, Ruth; Rolls-Willson, Gill (2007)

REVIEW RELATED SOFTWARE

In computer systems there are three primary components, and these are hardware, software, and peopleware. And each of this is essential to the whole system. Software is the most important, and it is more comprehensive than other components. Many companies are already technology-based and this is what is causing them to rise. So, they hired developers to create and fix systems for their company. But our technology is changing rapidly, so our tools in building a website are also changing. And these are examples of tools for creating a website;

PHP - Stands for "Hypertext Preprocessor." Also known "Personal Home Page". PHP is an HTML-embedded Web scripting language. This means PHP code can be inserted into the HTML of a Web page. When a PHP Page is accessed, the PHP code is read or "parsed" by the server the page resides on. The output from the PHP functions on the page are typically returned as HTML code, which can be read by the browser. Because the PHP code is transformed into HTML before the page is loaded, users cannot view the PHP code on a page.

This makes PHP pages secure enough to access databases and other secure information.

A lot of the syntax of PHP is borrowed from other languages such as C, Java and Perl. However, PHP has a number of unique features and specific functions as well. The goal of the language is to allow Web developers to write dynamically generated pages quickly and easily. PHP is also great for creating database-driven Web sites.

MySQL - A very popular SQL-based relational DBMS for both Web and embedded applications. Pronounced "my S-Q-L," MySQL runs under all popular operating systems. Oracle offers the paid and more comprehensive Enterprise editions. My Is Not "My" database, It's His Daughter Michael Widenius was the primary author of the software and co-founder of MySQL AB, and MySQL was named after his daughter My. Extensive language support Applications using MySQL are written in PHP, Perl, Python, Ruby, Java, C/C++, C# and Visual Basic. The MySQL programming interface (API) is a superset of the C language API for MySQL.

What is the difference between SQL and MySQL? In a nutshell, SQL is a language for querying databases and MySQL is an open-source database product. SQL is used for accessing, updating and maintaining data in a database and MySQL is an RDBMS that allows users to keep the data that exists in a database organized.

HTML - Stands for "Hypertext Markup Language." HTML is the language used to create webpages. "Hypertext" refers to the hyperlinks that an HTML page may contain.

"Markup language" refers to the way tags are used to define the page layout and elements within the page.

The first line defines what type of contents the document contains. "<!doctype html>" means the page is written in HTML 5. Properly formatted HTML pages should include <html>, <head>, and <body> tags, which are all included in the example above. The page title, metadata, and links to referenced files are placed between the <head> tags. The actual contents of the page go between the <body> tags.

The web has gone through many changes over the past few decades, but HTML has always been the fundamental language used to develop webpages. Interestingly, while websites have become more advanced and interactive, HTML has actually gotten simpler. If you compare the source of an HTML5 page with a similar page written in HTML 4.01 or XHTML 1.0, the HTML5 page would probably contain less code. This is because modern HTML relies on cascading style sheets or JavaScript to format nearly all the elements within a page.

CSS - Stands for "Cascading Style Sheet." Cascading style sheets are used to format the layout of Web Pages. They can be used to define text styles, table sizes, and other aspects of Web pages that previously could only be defined in a page's HTML.

CSS helps Web developers create a uniform look across several pages of a Web site. Instead of defining the style of each table and each block of text within a page's HTML, commonly used styles need to be defined only once in a CSS document. Once the style is defined in cascading style sheet, it can be used by any page that references the CSS file. Plus, CSS makes it easy to change styles across several pages at once. For example, a Web developer may want to increase the default text size from 10pt to 12pt for fifty pages of a Web site. If the pages all reference the same style sheet, the text size only needs to be changed on the style sheet and all the pages will show the larger text.

While CSS is great for creating text styles, it is helpful for formatting other aspects of Web page layout as well. For example, CSS can be used to define the cell padding of table cells, the style, thickness, and color of a table's border, and the padding around images or other objects. CSS gives Web developers more exact control over how Web pages will look than HTML does. This is why most Web pages today incorporate cascading style sheets.

Object Oriented Programming (OOP) is a programming model where programs are organized around objects and data rather than action and logic. OOP allows decomposition of a problem into a number of entities called objects and then builds data and functions around these objects.

REVIEW RELATED MODELS

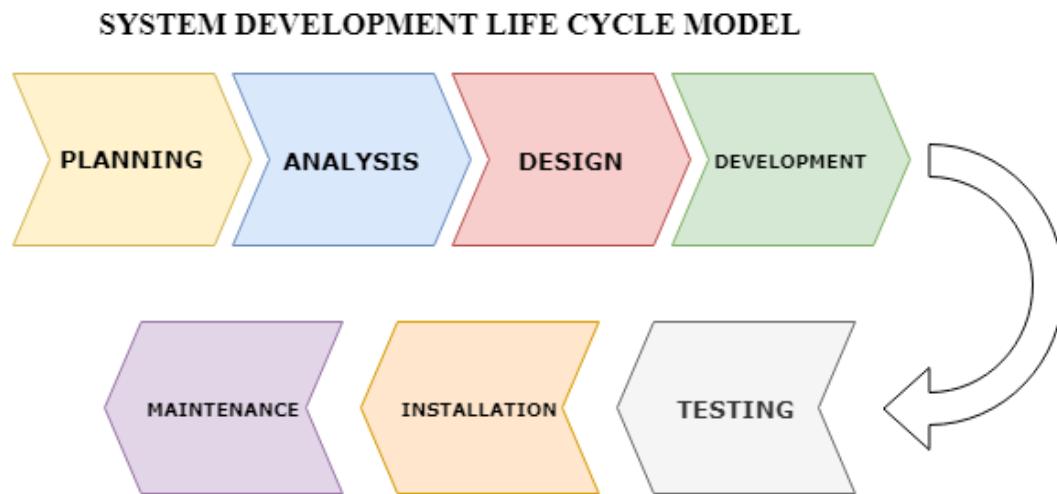


Figure 1.1 Structured Development Life Cycle Model

The Structured Development Life Cycle Model gives a more detailed description. This model is conceptual framework the mainly describes all of the given activities which we as researchers will need to accomplish to finish the study. It's also referred to the verification and validation model of the different stages in systems development which include the 1. Planning the researcher's will examine the gathered data needed in the study, 2. Survey the

researcher's will identify the system and figure out what is feasible, 3. Design involves the planning of the new system to created, 4. Development the researcher's will develop the system that depends on the user, 5. Testing the researcher's will conduct prototype testing for the quality assurance of the system, 6. Installation the researcher's will therefore install the final system and publish it to the web browser, 7. Maintenance the researcher's will wait for the feedback that will host the solutions needed for certain bugs or issues.

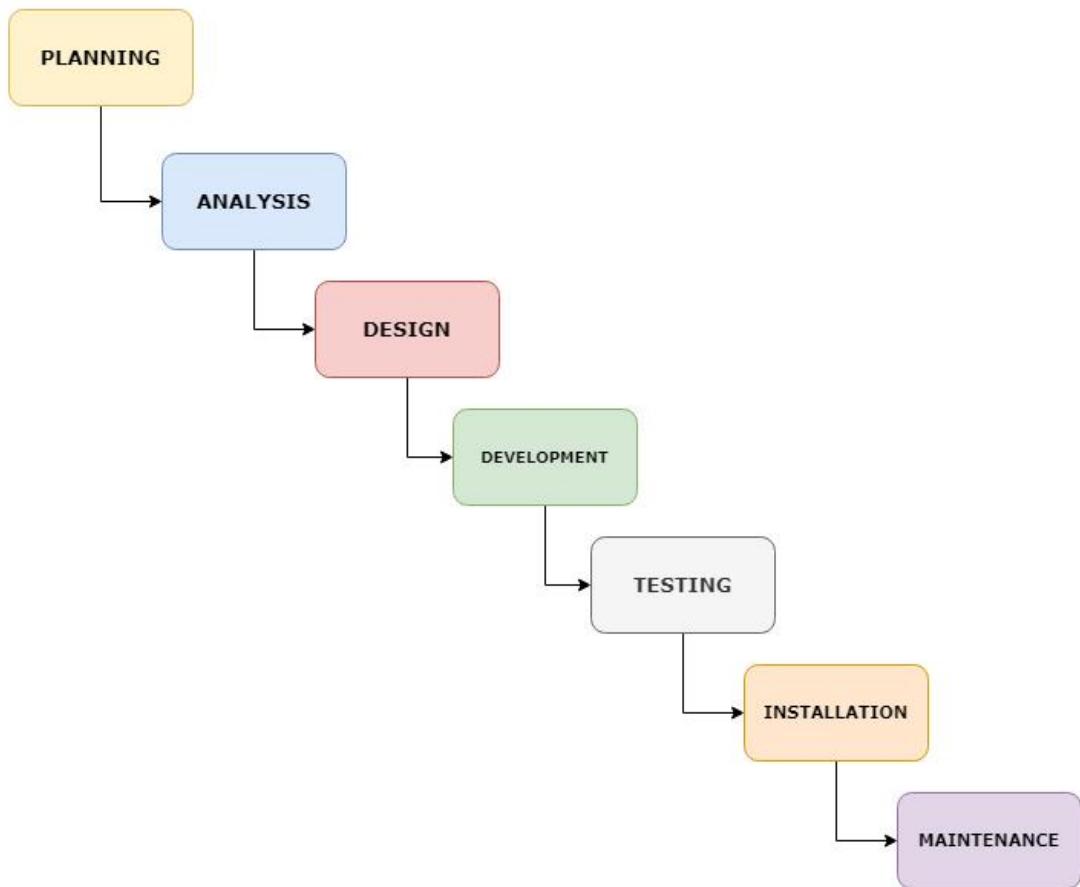


Figure 1.2 Waterfall Model

The Waterfall model helps to easily breakdown the projects and activities into linear sequential phases, where each phase depends on the deliverables of the previous one and corresponds to a specialization of tasks. online grocery system is following these step-by-step procedures it allows for departmentalization and control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one until achieving the final phase of our system. 1. Planning the researcher's will examine the gathered data needed in the study, 2. Survey the researcher's will identify the system and figure out what is feasible, 3. Design involves the planning of the new system to created, 4. Development the researcher's will develop the system that depends on the user, 5. Testing the researcher's will conduct prototype testing for the quality assurance of the system, 6. Installation the researcher's will therefore install the final system and publish it to the web browser, 7. Maintenance the researcher's will wait for the feedback that will host the solutions needed for certain bugs or issues.

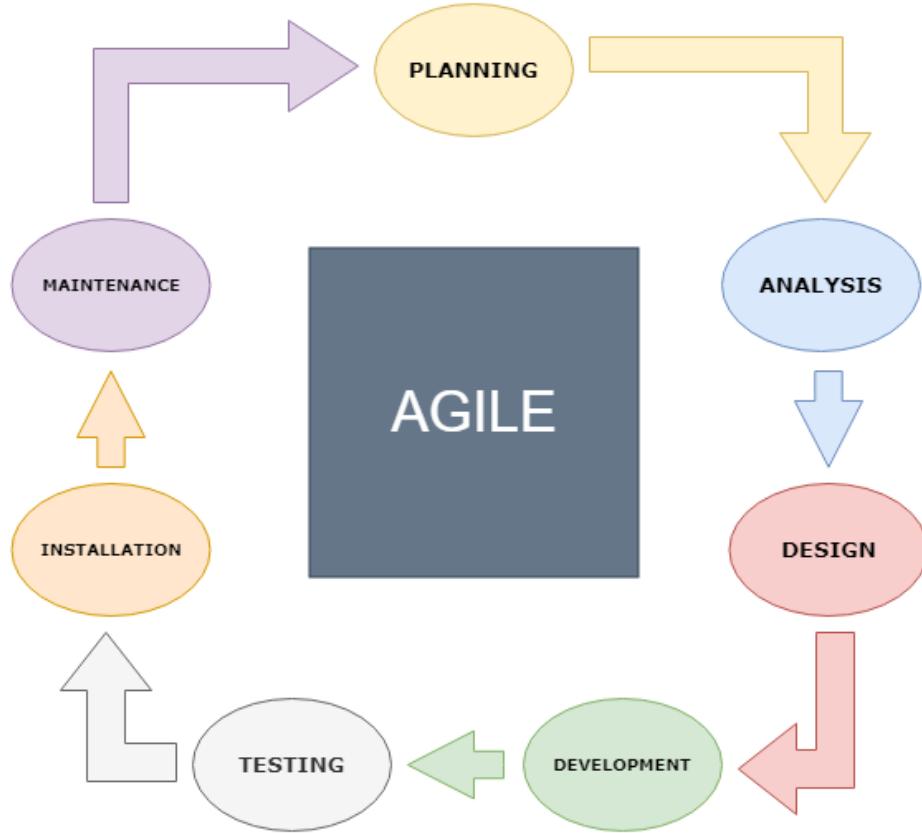


Figure 1.3 Agile Model

The Agile model was primarily designed to help our system to adapt to change requests quickly. So, the main aim of the Agile model is to facilitate quick project completion like this. To accomplish this task agility is required. Agility is achieved by fitting the process to the project, removing activities that may not be essential for a specific project. Also, anything that is wastage of time and effort is avoided.

1. Planning the researcher's will examine the gathered data needed in the study,
2. Survey the researcher's will identify the system and figure out what is feasible,
3. Design involves the planning of the new system to created,
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Maintenance the researcher's will wait for the feedback that will host the solutions needed for certain bugs or issues.

SYNTHESIS

According to a survey, more than 70% cite convenience and time savings as the main reasons for buying groceries online, while 15% have physical or disabilities that make shopping at grocery stores difficult. Qualitative and quantitative results show the importance of contextual factors such as the birth of a baby and the occurrence of health problems as a catalyst for starting online grocery shopping. Many shoppers stop buying groceries online when the yuan trigger runs out or there is a problem with the service. There are four ways to create value for customers when buying electronic groceries, but the business model you choose limits whether and to what extent a company can provide value-added services to consumers.

In addition to the limited research available in this area, this article examines Australian consumers' perceptions of online grocery shopping and identifies several factors that may promote or impede adoption. The researcher conducted a survey that recorded in detail the screen behavior of 40 shoppers during the "travel" of online shopping. While shopping, buy shopping carts in one of the two major retailers to 12 popular grocery categories. It aims to assess the factors that influence a customer's online grocery shopping experience and to assess the central role of customer service and consumer response to a satisfying grocery purchase. Further research is needed on what triggers consumers to buy groceries online.

In computer systems there are primary components, and these are hardware, software, and people ware. And each of these is essential to the whole system. Software is the most important, and it is more comprehensive than other components. Many companies are already technology-based and this is what is causing them to rise. So, they hired developers to create

and fix systems for their company. But our technology is changing rapidly, so our tools for building websites are also changing.

In relation to this, in order to make the system functionable, the researcher needs software that may be used to build the program. Although there is many software out there, the researcher chooses PHP, HTML, MySQL. PHP is where you can make functions to perform in the system. HTML is where the web page is made. MySQL is a database management system where you will store the data that will be sent by the user in the system.

In the part of the review of related models there were three model types which are presented in the past part. The models are Structured Development Life Cycle, in SDLC contains the brief discussion and explanation of all the activities which are needed to be done for the researchers to accomplish the study. Next is the Waterfall Model; the waterfall model is the simple linear representation of the steps or phases which are given by the researchers; The first is the planning phase, survey, designing, development, testing, installation and maintenance. The Agile model represents the brief visualization of the phases or tasks on which or which is the first one taken to finish quickly while agility is needed. Agility is achieved by fitting the process to the project, removing activities that may not be essential for a specific project. Also, anything that is a wastage of time and effort is avoided.

CONCEPTUAL FRAMEWORK

This study aims to evaluate proposed online grocery systems. Factors identified (quality of product, service quality, convenience or consumers,) in this research study can influence customers to switch to online grocery shopping and adopt online shopping as their prime mode of purchase. High perceived risk was observed to be the most important and significant factor in the case of online grocery shopping as compared to all other factors. Consumers who are less familiar with technological devices find it difficult to trust today's

technology; these include, domestic housewives. Whereas the younger generation is relatively excited about the emerging medium. This research study provides the existing online shopping trends and perception of people towards online grocery shopping. Furthermore, this study provides insights into the future scope of online grocery shopping. The researchers formulated an eclectic model with the following phases:

- Planning, during the planning phase, the researchers brainstorming and conducting a brief discussion on how they would execute all of the necessary requirements that are needed for the system to help in every specific area, like in Bulacan and Metro Manila. The researchers searched for possible problems in existing grocery systems that would give an idea to put in the proposed system. And will develop a plan on how to implement all the necessary information. Also, researcher discover the strengths, weaknesses, opportunities, and threats of the claimed application. After identifying the weak spots in the existing system, the researchers found the best solution to solve it and polished the app to perfection.
- The Analysis Phase, in this part the researchers will further identify the current system and figure out if the system needs to be done is feasible by conducting a simple questionnaire that may stand as the data gathering information for the system. For collection, the researchers will need to do a small collection or with the help of the administrator. Researchers can create a Google form that will serve as a survey form for the research. In guide, the researcher makes a criterion in survey form to easily identify with part is need to improve more and make a solution for solving the problem of the existing application. Also, to have a basis to each question in the survey form.
- Design Phase, in the designing phase there will be two designs, the first is physical design and the second is logical design. Physical design is what the proposed system

will look like. Logical Design is the data flow diagram which shows the flow of the system that supports the proposed system. These two designs helped the researcher build a better system. Also, this is the basis of the system to make a wonderful design for the proposed system.

- In the Development Phase this will hold all of the hard encoding for the system by also considering the liking of the user. The researchers will analyze the data results collected from the survey phase, then apply it to the development of the proposed system application. Researchers will establish how to develop the proposed application. This step can also determine whether researchers will use it to develop an online grocery application. With the help of respondents' feedback from the survey questionnaire, the system was developed better than the existing system.
- In Testing Phase, The Researchers will also test with sample testers or users, one of the researchers who isn't part of the development or developers to get an objective opinion on the design and functionality and the features of the application, and then find the best way for the developers to make modifications based on the feedbacks given by the tester. The next final test must be approved by the tester, after which it proceeds to the next stage. The researchers did a debugging of code to test the proposed system to see if there's no error and everything works properly.
- In Installation Phase, in this phase the researchers alongside the developers of the system will lay out the first batch of the installation of the grocery system to the web to grant the users the access to try and rate the first batch deployment of the system. The researchers use a free hosting provider for uploading the proposed system on their website so the researcher doesn't need to spend money.

- During the Maintenance Phase. After the deployment of the first batch of the system, the researchers will therefore wait for the given feedbacks of the users about the application; all of their possible complaints and bugs may find, or what would they want to be added in the system and devise a new solution and well, further improved application to make up the user's needs. also get feedback to the respondents of survey to enhance system. All of their possible complaints and bugs may find, or what would they want to be added to the system and devise a new solution and well, further improved application to meet the user's needs.

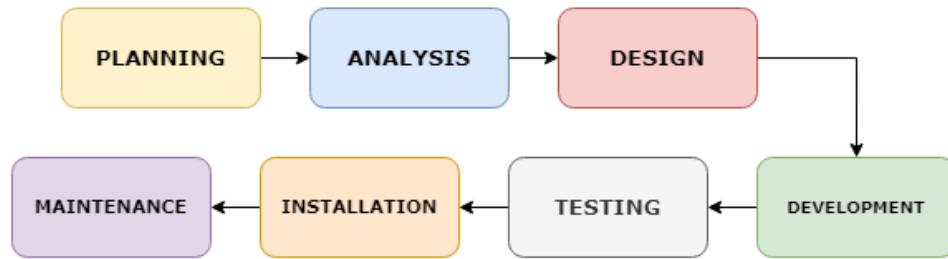


Figure 1.4 Conceptual Framework

STATEMENT OF THE PROBLEM

I. Planning

- What could be the impact of the gathered data information on the survey phase?
- What would the researchers do if the proposed application suffered from failures?

II. Survey

- What are the necessary data or information that are essential for the study?
- What are the possible complications that could happen to the proposed application?

III. Design

- How would the researchers design the entire application?
- Could the users accept the overall design of the application? What if they don't?

IV. Development

- What could be the best choice of software to use for the proposed application?
- Is it possible to create the application by the chosen software?
- How would the researchers execute the required features for the application?

V. Testing/Quality Assurance

- Would the application pass to the standards of the tester?
- Would the application function perfectly during the tests?

VI. Installation

- Is the application properly deployed to the users?
- What are the necessary steps in installation of the application?
- What are the key things needed to do in installing the application? (For example: software needed)

VII. Maintenance

- What would the researchers do if the feedback of the users is bad?
- What are the major improvements/debugging would the researchers do?

HYPOTHESIS

This Online Grocery System App allows the daily consumers or shopping enthusiasts to be able to browse through an online grocery application and without the risk of being infected of this spreading virus or pandemic. Through this application, consumers can also search for their wanted goods inside the app. This application also easily helps the daily consumer to buy their goods with great assurance of safety while having an easier and hassle-free way of buying goods online.

These two ways are both involved in the way of process of buying groceries. They both have their own ways of providing services which are necessary for consumers. They also help the consumers or users to easily buy on the physical and online store.

There is no significant difference of the manual way of buying groceries and the current online grocery application based on the following criteria of:

- Security
- Convenience
- Speed and accuracy
- Reliability

SIGNIFICANCE OF THE STUDY

It saves people so much time, money, and the effort of searching for the things you need to buy. Not only that, but it also lets you multitask on different things both at work and at home like buying in bulk with ease as you may already know, buying in bulk is a great way to cut your grocery costs. However, many shoppers avoid buying in bulk because it means taking up extra cart space and navigating the weight of bulky packages. Online shopping for home delivery makes buying in bulk much easier-simply add bulk products to your virtual shopping cart and they'll be delivered right to your doorstep. Cut gas and parking costs choosing to shop online for delivery means you can avoid putting extra miles on your car, as well as saving on gas and parking charges. While these savings may not seem drastic at the moment, over the course of a year, they can certainly add up. Online shopping allows you to browse the aisles when it is most convenient for you. Though you will have to be present when the groceries are delivered, you can choose a delivery time frame that is most convenient for you. Avoid the line and shop in the comfort of your home whether fulfilling your weekly shopping list or preparing for thanksgiving dinner, grocery shopping online for home delivery

allows you the pleasure of shopping from your dining room table, your couch, or your office, without navigating crowded aisles and lengthy cashier lines. That means having more time to do the things you love. Avoid making multiple trips forget to add an item to your virtual shopping cart? No big deal. With online shopping, you can add items to your cart, even after having made the purchase, up until the day of delivery to your home. That means no more treks back to the store for that single item you forgot. Our online grocery system strives to provide our customers with the most convenient shopping experience yet, built upon affordable prices, ongoing sales events, and friendly and attentive service.

SCOPE AND LIMITATIONS

The study will focus on creating a convenient web application that will benefit people buying groceries online. This is convenient for the customer who goes to the market all the time.

The target market for the system is mostly the people who go to the market every day. The researchers will conduct a survey through Google Forms, in which the respondent is 50 computer science students and 50 not computer science students.

The limitations of the study are to serve people through online by giving their needs for food supplies in this pandemic and but also before the pandemic. Some of the users might not use this system because of scammers, but the researchers will encourage them to use this system.

DEFINITION OF TERMS

The following terms are defined to facilitate better understanding of this study.

Bootstrap – means a free and open-source front end development framework for the creation of websites and web apps.

Convenience –it is providing the essential needs of the customers to the proposed system when it runs out.

Consumers - a person who purchases goods and services for personal use.

Delivery - the action of delivering letters, packages, or ordered goods.

Flexibility - means the ability of the system to cope with product variety.

Online Grocery Efficiency - The general increase in productivity based on better service to the customers.

Object-oriented programming – means a programming paradigm based on the concept of objects, which can contain data and code. data in the form of fields, and code, in the form of procedures.

Product quality - Product quality refers to how well a product satisfies customer needs, serves its purpose and meets industry standards.

Products - an article or substance that is manufactured or refined for sale.

Reliability – the ability of the proposed system to run every customer's transaction without failure.

Service - the action of helping or doing work for someone.

Survey- a list of questions aimed for extracting specific data from a particular group of people.

Speed and Accuracy - means the complex relationship between an individual's willingness to respond slowly and make relatively fewer errors compared to their willingness to respond quickly and make relatively more errors is described as the speed–accuracy tradeoff.

Speed of transaction-it is the amount of time of the proposed system to perform in every customer's transaction.

Security – all personal information that the customer's entered in the proposed system is secured.

Chapter II

METHODS

PROCEDURES

The study will be conducted using the Waterfall Model, which is used in the conceptual framework to show a visual representation of the process that the researchers took. The waterfall model is a model which is commonly used in the system development life cycle to create a system with a linear and sequential approach. During this procedure, will undertake six activities in total which helps to further understand the process or procedures that the researchers took to attain certain accomplishments during the research; those were: Planning, Survey, Design, Development, Testing and Maintenance.

I. Planning

- a. The researchers will scrutinize the gathered data and material from Google forms that are essentially needed in the study. Then the researchers will devise a plan on how to implement all of the necessary information. The researcher will also ascertain the strengths, weaknesses, opportunities, and threats of the proposed application. After that the researchers then devised a plan on how to start the application to its early stage and to know which are needed to be improved and added throughout the course of the creating the application. During the development the developers will also base the design and overall features and functionalities of the application based on the user's needs to provide a great user-experience and help them to easily navigate through the app. Then, after checking all of the necessary information which is presented during the survey phase, then the researchers ameliorate the application to its perfection.

II. Analysis

- a. The researchers need to gather enough information in order to fulfill the conditions in the study. In order to gather, the researchers need to hold a little gathering, or feasibly, by the assistance of the admin, the researchers could create a google form that will stand as the survey form for the study. The basis for the survey was based on two factors. First is the existing system which are the commonly used or daily used by the consumers nowadays. ex: shoppe and Lazada. Next is the proposed system which the researcher has proposed for the study. The survey questionnaire will also be based on the criteria which help to measure the mean to each of the factors stated earlier, and the others are further explained below; those criteria are: Speed of Transaction, Reliability, Security and Convenience.

III. Design

- a. Upon planning and examining the data-assembled information, the researchers will come up with the applications physical design. The researchers need to base its design on what are the essential features, parts and elements of the application. Also, logical designs are what the system needs because in here the researcher and the audience will have a knowledge of how the system flows. The designs of the system that the researchers and developers will be based on a regular yet minimalist style of E-Commerce Website, allowing the user to freely navigate all throughout the system with ease and not having unnecessary flaws that the application may met during the course of deployment. Also, the design which the researcher and developers come up is a complementary combination of nature greens and warm colors such as deep yellowish greens color scheme to ease the eyes of the users as the daily consumer or user of the application and also for those who suffers some visual complications to help them ease.

The functionalities and base designs of the features are used by CSS and Bootstrap to help the researcher and developers easily customize the overall design of the system.

IV. Development

- a. The researcher will establish how they will develop their proposed application. This phase could also depend on the researchers whether they want to use it to develop the online library application. For example, using other programming languages like, HTML, PHP, MySQL etc. The designs will also be based on the announced design phase. The system is created by using HTML and CSS, also by the help of Bootstrap that acts as the Front-End which is used to create the base design and structure of the system or the face of the system which are being seen by the users of the system. On the Back-End of the system, where the unseen part is, it is also considered as the backbone of the system which makes the system run and program itself. The Back-End of the system is made up of using JavaScript, PHP and MySQL for the database of the system and the connectivity for the database.

V. Testing

- a. During this phase, the researcher will now test the prototype of the application and locate all the problems and create a solution to further improve the application. They will also test it to a sample tester or user for an unbiased opinion about the design, functionalities of the application and by their feedback, the researcher will then figure out the best approach to fix it. Also, the researchers will ask an individual as a second tester which will act as the daily consumer to gain an true unbiased feedback upon testing the prototype of the system and help the developers know which necessary updates and bugs are needed to be fixed before deploying the main application. Then the next and final test to be approved by the sampler or tester checking if the requests,

updates are met that they received on the sample tester, then they will proceed to the next phase, which is the installation of the application.

VI. Installation

- a. In this phase, the researchers will now deploy the finalized output of the application. During this phase, this will help the researcher know what are the other key changes that need to be done after the first batch of installation. The installation process of the application is by hiring a hosting service which allows the researchers to upload the application to the web and be seen and used by the users publicly. Also, before deploying, the researchers will thoroughly check again if there are no more errors or bugs on the system and check whether there are floating sites that uses the same domain name the researchers chose to prevent plagiarism and provide a unique yet easily to remember. Then, after completing all of the necessary steps, then the researcher and developers will upload the system to be used by the public; the researcher then will wait for the feedback that will be sent through email that will be done in the next phase, which is maintenance.

VII. Maintenance

- a. In this phase, after deploying the application to the users, the researchers will wait for the feedback of the users about the application and devise a new solution and well-improved application to meet the user's needs. This phase is one of the most important phases because it serves as to maintain the overall performance of the application as well as the updates that are necessary. Also, from the help of surveys feedback in existing system it can be used to further improve the proposed system and identify what part of the system needs to be improved thoroughly the researcher also have monthly maintenance to ensure that the system works properly and the features of the proposed

system are based on the results of the survey to identify what features need to add. After thoroughly checking all off the added features and functionalities for the system, then the developers and researchers will send a notice that the updated version of the application will be released and ready to be used by the public again.

RESEARCH DESIGN

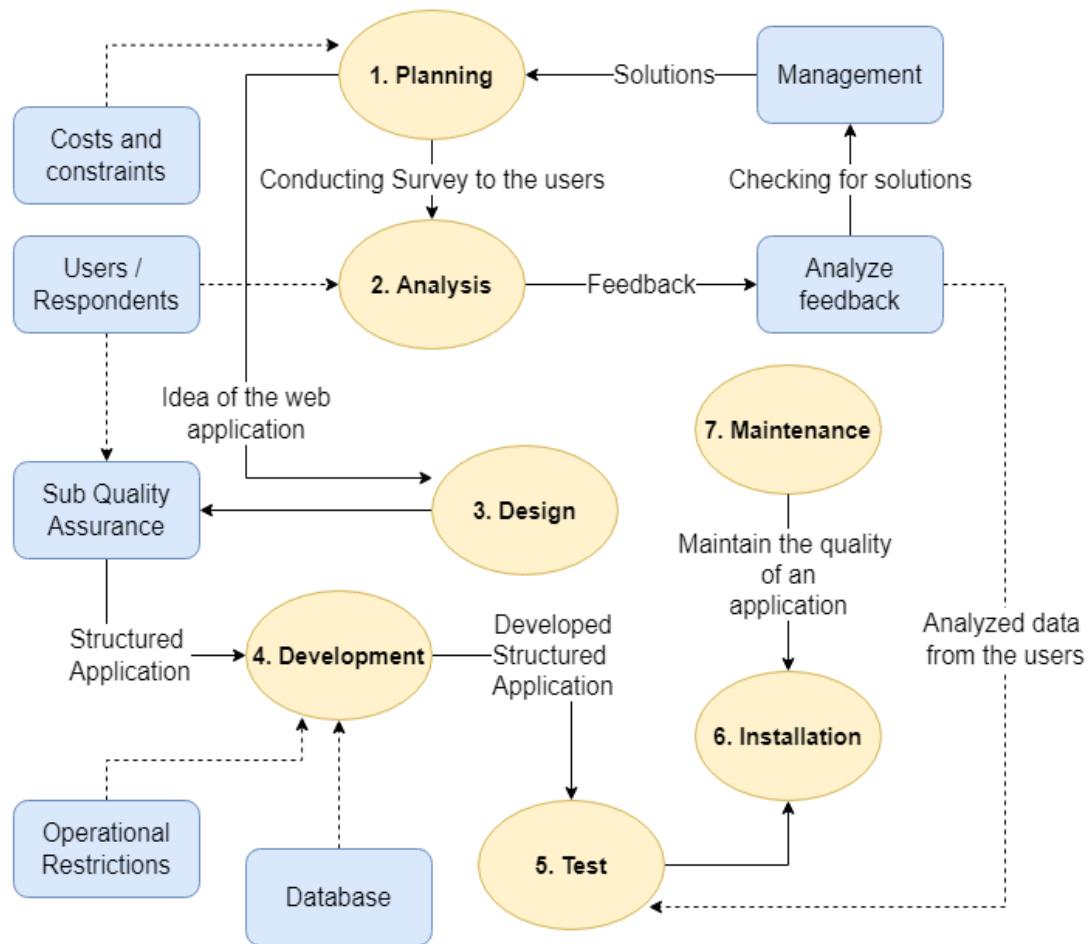


Figure 1.5 Research Design Diagram

1. In the planning phase here the planning of ideas and current situation takes place. Considering the future costs, future constraints, and structure of the system, which is how to benefit or help people.

2. At the survey stage, the developers confirmed possible solutions to their problems.

Here respondents or users were asked about current and future problems of our system.

After that, analyze the respondent's feedback and check the result.

3. In the design phase the information gathered from the respondents' feedback is adopted, including flowcharts, entity related diagrams, mock-ups and more.
4. in the development phase, codes, system structure, databases are adopted and operational restrictions are also included.
5. During the installation phase the system is uploaded to the internet so that the user can see the actual system.
6. During the testing phase various types of system testing are conducted. This includes beta-testing, where the user will test the system and provide feedback on their experience using it.
7. In the Maintenance phase the developer maintains the quality of the system released on the internet. This includes updates on features, dependencies and more.

DATA GATHERING INSTRUMENTS

The data gathering instruments that the researchers used is another variation of survey, the use of google forms, structured project life cycle, flowcharts, data dictionary. The researchers conducted an online survey in fifty students from computer science and fifty students from other course in College of Mary Immaculate in J.P Rizal St. Pandi, Bulacan with the total of a hundred of respondents. The researchers used structured project life cycles in determining which are the needed or valuable information that would be beneficial for the study. By using this tool to generate a life cycle view on what is the process of the creation of the application upon the development. Flowchart contains all the necessary steps underlying the principle on how the proposed system will work and will be used by the users. Data

dictionary is a tool that later be used by the researchers in organizing the data information for the storing the information that are gathered then will be stored inside the database.

The given survey questionnaire to the respondents is the one that will provide the necessary information for the study. The survey questionnaire will measure the performance of the system by asking some possible problems that are encountered by the users. This feedback will later help the developers and researchers on improving the application. The application design will enumerate and analyze in the given tools below:

1. Standard Systems Analysis and Design Tools

- a) Structured Project Life Cycle
- b) Flowcharts
- c) Data Dictionary

The Researchers used Structured Project Life Cycle in determining the needed information. Using this tool to generate a life cycle view on what is the process of the creation of the application will happen. The Flowcharts is used by the researchers because it contains the steps underlying the principle on how the proposed system will work and be used by the users. It is also used to capture and represent processes running on the system. After each process was captured / engineered, different data requirements were defined for each process. Data Dictionary is a tool that will later be used by the researchers in organizing the data information for the storing of databases. It is built to give the researchers a brief description of all the data that the system needs.

2. Survey Questionnaire and Evaluation Tool/s

There are quite a few tools for evaluating grocery systems, but a lot of research has already been done to evaluate systems and programs. They usually ask very general questions.

Sherah Kurnia & Petra Schubert (2004) devised an evaluation Extended Web Assessment

Method (EWAM). According to them, this tool was specifically created for the assessment of electronic commerce applications based on a consumers' viewpoint. The findings indicate that, in general, most web sites have not fully met the expectations of consumers. Strengths and weaknesses of the web sites are addressed. All this provides additional understanding of consumers' expectations in online grocery shopping and valuable insights into the slow uptake of online grocery shopping based in Australia with having the criteria of the following:

- a. Security of the system which ensures the consumers who wants to impose their personal data inside the system; b. Flexibility of the system; c. Speed and Accuracy on which the process is occurred; d. Reliability to the users' needs. The researchers were also asked to state their opinions through a survey which could evaluated using a five-point Likert scale judging from Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree.

The Evaluation Tool/s or Instruments that will later be used by the researchers:

- a. Five-point Likert Questionnaire based on the google forms which therefore deployed for the hundred respondents having fifty of computer science-based students and fifty non-computer science or some random people who are manually buys grocery items on the stores.

RESPONDENTS OF THE STUDY

The respondents of our study are fifty students from computer science who ask about the proposed system and fifty students from other course who ask about the old system. This primary purpose of this study about online grocery system is to show how the system helps the consumer to buy their needs online and no need to go outside. Instead of going to the line to buy, from the help of our system it's help to avoid it and also avoid covid-19. It will also help

you to have more to choose from and easily make way when you have forgotten to buy with the help of our online grocery system.

STATISTICAL TREATMENT

To determine whether the new online grocery system is much better than existing grocery or E-Commerce system. The researchers were asked to answer a Likert-scale questionnaire that is developed by the researchers for data gathering the survey categories in assessing the two systems' speed of transaction, ability to generate and make available accurate and concise information, flexibility and responsiveness to the users' needs. The arithmetic means and the standard deviation for each item in the questionnaire were computed and analyzed. The researcher used the research design to determine the presence of any significant difference in the observation of the respondents who used the new grocery system and the respondents who still used the current grocery system. The researcher creates a question for interview to make sure that the system is working well and no trouble and have a good feature that appropriate in our consumers and after gathering data the researcher use means to identified the results.

Chapter III

Results and Discussions

I. Planning

At the beginning of our system the researchers decide to make a brainstorming in choosing a topic that need to do and make some improvements. The researchers observe that many of us are affected of pandemic and limited people can go outside, so the researcher make an online web application which is purpose is to solve the issue about going outside, lessen the number of covid cases and supplies essential needs of people. the number one factor came out in our mind why many people go outside is to buy essential needs. so, the researcher decided to create an online web application for selling essential needs that's why the researcher comes up in creating online grocery system. before creating the application, the researcher starts to visit other application to gather idea on what we need to do and make improvements in old system, after identify the weaknesses spot of the old system the researcher makes a criteria for survey it classified in four part the speed of transaction, reliability, security and convenience and in every criteria there are 3 questions in the survey questionnaire to easily find the field which are having a problem so the researcher can solve it. after identify the researchers starts to build the application in creating online grocery system the researcher starts in create a login and create account page for the customers, employees and admins for security purposes. which will need to fulfill all the basic information of customers to verified, first before entering on home page there a validation if your account is already exist or not. once it is done and already login it will proceed to the home page if not you will not able to go on home page. if you are already on landing page you will see the navigation bar where when you press you will go to where you

like to go like home, category, products, contact, add to cart and account setting. in the category if you will go there's a sub category of item to be more organized it will have price per kilo of every item at the bottom, description of product and add to cart you may put the quantity first before you add it on the cart. for the products you will see items that are available on our online grocery system. if you are having a problem just contact us in our contact page to fix it. for add to cart you will see the item that you are buy and last is account setting you can add picture for your profile or update and change basic information to be right.

II. Analysis

Online Grocery System Analysis

In carrying out this phase of the study, the researcher investigated the existing system have a current problem with sorting of product and the design because all the products they sell are put together not sort properly and for the design are not user friendly.

Analysis of Systems Operations

The process of using existing system is just simple sign in and sign up enter your account or create your own account first after you've done, you will proceed on the landing page of the system which you will see the different products, category and prices of it. if you like a product just put the number of quantities you want and just click the add to cart button or buy now after there's a confirmation order after you've done a providing shipping address after you put your address and make payment it already done the shipping fee is depend on how long it delivers on you.

Strengths and Weaknesses of the Old System

Strengths

Goods are found at relatively at low price they purchase larger quantity of goods, sales volume rises high. it takes less operating cost. they take less profit from the customers. able to attract more customers due to its special features.

Weaknesses

Requirement of huge capital, need of appropriate location, no personal attention, not suitable of varieties of products. huge amount of capital is required to establish. it needs to be operated in huge building for which large amount of rent needs to be paid. mismatch on items delivered and customer choice.

Opportunities

Expansion into international markets

Threats

Well established competitors

Strengths and Weaknesses of the Proposed System

Strengths

Goods are found at relatively at low price they purchase larger quantity of goods, it saves time. it takes less operating cost. they take less profit from the customers. able to attract more customers due to its special features.

Weaknesses

Sustainability, mismatch on items delivered and customer choice

Opportunities

New partnerships and expansion into international markets

Threats

Well established competitors, instore promotions and service quality

Newly- Identified Needs based on the Observation

After the strengths and weaknesses of the current enrollment system had been analyzed, some new needs came out. For the sorting of product, the researcher decided to do by category of item and in every category there's a sub category to easily find the product that customers need. the researcher put description in every item and per kilo per meat, vegetable and fruits. for canned, chips, breads per pack. for spread per pieces.

Specification of Requirements and System Scope

After observing and analyzing the current online grocery system, it was recommended that the new system should exhibit the following features. First, validation of account in login form from the help of it will avoid duplication of account. if your account has been duplicated or use by someone there's a message shows like your account has been already exist or your account already used and also to make sure that your account is secured to avoid malicious attack of hackers.

This system will reduce the manual operation required to maintain all the records. And also generates the various reports for analysis. main concept of this thesis project is to enter transaction reports and to maintain customer records. the purpose of this online grocery system is to create a convenient and easy to use web application for the customers. the system is also designed to allow an admin to manage and check the stocks of goods in the grocery.

The following records, reports can be generated by the system:

1. Stock of items
2. Purchase information form
3. Product available

The proposed online grocery system that can generate the following reports:

1. List of transaction in every customer

COST ESTIMATES FOR THE STUDY

Table 1:

INITIAL COSTING FOR THE PROJECT

A. FIXED ASSETS ASSETS				B. CURRENT					
<u>FURNITURES AND FIXTURES</u>		<u>COST</u>	<u>QTY</u>	<u>SUBTOTAL</u>	<u>OFFICE SUPPLIES</u>		<u>COST</u>	<u>QTY</u>	<u>SUBTOTAL</u>
Computer Table		839	4	3356	Epson injected ink 616		1480		1480
Computer chairs		529	4	2116	Mouse		589	4	2356
		<u>TOTAL</u>		5472	Panda ballpen		105	4	420
					Epson L5190		5300		5300
<u>EQUIPMENT</u>		<u>COST</u>	<u>QTY</u>	<u>SUBTOTAL</u>			<u>TOTAL</u>		9556
Epson eco tank L3210		9290	2	18580	C. Expenses				
Converge		1500		1500	<u>PRE-OPERATING EXPENSES</u>		<u>COST</u>	<u>QTY</u>	
<u>SUBTOTAL</u>									
Storage room		20000		20000	Programmers fee		30000		3000
EBR		1000		1000	Delivery staff		450	4	9000
		<u>TOTAL</u>		41080			<u>TOTAL</u>		12000
<u>COMPUTER SOFTWARE</u>		<u>COST</u>	<u>QTY</u>	<u>SUBTOTAL</u>	<u>TOTAL PROJECT COST</u>				
Licensed windows 10 pro		10000		10000	Fixed Assets (existing already)				155036
Linux apache web server				0	Current Assets				9556
		<u>TOTAL</u>		10000	Pre-operating expenses				12000
					Total (HW and SW existing)				21556
<u>HARDWARE SET-UP COST</u>		<u>COST</u>	<u>QTY</u>	<u>SUBTOTAL</u>	Total (no HW and SW)				176592
RJ-45 connectors		238	4	952					
Hard disk 500GB		1500	4	6000					
Computer Case		1098	4	4392					
Monitor acer predator XB271HU	16338	4		65352					
Mechanical keyboard		2133	4	8532					
Headphones		999	4	3996					
SSD 128GB		819	4	3276					
Motherboard		1496	4	5984					
		<u>TOTAL</u>		98484					

Table 2:**OPERATING COST OF THE EXISTING SYSTEM**

A. WAGES	5 DAYS SALARY OF	COST	QTY	TOTAL
	Admin staff	12000	4	48000
	Customer service	10000	1	10000
	Storage staff	8000	4	32000
				TOTAL: 90000
B. SUPPLIES				
	Fresh from the farm	16500		16500
	Frozen food	12000		12000
	Panda ballpen	400	1	400
				TOTAL: 28900
C. OTHER INCIDENTALS				
	Load per week	1000	4	4000
				TOTAL: 4000
TOTAL OPERATIONAL COST/YEAR:				122900

Table 3:**OPERATING COST OF THE PROPOSED SYSTEM**

A. WAGES	5 DAYS SALARY OF	COST	QTY	TOTAL
	Admin staff	2250	4	9000
	Customer service	2250	1	2250
	Storage staff	2250	4	9000
				TOTAL: 20250
B. SUPPLIES				
	Fresh from the farm	16126		16126
	Frozen food	10000		10000
	Panda ballpen	105	4	420
				TOTAL: 26546
C. OTHER INCIDENTALS				
	Load per week	1196	4	4784
				TOTAL: 4784
TOTAL OPERATIONAL COST/YEAR:				51580

Cost Benefit Analysis

Now-a day's many people are using technology to buy something that the people want and need. So, the researcher came up with the idea of having an Online Grocery Store where they can buy what they want, although there is a system like that but the research adds something to the proposed system that can benefit the customer.

The benefits of this are you can now buy without a hassle. You can now order through your home, work, etc. This will need software that can run the system and hardware that will publish the work. This development will provide us with a more future-like system where people use their gadgets to do something useful. Also, all of the people will benefit from this system because it is convenient for us to buy food online without a hassle.

This system will have an economic feasibility where you will have an annual benefit for the worker that you will need. You will also have to have capital that will build this project. The economic growth of an Online Grocery System will grow more after 5 to 10 years from now because technology is in demand right now.

A. ANNUAL BENEFIT

(P) $P = \text{Existing Operational Cost} - [\text{Proposed Operational Cost} + (\text{Development Cost} / \text{Economic Life})]$

$$P = 122900 - [51580 + (21556 / 5)]$$

$$P = 122900 - [51580 + 4311]$$

$$P = 122900 - [55891]$$

$$P = 67009$$

The annual benefit that the institution can derive from the project is P67,009.00. In table 1, the computation for the actual development cost is derived. The computation for the existing and proposed operational cost is shown in Table 2 and 3 respectively.

B. PAYBACK PERIOD (T) – time required for the investment to break even.

$$T = \text{Development Cost} / \text{Annual Benefit}$$

$$T = 21556 / 67009$$

$$T = 0.322 \text{ years}$$

The existing infrastructure of the institution had been met the hardware and software requirements of the proposed system. The result is that the Development Cost is greater than the Annual Benefit. Because of this, the development cost of the project can be recovered in a half of a year.

C. RETURN OF INVESTMENT (R) – rate of benefits returned by an investment in terms of rate/year.

$$R = (2 [\text{Proposed Operational Cost} - (\text{Development Cost} / \text{Economic Life})]) / \text{Development Cost}$$

$$R = 2 [51580 - (21556 / 5)] / 21556$$

$$R = 2 [51580 - 4311] / 21556$$

$$R = 2 [47269] / 21556$$

$$R = 94538 / 21556$$

$$R = 4.3857$$

The fact that the development cost is greater than the annual benefit can boost the Return of Investment per 4 year which is 4.3857. This means that the investment will earn more than 100% of its initial investment per 4 years.

D. PROFITABILITY INDEX (P.I.)

This tells whether the investment is profitable or not. A computed value of less 1 means unprofitability, if it is equal to 1, it is break-even and if it is greater than 1, the investment is profitable. It allows the investor to choose among good investments and rank them according

to the degree of their profitability. In order to compute for the profitability index, the net present value (NPV) must be known.

Net Present Value (NPV) – sum of all present values of the annual benefit within its economic life. It is used for evaluating how much money the investment is going to generate and when this money is to be generated simultaneously. Moreover, it is also the value of the annual benefit relative to time. In the light of inflation and other factors, the present value of the annual benefit today is less than 1 year from now. The present value diminishes through time just like depreciation as new and more powerful systems come out in the market.

$$PV = (P \times T1V1) + (P \times T1V2) + \dots + (P \times T1Vn)$$

where $T1Vn$ is the value in the present value table.

YEAR	P	PV factor	PV
1	67009	0.87	58297.83
2	67009	0.756	50658.80
3	67009	0.658	44091.92
4	67009	0.572	38329.14
5	67009	0.497	<u>33303.47</u>
Total		Present Value	224681.16

PI = Present Value of Annual Benefits / Development Cost

$$PI = 224681.16 / 21556$$

$$PI = 10.423$$

With a very high Profitability Index (P.I.) of 10.432, the project is visibly worth the investment. This is due to the presence of the current computer infrastructure of the institution which already satisfies the requirements for developing the system. In addition, this will carry out one of the main objectives of this study which is to harness the existing facilities of the institution to the fullest.

The associated cost of setting-up an entirely new online system including both hardware and software is presented above but since the host institution already has the existing hardware infrastructure; it is only the development of the application software that will require cost. The savings in time and effort to provide instant information will offset the costing and the efficient implementation of the system will persuade all customers to buy online.

Significance of the New Online Grocery System

Having an online system for ordering groceries opens up your store to a wider customer. The enormous number of people surfing the web. It's a giant boost to your store's reach, and this can mean big business.

III. Design

The design of our system is simple the color that the researcher used are green, white, yellow, red and black because it is normally seen on grocery and also to avoid hurt in your eyes when you stare at the color. easily understand how to use it and read the text inside because of the color combination, the researcher uses picture of product and add logo to the system to make it professional online grocery system.

A. Database Structure

1. Normalization

I. username, email , password, role, product_id, product_title, stock_number, expiry_date, price, kilo_pcs_pack, category, description, images, firstname, lastname, cart_number, gender, date_of_birth, civil_status, contact_number, postal, street, barangay, civil_municipal, province, display, cart_id, product_image, product_title, product_price, quantity, cart_price, quantity, cart_price, date_added, primary, delivery_id, full_address, sub_total,

delivery_fee, total_price, order_date, zip, province, distance_km, payment_id, date_of_transac, payment_amount, mode_payment.

II. Data Tables

users	username, email, password, role
product	product_id, product_title, stock_number, expiry_date, price, kilo_pcs_pack, category, description, images
customers	username, email, firstname, lastname, cart_number, gender, date_of_birth, civil_status, contact_number, postal, street, barangay, city_municipal, province, display
cart	cart_id, cart_number, username, product_id, product_image, product_title, product_price, quantity, cart_price, date_added
cart_history	Primary, delivery_id, cart_number, username, product_id, product_image, product_title, product_price, quantity, cart_price, date_added
delivery	delivery_id, cart_number, username, full_address, postal, sub_total, delivery_fee, total_price, order_date

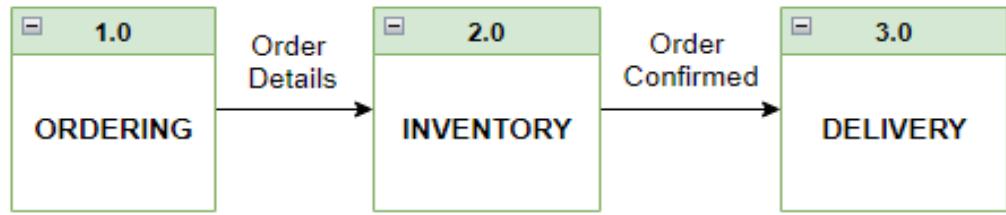
location	zip, city_municipal, province, distance_km
canceled_order	cancel_id, delivery_id, cart_number, username, full_address, postal, sub_total, delivery_fee, total_price, reason, date_canceled

1. Definition of tables

users	List of login credentials.
product	List of products.
customers	Contains basic information about the client.
cart	List of products that client wants.
cart_history	Contains past items in cart.
delivery	List of delivery details.
location	List of locations
payment	Date and amount of payment.

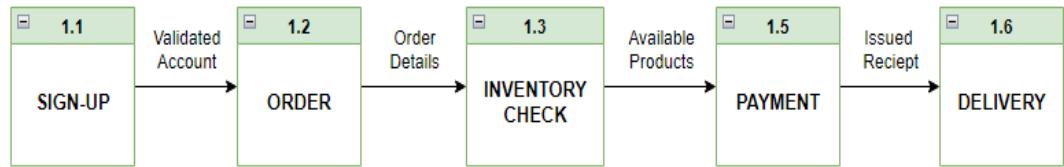
Diagram 0 and Exploded Diagram

a. Diagram 0

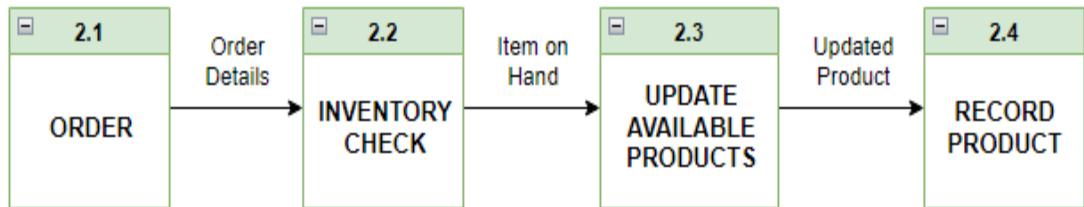


b. Exploded Diagram

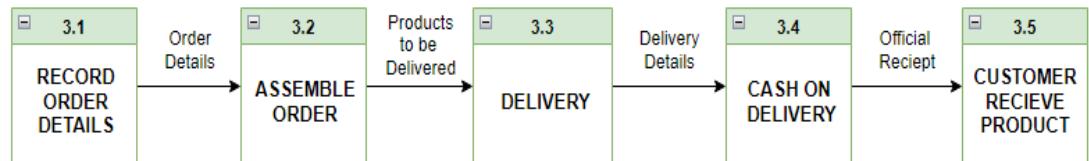
ORDERING



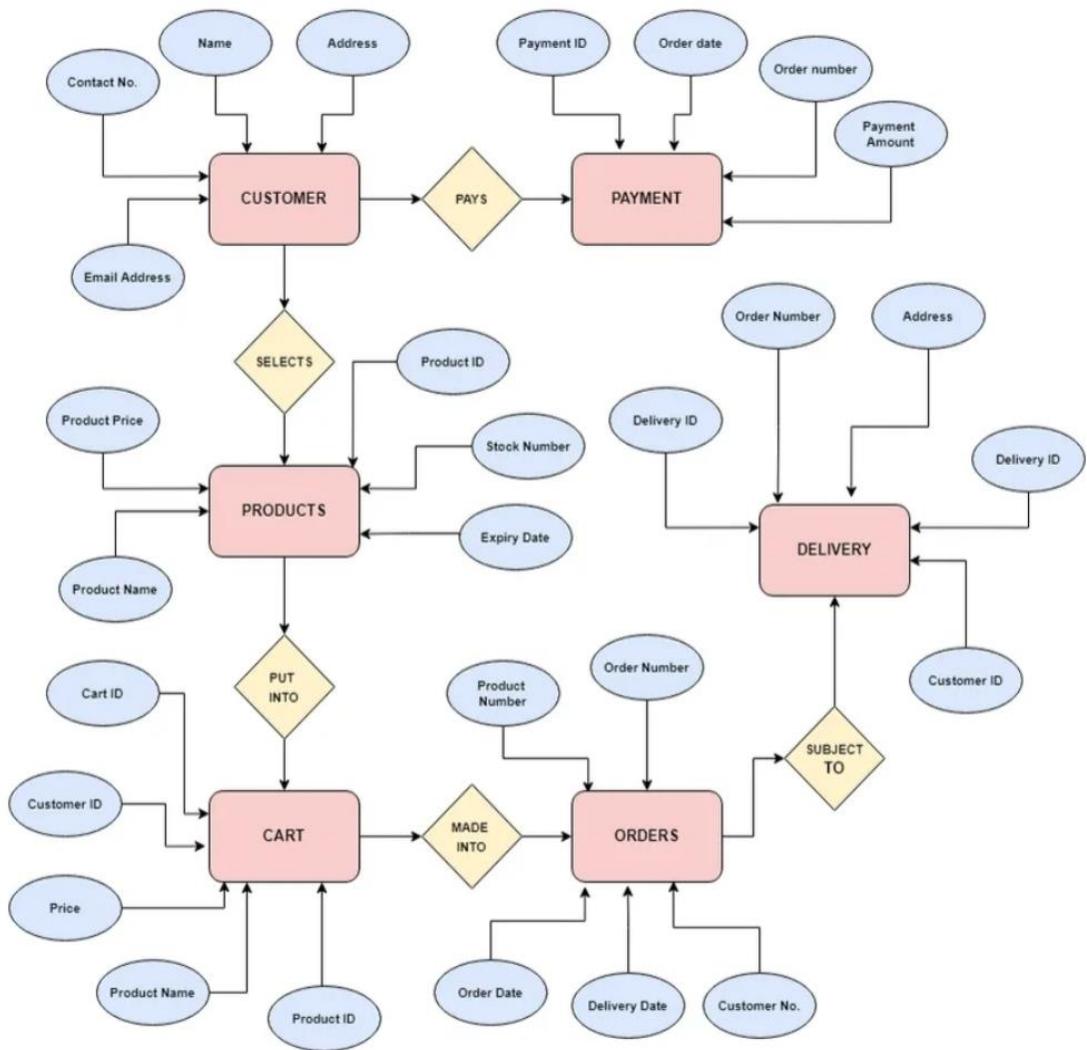
INVENTORY



DELIVERY



B. Entity Relationship Diagram



C. Data Dictionary

Variable	Description	Data type	Format
username	Customer's account name	VARCHAR	-----
email	Customer's email	VARCHAR	-----@----.com
password	Customer's password account	VARCHAR	-----
role	User's role in our system (user / admin)	VARCHAR	-----
product_id	Product ID	VARCHAR	P#####
product_title	Product title	VARCHAR	-----
stock_number	Product availability	INT	###

expiry_date	Expiration date of product	DATE	#####-##-##
price	Price of product	INT	P#####
kilo_pcs_pack	Weight based or unit based of every product	VARCHAR	-----
category	Product category	VARCHAR	-----
description	Product description	VARCHAR	-----
images	Product image	VARCHAR	----.---
firstname	Customer's first name	VARCHAR	-----
lastname	Customer's last name	VARCHAR	-----
cart_number	Customer's cart number	VARCHAR	CRT#####
gender	Customer's gender	VARCHAR	-----
date_of_birth	Customer's birthdate	DATE	#####-##-##
civil_status	Customer's civil status	VARCHAR	-----
contact_number	Customer's contact number	INT	########
postal	Customer's postal code	INT	########
street	Customer's street and house number	VARCHAR	--##, --##
barangay	Customer's barangay	VARCHAR	-----
city_municipal	Customer's city or municipal	VARCHAR	-----
province	Customer's province	VARCHAR	-----
display	Customer's display photo	VARCHAR	-----.---
cart_id	Cart transaction ID	VARCHAR	-----
product_image	Product image	VARCHAR	----.---
cart_price	Sum of product price and delivery fee	INT	###
quantity	The amount or number of a material	INT	##
date_added	Date of ordered products	DATETIME	#####-##-##, ##:##:##
primary	Cart history ID	INT	##
delivery_id	Delivery ID	INT	SHP#####
full_address	Customer's complete address	VARCHAR	---##, --##, -----
sub_total	Sum of items in cart	INT	#####
delivery_fee	Delivery fee	INT	#####

total_price	Sum of subtotal and delivery fee	INT	#####
order_date	Date of transaction	DATETIME	####-##-##, ##:##:##
distance_km	Distance measurement	INT	###

D. Input-Process-Output (IPO) Chart

INPUT	PROCESS	OUTPUT
<ul style="list-style-type: none"> • username • email • password • gender • code 	User account validation	Access System
<ul style="list-style-type: none"> • cart_id • username • product_id • quantity • price • date_added 	Ordering (Place Order)	Order Form
<ul style="list-style-type: none"> • delivery_id • cart_id • username • order_date • sub_total • delivery_fee 	Check payment transaction (Cash On Delivery)	Record Transaction
<ul style="list-style-type: none"> • delivery_id • cart_id • username • order_date 	Validate order form	Shipped

E. ODM

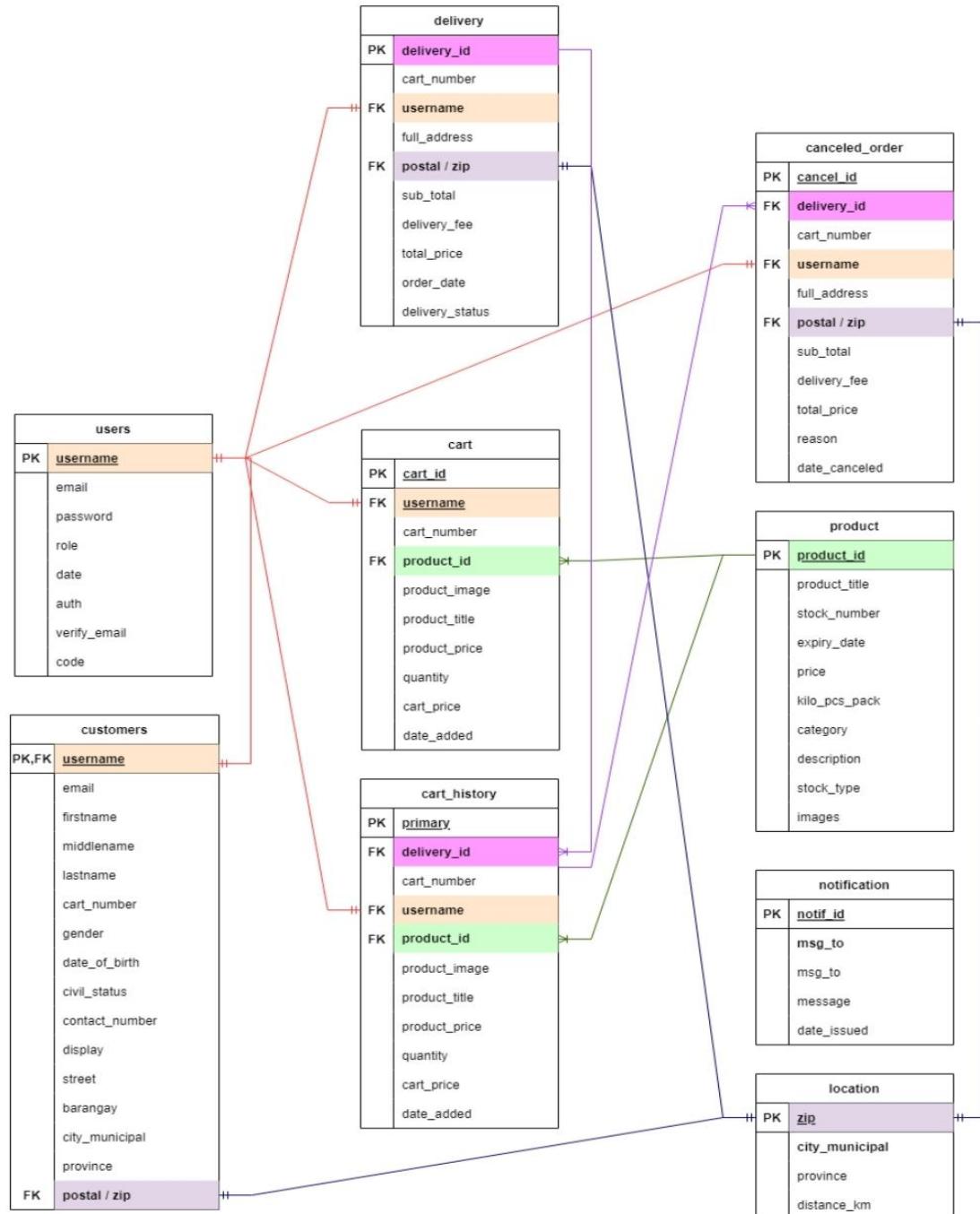


Figure 1.8 Operational Data Model

IV. Development

Researchers developed this proposed system using these tools, **HTML** for the structure of the proposed system, **CSS** is used to style and layout web pages, **PHP** is used to create dynamic Web pages and **MySQL** is used to create a database for storing and manipulating data, defining the relationship of each table. Researchers also used **OOP** or **Object-Oriented Programming**. It is used to structure a software program into simple, reusable pieces of code blueprints called classes. We also used this **MVC** or **Model, View and Controller** architectural pattern. It is used for efficiently relating the user interface to underlying data models and organizing to relate the application code.

The researchers created sign in and signup pages for the security of the proposed system. We also added a feature where the user has to verify his email, so that we can prevent fake accounts from all users of the system, and we also have a 2-factor verification feature, where every time the user logs in, we will ask him for a code, which is sent to his valid email. This way, we can provide the user with security to prevent others from opening his or her account. Next, the homepage, which shows small details about the proposed system, below these details, shows images labeled categorized products, such as canned goods, breads and spreads, snacks and chips, packed noodles, meats and poultry and lastly fruits and veggies. And we base these products on weight or on the unit. Examples of these are, kilograms, pieces, packs and so on and so forth. Next, the cart page, where the products added to the cart will be displayed, it will also take the first step in ordering the products in its contents. Check-out page, here is the last step to order all the products. It displays ordering details, such as full name, full address, postal code, contact number and more that identify the user. Next is the profile, it is divided into four pages, and this is the profile, delivery, security and my purchases page. The content of the profile page is the user's

personal info. Upon delivery page, the user's billing and shipping address are listed here. On the security page, here is the change password, and the 2-factor-verification switch that the user can use to increase the security of his or her account. On my purchases page, here are the user's orders, and they are divided into to pay, to ship, to receive, complete, and canceled tabs.

V. Testing

The efficiency of the current grocery system and proposed online grocery system was evaluated using two sets of questionnaires using a Likert scale developed by the researchers. The first set, which was done at the survey activity of this study, was the fifty randomly selected from not Computer Science Student. While the second set was evaluated by fifty from Computer Science Student. The responses were tabulated and interpreted using the mean and the standard deviation.

Table 7: Evaluation of the current enrollment system and the proposed online enrollment system

Questions	Current System			Proposed System		
	Mean	SD	R	Mean	SD	R
Speed of Transaction						
1. It is easy to find what product is looking for.	4.08	0.72	Agree	4.1	1.20	Agree
2. I can easily add product to the cart.	4.18	0.87	Agree	4.3	0.71	Agree
3. It takes a considerable amount of time to finish one transaction.	3.82	0.80	Neutral	4.1	0.89	Agree
Reliability						
4. Shopping online saves time.	4.36	0.72	Agree	4.28	0.76	Agree
5. Payment is easy to make through online store.	4.08	0.78	Agree	4.16	0.77	Agree
6. I can choose product even if I will not visit the store.	4	1.02	Agree	4.32	0.82	Agree
Security						
7. Shopping online is safe.	3.54	0.89	Neutral	4	0.79	Agree
8. I am confident that my personal information is kept secured when buying products online.	3.78	0.79	Neutral	4.24	0.74	Agree
9. I can ensure that my identity kept private.	3.76	0.72	Neutral	4.12	0.66	Agree
Convenience						
10. It is easy to compare product and price online.	3.8	0.86	Neutral	4.2	0.78	Agree
11. The product I received is what I expected.	3.48	0.54	Neutral	4.1	0.81	Agree
12. I can easily contact the seller if there is a concern about the product.	3.78	0.86	Neutral	4.24	0.77	Agree

In this evaluation the researcher used Likert scale to find out the result of the survey to the selected 100 students in College of Mary Immaculate. Five frequency scales were used in answering the survey: 1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly

Agree. The researcher divided it to 4 criteria speed of transaction, reliability, security and convenience. Each Criteria have 3 questions which is related to their criteria.

In the first evaluation which is in the current system for speed of transaction, questions 1 to 3 with a mean of 4.08, 4.18 and 3.82, and standard deviation of 0.72, 0.87 and 0.80. The respondents answer for number 1 and 2 questions is agreeing that is easily to find product on existing system and add item to cart but for the question number 3 you can see that some of the response takes time to finish a transaction. While in the evaluation of the proposed system for speed of transaction, question 1 to 3 with a mean of 4.1, 4.3 and 4.1, and standard deviation of 1.20, 0.71 and 0.89. You can see that the respondents are agreeing to all the three questions for the speed of transaction which is a good sign that the researcher improve the work of the system.

For the reliability, questions 4 to 6 have a mean of 4.36, 4.08 and 4, and standard deviation of 0.72, 0.78 and 1.02. The result of question 4 and 5 the respondents is agreeing that online shopping saves time and easy to pay but for the question 3 is some are agreeing and some are not so the result are neutral. For the proposed system, question 4 to 6 have a mean of 4.28, 4.16 and 4.32 and a standard deviation of 0.76, 0.77, 0.82. You will see that the respondents are agreeing that the system is performing well for them.

With a mean of 3.54, 3.78 and 3.76 and a standard deviation of 0.89, 0.79 and 0.72 for question number 7 to 9 implies that the respondents of the first set is neutral that the current system is not secured enough to protect them from the hackers. But the respondents for the second set of the survey with a mean of 4, 4.24 and 4.12 and a standard deviation of 0.79, 0.74 and 0.66. For question number 7 which is “Shopping online is safe” the result is neutral because there might be a professional hacker can hack all of the system so there must be a doubt that shopping online is a safety from them. In question number 8 and 9 the respondents are agreeing

that their personal information and identity are secured which the researcher convince them to neutral to agree securing private information for them.

For the convenience, questions 10 to 12 have a mean of 3.8, 3.48 and 3.78, and standard deviation of 0.86, 0.54 and 0.86. The result of question 10 to 12 the respondents is neutral about easily compare product online and price online, the product I received is what I expected and easily contact the seller if having concern about the product. While in the proposed system with a mean of 4.2, 4.1, and 4.24 and a standard deviation of 0.78, 0.81, and 0.77 respondent says that they are agreeing on how convenience the system is.

This will lead that the output of the researcher is better in terms of speed of transaction, reliability and convenience. While in the security, there is a doubt that security is well doing because it can cause bad impact to the customers.

VI. Installation

To Install the system the researcher needed a web hosting app to host the proposed system. The researcher searched about free web hosting so that it will host the proposed system to deployed in the website. So, the customer would see it live in the browsers.

VII. Maintenance

It depends on the system operator if he wants to add new features. But usually, every month check the system or maintain the system that there's no errors and everything works.

Chapter IV

Summary, Conclusions, and Recommendations

Summary of Findings

1. Planning

For the survey phase the researcher have a two set of survey where the first is in the existing system. Existing System is alike of what of the proposed system of the researcher. This will consist of 100 respondents. 50 for the existing system and 50 for the proposed system. Proposed System is the system that the researcher is doing.

In the survey phase the researcher conducted survey for the existing system where the respondents consist of 50 student who is not a Computer Science Student. The result of the survey is most of them answer that they agreed to the existing system.

2. Analysis

This study focused on the collection of data for the study of the Online Grocery System. The researchers observed who the users are and how they use the present online grocery system for purchasing of goods and sending of payment. The researchers create scope and limitations to measure the extent to which the problem should be fixed in the existing online grocery system to quickly find out where there is a problem, the researcher create a survey questionnaire was prepared based on the four criteria such as: Speed of transaction, Reliability, Security and Convenience.

3. Design

Researchers have used this type of flow, as it fits into the e-commerce system. And this flow is also the most commonly used by existing e-commerce systems. The first thing you can see inside the system is the "welcome page", with buttons that direct to our features. Such as product lists, add to cart, cart page and more. But there is a limit

to everything when the user is not logged in, such as he cannot add cart and he cannot open other features like cart page and the manage profile. Once the user has added a product to the cart, it will be recorded in the cart table named after him, he can save it no matter how long, or he can buy it immediately. When ordering cart items, the system will ask for all of the user's billing and shipping credentials to deliver the product to its exact location, and we will record this transaction as "completed" and this transaction set is the user can still access and purchase.

4. Development

The software that the researcher using are Visual Code, and XAMPP this is the best choice of the researcher for the web development. Visual Code is a software that create macros to automate repetitive word- and data-processing functions, and generate custom forms, graphs, and reports. XAMPP is open-source cross-platform web server solution stack package. Also, provide support for creating and manipulating databases in MySQL and MariaDB.

They can execute the required features for the application by using the software that is chosen and using the programming language. The researcher uses PHP where they are familiar with to create awesome feature to the proposed system.

5. Testing

As final testing of the proposed system, it was presented to its end-users of the online grocery system. The questionnaire given was the same with the one used in the evaluation of the existing system. Results of the two evaluations were interpreted and compared using mean and standard deviations.

6. Installation

First step picks the right hosting provider, second step choose the tool and method to upload your website, third step upload your website files, fourth step move the website files to the main root folder, fifth step import your database, and last check if your website works worldwide.

7. Maintenance

Every month the system needs to check if everything works, no error and if the admins add a new feature on the system.

Conclusions

1. Planning phase, the researcher determines the strength and weakness of the system which the researcher improve it by making a two-way factory authentication that will help the system better.
2. Analysis phase, the researchers identify that there some major problem solved by the proposed system like the two-way factor verification, other online shopping do not have a two-way factor authentication.
3. Design phase, the procedures and processes needed to develop were shown to illustrate how the transactions of the proposed system were used.
4. Development phase, the researcher develops an online grocery system where it has a two-way factory authentication which other online shopping platform do not have.
5. Testing/quality assurance phase, the researchers have monthly debugging of the system to identify if there's no error.
6. Installation phase, the users have a training about the processes and transactions upon installing the database application program of the proposed online grocery system.

7. Maintenance phase, get feedback to the user to enhance system and have a monthly debugging to check if there's an error.

Recommendations

1. Apply vouchers to have more customer that will use the system
2. Make a multiple address so that the customer uses it where to deliver it.
3. For the admins, applying an attendance for the admin users.
4. Installation phase, it is better to use free hosting so that you do not have to pay for installation of your application on website.
5. Maintenance phase, the researchers recommend to check the system every 1 month to be sure that there's no error and work properly.
6. Have a limitation to purchase to avoid fake ordering.

Bibliography:

- Morganosky, M. A., & Cude, B. J. (2000, February 1). *Consumer response to online grocery shopping*. International Journal of Retail & Distribution Management. Retrieved October 7, 2021, from <https://www.emerald.com/insight/content/doi/10.1108/09590550010306737/full/html>.
- Hand, C., Riley, F. D. O., Harris, P., Singh, J., & Rettie, R. (2009, September 18). *Online grocery shopping: The influence of situational factors*. European Journal of Marketing. Retrieved October 7, 2021, from <https://www.emerald.com/insight/content/doi/10.1108/03090560910976447/full/html>.
- Anckar, B., Walden, P., & Jelassi, T. (2002, April 1). *Creating customer value in online grocery shopping*. International Journal of Retail & Distribution Management. Retrieved October 7, 2021, from <https://www.emerald.com/insight/content/doi/10.1108/09590550210423681/full/html>.
- Kurnia, S., & Chien, A.-W. J. (2003, June 9). *The Acceptance of Online Grocery Shopping*. 16th Bled eCommerce Conference eTransformation. Retrieved October 7, 2021.
- Mortimer, G., Hasan, S. F. e, Andrews, L., & Martin, J. (2016, January 10). *Online grocery shopping: The impact of shopping frequency on perceived risk*. Taylor & Francis. Retrieved October 7, 2021, from <https://www.tandfonline.com/doi/abs/10.1080/09593969.2015.1130737>.
- Anesbury, Z., Nenycz-Thiel, M., Dawes, J., & Kennedy, R. (2015, December 17). *How do shoppers behave online? an observational study of online grocery shopping*. Wiley Online Library. Retrieved October 7, 2021, from <https://onlinelibrary.wiley.com/doi/abs/10.1002/cb.1566>.
- Singh, R., & Söderlund, M. (2020, February 6). *Extending the experience construct: An examination of online grocery shopping*. European Journal of Marketing. Retrieved October 7, 2021, from <https://www.emerald.com/insight/content/doi/10.1108/EJM-06-2019-0536/full/html>.
- Robinson, H., Dall'Olmo Riley, F., Rettie, R., & Rolls-Willson, G. (2007, March 1). *The role of situational variables in online grocery shopping in the UK*. Latest TOC RSS. Retrieved October 7, 2021, from <https://www.ingentaconnect.com/content/westburn/tmr/2007/00000007/00000001/art0007>.
- Your Dictionary, Retrieved October 23, 2021, <https://www.yourdictionary.com/phpTechTerms.com>, Retrieved October 23, 2021, <https://techterms.com/definition/php>
Your Dictionary, Retrieved October 23, 2021, <https://www.yourdictionary.com/mysqlTechTerms.com>, Retrieved October 23, 2021, <https://techterms.com/definition/htmlTechTerms.com>, Retrieved October 23, 2021, <https://techterms.com/definition/cssTechTerms.com>

**AN EVALUATION OF THE ONLINE GROCERY SYSTEM FOR COLLEGE OF
MARY IMMACULATE**

Name (Optional): _____ Yr.: _____ Date: _____

Please read the questions carefully and encircle the no. of your choice. Thank You!

SA = Strongly Agree A = Agree N = Neutral D = Disagree SD = Strongly Disagree

	SA	A	N	D	SD
1. It is easy to find what product is looking for.	5	4	3	2	1
2. I can easily add product to the cart.	5	4	3	2	1
3. It takes a considerable amount of time to finish one transaction.	5	4	3	2	1
4. Shopping online saves time.	5	4	3	2	1
5. Payment is easy to make through online store.	5	4	3	2	1
6. I can choose product even if I will not visit the store.	5	4	3	2	1
7. Shopping online is safe.	5	4	3	2	1
8. I am confident that my personal information is kept secured when buying products online.	5	4	3	2	1
9. I can ensure that my identity kept private.	5	4	3	2	1
10. It is easy to compare product and price online.	5	4	3	2	1
11. The product I received is what I expected.	5	4	3	2	1
12. I can easily contact the seller if there is a concern about the product.	5	4	3	2	1

Google Form Questionnaire

Survey - Google Forms

Survey

Questions Responses Settings

My Grocery

Good day!
We are making a system called "Online Grocery System". We need your cooperation in answering this questionnaire which will help provide important data for our study; we encourage you to answer the following question truthfully. We appreciate your support and response for the effectiveness of our research. Thank you very much for your collaboration.
Researchers: De Guzman, M. A., Fajardo, J., Perez, J., Villagonza, S. G.

Email (Optional)

Short answer text

1. It is easy to find what product is looking for. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

Survey - Google Forms

Survey

Questions Responses Settings

2. I can easily add product to the cart. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

3. It takes a considerable amount of time to finish one transaction. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

Survey - Google Forms

Questions Responses 20 Settings

4. Shopping online saves time. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

5. Payment is easy to make through online store. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

?

Survey - Google Forms

Questions Responses 20 Settings

6. I can choose product even if I will not visit the store. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

7. Shopping online is safe. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

?

Survey - Google Forms

Questions Responses 20 Settings

8. I am confident that my personal information is kept secured when buying products online. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

9. I can ensure that my identity kept private. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

Survey

Send

Questions Responses 20 Settings

Survey - Google Forms

Questions Responses 20 Settings

10. It is easy to compare product and price online. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

11. The product I received is what I expected. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

Survey

Send

Questions Responses 20 Settings

Survey - Google Forms

Survey

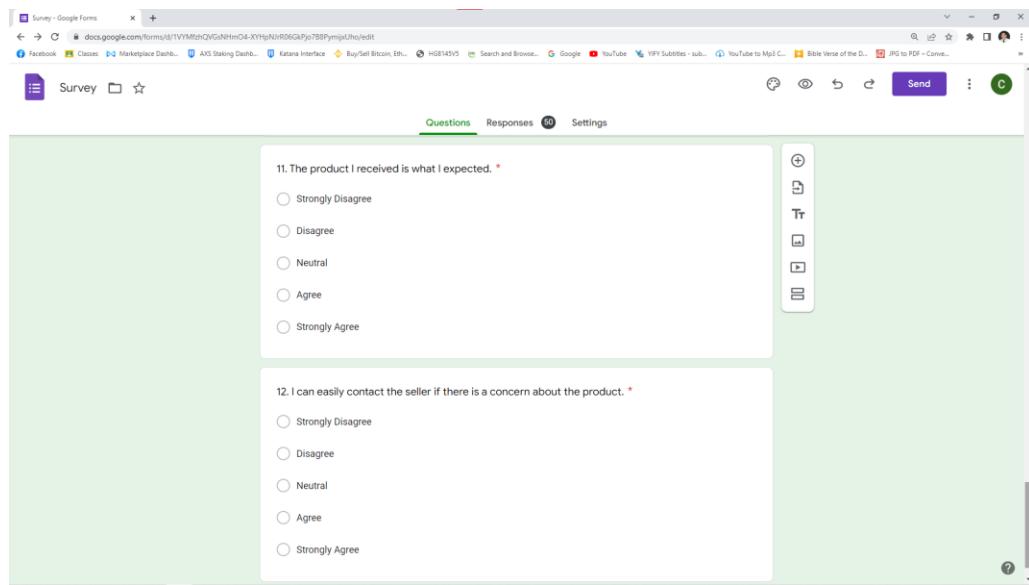
Questions Responses 60 Settings

11. The product I received is what I expected. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree

12. I can easily contact the seller if there is a concern about the product. *

Strongly Disagree
 Disagree
 Neutral
 Agree
 Strongly Agree



User-Manual

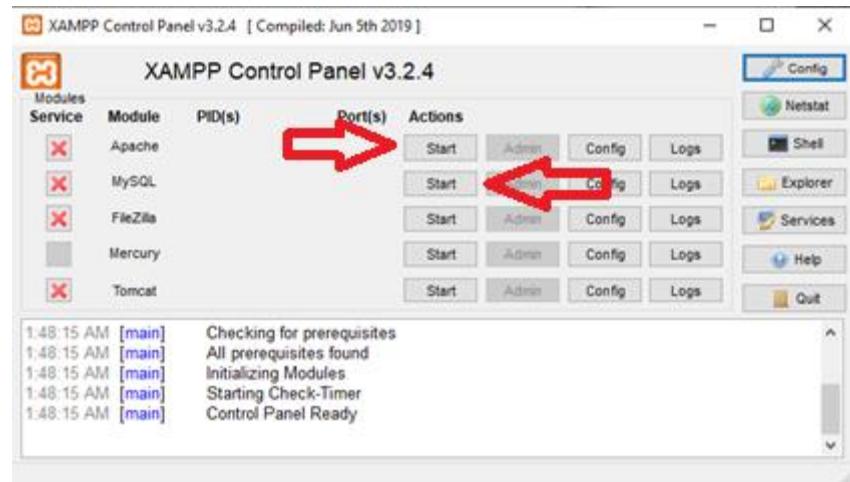
- The first thing you should do, is download and install XAMPP on your desktop.

What is XAMPP?

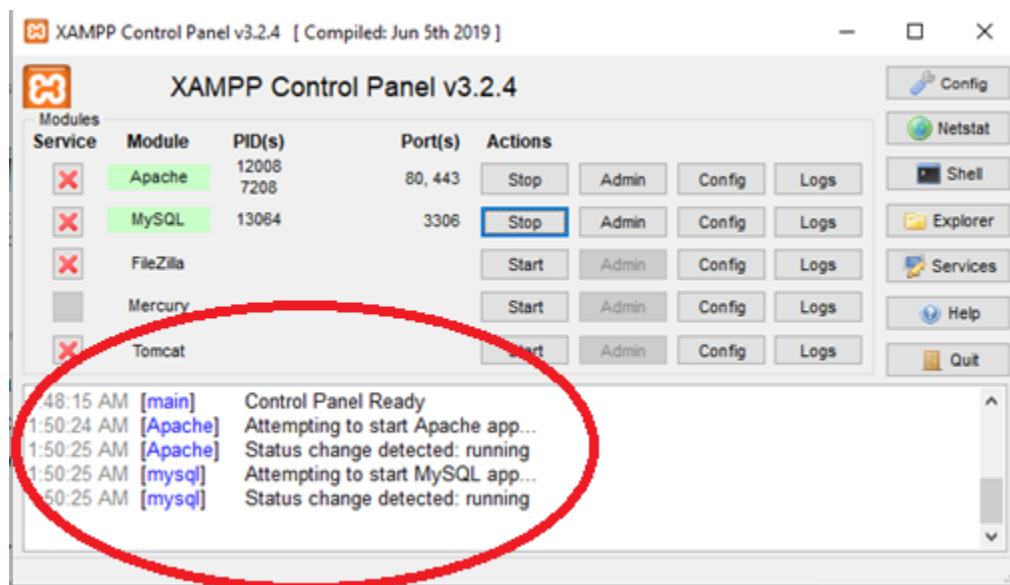
XAMPP helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server. It is a platform that furnishes a suitable environment to test and verify the working of projects based on Apache, Perl, MySQL database, and PHP through the system of the host itself.

- For more info go to this links →
 - <https://www.apachefriends.org/hosting.html>
 - <https://www.apachefriends.org/about.html>
- You can download it in here →
 - <https://www.apachefriends.org/index.html>
- How to install XAMPP? Go to the link →
 - <https://www.ionos.com/digitalguide/server/tools/xampp-tutorial-create-your-own-local-test-server/>

When you have finished installing XAMPP on your computer, the XAMPP control panel will appear. All we need to start here to access the system is Apache and MySQL.



Just click the start button of the two (Apache and MySQL). Then, you will see a message in the status bar, "Status change detected: running". Which means you've already opened both.



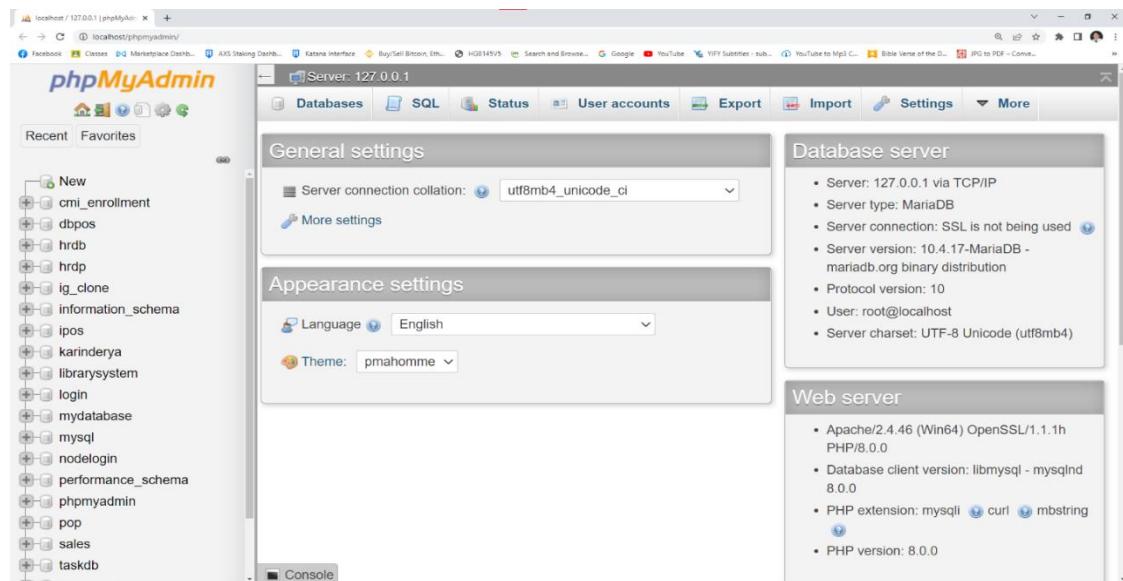
After you click the start button, you can access the admin button of these two. The Apache admin button will take you to the XAMPP's dashboard page, and the MySQL admin button will take you to the database or phpMyAdmin.

Once you've clicked the Apache admin this will direct you to <http://localhost/dashboard/>



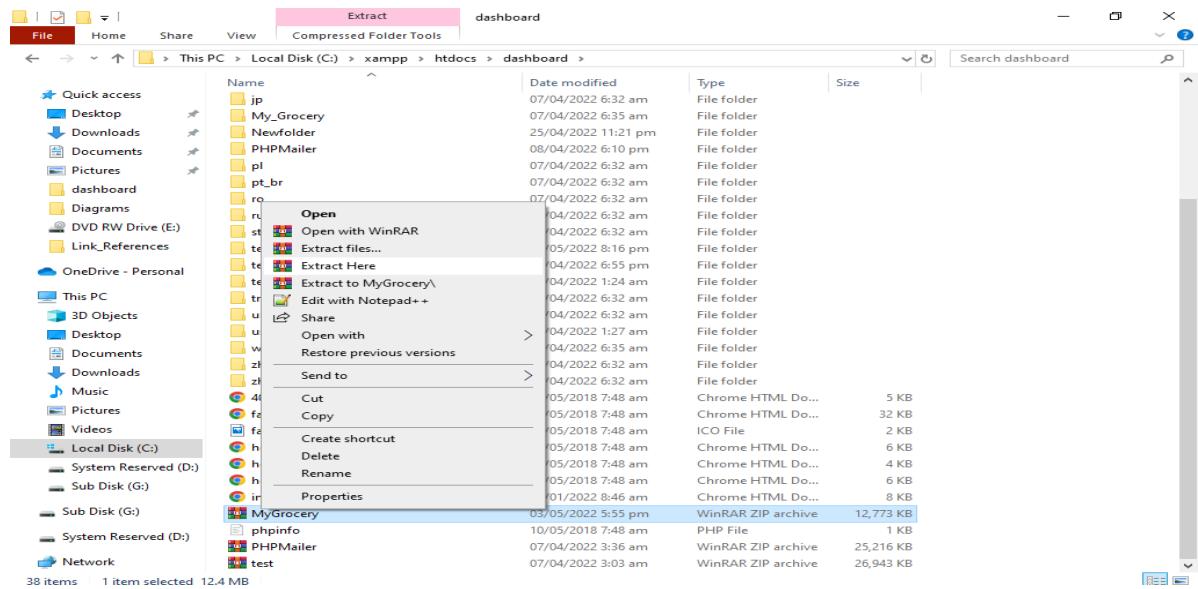
The screenshot shows the XAMPP Apache + MariaDB + PHP + Perl dashboard. At the top, there's a navigation bar with links for Applications, FAQs, HOW-TO Guides, PHPInfo, and phpMyAdmin. Below the header, the XAMPP logo is displayed, followed by the text "XAMPP Apache + MariaDB + PHP + Perl". The main content area is titled "Welcome to XAMPP for Windows 8.1.2". It includes a message about successful installation, links to FAQs and HOW-TO Guides, and a note about the package being meant for development purposes. It also mentions WAMP, MAMP, or LAMP as similar packages. A link to the XAMPP Control Panel is provided for server status.

Once you've clicked the MySQL admin this will direct you to <http://localhost/phpmyadmin/>

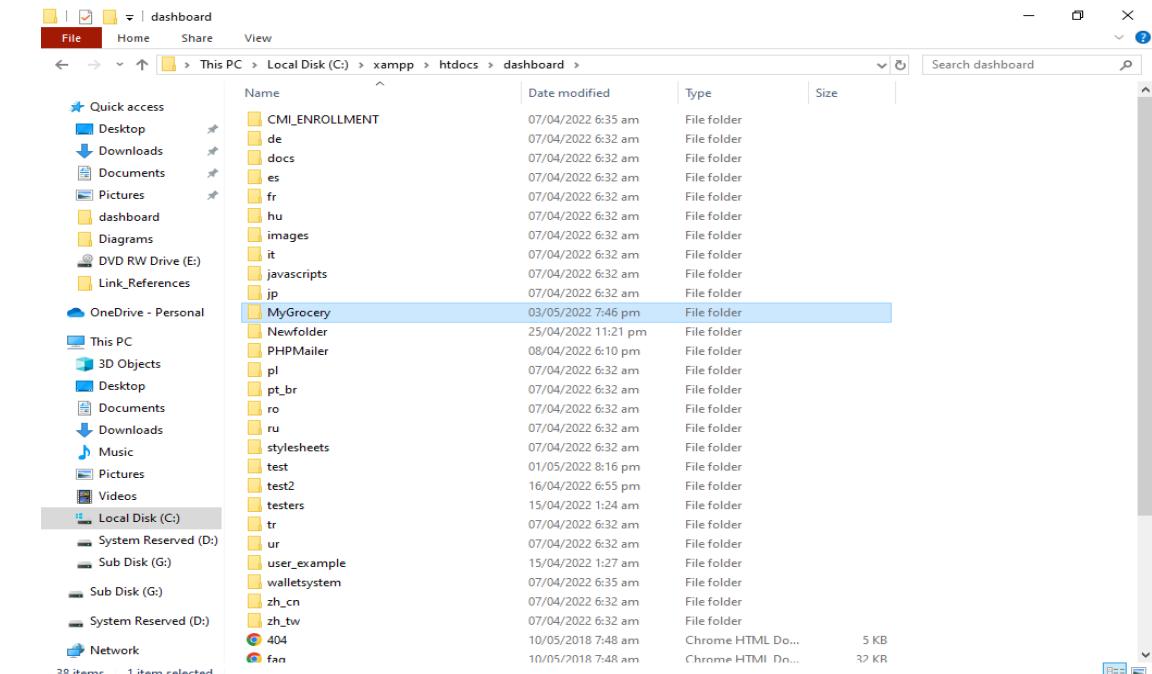


The screenshot shows the phpMyAdmin interface. On the left, there's a sidebar with a tree view of databases: New, cmi_enrollment, dbpos, hrd, hrdp, lg_clone, information_schema, ipos, karinderya, librarysystem, login, mydatabase, mysql, nodelogin, performance_schema, phpmyadmin, pop, sales, and taskdb. The main panel is divided into several sections: "General settings" (Server connection collation: utf8mb4_unicode_ci), "Appearance settings" (Language: English, Theme: pmahomme), "Database server" (Server: 127.0.0.1 via TCP/IP, Server type: MariaDB, Server connection: SSL is not being used, Server version: 10.4.17-MariaDB - mariadb.org binary distribution, Protocol version: 10, User: root@localhost, Server charset: UTF-8 Unicode (utf8mb4)), and "Web server" (Apache/2.4.46 (Win64) OpenSSL/1.1.1h PHP/8.0.0, Database client version: libmysql - mysqlnd 8.0.0, PHP extension: mysqli curl mbstring, PHP version: 8.0.0).

Before we proceed there, we need to put the zip file of the proposed system here "C:\xampp\htdocs\dashboard", and you extract the file inside the dashboard folder.



Then, you will see the "MyGrocery" folder where the source code of the proposed system is located. It will also be accessed by you later when you have finished setup the database.



Go to phpMyAdmin, you will find XAMPP's default databases here. All you have to do is to create a database named "mydatabase" (small letters only, no space). This database names default to the proposed system, so it is important that the name you create in the SQL is the same in proposed system's default database name.

The screenshot shows the 'Databases' section of phpMyAdmin. On the left, there is a sidebar with a 'New' button and a list of existing databases: cmi_enrollment, dbpos, hrdb, hrdb, ig_clone, information_schema, ipos, karinderya, librarysystem, login, mysql, nodelogin, performance_schema, phpmysql, pop, sales, taskdb, and tblproduct. In the main area, there is a 'Create database' form with a text input field containing 'mydatabase'. Below the form is a 'Filters' section with a search bar labeled 'Containing the word:'. A table lists the existing databases with their collation and action buttons:

Database	Collation	Action
cmi_enrollment	utf8mb4_general_ci	[Check privileges]
dbpos	utf8mb4_general_ci	[Check privileges]
hrdb	utf8mb4_general_ci	[Check privileges]
hrdp	utf8mb4_general_ci	[Check privileges]
ig_clone	utf8mb4_general_ci	[Check privileges]
information_schema	utf8_general_ci	[Check privileges]
ipos	utf8mb4_general_ci	[Check privileges]
karinderya	utf8mb4_general_ci	[Check privileges]
librarysystem	utf8mb4_general_ci	[Check privileges]
login	utf8mb4_general_ci	[Check privileges]
mysql	utf8mb4_general_ci	[Check privileges]
nodelogin	utf8mb4_general_ci	[Check privileges]
performance_schema	utf8mb4_general_ci	[Check privileges]
phpmysql	utf8mb4_general_ci	[Check privileges]
pop	utf8mb4_general_ci	[Check privileges]
sales	utf8mb4_general_ci	[Check privileges]
taskdb	utf8mb4_general_ci	[Check privileges]
tblproduct	utf8mb4_general_ci	[Check privileges]
Console	utf8mb4_general_ci	[Check privileges]

Once you have created a database it will go right to the database you created. All you have to do is look for "import" in the XAMPP navigator bar (at the top of the page), and you'll see that there's a "choose file" button.

The screenshot shows the 'Import' page of phpMyAdmin. The URL in the address bar is 'localhost / 127.0.0.1 / mydatabase'. The page title is 'Server: 127.0.0.1 » Database: mydatabase'. The 'Import' tab is selected in the top navigation bar. A file selection dialog is open, showing a list of files from the 'MyGrocery\SQL' folder on the local disk (C:). The 'user_edit_profile.php' file is selected. The dialog has an 'Open' button at the bottom.

Then, just click the "choose file" button and go to "C:\xampp\htdocs\dashboard\MyGrocery\SQL", here is the imported database of the proposed system. The file name of the database is "mydatabase.sql".

After you select that file, go to the bottom of the page, find the "Go" button, and press for the database import to be successful. After you click that, you will see the tables that default to the proposed system.

The screenshot shows two instances of the phpMyAdmin interface. The top window is titled 'localhost / 127.0.0.1 / mydatabase' and displays the 'Import' configuration page. It shows a sidebar with databases like 'information_schema', 'mydatabase', and 'myfirstproject_laravel'. The main area contains 'Other options' (checkbox for 'Enable foreign key checks'), 'Format' (set to 'SQL'), and 'Format-specific options' (checkbox for 'Do not use AUTO_INCREMENT for zero values'). A red arrow points to the 'Go' button at the bottom right of this window. The bottom window is also titled 'localhost / 127.0.0.1 / mydatabase' and shows the results of the import. It lists 39 queries executed successfully. The log output includes MySQL logs, SQL mode settings, and transaction start commands. The status bar at the bottom of this window indicates the log was generated on '03/05/2022 5:54 pm'.

Once you have successfully imported the database, you can access the proposed system in any browser. You should always check the XAMPP control panel if Apache and MySQL are started. Once started just go to this link <http://localhost/mygrocery/>.

HOME PAGE OF THE SYSTEM

The screenshot shows a web browser window for 'My Grocery'. The header includes a logo, a search bar, and navigation links for Home, Products, FAQs, About Us, Contact Us, a bell icon, a shopping cart, a user profile, and Logout. Below the header is a green banner with the text 'MY GROCERY | ONLINE SHOPPING EXPERIENCE'. A welcome message states: 'Welcome to My Grocery. This is our group's main thesis application proposal. This is an online grocery application that offers a variety of different products that are locally available for customer's needs. We have a broad selection of products of Canned Products, Breads & Spreads, Snacks & Chips, Packed Noodles, Meats & Poultry and Fruits & Veggies.' Underneath is a section titled 'DELIVERY OPTION' with a note about cash on delivery. The main content area is titled 'AVAILABLE PRODUCTS' and features three images: 'CANNED GOODS' (shelves of canned items), 'BREADS & SPREADS' (various breads and spreads), and 'SNACKS & CHIPS' (various snacks and chips). The bottom of the screen shows a Windows taskbar.

The screenshot shows the same web browser window for 'My Grocery'. The layout has changed to a grid format. The 'AVAILABLE PRODUCTS' section now contains six images with labels: 'CANNED GOODS', 'BREADS & SPREADS', 'SNACKS & CHIPS', 'NOODLES', 'MEATS AND POULTRY', and 'FRUITS & VEGGIES'. The rest of the page structure remains the same, including the header, banner, and delivery information.

The screenshot shows a web browser window with the URL localhost/dashboard/MyGrocery/index.php. The page has a green header bar with the logo "MY GROCERY". The main content area features a green banner with the heading "MY GROCERY | ONLINE SHOPPING EXPERIENCE". Below the banner, there is a paragraph of text about the service, followed by a section titled "Our Mission" with a sub-section "See Our Products". The bottom of the page includes a footer with social media icons and a copyright notice.

Here at My Grocery, we offer great quality services for our dear customers. This Online Grocery or E-Commerce application was created by our team of developers and designers consisting of Shunn Gerold Villagonza, Joule Fajardo, James Perez and Mark De Guzman. You can easily navigate through out the system with ease, also you can browse and search your desired products and add them to cart for later purchases.

Our Mission

Our mission is to provide the customers a unique experience of shopping online with great ease and assurance, worry-free environment also securing their own safety by staying at home amidst the pandemic.

[See Our Products](#)

The screenshot shows a web browser window with the URL localhost/dashboard/MyGrocery/index.php. The page has a green header bar with the logo "MY GROCERY". The main content area features a green banner with the heading "Our Mission" and a paragraph of text about the service. Below the banner, there is a section titled "See Our Products". The bottom of the page includes a footer with social media icons and a copyright notice.

Our mission is to provide the customers a unique experience of shopping online with great ease and assurance, worry-free environment also securing their own safety by staying at home amidst the pandemic.

Our Mission

Our mission is to provide the customers a unique experience of shopping online with great ease and assurance, worry-free environment also securing their own safety by staying at home amidst the pandemic.

[See Our Products](#)

The screenshot shows the footer section of the My Grocery website. It includes the "MY GROCERY" logo, a social media links section with icons for Facebook, Twitter, Instagram, and Google+, and a copyright notice. On the right side, there are three columns: "LIST OF PRODUCTS" with links to All Products, Canned Products, Breads & Spreads, Snacks & Chips, Packed Noodles, Meats and Poultry, and Fruits & Veggies; "FAQ'S ABOUT" with links to Profile/Account, Add to Cart, Transactions, and General Help; and a "Links" section with various icons.

Our grocery is always there for you.

CONTACT US @

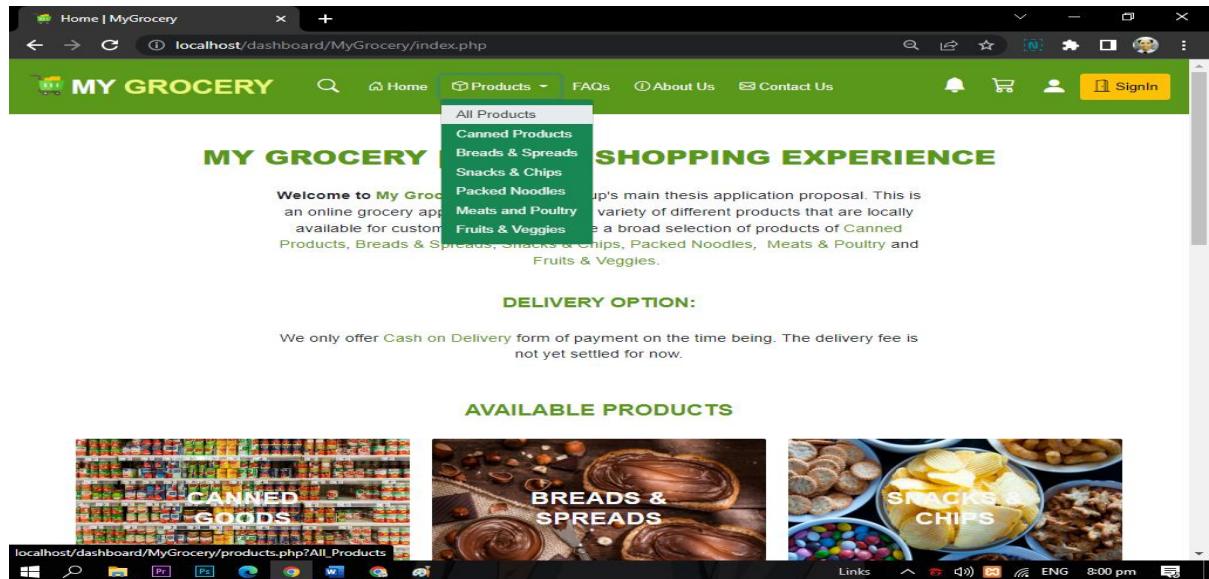
[f](#) [t](#) [i](#) [G](#)

© 2022 Copyright: [MyGrocery.com.ph](#)

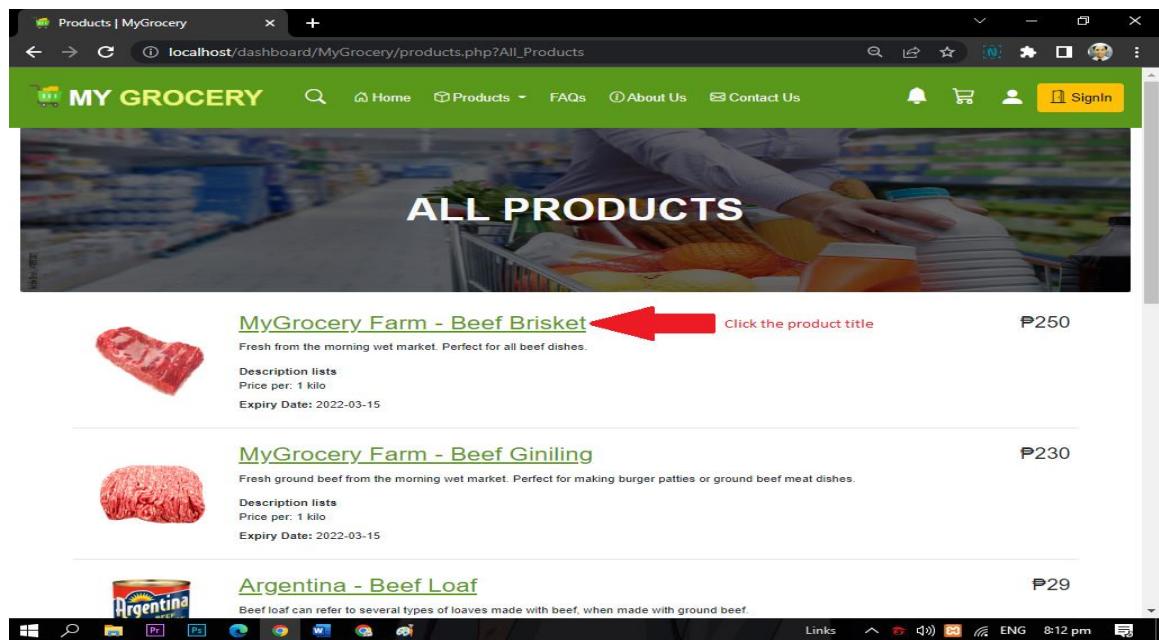
Links

HOW TO ADD ITEMS IN MY CART?

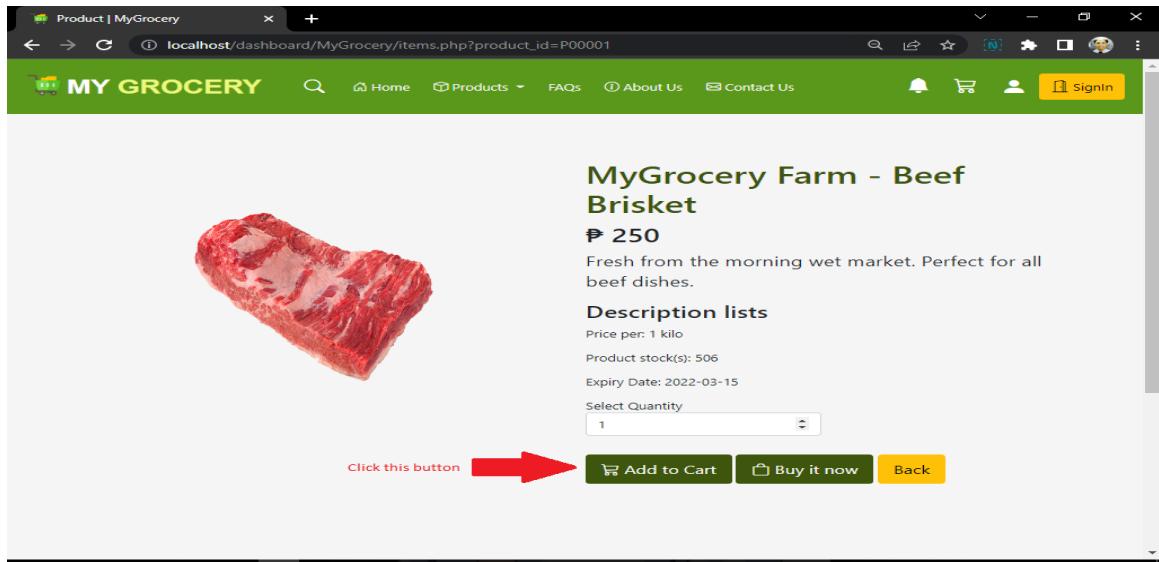
First of all, just look for the product button in the navigator bar, or look for the categorized products on the home page, you will find it in the welcome description where our products are highlighted or below it with pictures that are label the categorized products.



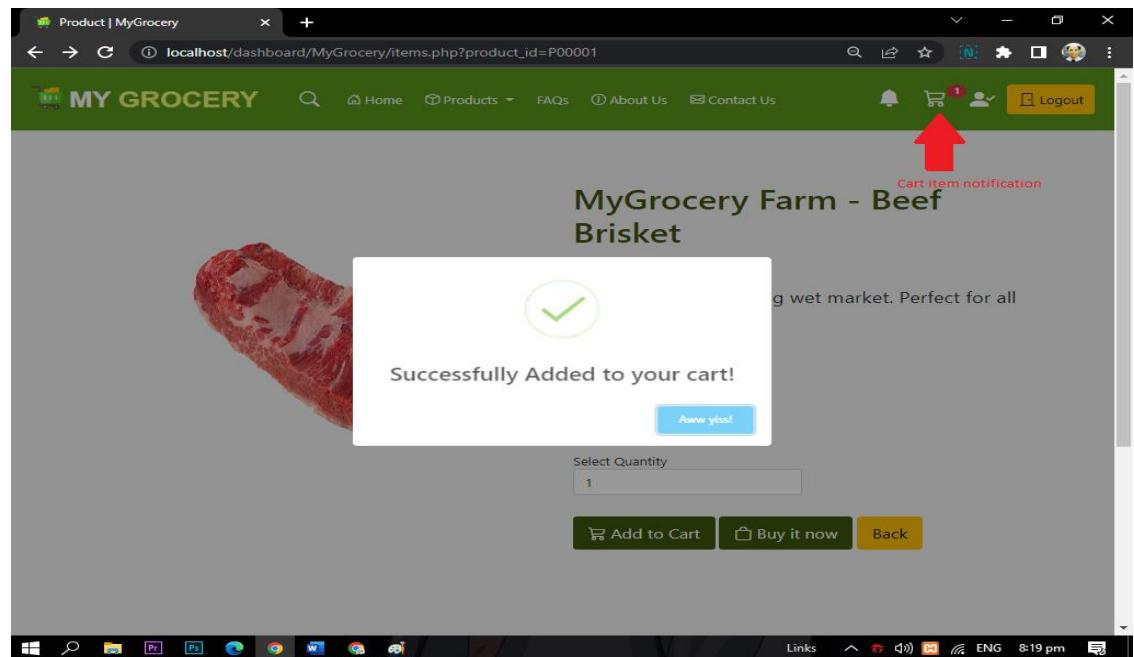
Second, find the product title on the product page and click it to be directed to the product description.



Third, you will find here the product description, and you can enter a quantity as to how many you need. Once you have entered the quantity you want, you can press the Add to cart button.

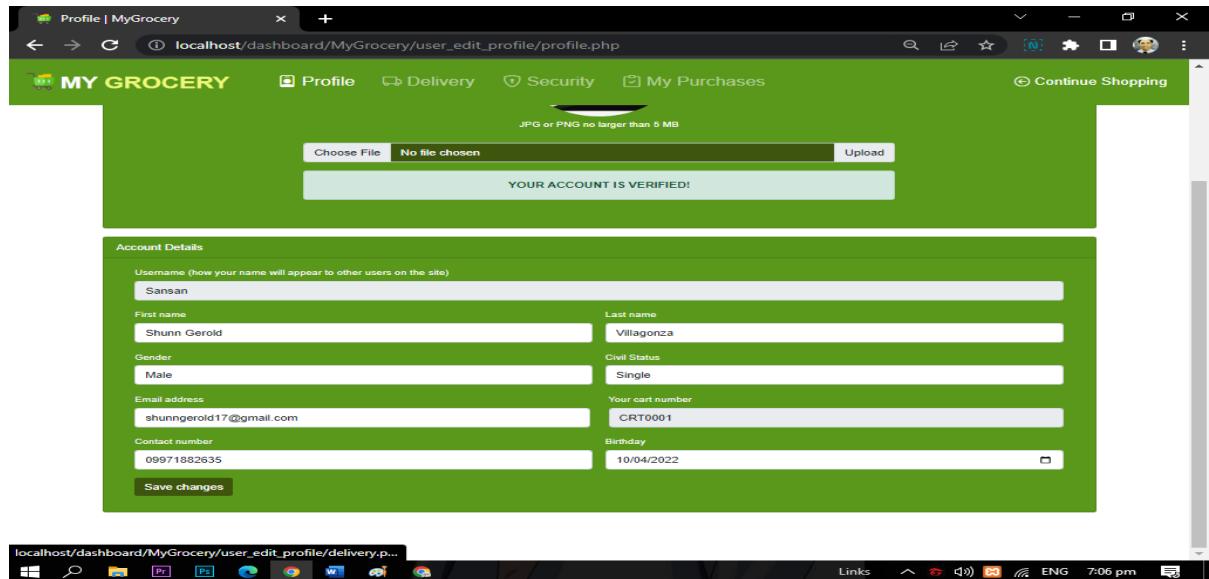


And successfully increased the contents of your cart. And you'll know it with the cart button on the right-side of your navigator bar.



HOW TO ORDER?

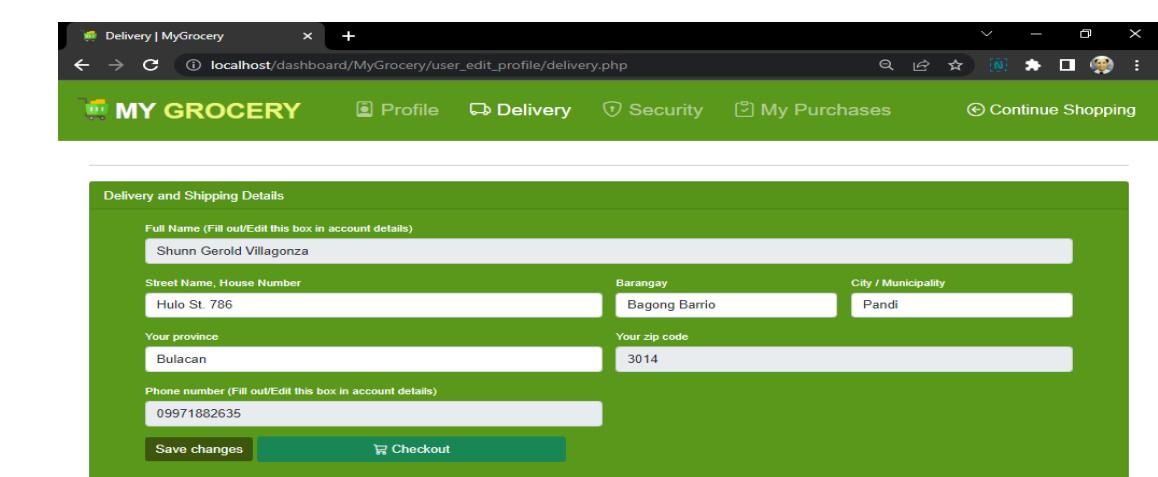
First of all, you need to fill in all the information here on the profile and delivery page. But you can no longer edit your username because this is what the proposed system will identify which user is accessing. And the cart number, you also can't edit it because it's the specific number of your cart when you order. All of these must be filled in so that we can deliver the product to your exact location.



The screenshot shows the 'Profile' section of the MyGrocery website. At the top, there is a file upload area with a placeholder 'Choose File' and a button 'Upload'. Below this, a green banner displays the message 'YOUR ACCOUNT IS VERIFIED!'. The main form is titled 'Account Details' and contains the following fields:

Username (how your name will appear to other users on the site)	Sansan
First name	Shunn Gerold
Last name	Villagonza
Gender	Male
Civil Status	Single
Email address	shunnerold17@gmail.com
Your cart number	CRT0001
Contact number	09971882635
Birthday	10/04/2022

At the bottom of the form are two buttons: 'Save changes' and 'Checkout'.



The screenshot shows the 'Delivery' section of the MyGrocery website. The main form is titled 'Delivery and Shipping Details' and contains the following fields:

Full Name (Fill out/Edit this box in account details)	Shunn Gerold Villagonza		
Street Name, House Number	Hulo St. 786	Barangay	Bagong Barrio
City / Municipality	Pandi		
Your province	Bulacan	Your zip code	3014
Phone number (Fill out/Edit this box in account details)	09971882635		

At the bottom of the form are two buttons: 'Save changes' and 'Checkout'.

Second, you go to the cart page, make sure your cart is full before you checkout. When there is content, you can press the checkout button below the total price.

The screenshot shows a web browser window for 'Cart | FMyGrocery' at 'localhost/dashboard/MyGrocery/cart.php'. The page has a green header with the 'MY GROCERY' logo and navigation links for Home, Products, FAQs, About Us, Contact Us, and Logout. Below the header is a table with columns 'Product', 'Quantity', and 'Price'. A single item, 'MyGrocery Farm - Beef Brisket', is listed with a quantity of 5 and a price of ₱1250. At the bottom, there are buttons for 'Back' and 'Checkout'. A red arrow points to the 'Checkout' button.

Product	Quantity	Price
MyGrocery Farm - Beef Brisket Available Stock(s): 511 Expiration date: 2022-03-15 Price: ₱ 250 Remove Item	<input type="button" value="-"/> 5 <input type="button" value="+"/>	₱ 1250.00
Subtotal		₱ 1250.00
Delivery Fee (Distance: 0km)		₱10.00
Total		₱ 1260.00

[Back](#) [Checkout](#)

Third, here in the confirm payment, you can see all your delivery and billing details. You can also edit it whenever you order here in our system. You will also find here all the contents of your cart that you order.

The screenshot shows a web browser window for 'Checkout | MyGrocery' at 'localhost/dashboard/MyGrocery/checkout.php'. The page has a green header with the 'MY GROCERY' logo and navigation links for All Products, Canned Products, FAQ'S ABOUT, Profile/Account, and Links. Below the header is a section titled 'MY GROCERY | CHECKOUT FORM' with a sub-instruction 'Confirm the necessary payment for your items that will be buying.' The page contains fields for 'Choose mode of payment' (radio buttons for Cash On Delivery, Credit card, and PayPal, with 'Cash On Delivery' selected), 'Delivery and Shipping address' (with fields for First name, Last name, Address, Postal Code, and a 'Billing Address' link with a red arrow), and a summary table for 'Items inside the cart' (listing the Beef Brisket item). At the bottom, there are buttons for 'Confirm Payment' (with a red arrow) and 'Back to Cart', and a note 'Click this to order.' A red arrow also points to the 'Edit delivery and shipping address' link.

MY GROCERY | CHECKOUT FORM
Confirm the necessary payment for your items that will be buying.

Choose mode of payment
Other payment methods are currently not supported.
 Cash On Delivery
 Credit card
 PayPal

Delivery and Shipping address

First name Shunn Gerold	Last name Villagonza
Address Hulo St. 786, Bagong Barrio, Pandi, Bulacan	Postal Code 3014

[Edit Billing Address](#) [Edit delivery and shipping address](#)

[Confirm Payment](#) [Back to Cart](#)

Click this to order.

Subtotal :	₱1250
Delivery Fee :	₱10
Total :	₱1260

And you'll see the message box "your order will arrive soon", which means you've already ordered all the items in your cart.

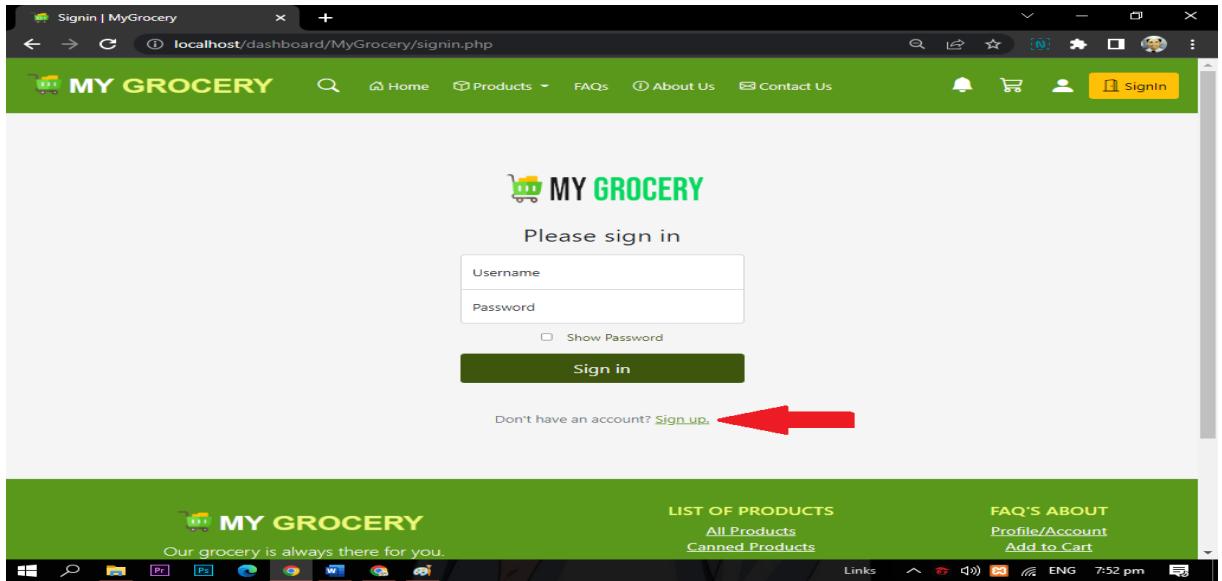
The screenshot shows a web browser window titled 'Cart | FMyGrocery'. The URL is 'localhost/dashboard/MyGrocery/cart.php'. The main content area displays a message: 'NO ITEMS IN YOUR CART' with a green checkmark icon. Below it, a box says 'Your items will arrive soon!' with a 'Awesome!' button. At the bottom right of the page, there is a 'Checkout' button. The top navigation bar includes links for Home, Products, FAQs, About Us, Contact Us, and Logout. The footer contains a logo for 'MY GROCERY' and a message: 'Our grocery is always there for you.' It also features links for LIST OF PRODUCTS (All Products, Canned Products), FAQ'S ABOUT (Profile/Account), and system status (Links, ENG, 7:08 pm).

HOW CAN I HAVE AN ACCOUNT?

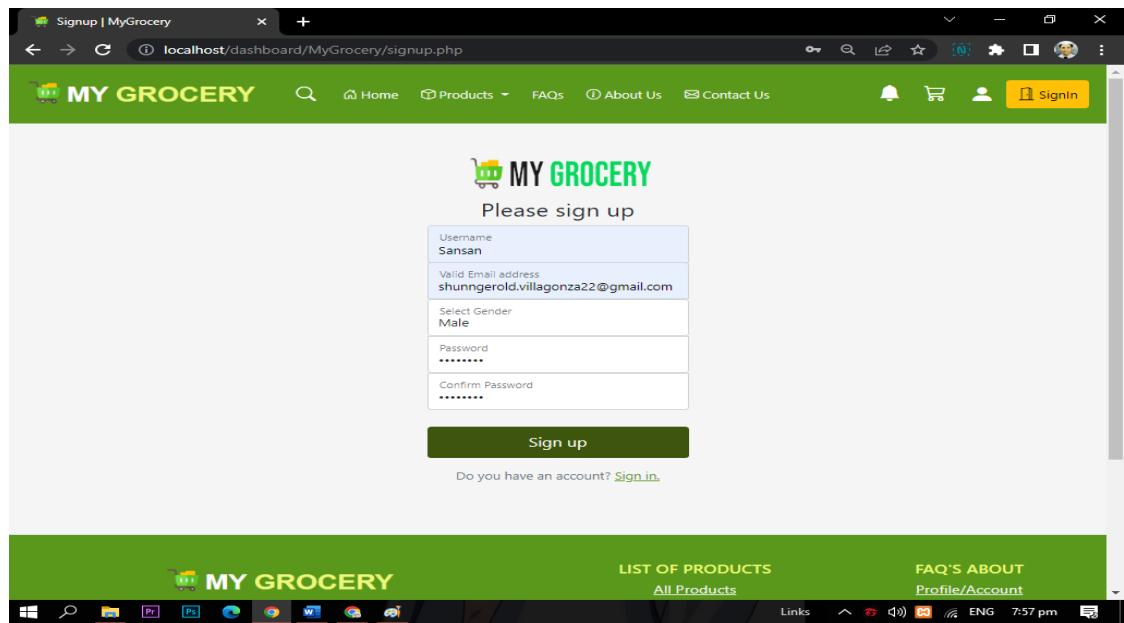
First, you need to find the sign in button in the navigator bar on the right. When you see that just click on it to go to the sign in form.

The screenshot shows a web browser window titled 'Home | MyGrocery'. The URL is 'localhost/dashboard/MyGrocery/index.php'. The main content area features a welcome message: 'Welcome to My Grocery. This is our group's main thesis application proposal. This is an online grocery application that offers a variety of different products that are locally available for customer's needs. We have a broad selection of products of Canned Products, Breads & Spreads, Snacks & Chips, Packed Noodles, Meats & Poultry and Fruits & Veggies.' Below this is a 'DELIVERY OPTION:' section stating 'We only offer Cash on Delivery form of payment on the time being. The delivery fee is not yet settled for now.' Further down is an 'AVAILABLE PRODUCTS' section with three categories: 'CANNED GOODS' (showing shelves of canned goods), 'BREADS & SPREADS' (showing various breads and spreads), and 'SNACKS & CHIPS' (showing various snacks and chips). The top navigation bar includes links for Home, Products, FAQs, About Us, Contact Us, and Logout. A red arrow points to the 'SignIn' button in the top right corner. A tooltip next to it says 'Click this to show sign in form and signup button.' The footer contains a Windows taskbar with various icons and a status bar showing 'Links', 'ENG', '7:46 pm'.

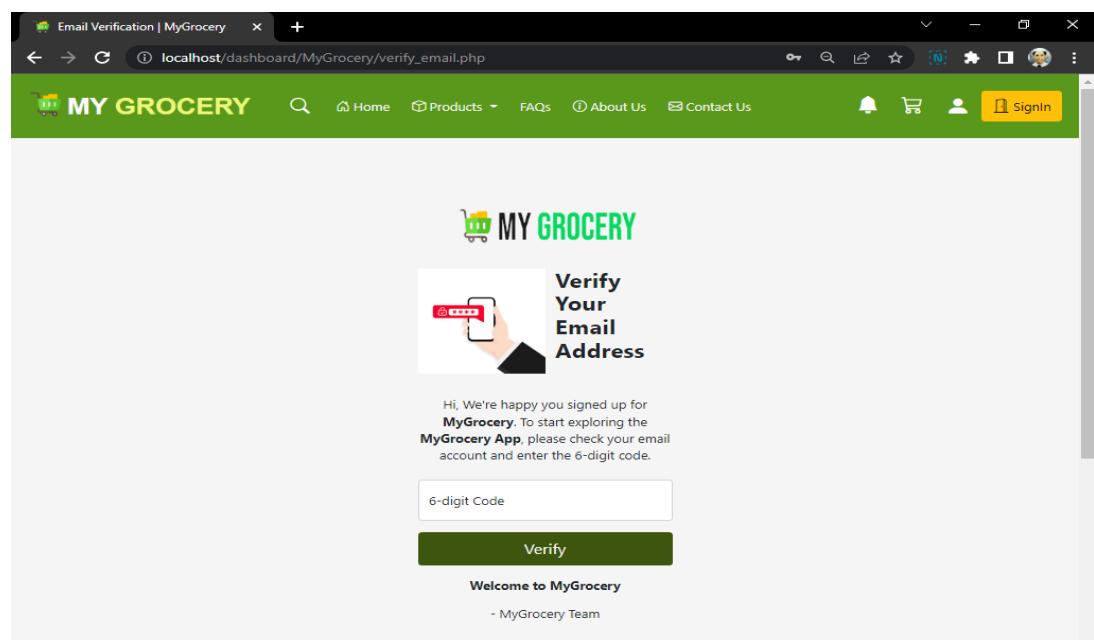
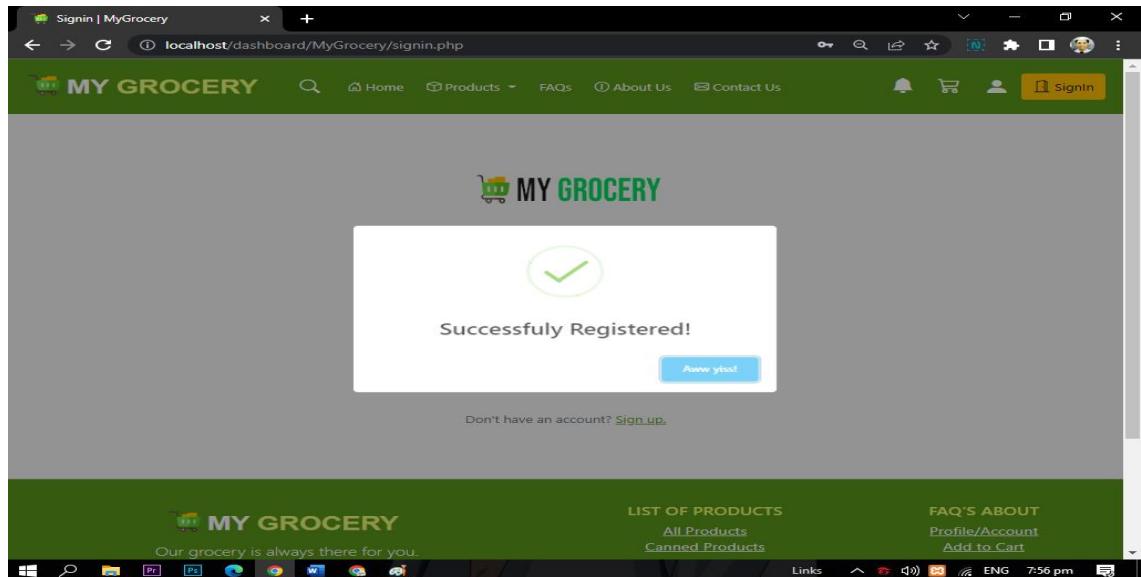
Second, just look for the signup button at the bottom of the sign in form. Once you find it, just click on it to be directed to the signup form.



Third, you just need to fill in all the boxes here on the form. All of these are required, and the email you enter must be a valid email for us to send the verification code for your email there. The verification email will occur when you sign in with the account you created.



And finally, a message box will appear with "Successfully registered!", Meaning that the account you created is already registered in the database. And you can now sign in to the system, and the verify your email page will appear.



Curriculum Vitae



Mark Angelo D. De Guzman

Profile

Age: 22 years old
Gender: Male
Civil Status: Single
Religion: Catholic
Citizenship: Filipino

Contact

- 0118 MA. Fernando St. San Roque Angat, Bulacan
- markdeguzman329@gmail.com
- Mark De Guzman
- 09776348986

Skills

Programming Languages

- Python - More than a year
- JavaScript - 1 year
- SQL - 2 years
- PHP - 2 years

Others

- Typing & Encoding Skills
- Logical & Technical Support
- Oriented in Different MS Office - Word, Excel, PowerPoint and Access
- Oriented in Basic Photo & Video Edititting

Objectives

To be able to gain enough experience and be able to share my knowledge in the field of Information Technology.

Education History

Tertiary

BS Computer Science 2018 - 2022
College of Mary Immaculate of Pandi
Bulacan Inc.
Pandi, Bulacan

Secondary & Senior High

Accountancy and Business 2012 - 2016
Management Strand (ABM) 2016 - 2018
Franklin Delano Roosevelt Memorial
School
Angat, Bulacan

Training and Seminars attended

On the Job Training Aug - Dec 2021
Web Development
College of Mary Immaculate of Pandi
Bulacan Inc.
Pandi, Bulacan

Building Android Application: March 2020
"Complete I.T Services"
College of Mary Immaculate of Pandi
Bulacan Inc.
Pandi, Bulacan

Computer Science Day: March 2019
"Achieving Solidarity through I.T"
College of Mary Immaculate of Pandi
Bulacan Inc.
Pandi, Bulacan

Work Experience

**Tyre Mate Marketing & Multi Link Tire
Exchange and Service Center**
454 General Alejo G. Santos Hwy,
Angat, Bulacan

December 1 -21 , 2017

Work Immersion

- Assigned to sales and warehouse for inventory monitoring.
- Manage payables in the shop.
- Encoding of the stocks and sales in the shop.

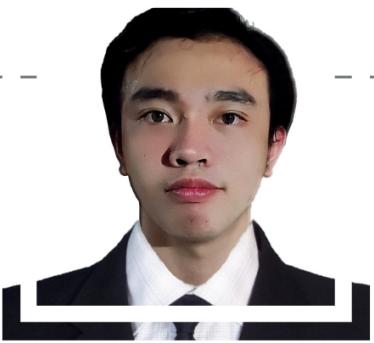
Character Reference

Mr. Joseph Bernard Reyes

- Computer Science Department Head/ Professor
- College of Mary Immaculate of Pandi Bulacan Inc.

I HEREBY CERTIFY THAT THE ABOVE INFORMATION ARE TRUE AND CORRECT
WITH ALL OF MY KNOWLEDGE.


MARK ANGELO D. DE GUZMAN
Applicant



Jouie C. Fajardo

Profile

Age: 21 years old
Gender: Male
Civil Status: Single
Religion: Catholic
Citizenship: Filipino

Contact

- Bagong, Barrio, Pandi, Bulacan
- jouiefajardo.15@gmail.com
- Jouie Fajardo
- 09395131138

Skills

Programming Languages

- Python - More than a year
- JavaScript - 1 year
- SQL - 2 years
- PHP - 2 years

Others

- Typing & Encoding Skills
- Logical & Technical Support
- Oriented in Different MS Office - Word, Excel, PowerPoint and Access
- Oriented in Basic Photo & Video Editting

Objectives

Technical Skills: Web Development (PHP, HTML, JavaScript, MySQL).
Database (Microsoft Access, MySQL).

Education History

Tertiary	2018 – 2022
BS Computer Science	
College of Mary Immaculate	
Pandi, Bulacan	
Senior High	2016 – 2018
Science Technology Engineering	
Mathematics (STEM)	
College of Mary Immaculate	
Pandi, Bulacan	
Junior High	2012 – 2016
Virginia Ramirez Cruz High School	
Siling, Bata, Pandi, Bulacan	
Elementary	2006 – 2012
Bagong Barrio Elementary School	
Bagong, Barrio, Pandi, Bulacan	

Training and Seminars attended

On the Job Training	Aug – Dec 2021
Web Development	
College of Mary Immaculate of Pandi	
Bulacan Inc.	
Pandi, Bulacan	
Building Android Application:	March 2020
"Complete I.T Services"	
College of Mary Immaculate of Pandi	
Bulacan Inc.	
Pandi, Bulacan	
Computer Science Day:	March 2019
"Achieving Solidarity through I.T"	
College of Mary Immaculate of Pandi	
Bulacan Inc.	
Pandi, Bulacan	

Character Reference

Mr. Joseph Bernard Reyes

- Computer Science Department
Head/ Professor
- College of Mary Immaculate of
Pandi Bulacan Inc.

I HEREBY CERTIFY THAT THE ABOVE INFORMATION ARE TRUE AND CORRECT
WITH ALL OF MY KNOWLEDGE.


Jouie C. Fajardo
Applicant



James F. Perez

Profile

Age: 21 years old
Gender: Male
Civil Status: Single
Religion: Catholic
Citizenship: Filipino

Contact

📍 507 San Roque Angat, Bulacan
✉️ james.perez21.jp@gmail.com
👤 James Perez
📞 09553174547

Skills

Programming Languages

- **Python** - More than a year
- **JavaScript** - 1 year
- **SQL** - 2 years
- **PHP** - 2 years

Others

- **Typing & Encoding Skills**
- **Logical & Technical Support**
- **Oriented in Different MS Office** - Word, Excel, PowerPoint and Access
- **Oriented in Basic Photo & Video Editting**

Objectives

To be able to gain enough experience and be able to share my knowledge during the course that I have gained in the field of Computer Science.

Education History

Tertiary

BS Computer Science 2018 – 2022
College of Mary Immaculate of Pandi
Bulacan Inc.
Pandi, Bulacan

Senior High

General Academic Strand (GAS) 2016 – 2018
Colegio De Sta. Monica De Angat
Angat, Bulacan

Junior High

Colegio De Sta. Monica De Angat 2012 – 2016
Angat, Bulacan

Elementary

Colegio De Sta. Monica De Angat 2006 – 2012
Angat, Bulacan

Training and Seminars attended

On the Job Training Aug – Dec 2021
Web Development

College of Mary Immaculate of Pandi
Bulacan Inc.
Pandi, Bulacan

Building Android Application: March 2020

"Complete I.T Services"
College of Mary Immaculate of Pandi
Bulacan Inc.
Pandi, Bulacan

Computer Science Day: March 2019

"Achieving Solidarity through I.T"
College of Mary Immaculate of Pandi
Bulacan Inc.
Pandi, Bulacan

Work Experience

Fresh Q Enterprises Corporation

May 2017

457 Maximo St., Sulucan, Angat,

Bulacan

Assistant Supervisor

Character Reference

Mr. Joseph Bernard Reyes

- Computer Science Department
- Head/ Professor
- College of Mary Immaculate of Pandi Bulacan Inc.

I HEREBY CERTIFY THAT THE ABOVE INFORMATION ARE TRUE AND CORRECT
WITH ALL OF MY KNOWLEDGE.



James F. Perez
Applicant



Shunn Gerold T. Villagonza

Profile

Age: 22

Gender: Male

Civil status: Single

Religion: Catholic

Citizenship: Filipino

Contact

B1, L20, S8, P1, Pabahay-2000,
Muzon, SJDM, Bulacan
shunngerold17@gmail.com
@Sansan.villagonza22
09971882635

Skills

Programming Languages

PHP - 2 years
SQL - 2 years
Laravel - 1 year
Java - Less than 1 year
JavaScript - Less than 1 year
C++ - Less than 1 year
Python - Less than 1 year

Others

Typing skill
Microsoft Office - Word, Excel,
Powerpoint, Access
Basic hardware troubleshooting
Basic photoshop
Analytical skill

Objectives

To be able to gain meaningful experience and to share my knowledge within the field of Information Technology by recruiting analytical and technical skills or any position that suits my personality in the best way that can help achieve the company's mission and vision.

Education History

Tertiary

BS Computer Science 2018 – 2022
College of Mary Immaculate of Pandi
Bulacan Inc.

Senior High

General Academic Strand (GAS) 2016 – 2018
Ninoy Aquino Senior High School
Longos, Malabon City

Junior High

Longos National High School 2012 – 2016
Longos, Malabon City

Primary

Ninoy Aquino Elementary School 2006 – 2012
Longos, Malabon City

Training and Seminars attended

On the Job Training Aug – Dec 2021
Web Development
College of Mary Immaculate
of Pandi Bulacan Inc.
Pandi, Bulacan

Robotics Process Automation February 2019
ACLC College
Sta. Maria

On the Job Training February 2018
Public Employment Service
Office (PESO)
City of Malabon

Work Experience

La Primera Pollo, Inc.
111 Pulong Gubat Rd, Balagtas, Bulacan

March – July 2020

Cleaning Maintenance

- I was assigned to clean the food processing equipment.
- I was assigned to keep the workplace clean.

Character References

Mary Grace S. Supremo

- HM Student at ICAS Philippines inc.
- 169 F. Mariano Avenue, Dela Paz, Pasig City
- 0975-801-0266

Catherine Rain Ang

- Laundry Staff at Laundry Best
- Valenzuela City
- 0995-553-3033

Mary Ann Bataller

- Warehouse staff
- 167 F. Mariano Avenue, Dela Paz, Pasig City
- 0938-085-5406

I HEREBY CERTIFY THAT THE ABOVE INFORMATION ARE TRUE AND CORRECT WITH ALL
OF MY KNOWLEDGE.

SHUNN GEROLD T. VILLAGONZA

Applicant