**Ordering and Delivery Tracker App for Quadro King Water Station Retail Store**

**A Capstone Project Presented to the Faculty of the**

**College of Computer Studies**

**AMA Computer College – Las Piñas Campus**

**In Partial Fulfillment for the Requirements of the Degree of**

**Bachelor of Science in Information Technology (BSIT)**

**Marlo, Dael**

**Alegrid, Floren Joseph A.**

**Belbis, Luis Gabriel O.**

**February 2021**

**ACKNOWLEDGEMENT**

The authors would like to express their profound and sincerest gratitude to the following individuals who helped in successfully accomplishing this study:

First and foremost, to **Prof. Karren de Lara** the group’s academic adviser, for the time, patience, support and guidance to the researchers despite the busy schedule and never failing to accommodate and guide them all throughout the study.

To the researchers’ parents for providing them unfailing support and continuous encouragement throughout the months of the study and through the process of researching and writing this study. For serving as an inspiration and became the fuel to keep the researchers from moving forward.

**The Researchers**

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**DISCLAIMER**

The study has been made the product of hard work of the researchers. It has been approved and accepted by the panel of reviewers. Hence, no part of this paper maybe used without proper citation or approval from the authors.

**Chapter 1**

**PROJECT AND ITS BACKGROUND**

**Project Context**

Nowadays, people lean on online deliveries for their essential needs like food, groceries, and etc. The Ordering and Delivery Tracker App will innovate the services of water delivery businesses and also their management of it. The goal of the researchers is to make an application that will help the management of the orders, and to track the delivery riders, also to track the address of the customers using Global Positioning System (GPS).

An online system will always ensure that a role is/are carried out to achieve a precise outcome. Customers or clients will receive the same level of service. The system will be able to manage employees, and tasks more effectively.

Because of the many advantages and benefits of an online system, more people are saying that they prefer to buy their needs online. Buyers conduct their own research on a certain product to see if the said product that they will buy will be okay to use. The internet makes doing business a lot faster and easier. It has led to changes in the way people do business with a rapidly growing world-wide trend towards online shopping or e-commerce.

Bottled water is drinking water packaged in plastic bottles we call them as a “Big Blue Jug”, “Mineral water Gallon”. It is commonly sold in blue and may range from large serving container to the smallest size of bottled water. The Mineral water, drinking water, Water Station industry in the Philippines made its popularity in the early 2000s because there was a period were Filipinos find it difficult to access safe drinking water. This scarcity made businessmen invest for drinking water refilling establishment and has been seen as the main source of clean and safe drinking water. But most of these businessmen didn’t invest for tech solutions such as online transaction because doing transactions offline are far more accessible to them and they would think investing in such tech solutions would cause wasted resources since people are used in our current ordering system. The major disadvantages of this offline system are repeated calls from the customer and to customer, if multiple orders are placed at the same area the delivery person has to travel multiple times, and there is no order tracing and there is a direct contact from delivery person to customer. Customers’ are also at risk of infection if they have to go outside of their homes to order water containers. In this current system may help contribute the spread of deadly COVID-19 as we are practicing social distancing. This paper proposes an android application for water vendors (Quadro King as the main beneficiary), delivery person and for the customer. Customers’ can make order over the application for water container ordering and can search for the nearest water station in their locality which provides online transaction and make payment online. The delivery person will be able to track the customers’ exact location and find the best and efficient route of delivery and shopkeepers will be able to showcase their water products over the android application

This study looks at the current ordering system showed a lot of disadvantages. First is in placing an order, the customer has to call the water station’s landline number. In most of household don’t own landline number so some of them needed to drive down to the shop to order water. Texting or DM’s to the shopkeeper. Second is placing an order over the phone lacks visual confirmation that the order was placed correctly. Third is every Water Station needs a certain person to take order over the phone or walk-in, to offer a customer satisfaction and process the payment. Walk-in orders could increase the possibility of transferring deadly COVID-19 virus. Last is there are no ways to boost the sales of the shop without a product showcase online.

Online systems are accessible from any computer or smartphones as long as they are connected to the internet. Users can manage their businesses anywhere. Online systems are another version of information system, which is the process of tools for storing, using, managing, and gathering of data and communications in an organization. Online platforms have innovated the access to all information. In our everyday lives, we use the internet to access different kinds of information and data that we search upon. We also use the internet to shop, and communicate with others.

There are various types of systems, they are transaction processing systems, decision support systems, knowledge management system, and learning management systems. Transaction processing system is a set of information that processes the data transaction in a database system that monitors transaction programs used. A decision support system is a computerized program use to support determinations, judgements, and courses of actions in a company, organization, or a business. Knowledge management system is any kind of IT system that retrieves and stores knowledge to improve understanding, collaboration, and process alignment. Learning management system is a software application for the documentation, administration, reporting, tracking, automation and delivery of educational courses. Database management system is a software package designed to define, manipulate, retrieve and manage data in a database.

Office information systems uses a software, hardware and networks to improve work flow and help communications among employees.

**Purpose and Description**

The popularity of online shopping here in the Philippines has been proven to ease our hectic daily lives. Today, most of the customers don’t need to drive to the shops of Divisoria or Malls for buying products but preferably they check over the mobile app for prices, offers reviews and order online. In Metro Manila, water containers are purchased from the water vendors for their needs for the day. The current system working in Metro Manila is where the customer calls or go to the shop to order the water container by providing the shopkeeper their address and then a delivery person delivers the order to the customer’s house. This current system has a lot of disadvantages. The major disadvantages of this offline system are repeated calls from the customer and to customer, if multiple orders are placed at the same area the delivery person has to travel multiple times, and there is no order tracing and there is a direct contact from delivery person to customer. Customers’ are also at risk of infection if they have to go outside of their homes to order water containers.

The proposed system although its main purpose is to provide tracker and ordering tracking system it does not disregard the customer security aspects. The system will ensure that the customers information as well as other user of this system are safe and will also ensure that this information will not be leaked in the internet. Account information such as address, name, and contact information is securely stored in our databases using Firebase authentication services. The proponents will be also be using firebase’ s open source and scalable feature Firebase Analytics this module will provide usage reports of the app and the connectivity of all users. Tracker modules in this system are built in Android studio and this will be supported using Google Map Services. Essentially, the app is defined to provide navigation for the delivery person and on-the-map order tracker for the customer. This module is designed for the customer. Customer app, the customer has to provide their details upon signing up. Details like Name, Phone Number, Email Address(user-id) and password. The password can be changed by the customer anytime. The proposed app has to provide GUI in the app for Profile, Search Store, Place Order, Track Order, Cancel order. The administrator app, this component is designed for the developers. This will provide all authorities concerned to admin. Username and password is provided to this app by all of the users. This app will keep track of users like, Customer, Delivery Personnel and Store Owner.

Store Owner app, this app is for shopkeeper or store owner who provides water container for the customers. This owner has to provide details like name of the shop, owner’s name, water station address, phone number and email address to register for the username and password. Delivery Personnel’s App this app has one special feature which help the driver to deliver the product efficiently. The features provided are: orders, Routes, Status of the order, payment (COD).

**Objective of the Study**

The main objectives of this study is to innovate the methods in ordering clean drinking water and also to innovate the process of managing the water station.To provide tech solutions for Quadro King Water station for their business

1. To provide ease in ordering drinking water without the customer having to drive down to the shop to order water
2. To provide the Delivery Person a In-app Map Navigation of the customers exact location and to provide efficient routes.
3. To know the advantages of having this app in Water refilling business with the new and improved monitoring and online transactions.
4. To lessen the paper works in the environment by using the app as the monitoring peripheral.

**Significance of the Study**

The beneficiaries of the proposed system are the owner, employees and clients/customers of Quadro King Water Station, aims to cater to people easily using a mobile application. In order to make orders without the aim of going outside of their houses, or calling the water station, the customers will only need to download the application and register an account to be able to place orders like any other online delivery services.

**Customers** - once they already have an account for the delivery application, it will only take them a few clicks to have their orders placed, their address is already saved and once the moderator of the application confirms the order, they will proceed to prepare and deliver the order.

**Owners -** Owners of different water station businesses will also be able to use this application to improve their businesses. It will improve the way of transacting with customers.

**The proponents -** this application will be a stepping stone for the start of their IT careers. The aim for this research is not just to innovate the water delivery service, but also to showcase their skills and to learn from different people, and the opinions of others.

In the completion of this project the proponents is expected to learn and improved a lot in coding and programming in android, java, and kotlin. And they can also improve their skills in integrating app services like Google Map and Firebase utilities.

**Scope and Limitation**

This system provides four (4) components of application which are the customers app, Admin app for maintenance, Store Owner of the water station (Quadro King) and delivery personnel app. The system will provide user-friendly graphical user interfaces and data flow to all of the components.

**Customer App**

This module is designed for the customer. The customer has to provide their details upon signing up. Details like Name, Phone Number, Email Address(user-id) and password. The password can be changed by the customer anytime. The proposed app has to provide GUI in the app for Profile, Search Store, Place Order, Track Order, Cancel order.

**Admin**

This component is designed for the developers. This will provide all authorities concerned to admin. Username and password is provided to this app by all of the users. This app will keep track of users like, Customer, Delivery Personnel and Store Owner.

**Store Owner’s App**

This app is for shopkeeper or store owner who provides water container for the customers. This owner has to provide details like name of the shop, owner’s name, water station address, phone number and email address to register for the username and password.

**Delivery Personnel’s App**

This app has one special feature which help the driver to deliver the product efficiently. The features provided are: orders, Routes, Status of the order, payment (COD).

In general, the study focuses on the innovation of the water delivery services. Instead of relying on calls or text messages, the app will provide a new approach for them. The fast growing of the online delivery services will also affect the water delivery business for a better experience for both the owner and the customers. The current working strategy of the water station owners are old-fashioned and there is no use of technologies like internet, android and digital currency. It can be concluded that the proposed application will be effective in terms of providing solution to the current working method. This application provides a customer an android app where he can place water order and also track orders. It also helps the water station owner to maintain records oh their customers systematically and reduces a lot of paper works. This application will provide advantages like Water Station locator, customer satisfaction interfaces(in-app), order process estimate time of delivery. However due to time constraints this will app will not be able to feature online transactions using credit and/or debit card options for time being since the current system of acquiring API for an Android system may take a few months before the other banks who have technologies to accept payment online.

Although the research reached its aims, there were some unavoidable limitations. For now, the proposed system will focus on the specific areas such as: Pilar Village, Almanza Uno, and TS Cruz village which are all located in Las Piñas City.

The tracker app will not be available in iOs.

The application will only run-on Android devices with android version Kitkat or higher version.