

**Benefits of a Web-based Salon and Spa Business Directory and
Booking System in Metro Manila**

A Capstone Project

Presented to the Faculty of the Information Systems Program

School of Management and Information Technology

De La Salle-College of Saint Benilde

Manila, Philippines

In Partial Fulfillment of the Requirements for the Degree

Bachelor of Science in Information Systems

By

De Guzman, Kyle

Fong, Von Drick

Lacuata, Kevin Duane

Ladrica, Jericho Andrei

March 25, 2022

Table of Contents

Table of Contents	ii
Executive Summary	v
List of Tables	vi
Chapter 1: Introduction.....	1
1.1 Project Context.....	1
1.2 Purpose and Description	2
1.2.1 Significance of the Study	2
1.2.2 Theoretical Framework	3
1.2.3 Conceptual Framework	4
1.3 Objectives	8
1.3.1 General Objective	8
1.3.2 Specific Objectives	9
1.4 Statement of the Problem or Opportunity	11
1.5 Scope and Limitations.....	13
Chapter 2: Review of Related Literature/Systems.....	17
2.1 Review of Related Literature	17
2.1.1 Defining Personal Care Services in the Philippines	17
2.1.2 Problems Spa and Salon Customers and Businesses are Facing	17
2.1.3 Engaging Service Activities in Metro Manila	19
2.1.4 The Need for Booking Systems of Spas and Salons.....	20
2.1.5 Benefits of Booking Systems.....	21
2.1.6 Benefits of an Online Business Listing Directory	22
2.1.7 Security and Data Privacy	23
2.1.8 Business Requirements	33
2.1.9 Online Booking Issues and Possible Solutions	35
RRL Synthesis	37
Chapter 3: Technical Background	40
3.1 Overview of Existing Systems.....	40
3.1.1 Customer Records	40
3.1.2 Reminders and Notifications to Customers	41

3.1.3	Business Directory Yelp	42
3.1.4	Geolocation of Google Business Profile	43
3.2	Current Trends and Technologies to be Used in the Proposed System	44
3.3	Development Plan / Framework	46
3.4	Application Benchmarking	47
Chapter 4:	Methodology, Results and Discussions	50
4.1	Research Method and Design(s) Used	50
4.2	Population Frame and Sampling Scheme	50
4.3	Description of Respondents	51
4.4	Instruments of the Study	51
4.5	Data Gathering Procedures	53
4.6	Results and Discussions	54
4.6.1	Requirements Analysis	86
Functional Requirements	86	
Non-Functional Requirements	96	
4.7	Requirements Documentation	98
4.7.1	Activity Diagrams	98
4.7.2	System Sequence Diagrams	118
4.8	Design of Software, Systems, Product and/or Processes	126
4.8.1	Entity Relationship Diagram	126
4.8.2	Database Dictionary	129
4.8.3	Sample of High-Fidelity Prototype Screens	135
4.9	Development and Testing	142
4.10	Implementation Plan	143
4.10.1	Work Breakdown Structure	143
4.10.2	Hardware and Software Requirements (Development and Deployment)	143
4.11	Implementation Results	144
4.11.1	User Acceptance Test and Test Case Analysis	144
Chapter 5:	Recommendations	152
5.1	Summary of Findings	152
5.2	Conclusions	152
5.3	Recommendations	152
List of Appendices	161	
Letter of Request to Survey Respondents	161	

Questionnaires Used to Respondents.....	163
Proof of Survey Gathering	179
Curriculum Vitae	182
RECOMMENDATIONS	199
Statistical Treatment of Data	199

Executive Summary

With the initial first-hand experience and observations of the researchers that Spas and Salons in Metro Manila mostly does not utilize digitalization or any technological tools to use for business process, this research proposal aims to study the reason behind that and to propose a solution to improve the business performance of spas and salons specifically, and to introduce customers an easy way to find and book appointments to them. This study proposes to create a platform — in Metro Manila — that will help the two interact with one another in a fast and efficient matter, with the overall goal of benefiting both sides.

With the help of our thesis advisers and panelists, this research paper provides the stated problem, the objectives, related literatures, tools used for the research, and the design and implementation of the proposal.

List of Tables

Table 2.1: OWASP Top Ten Security Risks of 2021	25
Table 2.2: A synthesis of all related literature and its relation to the study.....	37
Table 3.1: Minimum Requirements for Web Development	45
Table 33.23.2: Benchmark Analysis Table.....	47
Table 4.1: 3-point Likert scale to measure how important it is to address the problem	53
Table 4.2: 5-point Likert scale to measure frequency.....	53
Table 4.3: 3-point Likert scale to measure preference	53
Table 4.4: Have you waited long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment? [Frequency]	60
Table 4.5: Have you waited long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment? [Importance]	61
Table 4.6: Have you ever forgotten that you made an appointment and failed to show up? [Frequency]	61
Table 4.7: Have you ever forgotten that you made an appointment and failed to show up? [Importance].....	62
Table 4.8: Have you ever been in a Salon/Spa business but then some facilities are not available, or some employees are not available to cater your particular needs? [Frequency]	62
Table 4.9: Have you ever been in a Salon/Spa business but then some facilities are not available or some employees are not available to cater your particular needs? [Importance]	63
Table 4.10: Frequency of Devices Owned by Businesses	66
Table 4.11: Miscommunication with clients (in terms of service offered, customer service choice, and etc.) [Frequency]	74
Table 4.12: Miscommunication with clients (in terms of service offered, customer service choice, and etc.) [Importance]	74
Table 4.13: Customers Lack of requirements before service such as IDs, Vaccination Cards, Time Scheduled, and etc. [Frequency]	75
Table 4.14: Customers Lack of requirements before service such as IDs, Vaccination Cards, Time Scheduled, and etc. [Importance]	75

Table 4.15: Accidental redundant bookings or intentional spamming/trolls who keeps making reservations. [Frequency]	76
Table 4.16: Accidental redundant bookings or intentional spamming/trolls who keeps making reservations. [Importance]	77
Table 4.17: Tendency to disorganize the listing of our customer appointments [Frequency]	77
Table 4.18: Tendency to disorganize the listing of our customer appointments. [Importance] ...	78
Table 4.19: Customer no show / Sudden cancellation. [Frequency]	78
Table 4.20: Customer no show / Sudden cancellation. [Importance]	79
Table 4.21: Miscommunication amongst employees (In terms of who will do the job, what facility/equipment to operate, and etc.) [Frequency]	79
Table 4.22: Miscommunication amongst employees (In terms of who will do the job, what facility/equipment to operate, and etc.) [Importance]	80
Table 4.23: Failure to remember the appointments made by the customers [Frequency]	81
Table 4.24: Failure to remember the appointments made by the customers [Importance].....	81
Table 4.25: Trouble distributing employee workload [Frequency]	82
Table 4.26: Trouble distributing employee workload [Importance]	82
Table 4.27: Not enough employees/facilities to cater to the customer’s desired service at the time they are already in our establishment [Frequency]	83
Table 4.28: Not enough employees/facilities to cater to the customer’s desired service at the time they are already in our establishment [Importance]	83
Table 4.29: Functional Requirements	86
Table 4.30: Appointments Table.....	129
Table 4.31: Bookings Table	130
Table 4.32: Businesses Entity Table	130
Table 4.33: Categories Entity Table	130
Table 4.34: Customers Entity Table	131
Table 4.35: Expected Durations Entity Table	131
Table 4.36: Features Entity Table (from subscription package).....	131
Table 4.37: Feature Consumptions Entity Table (from subscription package)	132
Table 4.38: Feature Plan Entity Table (from subscription package)	132
Table 4.39: Feature Tickets Entity Table (from subscription package).....	132

Table 4.46: Services Entity Table	134
Table 4.47: Subscriptions Entity Table (from subscription package).....	135
Table 4.48: Subscription Renewals Entity Table (from subscription package).....	135

List of Figures

Figure 1.1: Unified Theory of Acceptance and Use of Technology Model (UTAUT)	4
Figure 1.2: Input-Process-Output (IPO) Framework of the Study	5
Figure 1.3: Input-Process-Output (IPO) Framework of the System	7
Figure 2.1: Sample of a business permit	33
Figure 3.1: Booksy.....	40
Figure 3.2: Boulevard Software Solution Message Feature	41
Figure 3.3: Sample of Directory Page – 1	42
Figure 3.4: Sample of Directory Page – 2	42
Figure 3.5: The Iterative Waterfall Methodology	46
Figure 4.1: Classification of Respondents	54
Figure 4.2: Age of Spa/Salon Customers.....	55
Figure 4.3: Location of Spa/Salon Business	55
Figure 4.4: Classification of Spa/Salon Business	56
Figure 4.5: Classification of Spas	58
Figure 4.6: Categories of Spas	58
Figure 4.7: Venues where services are held.....	59
Figure 4.8: Ways on how to search for existing spas or salons	60
Figure 4.9: Customer preference over walk-in as their method for scheduling/booking	64
Figure 4.10: Customer preference over SMS as their method for scheduling/booking.....	64
Figure 4.11: Customer preference over email as their method for scheduling/booking	64
Figure 4.12: Customer preference over online booking as their method for scheduling/booking	64
Figure 4.13: Availability of Internet Connection in Businesses	67
Figure 4.14: Ways on How Customers Schedule/Book an Appointment.....	68
Figure 4.15: Reasons Why Businesses don't have an Online Booking System	68
Figure 4.16: Ways on How Businesses Record/Keep Track of their Customers' Booking Appointment	69
Figure 4.17: Other Type of Customer Information Requirement	70

Figure 4.18: When does Businesses ask for Payments From their Customers	71
Figure 4.19: Ways on How Businesses do Reputation Management	72
Figure 4.20: Availability of Businesses Notifying or giving Reminders to Customers' Booked Appointment	73
Figure 4.21: Ways of Businesses Notify Customers about their Booked Appointment.....	73
Figure 4.22: Acceptability of Spa/Salon Businesses and Customers of using Online Spa/Salon Booking System.....	84
Figure 4.23: ERD - User tables in relation to the overall schema	126
Figure 4.24: ERD - Customer tables in relation to the overall schema	127
Figure 4.25: ERD - Subscription tables in relation to the overall schema.....	128
Figure 4.26: ERD - Business tables in relation to the overall schema.....	129

Chapter 1: Introduction

1.1 Project Context

Today, we enjoy the many benefits of modern technology. From the spaces of our homes to almost any place with a signal, people get to press or click on their devices to go shopping, search for information, connect with people in real-time, and many more. As the world becomes increasingly advanced things become easier to access — making our lives more and more convenient. However, as it stands in the Philippines, there are a few who do not have these advantages and are lagging behind, and in the case of this study's subjects — spas and salons — the researchers find that there is a need to introduce proper digitalization to these businesses so that they too can reap its benefits. Just imagine the following: walking in to find out that your appointment can't be made at that time you want, or going in only to be stuck in a long queue, or even being unsure about the establishment's quality of service because you weren't in the know before you got inside. Issues like these have been solved with a click of a button for other industries, so now it only needs to be introduced into this one.

Commonly, customers for these businesses either go in or contact their Spas and Salons via SMS or phone call to get their businesses done. Although there is nothing inherently wrong with this, it can really be problematic if either one recipient isn't available to discuss things properly, whereas having a digitalized solution could have solved this easily. Add in the factor of the “New Normal’s” standards – forcing businesses to take an online approach – it only becomes more difficult for these businesses if they haven't been digitalized because it's *required* to go online to survive these days. In recent years at the time of this study, many have even opted to go online to get their needs, whether it be groceries, clothes, or general goods, the shift from in-store

to online cannot be denied (*COVID-19 has changed online shopping forever, survey shows, 2020*).

Even before COVID-19, many have started to make their purchases through the internet. And while approximately 56% of the micro, small, and medium enterprises (MSMEs) *that use* technology are already at a basic level — a considerably large volume of businesses that affect the Philippines — only 34% use digital tools more meaningfully to aid their sales and marketing (Lavilla, 2020). If businesses were only looking beyond the requirement, only then could they truly understand why digitalization is important, and not just something that they need to have.

Although it may seem relevant now, it's understandable that this idea might lose its value if the pandemic stops. However, this notion is false. Other than the argument that the twenty-first century is dubbed the “Information Age,” this idea will retain its relevance because of how much the internet is used and valued nowadays. And even though it may seem counter-intuitive to go online because you may have to go in anyway, there is another important factor that drives the need for an online “one-stop-shop” for these businesses: preparation. Spas and salons need time to prepare to deliver quality service. Simply, there is a good reason as to why these businesses offer reservations — it takes time.

Considering these issues, this study aims to develop a web-based application for both business and customer use. With a software solution that not only aims to eliminate the dependence on paper-based reservation systems, it will also serve as a hub to connect business and consumer.

1.2 Purpose and Description

1.2.1 Significance of the Study

Nothing is more significant these days than to being mobile in work and leisure. By giving spas and salons the ability to use an online booking system, they can extend their service to

customers at anytime and anywhere. By developing the proposed solution, businesses can use the software to make their booking digitized, and they can also use it to enhance their business processes by adapting to this technology (digitalization). As for the customers, they will be able to look for establishments – who are registered on the website – based on user reviews, location, and/or category. Other benefits include improved communications with employee and customer, increased marketing and accessibility, increased service sales, decreased human error in reservation process, and efficient time use.

1.2.2 Theoretical Framework

The Unified Theory of Acceptance and Use of Technology Model (UTAUT) is created by Venkatesh et al to synthesize the previous technology acceptance models and to create a more comprehensive IT acceptance model. The authors of UTAUT model unified eight theories and models which include Theory of reason Action (TRA), Technology acceptance model (TAM), Motivational model (MM), Theory of planned behavior (TPB) combined TAM and TPB (C-TAM-TPB) Model of PC Utilization MPCU. Innovation Diffusion Theory (IDT) and Social Cognitive Theory (SCT) Bandura (1986). The unification by the researchers sums up all the constructs from the eight models to four determinants, which predicts intentions, usage, and four moderators of the key relationships Morris, Hall (2003). It was also stated by him that the UTAUT can explain 70 percent of the variance in user intention while the eight models can explain between 17 and 53 percent of the variance in user intentions to use information technology.

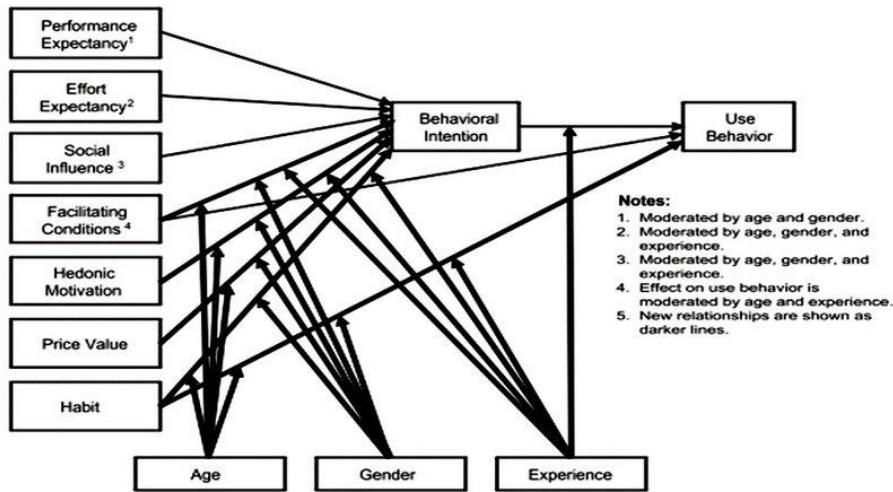


Figure 1.1: Unified Theory of Acceptance and Use of Technology Model (UTAUT)

Figure 1 illustrates the relationships that exist in the UTAUT model. The model has four EV, which refers to exogenous variables, EE which refers to effort expectancy, PE which indicates to performance expectancy, SI which refers to social influence, and FC which means facilitating conditions. The endogenous variables are the technology intention to use and behavior. There are other four moderators namely age, experience, gender and voluntariness. Performance expectancy is known, as a degree individual believes in the benefit of the system to performance (Venkatesh et al, 2003).

Based on the model, PE, EE, and SI directly affect behavioral intention which, in turn, affects usage behavior, while FC directly affects the user behavior or the actual usage of the system. The UTAUT model will be used in this study as it correlates to the theme which is transitioning to an online booking system from traditional booking system performed by spas and salons.

1.2.3 Conceptual Framework

The researchers created the conceptual framework of this study using the Input-Process-Output (I-P-O) Format as shown in Figure.

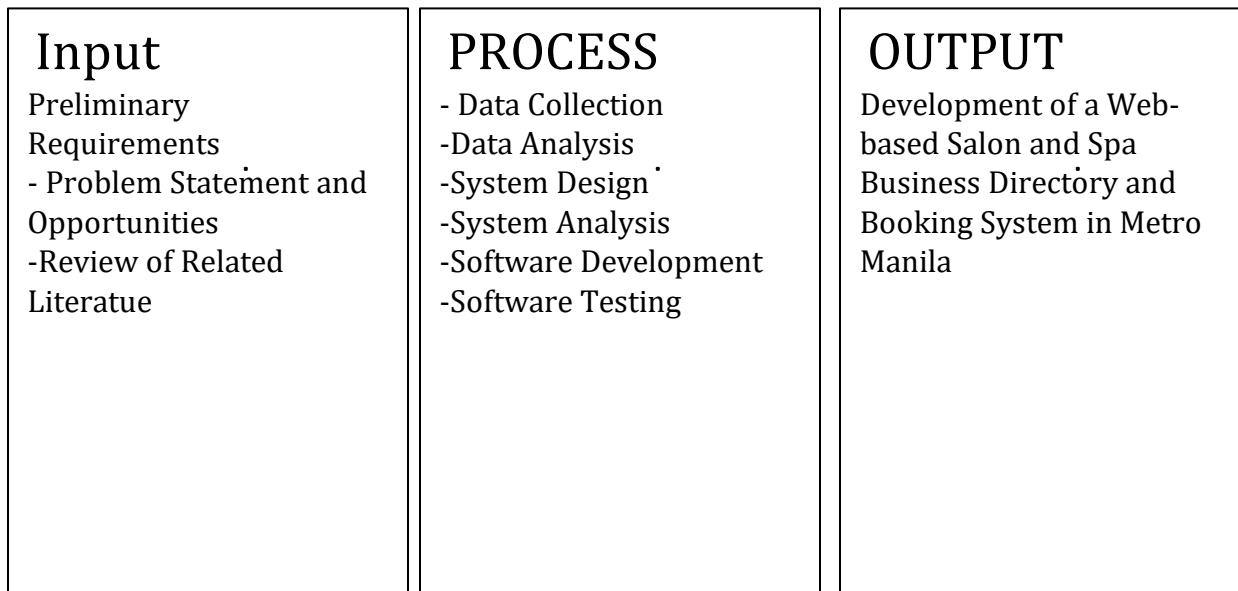


Figure 1.2: Input-Process-Output (IPO) Framework of the Study

Figure 1.2 describes the conceptual framework of the study wherein the input consists of the following:

Problem statement and Opportunities - the research decided to conduct a study on the current booking method since customers are claiming that the manual process of making an appointment is inefficient, inconvenient, and limited in terms of booking options and availability. The problems stated on the current method is an opportunity to the researchers by presenting a project that can improve the process of accepting customer appointments.

Related Literature and Systems - the researchers conducted research on the different literatures and related systems to serve as a guide in the development of the Online Spa and Salon Booking System.

To the right, the process begins with researchers gathering data in order to determine the current state of the Spa and Salon customers and businesses in Metro Manila. The researchers will also think of ways to improve and resolve the problems encountered/experienced by each respondent. Then, the researchers will collect, analyze, and interpret the data in order to come up with an informed solution on how to solve the problem. Next, would be the system analysis and design. Here, the researchers will gather, analyze, and validate the information in order to define the requirements or business process, as well as the use case diagrams in order to come up with a better and improved system. Afterwards is the software development, where the researchers will convert the design output from the previous step into actual working software. Finally, software testing - to detect defects and errors where researchers will evaluate and verify that the platform is working as intended, and to ensure that it is error-free, giving quality experience to its users.

The output is the Development of a Web-based Salon and Spa Business Directory and Booking System in Metro Manila. The output will also include software maintenance in case there are any bugs encountered by its users.

The researchers created the conceptual framework of this system using the Input-Process-Output (I-P-O) Format as shown in Figure.

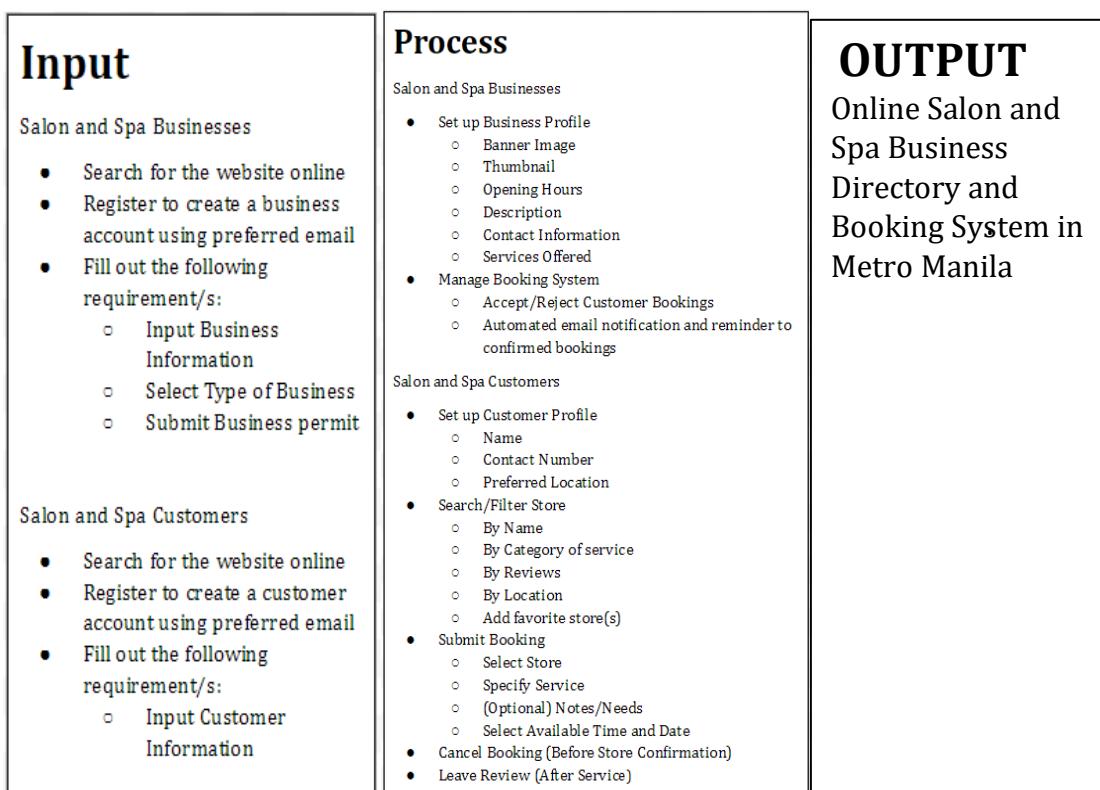


Figure 1.3: Input-Process-Output (IPO) Framework of the System

Figure 1.3 describes the conceptual framework of the system wherein the input consists of Salon and Spa businesses and customers searching for the website online. Then Salon and Spa businesses should register with their preferred email address to create a business account as well as submit the following requirements (1) business information, (2) Type of Business, (3) Business Permit for verification purposes. For Salon and Spa customers, they should register with their preferred email address to create a customer account and provide required customer information for verification purposes.

Next would be the Process, the process for Salon and Spa businesses includes Set up Business Profile and Manage Booking System. Set up Business Profile allows businesses to add and edit banner image, thumbnail, opening hours, description, contact information and services

offered. Manage Booking System allows business to accept and refuse customer booking and to send automated email notification and reminder to confirmed customer bookings. The process for Salon and Spa customers includes Set up Customer Profile, Search/Filter Spa and Salon, Submit Booking, Cancel Booking, and Leave Review. Set up Customer Profile allows customers to add their name, contact number, and preferred location. Search/Filter spa and salon allows customers to look for a spa or salon by name, category of service, reviews, and location. When it comes to submitting a booking, customers should include a selected spa or salon, specify which service they want to avail, add personal notes or needs if they want, and select an available time and date. Customer can cancel their booking so long as it hasn't been accepted or confirmed by the spa or salon. Otherwise, they can no longer cancel the booking they submitted. Lastly, Customers can now leave their review only after receiving the service.

The output will be the Online Business Directory and Booking System for Salon and Spa businesses in Metro Manila

1.3 Objectives

1.3.1 General Objective

This study aims to create a web-based application for spa and salon businesses. The application will provide an online business directory platform that connects spas/salons to customers, mainly for the purpose of booking appointments online and providing business information and directories specifically made for spas and salons. Customers will have the ability to browse businesses registered within the platform and can search for specific establishments based on a few sets of filters that they desire.

1.3.2 Specific Objectives

The specific objectives for this study are the following:

- To provide customers a way to find spas and salons that allows bookings to be made digitally with efficiency, yet with little effort through name search or category and location filtering.
- To create an online platform where spas and salons can join, register, display their business information, show location via google maps, and provide services to their customers and potential customers.
- To provide spa and salon businesses a way to easily manage bookings through a digitalized record-keeping logbooks and gain business insights based on their performance through the application.
- To add Customer Relationship Management (CRM) for businesses to their customers by providing promo awareness and advertising through email blasts.
- To identify similar or existing spa and salon solutions that improve business and customer interaction, for the purpose of benchmark analysis and determining the necessary features.
- To identify the needs, problems, and concerns that involved users have related to the project proposal. This will be done accomplished by conducting a survey. The most determining factors will have questions linked to a Likert scale to identify their weight of significance.
- To make changes to the initial features depending on the outcome of the survey and design process. The following are the initial features:
 - Business Owner / Persons in Charge
 - Profile editing

- Add and edit banner image
- Edit thumbnail
- Edit opening hours
- Edit description
- Edit contact information
- Add and edit services offered
- Booking process
 - Accept or reject customer booking
 - Automated email notification and reminder to confirmed customer's booking
- Customer Perspective
 - Profile editing
 - Edit name
 - Edit contact number
 - Edit preferred location
 - Search Spa or Salon
 - Search by name
 - Filter by category of service
 - Filter by reviews
 - Filter by location
 - Booking process (cannot do multiple bookings with same date and time)
 - Specify service with optional note/additional needs

- Select available time and date
- Cancel booking if not yet accepted
- Write a review after service

Full details of the features listed here and any additional features that will be added during the design period will be fully fleshed out at Chapter 4 under Functional Requirements.

1.4 Statement of the Problem or Opportunity

In a world where information is spread fast and efficiently, some businesses in the Philippines still refuse to tap into that advantage and are lagging behind while others have moved on and have benefited from digitalization. To spa and salon businesses, they are no exception to this. While there are several businesses who adopt this technology, this does not mean that they're utilizing it to its fullest; in fact, according to an article from the Small Business Corporation (2021) they even note that “the Philippines is in ‘level zero’ or a ‘level below basic’ in the ASEAN categories of digitalization of businesses”.

With regards to the proposal, not having the ability to book online can be detrimental for a business, as the option to have it solves many issues. For example, when a customer thinks of making a reservation they'd have to call or text during business hours, and if they want to change their schedule businesses may have to scramble to find hours available. In this type of situation, time and energy is being wasted, which can be easily solved by using an application that displays all the necessary information without bringing annoyance to both sides. In addition, with respect to benefits, when a process is digitalized, there is also the opportunity to automate an aspect of it, which could be very beneficial for businesses.

Having a platform that connects both businesses and customers presents the opportunity to gather information in a quick and efficient manner, so the proposed solution will not just simply be a booking application. Customers will be able to find businesses most suitable to them, and businesses will be able to look for their weaknesses when their customers review them in the application.

1.5 Scope and Limitations

This study is for the digitalization of processes and booking systems of both spa and salon businesses. To be specific, the researchers will not include businesses that are membership based such as “Club Spas,” as those businesses don’t require booking and appointment schedules for customers. Such establishments are readily open for their member clients, and members are supposed to come in and out anytime and be able to use facilities within their active membership status. As such, the service of the system will only extend to day spas, mineral spring spas, and mobile spas. For salons on the other hand, any type would be applicable.

In terms of business sizes, the researchers will only look into micro, small, and medium enterprises (MSMEs), as business with these sizes are usually the ones who resist proper digitalization.

The target location will be from within the Metro Manila area because of its high population density, high internet access rate (as the proposed application is web-based), and because it is within the proximity of the researchers. Most responses are expected to come from personal visits, but because of safety procedures and limited contact due to the pandemic, a survey will also be distributed online. By the end of the survey period, at least 50 responses will be gathered.

There are two types of respondents for the survey — one from a customer point of view and one from a business point of view. Research will be conducted while practicing proper safety procedures due to the pandemic, so personal interviews will be limited within the proximity of the researchers. Users are expected to have basic computer or smartphone literacy; have access to a

device that can use the web application; and have an email address, as the platform will require these in order to be used.

Definition of Terms/Variables

The study contains several varying terminologies to aid conciseness. As such, the following will be defined to better understand their meaning.

A Spa is a commercial establishment that offers health and beauty treatments and services through means of massage, steam baths, or exercise equipment.

A Salon is a commercial establishment that offer beauty and pampering services through means of hair, nail, face, and body styling.

Spa and Salon commercial establishments that may offer a combination of both Spa and Salon services.

A Customer is a person that purchases a type of service within a business or establishment.

A Client is a person served by the business or establishment or utilizes their services after purchasing a type of service from them.

Day Spa makes use of onsite leisure facilities during normal workings hours and provides massage, facials, body scrubs, wraps, and facility-based spa such as jacuzzi and steam baths. Day spas provides no overnight accommodations unlike spa hotels.

Mobile Spa consists of travelling spa professionals that offers the essentials of day spa services such as massage, facials, bridal hair, body treatments, manicures, and pedicures at the comfort of the customer's home or personal space.

Club Spa is a type of day spas located within larger gyms or health club. Adjoins fitness and health facilities and are often exclusive to those paying a monthly or annual membership fee.

Booking is an act of reserving a scheduled service. There can be multiple appointments under one booking.

An **Appointment** is an arranged meeting of two or more parties in a designated time and place.

Online Business Directory Platforms (or Web Directory, Search Engine) are online lists or catalogs of existing businesses that provides business information and ready to be searched by a user.

Digitization is the process of making existing data and processes digital.

Digitalization is the process of utilizing digital technologies to capture and assess data to make better business decisions and enable new business models.

Data Privacy refers to the proper and ethical way of handling confidential, personal, or essential data held service owners and ensuring its users that their data remains protected, unaltered, and unseen to be protected from possible malicious intentions by using their information

Private sector is a private segment of economy where businesses and organizations generate profit and free from state ownership and control.

Chapter 2: Review of Related Literature/Systems

2.1 Review of Related Literature

2.1.1 Defining Personal Care Services in the Philippines

In the context of the Philippines, what exactly a “personal care service” is, is quite loosely defined. For example, in a press release from the Department of Health (2020) addressing personal care services with regards to protocol, it has only mentioned a few examples of what those services may be — only briefly mentioning salons and barbers. No other official articles have been found that clearly define the definition within the context of the nation, hence it is ultimately up to interpretation and common knowledge. With regards to the proposed application, although it may be counterintuitive to not include services like barber businesses, there is a reason as to why spas and salons are only brought to focus. For one, spas and salons in the Philippines can sometimes be one in the same. Two, the time that it takes for a barber to finish their work is quicker (Alexander, 2017) compared to spas and salons (which may take a lot more time). Furthermore, spas and salons are even frequently used interchangeably (Miller, 2022). These businesses may have only one or the other and some even make a hybrid for such services. Spas and salons require more work, and with a booking system to assist them in preparation for their next client, it is also because of this reason that these establishments are only selected.

2.1.2 Problems Spa and Salon Customers and Businesses are Facing

This study identifies that there are three problems that need addressing — particularly because they are the main culprits of negative business performance, thus the need for attention

when the development phase comes into play. These problems are (1) long waiting lines, (2) poor communication, (3) and no show/sudden cancellation.

Long waiting lines in consumers-related businesses can affect the customer and reputation of the business. With regards to customers, the most obvious effect of waiting in long lines is the loss of customers. Having long waiting lines can lead to customers leaving your business and choosing to do business with a competitor. In terms of reputation, a business that has long lines runs the ultimate risk of having a bad reputation in the community. This can happen through word of mouth or direct testimonies of people where a bad reputation can be earned if the word of mouth is negative (Waiting-Line Problems: Where They Occur & Their Effect on Business, 2016).

Poor communication is a disease that can have many symptoms and most of the time it's the lack of communication. Working in a salon means being in constant communication with clients. This includes ensuring that customers are satisfied through understanding their wants and needs through effective communication. According to Rothstein, misunderstandings in communication could lead to dissatisfaction, which could result in bad reviews for your business (Rothstein, 2019). Without proper communication, spa and salon businesses will fail to understand how to build trust, establish credibility, and build a relationship with their clients. The process of conducting the consultation and understanding the client in terms of their concerns, goals, and maintenance requirements as part of the client intake process. Once the client's needs are discovered, the service provider can begin to recommend solutions in the form of products or services. In order to recommend the appropriate solutions, service providers must have a deep level of product knowledge. (Milady, Page 167)

Managing a salon or spa isn't easy due the constant need to balance the logistics or running a business with attracting and retaining clients within a competitive industry. Another area where

salon and spa owners are challenged is managing staff effectively and keeping them motivated. Staffing is considered to be consistently one of the biggest problems in the spa and wellness industry (Matheson-Shedrick, 2018). According to a study conducted by Yun-Yung et al. They investigated the factors affecting the repurchase intention of consumers in the beauty salon industry in Taiwan. These Factors are classified into two perspectives. One from the perspectives of the consumers while the other is from the perspectives of the beauticians. The factors from the perspective of the customers include (1) obvious treatment results, (2) the treatment space considers personal privacy, (3) the offer of promotional prices for treatment/product trials, and (4) the product knowledge of the beauticians. From the perspectives of the beauticians, the factors include (1) the treatment space is well-designed and makes the customers feel relaxed, (2) enhancement of the customer relationship, (3) the treatment space considers personal privacy, and (4) the positive service attitude of the beauticians. These factors are needed to be taken into consideration in order to meet the customers' expectations and sustain and expand their business during this growing competition from non-beauty salon operators (Yun-Yung et al, 2018).

No show customers are one of the biggest issues while handling the salon business. Most of the customers don't show up on time and that can result into wasting of time and resources. At the same time, it is not even possible to ask other customers to visit the salon before their time (William, 2021).

2.1.3 Engaging Service Activities in Metro Manila

Philippine Statistics Authority (PSA) cited that based on the results of the 2016 Annual Survey of Philippine Business and Industry (ASPBI), there were 11,907 establishments in the

formal sector of the economy that were engaged in Service Activities. Among these industries, beauty parlor or salon activities registered the highest number of establishments that reached up to 3,661. This is followed by the washing, dry cleaning of textiles and fur products services, and then funeral and related activities with 1,824 and 1,578 establishments, respectively.

According to a survey by Statista Research Department conducted in the Philippines on September 2021, Metro Manila recorded the highest internet access rate amongst the people and business establishments. Having at 84 percent of the Metro Manila's adult population having internet access, and then followed by the rest of the adult population in Luzon at 65 percent having an internet access. In general, approximately 63 percent of adult Filipinos reportedly had access to the internet from Luzon, Visayas, and Mindanao.

While in Metro Manila, salon businesses accounts as the highest number of service business establishments, while also being the most densely populated, the Philippine mobile service mark Speedtest data also showed that the top cities with fastest internet speed are mostly in Metro Manila. Data shows that Caloocan City had the fastest median download speed at 22.05 Mbps, followed by Quezon City that has 20.93 Mbps, and Manila that has 18.80 Mbps.

Based on Business List, a website that shows lists of businesses in cities of the Philippines, Metro Manila listed 277 existing Spas while other cities outside Metro Manila such as Cebu City, Davao City, and Zamboanga city, only showed 12, 4, and 1 spa businesses respectively. The website represents that spa businesses existing in Metro Manila are much more prone to using technologies and more open to registering on directory platforms and may also possibly state that there are more existing spas compared to other regions in the Philippines.

2.1.4 The Need for Booking Systems of Spas and Salons

While there are businesses in the Philippines who have already adopted technology there is still a significant amount who don't (Aguinaldo, 2020), and the majority of those who do use them, only about half of them use it to its fullest potential, according to Lavilla (2020). The country is lagging behind in terms of business automation and hasn't caught up to other countries such as the United States, Japan, China, and even developing nations like India and Malaysia. (Sotelo, 2020)

One reason to explain this, businesses in the Philippines, specifically micro, small, and medium enterprises have resisted in to transforming digitally or to implementing automation processes within their business. (CNN Philippines, 2019)

According to JG Puzon, founder, and CEO of Posible (n.d.), a lot of businesses in the Philippines thinks that technology, tools, and software, are only for big companies. But that was the case 10 years ago, and businesses are not being aware that it is not applicable in our current generation and its trends, and that the mindset still has not changed.

When it comes to the customer perspective, customers coming to massage parlors or salon parlors without doing any booking or scheduling appointment beforehand, wouldn't like to wait for long hours for their requested service. After seeing crowded receptions or rooms, busy and impatient clients will not wait and most likely not continue on to using the business' service. Such customers develop negative perception to the business and might never come back. (Awebstar Technologies, 2019)

2.1.5 Benefits of Booking Systems

According to Sam Johnston, CMO of BookingLive (2021), online booking systems for both businesses and customers showed evident impact when it comes to the business' process and

simplifies appointment procedures. Online booking systems cuts-off workload and employee work force. It is already plain hard to see that it costs a lot of time handling customer needs in the traditional way – which is by handling phone calls, looking up to using books, managing schedules, and explaining the services to the customers. With an online booking system that is fully automated, customers and clients can interact with businesses at any time, pick their own options, and choose their preferred date and time without any human interaction on the businesses' end that frees up employees to do more valuable things within their time.

One extensive benefit of incorporating booking and appointment scheduler systems is that it is easy-to-use. The usual way that customers book for service is by calling the business' numbers and causes businesses to allocate more staffing and even increase expenses. Arranging appointments through an online system reduces risk of miscommunication amongst employees and human error. Additionally, it already automates data collection, recording procedures, that quickly reaches out to the correct clients. (Awebstar Technologies, 2021)

Another major benefit of online booking systems is that it increases revenues through upselling. Due to the reason that it is easier to create, publish, promote and sell packages through add-ons online. It allows customers to combine them and let customers choose the packages they want, further increasing revenue that businesses generate while at the same time, customers are able to get exactly what they want. (Asenova, 2018)

2.1.6 Benefits of an Online Business Listing Directory

Expanding brand awareness, and exposing business to a wider audience, business directories enhance promotion and marketability of businesses. In comparison to spending on costly marketing and advertising campaigns, business directories may offer an inexpensive yet an

incredibly powerful alternative that have proven to directly reach costumers. Businesses taking the time in adding their business to as many directories as they can, will only stand to benefit their business in the present and for many years to come. (Construction World, n.d)

LaPore (2018) states that another benefit of joining business listing directories is that it can boost the business' Search Engine Optimization (SEO), it provides the business' web content in such a way that search engines will favor it and may rank it higher in results compared to other related businesses for applicable searches. Search engines wants to be trusted by its users, so the more information it can obtain on businesses, and the more consistent that information is, the better the business' web content will rank. Online business listings are also a great way to support and supplement businesses' already existing information to give it an extra validation.

2.1.7 Security and Data Privacy

For any application that asks for user information, it is crucial to not overlook any security and privacy concerns that would be involved. For one, the Data Privacy Act of 2012 will need to be applied because it is a key topic for all types of information involved in the Philippines. The law states that *"it is the policy of the State to protect the fundamental human right of privacy, of communication while ensuring free flow of information to promote innovation and growth. The State recognizes the vital role of information and communications technology in nation-building and its inherent obligation to ensure that personal information in information and communications systems in the government and in the private sector are secured and protected."* Therefore, during the process of development, it will need to be looked out for as the proposed application will involve users who are applied to this law (Data Privacy Act, 2012). As a guideline to use for thought with regards to security, OWASP's Top Ten Web Application Security Risks will be used

to address which specific problems need the most attention. To note, OWASP – which is the acronym for Open Web Application Security Project – is a community-driven nonprofit foundation that aims to improve the security of software, and it has been supported by corporations, foundations, developers, and volunteers for nearly two decades. Decision falls to using their guide because of their reputation.

The table below lists the top ten risks for the OWASP Top 10 (2021) with their corresponding description. Note that these aren't the only risks that will be put into consideration, it is merely the first place to start with when development begins, and the list to look at to know which risks needs more attention.

Table 2.1: OWASP Top Ten Security Risks of 2021

Risk Ranking	Description
1. Broken Access Control	Access control enforces policy such that users cannot act outside of their intended permissions. Failures typically lead to unauthorized information disclosure, modification, or destruction of all data or performing a business function outside the user's limits
2. Cryptographic Failures	Passwords, credit card numbers, health records, personal information, and business secrets require extra protection, mainly if that data falls under privacy laws or regulations. It could be detrimental if proper code is not implemented.
3. Injection	<p>An application is vulnerable to attack when:</p> <ul style="list-style-type: none"> • User-supplied data is not validated, filtered, or sanitized by the application. • Dynamic queries or non-parameterized calls without context-aware escaping are used directly in the interpreter. • Hostile data is used within object-relational mapping (ORM) search parameters to extract additional, sensitive records.

	<ul style="list-style-type: none">• Hostile data is directly used or concatenated. The SQL or command contains the structure and malicious data in dynamic queries, commands, or stored procedures.
4. Insecure Design	Among the factors that contribute to insecure design, one aspect is the lack of business risk profiling inherent in the software or system being developed, and thus the failure to determine what level of security design is required.
5. Security Misconfiguration	<p>The application might be vulnerable if the application is:</p> <ul style="list-style-type: none">• Missing appropriate security hardening across any part of the application stack or improperly configured permissions on cloud services.• Unnecessary features are enabled or installed (e.g., unnecessary ports, services, pages, accounts, or privileges).• Default accounts and their passwords are still enabled and unchanged.

	<ul style="list-style-type: none">• Error handling reveals stack traces or other overly informative error messages to users.• For upgraded systems, the latest security features are disabled or not configured securely.• The security settings in the application servers, application frameworks (e.g., Struts, Spring, ASP.NET), libraries, databases, etc., are not set to secure values.• The server does not send security headers or directives, or they are not set to secure values.• The software is out of date or vulnerable.
6. Vulnerable and Outdated Components	<p>The system is likely vulnerable:</p> <ul style="list-style-type: none">• If you do not know the versions of all components you use (both client-side and server-side). This includes components you directly use as well as nested dependencies.• If the software is vulnerable, unsupported, or out of date. This

	<p>includes the OS, web/application server, database management system (DBMS), applications, APIs and all components, runtime environments, and libraries.</p> <ul style="list-style-type: none">• If you do not fix or upgrade the underlying platform, frameworks, and dependencies in a risk-based, timely fashion.• If software developers do not test the compatibility of updated, upgraded, or patched libraries.• If you do not secure the components' configurations.
7. Identification and Authentication Failures	<p>There may be authentication weaknesses if the application:</p> <ul style="list-style-type: none">• Permits automated attacks such as credential stuffing, where the attacker has a list of valid usernames and passwords.• Permits brute force or other automated attacks.

	<ul style="list-style-type: none">• Permits default, weak, or well-known passwords, such as "Password1" or "admin/admin".• Uses weak or ineffective credential recovery and forgot-password processes, such as "knowledge-based answers," which cannot be made safe.• Uses plain text, encrypted, or weakly hashed passwords data stores.• Has missing or ineffective multi-factor authentication.• Exposes session identifier in the URL.• Reuse session identifier after successful login.• Does not correctly invalidate Session IDs. User sessions or authentication tokens (mainly single sign-on (SSO) tokens) aren't properly invalidated during logout or a period of inactivity.
8. Software and Data Integrity Failures	Software and data integrity failures relate to code and infrastructure that does not protect against integrity violations. An example of this is where an application relies upon plugins, libraries, or modules from untrusted sources,

	repositories, and content delivery networks (CDNs).
9. Security Logging and Monitoring Failures	<p>Without logging and monitoring, breaches cannot be detected. Insufficient logging, detection, monitoring, and active response occurs any time:</p> <ul style="list-style-type: none">• Auditable events, such as logins, failed logins, and high-value transactions, are not logged.• Warnings and errors generate no, inadequate, or unclear log messages.• Logs of applications and APIs are not monitored for suspicious activity.• Logs are only stored locally.• Appropriate alerting thresholds and response escalation processes are not in place or effective.• The application cannot detect, escalate, or alert for active attacks in real-time or near real-time. <p>You are vulnerable to information leakage by making logging and alerting events visible to a user or an attacker</p>

10. Server-Side Request Forgery (SSRF)	SSRF flaws occur whenever a web application is fetching a remote resource without validating the user-supplied URL. It allows an attacker to coerce the application to send a crafted request to an unexpected destination, even when protected by a firewall, VPN, or another type of network access control list (ACL). As modern web applications provide end-users with convenient features, fetching a URL becomes a common scenario. As a result, the incidence of SSRF is increasing. Also, the severity of SSRF is becoming higher due to cloud services and the complexity of architectures.
----------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Note. The risk ranking is based on the *Top 10 Web Application Security Risks*, by OWASP Foundation, Inc, 2021 (<https://owasp.org/www-project-top-ten/>). Copyright OWASP Foundation, Inc. The description for Broken Access Control is from *A01:2021 – Broken Access Control*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A01_2021-Broken_Access_Control/). Copyright OWASP Foundation, Inc. The description for Cryptographic Failures is from *A02:2021 – Cryptographic Failures*, by OWASP Foundation, Inc, 2020 (https://owasp.org/Top10/A02_2021-Cryptographic_Failures). Copyright OWASP Foundation, Inc. The description for Injection is from *A03:2021 – Injection*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A03_2021-Injection/). Copyright OWASP Foundation, Inc. The description for Insecure Design is from *A04:2021 – Insecure Design*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A04_2021-Insecure_Design/). Copyright OWASP Foundation,

Inc. The description for Security Misconfiguration is from *A05:2021 – Security Misconfiguration*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A05_2021-Security_Misconfiguration/). Copyright OWASP Foundation, Inc. The description for Vulnerable and Outdated Components is from *A06:2021 – Vulnerable and Outdated Components*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A06_2021-Vulnerable_and_Outdated_Components/). Copyright OWASP Foundation, Inc. The description for Identification and Authentication Failures is from *A07:2021 – Identification and Authentication Failures*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A07_2021-Identification_and_Authentication_Failures/). Copyright OWASP Foundation, Inc. The description for Software and Data Integrity Failures is from *A08:2021 – Software and Data Integrity Failures*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A08_2021-Software_and_Data_Integrity_Failures/). Copyright OWASP Foundation, Inc. The description for Security Logging and Monitoring Failures is from *A09:2021 – Security Logging and Monitoring Failures*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A09_2021-SecurityLogging_and_Monitoring_Failures/). Copyright OWASP Foundation, Inc. The description for Server-Side Request Forgery (SSRF) is from *A10:2021 – Server-Side Request Forgery (SSRF)*, by OWASP Foundation, Inc, 2021 (https://owasp.org/Top10/A10_2021-Server-Side_Request_Forgery_%28SSRF%29/). Copyright OWASP Foundation, Inc.

2.1.8 Business Requirements

To comply with the law, several requirements will need to be submitted before getting on board with the web application, as businesses that wish to partner will have to prove their legitimacy and legal status in terms of their operations period. As such, this study finds that the business permit will be sufficient, as it has vital information such as the business name, business address, the owner's name, validity period, and the mayor's sign and signature. After all, a legal business cannot operate if they don't have a permit to show for it (*Business Permit in the Philippines: All You Need to Know in 2022!*, 2021).

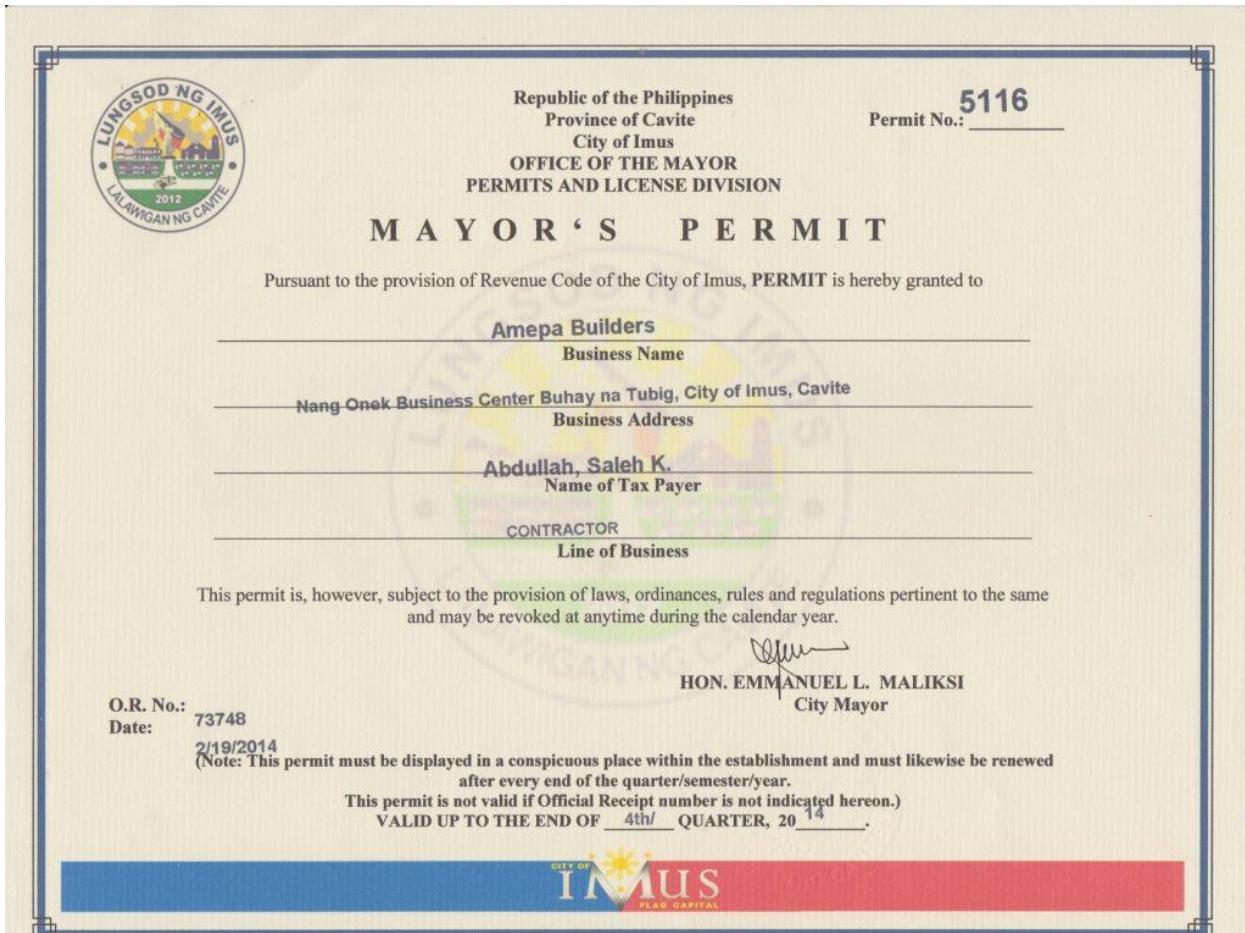


Figure 2.1: Sample of a business permit

(reference; another reference). Additionally, for extra measures to prove that it is the business owner's intent to use the application, a government-issued ID will be needed (e.g., driver's license, passport, PhilID, etc.). If there are any concerns about a business having to rebrand, the application – for the time being – will not be focusing on this matter as it may take a number of processes and legal consultations to make proper changes.

2.1.9 Online Booking Issues and Possible Solutions

Although there are plenty of benefits to receive when going digital, with regards to online booking specifically, there are a couple of problems that need addressing. Scamming and no-shows, particularly, are the most problematic. From 2019 to 2021, several articles from ABS-CBN News have reported those very issues: Ten food delivery drivers scammed with no-shows in Las Piñas (Antonio, 2020); GrabFood PH considering the possibility of penalizing their users because of unclaimed orders (*GrabFood users with unclaimed orders may face penalties soon*, 2019); and “More food delivery riders scammed anew by fake booking” (*More food delivery riders scammed anew by fake booking*, 2021)

In one article by De Dios (2021) states that the solution to this is to implement an initial cashless transaction — or “better yet” to keep all transactions cashless — to persuade a user to commit to their order. Surely, by requiring an initial fee or a cashless-only method, it may significantly reduce or even eliminate the issue at hand. In fact, a study has found that one in two Filipinos favor a cashless society (*Study finds more Filipinos open to a cashless society as e-payments rise*, 2021), as e-payment solutions rise thanks to platforms like G-Cash and PayMaya. However, it’s not a fool-proof plan, and payment via cash can arguably be better sometimes. Furthermore, the problems that have been mentioned were only in the cases of food deliveries. Several concerns come with cashless transactions. For one, there is inclusiveness, and two, there is the assumption that most spa or salon customers pay with cash anyway. Although we can consider security as another issue and say that cash has fewer risks (which can be true according to Investopedia, 2021), there has only been one incident that’s been brought to the public which was the hacking of a senator’s card to purchase food online — there was no follow-up article to confirm who was at fault besides the suspect (Rivas, 2021).

When using cash, it automatically benefits all types of customers because it won't exclude those who are less well-off or those who are less tech-savvy. Moreover, spa and salon services require direct customer contact anyway, and should customers choose to go cashless, most stores offer QR code payments nowadays. According to an article from Inquirer (2021), more and more Filipinos are adopting the use of QR codes to make payments, so the option to pay electronically is not eliminated should they opt to not use cash. Overall, it's better to not focus on including an online payment for the proposed application because of the reasons above, however, it is still possible to receive malicious attacks like spam booking, of which will need to be addressed during the development of the application.

RRL Synthesis

The table below synthesizes all literature topics with their corresponding description and relation to the project.

Table 2.2: A synthesis of all related literature and its relation to the study

Topic	Description	Relation
Defining Personal Care Services in the Philippines	Discusses the definition of what “personal care services” are, and why salons and spas are only fit for the application.	Provides information necessary to support the objectives and scope of the project.
Problems Spa and Salon Customers and Businesses are Facing	The theme cites related studies, articles, and literatures about problems faced by spa and salon customers and businesses.	The study mainly targets the Spa and Salon industry. The theme is to uncover problems from said industry that can be turned into opportunities.
Engaging Service Activities in Metro Manila	This theme cites statistical data about Metro Manila in general, the population's internet and network capabilities, and statistical data of Spas and Salons existing in the target location.	The study's target location is in Metro Manila. The literature is used here to support the scope and limitations of the study.

The Need for Booking Systems of Spas and Salons	The theme expounds on how booking automation and digitalization is lacking in the target market of the study. It also cites problems that businesses are facing without a booking system.	The study aims to provide necessary solution in terms of how spas and salons businesses handles their business process and systems.
Benefits of Booking Systems	The theme cites and explains how existing business processes, automation/digitalization systems, and particular processes can be much better with a booking system.	Since the study aims to provide booking systems, the theme conveys how having a booking system and its features can be of benefit.
Benefits of an Online Business Listing Directory	Related literature about what Online Business Listing Directories can provide and aid businesses in terms of marketing, exposure, and better performance.	The study also aims to provide an Online Business Listing Directory made specifically for Spas and Salons.
Security and Data Privacy	Discusses security risks and laws involved for the	Lists which specific risks should have more attention. Discusses why it is necessary

	development of the application.	to be aware of laws applied to protect the users of the proposed application.
Business Requirements	Discusses related requirements for businesses wishing to be part of the proposed application.	The project will need to have a way to verify a business registrant's legitimacy. Topics discussed here support why only those documents are needed.
Online Booking Issues and Possible Solutions	This theme explains and recognizes some drawbacks and flaws of existing online automation booking systems on different industries and businesses and how it can possibly be solved.	As the study's objective is to create a booking system, reviewing related literatures about the ups and downs of booking systems can help the researches solve these issues.

Chapter 3: Technical Background

3.1 Overview of Existing Systems

3.1.1 Customer Records

Professionalism and excellent memory are exemplary techniques that are expected amongst employees within a business. Handwritten notes are not a suggested solution either for it would make it extremely hard to keep track and search for a particular customer's record once it becomes a huge binder. In cases like this, electronic customer records are the aces up on the business' sleeves. It gives better visuals and good information for employees on how their customers have been using their services that may also let them know their favorite service or products, while also on the contrary, one's that are also not desired and appropriate for them. Customers and especially returning ones of spas and salons expects to be treated with special attention (Booksy Team, 2018).

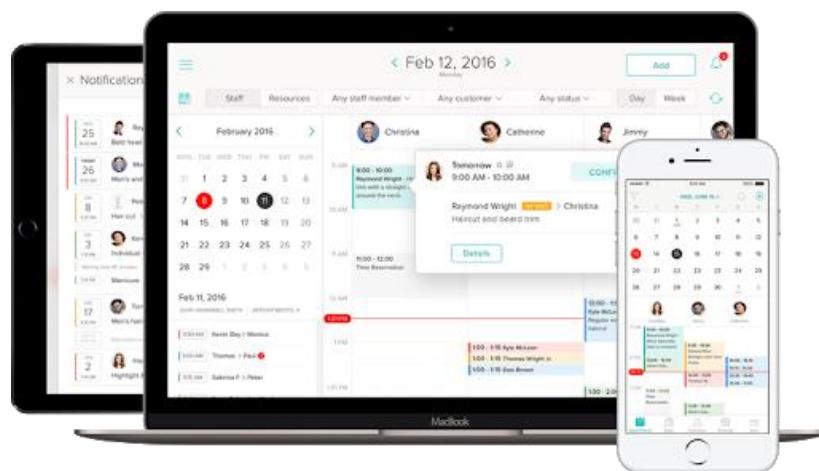


Figure 3.1: Booksy

Booksy software solution that is mostly available for Salons and Spas in countries in the Americas and European continent that provides and handles business customer records with visuals and includes calendar and date/time appointed.

3.1.2 Reminders and Notifications to Customers

Customers and clients may be busy with other things such as work and family life. Due to this, unforeseen events can make them forget or miss the appointments they have made to the Spa and Salon businesses. Providing clients consistent, clear, and helpful appointment reminders can improve customer service without needing too much effort. Reminder and notification features increase customer loyalty, profitability, reduces no-shows and disruptions (Yocale, 2017).

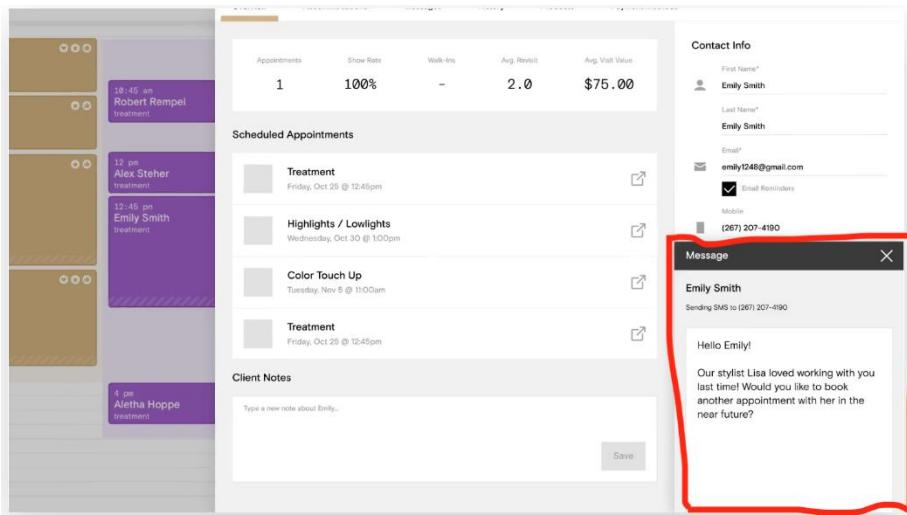


Figure 3.2: Boulevard Software Solution Message Feature

Boulevard Solutions allows real-time messaging to their customers that allows communication, reminding, and customer retention.

3.1.3 Business Directory Yelp

Filters

- Suggested: Open Now 1:20 AM
- Category: Massage, Day Spas, Nail Salons, Hair Salons
- Features: By Appointment Only, Free Wi-Fi, Good for Kids, All staff fully vaccinated
- Neighborhoods: North Caloocan City, South Caloocan City, Las Pinas City

Best Spas in Manila, Metro Manila, Philippines

1. Skye Angel's Spa
Massage • Open until 3:00:00 AM

2. Toccare Spa
Massage • Makati City
Closed until 1:00:00 PM

3. K1 Wellness and Beauty Spa
Day Spas • Manila City

Map: Manila, Metro Manila, Philippines. The map shows the locations of the spas relative to Manila, Makati, Pasay, Taguig, and surrounding areas.

Figure 3.3: Sample of Directory Page – 1

Reviews tacos, cheap dinner, Mac's

Location & Hours

Amenities and More

Location & Hours

BRGY. 301 309 Brgy. 404 Mon 2:00 PM - 3:00 AM (Next day)

BRGY. 302 307 San Sebastian Church Tue 2:00 PM - 3:00 AM (Next day)

BRGY. 298 297 307 394 Wed 2:00 PM - 3:00 AM (Next day)

291 307 393 383 389 Thu 2:00 PM - 3:00 AM (Next day)

Manila, 1009 Metro Manila Philippines Fri 2:00 PM - 3:00 AM (Next day) **Closed now**

Sat 2:00 PM - 3:00 AM (Next day)

Sun 2:00 PM - 3:00 AM (Next day)

Business Info

<https://www.skyeangelsspa.com> 0916-3327502

Figure 3.4: Sample of Directory Page – 2

Yelp provides and shows existing businesses within the users filtered search with business information such as contact, address, services, products, and customer ratings. Since Yelp is made for all types of businesses, there are mostly no booking appointment features for spa and salon businesses that are included in the site.

3.1.4 Geolocation of Google Business Profile

Google Business Profile is an easy-to-use tool for business and organizations to manage their online presence Google, including Search and Maps. To help customer find your business, and to tell them your story, you can verify your business and edit your business information (Google Support, n.d.)

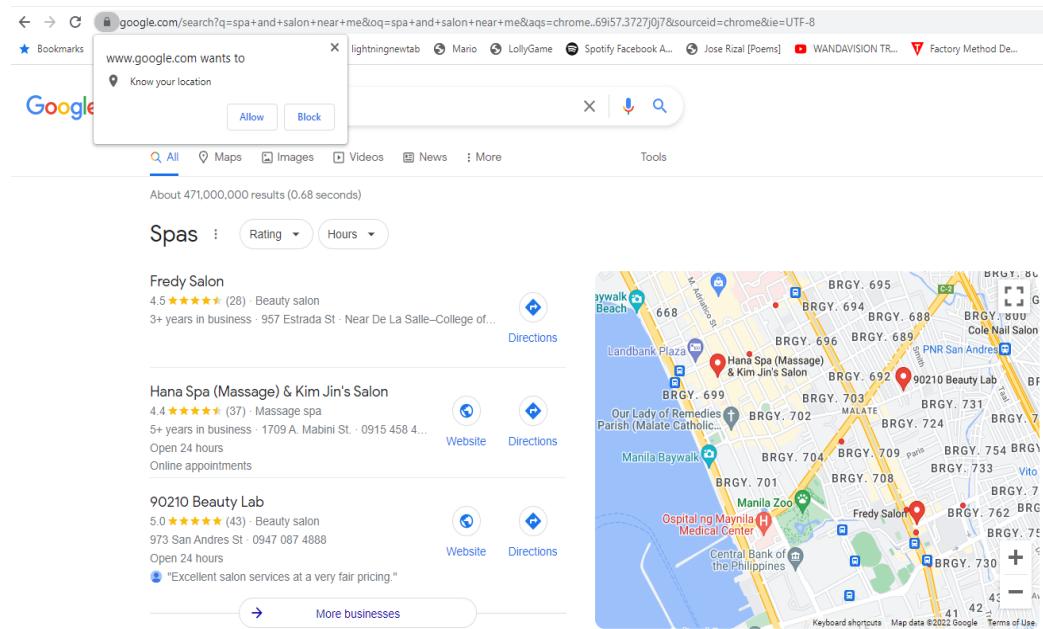


Figure 3.5 : Businesses using Google Business Profile with Geolocation

Google Business Profile allows businesses to manage their information that Google users find when they search for a particular business or the products and services offered. When people find a business on Google Maps and Search, they can find information like your hours, website, and street address.

3.2 Current Trends and Technologies to be Used in the Proposed System

At the time of this study, most users, if not all, work with chromium-based browsers. The researchers are also more familiar with developing projects around that particular type of browser, ergo development will be focused there. While development will be focused on creating a web application, this study recognizes the nature of the project, and that it may be appropriate to develop a smartphone application as well. So, for the time being, the minimum viable product will be a web-based application, and smartphone development will be for future initiatives or iterations. As for software and hardware requirements for the users of the proposed application, the researchers generally recommend any modern computer or smartphone device. Legacy technologies will not be catered to. To name a few, operating systems like MS-DOS, Windows 3.1 or XP, and hardware such as Apple II GS machines or Intel 286 computers will not be provided for (*Legacy Technology: 5 Most Asked Questions*, 2020).

The following will be used for the development of the application: PhpMyAdmin MySQL Server for database management; an Integrated Development Environment (IDE) of each researcher's choice (namely Visual Studio Code); and Php Laravel framework to build the web application. As the project will be web-based, the application will be delivered by means of software as a service (SaaS). Software as a Service is a service method delivery that allows users to access data from any device with internet connection and a web browser, and applications can be hosted by vendors or service providers online made available for customers to use over a network.

In terms of showing the locations of businesses registered to the system, Google Maps embedded API using HTTP will be used based on the businesses' address that allows viewers to see where the businesses are and be able to use Google Maps for directions.

According to technologyadvice.com (Turco, 2021), SaaS has four advantages that could lead in huge gains in the business world. In terms of Cost, SaaS is able to give savings for many reasons like quick downloads and maintenance of applications instead of spending on expensive hardware. When it comes to Time, SaaS saves time by simple installation and logging in for a seamless experience. As for Accessibility, it uses the pay-as-you-go model which makes it flexible by allowing users to access the software pretty much anywhere with good internet connections. Lastly, regarding its Compatibility, users can easily log-in to already upgraded services with ease without the need for paying any updates using the conventional software installation method.

The following table shows the minimum software and hardware requirements for web development. As it ultimately depends on how demanding the task is, the general minimum requirements will only be listed. According to Smith (2021), the requirements are as follows:

Table 3.1: Minimum Requirements for Web Development

	Software – OS	Hardware – CPU	Hardware – RAM
Minimum Requirement	Windows 8 or later macOS Sierra	Intel Pentium 4 or later	4GB or higher

Linux – 64-bit Ubuntu 14.04+, Debian 8+, OpenSUSE 13.3+, or Fedora Linux 24+

3.3 Development Plan / Framework

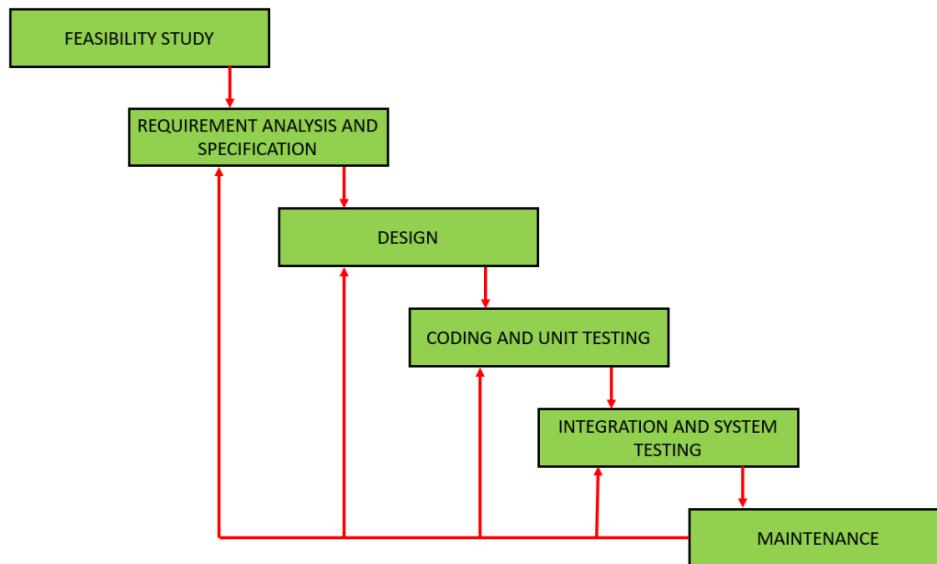


Figure 3.5: The Iterative Waterfall Methodology

The nature of this project requires a full documentation in advance (i.e., requirements gathering should be done before software development will take place), as such, the Waterfall methodology will be used instead of Agile. Specifically, the Iterative Waterfall methodology will be used to allow error correction during development because the classic model won't allow reworks if mistakes are found. While Agile is generally more flexible/modifiable in terms of delivery, it also requires constant feedback on an iterative basis from all users involved in the software. Because the researchers do not wish to disturb or take up any time from the businesses

involved in the scope, the waterfall methodology will allow the researchers to develop the product in their own pace. In addition, the researchers are also not capable of delivering small, yet functional products as the Agile methodology suggests, hence the decision to use Iterative Waterfall.

3.4 Application Benchmarking

Benchmark analysis is a type of market research that allows organizations to compare their existing performance against others and adopt improvements that fit their overall approach to continuous improvement and culture (USPS, nd).

The researchers have determined Four (4) similar systems, this include (1) Boulevard (<https://www.joinblvd.com/>) , (2) Booksy (<https://booksy.com/biz/en-au/features.html>) , (3) Google Business Profile (<https://www.google.com/business/>) and (4) Yelp (<https://business.yelp.com/>) Which will be used for the benchmark analysis as represented in the table below. In addition, the researchers got the features of each competitor and their information from their respective websites. Therefore, there might insufficient information because of some features are only accessible by availing their respective services.

The researchers considered adding Facebook Appointments (Book Now Tool) as a third competitor but it turned out that Appointments is a product of the partnership between Facebook and Booksy and it shares some similar features with the partner company like (1) Share their availability, (2) accept appointments from clients, (3) list available service, and (4) manage client contacts and send appointment reminders (Booksy, 2019).

Table 33.23.2: Benchmark Analysis Table

Features	Boulevard	Booksy	Google Business	Yelp Business	Proposed System
Activity Dashboard	✓	✓	✓	✓	✓
Alerts / Notifications	✓	✓	✗	✗	✓
Booking Notes	✗	✓	✗	✗	✓
Business Directory	✗	✓	✓	✓	✓
Customer and Client Profiles	✓	✓	✗	✓	✓
Confirmation/Reminders	✓	✓	✗	✗	✓
Customer Feedbacks	✓	✓	✓	✓	✓
Customer History	✓	✓	✗	✗	✓
For Salons and Spas	✓	✓	✓	✓	✓
Online Booking	✓	✓	✗	✗	✓
Product/Service Catalog	✓	✓	✓	✓	✓
Monthly Subscription Billing	✓	✗	✗	✗	✓
Reporting & Statistics	✓	✓	✓	✗	✓
Google Maps	✗	✓	✓	✓	✓

When it comes to prices of each service, Boulevard has three options. First plan is called Essentials and it costs \$175 per month which offers foundational features like self-booking overlay, business dashboard, integrated point-of-sale, client profiles, text & email confirmations, staff pricing & durations. Second is Premier Plan that costs \$325 per month which includes

flexible tools for small and medium businesses consists foundational features plus check-in & walk-in management, group booking & checkout, inventory management, multi-merchant transactions and more. They also offer a custom plan for large enterprises with specific needs and requirements. When it comes to Booksy. It doesn't offer a free plan instead it offers only plan which consists of the base cost of \$29.99 per month plus \$20 per month for each additional staff member. This plan will give users access to their Online booking 24/7 for the customers, management tools, online customer support, unlimited SMS invitation, and unlimited Customer notification and reminder via SMS. Google Business Profile allows businesses to create profiles for free. Yelp doesn't offer a monthly subscription but they offer yelp advertising which charges on a cost per click (CPC) basis. It depends on the size and type of business but the CPC price can vary immensely. Businesses can pay as low at \$0.30 per click and as high as \$40 per click.

Overall, the researchers will include the common features present in all 4 similar systems and will also include feature/s that will make our system unique.

Chapter 4: Methodology, Results and Discussions

4.1 Research Method and Design(s) Used

Research will be conducted mostly through online means because of the pandemic (using relevant data), but to gather recent information at the time of this study, survey questionnaires will be handed out during the time of this study to have a general idea of what attitudes and behaviors the target audience have with regards to the proposed application. The survey will collect information from two types of respondents, which with differing questions based on which description suits them the most (customer or business perspective). Participants will only need to fill out the survey once, due to the nature of the study as stated in the Development Plan of Chapter 3.

For research design, the waterfall methodology will be the most suitable. Because of the nature of this study, its development plan, and the time given for research, methodologies other than waterfall (with regards to the survey) would be inappropriate.

4.2 Population Frame and Sampling Scheme

Purposive and convenience sampling schemes will be used for the collection of surveys. Purposive sampling is a method of which the researchers only select those who fit the needs of the study, in which case it is the micro, small, and medium Spa and Salon businesses. As for convenience sampling, it is simply a method in which data is gathered from those who are readily available or easy to access. As the application will involve interaction between both business and customer, the decision to use purposive sampling was made because certain establishments do not

fit the study. As for convenience, it is used because of the quarantine safety protocols as stated in the Scope and Limitations of Chapter 1.

4.3 Description of Respondents

The survey is handed out to two types of respondents —one for customers (potential or regulars of spas and/or salons), and one for business owners or the persons in charge of the booking process in the business. Because eighteen is the minimum age requirement to use the application, only respondents who are eighteen and above will be surveyed. These two are the only ones selected because they will be the main users of the application. Software is made for the user, and as such, it only makes sense to include those two parties.

4.4 Instruments of the Study

The following describes the types of questions included in the survey study. For demographics, only age is considered for the customers side, while businesses are only asked for their location. Everyone else is asked for their name, but it is left optional should they not be comfortable with such information.

Customers will be asked to rate problems, in terms of importance and frequency, when it comes to queuing, forgetfulness of appointments, and the unavailability of certain services when visiting a business. Scheduling/Booking preferences will also be taken into account. There will also be a question asking how customers search for businesses.

For business employees, managers, or owners, they will be asked for additional demographic information pertaining to spas or salons such as name of business and business type. The questionnaire will ask for the following: if they offer home/private services; if they have an

internet connection; which devices they have for work use; how their customers schedule/book for appointments; what reasons do they have for not having an online booking system (if they don't have one); how they keep track of appointments; what point in time they ask for payments; how they check for customer feedback; if they ask for any other type of information in the booking process, with an open-ended question to follow-up; if they notify their customers about their appointment; and the means of how they notify their customers (if they notified them). And like with the customer side, they are also asked to rate the problems but with different concerns. They will be asked about the following: miscommunication with clients; issues of insufficient information from customers (i.e., requirements before service); accidental bookings or fake bookings; the tendency to disorganize the listing of customer appointments; customer no-shows or sudden cancellation; miscommunication amongst employees; forgetting customer appointments; employee workload distribution; and finally, issues with not being able to provide service when customers are in the establishment.

At the end of the survey all types of respondents are to be given a summary of what the proposed application will be like, and they will be asked if they would be willing to use it. Additionally, they will be asked with open-ended questions if they disagree to use it, and if they have any other suggestions to give for the application.

The Likert scale will be employed for certain questions to gather the general perception of particular problems and concerns. It will be used to measure the level of importance, frequency, and preference. Note that the numerical weights for both ends of each table have low ranges on purpose because they are considered “extremes”. The following tables below represent each response measurement:

Table 4.1: 3-point Likert scale to measure how important it is to address the problem

Weight	Numerical Weight	Opinion
3	2.5 – 3	Must address
2	1.5 – 2.49	Nice to address
1	1 – 1.49	Does not need addressing

Table 4.2: 5-point Likert scale to measure frequency

Rating	Numerical Weight	Opinion
5	4.5 – 5	Always / Very Often
4	3.5 – 4.49	Often
3	2.5 – 3.49	Sometimes
2	1.5 – 2.49	Rarely
1	1 – 1.49	Never

Table 4.3: 3-point Likert scale to measure preference

Weight	Numerical Weight	Opinion
3	2.5 – 3	Much prefer
2	1.5 – 2.49	Neutral
1	1 – 1.49	Do not prefer

4.5 Data Gathering Procedures

Data will mainly be collected via the internet, particularly through articles, blogs, educational forums, and survey questionnaires. The survey was handed out personally in the

establishments, through messages in Facebook, email, and word of mouth. Note that convenience sampling is used, so most of the participants that have been chosen are based on their proximity to the researchers. Google Forms will be utilized because of how easy it is to create a questionnaire, and because of how easy it is to visualize the summary of responses.

4.6 Results and Discussions

The following information entails the general information required from start of the survey.

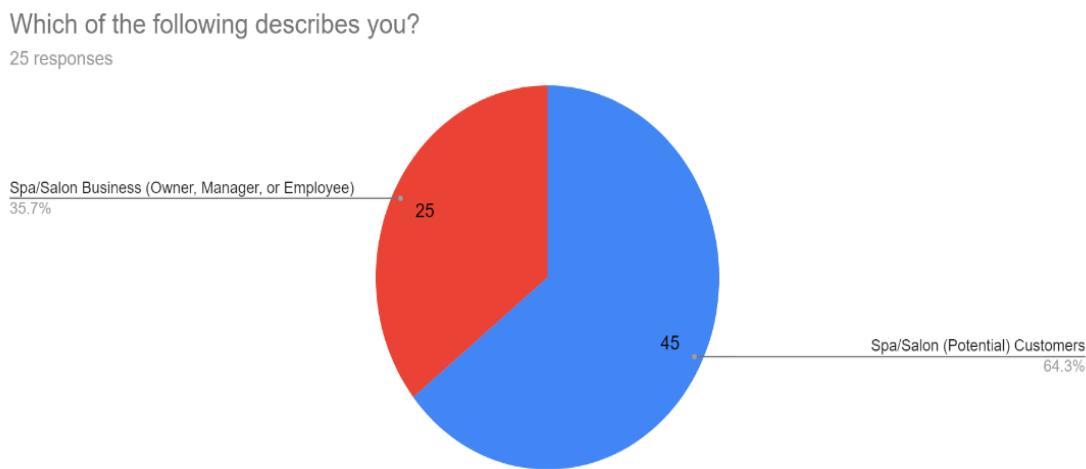


Figure 4.1: Classification of Respondents

This study received 70 respondents. 64.3% (45) of the respondents identify themselves as spa/salon customers while 35.7% (25) of the respondents identify themselves as spa/salon business (owner, manager, or employee).

Age
45 responses

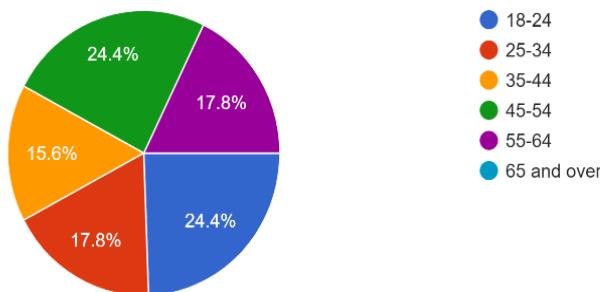


Figure 4.2: Age of Spa/Salon Customers

When it comes to age, 24.4% (11) of the spa/salon customers are between the ages of 18 and 24, another 24.4% (11) of the spa/salon customers are between the ages of 45 and 54, 17.8% (8) are between the ages of 25 and 34 while another 17.8% (8) are between the ages of 55 and 64, lastly 15.6% (7) are between the ages 35 and 44.

Location/Branch

25 responses

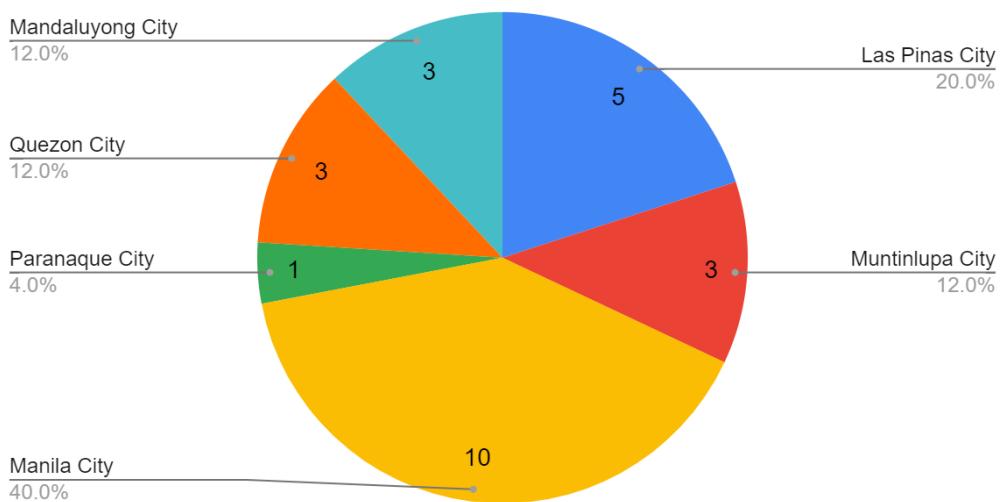


Figure 4.3: Location of Spa/Salon Business

As to location of spa/salon businesses in Metro Manila, 40% (10) of the respondents are from Manila City, 20% (5) of the respondents are from Las Pinas City, 12% (3) of the respondents are from Quezon City, 12% (3) of the respondents are from Mandaluyong City, 12% (3) of the respondents are from Muntinlupa City, and 4% (1) of the respondent is from Paranaque City.

What type is your business?

25 responses

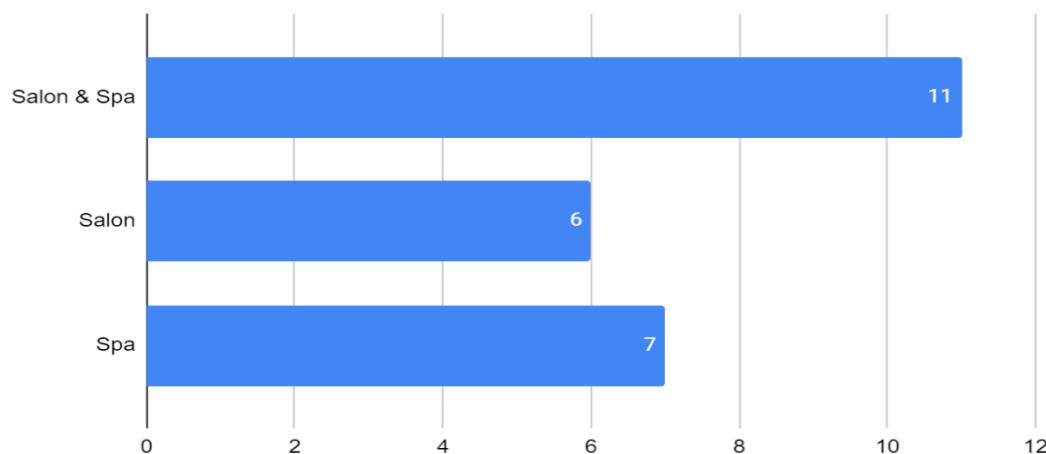


Figure 4.4: Classification of Spa/Salon Business

When it comes to classification of business respondents, 24% (6) of the respondents classify themselves as Salon only business, 26% (7) of the respondents classify themselves as Spa only business. The remaining 44% (11) of the respondents classify as both Salon and Spa business.

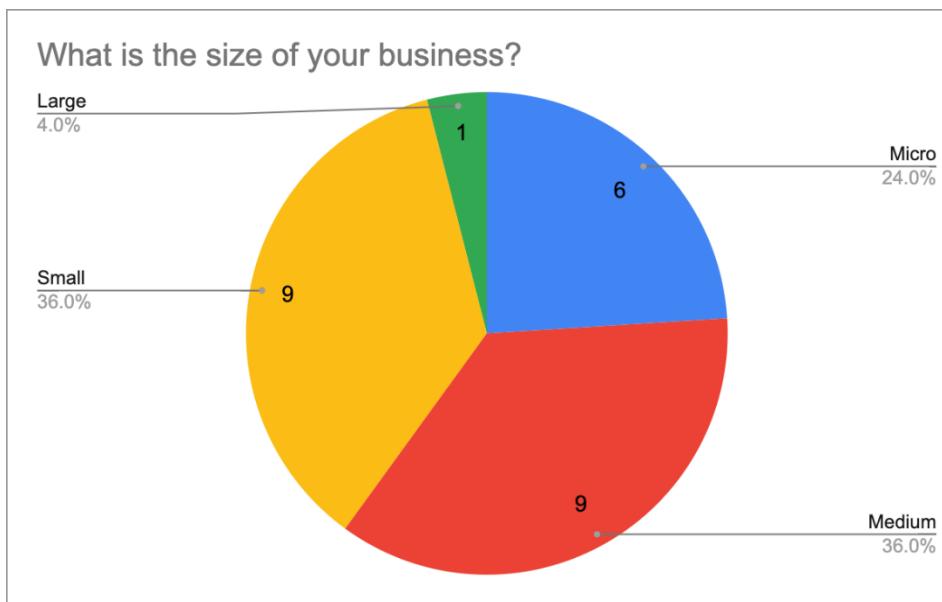


Figure 4.5: Classification of Business Size

When it comes to classification of business size, 24.0% (6) were classified as Micro, 36.0% (9) were classified as Small, another 36.0% (9) were classified as Medium, and 4.0% (1) was considered as a large business.

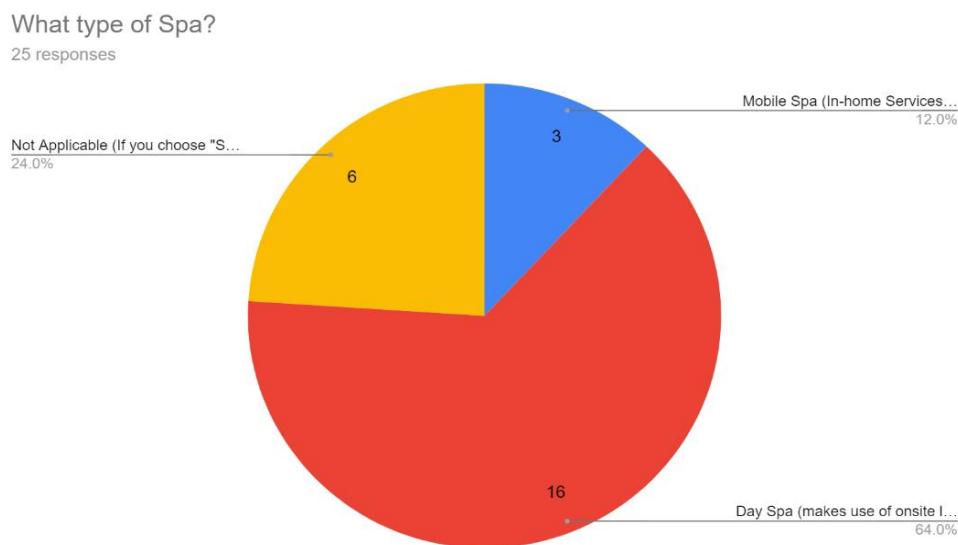


Figure 4.5: Classification of Spas

When it comes to the common types of spas, Majority of them which occupies 64% (16) of the respondents fall under the category of Day Spa (makes use of onsite leisure facilities during normal working hours), 12% (3) of the respondents fall under the category of Mobile Spa (In-home Services with or without beauty pampering, massage, and etc.). The remaining 24% (6) of the respondents only offer Salon services.

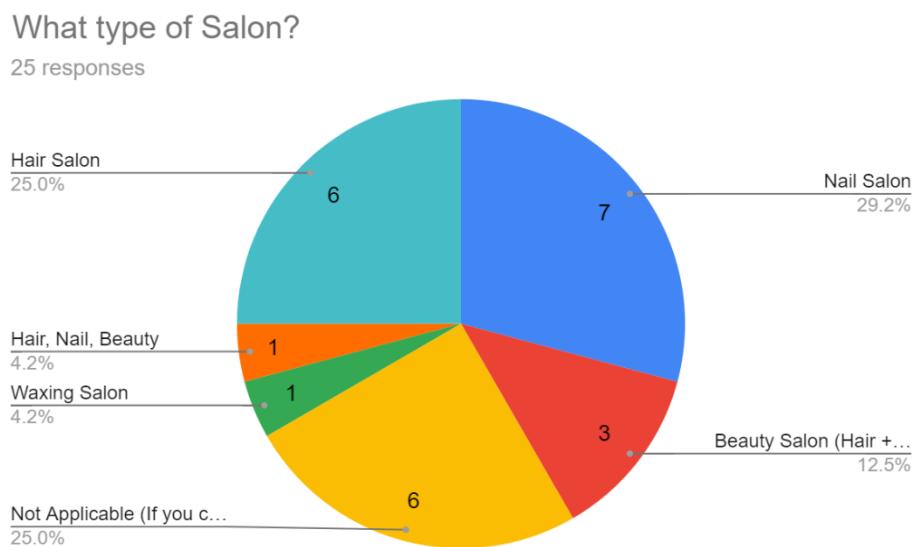


Figure 4.6: Categories of Spas

When it comes to the common types of salons, 29.2% (7) of the respondents fall under the nail salon category while 25% (6) falls under the hair salon category, 12.5% (3) of the respondents fall under the beauty salon category, 4.2% (1) respondent falls under multiple categories which includes hair, nail, and beauty salon, 4.2% (1) respondent categorizes their business as a waxing salon. The remaining 25% (6) of the respondents only offer Spa services.

Does your business offer home/private services or walk-in service?

25 responses

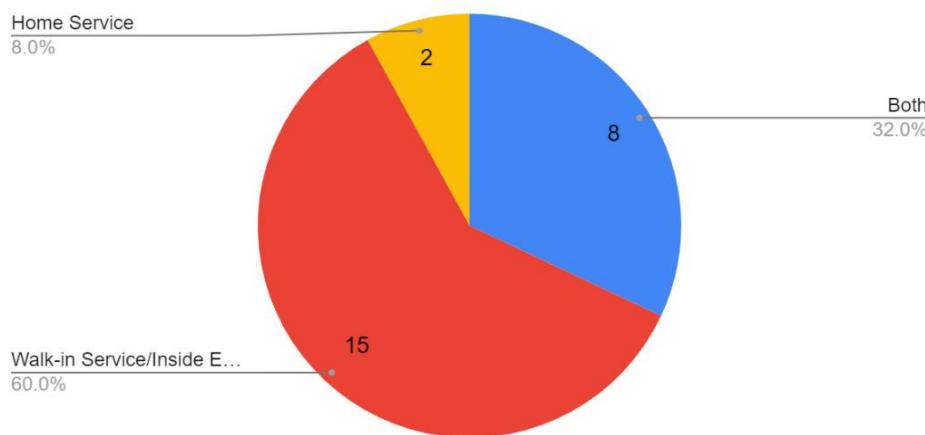


Figure 4.7: Venues where services are held

As for the venues where services are held, 60% (15) of the business respondents only offer walk-in service/inside the establishment service while 8% (2) of the business respondents only do home service. The remaining 32% (8) of the business respondents have both home service and walk-in service/inside the establishment service.

After the gathering of general information, the first part addresses the side of the customers while the second part addresses the side of the business.

How do you search or get to know existing spas or salons out there? (Select all that apply)

45 responses

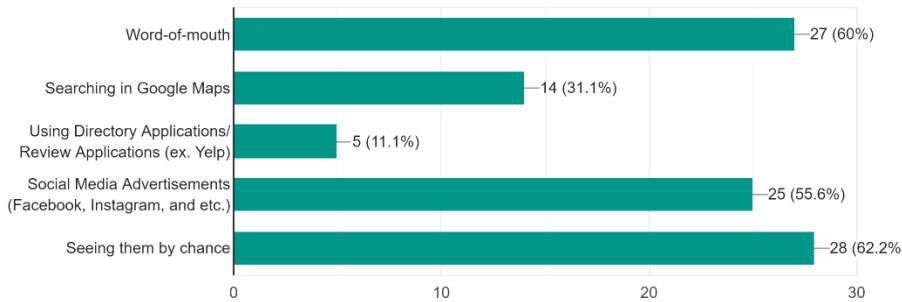


Figure 4.8: Ways on how to search for existing spas or salons

According to the respondents, 28 (62.2%) said they were able to search or get to know existing spas or salons out there through seeing them by chance, 27 (60%) said through Word-of-mouth, 25(55.6%) said through Social Media Advertisements (Facebook, Instagram, and etc.), the least method preferred method is Using Directory Applications/Review Applications (ex. Yelp) which only used by 5 (11.1%) respondents.

Table 4.4: Have you waited long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment? [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Have you waited long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment? [Frequency]	2	10	19	14	0	3.00 (S)

Table 4.5: Have you waited long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment? [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
15	24	6	2.2 (Nice to address)

As shown from the table, the majority of the respondents, which are 19 (42.5%) of them and 14 (31.1%) of them said they sometimes and often have to wait long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment while 10 (22.2%) of them and 2(4.4%) of them said they rarely to never experienced the said problem. With a weighted mean of 3.0 which means that the respondents sometimes experienced having to wait long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment. When it comes to the importance of addressing the said problem, 33% (15) of the respondents said it must be addressed, 53 % (24) of the respondents said it would be nice to address, 13% (6) of the respondents believe it does not need to be addressed. Overall, the customers believe that the problem is nice to address since it received a weighted mean of 2.2.

Table 4.6: Have you ever forgotten that you made an appointment and failed to show up? [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean

Have you ever forgotten that you made an appointment and failed to show up? [Frequency]	31	7	3	4	0	1.53 (R)
-----------------------------------------------------------------------------------------	----	---	---	---	---	-------------

Table 4.7: Have you ever forgotten that you made an appointment and failed to show up? [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
9	20	9	1.69 (Nice to address)

As shown from the table, the majority of the respondents, which are 69% (31) of them and 16% (7) of them said they rarely to never have forgotten that they made an appointment and failed to show up while 7% (3) of them and 8% (4) of them said they sometimes or often experienced the said problem. With a weighted mean of 1.5 which means that the respondents rarely experienced have forgotten that they made an appointment and failed to show up. When it comes to the importance of addressing the said problem, 20% (9) of the respondents said it must be addressed, 44 % (20) of the respondents said it would be nice to address, 20% (9) of the respondents believe it does not need to be addressed. The remaining 16% (7) of the respondents have never booked an appointment for a Spa/Salon service. Overall, the customers believe that the problem is nice to address since it received a weighted mean of 1.69.

Table 4.8: Have you ever been in a Salon/Spa business but then some facilities are not available, or some employees are not available to cater your particular needs? [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Have you ever been in a Salon/Spa business but then some facilities are not available or some employees are not available to cater your particular needs? [Frequency]	10	10	14	9	1	2.57 (S)

Table 4.9: Have you ever been in a Salon/Spa business but then some facilities are not available or some employees are not available to cater your particular needs? [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
18	14	8	2.05 (Nice to address)

As shown from the table, 31% (14) of the respondents said they sometimes having been in a Salon/Spa business but then some facilities are not available, or some employees are not available to cater your particular needs while 22% (10) of them and 22% (10) of them said they rarely to never have experienced the said problem. However, 20% (9) of them and 2% (1) said they often and always experience the said problem. With a weighted mean of 2.57 which means that the respondents sometimes experienced having been in a Salon/Spa business but then some facilities are not available, or some employees are not available to cater your particular needs. When it comes to the importance of addressing the said problem, 41% (18) of the respondents said it must be addressed, 32 % (14) of the respondents said it would be nice to address, 18% (8) of the

respondents believe it does not need to be addressed. The remaining 9% (7) of the respondents have never booked an appointment for a Spa/Salon service. Overall, the customers believe that the problem is nice to address since it received a weighted mean of 2.05.

The following discusses the rating of customer respondents over the following scheduling/booking preferences which includes (1) Walk-in, (2) SMS, (3) Email, and (4) Online Booking.

Figure 4.9: Customer preference over walk-in as their method for scheduling/booking

Must prefer (3)	Neutral (2)	Do not prefer (1)	Weighted Mean
15	24	6	2.2 (Neutral)

Figure 4.10: Customer preference over SMS as their method for scheduling/booking

Must prefer (3)	Neutral (2)	Do not prefer (1)	Weighted Mean
23	20	2	2.47 (Neutral)

Figure 4.11: Customer preference over email as their method for scheduling/booking

Must prefer (3)	Neutral (2)	Do not prefer (1)	Weighted Mean
9	19	17	1.82 (Neutral)

Figure 4.12: Customer preference over online booking as their method for scheduling/booking

Must prefer (3)	Neutral (2)	Do not prefer (1)	Weighted Mean
28	16	1	2.6 (Much prefer)

When it comes to customer preference over which of the following methods for scheduling/booking, online booking received a weighted mean of 2.6 which means customers much prefer using this method for scheduling/booking, SMS received the second highest weighted mean of 2.47 which means customers have neutral stand over using this method. This is followed by the walk-in method where it received a weighted mean of 2.2 which means customers are also fine with using this method. Lastly is email method which received a weighted mean of 1.82. It is the least among the methods, but customers are still neutral when it comes to using it for scheduling/booking.

The following figures and tables are the results from the survey given to the spa/salon business (owner, manager, or employee) respondents.

Which of the following devices does your business have for work use?

25 responses

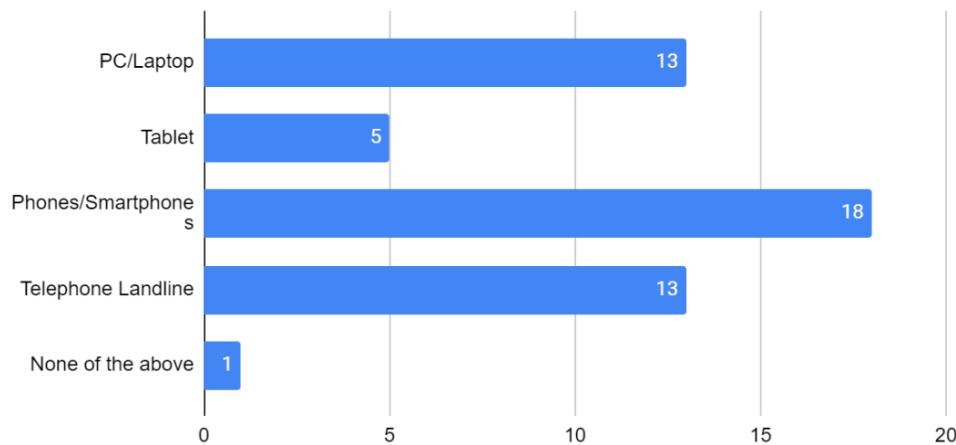


Table 4.10: Frequency of Devices Owned by Businesses

72% (18) of the businesses have a phone/smartphone for work use, 52% (13) of the respondents have pc/laptop, another 52% (13) of the respondents own a telephone landline, and then 20% (5) responded that they own a tablet, while 4% (1) respondent claims they own none of the above. From this we can conclude that our application will be web base with a responsive design in order to cater most devices, since majority of the businesses own a phone/smartphone.

Does your business have an internet connection?

25 responses

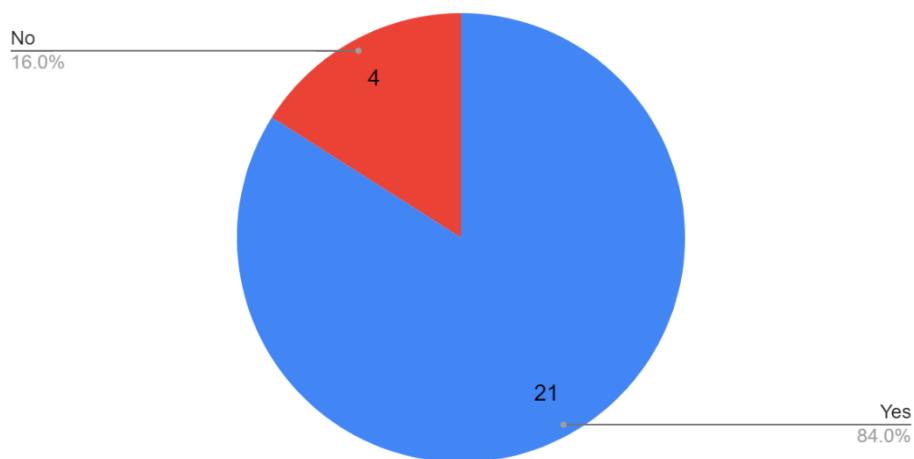


Figure 4.13: Availability of Internet Connection in Businesses

84% (21) of the businesses have internet connection in their establishment while 16% (4) of the businesses does not have internet connection. This information can further support that majority of the businesses can use our web application.

How do your customers schedule/book for appointments for your services? (Select all that apply)

25 responses

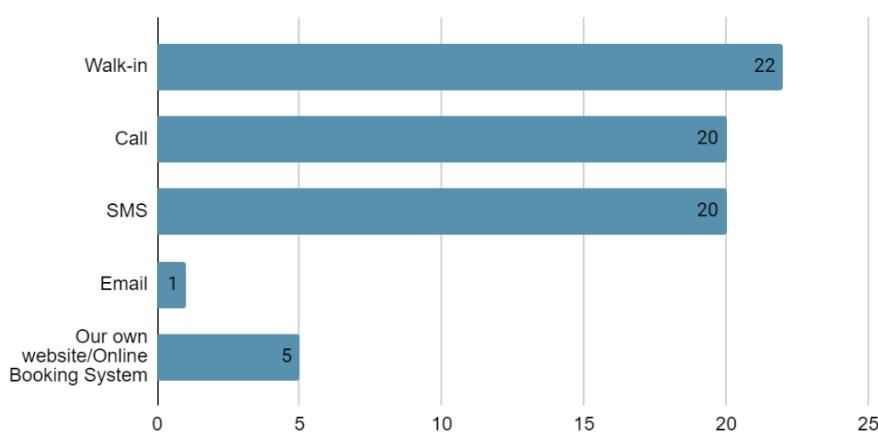
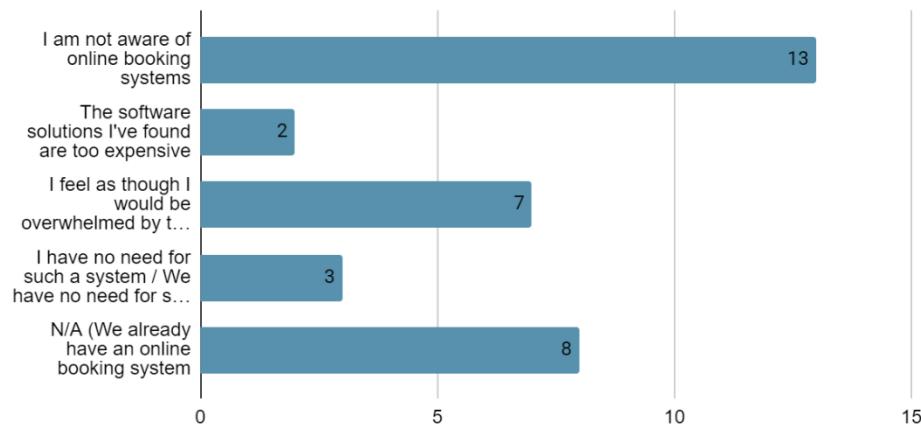


Figure 4.14: Ways on How Customers Schedule/Book an Appointment

88% (22) of the respondents said customers can walk-in to schedule/book for an appointment, 80% (20) of the respondents said customers can schedule/book their appointment through call another 80% (20) of them said through SMS, 20% (5) of the respondents claim customers can book/schedule their appointment through their own website/online booking system. Only 1 respondent say that customers can email them to book/schedule for an appointment.

If you do not have an "Online Booking System", why not?
(Select all that apply)

25 responses

*Figure 4.15: Reasons Why Businesses don't have an Online Booking System*

According to the figure above, 52% (13) business respondents are not aware of online booking systems, 28% (7) of the respondents claim they feel as though they would be overwhelmed by the features a software solution would have, 12% (3) of the respondents said they have no need for such a system since they don't have need for such business process improvements, 8% (2) of the respondents said the software solutions they found are too expensive, 32% (8) respondents claim that they already have an existing system.

How do you record/keep track of your customers' booking appointment for your services? (Select all that apply)

25 responses

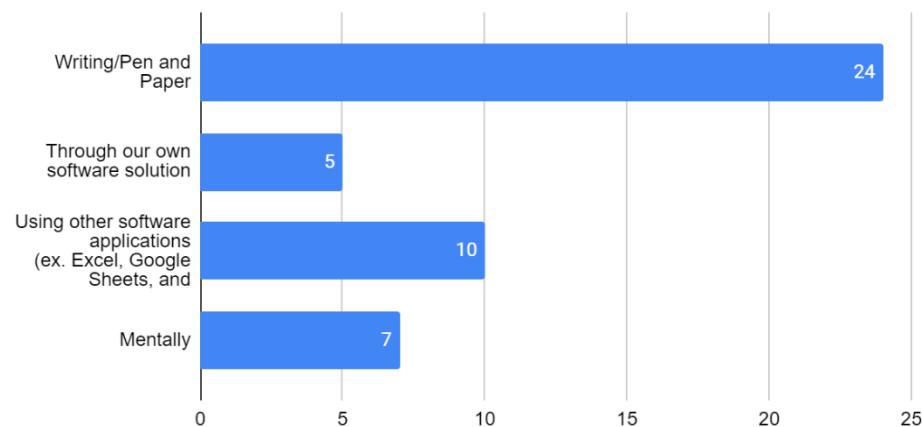


Figure 4.16: Ways on How Businesses Record/Keep Track of their Customers' Booking Appointment

As can be seen on figure, the most common way to record/keep track of customers' booking appointment is through writing it on pen and paper (96%), followed by using other software applications (ex. Excel, Google Sheets, and etc.) (40%), then mentally (28%), lastly is through their own software solution.

Other than asking for the time, date, name, and type of service when booking, do you ask your customers for any other type...

25 responses

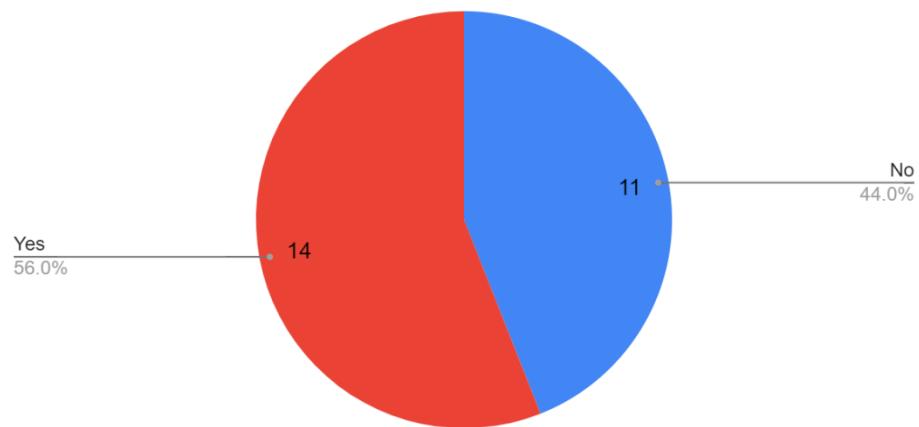


Figure 4.17: Other Type of Customer Information Requirement

Out of the 14 business respondents who said yes. Majority of them said vaccination card while some mentioned contract tracing information and personal information and history as their additional requirement for customers who want to avail their services.

At what moment or time does your business ask for payments to your customers?

25 responses

- Whenever we are already face-to-face with our customers. (Customers already inside our establishment or after massage therapist did the home service)

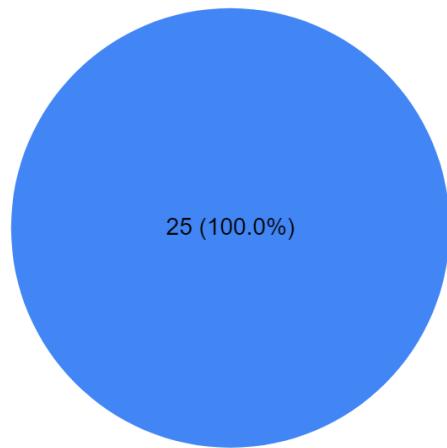


Figure 4.18: When does Businesses ask for Payments From their Customers

This question includes two options. These options include (1) We already ask for payments during booking for appointments even if customer hasn't gone in our business or met with our private service. Or (2) Whenever we are already face-to-face with our customers. (Customers already inside our establishment or after massage therapist did the home service). All of the respondents chose the second option with a 100% (25) claiming they ask for payment when customers are already inside our establishment or after massage therapist did the home service.

How does your business do Reputation Management, or check customer's feedback after giving service? (Select all that apply)

25 responses

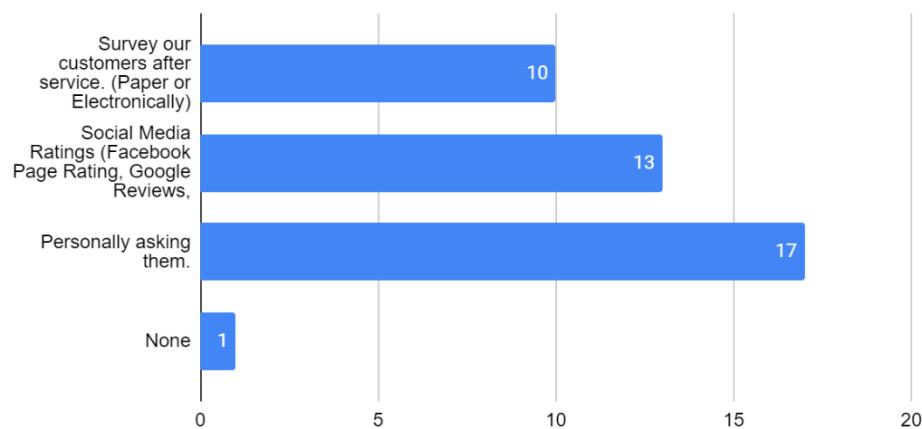


Figure 4.19: Ways on How Businesses do Reputation Management

As can be seen on figure above, the most common way to do reputation management is through personally asking the customers (68%), followed by using social media ratings (Facebook Page Rating, Google Reviews, Yelp etc.) (52%), then through distributing survey to the customer after service (Paper or Electronically) (40%).

Does your business notify or give reminders to your customers about their booked appointments?

25 responses

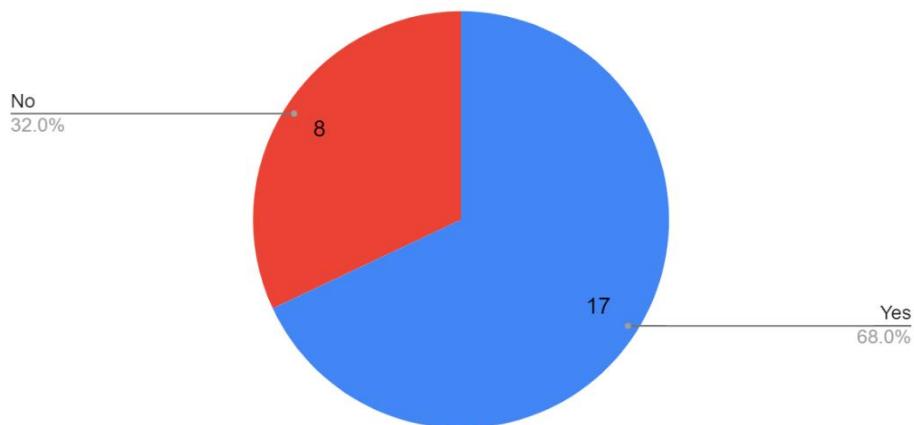


Figure 4.20: Availability of Businesses Notifying or giving Reminders to Customers' Booked Appointment

If you answered "Yes," how do you notify your customers?
(Select all that apply)

25 responses

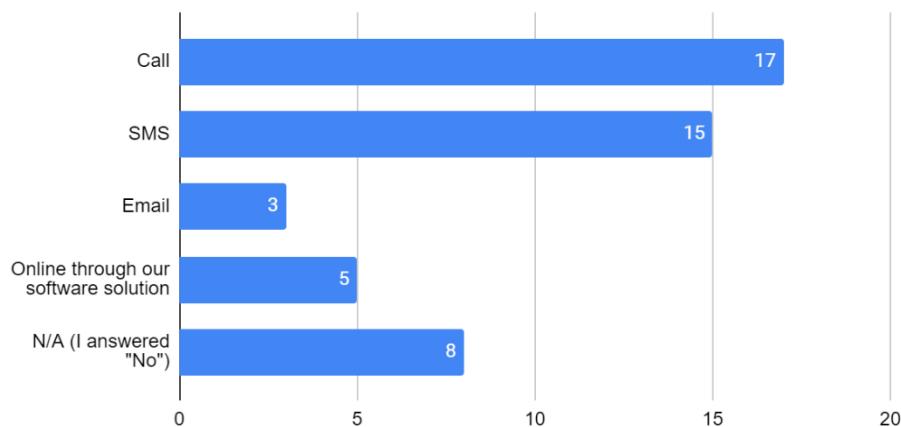


Figure 4.21: Ways of Businesses Notify Customers about their Booked Appointment

As can be seen on figure above, 68% (17) of respondents said yes while 32% (8) of the respondents said no. Continuing to figure, the most common way businesses do to notify their

customers about their booked appointment is through Call (68%), followed by using SMS (60%), then through their own software solution (20%). The least used way to notify customers is through email (12%).

This section includes scale-based questions that deals with issues businesses experiences with customers during the booking process.

Table 4.11: Miscommunication with clients (in terms of service offered, customer service choice, and etc.) [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Miscommunication with clients (in terms of service offered, customer service choice, and etc.) [Frequency]	2	4	16	2	1	2.84 (S)

Table 4.12: Miscommunication with clients (in terms of service offered, customer service choice, and etc.) [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
13	10	2	2.44 (Nice to address)

As shown from the table, 64% (16) of the respondents said they sometimes experience miscommunication with clients (in terms of service offered, customer service choice, and etc.)

while 16% (4) of them and 8% (2) of respondents said they rarely to never have experienced the said problem. 8% (2) of them and 4% (1) said they often and always experience the said problem. With a weighted mean of 2.84 which means that the respondents sometimes experienced miscommunication with clients (in terms of service offered, customer service choice, and etc.). When it comes to the importance of addressing the said problem, 52% (13) of the respondents said it must be addressed, 40 % (10) of the respondents said it would be nice to address, 8% (2) of the respondents believe it does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.44.

Table 4.13: Customers Lack of requirements before service such as IDs, Vaccination Cards, Time Scheduled, and etc. [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
We don't get enough data information from our customers/clients. (Lack of requirements before service such as IDs, Vaccination Cards, Time Scheduled, and etc.) [Frequency]	3	6	12	2	2	2.76 (S)

Table 4.14: Customers Lack of requirements before service such as IDs, Vaccination Cards, Time Scheduled, and etc. [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean

11	11	3`	2.32 (Nice to address)
----	----	----	---------------------------

As shown from the table, 48% (12) of the respondents said they sometimes experience not getting enough data information from our customers/clients (Lack of requirements before service such as IDs, Vaccination Cards, Time Scheduled, and etc.) while 24% (6) of them and 12% (3) of respondents said they rarely to never have experienced the said problem. 8% (2) of them and 8% (2) said they often and always experience the said problem. With a weighted mean of 2.76 which means that the respondents sometimes experienced not getting enough data information from our customers/clients. When it comes to the importance of addressing the said problem, 44% (11) of the respondents said it must be addressed, 44 % (11) of the respondents said it would be nice to address, 12% (3) of the respondents believe it does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.32.

*Table 4.15: Accidental redundant bookings or intentional spamming/trolls who keeps making reservations.
[Frequency]*

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Accidental redundant bookings or intentional spamming/trolls who keeps making reservations. [Frequency]	6	12	5	0	2	2.2 (R)

*Table 4.16: Accidental redundant bookings or intentional spamming/trolls who keeps making reservations.
[Importance]*

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
9	9	7	2.08 (Nice to address)

As shown from the table, 48% (12) of the respondents said they rarely experience accidental redundant bookings or intentional spamming/trolls who keeps making reservations. while 24% (6) of them said they never have experienced the said problem. 20% (5) of them said they sometimes experience the said problem while 8% (2) of the respondents always do. With a weighted mean of 2.2 which means that the respondents rarely experienced accidental redundant bookings or intentional spamming/trolls who keeps making reservations. When it comes to the importance of addressing the said problem, 36% (9) of the respondents said it must be addressed, 36 % (9) of the respondents said it would be nice to address, 28% (7) of the respondents believe it does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.08.

Table 4.17: Tendency to disorganize the listing of our customer appointments [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Tendency to disorganize the listing of our customer appointments [Frequency]	2	14	4	2	3	2.6 (S)

--	--	--	--	--	--	--

Table 4.18: Tendency to disorganize the listing of our customer appointments. [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
8	15	2	2.24 (Nice to address)

As shown from the table, 56% (14) of the respondents said they rarely have the tendency to disorganize the listing of our customer appointments. while 16% (4) of them said they sometimes experienced the said problem. 8% (2) of them and 12% (3) said they often and always experience the said problem. And the remaining 8% (2) respondents never experienced it. With a weighted mean of 2.6 which means that the respondents sometimes experienced tendency to disorganize the listing of our customer appointments. When it comes to the importance of addressing the said problem, 32% (8) of the respondents said it must be addressed, 60 % (15) of the respondents said it would be nice to address, 8% (2) of the respondents believe it does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.24.

This section includes scale-based questions that deals with issues businesses experience with booked customers.

Table 4.19: Customer no show / Sudden cancellation. [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Customer no show/ Sudden cancellation [Frequency]	0	9	15	1	0	2.68 (S)

Table 4.20: Customer no show / Sudden cancellation. [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
7	15	3	2.16 (Nice to address)

As shown from the table, 60% (15) of the respondents said they sometimes experience customer no show/ sudden cancellation while 36% (9) of them said they rarely experienced the said problem and 4% (1) of them said they often experience the said problem. With a weighted mean of 2.68 which means that the respondents sometimes experienced customer no show/ sudden cancellation. When it comes to the importance of addressing the said problem, 28% (7) of the respondents said it must be addressed, 60 % (15) of the respondents said it would be nice to address, 12% (3) of the respondents believe it does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.16.

Table 4.21: Miscommunication amongst employees (In terms of who will do the job, what facility/equipment to operate, and etc.) [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Miscommunication amongst employees (In terms of who will do the job, what facility/equipment to operate, and etc.) [Frequency]	3	13	8	0	1	2.32 (R)

Table 4.22: Miscommunication amongst employees (In terms of who will do the job, what facility/equipment to operate, and etc.) [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
7	17	1	2.24 (Nice to address)

As shown from the table, 52% (13) of the respondents said they rarely experience miscommunication amongst employees (In terms of who will do the job, what facility/equipment to operate, and etc.), 32% (8) of them said they sometimes experienced the said problem while 12% (3) of them said they never experience the said problem. Lastly, there is one respondent who claims they always experience the said problem. With a weighted mean of 2.32 which means that the respondents rarely experienced miscommunication amongst employees. When it comes to the importance of addressing the said problem, 28% (7) of the respondents said it must be addressed, 68 % (17) of the respondents said it would be nice to address, 4% (1) of the respondents believe it

does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.24.

Table 4.23: Failure to remember the appointments made by the customers [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
We forget the appointments our customers make [Frequency]	4	18	3	0	0	1.96 (R)

Table 4.24: Failure to remember the appointments made by the customers [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
5	15	5	2.00 (Nice to address)

As shown from the table, 72% (18) of the respondents said they rarely experience forgetting the appointments made by their customers while 16% (4) of them said they never experienced the said problem and 12% (3) of them said they sometimes experience the said problem. With a weighted mean of 1.96 which means that the respondents rarely forget the appointments made by their customers. When it comes to the importance of addressing the said problem, 20% (5) of the

respondents said it must be addressed, 60 % (15) of the respondents said it would be nice to address, 20% (5) of the respondents believe it does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.00.

Table 4.25: Trouble distributing employee workload [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Trouble distributing employee workload [Frequency]	4	13	5	3	0	2.28 (R)

Table 4.26: Trouble distributing employee workload [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
5	17	3	2.08 (Nice to address)

As shown from the table, 52% (13) of the respondents said they rarely experience trouble distributing employee workload, 20% (5) of them said they sometimes experienced the said problem while 16% (4) of them said they never experience the said problem. Lastly, 12% (3) respondents claim they often experience the said problem. With a weighted mean of 2.28 which means that the respondents rarely experienced trouble distributing employee workload. When it comes to the importance of addressing the said problem, 20% (5) of the respondents said it must

be addressed, 68 % (17) of the respondents said it would be nice to address, 12% (3) of the respondents believe it does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.08.

Table 4.27: Not enough employees/facilities to cater to the customer's desired service at the time they are already in our establishment [Frequency]

Question	N (1)	R (2)	S (3)	O (4)	A (5)	Weighted Mean
Not enough employees/facilities to cater to the customer's desired service at the time they are already in our establishment [Frequency]	3	9	10	3	0	2.52 (S)

Table 4.28: Not enough employees/facilities to cater to the customer's desired service at the time they are already in our establishment [Importance]

Must address (3)	Nice to address (2)	Doesn't need to be addressed (1)	Weighted Mean
8	15	2	2.24 (Nice to address)

As shown from the table, 40% (10) of the respondents said they sometimes experience not having enough employees/facilities to cater to the customer's desired service at the time they are inside the establishment, 36% (9) of them said they rarely experienced the said problem while 12% (3) of them said they never experience the said problem. Lastly, 12% (3) respondents claim they

often experience the said problem. With a weighted mean of 2.52 which means that the respondents sometimes experienced not having enough employees/facilities to cater to the customer's desired service at the time they are inside the establishment. When it comes to the importance of addressing the said problem, 32% (8) of the respondents said it must be addressed, 60 % (15) of the respondents said it would be nice to address, 8% (2) of the respondents believe it does not need to be addressed. Overall, the respondents believe that the problem is nice to address since it received a weighted mean of 2.24.

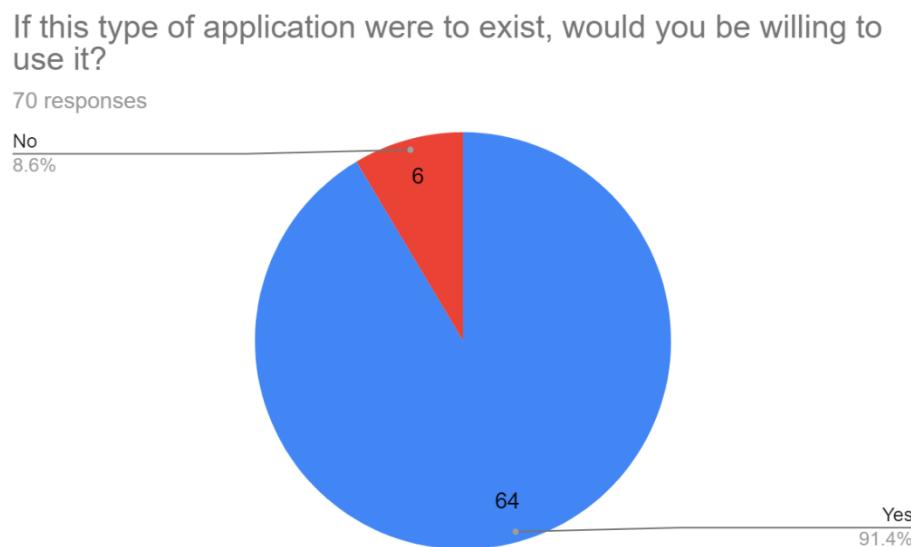


Figure 4.22: Acceptability of Spa/Salon Businesses and Customers of using Online Spa/Salon Booking System

The figure above shows the acceptability of spa/salon businesses and customers with regards to using the Online Spa/Salon Booking System. With a respondent of 70 (45 customers and 25 business owners/manager/employee) 64 respondents or 91.43% of the total respondents answered yes while 6 respondents or 11.57% of the total respondents answered no.

4.6.1 Requirements Analysis

Functional Requirements

Functional Requirements are the features that are included in a system for users to accomplish their tasks. These requirements define the very components of a system and how it will work to get its assigned jobs done.

Table 4.29: Functional Requirements

Registration			
Feature(s)	Description	Functionalities	User(s) involved
User Register	Allows users to create an account. Can be customer or business. Businesses who wish to be on board will be emailed for further requirements.	<ul style="list-style-type: none"> • Option to sign-up as customer or business • Verify if there is an existing account. • Require name, email, and contact number for all users. Businesses will have other information required. • Business owner will need to come up with a secret password to 	<ul style="list-style-type: none"> • Customers • Business Owners/Person in charge.

		<p>delete their account.</p> <ul style="list-style-type: none"> • Send confirmation email within 7 business days after verification process. • CAPTCHA to prevent potential spam 	
--	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

Login and Logout

Feature(s)	Description	Functionalities	User(s) involved
User Login	Allows users registered in the system to log-in with their account and be able to do certain features.	<ul style="list-style-type: none"> • Verify account • Click forgot password • Login to the system • Log out 	<ul style="list-style-type: none"> • Customers • Business Owners/Person in charge. • Administrators

Account Management

Feature(s)	Description	Functionalities	User(s) involved
Edit Business Profile	Allows businesses registered in the system to add or edit their business information and services.	<ul style="list-style-type: none"> • Input Business Information (e.g., contact num, address, opening hours) 	<ul style="list-style-type: none"> • Business Owners/Person in charge.

		<ul style="list-style-type: none">• Input business services• Edit account password• Toggle suspension in case store is closed.	
Edit Customer Profile	Allows customer users registered in the system to edit their information.	<ul style="list-style-type: none">• Edit name• Edit email• Edit phone number• Edit account password• Add/Edit special notes (if customers have a preferred employee, would like to note any certain	<ul style="list-style-type: none">• Customers

		conditions, etc.)	
Delete account	Lets users delete their account. Users should be allowed to delete their account at any point in time.	<ul style="list-style-type: none"> • Require password to confirm deletion 	<ul style="list-style-type: none"> • Business Owner/Person in charge • Customer
View list of accounts	Lets administrators view a list of accounts for general management	<ul style="list-style-type: none"> • View user ID, email, user type, email, and date created. • Delete account, add remark, and automatically email user for notice • View account 	<ul style="list-style-type: none"> • Administrators
View account	Lets administrators view details of an	<ul style="list-style-type: none"> • View all account details except for the 	<ul style="list-style-type: none"> • Administrators

	account with regards to deletion	user's password	
Search Store			
Feature(s)	Description	Functionalities	User(s) involved
Filter	Allows users to search for a store by filtering out specific tags, as well as add a favorite if they have one.	<ul style="list-style-type: none"> • Filter by location • Filter store by category • Filter by name • See business profile google map location 	<ul style="list-style-type: none"> • Customers
Rate			
Feature(s)	Description	Functionalities	User(s) involved
Rate a business	Allows customers to review or rate a business after receiving service	<ul style="list-style-type: none"> • Add a comment • Edit/Update comment • Delete comment • Rate overall service out of 5 	<ul style="list-style-type: none"> • Customers
Booking Appointment			
Feature(s)	Description	Functionalities	User(s) involved

Book an appointment (customer)	<p>Allows customers to book for the desired service of the businesses with time/date.</p> <p>The system will not allow users to do multiple bookings with a same date and time. However, the system will allow multiple bookings that have differing dates and times with a 3-hour interval between each booking, whether it be on the same business or other businesses.</p>	<ul style="list-style-type: none"> • Select a business • Select service • Select specific date and time. <p>Can be multiple under one booking</p> <ul style="list-style-type: none"> • Add special note • Spam/Bot check using CAPTCHA • Book an appointment • Disallow multiple bookings with same date and time. 	<ul style="list-style-type: none"> • Customers
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------

Cancel booking and/or appointment	Allows customers to cancel their booking or appointment if it isn't confirmed	<ul style="list-style-type: none"> • Cancel booking • Cancel appointment 	<ul style="list-style-type: none"> • Customers
View pending booking requests (business)	<p>Lets a business view pending requests to accept or reject clients.</p> <p>Must respond within 3 business days of request before automatically removing.</p>	<ul style="list-style-type: none"> • View clients name, phone, and email from list of requests • Reject and cancel client booking with required remark/note • Accept booking, finalize, and send automatic email of confirmation • Report client if possibly spam, then reject and 	<ul style="list-style-type: none"> • Business Owners/Person in charge

		cancel without notice	
Reject or cancel client booking	Lets a business reject or cancel booking. Note encouraged.	<ul style="list-style-type: none"> • Reject and cancel • Cancel accepted booking • Optional note for rejecting then confirm • Send automatic email after rejecting or canceling 	<ul style="list-style-type: none"> • Business Owners/Person in charge

Customer Appointment Record Management for Businesses

Feature(s)	Description	Functionalities	User(s) involved
Dashboard	Lets a business view visual representations of data related to their performance	<ul style="list-style-type: none"> • View comments from customers • View number of accounts reached 	<ul style="list-style-type: none"> • Business Owner/Person in charge

Business Verification

Feature(s)	Description	Functionalities	User(s) involved

List of business on-boarding request	Lets administrators view the list of businesses who wish to be part of the platform for verification Administrators will email the person who has made a request for additional concerns or requirements.	<ul style="list-style-type: none"> • View a business from list of requests • Confirm request • Delete account if considered spam or a similar offense • Email for additional concerns 	• Administrators
Report Management			
Feature(s)	Description	Functionalities	User(s) involved
Viewing of report	Lets administrators review a customer account's report(s)	<ul style="list-style-type: none"> • When appropriate, email the user and warn them about the offense • Delete a reported 	• Administrator

		comment when appropriate	
Report a customer	Lets a business report a user for potential spam or suspicious booking	<ul style="list-style-type: none"> • Report a customer to administrators with a required note 	<ul style="list-style-type: none"> • Business Owner/Person in Charge
Report a comment	Lets customers and a business report a comment if it is inappropriate	<ul style="list-style-type: none"> • Report a comment from a selection of reasons 	<ul style="list-style-type: none"> • Customer • Business Owner/ Person in Charge
Payment			
Feature(s)	Description	Functionalities	User(s) involved
Business payment	<p>Lets business owners pay to be on-board.</p> <p>Businesses will be reminded through email and can see when the next payment is due in the application.</p> <p>Payment period is between one day</p>	<ul style="list-style-type: none"> • View payment details on period of payment • View next payment when not due 	<ul style="list-style-type: none"> • Business Owner/ Person in Charge

	early and one day “late” from initial payment date.		
Payment management	Administrators will have to review and be given one day to review.	<ul style="list-style-type: none"> • Confirm payment • Change access of business if not paid • Email business if there are more concerns 	<ul style="list-style-type: none"> • Administrators

Non-Functional Requirements

Non-functional Requirements are the attributes that do not function to complete tasks, but rather important attributes that determine the system’s capabilities with regards to security, privacy, operations, and every other attribute possibly included.

In regards of what to do in **security**, it is of utmost importance to make sure that the system can withstand all types of attacks to prevent any damages on any data and the entirety of the system itself. First, the developers of the system must brainstorm any possible threats that the system may be endangered to. Find every loophole possible, and then repair it as much as needed. From any possible threatening malware to all the areas that only authorized users can access, every nook and cranny thoroughly thought of.

As for **privacy**, the same solution that applies to enhancing security should also be applied here. The system must make sure that the data being taken and stored in the system's database must remain unaltered by unauthorized parties, always available for use and sharing, and most importantly, stay confidential whatever the cost lest violating any customer's confidentiality. Information Security will play a huge role here by following the CIA (Confidentiality, Integrity, Availability) Triad, putting stress in authentication and authorization, and protecting data from any type of attack to prevent from being taken without consent and used for malicious intentions.

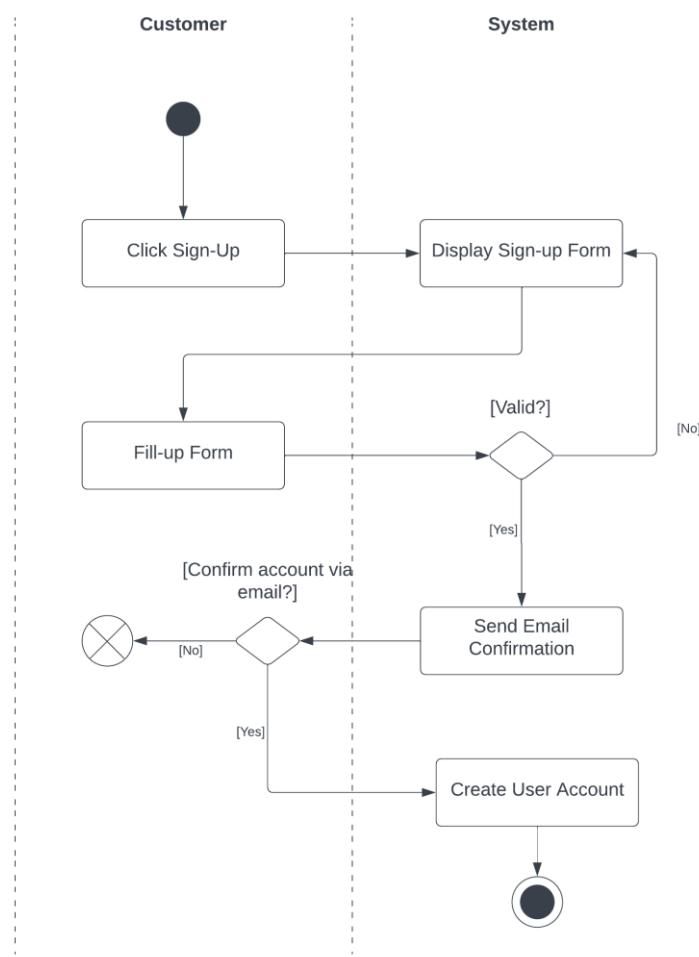
The developers will also implement **responsiveness** on both Web and Mobile interfaces by using bootstrap on the HTML pages for a better User Interface that the users can view and interact with whenever using the system.

To make such a system usable, the developers must make sure that the system is easy to learn, easy to use, easy to understand, and easy to master for maximum convenience and achieve an overall satisfying experience. But, in order to achieve such objective, an interface will have to go through trial-and-error to see which feature works best and abandon which do not to make room for any other improving features that may cross the developer's mind.

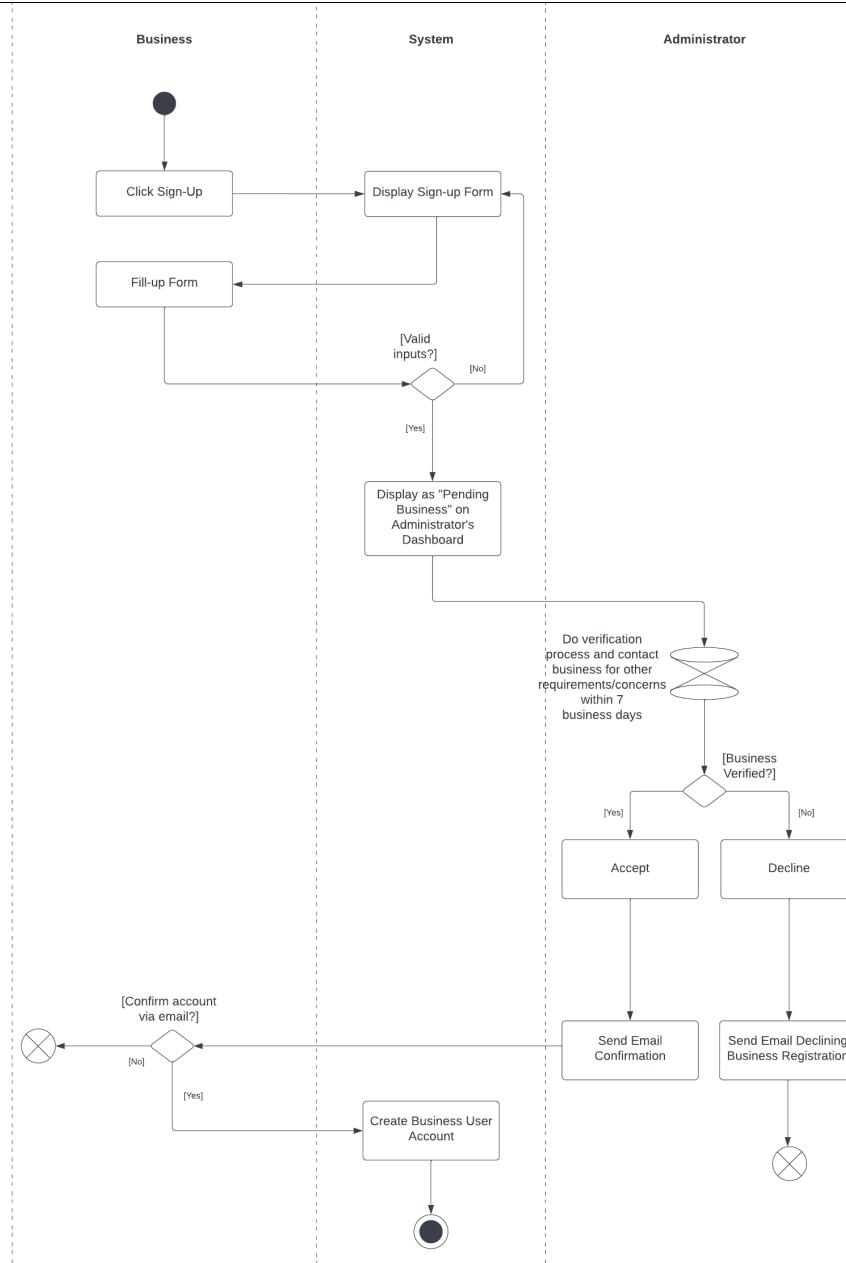
4.7 Requirements Documentation

4.7.1 Activity Diagrams

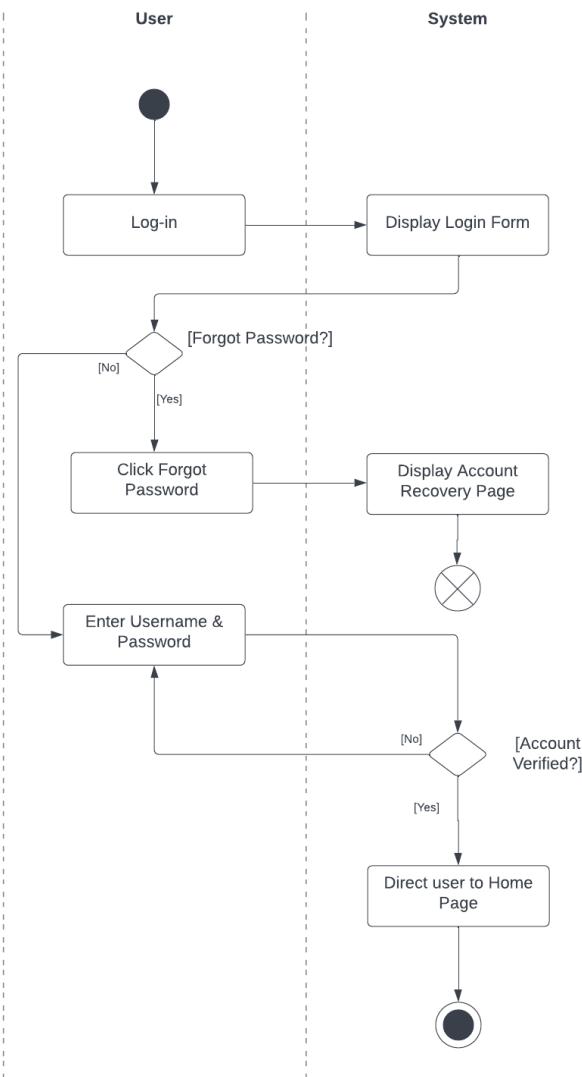
Activity Diagram of Customer Sign-up	Reference Number: AD-1
	Version Number: 1.0
System Name: Salonspas-S	
Subject: Customer Sign-up	



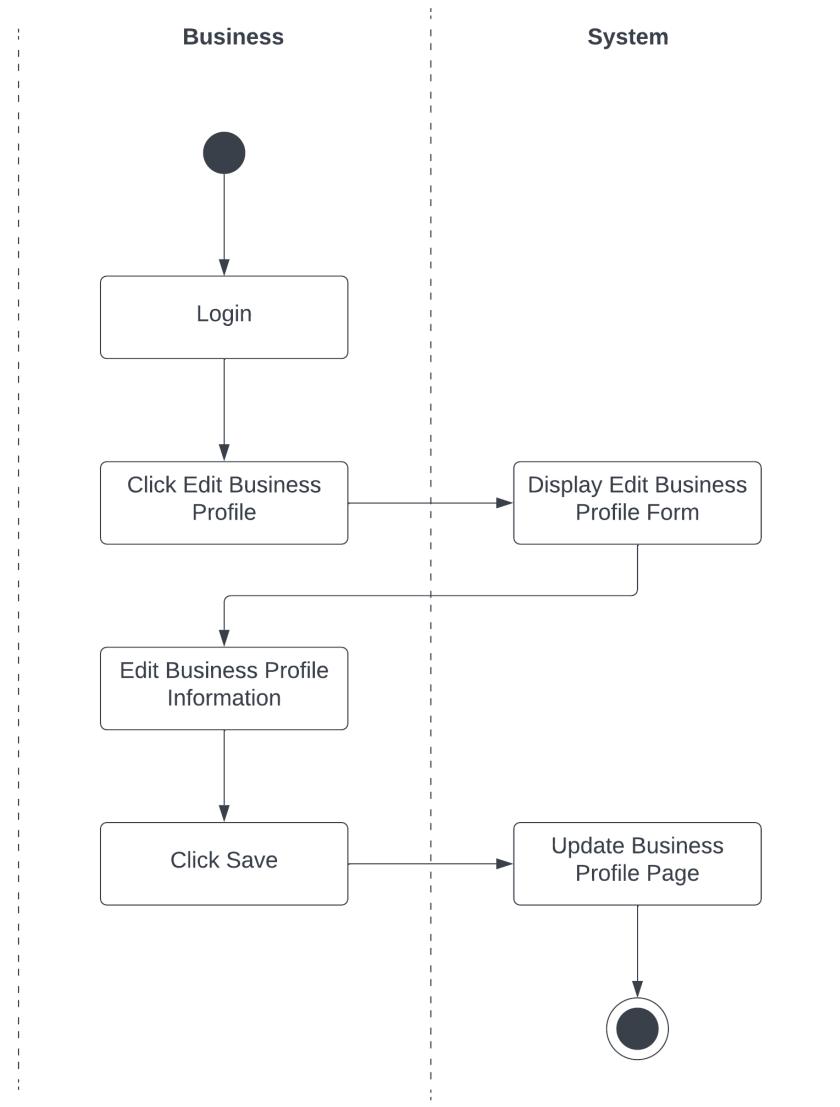
Activity Diagram of Business Sign-Up	Reference Number: AD-2
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Business Sign-up	



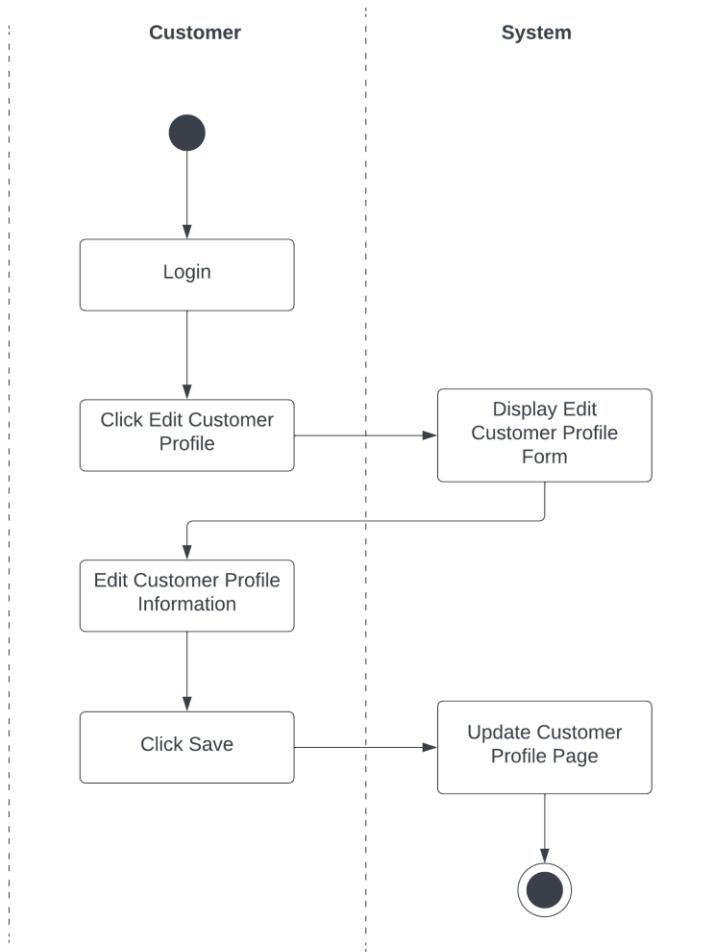
Activity Diagram of Login	Reference Number: AD-3
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Login	



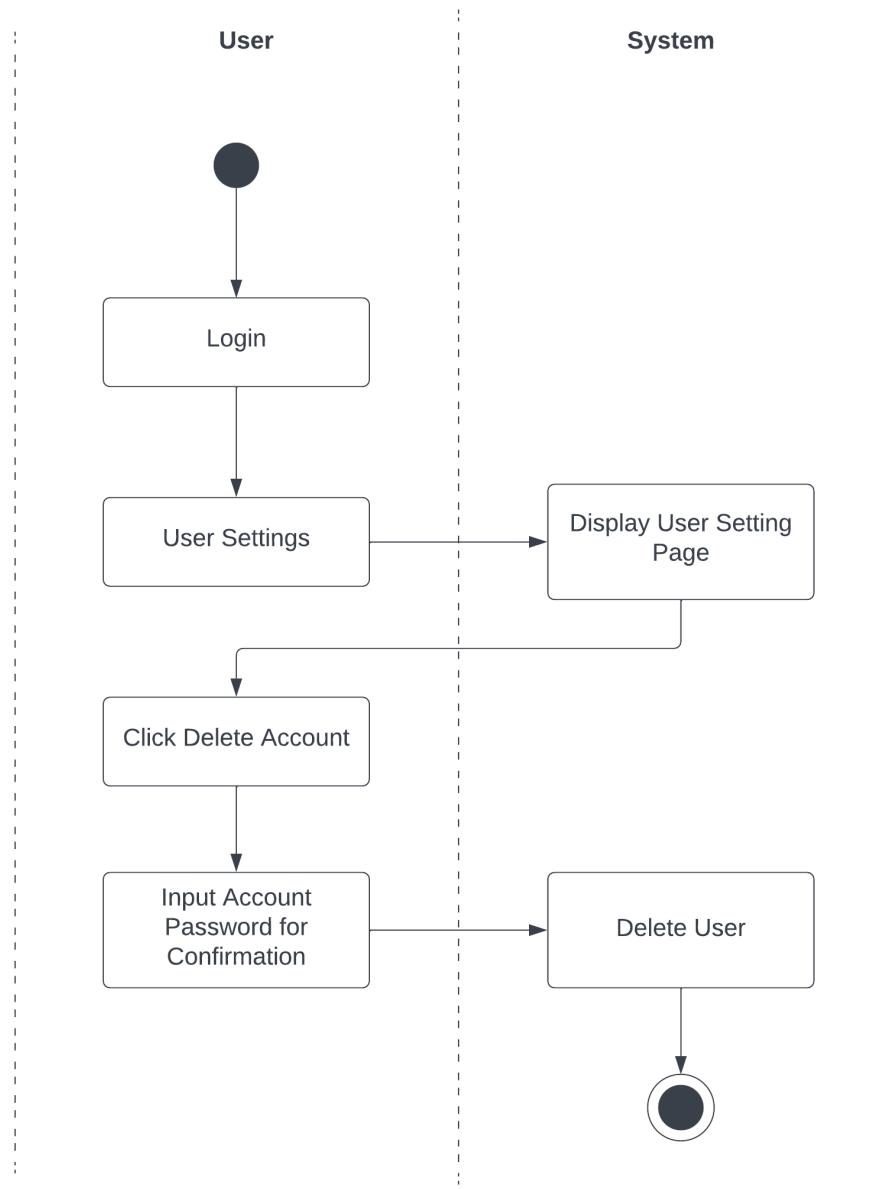
Activity Diagram of Edit Business Profile	Reference Number: AD-4
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Edit Business Profile	



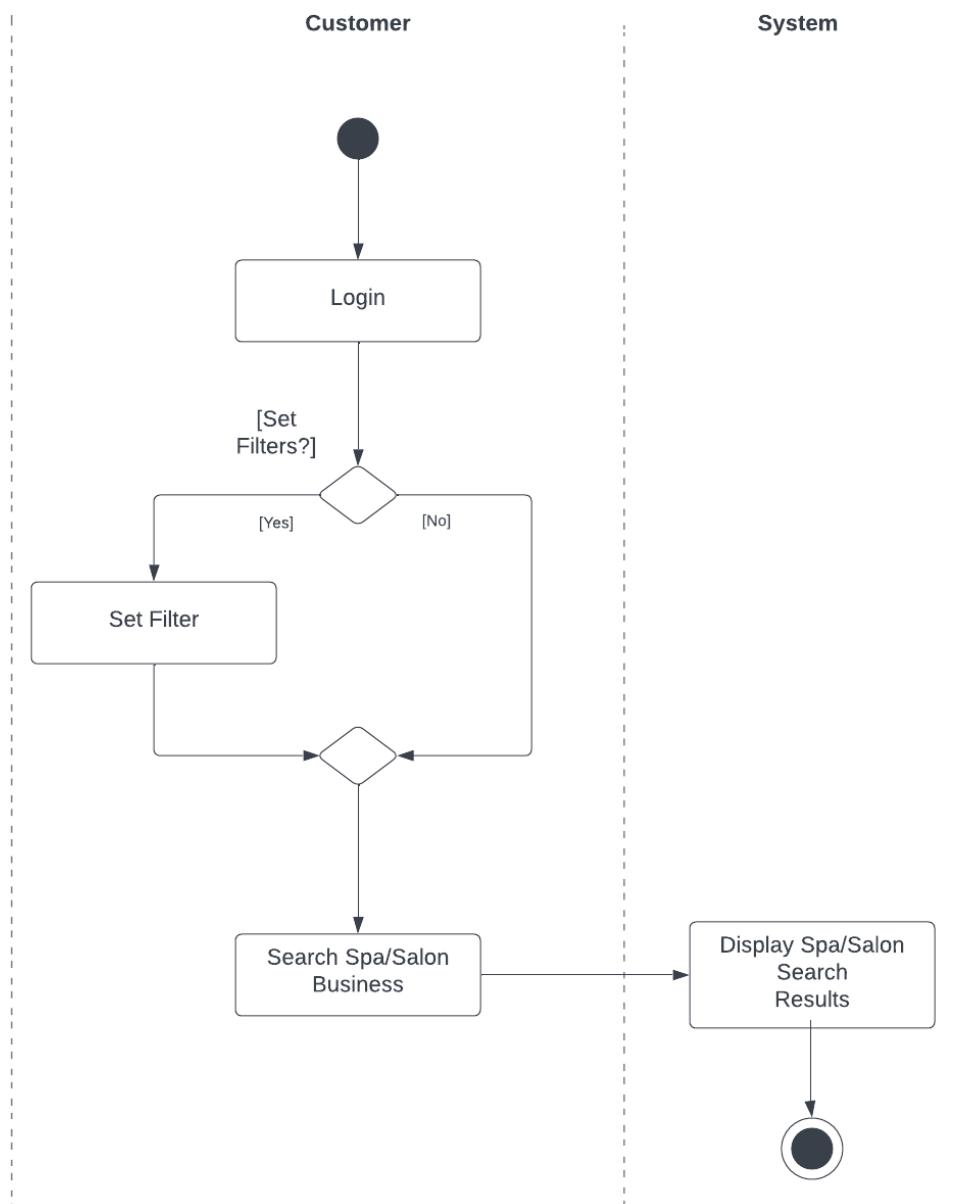
Activity Diagram of Edit Customer Profile	Reference Number: AD-5
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Edit Customer Profile	



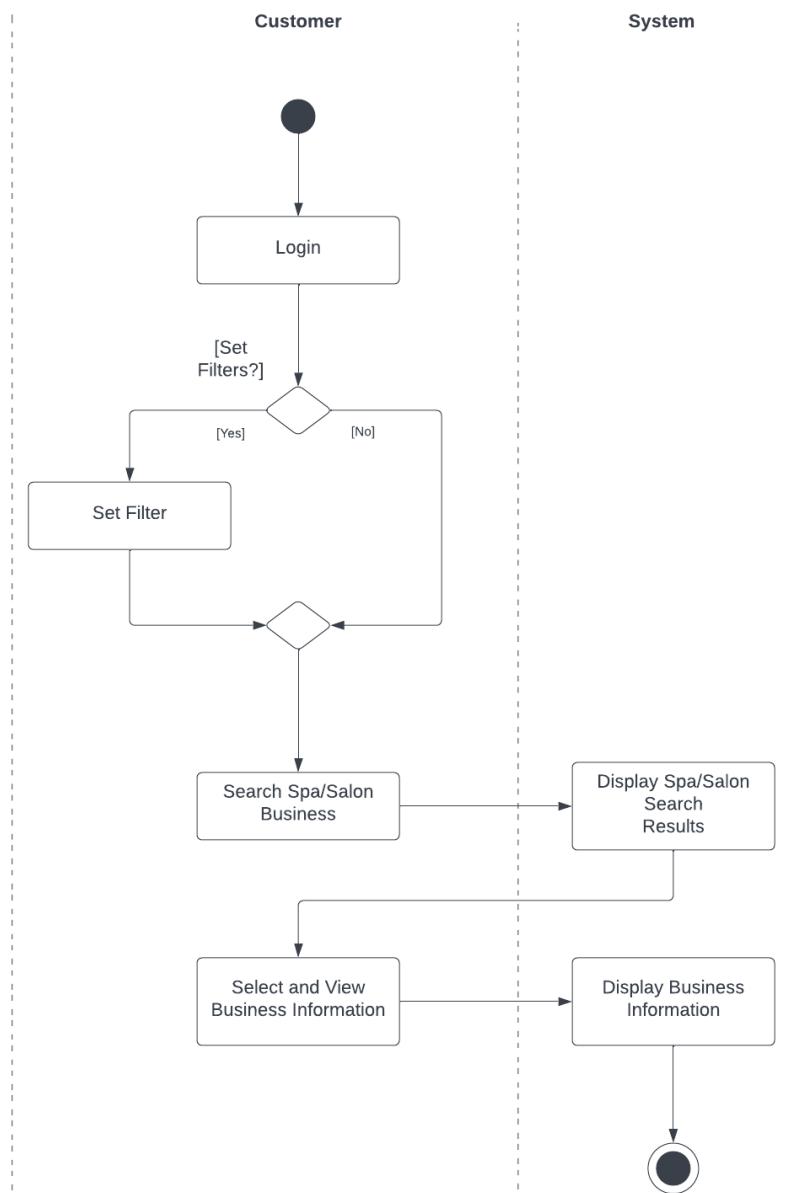
Activity Diagram of Delete Account	Reference Number: AD-6
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Delete Account	



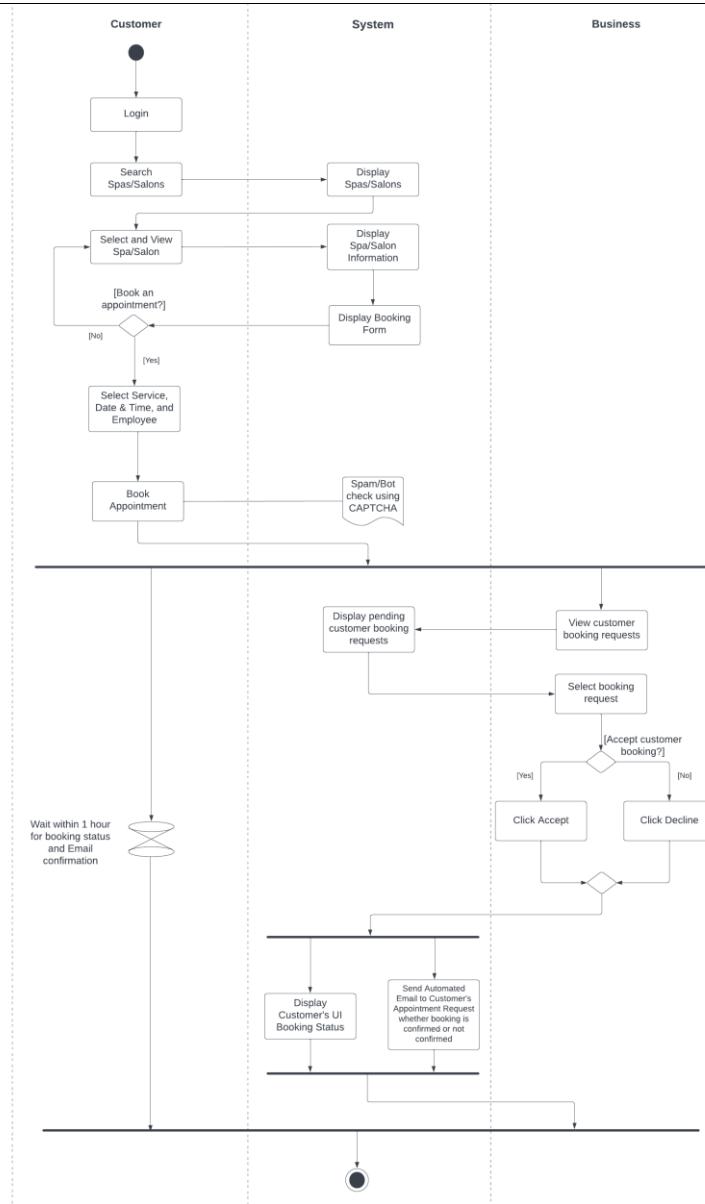
Activity Diagram of Search Business	Reference Number: AD-7
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Search Business	



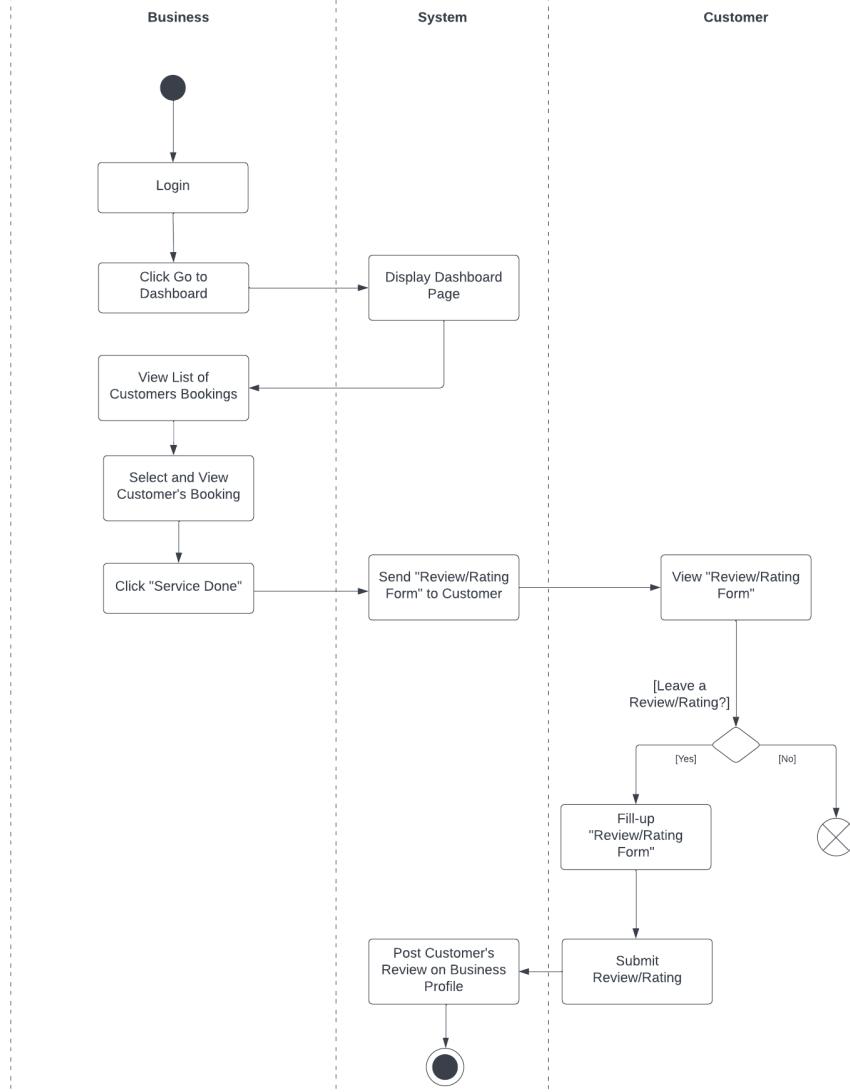
Activity Diagram of Select and View Business	Reference Number: AD-8
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Select and View Business	



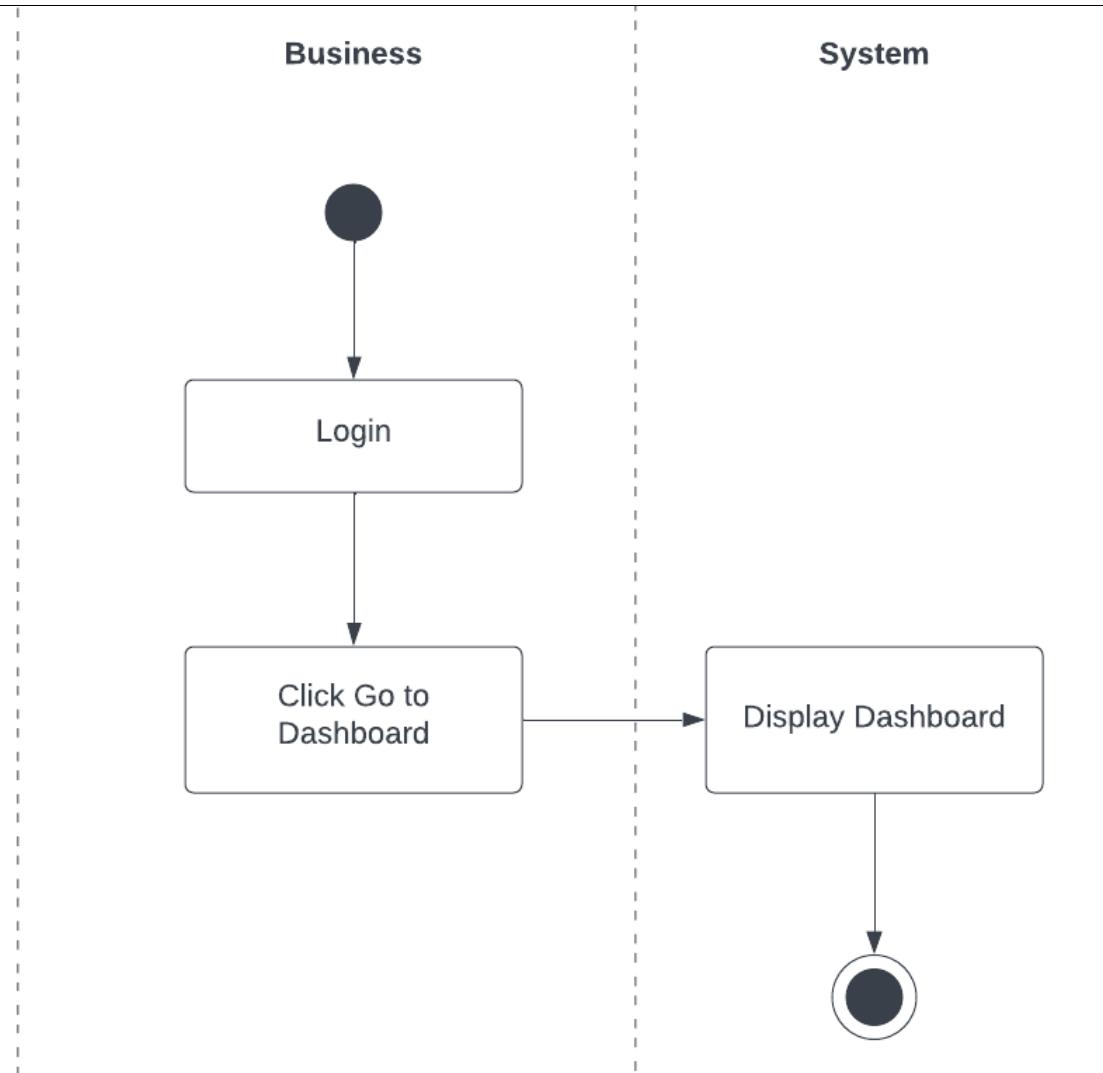
Activity Diagram of Customer Booking for an Appointment	Reference Number: AD-9
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Customer Booking for an Appointment	



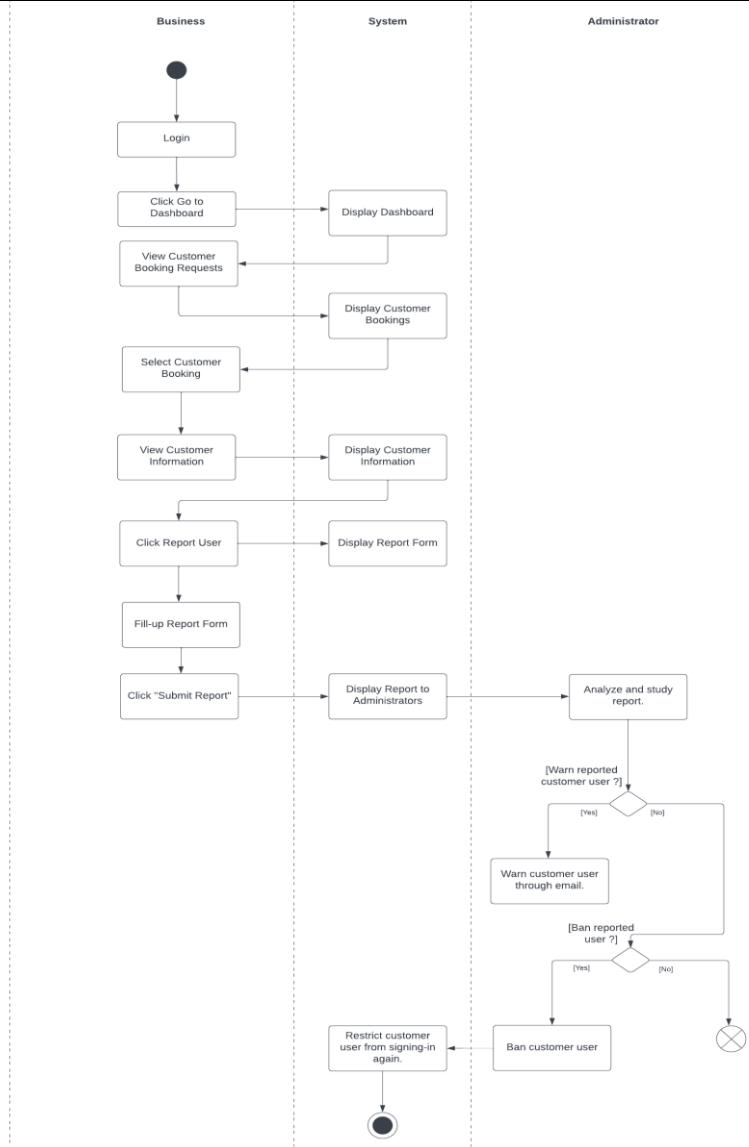
Activity Diagram of Customer Review and Rating to Business	Reference Number: AD-10
	Version Number: 1.0
System Name: SalonSpa-S	
Subject: Customer Review and Rating to Business	



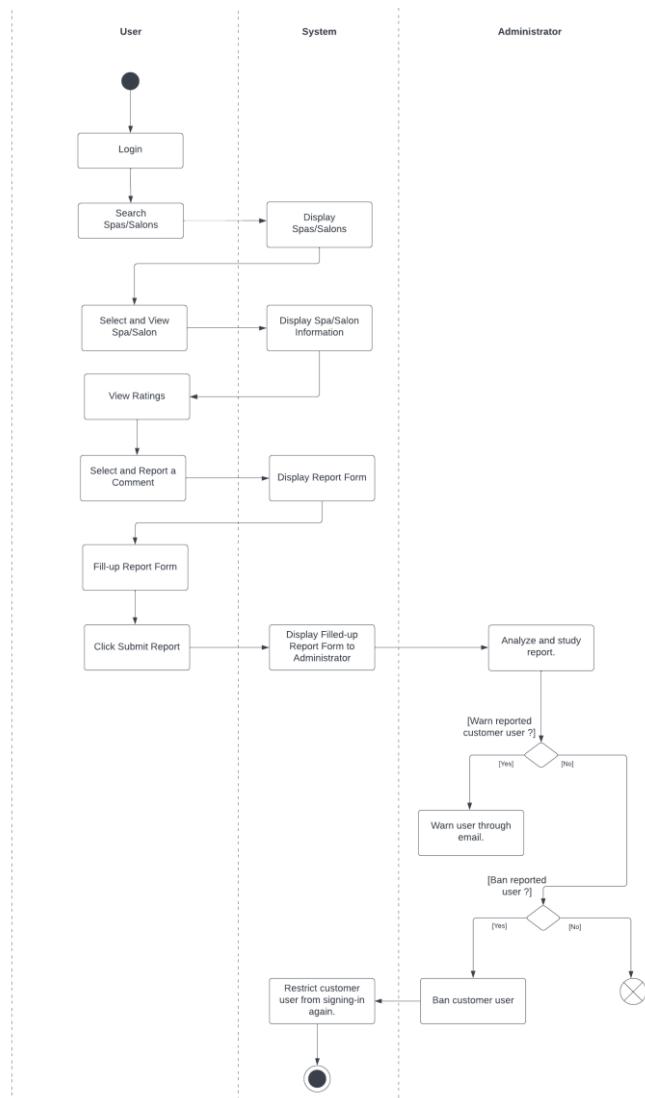
Activity Diagram of Business View Dashboard	Reference Number: AD-11
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Businesses View Dashboard	



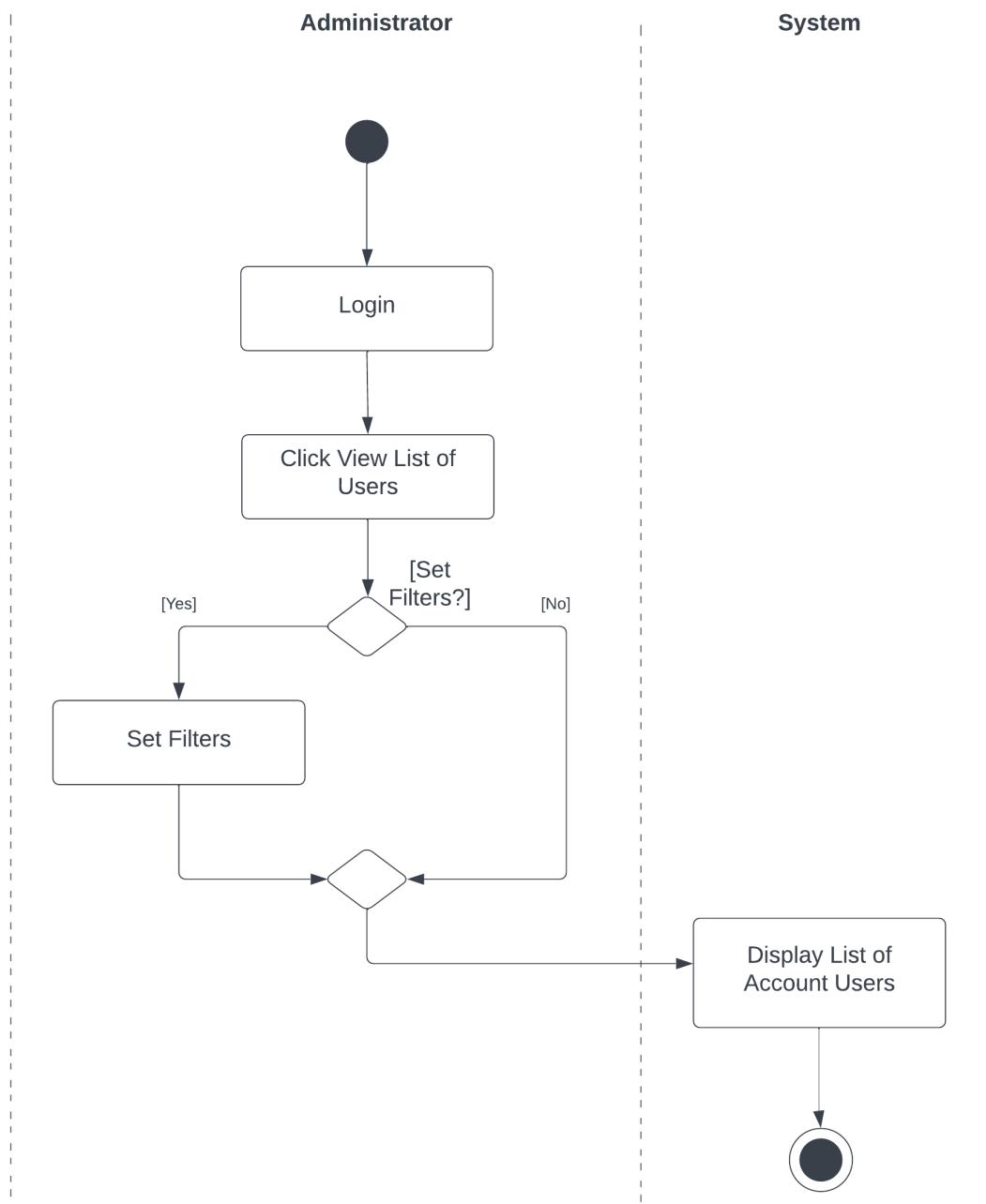
Activity Diagram of Report Customer User	Reference Number: AD-13
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Report Customer User	



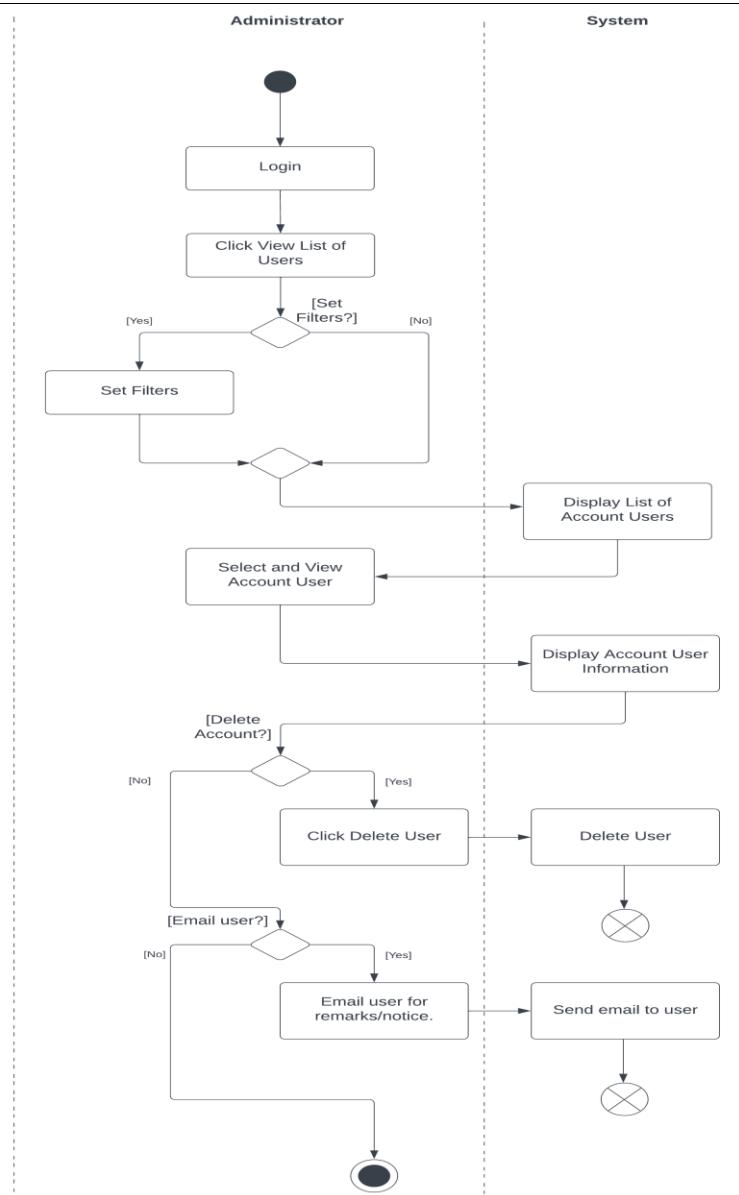
Activity Diagram of Report Comment	Reference Number: AD-14
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Report Comment	



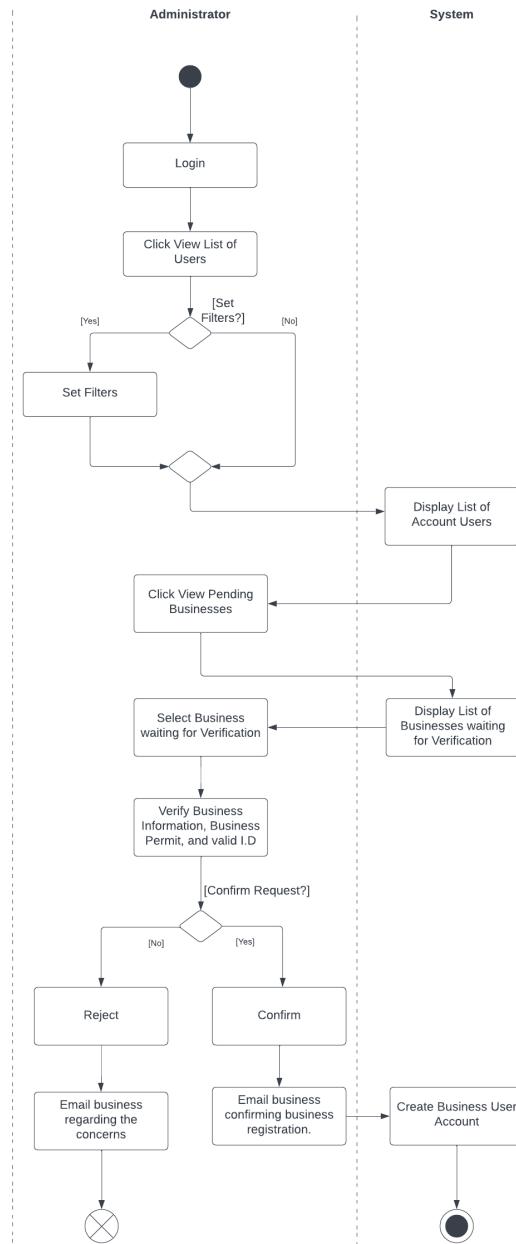
Activity Diagram of View List of Accounts	Reference Number: AD-15
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: View List of Accounts	



Activity Diagram of View User Account	Reference Number: AD-16
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: View User Account	

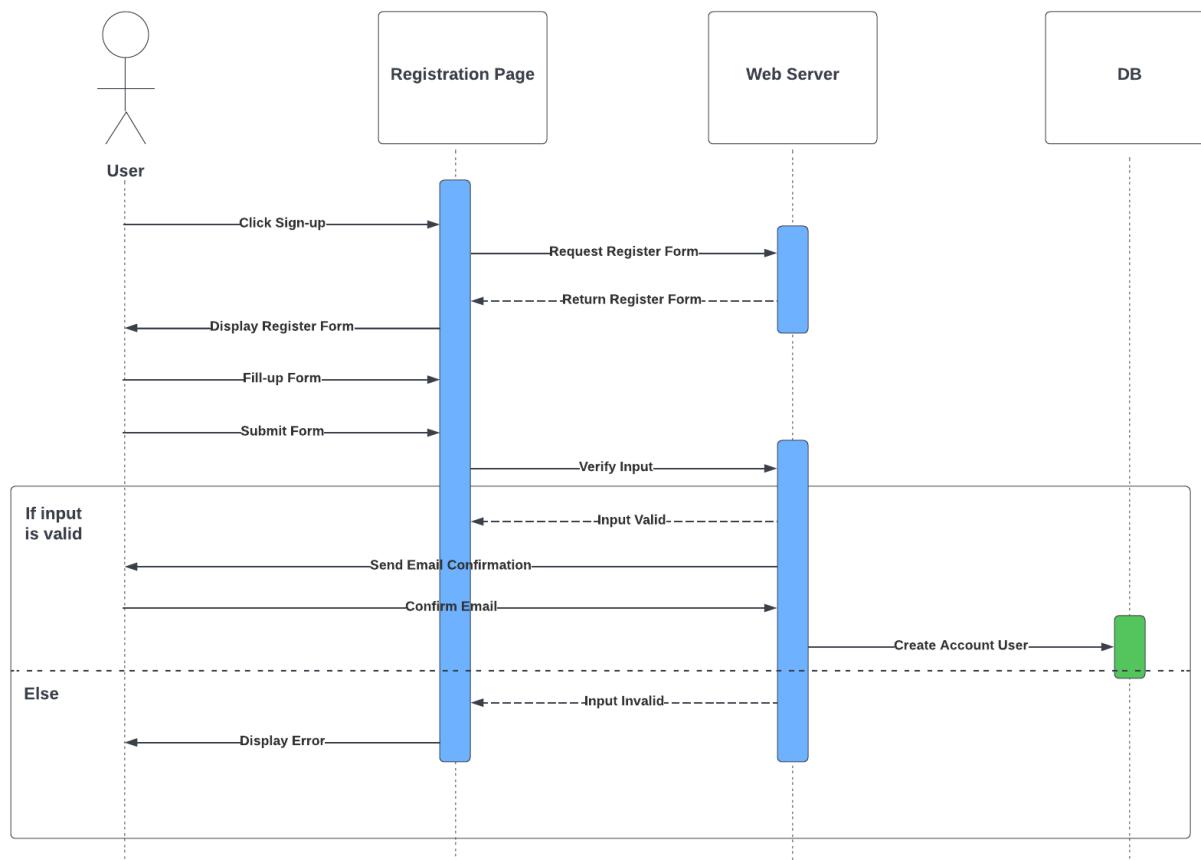


Activity Diagram of Administrators Business Verification	Reference Number: AD-17
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Administrators Business Verification	

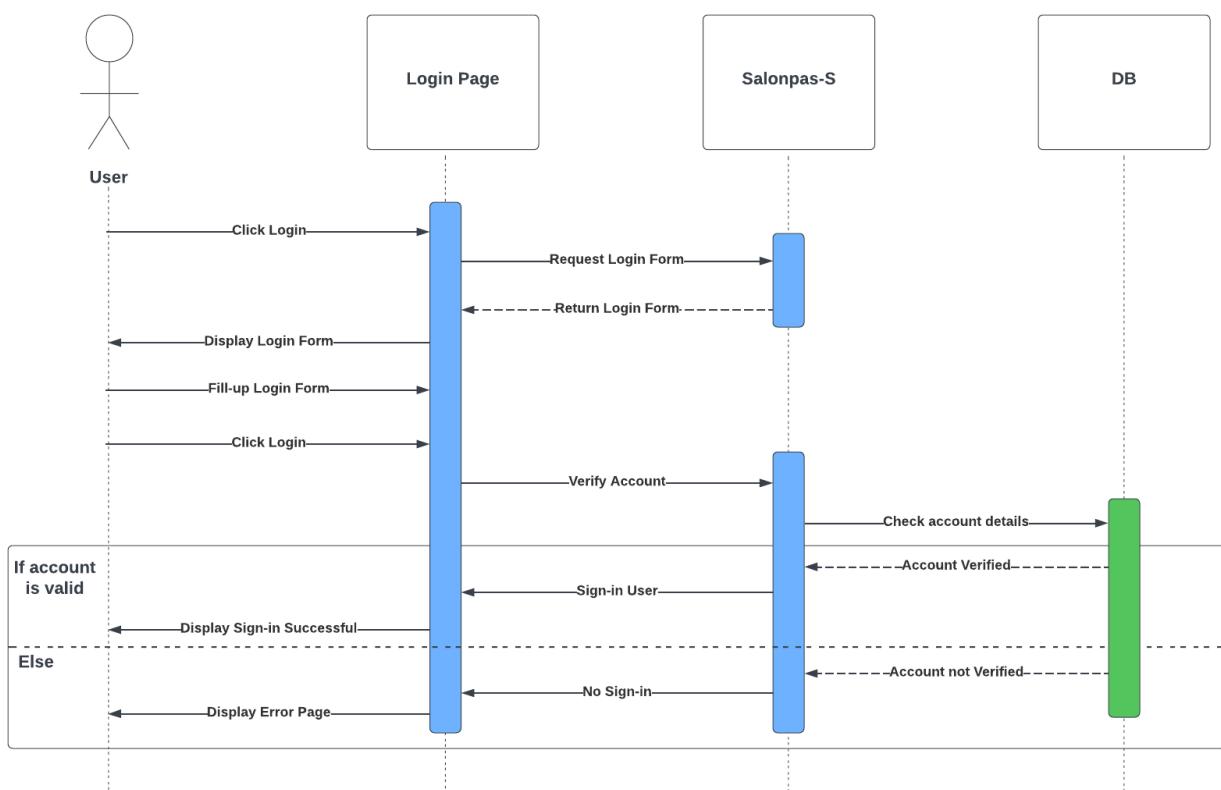


4.7.2 System Sequence Diagrams

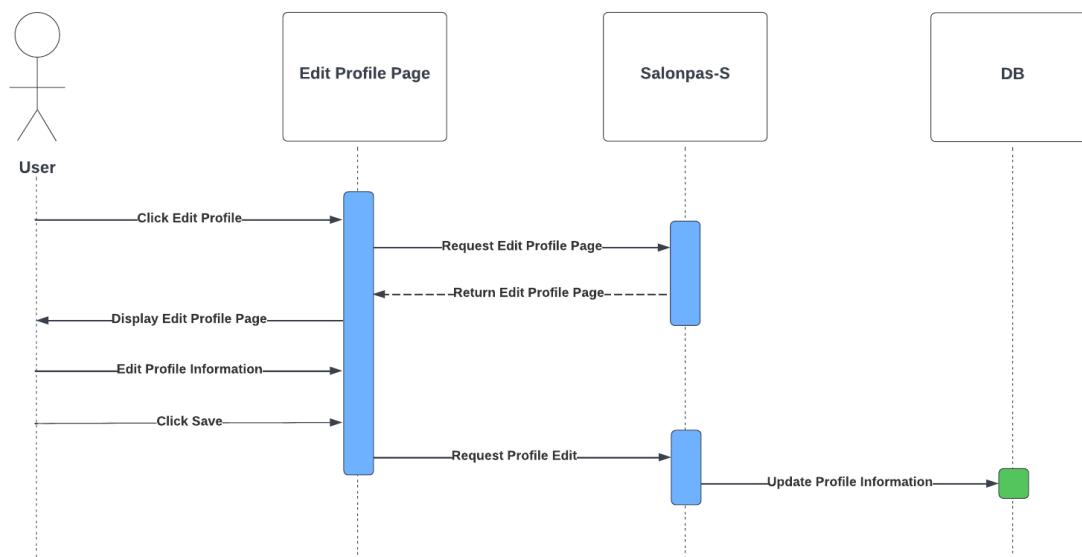
Sequence Diagram of the Sign-up	Reference Number: SD-1
	Version Number: 1.0
System Name: SalonSpa-S	
Subject: Sign-up	



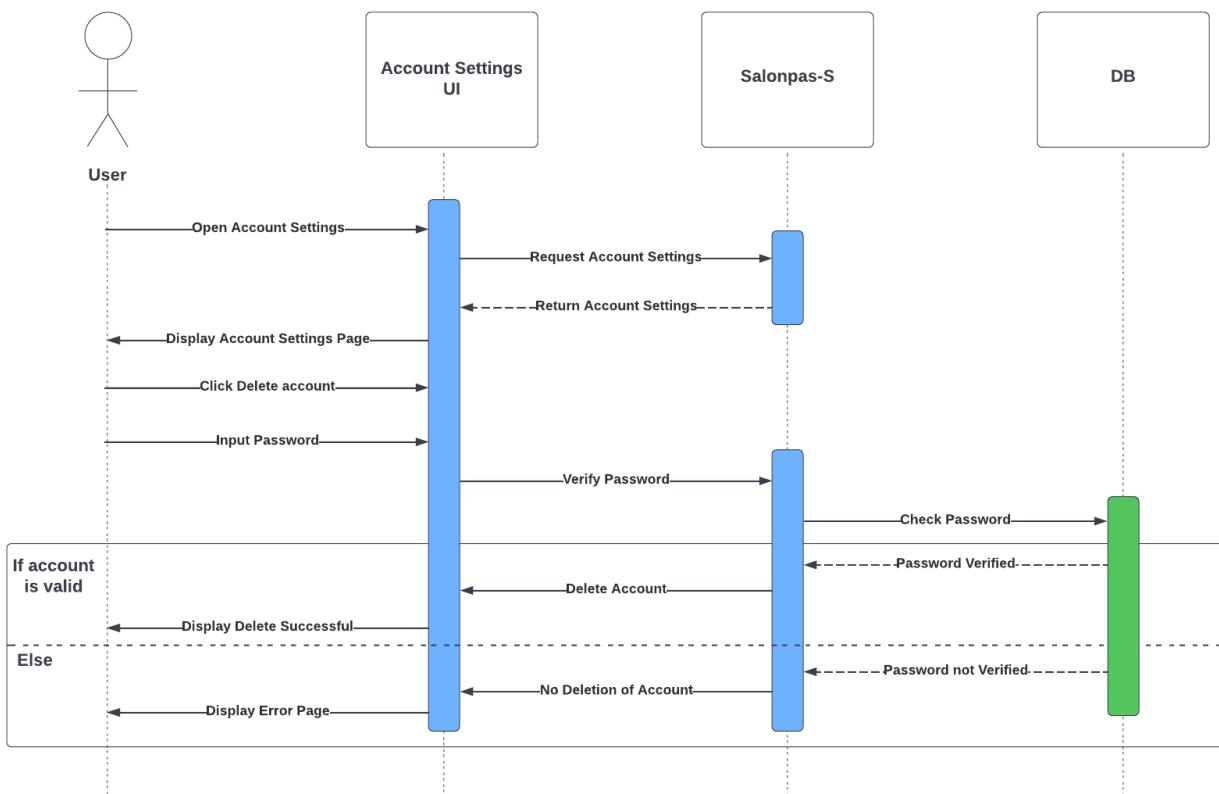
Sequence Diagram of the Login page	Reference Number: SD-2
	Version Number: 1.0
System Name: S	
Subject: Login	



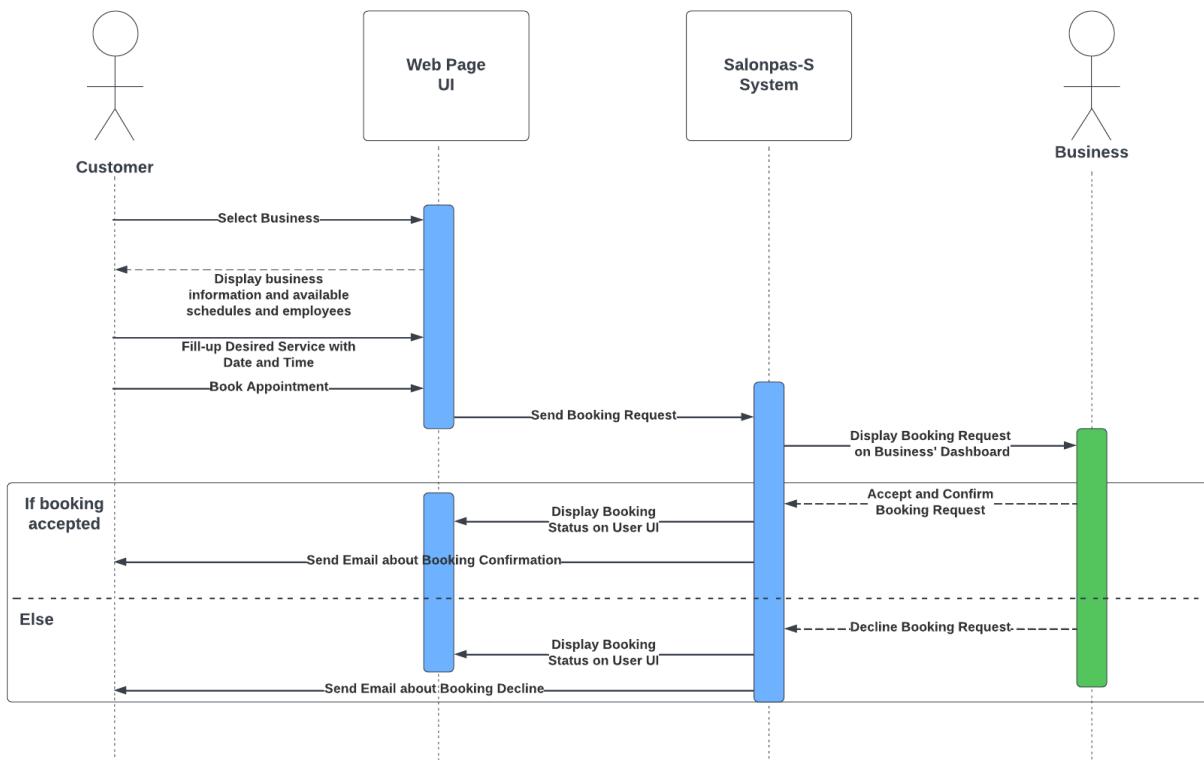
Sequence Diagram of the Edit Profile	Reference Number: SD-3
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Edit Profile	



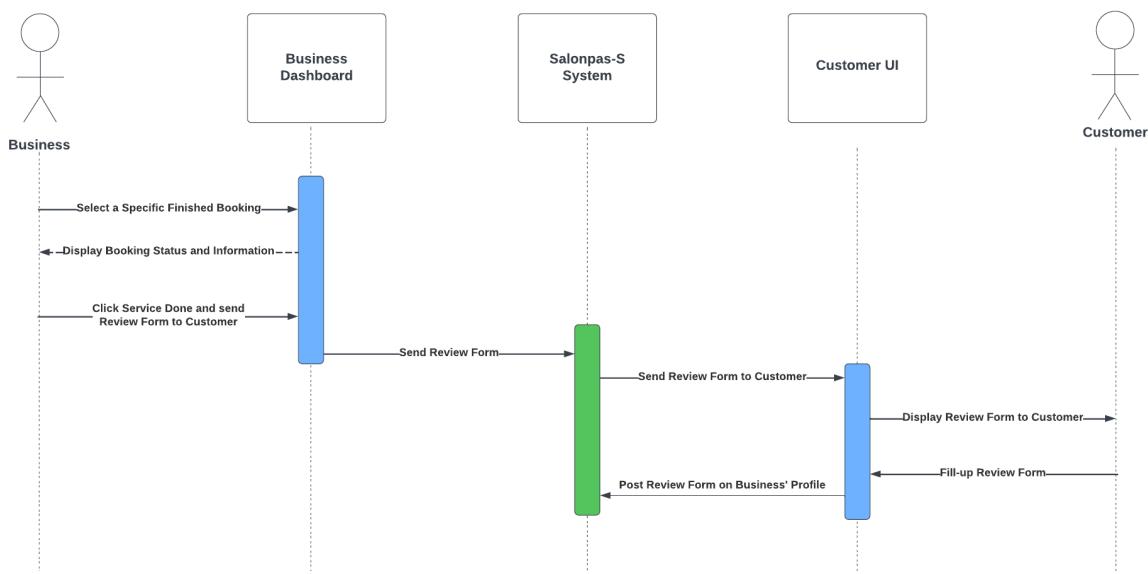
Sequence Diagram of the Delete Account	Reference Number: SD-4
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Delete Account	



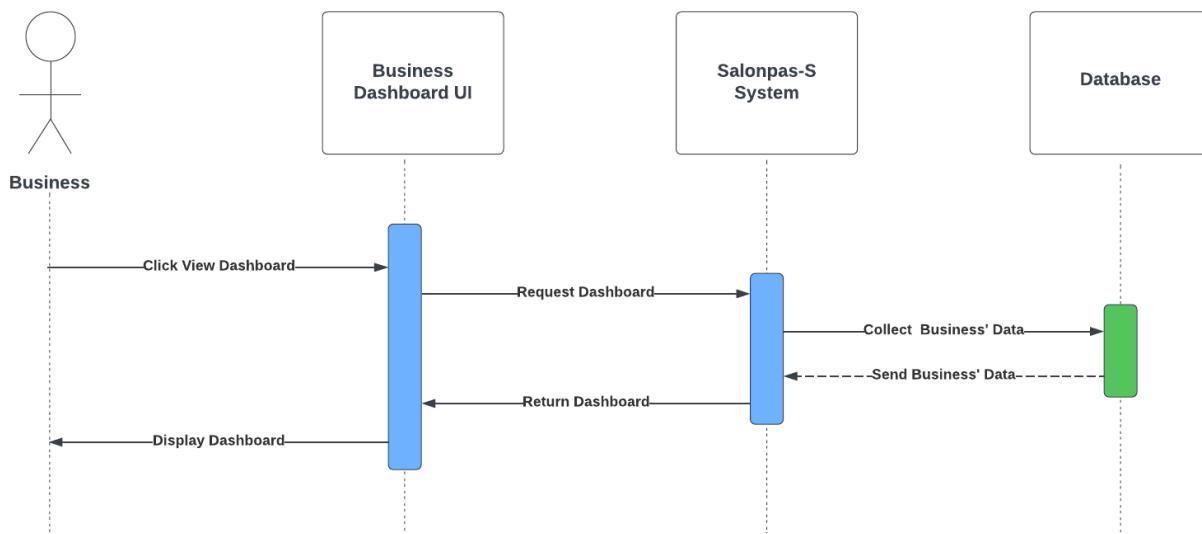
Sequence Diagram of the Customer Booking for an Appointment	Reference Number: SD-5
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Customer Booking for an Appointment	



Sequence Diagram of the Rating	Reference Number: SD-6
	Version Number: 1.0
System Name:	
Subject: Leave Rating	



Sequence Diagram of the Business View Dashboard	Reference Number: SD-7
	Version Number: 1.0
System Name: SalonSpas-S	
Subject: Business View Dashboard	



4.8 Design of Software, Systems, Product and/or Processes

4.8.1 Entity Relationship Diagram

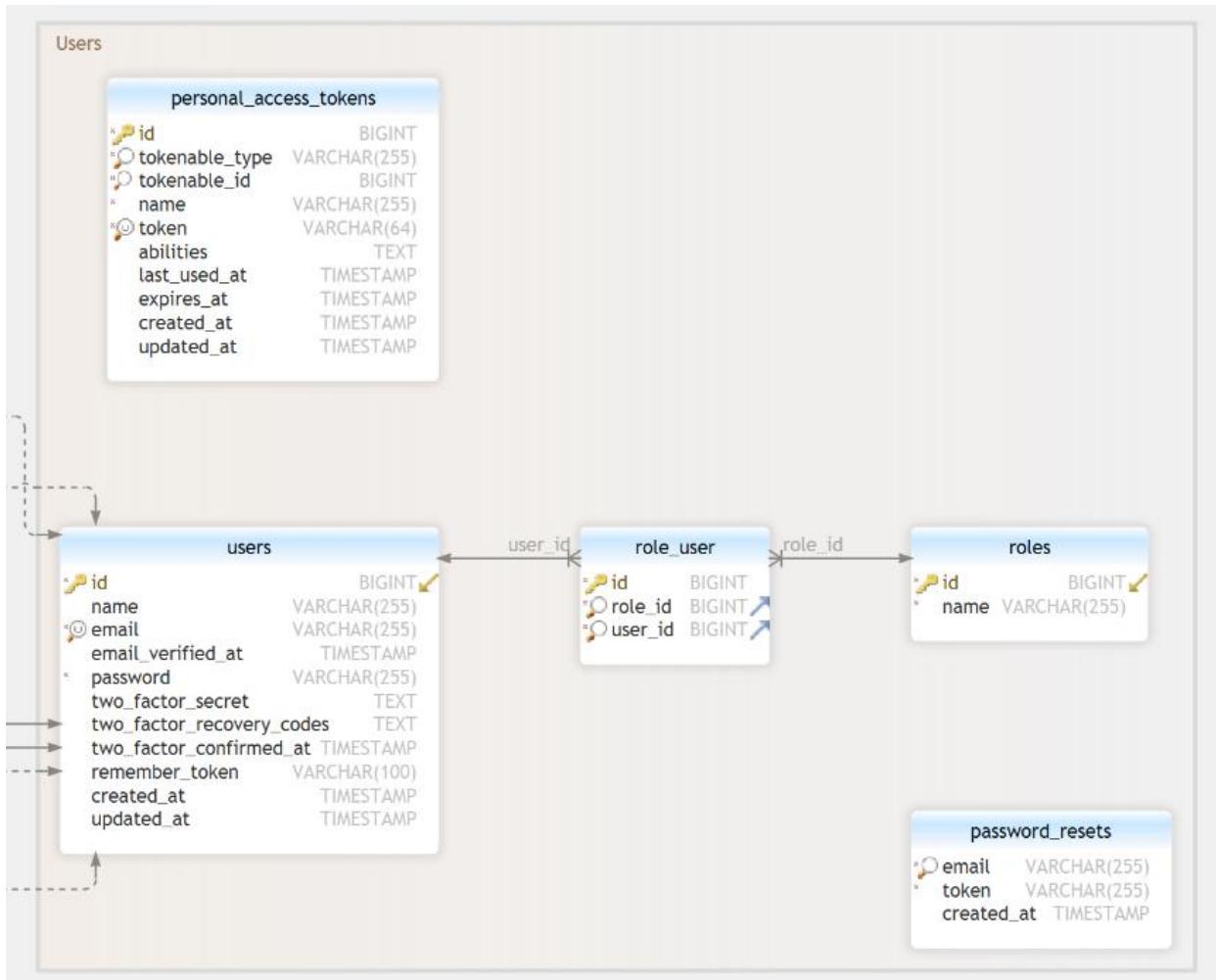


Figure 4.23: ERD - User tables in relation to the overall schema

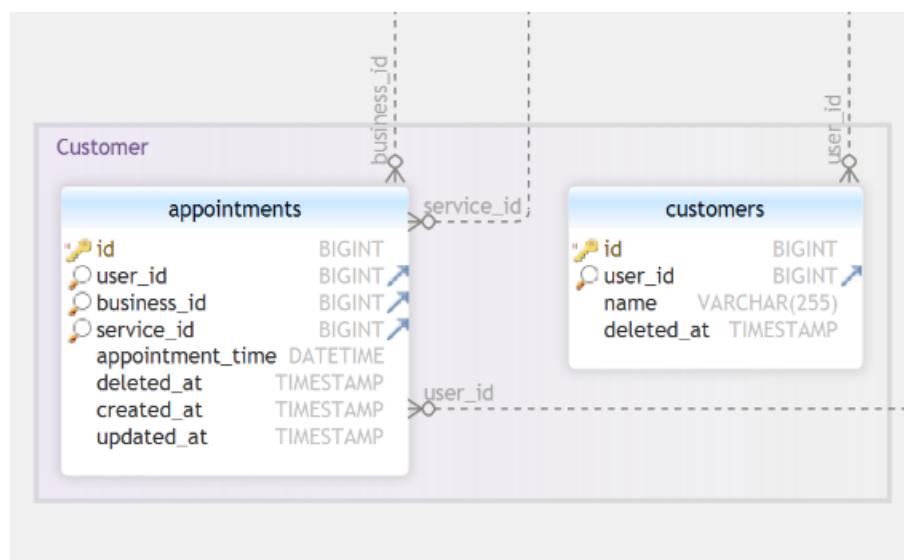


Figure 4.24: ERD - Customer tables in relation to the overall schema

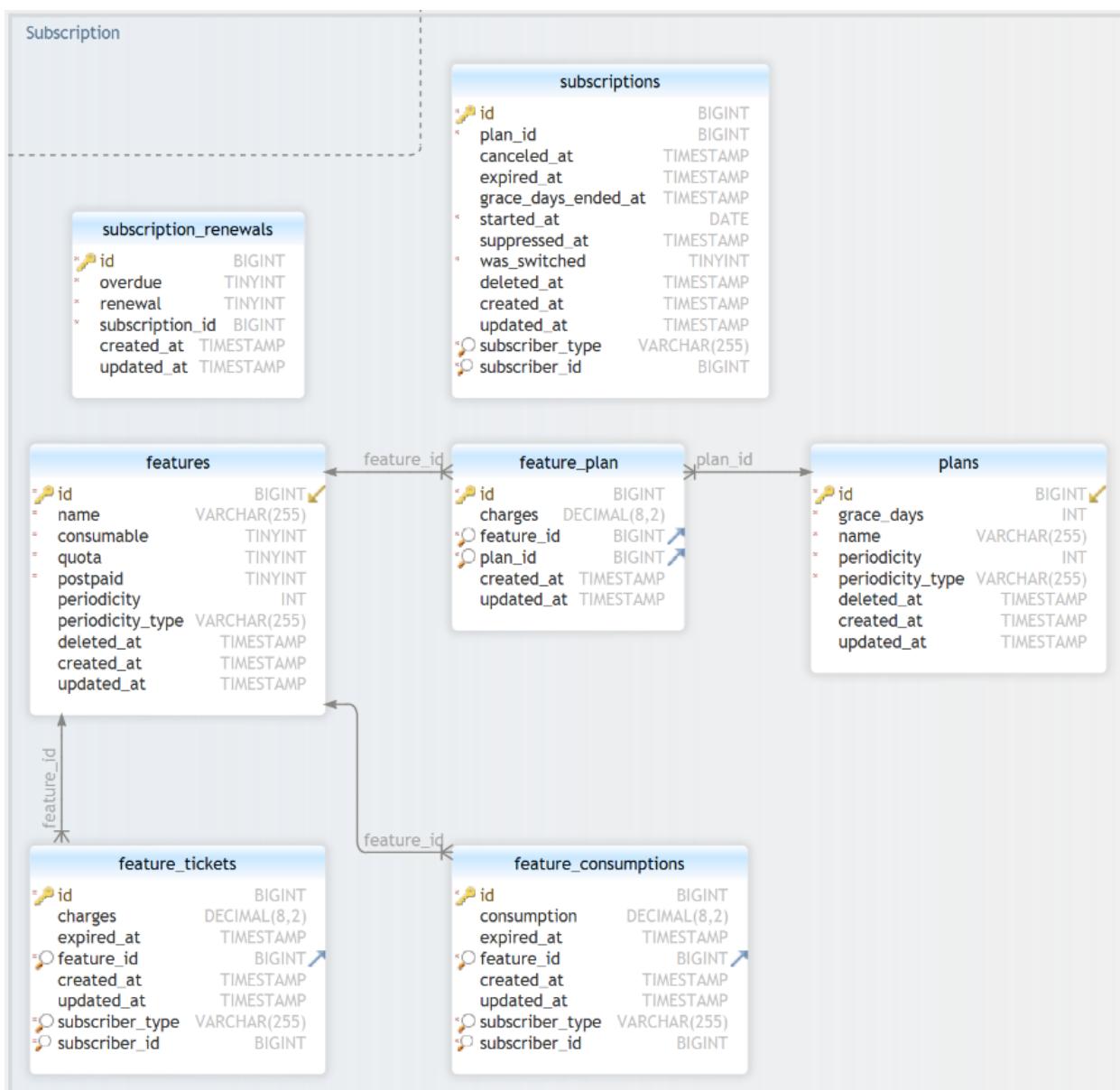


Figure 4.25: ERD - Subscription tables in relation to the overall schema

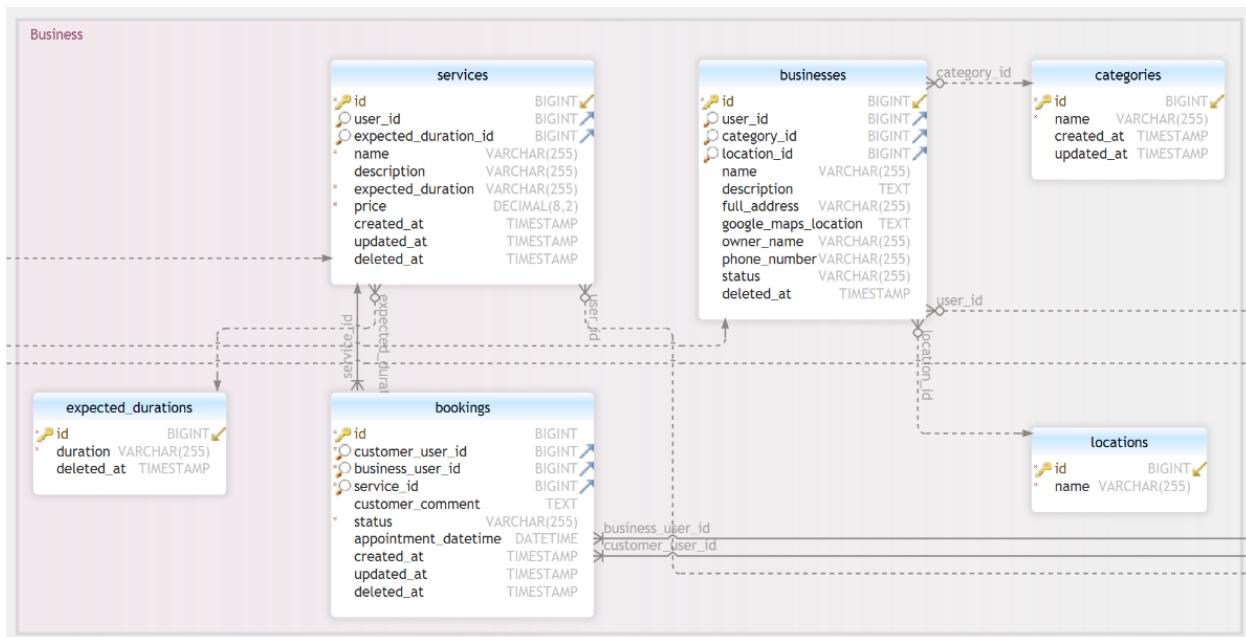


Figure 4.26: ERD - Business tables in relation to the overall schema

4.8.2 Database Dictionary

Table 4.30: Appointments Table

appointments

Column	Type	Null	Default	Comments
id (Primary)	bigint(20)	No		
user_id	bigint(20)	Yes	NULL	
business_id	bigint(20)	Yes	NULL	
service_id	bigint(20)	Yes	NULL	
appointment_time	datetime	Yes	NULL	
deleted_at	timestamp	Yes	NULL	
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	

Table 4.31: Bookings Table

bookings

Column	Type	Null	Default	Comments
<i>id (Primary)</i>	bigint(20)	No		
<i>customer_user_id</i>	bigint(20)	No		
<i>business_user_id</i>	bigint(20)	No		
<i>service_id</i>	bigint(20)	No		
<i>customer_comment</i>	text	Yes	<i>NULL</i>	
<i>status</i>	varchar(255)	No	<i>pending</i>	
<i>appointment_datetime</i>	datetime	Yes	<i>NULL</i>	
<i>created_at</i>	timestamp	Yes	<i>NULL</i>	
<i>updated_at</i>	timestamp	Yes	<i>NULL</i>	
<i>deleted_at</i>	timestamp	Yes	<i>NULL</i>	

Table 4.32: Businesses Entity Table

businesses

Column	Type	Null	Default	Comments
<i>id (Primary)</i>	bigint(20)	No		
<i>user_id</i>	bigint(20)	Yes	<i>NULL</i>	
<i>category_id</i>	bigint(20)	Yes	<i>NULL</i>	
<i>location_id</i>	bigint(20)	Yes	<i>NULL</i>	
<i>name</i>	varchar(255)	Yes	<i>NULL</i>	
<i>description</i>	text	Yes	<i>NULL</i>	
<i>full_address</i>	varchar(255)	Yes	<i>NULL</i>	
<i>google_maps_location</i>	text	Yes	<i>NULL</i>	
<i>owner_name</i>	varchar(255)	Yes	<i>NULL</i>	
<i>phone_number</i>	varchar(255)	Yes	<i>NULL</i>	
<i>status</i>	varchar(255)	Yes	<i>NULL</i>	
<i>deleted_at</i>	timestamp	Yes	<i>NULL</i>	

Table 4.33: Categories Entity Table

categories

Column	Type	Null	Default	Comments
<i>id (Primary)</i>	bigint(20)	No		
<i>name</i>	varchar(255)	No		
<i>created_at</i>	timestamp	Yes	<i>NULL</i>	
<i>updated_at</i>	timestamp	Yes	<i>NULL</i>	

Table 4.34: Customers Entity Table

customers

Column	Type	Null	Default	Comments				
id (<i>Primary</i>)	bigint(20)	No						
user_id	bigint(20)	Yes	NULL					
name	varchar(255)	Yes	NULL					
deleted_at	timestamp	Yes	NULL					
Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	2	A	No	
customers_user_id_foreign	BTREE	No	No	user_id	2	A	Yes	

Table 4.35: Expected Durations Entity Table

expected_durations

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
duration	varchar(255)	No		
deleted_at	timestamp	Yes	NULL	

Table 4.36: Features Entity Table (from subscription package)

features

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
name	varchar(255)	No		
consumable	tinyint(1)	No		
quota	tinyint(1)	No	0	
postpaid	tinyint(1)	No	0	
periodicity	int(10)	Yes	NULL	
periodicity_type	varchar(255)	Yes	NULL	
deleted_at	timestamp	Yes	NULL	
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	

Table 4.37: Feature Consumptions Entity Table (from subscription package)

feature_consumptions

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
consumption	decimal(8,2)	Yes	NULL	
expired_at	timestamp	Yes	NULL	
feature_id	bigint(20)	No		
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	
subscriber_type	varchar(255)	No		
subscriber_id	bigint(20)	No		

Table 4.38: Feature Plan Entity Table (from subscription package)

feature_plan

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
charges	decimal(8,2)	Yes	NULL	
feature_id	bigint(20)	No		
plan_id	bigint(20)	No		
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	

Table 4.39: Feature Tickets Entity Table (from subscription package)

feature_tickets

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
charges	decimal(8,2)	Yes	NULL	
expired_at	timestamp	Yes	NULL	
feature_id	bigint(20)	No		
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	
subscriber_type	varchar(255)	No		
subscriber_id	bigint(20)	No		

Table 4.40: Locations Entity Table

locations

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
name	varchar(255)	No		

Table 4.41: Password Resets Entity Table

password_resets

Column	Type	Null	Default	Comments
email	varchar(255)	No		
token	varchar(255)	No		
created_at	timestamp	Yes	NULL	

Table 4.42: Personal Access Tokens Entity Table

personal_access_tokens

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
tokenable_type	varchar(255)	No		
tokenable_id	bigint(20)	No		
name	varchar(255)	No		
token	varchar(64)	No		
abilities	text	Yes	NULL	
last_used_at	timestamp	Yes	NULL	
expires_at	timestamp	Yes	NULL	
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	

Table 4.43: Plans Entity Table

plans

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
grace_days	int(11)	No	0	
name	varchar(255)	No		
periodicity	int(10)	No		
periodicity_type	varchar(255)	No		
deleted_at	timestamp	Yes	NULL	
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	

Table 4.44: Roles Entity Table

roles

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
name	varchar(255)	No		

Table 4.45: Role User Entity Table

role_user

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
role_id	bigint(20)	No		
user_id	bigint(20)	No		

Table 4.40: Services Entity Table

services

Column	Type	Null	Default	Comments
id (<i>Primary</i>)	bigint(20)	No		
user_id	bigint(20)	Yes	NULL	
expected_duration_id	bigint(20)	Yes	NULL	
name	varchar(255)	No		
description	varchar(255)	Yes	NULL	
expected_duration	varchar(255)	No		
price	decimal(8,2)	No		
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	
deleted_at	timestamp	Yes	NULL	

Table 4.41: Subscriptions Entity Table (from subscription package)

subscriptions

Column	Type	Null	Default	Comments
<i>id (Primary)</i>	bigint(20)	No		
plan_id	bigint(20)	No		
canceled_at	timestamp	Yes	NULL	
expired_at	timestamp	Yes	NULL	
grace_days_ended_at	timestamp	Yes	NULL	
started_at	date	No		
suppressed_at	timestamp	Yes	NULL	
was_switched	tinyint(1)	No	0	
deleted_at	timestamp	Yes	NULL	
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	
subscriber_type	varchar(255)	No		
...

Table 4.42: Subscription Renewals Entity Table (from subscription package)

subscription_renewals

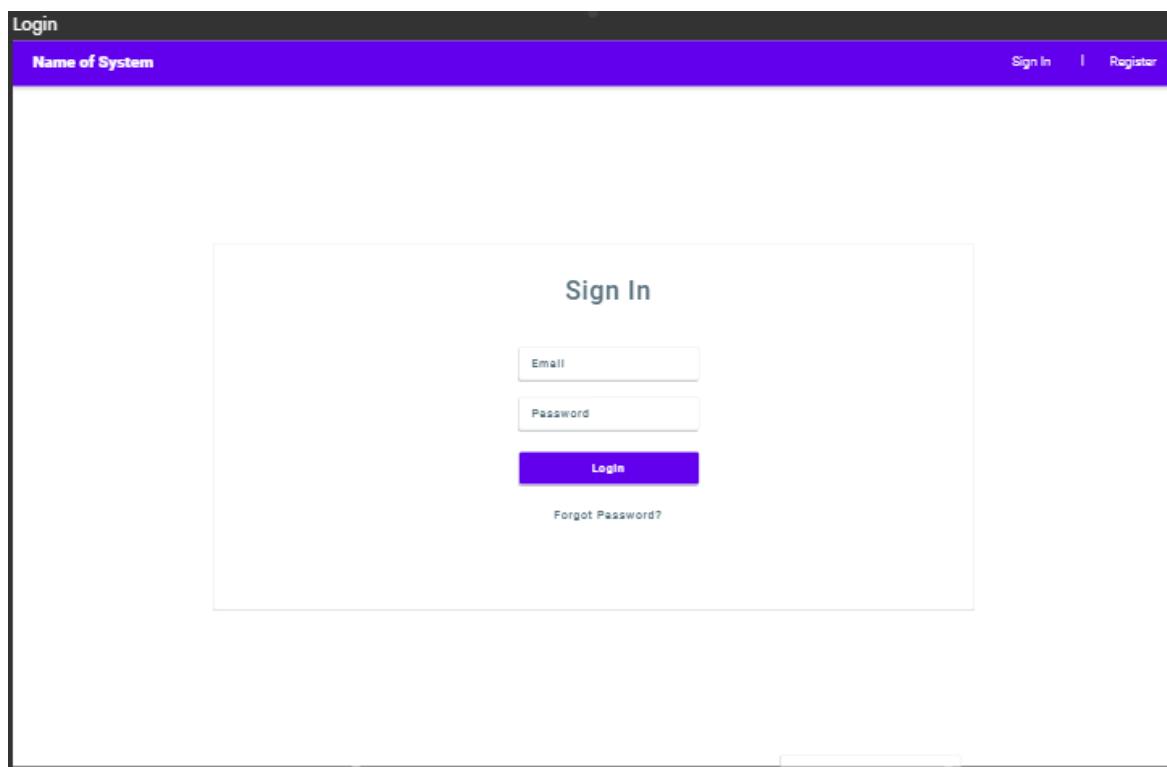
Column	Type	Null	Default	Comments
<i>id (Primary)</i>	bigint(20)	No		
overdue	tinyint(1)	No		
renewal	tinyint(1)	No		
subscription_id	bigint(20)	No		
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	

Table 4.49: Users Entity Table

users

Column	Type	Null	Default	Comments
<i>id (Primary)</i>	bigint(20)	No		
name	varchar(255)	Yes	NULL	
email	varchar(255)	No		
email_verified_at	timestamp	Yes	NULL	
password	varchar(255)	No		
two_factor_secret	text	Yes	NULL	
two_factor_recovery_codes	text	Yes	NULL	
two_factor_confirmed_at	timestamp	Yes	NULL	
remember_token	varchar(100)	Yes	NULL	
created_at	timestamp	Yes	NULL	
updated_at	timestamp	Yes	NULL	

4.8.3 Sample of High-Fidelity Prototype Screens



The image displays a business page for "PixLab". At the top, there's a navigation bar with "Business Page", the "PixLab" logo, and a "Logout" button. The main content features a large image of a storefront with a prominent "OPEN" sign. To the left, a sidebar lists "Store Page", "Profile", "Booking Requests", "Dashboard", and "On-board Payment". The central area has sections for "Store Name" (with the "OPEN" image), "Services" (listing "Service", "Expected Time", and "Price" with a "BOOK" button), and "Opening Hours" (listing days from Monday to Sunday). At the bottom, there are user reviews ("Username", "Rating 5", "Report"), a location field ("Address, City"), and category selection fields for "Main #1" and "Secondary #2".

Store Profile

Businesses / Stores

Name of System

Logout

Stores Profile My Bookings

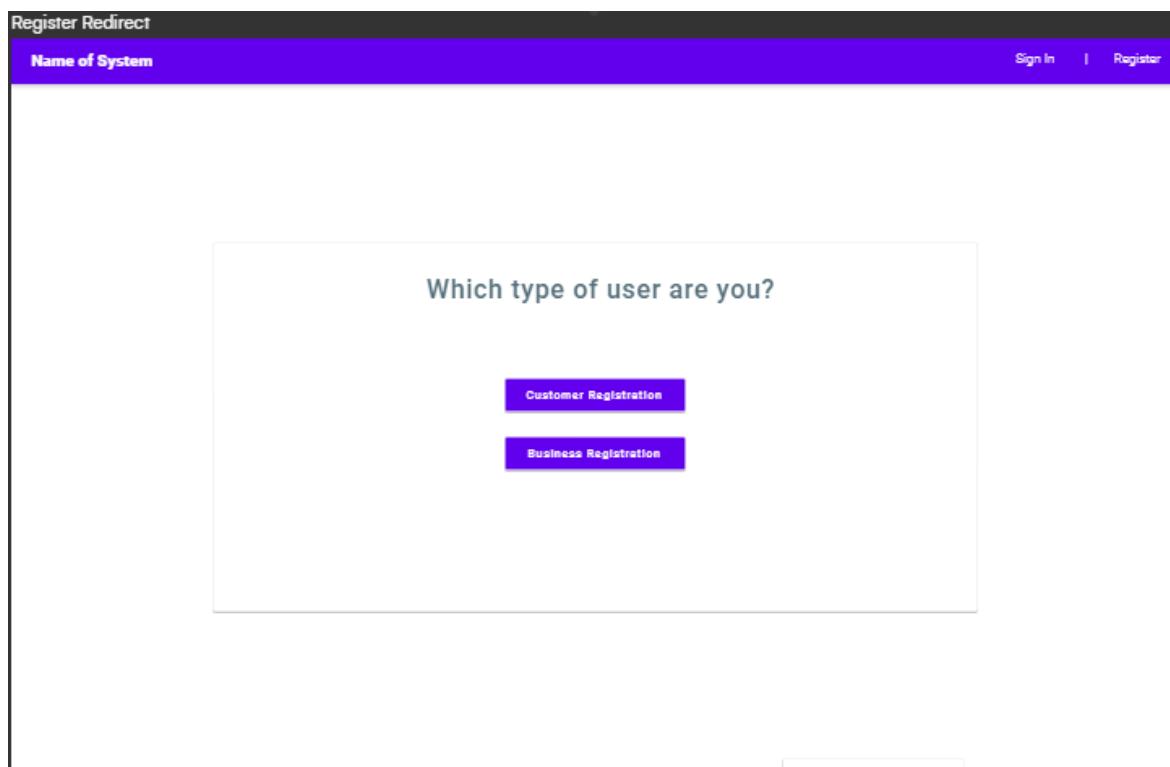
Search... Category City Rating

+ Add Favorite

Gwen Weustink ★ 3.5

Geran de Klerk ★ 5

List of Stores

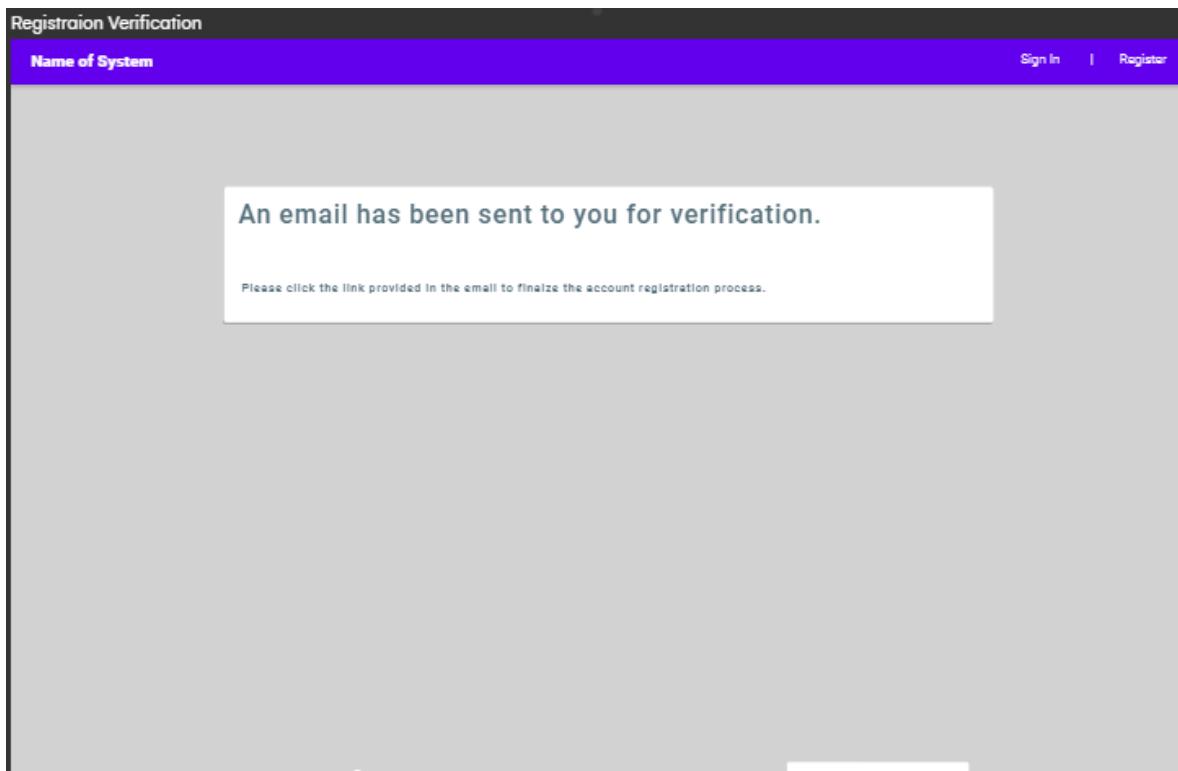


Registration Redirect

This screenshot shows a "Business Registration" form titled "Register | Business". The form includes fields for "First Name", "Last Name", "Contact Email", "City Location" (with a dropdown arrow), "Contact Number", "Password", and "Confirm Password". At the bottom of the form is a "Register" button.

First Name
Last Name
Contact Email
City Location
Contact Number
Password
Confirm Password

Registration



Email Verification

Admin View Accounts

PixLab Logout

Accounts

User ID	User Type	Email	Date Created
Data	Data	Data	Data

VIEW DELETE

Sample of Viewing Records

Dashboard

PixLab

Store Page Profile Booking Requests Dashboard

Customer Booking Rates Booking Rates per Service

Previous Month ▾

Business Current Rating:

★ 4.3

Accounts Reached 402 +32%

Customer Bookings 51

VIEW LIST OF RECORDS

Dashboard

Business Dashboard

Business Payment Page

PixLab

[Logout](#)

[Store Page](#)

[Profile](#)

[Booking Requests](#)

[Dashboard](#)

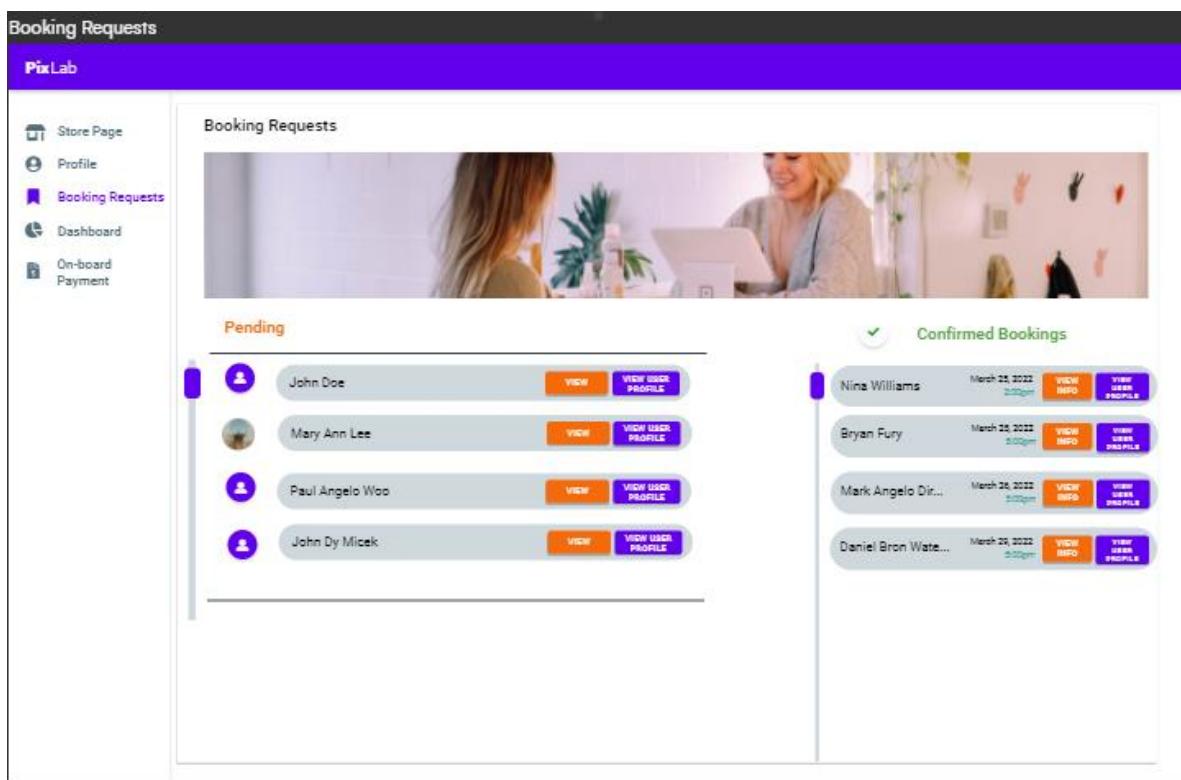
[On-board Payment](#)



Your next payment period is at
xx/xx/yyyy to xx/xx/yyyy

We'll send you a QR code
next time your payment is due!

Business Subscription Payment



Booking Requests

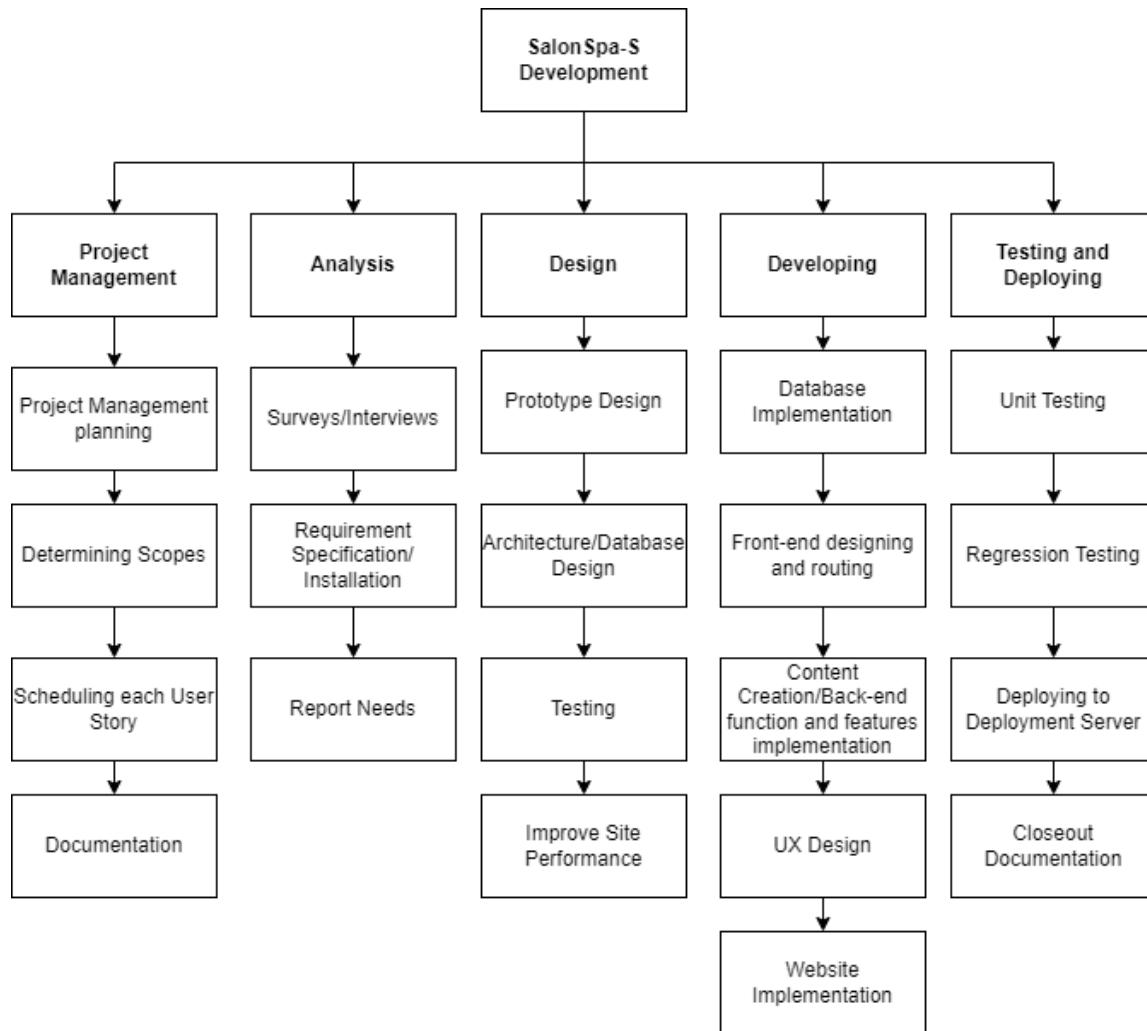
4.9 Development and Testing

The development was done through the Visual Studio IDE using the PHP language Laravel Framework. The library Livewire was also used to build the reactive and dynamic interfaces as the templating language and to be able to do the basic operations create, read, update, and delete for persistent storage while using MySQL as the database. Bootstrap and CSS were also used in designing the front-end and in making the website screen responsive.

Throughout the duration of the development, manual regression testing has been constantly utilized on each user story every after its implementation. Additionally, the developers also practiced unit testing at moments of any development on any additional functions that are being made in the back end during coding.

4.10 Implementation Plan

4.10.1 Work Breakdown Structure



4.10.2 Hardware and Software Requirements (Development and Deployment)

The implementation and requirements that the developers used during the development includes the artisan command line in Laravel to create its framework and be able to run artisan commands to run and host the project on the local server along with the XAMPP control panel. The developers also used NPM install to run the mix module, which is used to compile the JavaScript and CSS files written for the Laravel. MySql was also used as the database during the development and testing stages.

4.11 Implementation Results

4.11.1 User Acceptance Test and Test Case Analysis

Developers: Jericho Ladrica, Kyle Deguzman, Von Drick Fong

QA: Von Drick Fong, Jericho Ladrica, Kyle De Guzman

User: Dericka Coronel (Customer/Business Perspective),

The Developers (Admin Perspective)

TC ID	Objective	Test Steps	Expected Result	Actual Result	Status	Date Tested
Register						
Spalon01	Register Sign-up “Roles”	Click and Select the Choose Option Role Field	Dropdown of Roles “Business” and “Customer” should dropdown	Roles showed up	Closed	Nov 13, 2022
Spalon02	Register as a Business User	Click and select the “Business” role in the Role Field	Forms and fields should be changed for Business Register Information	Form and the fields showed correct for Business Role User	Closed	Nov 15, 2022
Spalon03	Form Validation	Input correct formats on Register Form Fields	No error should be displayed	No error is displayed	Closed	Nov 13, 2022
Spalon04		Input incorrect formats on Register Form Fields	Errors on the field should be displayed stating that format is incorrect	Errors are displayed	Closed	Nov 15, 2022

Login						
Spalon05	User log in	User inputs username or email and password	User details get authenticated and successfully gets logged in	User is able to login to the website	Closed	Nov 14, 2022
Forgot Password						
Spalon06	Forgot Password	User clicks forget password	User gets asked to input their email	The reset password mail is sent to the email associated with the SalonSpa-S Account	Closed	Nov 14, 2022
Spalon07	Forgot Password Email Sent	User clicks send “Password Reset Link”	User should receive an email	The reset password mail is sent to the email associated with the SalonSpa-S Account	Closed	Nov 14, 2022
Navbar						
Spalon08	SalonSpa-S Logo	Click SalonSpa-S Logo on the left side of the navbar	User should be redirected to “Home” page	User gets redirected to the “Home” page	Closed	Nov 14, 2022
Spalon09	About	Click “About” link on the right side of the navbar	User should be redirected to the “About” page.	User gets redirected to the “About” page.	Closed	Nov 14, 2022

Spalon10	User Dropdown for “Business” users	Click “Booking List”	User should be redirected to the “booking list” page	User gets redirected to the “Booking List” page	Closed	Nov 14, 2022
Spalon11		Click “Service Management”	User should be redirected to the “Service Management” page	User gets redirected to the “Service Management” page	Closed	Nov 14, 2022
Spalon12		Click “Edit Info”	User should be redirected to the “Edit Info”	User gets redirected to the “Edit Info” page	Closed	Nov 14, 2022
Spalon13		Click “Logout”	Business User should be signed-out	Business User gets signed-out	Closed	Nov 14, 2022
Spalon14	User Dropdown for “Customer” users	Click “My Bookings List”	User should be redirected to the “booking list” page	User gets redirected to the “Booking” list page	Closed	Nov 14, 2022
Spalon15		Click “Edit Info”	User should be redirected to the “Edit Info”	User gets signed-out	Closed	Nov 14, 2022
Spalon16		Click “Logout”	Customer User should be signed-out	Customer User gets signed-out	Closed	Nov 14, 2022
Business Edit Page						
Spalon17	Field Validations	Input correct required	No error should be displayed.	No errors displayed.	Closed	

		field formats				
Spalon18		Input incorrect required field formats	Errors should display stating user's input format is incorrect	Error displayed stating that user's input is incorrect	Closed	Nov 13, 2022
Spalon19	Avatar Upload	Upload an image	Upload an image for the business avatar	Image is uploaded to the placeholder	Closed	Nov 14, 2022
Spalon20		Image file type validation	Upload a different file type that is not jpg or png.	Error should be displayed that file type is incorrect	Closed	Nov 14, 2022
Spalon21	Google Map Link Help/Question Mark Button	Click the question mark button	Modal should pop-up with the instruction on how to put Google Map	Modal shows up	Closed	Nov 14, 2022

Business List Page – Search Function

Spalon22	Search Feature	Input business names	Inputs should be displayed in the input field	Inputs are displayed in the input field	Closed	Nov 13, 2022
Spalon23		Click Enter	The search result should be displayed and filtered with the user's input	Displayed the businesses that are match with the search	Closed	Nov 13, 2022

Spalon24	Category Filter	Select each “Category” options	List of Businesses should display in line with the Category set by the user	List of Businesses are displayed in line with the Category set by the user	Closed	Nov 13, 2022
Spalon25	Location Filter	Select each “Location” options	List of Business should display in line with the Location set by the user	List of Business are displayed in line with the Location set by the user	Closed	Nov 13, 2022
Business List Page - Pagination						

Spalon26	Next Button	Click next button to show the next page/s	User should be directed to the next page section of Businesses	User is directed to the next page section of Businesses	Closed	Oct 20, 2022
Spalon27	Previous Button	Click previous button to show the previous page/s	User should be directed to the previous page section of Businesses	User is directed to the previous page section of Businesses	Closed	Oct 20, 2022
Spalon28	Page Numbers Button	Click the page number to skip towards that page section	User should be directed to the desired page number of Businesses	User is directed to the desired page number of Businesses	Closed	Oct 20, 2022

Booking Function/Business Store Page						
Spalon29	Display booking form	Booking form is displayed after customer chooses the service provider	Option to select schedule and type of service appears in the form	The website displays the booking firm	Closed	Oct 27, 2022
Spalon30	Customer books selected service	Customer selects an available service after searching	Customer successfully books selected service from filtered/non-filtered available options	Customer is able to book the selected service.	Closed	Oct 27, 2022
Spalon31	Customer selects date, time, type of service	Customer selects the desired schedule and type of service during booking	System books selected inputs in database	User is able to select and pick choices of date, time, and service	Closed	Oct 27, 2022
Spalon32	Business views pending booking request/s	Booked request by customer is seen by business user	Booked request is displayed on pending request page with all correct selected options	Website displays the pending booking requests	Closed	Oct 27, 2022
Spalon33	Accept/Decline booking request	Business user either accepts or declines request by customer	Booked request transfers from pending to either accepted or declined	The business users are able to accept and decline the booking made by	Closed	Oct 27, 2022

				the customer.		
Footer						
Spalon34	“Terms and Service” anchor link	Click Terms and Service	User should be redirected to the “Terms and Service” page.	User is redirected to the “Terms and Service” page.	Closed	Nov 14, 2022
Spalon35	“Privacy and Policy” anchor link	Click Privacy and Policy	User should be redirected to the “Privacy and Policy” page	User is redirected to the “Privacy and Policy” page	Closed	Nov 14, 2022
Spalon36	“The Developers ” anchor link	Click The Developers	User should be redirected to the “About” page, “The Developers ” section.	User is redirected to the “About” page, “The Developers ” section.	Closed	Nov 14, 2022
Admin Dashboard						
Spalon37	Dashboard Page	User clicks the dashboard	User is redirected and dashboard page should be displayed	Admin dashboard is displayed	Closed	Nov 1, 2022
Spalon38	Edit User Status	User Admin click Status button on a user	Pop-up menu should be displayed	Pop-up modal menu is displayed	Closed	Nov 10, 2022
Spalon39		User admin change status from	User status should be changed to	User status is changed	Closed	Nov 10, 2022

		“Paid” to “Unpaid” and vice-versa	the updated status			
Spalon40	Renew User	Click Renew Button	User paid status should be renewed	User payment is renewed	Closed	Nov 10, 2022
Spalon41	Cancel User	Click cancel button	Subscription of the business user should be cancelled	Subscription of the business user is canceled	Closed	Nov 10, 2022

Chapter 5: Recommendations

5.1 Summary of Findings

The research became more engrossing to us researchers as we've done more studies about other related literature, doing surveys, and up until the designing and implementation of the system. Through those, we've gained more insights and learned additional existing problems that our proposal could actually also solve.

The very initial problem that we raised first is the lack of digitization and use of technological systems of spa and salon businesses in Metro Manila, we then hypothesized of implementing one for these businesses to improve their business process, that went further into discovering other problems such as the lack of efficiency and record keeping that these businesses seemed to be experiencing and were attuned of specifically in Metro Manila, Philippines. Other reasons for that are that business owners in Metro Manila have the thinking that digitalizing or automating such processes are only doable for big time companies.

In the survey made, we have found that out of the 23 spas and salons we've handed the questionnaire to, only 5 stated that they're using a digitalized or an online system to handle their booking processes and record keeping with 1 of the 5 misunderstanding the meaning of an online system or digitalized one with their use of excel. This alone explains how lagging business establishments are in Metro Manila in terms of using technology and digitization to handle their business process.

5.2 Conclusions

After the final stages of the development up until the deployment, we have found that the project is an applicable system for both Spas and Salons in Metro Manila to use as an improvement for business process. Based on the surveys having received a 91.43% of respondents very much likely to use the proposed system, and the User Acceptance Test that was made on both Business and Customer point of views, the researchers and developers were able to meet the objectives of the research by the implementation of the system with the features included in line with the stated problem, therefore concluding that digitalization through the use of the proposed system increases the effectiveness in to improving business functionalities through convenient and better booking, customer record book-keeping, locating Spas and Salons for customers, and the increase of brand awareness and competition analysis of Spas and Salons.

5.3 Recommendations

The researchers aspires that this research paper can be used by other researchers in the future for their studies and can be of benefit in the world of Information Technology and the industry this research has targeted on, which are Spa and Salon businesses. Such platforms and systems are highly recommended by us researchers, specifically businesses in Metro Manila to keep up and be on trend in terms of technological capabilities against other countries.

For the Spa and Salon businesses, they may promote and consider the use of the system for better customer reach and improved business process through digitalization. We also hope that this research proposal makes them eliminate the thinking that technology and the use of system for businesses are only attainable by bigger companies in Metro Manila.

Customers may use the platform for faster booking transactions for their convenience, get information with their desired service and business, and be able to find and locate the locations of the Spas and Salons they're looking for with the directions provided.

References

6 Fantastic Benefits of Advanced Appointment Scheduling System For Massage Therapists.

(2019, June 1). A Webstar Technologies. Retrieved March 11, 2022, from

<https://awebstar.com.sg/blog/benefits-advanced-appointment-scheduling-system-massage-therapists.html>

ABS-CBN News. (2019a, June 19). *GrabFood users with unclaimed orders may face penalties soon.*

Retrieved March 12, 2022, from <https://news.abs-cbn.com/business/06/19/19/grabfood-users-with-unclaimed-orders-may-face-penalties-soon>

ABS-CBN News. (2019b, June 19). *GrabFood users with unclaimed orders may face penalties soon.*

Retrieved March 12, 2022, from <https://news.abs-cbn.com/business/06/19/19/grabfood-users-with-unclaimed-orders-may-face-penalties-soon>

Aguinaldo, M. L. (2020, August 13). *Half of Filipino small business owners use social media as their main channel of communication.* BusinessWorld Online.

<https://www.bworldonline.com/half-of-filipino-small-business-owners-use-social-media-as-their-main-channel-of-communication/>

Alexander, D. (2017, July 27). *How to Choose a Barber vs Salon*. Splice Barbershop. Retrieved March 25, 2022, from <https://www.splicebarbershop.com.sg/blogs/news/how-to-choose-a-barber-vs-salon>

Antonio, J. (2022, September 16). *VIRAL: Halos 10 food delivery riders nabiktima ng scam ng no-show customer sa Las Piñas*. ABS-CBN News. Retrieved March 12, 2022, from <https://news.abs-cbn.com/news/09/16/20/grabfood-food-panda-scam-no-show-order-viral-pilar-las-pinas-aj-pande-scammer>

Asenova, I. (2018, April 2). *The Benefits of Online Booking Systems*. Clock PMS+. Retrieved March 11, 2022, from <https://www.clock-software.com/blog/Benefits-of-online-booking-systems.html>

Beattie, A. (2021, August 21). *Should You Pay in Cash?* Investopedia. Retrieved March 12, 2022, from <https://www.investopedia.com/articles/pf/08/pay-in-cash.asp>

Be Informed. *Legacy Technology: 5 Most Asked Questions*. (2020, July 21).
<https://www.beinformed.com/blog/legacy-technology-5-most-asked-questions/#:%7E:text=Legacy%20technologies%20are%20systems%2C%20technologies,ands%20interdepartmental%20in%20an%20organization.>

Booksy. (2019, May 24). *Facebook partners with Booksy for New Appointments Integration*.

Cision PR Newswire. Retrieved March 25, 2022, from

<https://www.prnewswire.com/news-releases/facebook-partners-with-booksy-for-new-appointments-integration-300856436.html>

Booksy Team. (2018, October 1). *How to benefit from using customer records in a beauty salon*.

Booksy. Retrieved March 12, 2022, from <https://booksy.com/biz/en-gb/blog/how-to-benefit-from-using-customer-records-in-a-beauty-salon-v>

Cloudcfo. (2021, December 13). *Business Permit in the Philippines: All You Need to Know in 2022!* Retrieved March 18, 2022, from <https://cloudcfo.ph/blog/corporate/business-permits-in-the-philippines-heres-what-you-need-to-know/>

CNN Philippines Staff. (2019, October 25). *PH businesses risk failing if they don't transform digitally soon*. CNN Philippines. Retrieved March 15, 2022, from
<https://www.cnnphilippines.com/business/2019/10/25/ph-businesses-risk-failing-if-they-dont-transform-digitally-soon.html>

de Dios, M. (2021, April 5). *Fake Booking: What does it say about Grab, Foodpanda and others?* Clopified. Retrieved March 12, 2022, from
<https://www.clopified.com/learning/topic/fake-booking-what-does-it-say-about-grab-foodpanda-and-others/>

Department of Health. (2020, June 24). *PERSONAL CARE SERVICES INTENSIFY HEALTH, SANITATION PROTOCOLS AMID COVID-19*. Department of Health Philippines.

Retrieved March 25, 2022, from <https://doh.gov.ph/press-release/PERSONAL-CARE-SERVICES-INTENSIFY-HEALTH-SANITATION-PROTOCOLS-AMID-COVID-19>

Editorial Staff. (n.d.). *How to Get Mayor's Permit in the Philippines*. Efren Nolasco. Retrieved March 18, 2022, from <https://www.efrennolasco.com/how-to-get-mayors-permit/>

Haire, L. (2016, May 27). *Waiting-Line Problems: Where They Occur & Their Effect on Business*. Study. Retrieved March 25, 2022, from <https://study.com/academy/lesson/waiting-line-problems-where-they-occur-their-effect-on-business.html>

Google Support. (n.d.). *About google business profile - computer*. Google Business Profile Help. Retrieved April 6, 2022, from https://support.google.com/business/answer/3038063?hl=en&co=GENIE.Platform%3DDe_sktop&oco=0

Hitachi. (n.d.). *Using Technology to Achieve Social Innovation in the Philippines*. Hitachi Inspire the Next. Retrieved March 17, 2022, from <https://social-innovation.hitachi/en-ph/about/socialinnovationinasean/phillippines/>

International SPA Association & ISPA Foundation. (2012). *Retail Management for Salons and Spas* [E-book]. Cengage Learning. Retrieved March 20, 2022, from <https://books.google.com.ph/books?id=hasWAAAAQBAJ&pg=PR4&dq=challenges+of+salon+and+spa&hl=en&sa=X&ved=2ahUKEwibnoi9l9T2AhUO-2EKHTOXbjYQ6wF6BAGJEAE#v=onepage&q=challenges%20of%20salon%20and%20spa&f=false>

Johnston, S. (2021, June 23). *Advantages and Disadvantages of Online Booking Systems*.

BookingLive. Retrieved March 11, 2022, from <https://www.bookinglive.com/advantages-disadvantages-online-booking-system/>

LaPore, M. (2018). *8 Major Benefits of Online Business Directories*. Checkout Arizona.

Retrieved March 24, 2022, from <https://checkoutmedia.kayako.com/article/9-8-major-benefits-of-online-business-directories>

Lavilla, D. S. (2020, August 10). Innovation and digital transformation: How are Philippine MSMEs performing? PwC. <https://www.pwc.com/ph/en/business-unusual/innovation-and-digital-transformation-how-are-philippine-msmes-performing.html>

Lucas, D. (2021, May 26). *QR code payments gaining traction among Filipinos, says BSP Read more:* <https://business.inquirer.net/323669/qr-code-payments-gaining-traction-among-filipinos-says-bsp#ixzz7OYdGcfzo> Follow us: @inquirerdotnet on Twitter / inquirerdotnet on Facebook. Inquirer. Retrieved March 12, 2022, from <https://business.inquirer.net/323669/qr-code-payments-gaining-traction-among-filipinos-says-bsp>

Matheson-Shedrick, K. (2018, January 23). *Can the SPA industry solve its staffing problems before it's too late?* Spa Executive. Retrieved March 25, 2022, from <https://spaexecutive.com/2018/01/23/special-report-can-the-spa-industry-solve-its-staffing-problems-before-its-too-late/>

Miller, B. (2022, March 12). *What is the Difference Between a Salon and Spa?* Smart Capital Mind. <https://www.smartcapitalmind.com/what-is-the-difference-between-a-salon-and-spa.htm#:~:text=A%20salon%20is%20typically%20much,number%20of%20private%20treatment%20rooms>

National Privacy Commission. (2011, July 11). *Data Privacy Act of 2012*. Privacy Government Philippines. Retrieved March 18, 2022, from <https://www.privacy.gov.ph/data-privacy-act/>

OWASP. (n.d.). *OWASP Top Ten*. Retrieved March 19, 2022, from <https://owasp.org/www-project-top-ten/#>

Philippine Statistics Authority. (2019, January 17). *2016 Annual Survey of Philippine Business and Industry (ASPBI) - Other Service Activities Sector For All Establishments: Final Results*. PSA. Retrieved March 17, 2022, from <https://psa.gov.ph/content/2016-annual-survey-philippine-business-and-industry-aspbi-other-service-activities-sector-0>

Rivas, R. (2021, January 6). *Hacker orders food worth P1 million using Senator Gatchalian's credit card*. Rappler. Retrieved March 12, 2022, from <https://www.rappler.com/business/hacker-orders-food-worth-million-using-senator-sherwin-gatchalian-credit-card/>

Rothstein, A. (2019, December 11). *The importance of communication in a hair salon*. Minnesota School of Cosmetology. Minnesota School of Cosmetology. Retrieved March 25, 2022, from <https://www.msccollege.edu/blogs/hair/the-importance-of-communication-in-a-hair-salon/>

Small Business Corporation. (2021, October 17). *SBCorp encourages MSMEs to go ‘online.’*

SBCorp. <https://sbcorp.gov.ph/news/sbcorp-encourages-msmes-to-go-online/>

Sotelo, R. (2020, March 25). *5 REASONS WHY AUTOMATION IS IMPORTANT FOR PH BUSINESSES.* Infomax. Retrieved March 15, 2022, from

<https://www.infomax.com.ph/blog/five-reasons-why-automation-is-important-ph>

Statista Research Department. (2021, October 26). *Internet access rate among adults in the Philippines September 2021, by region.* Statista. Retrieved March 25, 2022, from
<https://www.statista.com/statistics/1271380/phillippines-internet-access-rate-by-region/#statisticContainer>

Study finds more Filipinos open to a cashless society as e-payments rise. (2021, March 10).

Business World. Retrieved March 12, 2022, from <https://www.bworldonline.com/study-finds-more-filipinos-open-to-a-cashless-society-as-e-payments-rise/>

Top Benefits of Online Appointment Scheduling Software in 2021. (2021, August 17). Awebstar Technologies. Retrieved March 12, 2022, from <https://awebstar.com.sg/blog/top-benefits-of-online-appointment-scheduling-software-in-2021.html>

USPS. (n.d.). *Benchmarking Analysis.* United States Postal Service. Retrieved March 25, 2022, from

https://about.usps.com/manuals/spp/html/spp1_043.htm#:~:text=Benchmarking%20analysis%20is%20a%20specific,to%20continuous%20improvement%20and%20culture

Whitby, M. (2021, November 12). *State of the spa and salon industry report 2021 reveals challenges and opportunities*. Spa Opportunities. Retrieved March 25, 2022, from <https://www.spaopportunities.com/spa-news/Mindbodys-salon-and-spa-industry-report-reveals-consumers-trends-in-beauty-spend-and-openness-to-trying-new-services-State-of-the-Spa-and-Salon-Industry-Report-Josh-McCarter/348775>

William, C. (2021, January 4). *Salonist Software: Solve the General Problems Faced by Beauty Salons*. Salonist. Retrieved March 25, 2022, from <https://salonist.io/blog/salonist-software-solve-the-general-problems-faced-by-beauty-salons/>

Yocale. (2017, August 30). *12 Benefits of Appointment Email & SMS Reminders*. Retrieved March 12, 2022, from <https://business.yocale.com/benefits-of-appointment-email-sms-reminders/>

Yun-Yung, L. (2018, January 15). *Will My Customers Come Back? A Study of Beauty Salons in Taiwan*. Korea Science. Retrieved March 25, 2022, from <https://www.koreascience.or.kr/article/JAKO201816357067052.pdf>

Turco, K. (2021, April 28). *Four advantages of SaaS*. TechnologyAdvice. Retrieved March 31, 2022, from <https://technologyadvice.com/blog/information-technology/advantages-of-software-as-a-service-saas-2/>

List of Appendices

Letter of Request to Survey Respondents

Usability of Online Booking System for Spas/Salons in Metro Manila

Dear Respondent,

We invite you to participate in our research study titled “Usability of Online Booking System for Spas/Salons”. This is a research study conducted by students from De La Salle—College of Saint Benilde. We invite you to take part in this research study because we are looking to improve the booking experience for spa and salon businesses with a web-based software application. With your help, either responding as a business or (potential) customer, we hope to get some valuable information to help shape our proposed software.

- (i) The results of this study will be used for scholarly purposes only.
- (i) Rest assured, your responses will remain confidential in accordance with the Data Privacy Act of 2012.

Expected completion time 

Business (Owner, Manager, or Employee point of view) // 3 minutes or less
Customer // 1 minute or less

Should you have any concerns regarding this survey, please contact us:

jerichoandrei.ladrica@benilde.edu.ph
kylel.deguzman@benilde.edu.ph
kevinduane.lacuata@benilde.edu.ph
vondrick.fong@benilde.edu.ph

Questionnaires Used to Respondents

Name (Optional)

Short answer text

Which of the following describes you? *

Please select the most appropriate choice as the next set of questions will depend on your selection.

- Spa/Salon Business (Owner, Manager, or Employee)
- Spa/Salon (Potential) Customers

Section 3 of 8

Spa/Salon Business Owner, Manager, or Employee

General information

Name of Business *

Short answer text

Location/Branch *

Short answer text

What type is your business? (Select all that *

- Spa
- Salon
- Salon & Spa

What type of Spa is your *

- Day Spa (makes use of onsite leisure facilities during normal working hours)
- Club Spa (located within a larger gym or health club. Adjoining fitness and health facilities)
- Mobile Spa (In-home Services with or without beauty pampering, massage, and etc.)
- Mineral Spring Spa
- Not Applicable (If you choose "Salon" on the question above)
- Other...

What type of Salon is your *

- Hair Salon
- Nail Salon
- Beauty Salon (Hair + Make-up)
- Eye Brow Salon
- Waxing Salon
- Not Applicable (If you choose "Spa" on the question above)
- Other...

Does your business offer home/private services or walk-in *

- Home Service
- Walk-in Service/Inside Establishment Service
- Both

Does your business have an internet *

- Yes
- No

Which of the following devices does your business have for work *

- PC/Laptop
- Tablet
- Phones/Smartphones
- Telephone Landline
- None of the above

Section 4 of 8

Problem-Specific Questions (Business)

x ::

Description (optional)

How do your customers schedule/book for appointments for your services? (Select all that * apply)

- Walk-in
- Call
- SMS
- Email
- Our own website/Online Booking System
- Other...

If you do not have an "Online Booking System", why not? (Select all that * apply)

- I am not aware of online booking systems
- The software solutions I've found are too expensive
- I feel as though I would be overwhelmed by the features a software solution would have
- I have no need for such a system / We have no need for such business process improvements.
- N/A (We already have an online booking system)
- Other...

How do you record/keep track of your customers' booking appointment for your services? *

- (Select all that apply)
- Writing/Pen and Paper
 - Through our own software solution
 - Using other software applications (ex. Excel, Google Sheets, and etc.)
 - Mentally
 - Other...

Other than asking for the time, date, name, and type of service when booking, do you ask your customers for any other type of information? *

- Yes
- No

If your answer is "Yes," what other type of information do you ask for? (Simply type "N/A" if you have answered "No," previously) *

Long answer text

At what moment or time does your business ask for payments to your *

- Whenever we are already face-to-face with our customers. (Customers already inside our establishment o...
- We already ask for payments during booking for appointments even if customer hasn't gone in our busine...

How does your business do Reputation Management, or check customer's feedback after giving service? (Select all that apply) *

- Survey our customers after service. (Paper or Electronically)
- Social Media Ratings (Facebook Page Rating, Google Reviews, Yelp etc.)
- Personally asking them.
- None
- Other...

Does your business notify or give reminders to your customers about their booked appointments? *

- Yes
- No

If you answered "Yes," how do you notify your customers? (Select all that) *

- Call
- SMS
- Email
- Online through our software solution
- N/A (I answered "No")

Section 5 of 8

Scale-Based Questions — Issues with Customers During Booking Process 🤝



Based on your experience of the following below, how often has your business/workplace encountered these difficulties WHENEVER A CUSTOMER IS BOOKING FOR AN APPOINTMENT? [Frequency]

[Frequency]

- 1 - Never
- 2 - Rarely
- 3 - Sometimes
- 4 - Often
- 5 - Always / Very Often

Additionally, please rate how much the issue needs to be addressed. [Importance]

Miscommunication with clients (in terms of service offered, customer service choice, and etc.) [Frequency] *

1	2	3	4	5	
Not Often	<input type="radio"/> Always / Very Often				

Miscommunication with clients (in terms of service offered, customer service choice, and etc.) [Importance] *

- Does not need addressing
- Nice to address
- Must address

We don't get enough data information from our customers/clients. (Lack of requirements before service such as IDs, Vaccination Cards, Time Scheduled, and etc.) [Frequency] *

1	2	3	4	5	
Never	<input type="radio"/> Always / Very Often				

We don't get enough data information from our customers/clients. (Lack of requirements before service such as IDs, Vaccination Cards, Time Scheduled, and etc.) [Importance] *

- Does not need addressing
- Nice to address
- Must address

Accidental redundant bookings or intentional spamming/trolls who keeps making reservations. [Frequency]



Accidental redundant bookings or intentional spamming/trolls who keeps making reservations. [Importance] *

- Does not need addressing
- Nice to address
- Must address

Tendency to disorganize the listing of our customer appointments *



Tendency to disorganize the listing of our customer appointments *

- Does not need addressing
- Nice to address
- Must address

Section 6 of 8

Scale-Based Questions — Issues with Booked Customers

x

:

Of the following below, how often has your business/workplace encountered these difficulties WHEN A CUSTOMER HAS ALREADY BOOKED AN APPOINTMENT? [Frequency]

[Frequency]

- 1 - Never
- 2 - Rarely
- 3 - Sometimes
- 4 - Often
- 5 - Always / Very Often

Additionally, please rate how much the issue needs to be addressed. [Importance]

Customer no show / Sudden cancellation

*

1

2

3

4

5

Never



Always / Very Often

Customer no show / Sudden cancellation

*

- Does not need addressing
- Nice to address
- Must address

Miscommunication amongst employees (In terms of who will do the job, what facility/equipment to operate, and etc.) [Frequency]

*

1

2

3

4

5

Never



Always / Very Often

Miscommunication amongst employees (In terms of who will do the job, what facility/equipment to operate, and etc.) [Importance] *

- Does not need addressing
- Nice to address
- Must address

We forget the appointments our customers make *



We forget the appointments our customers make *

- Does not need addressing
- Nice to address
- Must address

Trouble distributing employee workload *

1 2 3 4 5

Never

Always / Very Often

Trouble distributing employee workload *

- Does not need addressing
- Nice to address
- Must address

Not enough employees/facilities to cater to the customer's desired service at the time they * are already in our establishment [Frequency]

1 2 3 4 5

Never

Always / Very Often

Not enough employees/facilities to cater to the customer's desired service at the time they * are already in our establishment [Importance]

- Does not need addressing
- Nice to address
- Must address

Section 7 of 8

Spa/Salon Customers



Definition of Terms

Spa - a commercial establishment offering health and beauty treatment through such means as steam baths,

exercise equipment, and massage.

Salon - an establishment where a hairdresser, beautician, or couturier conducts business. (ex. Barbershops,

Waxing Salons, Nail Salons, and etc.)

Age *

18-24

25-34

35-44

45-54

55-64

65 and over

How do you search or get to know existing spas or salons out there? (Select all that

*

Word-of-mouth

Searching in Google Maps

Using Directory Applications/Review Applications (ex. Yelp)

Social Media Advertisements (Facebook, Instagram, and etc.)

Seeing them by chance

Scale-Based Questions — Issues

Of the following below, how often have you encountered these difficulties when visiting spas/salons? [Frequency]

1 - Never

2 - Rarely

3 - Sometimes

4 - Often

5 - Always / Very Often

Additionally, please rate how much the issue needs to be addressed. [Importance]

Have you waited long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment? [Frequency]

1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always / Very Often

Have you waited long in queue to receive a service from a Spa/Salon whenever doing a walk-in appointment? [Importance]

- Does not need addressing
- Nice to address
- Must address
- N/A (I have never visited a Spa/Salon)

Have you ever forgotten that you made an appointment and failed to show up? *

1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always / Very Often

Have you ever forgotten that you made an appointment and failed to show up? *

- Does not need addressing
- Nice to address
- Must address
- N/A (I have never booked an appointment for a Spa/Salon service)

Have you ever been in a Salon/Spa business but then some facilities are not available or some employees are not available to cater to your particular needs? [Frequency]

1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always / Very Often

Have you ever been in a Salon/Spa business but then some facilities are not available or some employees are not available to cater to your particular needs? [Importance] *

- Does not need addressing
- Nice to address
- Must address
- N/A (I have never booked an appointment for a Spa/Salon service)

Please rate the following based on your scheduling/booking

Description (optional)

Walk- *

- Do not prefer
- Neutral
- Much prefer

SMS *

- Do not prefer
- Neutral
- Much prefer

Email *

- Do not prefer
- Neutral
- Much prefer

Online *

- Do not prefer
- Neutral
- Much prefer

Section 8 of 8

Software Solution Acceptability



As part of our study, we are planning to provide a solution that address the problems faced by spa and/or salon businesses as well as its customers. This solution includes a platform similar to "Foodpanda" where a booking system with a search functionality allows customers to look for establishments based on user reviews, location, and/or category. Spa and/or salon businesses who are interested to be part of our service will also show up in the web application.

(Please read the description above) If this type of application were to exist, would you be willing to use it? *

- Yes
- No

If you answered "no", please state the reason why. Otherwise, simply type *

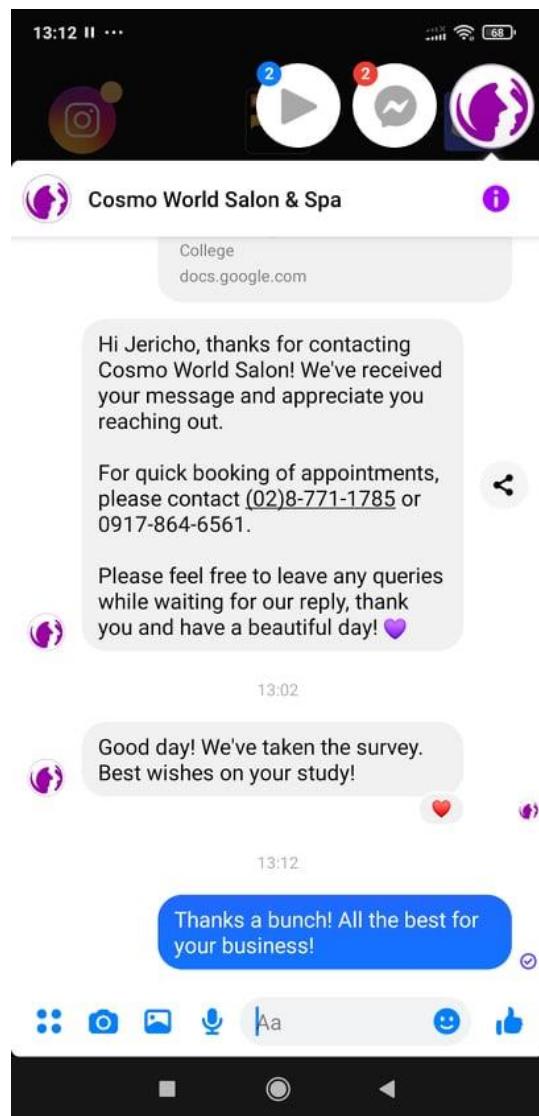
Long answer text

Do you have any additional comments or suggestions as to what we should include or consider for the application? (Optional)

Long answer text

Proof of Survey Gathering







Curriculum Vitae

Kyle Lu De Guzman

Kylel.deguzman@benilde.edu.ph ♦ (0995) 649-9093

♦ Cabanatuan City, Nueva Ecija

WORK EXPERIENCE

Remy's Bazaar

2015-2022

Store Manager

- Improved the Company System to produce more customer sales and maintain market retention.
- Responsible for the product selection and the prices to be sold at the company.
- Ensures to protect the integrity of the Company as well as its loyal customers.

2007-2015

Marketing Assistant

- Compiling and distributing financial and statistical information such as budget spreadsheets
- Responsible for keeping the demand of products high
- Regulating the products sold are up to standards

EDUCATION

De La Salle — College of Saint Benilde

2018 - Present

Bachelor of Science in Information Systems

Manila, Metro Manila

Nueva Ecija University of Science and Technology

2011-2015

High School

SKILLS & INTERESTS

- **Technical Skills:**
 - Programming languages: C#, Php, ASP.NET
 - Web Development/Laravel, SQL
 - Data Science and Data Visualization/PowerBI
- **Interests:** Driving, Marketing, Playing Basketball

Von Drick Ramos Fong

vondrick.fong@benilde.edu.ph ♦ (925) 237-7802

♦ Antioch, California

WORK EXPERIENCE

You_Source

October – December 2022

Software QA Intern

B-Finder

2019-2020

Back-end Developer

- Developed a web application as the group's lead back-end developer called the "B-Finder" with functionalities that allows clients to register, sign-in, and book appointments to schedule rooms around the college's campus.

Automation of Ignacio Villamor High

2019-2020

Risk Committee

- Wrote the capstone paper as one of the class's Risks Committee for the automation and systematized attendance and grading system proposal for the public school, Ignacio Villamor High.

Association of Information Management (AIM)

2019-2020

Documentations Committee

- Handles paperwork, photography, and recordings of video in the course program's various related events and industry partnerships

EDUCATION

De La Salle — College of Saint Benilde

2018 - 2022

Bachelor of Science in Information Systems

Manila, Metro Manila

- 1x Dean's List — First Honors (3rd Term 3 SY 2020-2021)
- 1x Dean's List — Second Honors (2nd Term 1 SY 2018-2019)

University of Perpetual Help System DALTA

2018

Senior High School

Las Piñas City, Metro Manila

Aquinas School of San Juan

2012

Grade School

SKILLS & INTERESTS

- **Technical Skills:**

- Programming languages: C# & Php
- Software Quality Assurance & Testing
- Azure Devops
- Web Development/Laravel, ASP.NET mySQL, Microsoft SQL
- Data Science and Data Visualization/PowerBI
- Github

- **Interests:** Music, Singing, Playing Piano, Music Production, Table Tennis, Video Games, Anime, Movies

Kevin Duane Lacuata

kevinduane.lacuata@benilde.edu.ph ♦ (0916) 621-9151 ♦ Quezon City,
Metro Manila

WORK EXPERIENCE

Nihon Bunka-bu (NBB)

2017-2018

Treasurer

- Managed my first student organization project called: “Japanese Cuisine Cooking Class” under the organization with Chef Sabrina Gan as the instructor for the event.
- Participated in PLANS 2018, a team building event for all participating Student Leaders from any student organization under DLS-CSB

2018-2019

Treasurer

- Managed my first collaboration project with Karate Development Arts & Sports DLSU for an event called: “Karatedo: The Way Of The Empty Hand” with Cesar Unson Jr. As the instructor for the event.

2019-2020

President

- Supervised the organization during Student Involvement Week 1 and Student Involvement Week 2

EDUCATION

De La Salle – College of Saint Benilde

2017-Present

Taft, Manila, Metro Manila

Studies Bachelor of Science in Information Systems

CIIT Philippines

2015

Diliman, Quezon City

Studied Specialist Course in Photography
Studied Specialist Course in Photo Editing

New Era University

2014-2014

New Era, Quezon City
Studied Bachelor of Science in Economics

De La Salle University

2013-2014

Taft, Manila, Metro Manila
Studied Bachelor of Arts in International Studies Major in Japanese Studies and Bachelor of Science in Accountancy

O.B. Montessori Center, Inc.

2001-2003

Kindergarten

2003-2009

Grade School

- Loyalty Award

2009-2013

High School

- Loyalty Award

SKILLS AND INTERESTS

- **Technical Skills:**
 - Programming Language: C#, ASP.NET, SQL
- **Interests:**
 - Video Games, Pop Culture (Western, Japanese, Korean), Japanese (Language, History, and Culture), Animals, Photography, Martial Arts, Parkour appreciation, Figure and Model Kit Collecting,

Jericho Andrei Ladrica

jerichoandrei.ladrica@gmail.com ♦ (0916) 458-9406 ♦ Imus, Cavite

WORK EXPERIENCE

Toys 'R' Us Canada (CO-OP)

2017-2018

Customer Service

Toronto, Ontario

- Listen to customers' questions and concerns and provide answers or with an appropriate response.
- Provide information about products or services.
- Handle returns or complaints.
- Shelf stocking and product labeling. Check for any errors in pricing and re-stock when necessary.

EDUCATION

De La Salle — College of Saint Benilde

2018 - Present

Bachelor of Science in Information Systems

Manila, Metro Manila

- 1x Dean's List — Second Honors (3rd Term SY 2018-2019)

North Toronto Collegiate Institute

2017 – 2018

Graduate High School

Toronto, Ontario

Lisgar Collegiate Institute

2014 - 2017

- Grade 10 Honors in Applied Math

Ottawa, Ontario

SKILLS & INTERESTS

▪ Technical Skills:

- Programming languages familiar with: Python, C#, Java, SQL, Kotlin
- Web Development/ASP.NET Core
- GitHub (Moderate Familiarity)

- **Interests:** Physical fitness; traveling; Japanese language; Japanese entertainment; video games; street dance