

DE LA SALLE-COLLEGE OF SAINT BENILDE

JITENSHA: The Usability of an Online Build a Bike Platform for Bike Users in

NCR Plus

A Capstone Project

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EXECUTIVE SUMMARY

Biking - nowadays - has soared in popularity and has become a trend over the past years especially during the pandemic (World Bank Blogs, 2022). The researchers aim to use this as an opportunity to participate in this trend. This study aims to help beginners improve a better understanding with bikes, parts, and maintenance. More so, to provide beginners to build their own personalized bikes with a plethora of parts from different bike brands. The study covers bike users - all kinds - as respondents in NCR plus. The researchers used a quantitative approach - utilization of survey and questionnaire- to gather relevant data for the study.

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G.T.T

INTRODUCTION

Project Context

The health advantages of physical activity are undeniable. Regular exercise helps to avoid heart disease and other chronic illnesses, improves mood, decreases stress, and improves sleep, among other benefits; Outdoor exercise may be a systematic workout method of taking advantage of the natural environment to get you in shape, or it can be as simple as a casual walk around the block (Iliades et al., 2018). According to The Outdoor Activity (2020) Outdoor recreational activities provide several advantages for both physical and emotional wellbeing. It allows people to engage and socialize with individuals who share their interests. Outdoor activities also have monetary opportunities since individuals are more productive after participating in a leisure activity. It also allows us to explore your surroundings while breathing in some fresh air.

HowStuffWorks (2009) stated that, the excellent way to go outdoors is by using a bicycle, whether use it for a bicycle road trip or to mountains. Outdoor biking is an excellent option whether you are a pro, training for a competition, or simply going on your bike for a casual weekend ride. Using your bike for errands and vacations is a practical way to add additional movement to your hectic schedule (Macpherson, 2022).

Since the start of the pandemic, people are not able to exercise or be as active as they were before the pandemic; hence they opted to exercise indoors. Indoor exercises are limited and lack mobility which made biking become one of the few activities allowed

during this time. The people are obligated to maintain their well being and to avoid the risks of health problems such as obesity, high blood pressure and to fight against the COVID-19 (Ramdani, 2020).

One of the many ways that people thought to exercise outdoors while maintaining social distance is cycling. Dela Cruz and Ives (2020) stated that, as governments around the world cut public transportation because of the need for social distancing, metropolis inhabitants from Paris to Tokyo are riding on bikes instead. According to Zafri et al. (2021) the COVID-19 pandemic has had huge ramifications on people's travel habits. Due to the inability to maintain physical distance inside public transportation, demand for private automobiles and active transportation modes such as walking and cycling has surged throughout the pandemic. People are encouraged to use it for leisure and transportation. The lack of transportation has also been an issue due to the fear of catching the virus which is also the reason why people would opt in in choosing to build or buy a bike.

Biking has grown in popularity due to the COVID-19 pandemic. This led to biking becoming a trend due to health protocols implemented by the government and even some restrictions were already lifted using bicycles are still growing. According to World Bank Blogs (2022) Dozens of commuters who previously relied primarily on public transport have come to use bicycles as a result of the pandemic and even after public services resumed, many people remained on their bikes. As a result of this situation, demand for bicycles and their spare parts is increasing, given the fact that their prices are also rising.

Dela Cruz and Ives (2020) stated that Bicycle consumption has skyrocketed globally to the point where even Giant, the world's largest bike manufacturer, is struggling to keep up with demand.

Several people never had the opportunity to learn how to ride a bike, and many children wish to. There's no cause to be ashamed. Rather, feel excited about embarking on one of the healthiest, most ecologically friendly, and most gratifying modes of self-transportation available. It takes practice, technique, and a little tripping, but learning to ride a bicycle is possible for anyone (Jackel, 2022).

According to Volpe (2022) DIY is intended to be a convenient and simple fix that anyone can accomplish — and, in the case of sewing on a button, that's true. However, be realistic about what the project includes, since there is a lot to think about; DIY can bring a lot of delight to some people.

When looking at a bicycle, it is clear that the frame is the most significant component of this vehicle. The frame is not just the part that keeps the bike together and allows you to sit on it and control it, but it also attests to the quality of the materials applied(Kitty, 2014). Stolen Ride(2021) stated that Bicycle anatomy could be both extremely simple and vexingly complex. A bicycle is, at its most basic, two wheels with a frame, pedals, and handlebars. Turn the pedals, the wheels spin, and presto. However, there are occasions when it is necessary to delve far further into the details. Building a bike is one of the most enjoyable experiences a cyclist can have(Lin, 2022). According to Wikstrom(2018) The biggest strength and attractiveness of custom-building a bike is

that the customer is in control of every element, beginning with the build's goals and priorities. For some, it may be adopting the newest technology and/or aerodynamics; for others, it may be focusing on weight, specific colors, or reproducing a team bike; it is even conceivable to work within a strict budget and/or recycle parts that have been sitting in the storage for a while.

In context of the current problems and challenges surrounding buying and building a bike, through an Online Build a Bike Platform it gives the users the opportunity to learn and have a better understanding in choosing the right bike and parts for them. This application will open the future of the bicycle industry. Through the platform, the users are able to choose their desired parts to build their ideal bike. Due to the sudden trend of biking as a hobby or for an entirely different matter, the influx of individuals wanting to own or build their own bike has increased which also means that there will also be inundation of beginners in biking. The expertise of the riders must be taken into consideration - beginner, intermediate, and expert. Not every cyclist cannot be presumed as an expert or the latter. Through the use of this web application, all kinds of bikers - in all different skill levels and abilities- can use this application as a medium to learn and absorb more information regarding biking as a whole, in both macro and micro level. Micro level persists to the different kinds of bike parts and macro level pertains to the different perceivable bike builds to the current trends of biking in general. Moreover, the project aims to provide a platform for bike enthusiasts and bike beginners to locate the nearest reputable bike shop within his / her radius or the location they input in the feature.

Purpose and Description

Significance of the Study

This study aims to provide help for bikers who are finding specific parts to build their project bike and guide beginner bikers that are currently (and planning to build) building their own bike. This study also aims to create a platform where bike consumers can consult and interact with other bike (enthusiastXV)specialists who can also guide and help them build their dream bike. The research would be beneficial to the following:

Bike Enthusiasts. The result of the study will be beneficial to the bike enthusiast as it will serve as a platform where these individuals can search the parts needed to complete the project bike. Enthusiasts include bike beginners and experts.

Bike Beginners. The result of this study will be beneficial to the beginners who want to start and learn how to build their own bike as it will serve as a platform to guide the individuals in creating their personal bikes.

Bike Sellers. The result of this study will be beneficial to the user - bike seller - who wants to sell and advertise their bicycle parts, either brand new or used, to the different users using the platform. The user can either be a personal seller or a bike shop.

Future Researchers. The result of this study will be beneficial to the future researchers as it will serve as a guide to give insight and knowledge to further improve the study.

Theoretical Framework

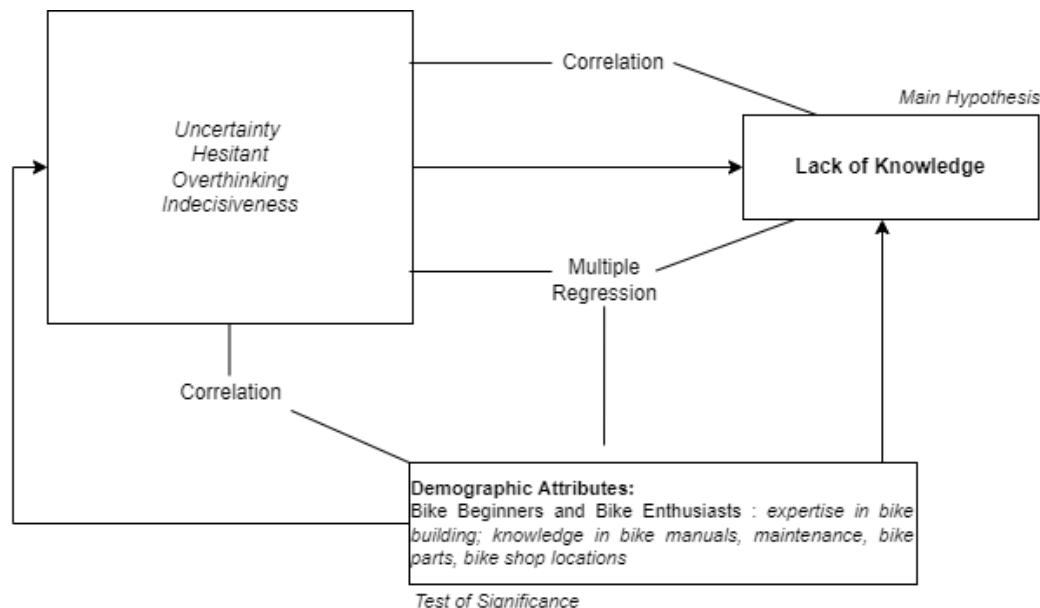


Figure 1.1

- **Lack of knowledge theory**

This study is anchored on the concept of Lack-of-Knowledge by Ladeveze et al. (2006) wherein the theory is based on the idea of globalizing all sources of uncertainty for each substructure using scalar parameters that belong to an interval with random variables as its bounds. The LOK theory can be thought of as an extension of the interval theory in which the endpoints are random variables, reducing the overestimation of output uncertainty. In this way, the difference between an accurate deterministic model and a family of real structures with

uncertainties is quantified. Physical reality is represented by this stochastic vision approach. Because the construction of a building is never faultless, the shift from a theoretical model to a practical one is always fraught with uncertainty. The available data in the real world differs from theoretical information, which is deterministic, in certain ways. As a result, rather than using safety factors to account for these uncertainties, this modeling approach provides a practical tool that engineers can employ. The difference between a numerical model and a real structure is not only qualified, but also quantified using this method. The concept of basic lack-of-knowledge can be used to account for all causes of uncertainty, including modeling errors. Referring to this theory, it coincides with the current research on people who want to achieve or build something but don't have the proper knowledge to do it.

- **Model of Decision Making**

This study is supported by the model of Decision making by Rassin (2012) which hypothesized that indecisiveness is the result of overt choice-related behaviors such as delay, tunnel vision, and post-decision dysfunctional behavior caused by decision problems (i.e., lack of knowledge, valuation difficulty, and outcome uncertainty) (e.g., worry). Existing knowledge is explored in the context of this model, and it is suggested that the model could be used to guide future indecisiveness research. By referring to this model, it corresponds to the current

study on how customers are indecisive in choosing what bike is suitable for them, what factors should be considered in building a bike, and what type of bike should they build or buy. This model could potentially assist the users to build and buy their ideal bike.

The concept of Lack-of-Knowledge by Ladeveze et al. (2006) is the adjacent theory that can be related to this study, given the emphasis on the idea of globalizing all sources of uncertainty. Lack of knowledge can lead to different factors like people overthinking, indecisiveness etc. This theory could assist the researchers to determine and create a system that would give knowledge to people who want to buy and build their own personal bike. The study claims in its project context that to use this application as a medium to learn and absorb more information regarding biking as a whole.

Hypotheses

Building on the aforementioned models - Lack of Knowledge and Decision Making model - may positively affect and infer a causation for consumers to be confident in building their own custom bicycle with utmost trust and credence. For this study, it is strongly presumed that these can be attained through the usage of the bike building platform. By that remark, this study formulates the corresponding hypotheses:

1. Bicycling is one of the main workout / exercise of people as alternative in going to the gyms

2. The availability of build a bike enhances the experience of beginners who are hesitant in building bikes because of too much information around the internet
3. The platform can increases confidence and ease of use to users who are finding comfortable ways in building their bike
4. The availability of the platform as way to advertise or sell products by the users

Conceptual Framework

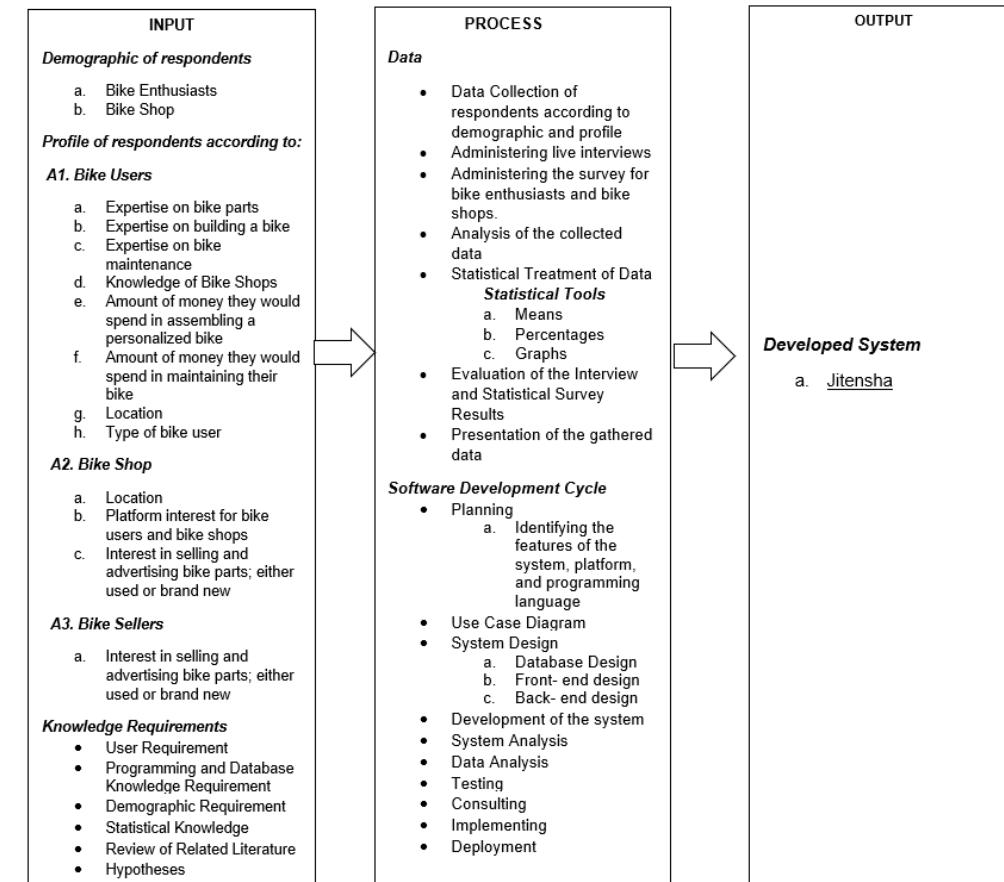
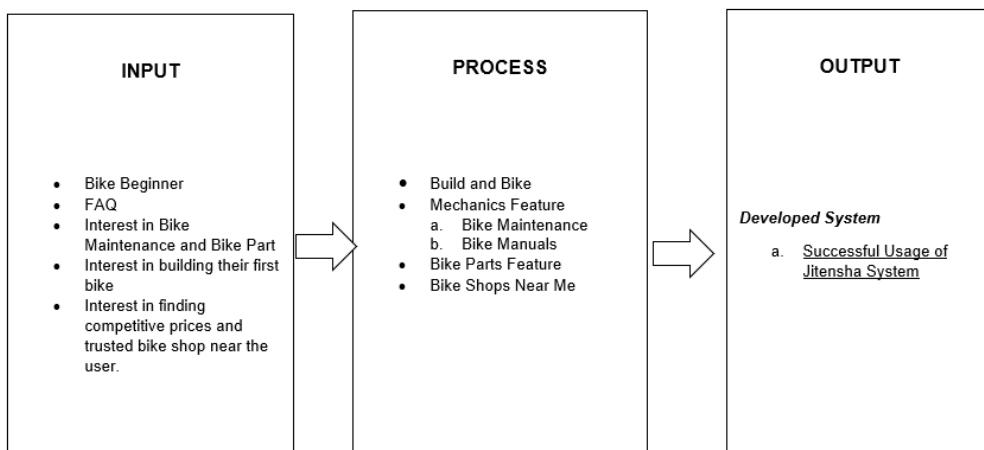


Figure 1.2 Conceptual Framework

The demographic of the respondents are two: bike users and bike shops. The profile of the bike enthusiasts are categorized on their expertise in bikes in general along with their knowledge of maintaining their own bikes. Under this demographic as well are the bike beginners - those people who are new to bike building. They are included because they are also considered as bike users. On the other hand, the profile of the bike shops mainly focuses on the location and interest of affixing themselves to a platform. The

knowledge requirements needed are the following: User Requirements, extensive comprehension of database and programming, demographic input requirements, understanding of basic statistics, and studies that will support the researcher's study. Every input is vital for the processing of these variables. The data, interviews and collected data from surveys, will undergo analysis and statistical treatment which will result in the evaluation of the statistical results and, eventually, the presentation of the evaluated results which is beneficial for the study being done by the researchers.

As for the development of the system itself, the overall system must first undergo planning - knowing the wanted features of the system, what platform to be used, and what programming language to be utilized. It will also need the use case diagram of the system and the overall system design - database design, front end, and back end. After this, the proper development of the system will begin with analyzing the system and data itself. When the development is done, testing must be conducted and outside consultation is a must before implementing the system and deploying it on the Internet. All of these variables will lead to the success of the tangible output - Jitensha website.

*Figure 1.3*

The inputs are as follows: Bike Beginner as the user and their interests in bike maintenance, different bike parts, building their first bike, finding trusted bike shops with competitive prices. The process - in order to use these inputs - is simply directing them to the features of the system / platform. The first feature is the ‘Build and Bike’ feature. Under this are these processes: the first main process scenario is : the user is asked by the system regarding the user’s physical parameters - height and weight, interests, where the user will use the bike for, and overall budget. The estimated total price range will be shown along with individual prices for the bike parts. The second feature is the mechanics feature and under these two are the bike maintenance and bike manuals. Under this are these processes: the second process scenario is: the user wants to know more about the bike maintenance and bike manuals.The user is prompted to click the respective pages - ‘Bike Maintenance” page and “Bike Manual” page if they wish to know more about these aforementioned topics. The third feature is the “Bike Parts”. The user must click it in

order to like the different bike parts with their usage and different brands. The fourth feature is the “Bike Shops Near Me”. To use this feature, the user needs to click it and the user is directed to maps. This will show his/ her current location and nearest bike shops along the 15km radius using “Locate Me” or he/ she can input a specific location to find shops in those areas. All of this will lead to a successful usage of the Jitensha system.

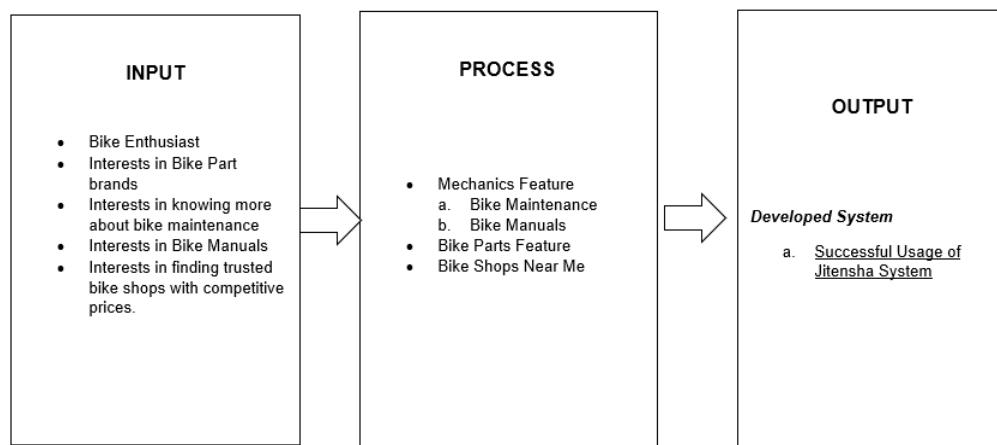


Figure 1.4

The inputs are as follows: Bike enthusiast as the user and their interests in bike part brands, knowledge in bike maintenance, and finding trusted bike shops with competitive prices. The process in order to use these inputs needs to use the following features: Mechanics, Bike Parts, and Bike Shops Near Me. The first feature is the ‘Bike Part’ feature. The first main process scenario of this feature is : the user will be directed to the main page where they will be shown a variety of bicycle parts with the estimated price from the trusted bike shops. The second feature is the ‘Mechanics’ Feature. The

first process scenario is : the user is looking for more information on maintenance and manuals for bikes. The user will be redirected to the maintenance page after clicking the ‘Bike Maintenance’ page if they wish to look for more information about bike maintenance and ‘Bike Manual’ page if they wish to see the different manuals. The third feature is the ‘Bike Shop Near Me’ feature. The process scenario is that the user is looking for a nearby bike shop who has the specific parts that they want to buy. After clicking the “Bike Shop Near Me” page, the user will be prompted to a map where the user can pin their address to the system and the system will locate all bike shops near the user - wherein they can input his/ her current address or put a different address to look for bike shops around that area. The other option for the user is when they press the “Locate me” page where the system will automatically determine the user's location and find all the nearest bike shops within the 15km radius. All of this will lead to a successful usage of the Jitensha system.

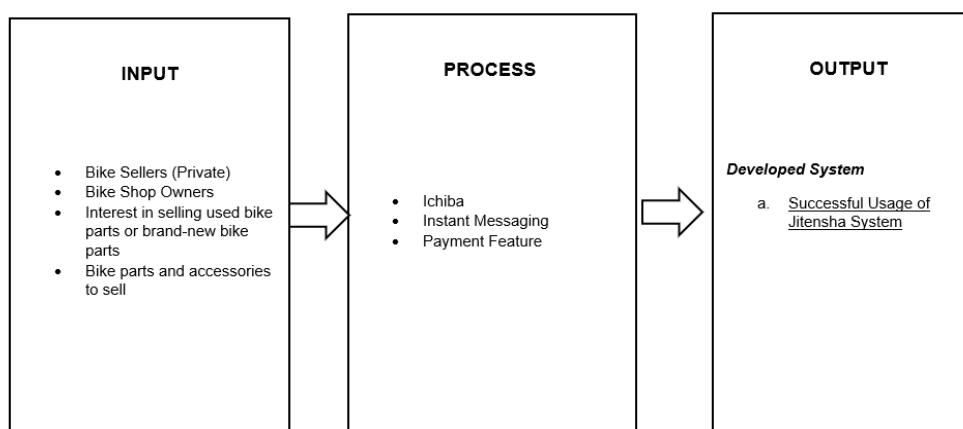


Figure 1.5

The inputs are as follows: Bike sellers and bike shop owners who have bike parts or accessories to sell and have interest in selling and advertising their products. These are needed in order to complete the next process. To use these inputs, the users - both bike sellers and bike shop owners - must proceed to the feature of the system that caters to their specific needs. This feature can be found in the “Ichiba” page where they can post their products for other users to see. This also includes the location of the one who posted and reviews from different users if people already bought from them. More so, the seller must have a verified account as well. When a buyer is interested in a particular product, the buyer can use the instant messaging feature of the system in order to contact the system regarding with the inquiry on hand; the system acts as a consignment-type of store and the administrators will be the one to answer the questions related to the product. The administrators act as the middleman for these transactions. All of this will lead to a successful usage of the Jitensha system.

Objectives

This study aims to help beginners improve a better understanding with bikes, parts, and maintenance. The application also offers basic tutorials and tips on how to maintain the condition of the bike, video tutorials of bike enthusiasts and experts from youtube that shows steps of works and will easily help them in mechanics will be grabbed and posted in the application for reference. More so, the application will help bike enthusiasts and bike beginners to build their own personalized bikes with a plethora of parts from

different brands coming from different companies - in this way, the consumers will have other choices in choosing the preferred brand for their ideal bike.

The following goals of the researchers are:

- To provide a platform where bike users and beginners can properly construct their ideal bike.
- To help them learn and understand every purpose of different types of bicycle.
- To give insight on how to maintain their bicycle.
- To guide bike users in their bike projects.
- To create a platform where bike users will know the best bike fits to their lifestyle.
- To raise awareness and promote safety in using a bicycle.
- To give consumers an e-commerce website solely for bike related merchandise.

Statement of the Problem/Opportunity

The purpose of this study is to provide an online build a bike platform to improve the experience of Filipinos towards building their bike. As pandemic hits, more and more people became reluctant to board public transportations because of the high infection rate of the virus. This has become a problem for most people because most people can't afford to buy private vehicles hence their attention was converted to bicycles and became their alternative transportation. A survey launched by the World Bank Group's Technical Assistance team and national government agencies (2020) showed that more than 7,400 respondents chose cycling instead of other transportation amongst the pandemic, a drastic increase when compared to the pre-pandemic. All things considered, this pandemic

created a lot of beginners in the cycling world which includes new bikers with no background ideas or even familiarity in different aspects. Riding can be difficult, especially for inexperienced cyclists who are unfamiliar with the local cycling network (Nunes et al., 2020).

Solving this study will attain the following opportunities:

1. The result of the study will render a suitable bike building platform for bike enthusiasts and bike beginners to personally customize their bikes using different bike part brands.
2. A suitable platform where a bike enthusiast and bike beginners will be able to locate the nearest reputable bike shop within his/ her radius.
3. A suitable platform where bike beginners and bike users can buy bike related merchandise in the built-in marketplace of the system.
4. An application where the user can learn how to maintain their bikes.
5. An application wherein bike beginners can use as a medium to learn and absorb more information regarding biking as a whole.

Scope and Limitations

System

The study mainly focuses on helping bike users, especially beginners to properly build their ideal bike through an Online Build a Bike Platform. The application will have a set of questions for all users, this series of questions will be used to determine and will recommend a bike that is appropriate and fit for the user. It considers lifestyle, purpose,

and its skill level. The application will also be able to display different brands of bike parts, bike accessories, and anything related to bikes in general. It will also cover different manuals in building coherent personalized bikes for the consumer's consumption - for beginners, intermediate, and experts alike. Moreover, it will also include information about the proper maintenance and procedures on how to properly service bikes. Lastly, the application also offers a platform to post selling items, upon posting an item for sale the application requires to have a product tag that will distinguish if that specific bike or bike part is suitable for beginner, intermediate, experts. A chat room where communication can be held for the consumer which the system will act as an agent for the inquiries; this also covers the payment gateway for such wanted products by the consumer if he/she wants to purchase the item in question.

Scope

The scope for the system will include the user access and the respondents. For the User Access the users have the access to either search and post for sale parts and will have a chat feature. Bike beginners can find the best bike fit for them. Bike enthusiasts can find the exact parts they need for their project bike. The user can also find the nearest bike shop around his relative radius. The user can register an account. Lastly, the bike sellers can sell their items and the system will act as a consignment-type of store. The system is an e-commerce website thus it will be handling payments. The system will also cover the shipment of the item in question; the logistics will be covered For the

respondents, the bike users will consist of bike enthusiasts, bike beginners, and casual bikers within the NCR Plus area. (Metro Manila, Rizal, Bulacan, Cavite, and Laguna). The Bike sellers are within the NCR Plus area (Metro Manila, Rizal, Bulacan, Cavite, and Laguna).

Limitations

The system will not be able to procure the items that the user wanted. The system will also not be able to make certain the availability of the bike part that the user wants. Although, it is a consignment type of platform, the system will not cover the logistics and storage of the posted items; the seller will be the one to ship and store the items. The system cannot also present the bicycle part and finished custom bike as a whole using 3D technology. For the respondents' side, the study will not be able to reach bike users and bike shops outside NCR plus (Metro Manila, Rizal, Bulacan, Cavite, and Laguna).

Assumptions

The system will assume the following:

- The user must be connected to the internet
- The user must have basic knowledge and skills in using a computer
- The user must register using a verified email address.

Definition of Terms

The researchers listed down the following terminologies to provide a brief description and clear explanation for the study.

1. *Bicycle - also called a pedal cycle, bike or cycle, is a human-powered or motor-powered assisted, pedal-driven, single-track vehicle, having two wheels attached to a frame, one behind the other.*
2. *Bike Building - an action that constructs or assembles a bicycle.*
3. *Bike Maintenance - a service that maintains bikes for it to be well-conditioned and helps to avoid future costly repairs.*
4. *Bike Manuals - an owner's handbook for maintenance and assembling purposes.*
5. *Bike Shops - a shop that sells and usually repairs bicycles and bicycle parts.*
6. *Bike Users - a person who uses/riding a bicycle*
 - a. *Bike Enthusiasts - a person who is very interested in cycling and spends a lot of time on it.*
 - b. *Bike Beginners - a person just starting to learn about bicycles.*
7. *Bike Parts - a piece or component of a bicycle (such as frame, brakes, gears, etc.) which combined with other pieces makes up the whole.*
8. *Chatbot – an automated computer program designed to stimulate and imitate human interaction i.e. human conversations.*
9. *LOK - Lack Of Knowledge*
10. *CAPTCHA - a program or system intended to distinguish human from machine input, typically as a way of thwarting spam and automated extraction of data from websites.*

11. *Geolocation - the process or technique of identifying the geographical location of a person or device by means of digital information processed via the internet.*
12. *Instant Messaging - form of text-based communication in which two persons participate in a single conversation over their computers or mobile devices within an Internet-based chatroom.*
13. *Payment Gateway - the virtual equivalent of POS (Point of Sales) used for physical credit and debit card transactions; this is used mostly for E-commerce websites.*
14. *Individual Personal Sellers - these sellers are considered as users within the Jistensha system : bike enthusiasts, bike users, and the civilian population who want to sell a bike related item in Ichiba.*
15. *JITENSHA - a japanese word for “Bicycle”.*
16. *Ichiba - a japanese word meaning “Market / Marketplace”.*

REVIEW OF RELATED LITERATURE / SYSTEMS

Outdoor Exercise

Exercising outside gives a variety of health benefits that you won't get when you exercise indoors. Exercising has various physical and mental advantages by itself, but when you take your training outside, you dramatically multiply these benefits. Many variables, such as fresh air and sunlight, contribute to an increase in advantages during an outdoor workout. (Fitness Nation, 2021). McCall(2016) stated that Outdoor exercise allows you to be physically active while immersed in a highly dynamic environment.

The more difficult the terrain, the more difficult it will be for the body to maintain an efficient labor pace.

Cycling as an Outdoor Exercise

Outdoor biking is a fantastic way to stay in shape while most facilities are closed and social distancing still present. Cycling is a fantastic cardiovascular activity that has been shown to benefit heart health, immunity, and overall well-being.“Outdoor cycling is great for anyone who wants to build their aerobic capacity, and improve the all-round fitness endurance. It is very functional in nature and has a multitude of health benefits, other than being environment friendly, which helps improve the overall ecosystem,” says Rishabh Telang, fitness expert, cure.fit.(Sabhnani, 2020). According to Robinson(2020) Cycling is an excellent aerobic workout. In an hour, you'll burn roughly 400 calories. It also improves your lower body, including your legs, hips, and glutes; this is a fantastic choice if you want a moderate workout for your back, hips, knees, and ankles.

Impact of the Global Pandemic in Cycling

Due to the COVID-19 pandemic, the majority of the world had to stop its normal daily operations and more than half of the world population was put down with lockdown - both partial and full. Governments of affected countries strictly implemented these restrictions to avoid the spread and transmission of the virus. In light of this, public and transit operations have ceased, temporarily, due to health safety and usage of the transit and public transports. With this predicament, people turned to

cycling as a viable alternative to fill the need of such shortcomings. Cities with urban cycling networks - both advanced and basic - have seen a gush of bike traffic as the pandemic continues. During the two-month lockdown in Wuhan, China, volunteers for the cause of containing the pandemic maximized the usage of bicycles to get around the concerned areas e.g. to deliver necessities to the people, especially those who are stuck at home and cannot go outside for groceries. During these times, from January 23 to March 12 - the Meituan Bikeshare, Wuhan's Bike Share Program, saw a surge of people who used their bikes to get around and provided roughly 2.3 million trips logged within their system. In different parts of the world, in New York City, the city's bikeshare system - Citi Bike - had a gush of demand for the bikes in the system which was around 67%. Places like Chicago and Philadelphia also saw the trend of roughly doubling the usage during March, last year - in Philadelphia, cycling has bloated to a staggering 150% during the whole pandemic. In Dublin, bike shops were seeing a boom in their respective industry as sales sky-rocketed. Some governments, who are cautious of the transmission, responded to the demand of bikes by building bike related infrastructures e.g. bike lanes, bike parking lots and sheds, etc. and offering and persuading essential workers in using bikes by giving them their own bikes coming from relative shared fleets.(Schwedhelm, A. et. al., 2020).

With these surges, it proved that cycling is both a great way to get around places especially during critical times and crises. It can be seen as a critical and optimal way for transport in both dense cities and rural areas and at the same time for leisure and

fitness - all combined. According to Schwedhelm, A. et. al. (2020), it will provide beneficial and profitable benefits in the imminent future as well which can go beyond using it as a mode of transportation. Infrastructure development might include much more intricate cycling networks within the urban area and business wise, it might move up the bike industry to a different level. Based on the article, apart from those usage solely on transportation and mobility, cycling can also improve and enhance public health and quality of life. For urban places, a densely packed place, it can improve the quality of air making it more breathable and healthier because of the implementation of biking schedules or encouragement of using bikes in lieu of automobiles that emit CO₂ to the atmosphere. This will also be a way of staying fit because biking requires you to use your body to power the machine and with this, consistent exercise - if done properly and regularly in healthy amounts - will make people a tad healthier within the said vicinity. Regular cyclists normally enjoy this benefit and studies show that they have 40% lower risk of having cancer. More so, cyclists are more than 50% less unlikely to develop heart disease and 40% less likely to pass away precipitately. This benefit came from indulging in consistent exercise. A different study states that having healthy air might reduce the risk of fatality from COVID-19 especially in urban polluted areas - around 85% out of 100% decreased fatality from COVID-19. In this way, cycling will hit a lot of cylinders if it is highly encouraged with, not limited to, reducing air pollution within the area and encouraging the populace to use bikes for their own fitness

which will see an increase in physical activity with promises of improving the immune system and individual resilience. (Schwedhelm, A. et. al., 2020).

Being a Beginner

According to Tatsushi et al. (2014) in the field of cycling competition, cyclists frequently use binding pedals to improve their competitive performance. The pedaling action is created by a combination of lower extremity muscular activity. The skill of pedaling exercise has been defined as the efficiency with which a cyclist's physical strength is converted to the propulsive force of a bicycle. The pedaling action is created by a combination of lower extremity muscular activity. The skill of pedaling exercise has been defined as the efficiency with which a cyclist's physical strength is converted to the propulsive force of a bicycle.

Currently, a range of bicycles for competitive cycling have been produced, including mountain bikes, track racers, and road racers, among others. Bicycles used in cycling events are made up of a frame, wheels, a handle, and a saddle, among other mechanical components. In order to optimize a cyclist's competitive abilities, the placements of these components must be modified based on the cyclist's physical characteristics. Because the distance between the center of a crank and the saddle limits muscle activity and joint mobility, the use of binding pedals emphasizes the need of properly situating bicycle components. (Tatsushi et al., 2014).

Aerobic and anaerobic capacity, muscular strength and endurance, skeleton, and body composition are all elements that influence cycling performance. Hug et al. (2009)

published a review of the pedaling exercise, in which the pattern of muscle activity recruited during the exercise was studied using electromyogram data. Because they are strongly impacted by the position setting of the bicycle, the amount of muscle activity and activation timing recruited in the pedaling action have been considered as key aspects to discuss pedaling exercise. Andrew et al. (2008) studied the variations in leg muscle activity patterns between beginner and experienced cyclists, finding an unbridgeable gap in leg muscle activity patterns that corresponded to their riding levels.

Raymond et al. (2005) measured the effects of the patterns of muscle activation and the patterns of muscle co-activation. Additionally, they investigated the effects of muscle fatigue, cadence, and posture on the muscle recruitment patterns in the pedaling exercise, and showed that the muscle recruitment patterns are altered by muscle fatigue, cadence, and posture.

Bicycling is popular among youngsters in Norway and many other Western nations. The bicycle is mostly used for play by the smallest children, although it is subsequently employed as a mode of transportation. According to Statistics Norway (2002), between 1987 and 1993, there was a 46 percent rise in the number of bicycle-related injuries in Norway. Children under the age of 15 account for the majority of injured cyclists in Scandinavia.

K.S. Hansen et al. (2005) stated that there is a calculated risk of getting injured when cycling. It seems logical that children should spend more time cycling to increase

their skills and thereby reduce the risk of getting injured. Without practice, more and more children are prone to injury, increasing the risk of cycling to beginners.

DIY/Building up Something

DIY or Do-It-Yourself means that instead of hiring a professional to do a particular task, you're choosing to do that task yourself with no direct help from an expert (Morgan, 2018). The long history of DIY started in the 1600s. According to Science Museum (2020), the book Mechanick Exercises by Joseph Moxon portrays some basic DIY such as how to be a blacksmith and metal casting. This sets the pattern of the rich history of DIY.

In the present day, the majority of the things we encounter are made of industrial materials, which are materials created to meet specific needs. However, it's clear that the connection between designers, technology, manufacturing processes, and materials has taken on a new dimension in recent years. DIY-Materials (Do-It-Yourself Materials) is the name given to this "new class" of materials that are designed by the designer and developed through an experimenting and self-production process (Garcia et al., 2015). According to Rognoli (2015) companies and industries that provide mass customization and personalization services are gaining popularity in order to meet the growing demand for unique materials. Even with their direct involvement in the design process and/or production, a rising number of consumers indicate a need for customized materials. Designers are attempting to come up with significant solutions that address these issues.

DIY materials are made by individual or group self-production procedures, frequently using the designer's own techniques and processes. They can be completely new materials or modified or enhanced versions of current materials. The accessibility of personal fabrication technology, along with an increasing desire among individuals for individualized items, has aided the development of this new trend in the field of materials and design. Material experimentation, as well as distributed and shared production techniques, provide excellent chances for DIY materials to actively contribute to product design (Rognoli et al., 2015).

Bike Parts Knowledge

According to Momentum Mag(2021) The bicycle is a complex mechanism with several parts – just as many, in fact, that many users never learn the names and simply point to a problem location on their bike when anything goes wrong. But, whether you're new to riding a bike or not, everyone understands that pointing isn't always the best form of communicating. You can end up leaving a bike shop with something you didn't want to buy. Bike Smarts(2021) stated that, Going to a bike shop to buy a bike or have a tune-up, not understanding the names of your bike parts and their functions can be an issue. Noticing that the personnel at the bike shop speak a foreign language. There is a number of technical vocabulary in the cycling world, and understanding the basic part names can help clarify things and make you feel much more confident about riding a bike.

Distinct types of bicycles have different uses, and varied bicycle parts have various requirements; these requirements can then be specified as specific desired material attributes. Material selection refers to the process of selecting the best materials to meet the needs. Each component of the bicycle may necessitate material qualities that are vastly different. Material attributes are all of the characteristics that define a material. Each part has a purpose, necessitating the use of various material qualities. (“Bicycle Materials”, n.d.)

The needs of any form of bicycle design are established by what the bicycle is used for. The key overall bicycle criteria are, as always, speed, safety, comfort, and endurance. The bicycle weight is critical to speed, but the requirement for lightness must be balanced by other elements such as safety, comfort, and endurance. (“Bicycle Parts & Design”, n.d.)

Building a Bike

According to Wikstrom M. (2013) from CyclingTips., the favorable way to own a bike is to purchase it as a built unit with different kinds of brands per parts to make up a complete and usable bicycle. The consumer can take the factory- built bikes to see and take it for a spin before making a decision if they want to go through with the purchase. This, also, imposes a problem: the consumer has no power to choose the specific parts for them - this includes from the color of the frameset to saddles and stems. A custom built bicycle allows the consumer to acclimate and conform the bicycle to his/ her liking. With this given capability to the consumer, they are in charge with everything

they want to put on their bicycle. In this way, they can discern the goals and reason why they wanted that kind of build. This compasses from choosing the newest possible technology to weight preferences and colors. Due to this reason, Wikstrom M. (2013) stated that even though they have power to customize their bicycles based on aptitude, they will not be able to test it beforehand - to take it for a test drive. The consumer may not also have a clear and lucid idea on how the final outlook of the bicycle will be until it has been put together.

According to Bike Smart(2021), It is widely believed that building your own bicycle is more expensive than purchasing one that has already been built by a manufacturer. This is true because bike makers frequently have partnerships with manufacturers who build the parts, allowing them to be cheaper. Having said that, this is not always the case. It can save a lot of money by building your own bicycle. Anyone can build a high quality bike for a fraction of the cost of buying one that has already been made. It is possible to find offers on scarcely used frames and lightly worn parts, which can save you a significant amount of money.

Trust in Seller

Based on the research of Soleimani M. (2021), knowing the precursor of a customer's trust can bestow indispensable perception into the underlying factors that can possibly push to affix their trust in transacting online. The principal antecedents of trust, according to literature, are customer concerns, disposition to trust, trusting beliefs, familiarity, calculative-based trust, and accessibility of information. (Soleimani M. ,

2021). The first antecedent is customer concerns and in e-commerce. According to Soleimani M. (2021, as cited in Agat et al., 2020; Kim 2008), it is one of the most acute and serious hurdles in electronic transactions and dealings. The four primary apprehensions for consumers who are dealing virtually and electronically are: 1. Privacy 2. Security 3. Perceived Technology Risk 4. Integrity Concerns. (Soleimani M., 2021, as cited in Connolly and Bannister, 2007; Shukia, 2014)

The next one is ‘disposition to trust’ which is also coined as ‘propensity to trust’. Disposition to trust means - according to Soleimani M. (2021, as cited in McKnight et. al. 2002, p. 339) - is “the extent to which a person displays a tendency to be willing to depend on others across a broad spectrum of situations and people”. It is also proposed that the ramifications of dispositional factors are found much more frequently than supplementary factors e.g. institution-based trust. With this, the general consensus of propensity to put trust in others can regulate and impact the raw intentions and outlook of trustors - consumers - regarding e-vendors.

Moreover, familiarity is also an antecedent or precursor in impacting customer’s trust. This is in relation to the behavioral pattern of a customer prior to contact with the situation. Familiarity, according to Soleimani M. (2021, as cited in Bhattacherjee, 2022, p. 220), is the person’s comprehension of a different behavior grounded and based on preceding interactions and encounters. More specifically, familiarity moderately develops and matures as time passes by with trustees - consumers - become used and

habitual to trustors' behavior which in a positive turn - ameliorate the trust in consumers purchasing virtually through the use of e-commerce.

Another antecedent or precursor is calculative- based trust. Based on the research of Soleimani M. (2021, as cited in Gefen et. al. 2003) , an online consumer can establish a solid foundation of trust through cost- benefit analysis of trustees whose behavioral pattern exhibits whether they are either: cheating or cooperating. To add to this, calculative- based trust is based on deterrence. The refusal of engagement in opportunistic behavior of the consumer will be exhibited if they feel that the seller or e-vendor is untrustworthy and dishonest. According to Soleimani M. (2021, as cited in Gefen et. al. 2003), an online consumer will affix his/ her trust to an e-vendor when they [e - vendors] either have more to lose through the use of cheating or have nothing or close to zero chances of gaining by breaking the trust of an online consumer.

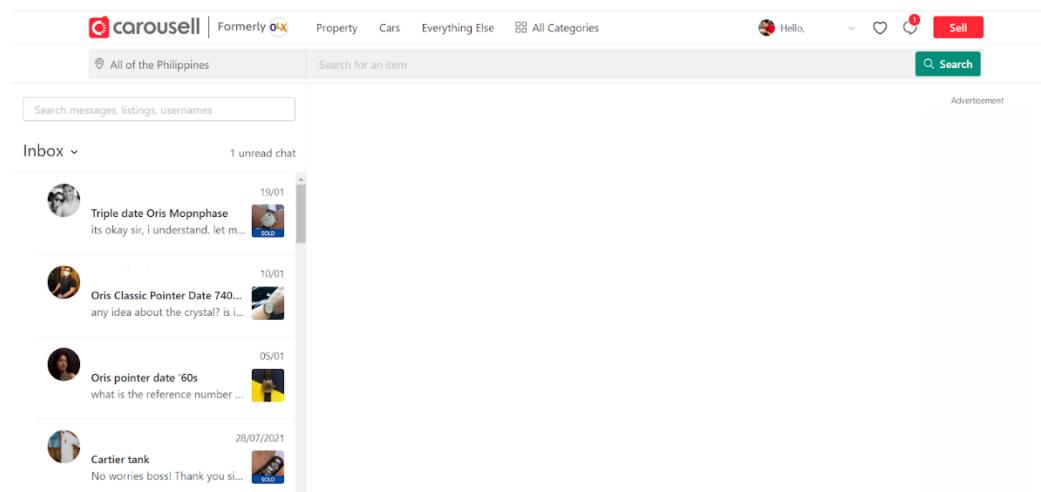
Seller's trust and a buyer's trust is a big concern for e-commerce. In order for trust to be established, two prerequisites must be satisfied. The trustor's reliance on and lack of control over the trustee come into play (Gefen, 2004; Rousseau et al., 1998). First, in online markets, sellers who are in control of selling products and making selling decisions for themselves or their organizations rely on the intermediary and purchasers to accomplish their transactions. This means that the seller's company is reliant on the middleman and purchasers. Second, the vendor does not have complete control over the middleman and the purchasers. Buyers, for example, frequently fail to make timely payments, communicate ineffectively, act in a hostile manner, or engage in

excessive arguments with sellers about product quality. Sellers are particularly vulnerable since they often undertake transactions with unknown buyers: around 89 percent of all seller-buyer couples conducted only one transaction, and 98.9% completed no more than four (Chong et al., 2003; Resnick and Zeckhauser, 2002). As a result, familiarity with individual purchasers is a tough building block of trust in an online economy (Zucker, 1986). To continue their transactions on an internet marketplace, merchants that rely largely on buyers and middlemen yet have little overt control over them require trust. "The integrity [one of the primary components of trust] of the eBay marketplace is the single top issue facing their [sellers'] companies on eBay," according to the Professional eBay Sellers Alliance. The necessity of investigating sellers' trust, despite the fact that there is already a vast body of research on buyers' trust, stems from the fact that sellers' trust differs significantly from buyers' trust. First, suppliers and consumers place their faith in e-commerce websites based on a variety of factors and features. Sellers and buyers go to different websites and follow different procedures for selling and buying products, respectively. Buyers are mostly concerned with the shopping cart process, but merchants are primarily concerned with web pages meant to make online selling easier. Given that the content and layout of ecommerce web pages have a significant impact on one's trust in the intermediary who maintains these pages, sellers and buyers interacting with different web pages within the same company website may have radically different perspectives on the same service provider's trustworthiness (Cyr, 2008; Flavian et al., 2006; Wang and Emurian, 2005).

Review of Related Systems (RRS)**Carousell**

Carousell is an online platform with a bit of e-commerce. This is where users can post their goods e.g. either brand new or used. Their - users- listings include the prices as well. The profiles also have ratings which are rated by a different user as well. The rating feature only is available when you make an offer for a particular listing of a different user and it will be activated fully when the other user - seller - approves the price being offered by the buyer. In return, they will be able to rate each other - both the buyer and seller. However, the transaction is done outside Carousell. The online platform does not hold any authority and the transaction is done at your own risk.

Although, Carousell really emphasizes the need to meet them up in person if possible or ask around and be a responsible buyer to avoid scams. That is why there are ratings for the users/ sellers to quantify and ease up the buyer's trust in purchasing a listing from a different user - a buyer. Carousell is basically an online platform where people can videoconnect, promote their product either brand new or used, and use the platform as a virtual meeting place where they can talk, connect, and ask around regarding a listing that a buyer is interested in.



Carousell. (n.d.) Carousell

<https://www.carousell.ph/>

Figure 3.1 Carousell

PCHub

PcHub is an online platform that helps customers build their own PC by guiding and letting them choose different PC parts through the platform. Upon entering the website, Pchub lets the customer scan through their available products and lets the customer build their own PC. Upon building the PC, Pchub has ten steps that guide the users in completing the build. The first step is choosing their cpu followed by the second step and third step which is choosing the compatible cpu cooler and motherboard. The fourth step and fifth step is choosing the RAM and the storage for the user's build. The user is not limited to adding one item which helps them for example on their storage. Depending on the user, they can either add a HDD storage, a SSD

storage or both. The sixth step is choosing their video card. The user can either opt not to add or add a video card depending on the purpose of the build and their budget. The seventh step is choosing the PC case. The eight step is choosing the power supply unit that is capable of powering the PC parts the user chose. The power supply unit is a critical part of a PC. It powers all the components in a PC, and a faulty one can ruin the whole system. The ninth step and last step is choosing the monitor and their desired peripherals. After choosing all the parts the user wanted, the user clicks the cart to view the overview and its total price. Unfortunately there is no chat support and a guide on building the user's desired PC. The user must contact a number or visit the facebook page of the platform in order to contact the platform's agents.

SKU	Category	Product Description	Price	Quantity	Remove
7250082	Case	Cooler Master CM H500M TG, black, ATX, 2x200mm 1x140mm, pn: MCM-H500M-IHNN-S00	₱12,950	1	<input type="button" value="-"/> <input type="button" value="+"/> <input type="button" value="Remove"/>
7591004	Cooling	Thermaltake TT Floe Riing 240 AIO LC Cooler, pn: CL-W157-PL12SW-A	₱8,100	1	<input type="button" value="-"/> <input type="button" value="+"/> <input type="button" value="Remove"/>
5140614	GPU	MSI RTX 3060 Ventus 2X OC LHR, pn: G57-V1B0337-Y47 -- LESS 1640, IF bought with PC set (Min RQMT: i5+B460 or RS 3500+B450) : PHP 31310	₱32,950	1	<input type="button" value="-"/> <input type="button" value="+"/> <input type="button" value="Remove"/>
4020785	HDD	2tb WD Blue hdd, 256mb 7200rpm, pn: WD20EZBX	₱3,150	1	<input type="button" value="-"/> <input type="button" value="+"/> <input type="button" value="Remove"/>
7461944	Keyboard	Asus TUF K3 RGB, mkb mech keyboard, wristpad, mx blue, pn: RA05 TUF GAMING K3/BL/US	₱3,410	1	<input type="button" value="-"/> <input type="button" value="+"/> <input type="button" value="Remove"/>

ORDER SUMMARY

Price/Avail Valid Until: 3/18/2022 12:22:23 PM
 Payment Method: Cash/Online Transfer
 Transaction Type: Pick Up/Delivery Apps
 SubTotal: ₱158,010
 Number of Items: 11

Checkout

PCHub (n.d.) PCHub<https://pchubpricelist.online/>*Figure 3.2 PCHub*

EasyPC is an e-commerce platform where the users can build their own PC. The platform offers different services to the user like having a list of items the platform is selling and their build a PC feature. To start building the desired PC, the users must follow a 8 step process. The first and second step is choosing the processor of the build and choosing the compatible motherboard for the chosen processor. The third step is choosing the memory or the RAM for the build, the user can add multiple memory for the build. The fourth step is choosing the graphics card of the build, the user has the option not to add an graphics card depending on their budget or the purpose of the build. The fifth and sixth step is choosing the solid state drive or the SSD and the hard disk or the HDD of the build. The seventh step is choosing the power supply unit of the build, this is important because it powers the whole PC and if the psu is faulty, the user might run into problems. The last step is choosing the PC case which will contain all the parts chosen by the user. After choosing all the parts, the website will give an overview of all the items chosen by the user. If the user has completed reviewing the overview, the user has to log in and input all the information needed in order to proceed with the checkout process. The platform also features a chatbot so that the user can ask questions about the parts or the build.

The screenshot shows a configuration page for a computer build. At the top, it says "Easy Build". Below that is a table with columns for Components, Selection, Brand, Qty, and Price. The components listed are:

Components	Selection	Brand	Qty	Price
Processor	AMD Ryzen 5 5600X Socket AM4 3.7GHz Processor	AMD	1	₱18,495.00
Motherboard	Asus Rog Strix B550-A Socket AM4, Full Connectivity, PCIe 4.0 Ready, Aura Sync RGB ATX Ddr...	ASUS	1	₱10,599.00
Memory	Team Elite TForce Delta 16GB 2x8 Memory 3200mhz Ddr4 RGB White	TEAM ELITE	1	₱4,995.00
	+ Choose Additional Memory			
Graphics Card	+ Choose Graphics Card			
Solid State Drive	Samsung 870 Evo 500gb SATA 2.5 world's best-selling SSD series pioneering SSD technology...	SAMSUNG	1	₱4,309.00
	+ Choose Additional Solid State Drive			

EasyPC. (n.d.) EasyPC

<https://easypc.com.ph/>

Figure 3.3 EasyPC

TECHNICAL BACKGROUND

Overview of Existing Systems

Fanatik Bike Co.

Fanatik Bike Co. is an e-commerce website with bike building features. They also offer bicycle parts with respective brands. They also have a wheel builder where you can custom build your desired wheel. They also have rental services, blogs about bikes, build gallery [built custom bicycles], and services for maintenance. The process of using their system when you want to build your own custom bike is by clicking on the feature itself from the home page. The system redirects you to the main program - bike builder - where you can choose a specific brand to start your build. After clicking the brand you desire, the system leads you to the user interface of the bike builder with the 3D technology. The 3D scanned image of the bike part is shown along with the availability of the bike part, size, color, and attributes e.g. weight etc. Once the build is done, it notifies you that the build has been completed. The system displays the total amount of parts and you can print it as well. However, given the bike parts used to construct the custom bike - it does not automatically add the items to the cart. The user has to manually find and add it to the cart for checking out. This is due to the fact that the items may not be available for purchase. If the item is available, the user can add it to the cart and proceed with the steps: 1. Filling up the shipping address 2. choice of payment / mode of payment 3. The confirmation of the order and sending of email notification. 4. Lastly, the sending out of the purchased product/s. Above these, they also

have maintenance services and it is offered as different packages with corresponding prices eg. basic tune, standard tune, better tune, new school tune which you can purchase as well.

Sixthreezero

Sixthree zero is an online platform that allows the users to pick and customize their preferred bike available in the platform. On their website they offer ready-made bikes but they will also offer custom-made bikes. For the custom-made bike, the platform starts by asking questions like height, weight, problems of the user when riding their current bike, etc. They have the feature where the user picks the design they want for their bike. After choosing the design, the last step for the custom-made bike will be the customization of the bike. On the left part of the website, the platform displays the bike and its benefits while on the right side of the platform, it will display the customization options. The user chooses the color, accessories, even its warranty. When the user is satisfied with the changes made, the user adds the bike to the cart, there will be a pop out message informing whether the user wants to check out or build another bike. If the user chooses the continue shopping option, the user is redirected back to the customization page however if the user chooses the checkout option, the user is directed to the checkout page where the user inputs their contact information, shipping address, and the payment option.

Mission Bicycle

Mission Bicycle is an online platform that allows the user to customize a bike. Similar to Fanatik, the user has the option to build a bike from scratch starting from the bike's frame. When designing a bike, it has 4 steps. The first step is to choose the colors of the frame, rims, grips, chains, and the components. Followed with the second step is choosing the bike parts and specifications such as the bike speed, handlebars, and frame size. Mission Bicycle shows the recommended frame size for the customer based on their height. The third step is upgrades which are optional, in this step the user has the option to upgrade the components of the bikes like the pedals which can be upgraded to premium pedals however the upgrades will have an additional cost to the total price of the bike. And lastly the fourth step is to order the bike. In this step the platform offers a special request that the user wants for the custom bike which is really unique compared to other online build bike platforms. The user can also see the total price of the bike in the last step and can now order the bike. When ordering the bike, Mission Bicycle offers a monthly payment for the bike for as low as \$88 per month. This feature has the edge over other platforms. The user can contact MIssion Bicycle through its chatbot or via email.

Trek Project One

Trek Project One is an e-commerce web application that offers bike building capabilities. This is an application that also offers users the ability to buy bicycle parts, gears, and even accessories. Their bike building feature includes pre-built

bicycles where you build it as well. When a user clicks the “Build” button, the user is redirected to the paint/ theme section first. Upon completion of this scenario, you can personalize the bicycle with the gears of your choosing and so on. After doing this, there will be a total summary where the price is shown and can be sent to the retailer for ordering. The unordered gears and parts are deleted by the system as this is now conceived as irrelevant data to the system. The system also offers all kinds of bicycles for the user to browse and see.

Bespoke

Bespoke is an online platform that helps the customer build a bike by choosing different bike parts through the platform. Upon opening their website, there are seven steps in completing the build. The first step is choosing the frame and its colors followed by the second step which is choosing the stem. The third step is choosing the groupset and the brands that the user wanted. The fourth and fifth step is choosing the wheels and tyres for the bike. The sixth step is choosing the saddle for the bike. This may depend on the user’s comfort. And lastly the final step is the bike fit. In the final step the user can view the overview of the bike and its total. It also has the option to contact Bespoke to discuss the build of the bike and how to order it. Unfortunately, Bespoke does not have chat support and the user must contact them through email in order to communicate with the platform’s agents.

Bike Config

Bike Config is solely a bicycle building web and mobile application. The system does not offer any features of selling bike parts - no e-commerce related services. The user can build their own existing bike or entirely from scratch. The system uses 3D technology to portray the custom bike in real time as the user edits the bike components and parts. For example, the user wants to change the bike frame to a different one - it can be done through picking it from the choices given along with the desired color. The user can experiment with different builds. Once the bike customization is complete, the user can save and load it if the user wishes to. More so, the user can share the design to social media. The design is now available for the other users to view and see below. Moreover, the website also has an upvote or “like” system where users can vote for a bike brand and in return, it will be shown as a recommended bike part made by a certain brand for the users who are interested in building their own bicycles. The user can filter those brands and parts accordingly in the system for flexibility purposes.

Currently, their system only offers that main feature: building your own bicycle.

	Chatbot	Marketplace	Notification Feature	Bike builder	Payment Feature
Jitensha	✓ Offers Chatbot and	✓ Offer users to post and sell	✓ Users can receive notification	✓ Covers different bike parts for	✓ GCash, Maya, Paypal, Visa,

	Chat Support	products on the platform	through the platform	specific types of bicycles in order to assemble a custom bicycle	Mastercard
Fanatik Bike Co.	✓	X Does not offer users to post and sell products on the platform	X Does not have not have notification feature	✓ Allows the user to build bikes from scratch. Does not filter what if the user is a beginner or not	✓ Visa and Mastercard only
SixThreeZero	X Does not have a chatbot	X Does not offer users to post and sell products on the platform	X Does not have not have notification feature	X Pre-built bikes only. Cannot really choose the user's desired parts	✓ Shop pay, Google pay, Visa, Mastercard
Mission Bicycle	Currently unavailable	Currently unavailable	Currently unavailable	Currently unavailable	Currently unavailable
Trek Project One	X Does not have a	X Does not offer users to post and	X Does not have not	✓ (Only TREK products)	✓ Visa, Mastercard,

	chatbot/FAQ. The user must email the company to ask questions.	sell products on the platform	have notification	Does not filter what if the user is a beginner or not	American Express
BeSpoke	X The user must contact/email the company to ask questions	X Does not offer users to post and sell products on the platform	X Does not have not have notification feature	✓	✓ Visa, Mastercard
Bike Config	X Does not have Chatbot support	X Does not offer users to post and sell products on the platform	X Does not have not have notification feature	✓ Helps the user to build their ideal bike from scratch	X Does not have a payment feature

table 3.1 Synthesis of existing systems

Jitensha offers different features and uniqueness compared to the other existing systems. First of all, the researchers plan to make the system as the first local bike builder. Second is the chatbot. Comparing it to the other systems, Jitensha has a chatbot and FAQ feature while the other websites have either the chatbot or the FAQ only or

none at all the users must email the company for their question. Only Fanatik Bike Co. has a complete chatbot and FAQ feature. The next feature is the marketplace. This feature is one of the unique features of Jitensha which offers the users to post and sell their products on the platform. Currently, there is no other system which offers the same feature. The next unique feature of Jitensha is the notification feature. The user can receive notifications through the platform containing the status of their bike, response of the seller or the buyer, shipping dates of their customized bike, etc. The next feature is the bike builder. Like other systems, Jitensha also offers a bike builder but comparing it to the other systems, Jitensha gives a beginner-friendly bike builder to new bikers and other users. Lastly, the payment feature which is also offered by the other systems but Jitensha offers users local payment systems i.e.GCash, Maya, etc.

Hardware Requirements

The technologies that will be used in developing the system will be powered by four machines. Three of the machines will have an operating system of Windows 10 Home Single Language 64-bit (10.0 Build 19042). In terms of hardware, both laptops will be powered with Intel Core 8th Gen i7-8750H 2.2 GHz, 64-bit Processor, GTX 1050Ti Graphics Card, 16 GB DDR4 RAM, 128GB SSD, and 1TB HDD. The second will be running the Windows 10 Home Single Language 64-bit (10.0 Build 19044) operating system. It will be powered by Intel Core i3-6006U 2.0GHz processor and 16GB of RAM with a storage capacity of 128GB SSD, and 1TB HDD.

Software Requirements

Upon developing the system, the developers decided to create a web-based platform using the programming language PHP: Hypertext Preprocessor. The reason for choosing the said programming language is for its security and connectivity with other databases and the utilization of the MVC framework in building the application. Model-View-Controller or MVC in short each of this and each of this has its own function. Model defines what the data app should contain and is responsible for the database, View is for the user interface, and Controller contains functionality that responds to input from users by updating the model and/or view.

The developers will also utilize one of PHP's open-source frameworks which is Laravel. Laravel is used for creating custom web applications. It's a server-side framework that manages data using the Model-View-Controller (MVC) design pattern, which divides an application's back-end architecture into logical sections (Burets, 2021).

In order to test the system's performance, the developers will use XAMPP as the test server and for deployment. XAMPP is an abbreviation for cross-platform, Apache, MySQL, PHP and Perl which helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server (undsgn, 2018).

In addition to the software requirements, the developers will utilize chatbots for the system. A chatbot is a computer program that mimics and processes human speech, allowing people to communicate with digital gadgets as if they were talking to a real person. Chatbots can range from simple programs that respond to a single-line query to

digital assistants that learn and improve as they gather and process data to give increasing levels of personalisation (Oracle, n.d.).

Completely Automated Public Turing test to tell Computers and Humans Apart or CAPTCHA in short. CAPTCHAs are technologies that let you distinguish between human users and automated users like bots. CAPTCHAs are challenges that are difficult for machines to complete but relatively simple for humans to complete. Identifying stretched characters or digits and clicking in a specific spot in an image are examples of CAPTCHA. (Lynch, n.d.)

The developers will also utilize payment gateway for online transactions. These include local e-wallets (Gcash and Maya), card networks (Visa and Mastercard), and online payment system (PayPal) to direct the POS for both Jitensha merchants and Jitensha website. According to Baker S. (2021) and Stax (2020), payment gateway provides a ton of benefits and uses for the consumers: it allows merchants to charge a specific right amount to a consumer's card/e-wallet/payment system by requesting the issuer (consumer) the transfer or payment of the said item by the acquirer - the registered bank of the online merchant. The transaction and actions are done within the payment gateway and the security of data will stay within those boundaries in order to avoid compromises of sensitive information and data.

The researchers will use Hostinger as its web hosting tool for the application to ensure it operates at peak efficiency and has great security measures. Hostinger will secure the websites with different fail-safe layers, RAID-10, and daily or weekly backups.

To keep the websites responsive in every nation, Hostinger's 10 data centers are dispersed globally. As it is deployed in globally connected Tier-3 datacenters, the user will experience the lowest latency and unparalleled dependability. As for safety, speed, and reliability, Hostinger works to keep it operational 99.99 percent of the time. The most popular operating system for hosting providers, CloudLinux, powers the servers which regularly update the systems, protect servers from DDoS assaults, and boost their performance using the most recent LiteSpeed innovations.

For the user interface, the developers decided to use three different colors, mainly white, gray, and black. The reason for choosing these color schemes is to have a clean and minimalist approach for the platform. A minimalist design has fewer elements and images load faster which will improve the user's experience (Hossain, 2021). Designers must produce the most accessible and attractive sites accessible as the web design industry focuses more and more on user experience. Minimalist principles, when carefully used, can assist designers in creating appealing and successful sites with fewer elements, simplifying and increasing consumers' online interactions (Smith, 2019).

Geolocation refers to any type of technology that can identify a geographic location of an Internet-connected device (Sensolus, 2020). Geolocation is also used by a variety of industries and businesses for a number of purposes. It can be used by travel websites to display location-based material based on the visitor's location. Marketers can establish geolocation profiles to improve the user experience and produce more relevant adverts

for each individual, as well as run targeted advertising campaigns based on a person's previous locations or proximity to a store. Geolocation data can be used in a variety of ways by both organizations and consumers (Focal Point Insight, 2021).

[Informed Consent Form]

1.a. Introduction

[Garcia, John Bryan G., Rostrata, Marc Dominic C., Sevilla, Matthew M., Tucay, Gabriel T.]

[De La Salle - College of St. Benilde]

[JITENSHA: The Usability of an Online Build a Bike Platform for Bike Users in NCR Plus]

We are, John Bryan Garcia, Marc Dominic Rostrata, Matthew Sevilla, and Gabriel Tucay, a group of undergraduate Information Systems students. We are inviting you to participate in this capstone research project regarding the usability of an online build a bike platform for bike users in NCR plus; the research project also encompasses a virtual marketplace solely for bike parts: user to user interaction. Participation in this study is completely and utterly voluntary and you may opt not to partake in this capstone research project.

If you have any inquiries regarding the aforementioned topic, please feel free to email us at our respective email addresses:

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marcdominic.rostata@benilde.edu.ph

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We will respond as soon as possible.

1.b. Purpose of the research

The main purpose of this capstone research project is to discern the feasibility of making an online build a bike platform within the confined scope of NCR plus along with the plausibility of incorporating a marketplace dedicated for bike related items and merchandise.

1.c. Participant Selection

The participant selection for the study are bike users within NCR plus. You are encouraged to partake in the said study.

1.d. Type of Research Procedures

We will utilize the questionnaire method (survey) to gather relevant information and data for the study. Due to this, the concerned participants will be asked to answer a survey done on google forms. The questions embedded in the survey are about the location of the participant, interest in using a build a bike

platform, bicycle knowledge regarding bike building and maintenance, type of cyclist, interest in using the platform as a marketplace for bike parts, interest in using a bike builder for bike building, and interest in using the other proposed features of Jitensha.

1.e. Voluntary Participation and Freedom to Refuse/Withdraw

If you decide to participate in this study, it is requested that participants answer all the questions in the survey truthfully; for the marketplace (Ichiba) feature, sellers must provide government documents i.e. passports, etc. The provided legal/government documents are for verification purposes only and it is also included in the confidentiality clause of this research. Participation in this project is voluntary and you may refuse to participate in this activity. In case a participant wishes to withdraw from the survey, please close the google forms web page. In case a seller wishes to withdraw from the activity, please inform the researchers immediately. The submitted legal/government documents are subject to deletion.

1.f. Duration

The survey can be completed within 10 -15 minutes.

1.g. Risks

There are no known risks for this study. The legal/government documents will be stored away securely within the database of Jitensha.

1.h Benefits

The results of this research will benefit not only the researchers but also the future readers and researchers of this study. Future readers and researchers will acknowledge the feasibility of having an online bike builder platform and a marketplace system for bike related items and merchandise.

1.i. Confidentiality

In the Philippines, the Republic Act No. 10173 or the Data Privacy Act is a law that protects all forms of information. It covers both natural and juridical persons involved in the processing of personal information (Data Privacy Philippines, n.d.).

The data given will be stored and used only for research purposes. The access will always be limited to the group of researchers and developers only. As for the legal/government documents - mentioned in **1.e Voluntary Participation** - the bike sellers, both bike shops and individual personal sellers - are required to provide legal/government documents for verification in order to use the marketplace (Ichiba) feature of Jitensha effectively without constraints. As mentioned above, if the seller wishes to back out using the website, the administrators will subject the submitted information to complete deletion.

If the seller wants to remain and use the aforementioned feature, the collected data and information will be stored securely with the chosen encryption - *SHA-256*- within the database of Jitensha. The collected data and information will not be used for other purposes and will only be used solely for verifying, documenting the account profile, and to be used for updation of account profile (in order to have complete access and use of Ichiba) The seller can also request for the deletion of said information and data if the seller desires it to be deleted and erased. The compliance of this is in reliance of the identity of who sent the request and will undergo strenuous process before the completion of total deletion of the concerned submitted legal/government documents. We understand the gravity and importance of protecting the data and information of users and participants of the study as this is considered private and sensitive data.

The improper use and misuse of the gathered information in this survey and study will be subjected to appropriate disciplinary actions under the Republic Act No. 10173 : Data Privacy Act of 2012.

Peopleware

For the peopleware component, the proposed system will feature different roles for the user. The purpose of this is that it will be able to do group and individual tasks while also making a positive contribution to functionality, efficiency, and effectiveness of the system.

The **System Administrator** is responsible for the overall functionality of the system such as maintenance, operation of the system, and the monitoring of the overall operations.

The system administrator can do the following:

- Has the full control over the system
- View the list of all accounts
- Edit the role of the user.
- Create, Read, Update and Delete parts in the system.
- Create, Read, Update and Delete accounts of the customer.
- Sends notifications to the users through push notifications.

The **Customer** can do the following:

- Can create an account
- Login to the system
- View and edit their profile details.
- Receive push notifications from the system administrator.
- Can sell products related to biking
- Can fully use the features of the platform

Network Requirements

The researchers for this current study are using Wi-Fi connection with the maximum MBPS of 200. The researchers are using social media and communication applications to relay, deliberate, and do the tasks together using Discord and Messenger.

For the development of the proposed system, the researchers plan to utilize and use Github to monitor and track the development of the system - with the different versions edited by the researchers/ developers.

Discussions on the current trends and technologies to be used in developing and implementing the proposed system

CAPTCHA

The researchers are planning to use CAPTCHA as a technological trend in the proposed system.

According to Onsight (n.d), the Complete Automated Public Turing test to tell Computers and Humans Apart or simply known as CAPTCHA is a technology trend which encapsulates the discernment between computers and a human being. The idea was derived and based upon the Turing test. A Turing test is a kind of test which checks and examines a machine's capability to show behavior in an intelligent manner that is closely identical to that of a real human being. Moreover, a CAPTCHA can also be referred to as the reverse Turing test - for the reason being a computer is generating the test which challenges the humans and contrariwise. CAPTCHA was introduced in the 2000s by Carnegie Mellon University and IBM, respectively. The term was properly and aptly coined by professors and scientists of the aforementioned institute and company. The technology is a challenge-response test. The way it works is the system - a party - gives out a question or a challenge to the user or bot - other party- for them or the bot to answer and respond to. In order to get past this technology and get authenticated, the latter party

must give and provide an accepted and valid answer. CAPTCHA's main focus is to prevent or try to stave off spams and bots in websites.

Chatbot

The researchers are planning to use Chatbot as a technological trend in the proposed system.

According to Oracle(n.d), a chatbot is a technology that mimics real human conversation - which can be either written or spoken. This is where the users can interact with artificial intelligence and communicate as if they are conversing with a tangible human being. It also simulates the possible scenarios through the use of questions. These are computer programs that are basic and based on fundamentals that adheres and answers a simple question with - at least - a single- line response or - at best - an advanced response to a query. Chatbots are powered by AI (Artificial Intelligence), natural- language processing (NLP) with automated rules, and machine learning (ML) in order to circulate and process data for the purpose of delivering the proper responses to the certain requests of the user or in some cases, requests of all kinds. With the use of chatbots, it boosts efficiency and brings proactiveness because companies who are using this technology allows it - chatbots- to deal with customer inquiries, problems, queries, and issues while lessening and decreasing the need and feel for human interaction - live customer service.

According to Business Insider (2022), consumers are actively asking and demanding 24 hours, round-the-clock service to cater and give assistance to the consumer. This is evident as approximately 40% of net users - worldwide - prefer using

and utilizing chatbots to their fullest potential than live customer chats with virtual agents. More so, major industries e.g. retail and also healthcare are making use of digital technology. With that, chatbots are most likely to increase in popularity in the relative future as digital technology progresses.

Instant Messaging

The researchers are planning to use Instant Messaging as a technological trend in the proposed system.

According to Lutkevich & Scarpati (2022), instant messaging is basically an exchange of messages - just like in real-time chatting- with the usage of an independent application or provided software of a system. Given that it is somehow like chat rooms, it is different and is its own entity. When using chat rooms, users are either constantly engaging simultaneously that results in imbricating conversations or passive non simultaneous engagement by the users in the chat room. When using instant messaging, the scenario usually is the same: it is between two separate entities or parties - two users - in a private back-and-forth type of conversation, just like how two people converse and talk in real life. It is used for real-time communication among internet users. Based on Lutkevich & Scarpati (2022), the users find it much more convenient and flexible than utilizing email. Using instant messaging is faster and much more efficient than traditional email because it is directly opposed to other asynchronous forms of communication i.e. email.

Geolocation

The researchers are planning to use Geolocation as a technological trend in the proposed system.

Estes (2016) stated that geolocation is a technology that uses data from a user's computer or mobile device to determine or describe the user's actual physical location. Two types of data can be collected: active user/device-based information and passive server-based lookup/data correlation and then cross-referenced to produce the most accurate result. Geolocation allows users to receive all forms of information in real time from any device connected to the Internet, as well as identify the user's location at any given moment. The foundation for location-positioning services and location-aware applications is geolocation technology apps. With 2.66 billion smartphone users predicted by 2019 and more than 2 million apps accessible on both the Android and iPhone platforms, the usage of geolocation technology will only become more common. Geolocation data have a variety of uses, each of which can be tailored to particular apps, environments or enterprises. These uses presently include localization and/or customization of delivered content, enforcement of access and delivery restrictions based on geographical location, fraud prevention, and network traffic analysis. Extending these technologies and their demand entails extending the problem of the nature of the information often private and/or sensitive associated with them. It is, therefore, important to be especially aware of issues relating to security and privacy to be able to use geolocation tools responsibly.

Payment Feature

The researchers are planning to incorporate a payment feature within Jitensha as a technological trend in the proposed system.

This specific feature will cover the seamless transaction using different payment methods with the utilization of payment gateway. Due to the recent trend of E-commerce, transacting online using different payment gateways boomed in recent years especially during the COVID-19 virus pandemic. According to Baker S. (2021), digital payment is a viable and an obvious way to go for business in terms of transactions; it is prevalent with its usage as it is increasing rapidly worldwide in parallel with the rise of E-commerce. In the most recent years, COVID-19 pandemic (2020) has also driven online sales with force as consumers in different parts of the world utilizes payment gateways e.g. PayPal, VISA, etc. for their purchasing endeavors online. The reason being that it is hassle free and safe. More so because of the recent virus outbreak, the proliferation of digital payments can be attributed to the decision of consumers to avoid - as much as possible - using physical cash or simply cash payments in transactions. This trend will likely still continue according to Baker S. (2021) and the projection of pushing the transaction value of the global digital payment market to \$6.6 trillion by the end of the year - 2021.

According to Baker S. (2021), a payment gateway is a solution that renders tons of benefits to the consumer or user; with the use of payment gateway, it allows merchants to sell virtually and allowing them to charge a specific amount (amount of item being purchased by the user) to the consumer's respective chosen mode of payment e.g. credit

card, debit card, e-wallet, etc. More so, it functions as a mediator for both concerned parties in terms of payment transactions that happen within the website or online store and the payment processor. Stax (2020) stated that payment processors are for in-person transactions i.e. POS machines to collect payments for a specific product (card reader), payment gateways are used mostly for online payments in online stores and websites and usually using CNP (card not present) payments or absence of physical bank cards. With the use of payment gateways, a secure connection is established and made between the merchant/seller of the online store, the respective browser of the consumer/buyer, and the consumer/buyer's card company i.e. debit, credit, e-wallet, etc. The data is secured within the payment gateway. The payment - virtual money - is sent to the merchant: the registered bank account of the merchant or in this case, the acquirer, sends a request of transfer or payment to the issuer (consumer/buyer) and the success of the transaction is based on the instance of the consumer/buyer's available funds - if the consumer/ buyer has enough or the exact amount to pay, then the transaction is successful and the payment gateway concludes and settles the sale and approval of purchase and payment. The request to the issuer goes through the payment processing service provider. Everything is done in the payment gateway and compromises to data are non-existent and definitely secure for both parties; the credit card or whatever mode of payment used and all transaction details are dispatched securely through the secured connection that was established with proper encryption of the aforementioned data. According to Stax (2020),

payment gateway is simply an online “Point of Sales” (POS) terminal of a business; in a physical store, these are the card readers.

Jitensha payment feature will utilize the following payment methods: e-wallet service i.e. Gcash and Maya; card networks - both including credit card and debit card i.e. Visa and Mastercard; and online payment system i.e. PayPal. All of these modes of payment are available for the convenience of the consumer/buyer which the users can use freely.

Discussions of the process/framework to be use

Agile Kanban

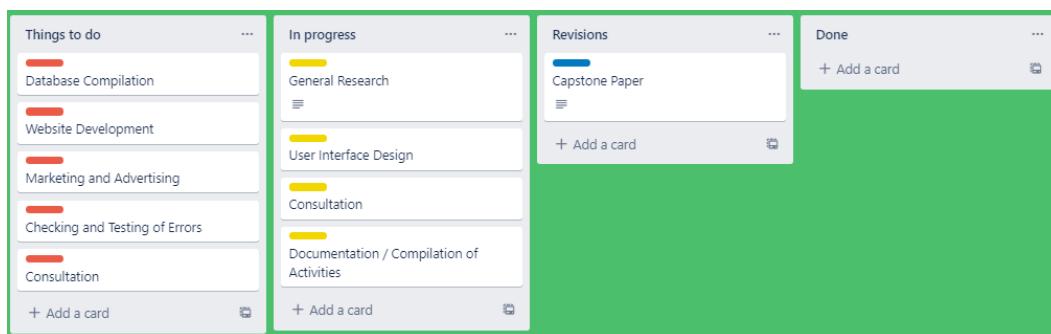


Figure 213 Jitensha Kanban board

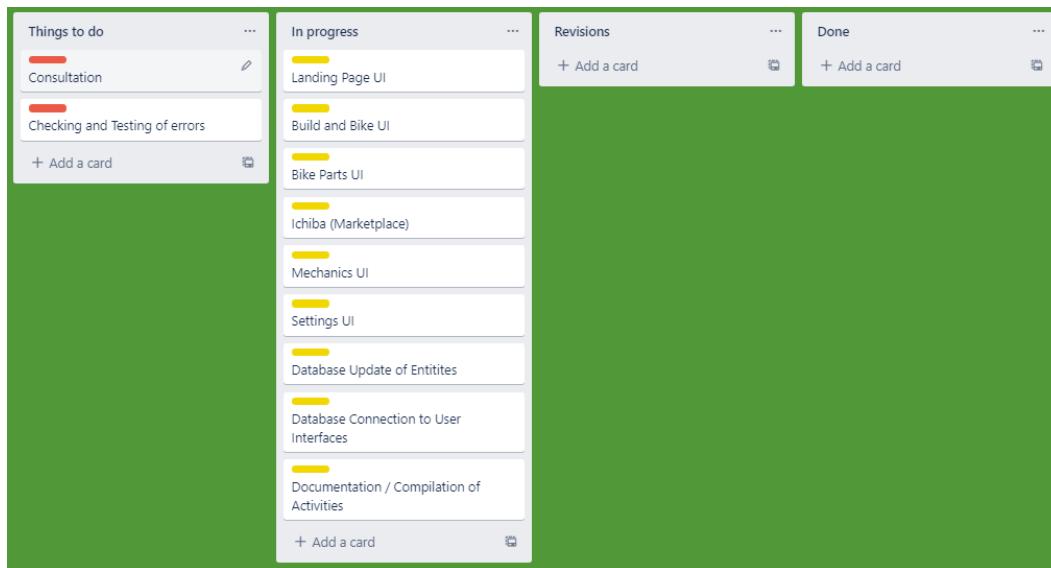


Figure 123 Website Development Kanban board

Agile project management and software development is an iterative method that enables teams to provide value to clients faster and with fewer difficulties. An agile team provides work in short, step-by-step procedures rather than relying on a sudden launch. Teams have a natural mechanism for adapting to change rapidly since requirements, strategies, and outcomes are assessed on a regular basis. A well known framework for agile and DevOps software development is called Kanban. It implies significant communication and well-defined work status. On a kanban board made by the team, required tasks are visually depicted, in which it helps team members to view the status of each piece of work at any moment (Atlassian, 2021).

The researchers used Agile methodology, Kanban, since the documentation and system development are processed at the same time. The tasks are distributed among the researchers and are done in a self-organizing manner. As the design coincides with the

requirements of progressing the system, frequent improvement is practiced. Every week, the researchers are assigned parts to work on. This is done in order to meet the deadline and ensure high quality software development and documentation.

Legitimacy of Shops

The Ichiba feature - the marketplace for bike related purposes - has two kinds of sellers: bike shops and individual personal sellers which are Jitensha users as well; for the sake of brevity and conciseness, these personal users will be referred to as “Individual Personal Seller” in the following portions. With this, the security and guarantee of the user/buyer must be in the highest priority. Therefore, the legitimacy of the seller/s must be documented and verified meticulously. This is for the assurance of the user as a buyer.

To achieve this, the system asks for the valid IDs and papers from various departments of the government. However, both will have varied documents to pass as both have different sets of fields. This is done because of the nature of both entities: individual personal sellers are private sellers and people hence they do not run an enterprise, business, or a corporation; bike shops are privately owned businesses or enterprises (in some cases, state-owned) that are much more legal and needs registering at the concerned government departments in order to operate legally within their bounds.

Below is the list of what to submit or pass in order to be verified per type of user.

An Individual Personal Seller needs to pass a valid Government-Issued Identification Card. Any of the mentioned IDs below are accepted. Government-Issued Identification Cards that can be passed and accepted by Jitensha are listed down below:

- Unified Multi-Purpose Identification (UMID) Card
- National ID
- Land Transportation Office (LTO) Driver's License
- Professional Regulation Commission (PRC) ID
- Passport
- Senior Citizen ID
- Social Security System ID/ Card (SSS)
- Government Service Insurance System ID/ Card (GSIS)
- COMELEC / Voter's ID / COMELEC Registration Form
- Philippine Identification (PhilID)
- Pag-ibig ID
- Persons With Disability (PWD) ID
- Solo Parent ID
- Barangay ID
- Philippine Postal ID

- Phil-Health ID
- Integrated Bar of the Philippines (IBP) ID

All of these must still be valid within its validity period. A user cannot be verified if the ID they submitted is past its validity period.

If a user does not have any of the valid IDs mentioned above, they can submit a private / government school-issued ID. However, it must be accompanied by another document to prove its validity e.g. enrollment card/certificate of enrollment, employee registration, etc.; anything that will prove that a user is a part of that particular institution or company.

Listed below are accepted IDs but needs secondary proof in order to be validated:

- School ID
- Employee ID
- Office ID

If a user is a foreign tourist, foreign person with temporary visa, or a foreign immigrant who wants to use Ichiba feature and is within NCR+, it is advised for them to pass the following documents:

- Passport

Passport must be valid or not expired. It must be passed as it is a valid ID / document of the user's country of origin. If the user wishes to only utilize a passport in order to be validated, the user can do so as they wish.

- Travel Document valid for at least 6 months beyond the intended stay in the Philippines or;
- Visa i.e. temporary visa or immigrant visa

A bike store/ shop/ business, especially with a tangible shop, is required to pass permits and certificates of registration in lieu of the aforementioned valid IDs mentioned above for the individual personal sellers. All of the mentioned documents must be submitted in order to be validated. A bike shop business is required to submit these documents to Jitensha:

- Department of Trade and Industry (DTI) Certificate of Registration
- Bureau of Internal Revenue (BIR) Certificate of Registration
- Mayor's Permit / Business Permit

After validation by the system, each will be given - depending on the type of user - a corresponding icon or symbol to discern the type of user. There are two individual distinct icons for both user types. For an individual personal seller type of user, a distinct user icon will be placed beside the registered name to notify the buyer that the seller is of this user type i.e. individual personal seller. On the other hand, a distinct shop icon will be placed beside the registered business name of the bike shop in Jitensha to inform the buyer that the seller is of this user type i.e. bike store/ shop/ business. In this way, there is a distinct and proper division of both user types; additional user type information is listed along with the seller's profile and the user's listing as a reminder for the buyer.

The verification of the identification cards (ID) or legal documents e.g. permits, visa, etc. of the seller is done manually by the administrators of Jitensha. Although it might be a bottleneck in the future, it can be improved later on but as of now, Jitensha is a start-up company with few expected sellers for the Ichiba feature (marketplace). The verification of the account will take about one working day to three working days depending on the traffic and influx of applications. The estimated user count for Ichiba is around a minimum of 50 to maximum of 150 users and capped at a maximum threshold of 250 users - each with an application for verification; each user applicant is going to be verified by the administrator team. If the user count increases way beyond the threshold of 250 users and in a continuous manner, the administrators are likely to either hire more personnels to do the manual verification; or assemble a team solely for verifying users for the Ichiba feature; or partner up with the government in order to have an automated verification of the said IDs within the system of Jitensha. Those - the aforementioned solutions - can be applied once the application count continues to increase in a large uncontrolled manner but like what was stated above: Jitensha is a start up website and it is not expecting a large number or influx of users immediately. With this, extra expenses and liabilities are also cut and minimized (for now) as the hiring and partnering is not required as of now. Thus, it is conclusive to utilize manual verification as the way of verifying bike store/ shop/ business and individual personal sellers - both of which are considered as users in the Jitensha system.

The manual verification process is straightforward and simple: the user who wants to apply and get verified will pass the needed and asked documents e.g. identification cards, visa, permits, etc. to the system through uploading it in the verification panel; the document goes through the system and is sent and will be for viewing of the administrator; the administrator reviews the sent documents i.e. cross referencing valid examples on hand of these said documents and checking the validity period; if everything checks out from validity to authenticity of the documents passed, the administrator approves the application due to the applicant's proper compliance and submission of the necessary documents; the user receives a notification of the acceptance through email and immediately - in an effective manner - use the Ichiba feature of the Jitensha website in which the user can either sell or buy from other users/sellers as well (full utilization of the Ichiba feature.)

Business Model

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
<p>Listed below are the key partners of <i>Jitensha</i>:</p> <ul style="list-style-type: none"> Bike Enthusiasts Bike Shop Businesses Individual Bike Users who want to sell <p>A. Bike Enthusiasts Bike Owners are one of the key partners of the business as they are one of the target users of the system. This includes segments of: A. Bike Beginners, B. Intermediate Bike Users, C. Bike Experts, D. Normal Interested User.</p> <p>B. Bike Shop Businesses Bike Shop Businesses are one of the key partners of the business. The business aims to partner with DTI registered with valid business permit bike shops and businesses and use this platform to advertise and sell their products. The system will act as a middleman-consignment store.</p> <p>C. Individual Bike Users who want to sell Individual Bike Users who want to sell their individual bike parts or accessories is one of the partners of the system. They can also use the system to advertise their products. The system will act as a middleman-consignment store.</p>	<p>Listed below are the key activities of <i>Jitensha</i>:</p> <ul style="list-style-type: none"> Bike Building using Jitensha Bike Builder with added feature e.g., bike wizard. Ichiba activity (Marketplace feature) Payment Feature Consignment Activity Middleman service Content Distribution Platform website Advertisement of Bike related items by Key Partners Continuous finding of Key Partners Engagement with stakeholders Shipment and Logistics <p>Key Resources</p> <p>The key resources of <i>Jitensha</i>:</p> <ul style="list-style-type: none"> Human Capital e.g., biker's knowledge, bike shops, etc. Capital Cloud Services Website / Web Platform Web Developers and QA testers Market Tax/Consignment fee Customer Service Limited Partnership with Bike Shop Businesses Shipping and Handling 	<p>Listed below are the value propositions of <i>Jitensha</i>:</p> <ul style="list-style-type: none"> Bike Builder with Bike Wizard (Guide) Demand of a Marketplace solely for Bike parts and accessories with instant messaging Distribution of content regarding with bicycles An overall platform for bike sellers and interested buyers General advertisement of products by both bike shop businesses and individual bike users Jitensha AdBoost Jitensha Buyer Protection Payment Policies National and Local-Based service and platform Geolocation of nearest bike shop within the inputted area Shipment of Items from Seller to Consumer 	<p>Listed below are the customer relationships of <i>Jitensha</i>:</p> <ul style="list-style-type: none"> Self Service Customer Service for features especially for Ichiba (Marketplace); only if contacted by a user. Buyer Protection Ease of Use for all users <p>Channels</p> <p>Listed below are the channels of <i>Jitensha</i>:</p> <ul style="list-style-type: none"> Any Device Web Browser Social Media Word of mouth Online advertising Jitensha website application 	<p>Listed below are the customer segments of <i>Jitensha</i>:</p> <p>For Ichiba Feature:</p> <ul style="list-style-type: none"> Bike Enthusiasts in NCR + regions <ul style="list-style-type: none"> This includes all kinds of bikers even if a user does not even own a bike yet. Buyers and customers in NCR + regions <ul style="list-style-type: none"> This includes all kinds of buyers in any age group, class, and adopter; e.g., bikers, artists, engineers, guards etc. <p>Geographical Segment</p> <ul style="list-style-type: none"> Adopters i.e., users from Philippines can use the other features but will not be able to fully use the Ichiba feature unless the user is from NCR +
<p>Cost Structure</p> <p>Listed below are the cost structure of <i>Jitensha</i>:</p> <p>Variable Costs</p> <ul style="list-style-type: none"> Marketing and Advertising Website Application Maintenance and Testing Research and Development <p>Fixed Costs</p> <ul style="list-style-type: none"> Machine Equipment Costs Cloud Services and Hosting Services Web Hosting 		<p>Revenue Streams</p> <p>Listed below are revenue streams of <i>Jitensha</i>:</p> <ul style="list-style-type: none"> Advertisements Subscription Model i.e., <i>Jitensha AdBoost</i> Automatic Market Tax of 3% for listed items/merchandise in Ichiba (e.g., PHP 2000 item will be listed as PHP 2060 in Ichiba) Bike Shop Business Interest Tax of 5% for listed item/merchandise in Ichiba (e.g., PHP 20 000 item will be listed as PHP 21 000 in Ichiba) 		

Figure 4.1 Business Model

The web application “Jitensha” is an e-commerce type of business since it is operating mainly on the Internet/ Web. Jitensha offers a middleman-consignment type of service - Ichiba marketplace - for sales and business to be conducted on; although it is a consignment type of business, it will not hold the posted items – the logistics and shipping will be carried by the seller. This ranges from bike stores/shops/businesses to individual personal sellers e.g. bike enthusiasts etc. Jitensha acts as a consignment store (the item posted is stored within their relative proximity) for the listed items by both the business

and individual personal sellers and Jitensha will act as the middleman or intermediately for the consumer and seller. If a consumer wants to ask an inquiry regarding a specific posted item, he/she can do so by utilizing the messaging portion provided by the system; this inquiry will be answered the administrators. The system also covers the booking of items being procured by the consumer; the logistics and shipping, however, is covered by the seller upon checkout.

Therefore, the type of business model framework Jitensha is a B2C (business to consumer) - C2C (consumer to consumer) hybrid model. Jitensha hosts bike stores/shops/businesses within the system where they can market their products to other consumers through the use of the system as a middleman-consignment platform where a fee will be automatically added upon listing e.g. the user sells it for PHP 20 000, the buyer buys it for PHP 21 000 – this is based on the market tax for bike business shops of 5% ; the end user - consumer - purchases the item thus ending the process of transaction as business to consumer type of model (B2C). Although Ichiba is pretty much a marketplace, it also offers spots for individual personal sellers to advertise and market their products (old, new, etc.) hence it is also considered as C2C framework due to the fact that individual personal sellers controls the listing, quality control, and fees to other consumers and markets or sells it to them; the consignment fee/tax is different for people listing as an individual seller: if the seller listed the item as PHP 2000, the final listing price would be PHP 2060 – a market tax of 3% for users listing as an individual seller. The transaction is held by the Jitensha system, more so the inquiries being asked; the

administrators are the agents/middleman for the transaction between the consumer and seller.

To conclude, Jitensha runs on the B2C-C2C hybrid model in order to accommodate both users: both depending on the situation of transaction within the marketplace of Ichiba thus making it a hybrid model - combined model- of the two mentioned frameworks. (Big Commerce, 2022)

Revenue Streams and Costing

Category	Description	Estimated Value
Start up expenses	Equipment: 3 * Laptops i7 8th gen 1 * Laptop i3 6th gen	PHP 231,000
	Legal/regulatory obligations	PHP 5,000
Monthly expenses	Hostinger	PHP 235.00
	Electricity	PHP 10,000 <i>[Neutral average expenses for this variable cost]</i>
	Advertisement/promotions	PHP 10,000
	Internet	PHP 1,600
Others	Website Maintenance and Testing	PHP 7,500 <i>[Neutral average expenses for this variable cost]</i>
	Research and Development	PHP 15,000 <i>[Neutral average expenses for this variable cost]</i>
Total approximate cost per month		PHP 44,335. 00

Estimated Price per unit	<p>Costing / Expenses per month:</p> <p>Fixed Costs: Hostinger : PHP 235 / month Internet: PHP 1,600 / month [50 MBPS] Advertisement/ Promotions : PHP 15,000 / month</p> <p>Variable Costs: Electricity : PHP 5000 (minimum) - PHP 15,000(maximum) Website Maintenance and Testing (QA) : PHP 5000 (minimum) - PHP 10,000 (maximum) Research and Development: PHP 10,000 (minimum) - PHP 20,000 (maximum)</p>	<p>Revenue Streams:</p> <p>Fixed Revenue Jitensha Boost- Adboost: <i>Fixed Pricing</i> Boosting of (1) day: PHP 50 Boosting of (1) week: PHP 300 Boosting of (1) month: PHP 1,250</p> <p>Variable Revenue: Advertisement Impression (Passive income depending on website traffic): Bad day: PHP 0.40 Good day: PHP 30. 00</p> <p>Market Tax (Immediate interest tax of 3%; tentative income: TBD by the Individual Personal Seller's selling price)</p> <p>Bike Shops (Immediate interest tax of 5% for listed items/merchandise; tentative income: TBD by the price laid by the bike business shops)</p>
Income Advertisement Impression:	<p>Income per month (Projection)</p> <p>Good month: PHP 112, 500 Bad month: PHP 1,500</p>	

<p>500 (website visits) * 30 days (conservative projection) = 15,000 visits per month</p> <p>Retention Rate:</p> <p>15,000 visits * 25% retention rate visits = 3,750 visits</p> <p><i>Bad Month:</i> 3750 visits * 0.40 PHP = PHP 1,500 [Extreme]</p> <p><i>Good Month:</i> 3750 visits * 30 PHP = PHP 112,500 [Extreme]</p> <p>Jitensha Adboost</p> <p>Expected Sales no. per day:</p> <p>1 day boost : 30 subscriptions;</p> <p>1 week boost: 15 subscriptions;</p> <p>1 month boost: 5 subscriptions</p> <p>1. 30 1-day subscriptions * 50 PHP = PHP 1,500/day</p> <p>2. 15 1-week subscriptions *</p>	<p>Jitensha AdBoost: PHP 91,875</p> <p>Tentative Income: 75 sales (no exact estimation or figure)</p> <p>Total Income per month:</p> <p>Good month: PHP 112,500 + PHP 91,875 = PHP 204,375 + tentative income</p> <p>Bad month: PHP 1,500 + PHP 91,875 = PHP 93,375 + tentative income</p>	<p>Profit per month (Projection)</p> <p>Total Income per month:</p> <p>Good month: PHP 204,375</p> <p>Bad month: PHP 93,375</p> <p>Total Monthly Expenses: PHP 44,335 [This includes the neutral average for variable costs]</p> <p>Projected Profit per month:</p> <p>Good Month: PHP 204,375 - PHP 44,335 = PHP 160,040/month + tentative income</p> <p>Bad Month: PHP 93,375 - PHP 44,335 = PHP 49,040/month + tentative income</p> <p>Conclusion: The business is feasible and profitable.</p> <p><i>Note: Jistensha aims to at least reach 30% percent of the projected “good” month (PHP 61312.50) and at least reach 60% (PHP 56025.50)</i></p>
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<p>300 PHP = PHP 4,500/day 3. 5 1-month subscriptions * 1250 PHP = PHP 6,250/day</p> <p>Total Estimation Adboost Sales per day: PHP 12,250 Total Estimation Adboost Sales per month: PHP 367,500</p> <p>Retention Rate of Adboost Sales: PHP 91, 875/month</p> <p>Tentative Income: Market Tax (3%) for Individual Personal Sellers Bike Shop Interest Tax (5%)</p> <p>Expected Sales per day: 10 sales for both kinds of sellers (conservative projection)</p> <p>Expected Sales per month: 300 sales/month Retention Rate of Sales per month:</p>	<p>of the projected “bad” month. This is the minimum income Jitensha is targeting to combat the possibility of higher monthly expenses due to different variable costs. The liabilities every month might be higher depending on each month and such can incur losses in assets and deem the business functioning on a loss. This is to avoid significant losses and keep the business running.</p> <p>The business is expected to surpass break even in the first months or even in the first month depending on the effectiveness of marketing, advertising, and frequency of sales. If sales are bad with a retention rate around 2% to 10% every month then break even is projected to be at least a maximum of 1 year ¼ year(s) before the declaration of bankruptcy and business failure due to excessive liabilities.</p>
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300 sales * 25% = 75 sales/month		
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Figure 4.2 Revenue Streams and Costings

METHODOLOGY, RESULTS AND DISCUSSIONS

METHODOLOGY

Research Methods and Design/s Used

The descriptive research design approach will be used for this study and the chosen research method is the quantitative method. According to McCombes S. (2020), a descriptive design must be used if the researchers' aim is to identify the characteristics, categories, trends and frequencies. This research design will also help understand and relay the importance of why an Online Build a Bike Platform System must be implemented. The survey research based approach will also be used to gather variables and which will also analyze the factors, patterns, and frequencies. Given that this study needs to analyze data - the quantitative method is needed. According to Bhandari P. (2021), quantitative research is the procedure gathering and collection of data. This will also warrant an analysis of the collected

data. The statistical conclusions, from hard numerical data and analysis, will prove vital and essential for the study. This will result in finding the average patterns of Bike users: what specific bikes are fit for them, choosing the right parts and maintaining the bike. This will also find the average pattern of interest of using the platform as a place to market, advertise, and sell bike related products and items.

Population Frame and Sampling Scheme

To conduct the survey, the researchers used Google Forms wherein it is to be signed and answered by the respondents who are fit to participate in the study. A total of sixty three (63) respondents answered the survey. By using purposive sampling technique, the researchers will be able to choose and focus on a particular characteristics of a population that will fit in the study.

Description of Respondents

The researchers chose a particular respondent for the research which is bike users. The reason for choosing these said respondents is because they have the knowledge to answer the survey questions which will supply us with the information that we need.

The respondents mentioned above are selected for those who own a bike, bike enthusiast and bike beginners. They were selected in order to determine the usability of an online build a bike platform for the respondents. As for the bike

sellers, they are also covered in the survey as they also considered users within the system: bike sellers are also Jitensha users (bike enthusiasts) and in correlation with the survey, each respondent were also asked their interest in using the platform to market, advertise, and sell the bike related products and merchandise.

Instruments of the Study

The instrument used in the study is a questionnaire method to survey the respondents from those who own a bike, bike enthusiasts, bike beginners and bike users that use bikes for leisure and fitness. The checkboxes, multiple choice and likert scale questions were utilized in this study to interpret the responses from the respondents. The checkbox question allows the respondent to select multiple answer options from the list of answer choices. As shown below, table a. is a scale with the highest rating of 5 that interprets a strong agreement and a strong disagreement for the lowest rating, table b. is a scale with the highest rating of 5 that interprets Extremely interested and extremely not interested for the lowest rating.

Rate	Scale	Verbal Interpretation
5	4.21-5.00	Strongly Agree
4	3.41-4.20	Agree
3	2.61-3.40	Neither Agree or Disagree
2	1.81-2.60	Disagree
1	1.00-1.80	Strongly Disagree

Table a.

Rate	Scale	Verbal Interpretation
5	4.21-5.00	Extremely Interested
4	3.41-4.20	Interested
3	2.61-3.40	Neutral
2	1.81-2.60	Not Interested
1	1.00-1.80	Extremely Not Interested

Table b.

Data Gathering Procedure

The researchers decided to make a survey checklist, as it will be an efficient way to gather data during the pandemic and will benefit the research in a strong manner. The survey was then distributed to different people, both male and female,

using the simple random sampling technique with a mix of stratified random sampling. The respondents were bike users and bike owners. The respondents were briefed how important and salient their response will be for the research. More so, the researchers requested the respondents to answer the survey with full honesty to attain a forthright data. The researchers used stratified random sampling for the study because according to Shin T. (2020), stratified random sampling will start by sundering a population into sample size groups, in which case, with similar attributes then a random sample will be taken from said groups. In the researchers' case, the similar attribute of the population is people who are bike users and bike owners. This method will make sure that the different sections will be represented with equality. Specifically it was chosen mainly because the researchers would like to know the struggles and give opportunities for bike users and bike owners and if having a Build a Bike Platform System will benefit and help them- giving an alternative way or option: in understanding bike parts, choosing the right parts and how to maintain a bike. After the respondents answered the survey, the data was collected and tallied by the researchers. A statistical analysis was implemented to ascertain the collected and tallied data for interpretation.

RESULTS AND DISCUSSIONS

The results, evaluation, and interpretation of data are presented in this chapter. The collected data is given in statistical and textual form for interpretation and analysis using

statistical treatment. Researchers examined, evaluated, and structured the data obtained according to the difficulties outlined in this chapter.

Demographic Data

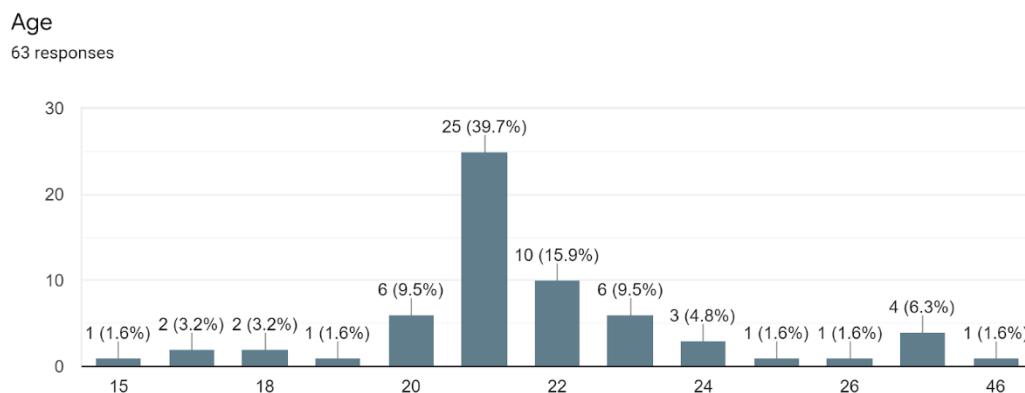


Table 4.1 Age

Table 4.1 shows that the majority of the respondents are aged 21(39.7%) Followed are the respondents aged 22(15.9%), aged 20 and 23(9.5%), aged 27(6.3%), aged 24(4.8%), aged 17 and 18(3.2%), and aged 15,19,25,26,46(1.6%).

Select your location of stay

63 responses

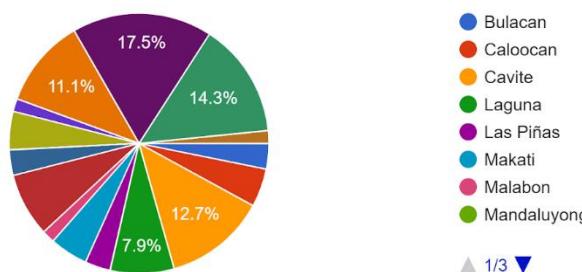
*Table 4.2 Location Of Stay*

Table 4.2 shows that the majority of the respondents which are 11 of them are from Quezon City with 17.5% percentile. Followed by Rizal(14.3%), Cavite(12.7%), Pasig(11.1%), Laguna and Manila(7.9%), Paranaque, Makati, Caloocan(4.8%), Bulacan, Las Pinas, Marikina(3.2%), and the least are Malabon, Pasay, Valenzuela(1.6%)

Do you exercise outdoors?

63 responses

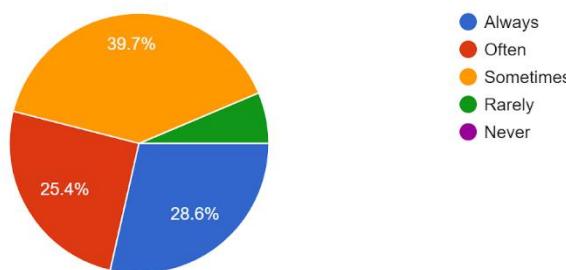
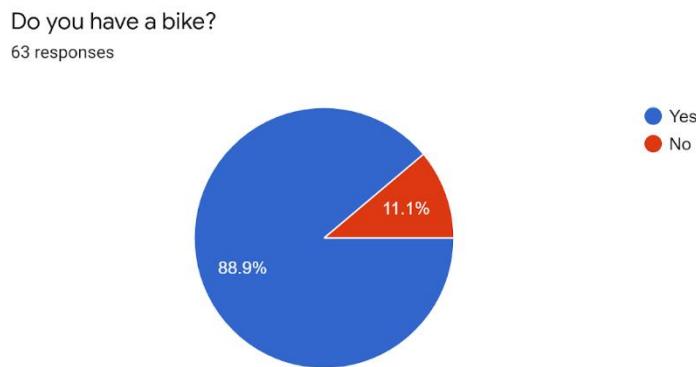


Table 4.3 Do you exercise outdoors?

As shown in the chart, 39.7% of the respondents answered that they sometimes exercise outdoors, followed by 28.6% that answered “Always”, 25.4% answered “Often”, and 6.3% answered “Rarely”

*Table 4.4 Do you have a bike?*

As shown in the chart, Majority of the respondents answered that they have a bike with a percentile of 88.9%, and 11.1% of the respondents answered that they do not have a bike.

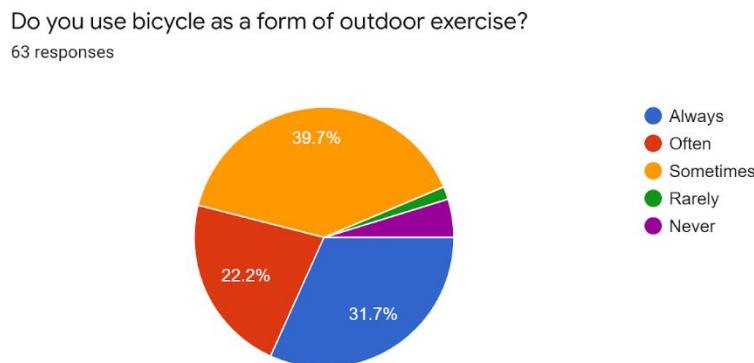
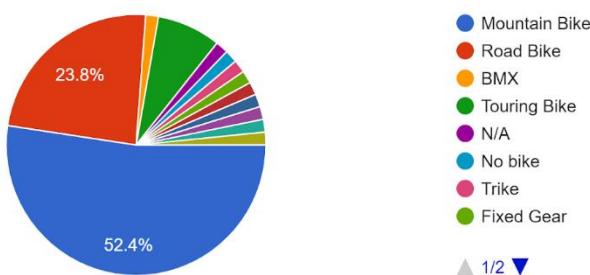


Table 4.5 Do you use bicycle as a form of outdoor exercise?

As shown in the chart, Majority of the respondents answered that they sometimes use bicycles as a form of outdoor exercise with a percentile of 39.7%, 31.7% of the respondents answered that they always use bicycles as a form of outdoor exercise, 22.2% answered “Often”, 4.8% answered “Never”, and the least percentage 1.6% of respondents answered “Rarely”.

What kind of bicycle do you have?

63 responses



▲ 1/2 ▼

Table 4.6 What kind of bicycle do you have?

As shown from the chart, more than half of the respondents , 33 of them with a 52.4% percentile, answered that they own a mountain bike. 23.8% of respondents own a road bike and 7.9% own a touring bicycle.

What kind of bicycle rider are you?

63 responses

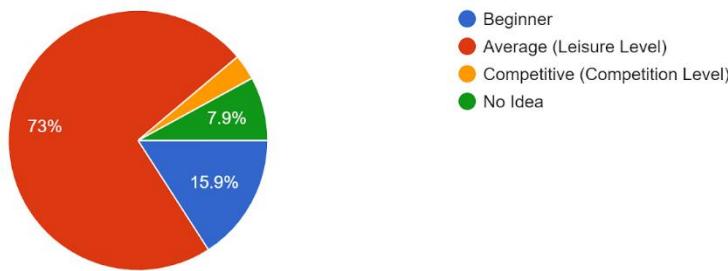


Table 4.7 What kind of bicycle rider are you?

As shown from the chart , 73% of the respondents are Average bicycle riders(Leisure level), 15.9% are beginners, 7.9% have no idea on what kind of bicycle rider they are, and 3.2% are in the competitive level.

How often do you bike?

63 responses

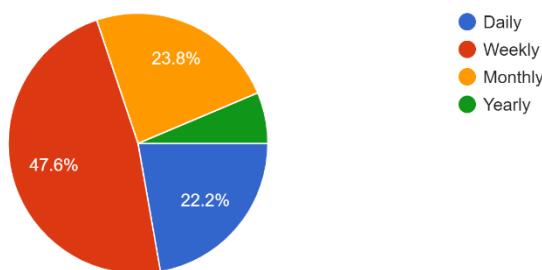


Table 4.8 How often do you bike?

As shown from the chart , 47.6% of the respondents are riding a bike weekly, 23.8% are riding a bike monthly, 22.2% are riding a bike daily, and 6.3% are riding a bike yearly.

Besides for fitness, what do you use your bike for? Select all that apply.

63 responses

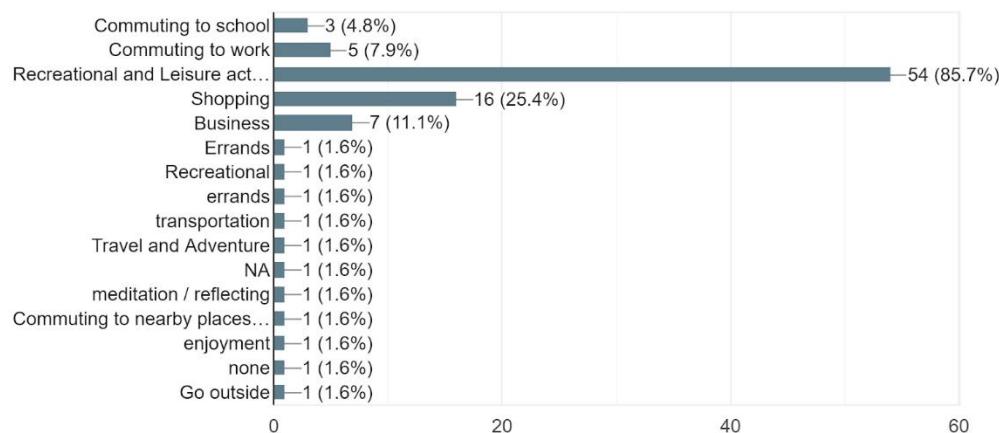


Table 4.9 What kind of bicycle rider are you?

As shown from the chart , majority of the respondents answered that they use bicycles for Recreational and Leisure activities with a percentile of 85.7%, 25.4% of the respondents answered that they use bicycles for Shopping , 11.1% answered that they use bicycles for Business, 7.9% answered that they use bicycles for Commuting to Work, 4.8% answered that they use bicycles for Commuting to School and 1.6% respondents for other 11 answers submitted.

How knowledgeable are you in bike maintenance?

63 responses

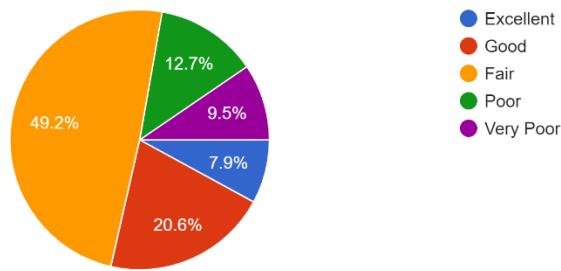


Table 4.10 How knowledgeable are you in bike maintenance?

As shown from the chart , Almost half of the respondents with 49.2% percentile have fair knowledge in bike maintenance, 20.6% have good knowledge in bike maintenance, 12.7% have poor knowledge in bike maintenance, 9.5% answered that they very poor knowledge in bike maintenance, and 7.9% for excellent knowledge in bicycle maintenance.

Do you maintain your own bike?

63 responses

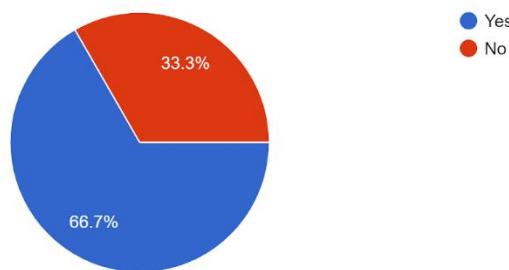


Table 4.11 Do you maintain your own bike?

As shown in the chart, Majority of the respondents answered that they maintain their own bike with a percentile of 66.7%, and 33.3% of the respondents answered that they do not maintain their own bike.

How much do you usually spend on maintaining your bike?

63 responses

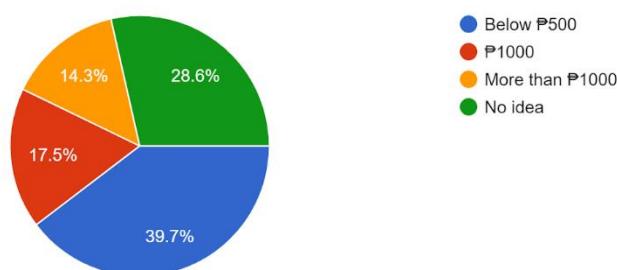


Table 4.12 How much do you usually spend on maintaining your bike?

As shown in the chart, 39.7% of the respondents answered that they spend below 500 Philippine Peso for maintaining their bike, 28.6% of the respondents answered that they do not have an idea on how much they spend for maintaining their bike, 17.5%

answered 1000 Philippine Peso, and 14.3% of the respondents answered that they spend more than 1000 Philippine Peso for maintaining their bike.

Do you think having an online platform that has a bike maintenance guide feature would be helpful? Please rate from 1 - 5. (5 being the highest and 1 being the lowest)

63 responses

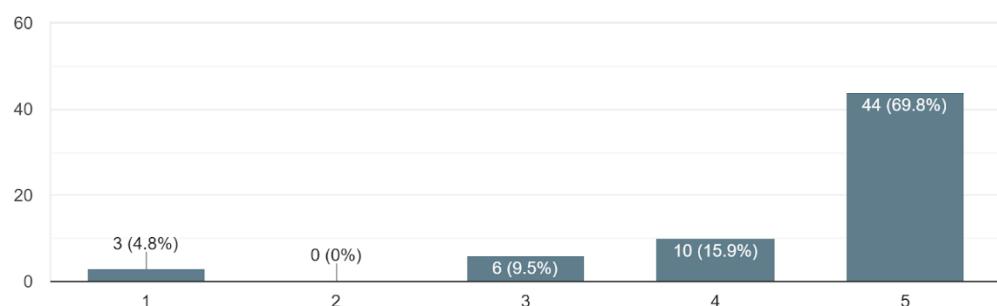


Table 4.13 Do you think having an online platform that has a bike maintenance guide feature would be helpful?

As shown from the chart , Majority of the respondents Strongly Agree(5) that having an online platform that has a bike maintenance guide feature would be helpful with a percentile of 69.8%, 15.9% of the respondents agree(4) , 9.5% answered Neither agree or disagree(3), and 4.8% Strongly disagree that having an online platform that has a bike maintenance guide feature would be helpful.

Do you have interests in building a bike?

63 responses

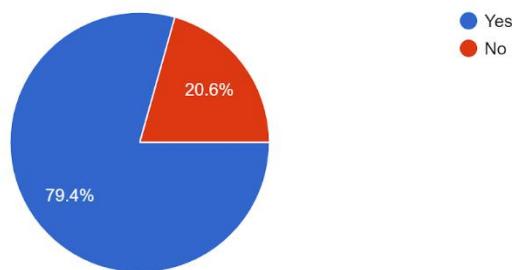


Table 4.14 Do you have interest in building a bike?

As shown in the chart, Majority of the respondents answered that they have interest in building a bike with a percentile of 79.4%, and 20.6% of the respondents answered that they do not have interest in building a bike.

How good are you in building your personal bike?

63 responses

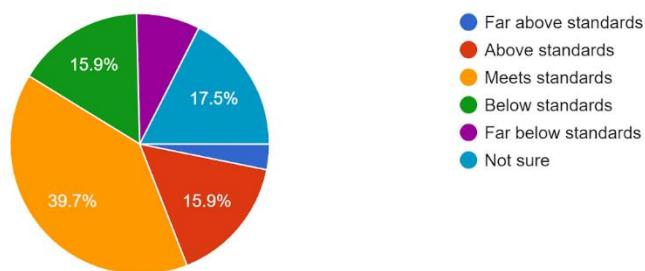


Table 4.15 How good are you in building your personal bike?

As shown from the chart , 39.7% of the respondents meet the standards in building their own personal bike, 17.5% of the respondents are not sure how good they are in building their own personal bike, 15.9% of the respondents answered that they are above

the standards in building their own personal bike, also 15.9% of the respondents answered that they are below the standards in building their own personal bike, 7.9% of the respondents are far below standards, and 3.2% of the respondents are far above standards.

How knowledgeable are you in building a bike?

63 responses

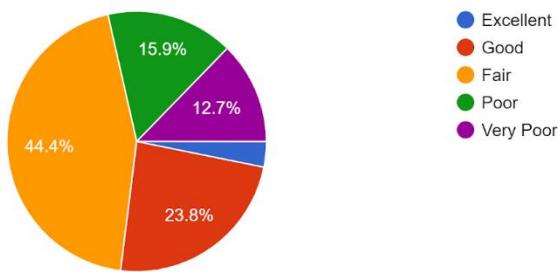


Table 4.16 How knowledgeable are you in building a bike?

As shown from the chart , Almost half of the respondents with 44.4% percentile have fair knowledge in building a bike, 23.8% have good knowledge in building a bike, 15.9% have poor knowledge in building a bike, 12.7% answered that they very poor knowledge in building a bike, and 3.2% for excellent knowledge in building a bike.

How knowledgeable are you in bike brands?

63 responses

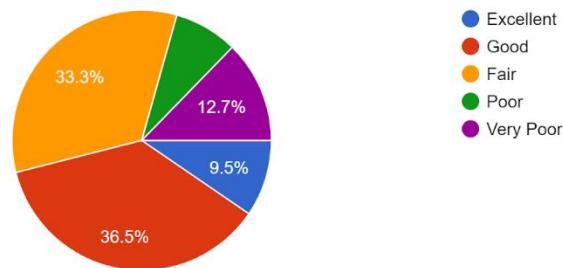


Table 4.17 How knowledgeable are you in bike brands?

As shown from the chart , 36.5% of the respondents have Good Knowledge in bike brands, 33.3% have Fair Knowledge in bike brands, 12.7% answered that they have Very Poor Knowledge in bike brands, 9.5% answered that they have Excellent Knowledge in bike brands, and 7.9% for Poor Knowledge in bike brands.

Select the factors that you consider when building a bike

63 responses

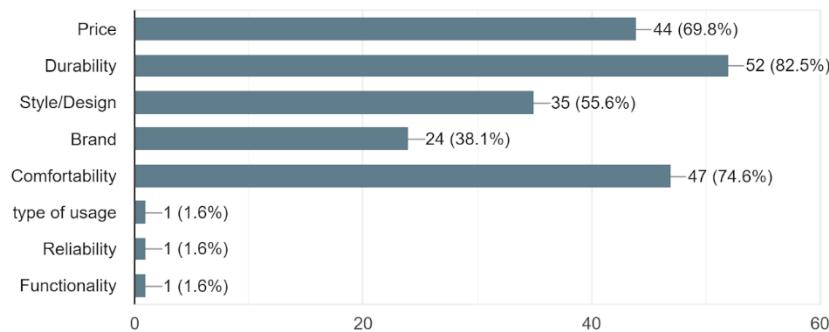


Table 4.18 Select the factors that you consider when building a bike?

As shown from the chart ,the majority of the respondents selected Durability (82.5%), Comfortability(74.6%), Price (69.8%), Style/Design (55.6%), and Brand(38.1%) as factors that they consider in building a bike.

Features

How interested are you in using the platform to advertise and sell your bike parts? Note: Products can be either used or brand new. Kindly rate your i... (With 5 being the highest and 1 being the lowest)
63 responses

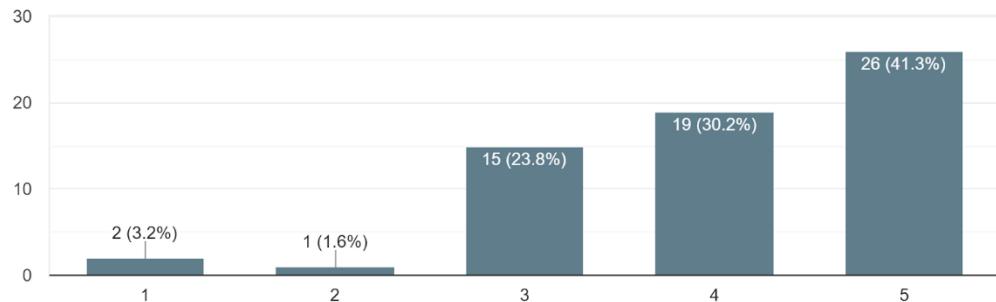


Table 4.19 How interested are you in using the platform?

As shown from the chart , majority of the respondents are Extremely Interested (5) in having a platform to advertise and sell their bike parts with a percentile of 41.3%, 30.2% of the respondents are Interested (4) , 23.8% answered Neutral (3), 3.2% of the respondents are Extremely Not Interested (1), and 1.6% of respondents are Not Interested (2).

Are you interested in using the Bike Builder feature that the application will offer?

63 responses

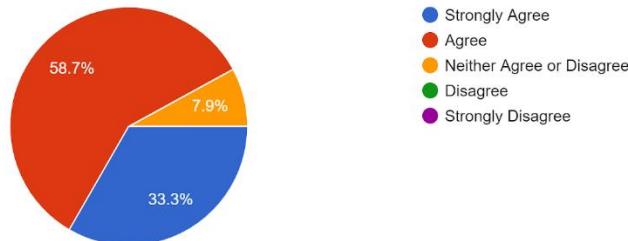


Table 4.20 Are you interested in using the Bike Builder feature that the application will offer?

As shown from the chart , Majority of the respondents answered Strongly Agree having an interest in using the Bike Builder feature with a percentile of 58.7%, 33.3% of the respondents Agreed , and 7.9% answered Neither Agree or Disagree.

The Bike Builder will have an FAQ feature to ask the rider specific questions; are you interested in using the FAQ feature that application will offer?

63 responses

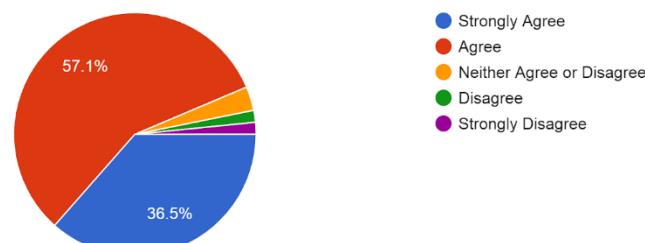


Table 4.21 The Bike Builder will have an FAQ feature to ask the rider specific questions; are you interested in using the FAQ feature that application will offer?

As shown from the chart , More than half of the respondents Agreed having an FAQ feature with a percentile of 57.1%, 36.5% of the respondents Strongly Agreed, 3.2% answered Neither Agree or Disagree., and 1.6% answered Disagree and Strongly Disagree.

Are you interested in using the Chatbot feature for questions frequently asked by a user?
63 responses

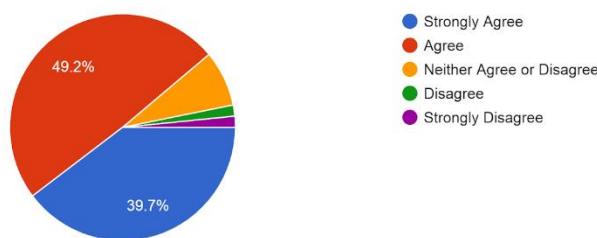


Table 4.22 Are you interested in using the Chatbot feature for questions frequently asked by a user?

As shown from the chart , Almost half of the respondents Agreed that they are interested in using the Chatbot feature with a percentile of 49.2%, 39.7% of the respondents Strongly Agreed , 7.9% answered Neither Agree or Disagree., and 1.6% answered Disagree and Strongly Disagree.

Are you interested in using the Bike Shop Locator feature to locate the nearest bike shop around the user's area or inputted area?

63 responses

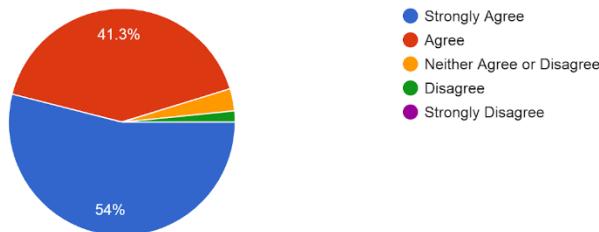


Table 4.23 Are you interested in using the Bike Shop Locator feature to locate the nearest bike shop around the user's area or inputted area?

As shown from the chart , 54% of the respondents Strongly Agree that they are interested in using the Bike Shop Locator feature to locate the nearest bike shop around the user's area or inputted area, 41.3% of the respondents Agreed, 3.2% answered Neither Agree or Disagree., and 1.6% answered Disagree.

Are you interested in using an Instant Messaging feature / Chat Feature to communicate with other users?

63 responses

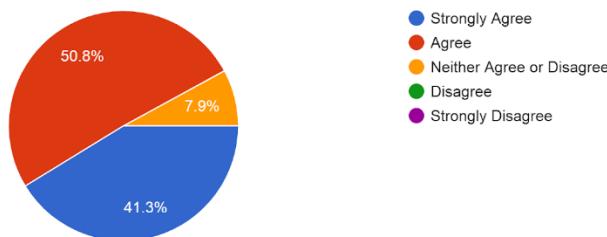


Table 4.24 Are you interested in using an Instant Messaging feature / Chat Feature to communicate with other users?

Majority of respondents agreed that they are interested in having an instant messaging or chat feature in the system as a way to communicate with other users. 50.8% of the respondents agreed and another 41.3% Strongly Agreed while the remaining 7.9% answered Neither Agree or Disagree

Are you interested in using Bike Manuals and Maintenance to get more information about your bike?

63 responses

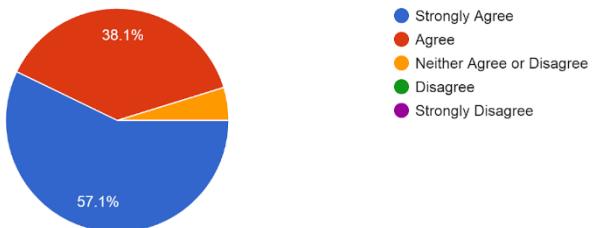


Table 4.24 Are you interested in using Bike Manuals and Maintenance to get more information about your bike?

As shown from the chart , 57.1% of the respondents Strongly Agreed that they are interested in using Bike Manuals and Maintenance to get more information about their bike, 38.1% of the respondents Strongly Agreed , and 4.8% answered Neither Agree or Disagree.

Requirements Analysis

This section includes the features of Jitensha using Use Case Diagrams and Functional and Non-Functional Requirements.

Requirements Documentation

Use Case Diagram	Reference Number: <i><<3>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

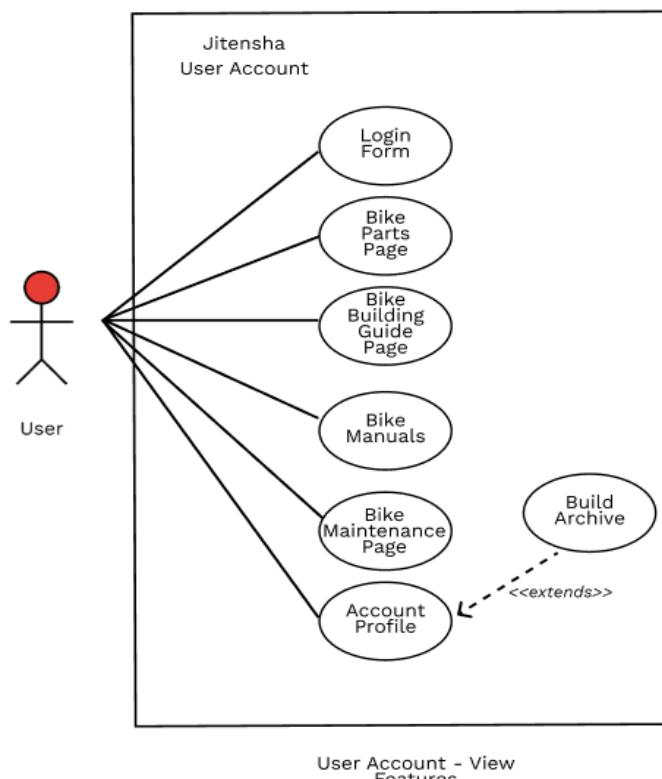


Figure 4.3

Title: Customer Account - View Features

Summary: This use case describes the access of users' account

1. User - Accessing their account

Creation Date: 22/03/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events**○ Preconditions:**

1. The user already has an account with proper verification.
2. The user wants to view bike parts.
3. The user wants to view bike manuals
4. The user wants to view bike building guides .
5. The user wants to view bike maintenance guides.
6. The user wants to manage his/ her account.

○ Main Success Scenario:

The user opens the website - Jitensha.

1. The user is able to display the features.
2. The user clicks to view the “ Bike Parts” feature.
3. The user is directed to the “Bike Part” page.
4. The user clicks to view the “Bike Building Guides” feature.
5. The user is directed to the “Bike Building Guides” page.
6. The user clicks to view the “Bike Manuals” feature.
7. The user is directed to the “Bike Manuals” page.
8. The user clicks to view the “Bike Maintenance” feature.
9. The user is directed to the “ Bike Maintenance” page.
10. The user clicks the login feature.
11. The user logins his/ her account.
12. The user clicks the “Account Profile” feature.
13. The user is able to optimize and see account details.
14. The user clicks to view archived bike builds in “Build Archive”..
15. The user is able to view the archive bike build.
16. The user clicks back to go back to the account profile.
17. The user goes back to the homepage.

18. The user exits the web application because he/ she already checked all that he/ she wanted to check.

○ **Alternative Sequences:**

- A1. Archive bike builds cannot be found.
1. The user follows the Main Success scenario# 1- 14.
 2. The system emits a message: “No Archived Bike Builds”..
- a. No available or existing previously saved bike builds.
3. The user clicks back and the use case continues at Main Success Scenario #17.
- A2. The user cannot view “Manage Account”.
1. The user follows Main Success scenario# 1- 11.
 2. The system emits a message: “Invalid Username/ Email and Password.”
- a. The user has no created account.
3. The user clicks back and the use case continues at Main Success Scenario# 18.
- A3. The user entered the wrong credentials for the login feature.
1. The user follows the Main Success scenario#1- 12
 2. The system emits an error message: “Invalid Username/ Email and Password.”
- a. The user re-enters the correct username and password credentials.
- b. The system accepts and recognizes the account.
3. The use case continues at Main Success scenario# 13.

○ **Error Sequences:**

1. N/A

○ **PostConditions:**

1. The user will now be able to view the features.
2. The user can manage his/ her account.

○ **UI (User Interface) Requirements:**

- The User Interface is connected to the Jitensha system.

○ **Non-Functional Requirements (optional)**

- The timestamp of viewing is updated in the database.

- “Viewed” badge shown in opened features

Use Case Diagram	Reference Number: <i><<4>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

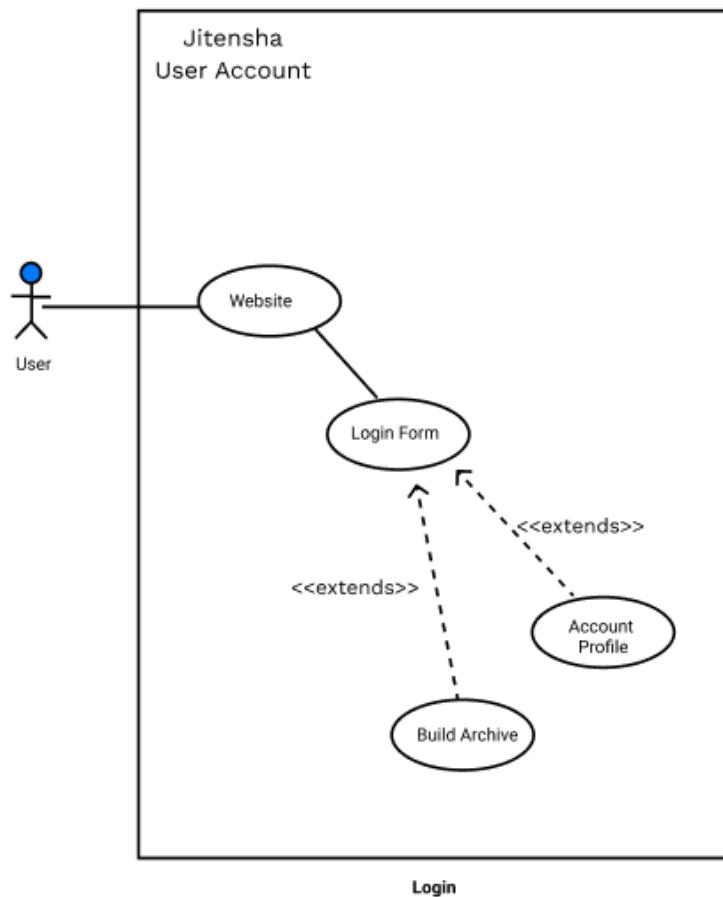


Figure 4.4

Reference #2

Title: *Login - Customer account*

Summary: This use case describes the steps needed to log in the system

○ **Actors:**

1. User - They want to log in their account.

Creation Date: 22/03/ 2022 *Date of Update:* 22/03/2022

Version: v1.0
C.

Person in Charge: Rostrata, Marc Dominic

Flow of Events

○ **Preconditions:**

1. The user already has an account with proper verification.
2. The user wants to log in the system.

○ **Main Success Scenario:**

1. The user enters the website - Jitensha.
2. The user clicks the login feature of the website.
3. The user inputs the needed information - username or email.
4. The user inputs the needed information - password.
5. The user clicks the Login button.
6. The inputted credentials are dispatched to the server side for verification and automatically authenticated by the system.
7. The system accepts the account.
8. The user gets into their account.
9. The user is now able to display their own profile and builds.

○ **Alternative Sequences:**

- A.1. Email, Username, or Password is incorrect.
1. The system emits an error message.
 2. The user acknowledges the error.
 - 2.a. The Username/ Email is wrong.
 1. The user repeats Main Success Scenario #3.
 - 2.b. The password is incorrect
 1. The user repeats Main Success Scenario #4.
 3. The authentication was a success which resumes the use case at Step #8.

○ **Error Sequences:**

- E1. No account found
1. The system emits an error message.
 2. The user acknowledges the error.
 - 2.a. The Username / Email is wrong.
 - 2.b. The password is incorrect.
 3. The system rejected the inputted credentials which end the use case.

○ **Post Conditions:**

1. The user will now be able to access the features.
2. The timestamp of account access is updated in the database under customer activity.

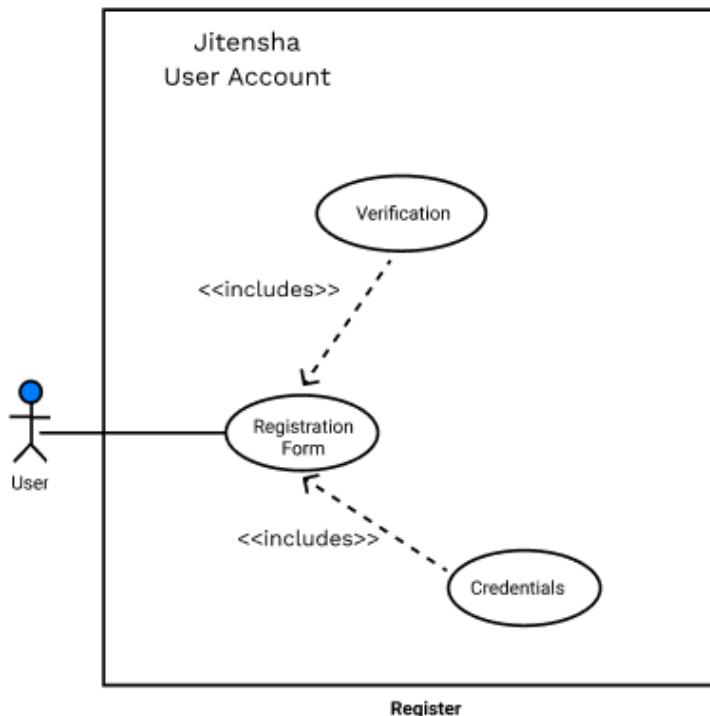
○ **UI (User Interface) Requirements:**

- User Account
- The User Interface is connected to the Jitensha system.

○ **Non-Functional Requirements (optional)**

- Fast authentication feature
- Timestamp of account access

Use Case Diagram	Reference Number: <<5>> Version Number: <<v1.0.>>
System Name: <i>Jitensha</i>	

*Figure 4.5***Title:** *Registration with Verification - Customer Account***Summary:** This use case describes the steps needed to register an account to the system.○ **Actors:**

1. User - They want to register an account.

Creation Date: 22/03/ 2022 **Date of Update:** 22/03 / 2022**Version:** v1.0**Person in Charge:** Rostrata, Marc Dominic C.

Flow of Events

○ Preconditions:

1. The user has no existing account.
2. The user wants to register an account to the system
3. The user has an active email address and phone number.
4. The user has a first name and last name.

○ Main Success Scenario:

1. The User opens the website - Jitensha.
2. The user clicks the sign up/ register button.
3. The user is presented, by the website, with the registration form.
4. The user fills up the Email field.
5. The user fills up the Password field.
6. The user fills up the Phone Number field.
7. The user fills up the Username field.
8. The user fills up the Password field.
9. The user re-enters the password inputted in the Password field for the Re-enter Password field.
10. The user clicks the register button.
11. The inputted credentials are dispatched to the server side for verification.
12. The system accepts the created account and automatically adds the account and credentials associated to the said account in the database.
13. The system sends a verification email to the registered email address / verification code via text to the registered phone number.
14. The user is automatically directed to the verification page.
15. The user checks the verification email in the registered email address / verification code via text from the registered phone number.
16. The user inputs the verification code in the verification page/ clicked the link in the email for the verification of the account.
17. The system validates the verification and accepts it.
18. The user is automatically directed to the account profile page for viewing.
19. The user has now access to the features.

○ Alternative Sequences:

- A.1. The Email is already taken.
1. The user submits the credentials.

2. The system rejects the submitted data and emits an error message.
 3. The user acknowledges the error.
 - 3a. The Email address is already taken.
 1. The user repeats Main Success Scenario #4.
 4. The user resubmits the credentials.
 5. The system accepts the credentials.
 6. The authentication was a success which resumes the use case at Step 10.
- A2. The Username is already taken.
1. The user submits the credentials.
 2. The system rejects the submitted data and emits an error message.
 3. The user acknowledges the error.
 - 3a. The Username address is already taken.
 1. The user repeats Main Success Scenario #7
 4. The user resubmits the credentials.
 5. The system accepts the credentials.
 6. The authentication was a success which resumes the use case at Step 10.
- A.3. The Password, typed in the Re-enter Password field, does not match with the Password typed in the Password field.
1. The user submits the credentials.
 2. The system rejects the submitted data and emits an error message.
 3. The user acknowledges the error.
 - 3a. The Password is incorrect.
 1. The user repeats Main Success Scenario #9
 4. The user resubmits the credentials.
 5. The system accepts the credentials.
 6. The authentication was a success which resumes the use case at Step 10.

○ Error Sequences:

E1. Verification Failed.

1. The user submits the credentials.
2. The user is directed to the verification page.
3. The user is asked where the verification code or link is to be sent.
4. The customer chooses an option.
5. The system sends out the verification code or link via preferred option.
6. The user will look for the verification code in text or the verification link in the registered email address.
7. The customer was not able to find the verification code.
8. The use case ends due to possibly human error or system side postbug.

○ **Post Conditions:**

1. The user will now be able to access the features.
2. The user is fully verified.
3. The newly created account is now added into the customer account table in the database.
4. Timestamp of when the account was made - should be detail oriented.

○ **UI (User Interface) Requirements:**

- The User Interface is connected to the Jitensha System
- User Credentials

○ **Non-Functional Requirements (optional)**

- Fast authentication feature
- Verification feature
- Timestamp for the newly created account
- Password encryption SHA256

Use Case Diagram	Reference Number: <<6>> Version Number: <<v1.0.>>
System Name: <i>Jitensha</i>	

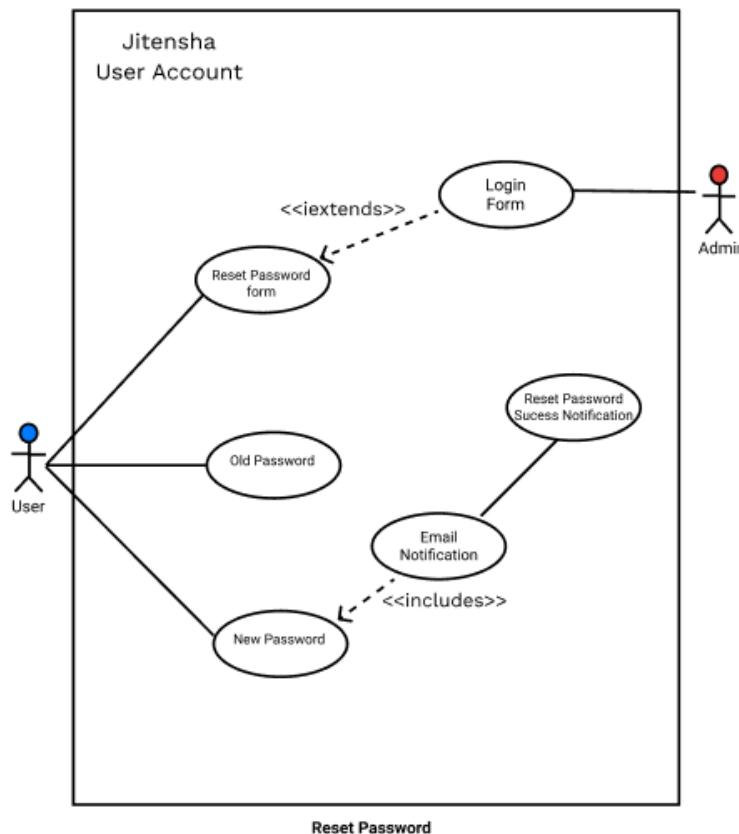


Figure 4.6

Title: Reset Password - User account

Summary: This use case describes the steps needed to reset the password (User account)

○ **Actors:**

1. User - They want to log in their account.

2. Admin - Manages the accounts.

Creation Date: 22/03/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

- **Preconditions:**

1. The user already has an existing account.
2. The user wants to reset their password.
3. The user is able to login in their account or has complete access to the account.
4. The user wants the admin to change the password per request.

- **Main Success Scenario:**

A. Admin Side Scenario

1. The user sends an email to the help desk to change the password.
2. The help desk sends the request to an administrator.
3. The administrator accepts the request and sends an email with a link for the reset password.
4. The user checks the email and clicks the link.
5. The user is redirected to the reset password page.
6. The user inputs the old password.
7. The user inputs the new password.
8. The user clicks the change password button.
9. The inputted new password in the form is dispatched to the server side and cross referenced the old password.
10. The system sends an email confirmation that the user wants to reset the password.
11. The user checks the email confirmation and clicks the link.
12. The system accepts the confirmation.
13. The new password automatically replaces the old password.
14. The user is redirected to a “Reset Password Success” page.
15. The user gets a notification through email that the password of the account was changed.
16. The administrator confirms to the user that the changing of password is a success.
17. The user successfully reseted the password.

B. Client Side Scenario

1. The user opens the website.
2. The user logs in their account.
3. The user clicks the “View Profile”.
4. The user clicks “Account Settings”
5. The user clicks “Change Password”.
6. The user is directed to the reset password page.
7. The user inputs the old password.
8. The user inputs the new password.
9. The user clicks the change password button.
10. The inputted new password in the form is dispatched to the server side and cross referenced the old password.
11. The system sends an email confirmation that the user wants to reset the password.
12. The user checks the email confirmation and clicks the link.
13. The system accepts the confirmation.
14. The new password automatically replaces the old password.
15. The user is redirected to a “Reset Password Success” page.
16. The user gets a notification through email that the password of the account was changed.
17. The user successfully reseted the password.

○ **Alternative Sequences:**

- A1. New proposed password already exists
 1. The user enters the old and new password in the fields, respectively.
 2. The user submits the inputted information.
 3. The system rejects the submitted data and emits an error message.
 4. The user acknowledges the error.
 - 4a. The customer repeats the Main Success Scenario #B.7 and #B.8. Input a new proposed password.
5. The user submits the form.
6. The system accepts the inputted credentials.
7. The Use Case Success Scenario continues at Step# B.11.
 - A2. Old password does not match with the current password.
 1. The user enters the old and new password in the fields, respectively.
 2. The user submits the inputted information.
 3. The system rejects the submitted data and emits an error message.
 4. The user acknowledges the error.

- 4a. The customer repeats the Main Success Scenario #B.7 and #B.8. Input the correct current password.
5. The user submits the form.
 6. The system accepts the inputted credentials.
 7. The Use Case Success Scenario continues at Step#B.11.
- A3. Users cannot remember old passwords.
1. The user sends an email to the help desk to change the password.
 2. The help desk sends a link for the “Forgot Password” feature.
 3. The customer clicks the provided link and gets redirected to the Forgot Password page.
 4. The Use Case ends here because this feature is for Forgot Password.
- A4. Admin manages the account of the user - reset password.
1. The customer sends an email to the help desk to reset the password: Email reads “Reset the password for me because I forgot my old password.”
 2. The help desk receives and complies with the request and sends a letter of request of reset password to the database administrator.
 3. The help desk replies and asks for a valid ID from the user.
 4. The user complies and sends a valid ID.
 5. The help desk checks and cross references the given ID
 6. The help desk accepts the credentials and sends the acceptance of resetting the password of the user.
 7. The administrator resets the password and gives a link to the help desk; a secured link that contains only inputting the new password.
 8. The user complies, clicks the link, and inputs the new password.
 9. The Use Case Success Scenario continues at Step#A. 15.

○ **Error Sequences:**

- E1. User cannot also access registered email address
1. Follow Main Success Scenario Step# A. 1 - A.10 and Step#B.1 - B.11.
 2. The user cannot also access the registered email address.
 3. The Use Case ends here due to client side error.
- E2. User gave the wrong Valid ID
1. Follow Alternative Sequence 4 Steps# 1 - 4.
 2. The help desk checks and cross references the valid ID
 3. The help desk rejects the request due to the information not matching the registered name in the account.

4. Help desk sends out an email telling the user to resend the correct valid ID with the correct credentials.
5. A. The user does not reply.
 - 1 .Help desk waits for3 days
 2. Help desk closes the ticket due to lack of cooperation hence ending the use case
- B. The user replies.
 1. User sends a different valid ID.
 2. The help desk checks and cross references the sent ID.
 3. Information still does not match.
 4. Help desk sends a request to restrict the said account until further notice with evidence.
 5. Administrator complies with the request.
 6. Account is now restricted until further notice.
 7. Help desk sends an email back to the sender regarding the issue; might be a breach of account.
 8. Help desk closes the ticket due to possible breach of account hence ending the use case.

○ **Post Conditions:**

1. The user was able to reset their password successfully.
2. The administrator and help desk was able to help and assist the user in resetting their password.
3. The user is able to log in their account using their new password.
4. Timestamp of newly added password is added to the database under customer activity.

○ **UI (User Interface) Requirements:**

- User Account
- The User Interface is connected to the Jitensha System.
- Reset Password Page
- Help Desk option

○ **Non-Functional Requirements (optional)**

- Fast Reset password feature (User should take at least 2 minutes MAX to accomplish the steps from submission to clicking of link; speed may vary depending on the ISP of the user)
- Fast and immediate email link for resetting the password.
- Timestamp of password reset and change.
- Immediate and automatic update in the respective records.

- Password encryption for the newly set password.
- Old Password is stored safely for further uses (telling the user, next time they reset, that the new proposed password was already been used before by the same account)

Use Case Diagram	Reference Number: <i><<7>></i>
	Version Number: <i><<v1.0.>></i>
System Name: Jitensha	

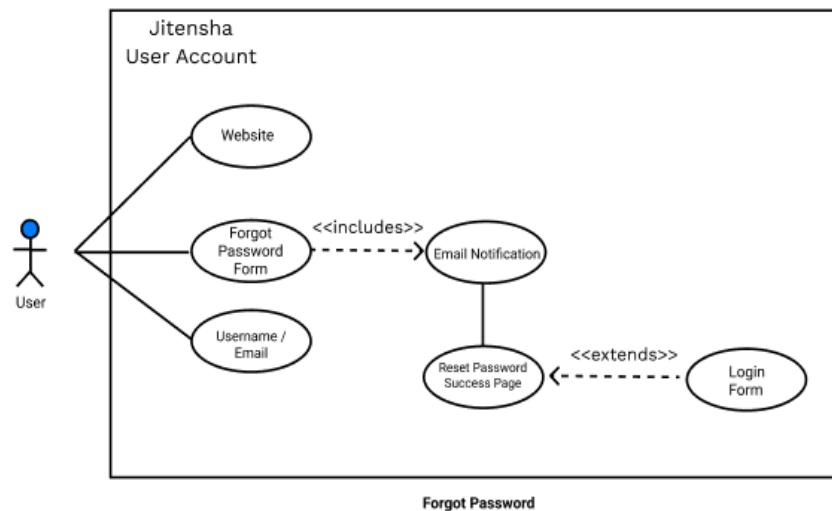


Figure 4.7

Title: Forgot Password - Customer account

Summary: This use case describes the steps needed to use the forgot password feature.

○ **Actors:**

1. User - They want to log in their account.

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

○ **Preconditions:**

1. The user already has an existing account.
2. The user wants to use the forgot password feature; to retrieve password.

○ **Main Success Scenario:**

1. The user opens the website - Jitensha.
2. The user clicks the Sign In button.
3. The user clicks the Forgot Password button.
4. The user enters a username or registered email address.
5. The user clicks the submit button.
6. The inputted credentials are dispatched to the server side for verification.
7. The system reviews the list of accounts and credentials associated with the said account in the database.
8. The system sends a verification email to the registered email address.
9. The user is automatically directed to the verification page.
10. The user checks the verification code provided in the verification email.
11. The user inputs the verification code in the verification page/ clicks the link in the email for the verification of the account.
12. The system validates the verification and accepts it.
13. The user is presented, by the website, the Reset Password form.
14. The user fills up the New Password field.
15. The user re-enters the password inputted in the password field for the Re-enter Password field.
16. The user clicks the confirmation button.
17. The inputted credentials are dispatched to the server side for verification.
18. The system updates the list of accounts and credentials associated with the said account in the database.
19. The user is redirected to the Login page.
20. The user is now able to login with the new password.

○ Alternative Sequences:

- A1. The user forgot the username.
 1. The user submits the credentials.
 2. The system rejects the submitted data and emits an error message.
 3. The user acknowledges the error.
 - 3a. The username was not found in the list of accounts.
 1. The user is prompted to enter the email address associated with the account.
 2. The user repeats Main Success Scenario #3
4. The user resubmits the credentials.
5. The system accepts the credentials.
 6. The authentication was a success which resumes the use case at Step 8.

Error Sequences:

- E1. No Email or Username found.
 1. The user follows Main Success Scenario #1 - 5.
 2. The system rejects the input and emits an error message.
 3. The user acknowledges the error.
 - 3a. The user re-enters the email and username.
4. The user resubmits the form.
5. The inputted credentials are dispatched to the system.
 6. System emits an error message to the client side regarding the predicament which states: "Account does not exist.".
 7. The user is presented with two options by the website - to sign up or to use the forgot password feature again - hence ending the use case.

Post Conditions:

1. The user will be able to log in to the account.
2. The list of accounts is updated with the new password details.
3. The user was able to use the forgot password feature.
4. The user was able to reset the password successfully.
5. Timestamp of newly added password is added to the database under customer activity.

UI (User Interface) Requirements:

- User Account
- User Interface is connected to the Jitensha System
- Forgot password feature

○ Non-Functional Requirements (optional)

- Timestamp of password reset and change.

- Immediate and automatic update in the respective records.
- Password encryption for the newly set password.
- Old Password is stored safely for further uses (telling the user, next time they reset, that the new proposed password was already been used before by the same account)

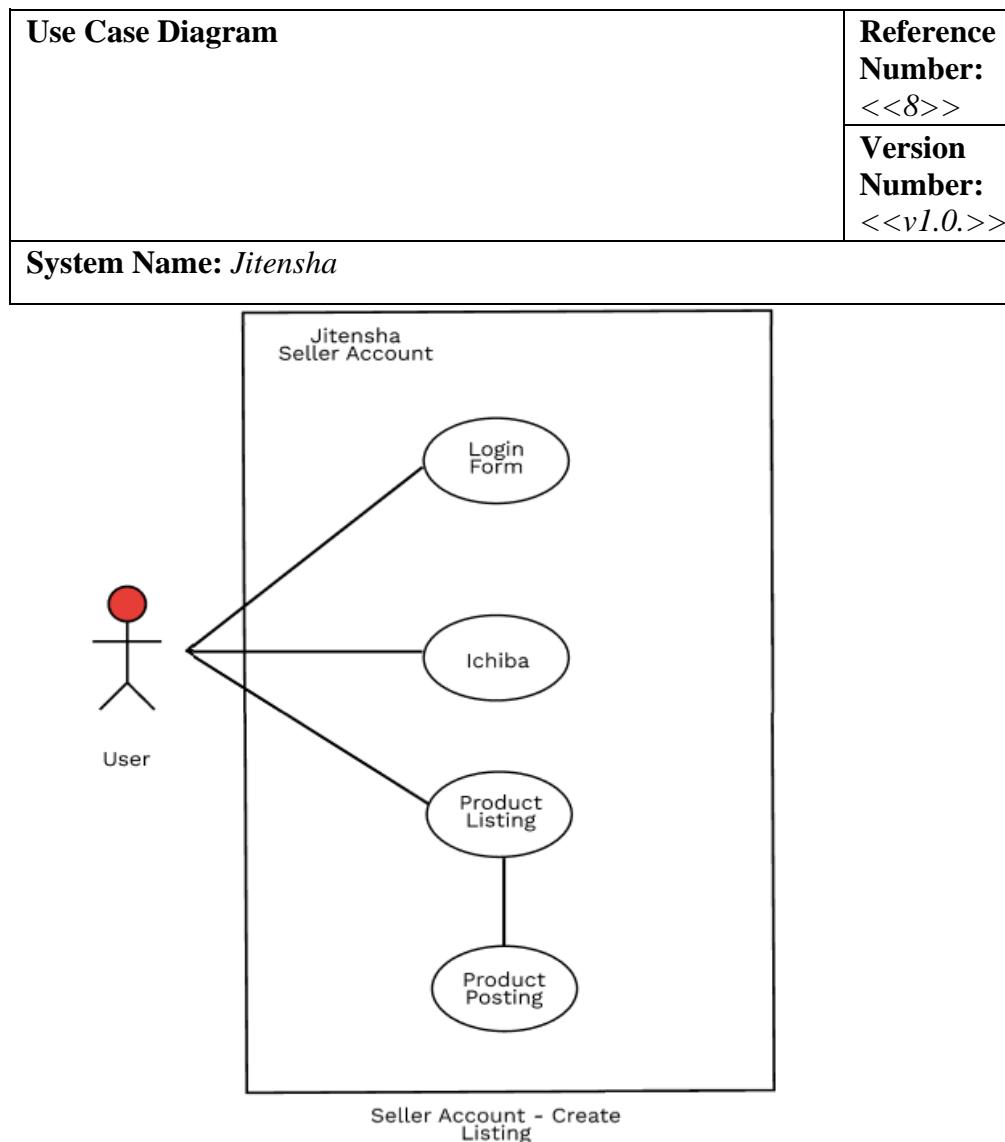


Figure 4.8

Title: *Create Listing - Seller Account*

Summary: This use case describes the steps needed to use the Ichiba feature (Create Listing).

○ **Actors:**

1. User - The one who wants to create a listing in Ichiba. .

Creation Date: 22/02/ 2022 *Date of Update:* 22/03 /2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

○ **Preconditions:**

1. The user already has an existing account.
2. The user already has a verified account for selling (separate verification).
3. The user wants to create a new listing
4. The user can access Ichiba.

Main Success Scenario:

1. The user opens the website - Jitensha.
2. The user logs in their account.
3. The user clicks the Ichiba feature.
4. The user clicks the “Create Listing” button.
5. The user is presented- by the system- the forms for listing.
6. The user fills up the forms with corresponding credentials for the item he/ she is going to list.
7. The user clicks the button “List” to submit the listing.
8. The website submits the proposed listing to the system.
9. The system receives and accepts the listing.
10. The system automatically approves it in the system and stores it in the database.
11. The system sends the approval back to the website.
12. The website displays a success message: The listing is now posted.
13. The listed product is now seen by other users: buyers and sellers.

Alternative Sequences

A.1. The user did not log in his./ her account first.

1. The user opens the website - Jitensha.

2. The user clicks the Ichiba feature.
3. The user is met with an error message: "You need a verified-seller account to access this feature. Please login your account if you have.".
4. The user goes back and logs his/ her account.
5. The use case continues at Main Success scenario #3.

A.2. The listing has insufficient data during the listing process.

1. The user follows the Main Success scenario #1 - 7.
2. The user is met with an error message: "Some fields are incomplete. Please fill them.".
3. The user complies with the error messages and fills the missing fields.
4. The user clicks the button "List" to submit the listing once more.
5. The use case continues at Main Success scenario #8.

Error Sequences

E.1. The user is not verified.

1. The user follows Main Success scenario #1-3.
2. The user is met with an error message: "You are not a verified seller yet, please verify first in order to sell.".
3. The user exits the feature thus ending the use case.

Post Conditions:

1. The user is able to successfully create a new listing.
2. The user is able to view his/ her own new listing.

UI (User Interface) Requirements:

- User Account (with seller verification)
- User Interface is connected to the Jitensha System
- Ichiba interface
- Login form

○ Non-Functional Requirements (optional)

- Fast response time of request and dispatching.
- Immediate and automatic update in the respective records.
- Fast logging and authentication of the user when using the login feature.

Use Case Diagram	Reference Number: "><<9>>
	Version Number: "><<v1.0.>>
System Name: <i>Jitensha</i>	

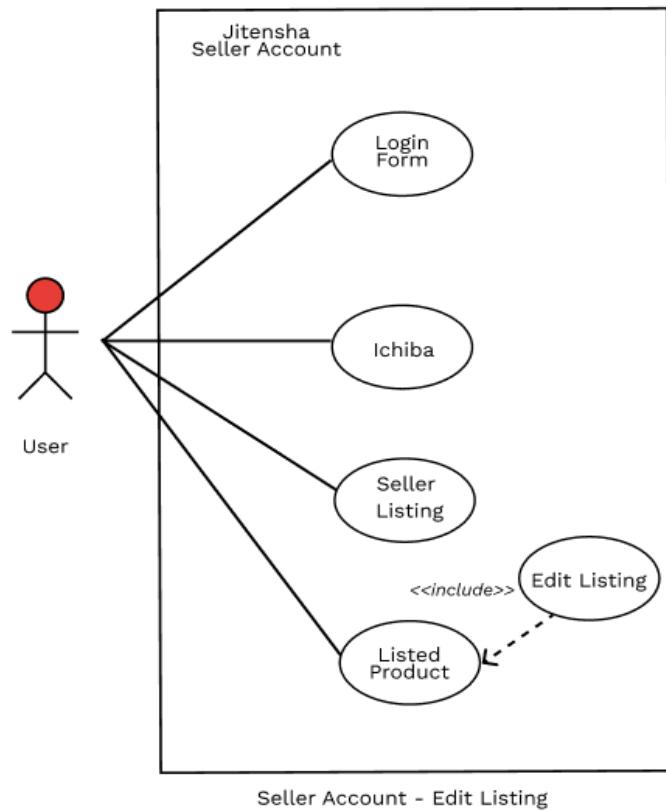


Figure 4.9

Title: *Edit Listing - Seller Account*

Summary: This use case describes the steps needed to use the Ichiba feature (Edit Listing).

- **Actors:**

1. User - The one who wants to edit their listing in Ichiba

Creation Date: 22/03/ 2022 ***Date of Update:*** 22/03 / 2022

Version: v1.0

Person in Charge: Sevilla, Matthew M.

Flow of Events

○ **Preconditions:**

1. The user already has an existing account.
2. The user already has a verified account for selling (separate verification).
3. The user wants to edit their listing in Ichiba.
4. The user can access Ichiba.
5. The user has an active listing in Ichiba.

○ **Main Success Scenario:**

1. The user opens the website - Jitensha.
2. The user logs in their account.
3. The user clicks the “View My Listings”.
4. The user is presented with the listings.
5. The user clicks the listing he/ she wants to manage.
6. The user is presented with the concerned listing.
7. The user clicks the “Edit Listing” button.
8. The user then edits the listing.
9. The user clicks the “Save” button.
10. The website submits the request to the system.
11. The system receives and automatically accepts the request.
12. The system automatically updates the listing in the database.
13. The system dispatches back the result to the website.
14. The website displays a success message: The listing is now updated.
15. The user is sent back to the user account’s product listing UI.

○ **Alternative Sequences:**

A.1. The user did not log in his./ her account first.

1. The user opens the website - Jitensha.
2. The user clicks the Ichiba feature.

3. The user is met with an error message: "You need a verified-seller account to access this feature. Please login your account if you have."
4. The user goes back and logs in his/her account.
5. The user follows Main Success scenario #3-16.

A.2. The user was not able to complete the fields required in editing the listing.

1. The user opens the website - Jitensha.
2. The user logs in their account.
3. The user clicks the "View My Listings".
4. The user is presented with the listings.
5. The user clicks the listing he/she wants to manage.
6. The user is presented with the concerned listing.
7. The user clicks the "Edit Listing" button.
8. The user then edits the listing.
9. The user clicks the "Save" button.
10. The user is prompted with an error message saying "Please fill up the missing field."
11. The user fills up the missing field.
12. The user clicks the "Save" button.
13. The website submits the request to the system.
14. The system receives and automatically accepts the request.
15. The system automatically updates the listing in the database.
16. The system dispatches back the result to the website.
17. The website displays a success message: The listing is now updated.
18. The user is sent back to the user account's product listing UI.

○ Error Sequences:

E.1. The user is not verified.

1. The user follows Main Success scenario #1-3.
2. The user is met with an error message: "You are not a verified seller and buyer yet, please verify first in order to sell."
3. The user exits the feature thus ending the use case.

E.2. The user has no active listing.

1. The user follows Main Success scenario #1-5.
2. The user has no active listing/s.
3. The user exits Ichiba thus ending the use case.

○ **Post Conditions:**

1. The user is able to successfully edit and update the concerned listing.

○ **UI (User Interface) Requirements:**

- User Account (with seller verification)
- User Interface is connected to the Jitensha System
- Ichiba interface
- Login Form

○ **Non-Functional Requirements (optional)**

- Fast response time of request and dispatching.
- Immediate and automatic update in the respective records.
- Fast logging and authentication of the user when using the login feature.

Use Case Diagram	Reference Number: "><<10>>
	Version Number: "><<v1.0.>>
System Name: <i>Jitensha</i>	

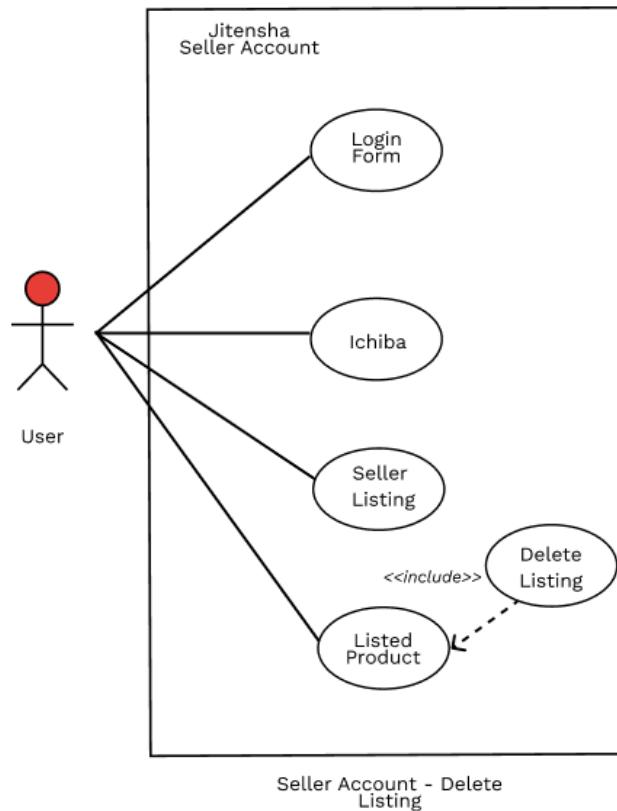


Figure 4.10

Title: Delete Listing - Seller Account

Summary: This use case describes the steps needed to use the Ichiba feature (Delete Listing).

○ **Actors:**

1. User - The one who wants to delete a listing in Ichiba. .

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

○ Preconditions:

1. The user already has an existing account.
2. The user already has a verified account for selling (separate verification).
3. The user wants to create a new listing
4. The user can access Ichiba.
5. The user has an active listing in Ichiba.

Main Success Scenario:

1. The user opens the website - Jitensha.
2. The user logs in their account.
3. The user clicks the Ichiba feature.
4. The user clicks the “View My Listings”.
5. The user is presented with the listing/s.
6. The user clicks the listing he/ she wants to manage.
7. The user is presented with the concerned listing.
8. The user clicks the “Delete Listing” button.
9. The user is met with a warning message: Are you sure?
10. The user clicks the “Yes” button.
11. The website submits the request to the system.
12. The system receives and automatically accepts the request.
13. The system automatically deletes the listing in the database.
14. The system dispatches back the result to the website.
15. The website displays a success message: The listing is now deleted.
16. The user is sent back to the user account’s product listing UI.

Alternative Sequences

- A.1. The user did not log in his./ her account first.

1. The user opens the website - Jitensha.
2. The user clicks the Ichiba feature.
3. The user is met with an error message: “You need a verified-seller account to access this feature. Please log in your account if you have.”.

4. The user goes back and logs his/ her account.

Error Sequences

- E.1. The user is not verified.

1. The user follows Main Success scenario #1-3.
2. The user is met with an error message: "You are not a verified seller and buyer yet, please verify first in order to sell.".
3. The user exits the feature thus ending the use case.

- E.2. The user has no active listing.

1. The user follows Main Success scenario #1-5.
2. The user has no active listing/s.
3. The user exits Ichiba thus ending the use case.

Post Conditions:

1. The user is able to successfully delete the concerned listing.

UI (User Interface) Requirements:

- User Account (with seller verification)
- User Interface is connected to the Jitensha System
- Ichiba interface
- Login Form

○ Non-Functional Requirements (optional)

- Fast response time of request and dispatching.
- Immediate and automatic update in the respective records.
- Fast logging and authentication of the user when using the login feature.

Use Case Diagram	Reference Number: <i><<11>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

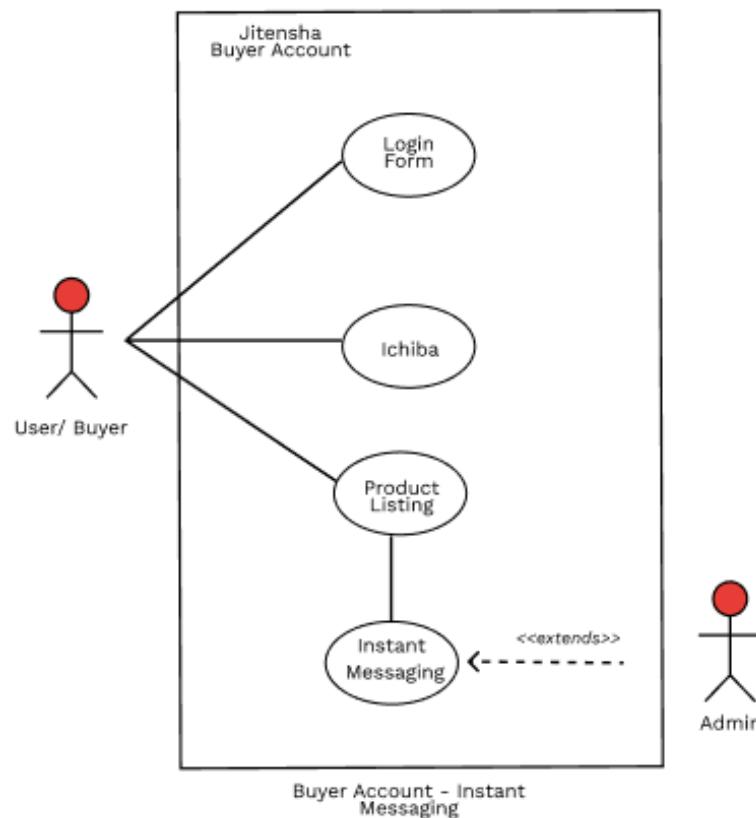


Figure 4.11

Title: Ichiba - Instant Messaging (Buyer Account)

Summary: This use case describes the steps needed to use the instant messaging feature in Ichiba.

○ **Actors:**

1. User/ Buyer - The one who wants to message a seller regarding a listing in Ichiba.
2. Admin- The one who will answer the buyer regarding his/ her inquiries.
3. Seller – The one who listed his/her item.

Creation Date: 22/02/ 2022 **Date of Update:** 22/ 03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

○ **Preconditions:**

1. The buyer already has an existing account.
2. The buyer already has a verified account for selling and buying (separate verification).
3. The buyer wants to message a user regarding a listing.
4. The buyer can access Ichiba.
5. The admin has access to the admin dashboard – chat support.
6. The seller has a valid existing listing.

Main Success Scenario:

1. The buyer opens the website - Jitensha.
2. The buyer logs in their account.
3. The buyer clicks the Ichiba feature.
4. The buyer sees the listing he/ she wants.
5. The buyer clicks on the listing.
6. The buyer clicks the “Message” button.
7. The buyer is redirected to the instant messaging feature.
8. The buyer chats the admin for inquiries regarding the item.
9. The system sends out the message to the admin dashboard.
10. The admin receives the message and replies.
11. The conversation details and content are stored in the database.

Alternative Sequence:

- A.1. The buyer did not login his./ her account first.
1. The buyer opens the website - Jitensha.
 2. The buyer clicks the Ichiba feature.
 3. The buyer is met with an error message: “You need a verified-seller account to access this feature. Please login your account if you have.”.
 4. The buyer goes back and logs his/ her account.
- A.2. The buyer uses the search bar in Ichiba to find the wanted listing.
1. The buyer follows Main Success scenario #1-3.
 2. The buyer cannot find the listing he/ she wants.
 - a. The buyer uses the search bar to find the listing he/ she wants.
 3. The buyer sees the listing he/ she wants.
 4. The use case follows the Main Success scenario #5-10.
- A.3. The buyer used the filter feature in Ichiba to find the wanted listing.
1. The buyer follows Main Success scenario #1-3.
 2. The buyer cannot find the listing he/ she wants.
 - a. The buyer uses the filter bar to find the listing he/ she wants.
 - b. The buyer clicks the desired filter e.g. price, brand, part, etc.
 - c. The buyer clicks the “Find” button.
 - d. The system and website emits the filtered result.
 3. The buyer sees the listing he/ she wants.
 4. The use case continues at Main Success scenario #5.
- A.4. The user’s message was not sent due to technical issues e.g. internet connection etc.
1. The buyer follows Main Success scenario# 1-8.
 2. The buyer’s message was not sent.
 - a. The user clicks the message and clicks “Resend Message”.
 3. The use case continues at Main Success scenario #9.

Error Sequence

- E. 1. The user is not verified.
1. The user follows Main Success scenario #1-3.
 2. The user is met with an error message: “You are not a verified seller and buyer yet, please verify first in order to sell.”.
 3. The user exits the feature thus ending the use case.

Post Conditions

1. The user - buyer - was able to contact the seller regarding the listing.

UI (User Interface) Requirements:

- User Account (with seller and buyer verification)
- User Interface is connected to the Jitensha System
- Ichiba interface
- Instant Messaging
- Login form
- Admin Dashboard

○ Non-Functional Requirements (optional)

- Fast response time of request and dispatching.
- Immediate and automatic update in the respective records.
- Fast sending of email notification and system notification.
- All conversation details are safely stored in the database including the timestamps i.e. chat started and chat ended.
- Fast logging and authentication of the user when using the login feature.

Use Case Diagram	Reference Number: <i><<12>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

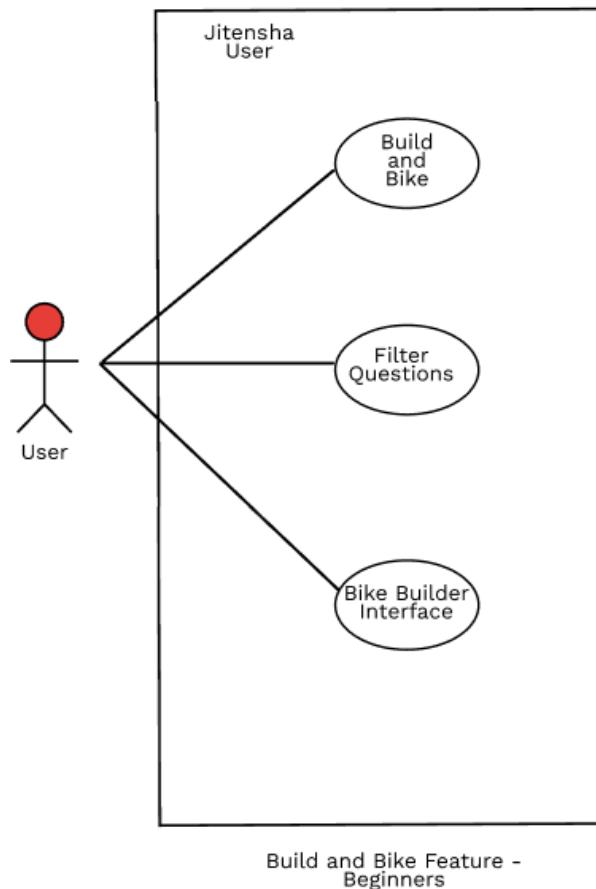


Figure 4.12

Title: Build and Bike - Beginner (without an account)

Summary: This use case describes the steps needed to use the Build and Bike feature (Beginners).

○ **Actors:**

1. User- the one- a beginner- who wants to build a bike using the Build and Bike feature.

Creation Date: 22/02/ 2022

Date of Update: 22/03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

Preconditions

1. The user can access the Build and Bike feature.
2. The user is ready to answer the filter questions.
3. The user has zero idea in bike building or has some idea - but not an expert - in bike building.

Main Success Scenario:

1. The user opens the website - Jitensha.
2. The user clicks the Build and Bike feature.
3. The user is first asked if he/ she is a beginner or an expert.
4. The user clicks beginner.
5. The user is presented with the filter questions e.g. physical parameters, bike preference, etc.
6. The user fills in the form accordingly.
7. The user is directed to the possible and suggested builds which the system chose for him/ her.
8. The user clicks the suggested build and chosen build.
9. The user is asked by the system if he/she likes it: “Yes” or “No”.
10. The user clicks “Yes”.
11. The user has now a custom bike for him/ her to use as reference when procuring the parts..

Alternative Sequence:

A.1. The user clicked the wrong option: “Not a beginner”.

1. The user follows the Main Success scenario #1-3.
2. The user clicked the wrong option.

- a. The user is prompted to use the “Go back, I am a beginner” button in the main bike building feature,
- b. The user is redirected straight to the filter questions.
3. The use case continues at Main Success scenario #5.

A.2. The user clicked and filled the wrong parameters or credentials in the filter questions.

1. The user follows the Main Success scenario #1-6.
2. The user realizes what he/ she put was wrong.
- a. The user is prompted to use the “Go back to the filter questions” button in the suggested bike build page.
- b. The user is redirected back to the filter questions
- c. The user navigates through the questions and changes the answers to the questions he/she inputted wrong.
3. The use case continues at Main Success scenario# 7.

A.3. The user user does not like the chosen bike build after doing Main Success scenario# 10.

1. The user follows the Main Success scenario#1- 10.
2. The user wants to change the chosen custom bike he/ she chose.
 - a. The user clicks the “Change my chosen custom bike build” button,
 - b. The use case goes back at Main Success scenario# 7.
3. The use case continues at Main Success scenario# 7.

A.4. The user clicks “No” when asked “Do you like it?” - Main Success scenario# 9.

1. The user follows Main Success scenario#1 - 9.
2. The user clicks “No”
 - a. The user is redirected to the suggested bike build page.
 - b. The use case goes back at Main Success scenario# 7.
3. The use case continues at Main Success scenario# 7.

Error Sequence:

1. N/A

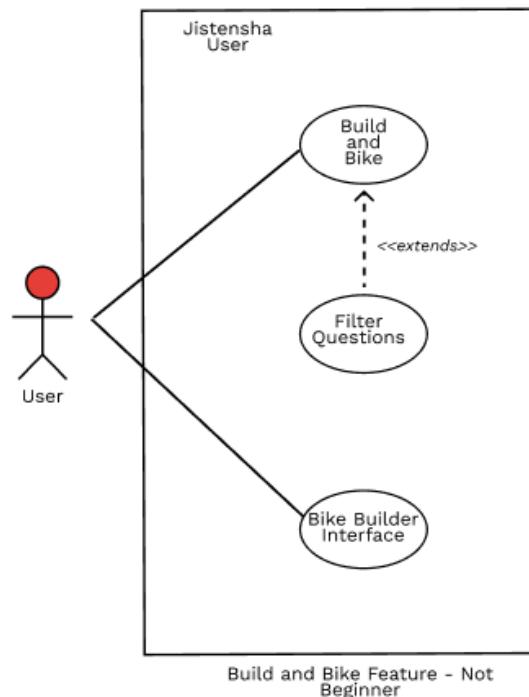
UI (User Interface) Requirements

- User Interface is connected to the Jitensha System
- Build and Bike interface
- Filter Questions interface
- Suggested Bike Build interface

Nonfunctional Requirements (optional)

- Serviceability and stability of the feature.
- Fast response when answering the filter questions

Use Case Diagram	Reference Number: "><<13>>
	Version Number: "><<v1.0.>>
System Name: Jitensha	

*Figure 4.13***Title:** *Build and Bike - Not a Beginner (without an account)***Summary:** This use case describes the steps needed to use the Build and Bike feature (Not a Beginner).○ **Actors:**

1. User- the one - not a beginner- who wants to build a bike using the Build and Bike feature.

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022**Version:** v1.0**Person in Charge:** Rostrata, Marc Dominic C.

Flow of Events**Preconditions**

1. The user can access the Build and Bike feature.
2. The user is ready to answer the filter questions.
3. The user is an expert in bike building.

Main Success Scenario:

1. The user opens the website - Jitensha.
2. The user clicks the Build and Bike feature.
3. The user is first asked if he/ she is a beginner or an expert.
4. The user clicks expert.
5. The user is redirected straight to the bike building page.
6. The user now chooses the type of bike he/ she wants to build.
7. The user clicks and is directed to the main bike building feature.
8. The user is now presented with the possible bike parts with brands to use in building his/ her preferred bike.
9. The user clicks the “Build” button after choosing the favored bike parts and brands.
10. The website and system asks the user if he/she likes it: “Yes” or “No”.
11. The user clicks “Yes”.
12. The user has now a custom bike for him/ her to use as reference when procuring the parts.

Alternative Sequence:

- A.1. The user clicked the wrong option: “I am a beginner”.

1. The user follows the Main Success scenario #1-3.
2. The user clicked the wrong option.
 - a. The user is prompted to use the “Skip” button in the filter question feature..
 - b. The user is redirected straight to the bike building page. .
 3. The use case continues at Main Success scenario #6.

- A.2. The user wants to change the type of bike he/she is going to build.

1. The user follows the Main Success scenario# 1- 8.
2. The user wants to change the type of bike to build.
 - a. The user is prompted to use the “Choose a different type of bike” button in the main bike building feature.
 - b. The user is redirected back to the bike building page.
 3. The use case continues at Main Success scenario# 6.

A.3 The user wants to change the bike parts or bike brands in the build.

1. . The user follows Main Success scenario#1- 10.
2. The user clicks “No”.
 - a. Although on the same page, after clicking “No” - the website gives back the ability for the user to customize his/ her bike in the main bike building feature.
 - b. The user chooses the right bike parts or favored brand.
 3. The use case continues at Main Success scenario# 9.

A.4. The user clicks “No” when asked “Do you like it?” - Main Success scenario# 10.

1. The user follows Main Success scenario#1- 10.
2. The user clicks “No”
 - a. The user is redirected to the main bike building feature..
 - b. The user edits and corrects the custom built bike.
 3. The use case continues at Main Success scenario# 9.

Error Sequence:

1. N/A

UI (User Interface) Requirements

- User Interface is connected to the Jitensha System
- Build and Bike interface
- Main Bike Building interface
- Filter Question [Only: “ what type of bike do you want to build?”]

Nonfunctional Requirements (optional)

- Serviceability and stability of the feature.
- Fast response when choosing bike parts and brands in the main bike building interface.

Use Case Diagram	Reference Number: <<14>> Version Number: <<v1.0.>>
System Name: Jitensha	

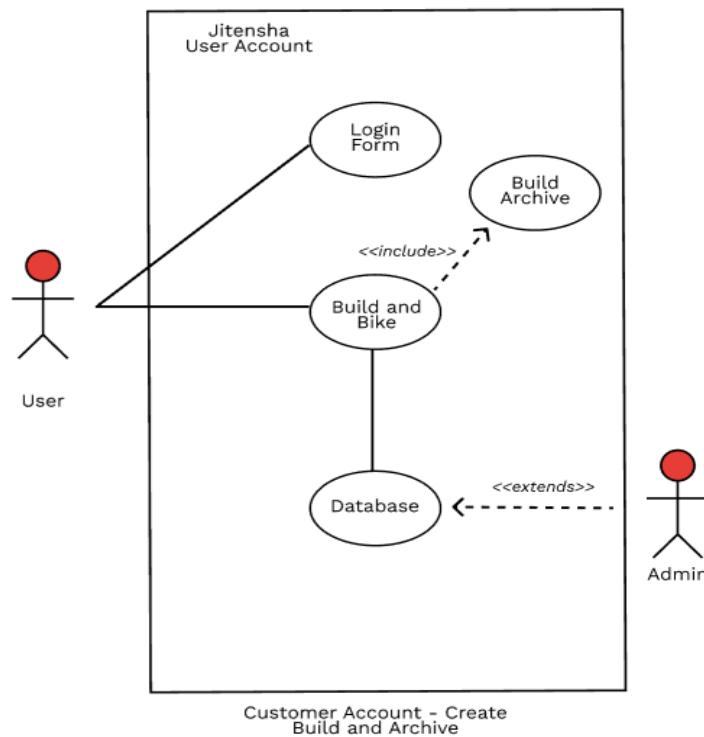


Figure 4.14

Title: Build and Bike-Create build and archive (with account)

Summary: This use case describes the steps needed to use the Build and Bike feature (Create Build and Archive).

○ **Actors:**

1. User- the one who wants to create a build in the Build and Bike feature and save/ archive it.

Creation Date: 22/02/ 2022 ***Date of Update:*** 22/ 03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

Preconditions

1. The user can access the Build and Bike feature.
2. The user wants to create a build.
3. The user wants to archive/ save the bike build.
4. The user has an account.

Main Success Scenario:

1. The user opens the website - Jitensha.
2. The user clicks the login form.
3. The user logins his/ her account.
4. The user clicks the Build and Bike feature.
5. The user is prompted to answer the question if he/she is a beginner or an expert.
6. The user answers accordingly.
7. The user builds his bike or chooses the suggested bike builds - depending on what he/ she chose in Main Success scenario# 4.
8. The user has completed his/ her build or is satisfied with the suggested bike build given by the system.
9. The user clicks the “Archive Build” button to save the custom build bike.
10. The system accepts the request and saves the recently built bike.
11. The system saves it in the database (table) along and connected to the user’s profile,
12. The custom build is now saved and added to the archived builds list.

Alternative Sequence:

A.1 The user inputted the wrong credentials for the account login.

1. The user follows the Main Success scenario# 1- 3.
2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The user re-enters the right credentials.
 - b. The user submits the login form
 - c. The system recognizes the inputted data and accepts the user login attempt.
3. The use case continues at Main Success scenario# 4.

A.2. The user is not satisfied with the built custom bike or suggested chosen bike build.

1. The user follows the Main Success scenario# 1- 8.
2. The user is not satisfied with the built custom bike or suggested chosen bike build.

2.a The user chose the bike beginner path.

1. The user clicks the “Change my chosen custom bike build” button
2. The user is redirected back to the suggested bike build page.
3. The user chooses a different bike build and confirms it.

2.b. The user chose the expert path (changing the type of bike to build)..

1. The user is prompted to use the “Choose a different type of bike” button in the main bike building feature.
2. The user is redirected back to the bike building page.
3. The user chooses a different bike type.

2.c. The user chose the expert path(changing the bike part or bike brand).

1. Although on the same page, after clicking “No” - the website gives back the ability for the user to customize his/ her bike in the main bike building feature.
2. The user chooses the right bike parts or favored brand.

3. The use case continues at Main Success scenario# 8.

Error Sequence:

E.1. The user has no existing account.

1. The user follows Main Success scenario# 1 - 2
2. The user has no existing account to use for logging in,
3. The user was not able to login and use the archive feature thus ending the use case.

UI (User Interface) Requirements

- User Interface is connected to the Jitensha System
- Build and Bike interface
- Main Bike Building interface

- Filter Question
- Archive Build feature
- Login Form

Nonfunctional Requirements (optional)

- Serviceability and stability of the feature.
- Fast response when choosing bike parts and brands in the main bike building interface.
- Fast response when archiving the bike build.
- Fast logging and authentication of the user when using the login feature.

Use Case Diagram	Reference Number: <i><<15>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

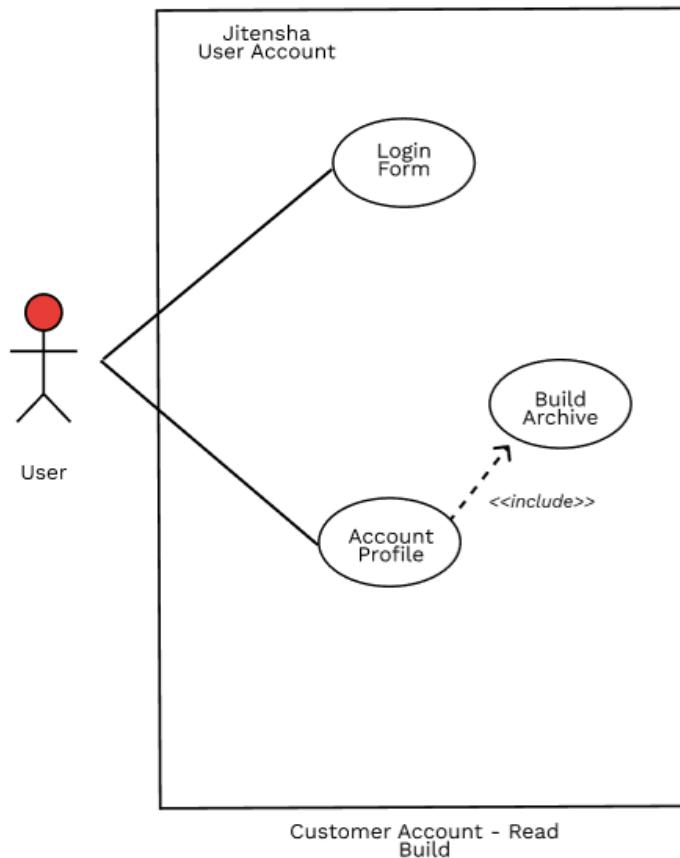


Figure 4.15

Title: Build and Bike- read and see archived bike builds (with account)

Summary: This use case describes the steps needed to use and see the build archive. (Read build archive).

○ **Actors:**

1. User- the one who wants to view the previous bike builds in the Build Archive.

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

Preconditions

1. The user has an existing account.
2. The user has custom builds stored in the build archive (at least one).

Main Success Scenario:

1. The user opens the website - Jitensha.
2. The user clicks the login form.
3. The user logins his/ her account.
4. The user clicks his/ her account profile.
5. The user clicks the “Build Archive” button.
6. The user is redirected to the Build Archive. .
7. The user sees the previous archived bike builds in the Build Archive page.

Alternative Sequence:

- A.1. The user inputted the wrong credentials for the account login.

1. The user follows the Main Success scenario# 1- 3.
2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The user re-enters the right credentials.
 - b. The user submits the login form
 - c. The system recognizes the inputted data and accepts the user login attempt.
 3. The use case continues at Main Success scenario# 4.

Error Sequence:

- E.1. The user has no existing account

1. The user follows Main Success scenario# 1 - 2
2. The user has no existing account to use for logging in,
3. The user was not able to login and use the Build Archive feature thus ending the use case.

E.2 The user has no previous bike build/s stored in the Build Archive page.

1. The user follows Main Success scenario# 1- .6.
2. The user is met with an information message: “No Archived Bike Builds”.
 - a. The user clicks “Okay”.
 - b. The user is given the Build Archive page.
 - c. The Build Archive is empty.
 - d. The user sees no archived bike builds from previous custom bike building activities done in Jitensha.
3. The user exits the “Build Archive” page thus ending the use case.

UI (User Interface) Requirements

- User Interface is connected to the Jitensha System
- Build Archive page
- Login Form
- Listed previous custom bike build/s

Nonfunctional Requirements (optional)

- Serviceability and stability of the feature.
- Fast logging and authentication of the user when using the login feature.
- Fast response when requesting for the list of previous custom bike build/s of the user.

Use Case Diagram	Reference Number: <i><<16>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

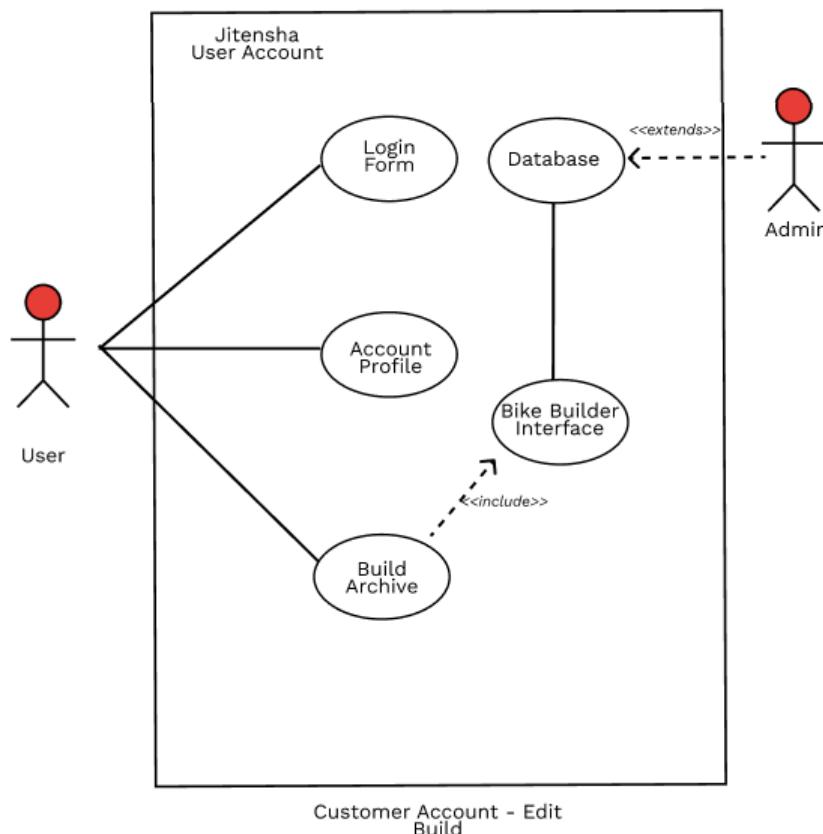


Figure 4.16

Title: *Build and Bike- edit archived bike builds (with account)*

Summary: This use case describes the steps needed to edit builds in the build archive. (Read build archive).

○ **Actors:**

1. User- the one who wants to edit and update the previous bike builds in the Build Archive.

Creation Date: 22/02/ 2022 ***Date of Update:*** 22/ 03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

Preconditions

1. The user has an existing account.
2. The user has at least one previous custom bike build saved in the Build Archive.
3. The user wants to edit/ update a previous custom bike build.

Main Success Scenario

1. The user opens the website - Jitensha.
2. The user clicks the login form.
3. The user logins his/ her account.
4. The user clicks his/ her account profile.
5. The user clicks the “Build Archive” button.
6. The user is redirected to the Build Archive.
7. The user sees the previous archived bike builds in the Build Archive page.
8. The user clicks the concerned bike build - the build he/ she wants to edit.
9. The user is shown the custom bike build in a bigger picture.
10. The user clicks ‘Edit Build’ button.
11. The user website asks the user if he/ she wants to edit the concerned bike build.
12. The user answers: “Yes”.
13. The website redirects the user to the main bike building feature.
14. The user edits / updates the bike accordingly.
15. The user is now done with editing and checks the edited build.
16. The user - now satisfied with the build- clicks the “Save Build” button.
17. The user is asked if he/ she is satisfied with the build.
18. The user answers: “Yes”.
19. The updated build is automatically updated in the database.
20. The system/ website automatically brings back the user to the “Build Archive” page after clicking “Yes”.
21. The user can now see the updated custom bike build.

Alternative Sequences:

A.1. The user inputted the wrong credentials for the account login.

1. The user follows the Main Success scenario# 1- 3.
2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The user re-enters the right credentials.
 - b. The user submits the login form
 - c. The system recognizes the inputted data and accepts the user login attempt.
3. The use case continues at Main Success scenario# 4.

A.2. The user clicks “No” when asked by the system if he/she wants to edit the concerned bike build.

1. The user follows the Main Success scenario# 1- 11.
2. The user accidentally clicks the “No” button
 - a. The system brings back user to Main Success scenario# 9.
 - b. The user clicks the “Edit” button again.
 - c. The user follows Main Success scenario# 11- 12.
3. The use case continues at Main Success scenario# 13.

A.3. The user clicks “No” when the user is asked if he/ she is satisfied with the edited build.

1. The user follows the Main Success scenario# 1- 17.
2. The user accidentally clicks the “No” button
 - a. The system brings back the user to Main Success scenario# 15.
 - b. The user clicks the “Save Build” button.
3. The use case continues at Main Success scenario# 17.

A.4. The user is not satisfied with the edited bike build.

1. The user follows the Main Success scenario# 1- 17
2. The user is not satisfied with the build.
3. The user clicks the “No” button
 - a. The system brings back the user to Main Success scenario# 13.
 - b. The changes and edits the parts he/ she wants to change and edit.
 - c. The user clicks the “Save Build” button.
4. The use case continues at Main Success scenario# 17.

Error Sequences:

E.1. The user has no existing account

1. The user follows Main Success scenario# 1 - 2
2. The user has no existing account to use for logging in, S
3. The user was not able to login, use the Build Archive feature, and edit thus ending the use case.

E.2 The user has no previous bike build/s stored in the Build Archive page.

1. The user follows Main Success scenario# 1- .6.
2. The user is met with an information message: “No Archived Bike Builds”.
 - a. The user clicks “Okay”.
 - b. The user is given the Build Archive page.
 - c. The Build Archive is empty.
 - d. The user sees no archived bike builds from previous custom bike building activities done in Jitensha.
3. The user exits the “Build Archive” page thus ending the use case.

UI (User Interface) Requirements

- User Interface is connected to the Jitensha System
- Build Archive page
- Login Form
- Listed previous custom bike build/s
- Bike Building page

Nonfunctional Requirements (optional)

- Serviceability and stability of the feature.
- Fast logging and authentication of the user when using the login feature.
- Fast response when requesting for the list of previous custom bike build/s of the user.
- Fast redirection from Build Archive to the main bike building feature.
- Fast update in the database of the updated bike build of the user.

Use Case Diagram	Reference Number: <<17>> Version Number: <<v1.0.>>
System Name: Jitensha	

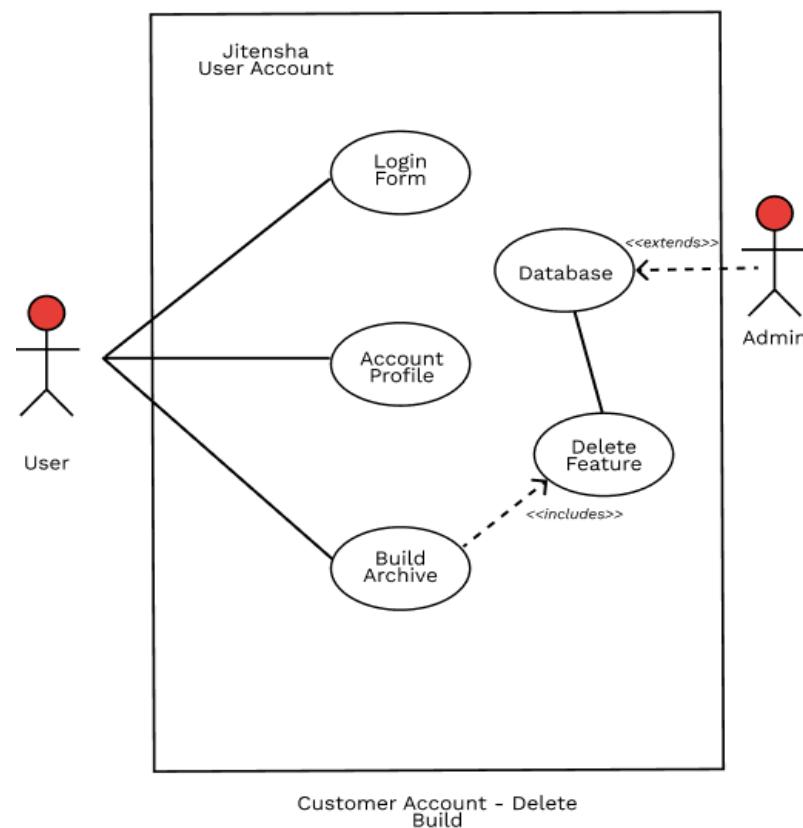


Figure 4.17

Title: Build and Bike- delete archived bike builds (with account)

Summary: This use case describes the steps needed to delete builds in the build archive. (Read build archive).

○ **Actors:**

1. User - the one who wants to delete their previous bike builds in the build archive

Creation Date: 22/02/ 2022 ***Date of Update:*** 22/03 / 2022

Version: v1.0

Person in Charge: Sevilla, Matthew M.

Flow of Events

Preconditions

1. The user has an existing account.
2. The user must have one bike build that is saved in the Build Archive
3. The user wants to delete a previous custom bike build.

Main Success Scenario

1. The user opens the website - Jitensha.
2. The user clicks the login form.
3. The user logins their account
4. The user clicks his/ her account profile.
5. The user clicks the “Build Archive” button.
6. The user is redirected to the Build Archive.
7. The user sees the previous archived bike builds in the Build Archive page.
8. The user clicks the concerned bike build that he/she wants to delete.
9. The user is shown the custom bike build in a bigger picture.
10. The user clicks the “Delete Build” button.
11. The user is asked if he/she wants to delete the concerned bike build.
12. The user answers: “Yes”
13. The system/ website automatically brings back the user to the “Build Archive” page after clicking “Yes”.
14. The user can now see the updated list of custom bike builds.

Alternative Sequences:

A.1. The user inputted the wrong credentials for the account login.

1. The user follows the Main Success scenario# 1- 3.
2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The user re-enters the right credentials.
 - b. The user submits the login form
 - c. The system recognizes the inputted data and accepts the user login attempt.
 3. The use case continues at Main Success scenario# 4.

Error Sequences:

E.1. The user does not have an existing archived build in the Build Archive.

1. The user follows the Main Success scenario# 1- 5.
2. The system will display a message: “No Archived Bike Builds”.
3. The system will redirect the user to the Landing Page.

UI (User Interface) Requirements

- User Interface is connected to the Jitensha System
- Build Archive page
- Login Form
- Listed previous custom bike build/s

Nonfunctional Requirements (optional)

- Serviceability and stability of the feature.
- Fast logging and authentication of the user when using the login feature.
- Fast response when requesting for the list of previous custom bike build/s of the user.
- Fast deletion and automatic updation of the deleted build in the database and website.

Use Case Diagram	Reference Number: <i><<18>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

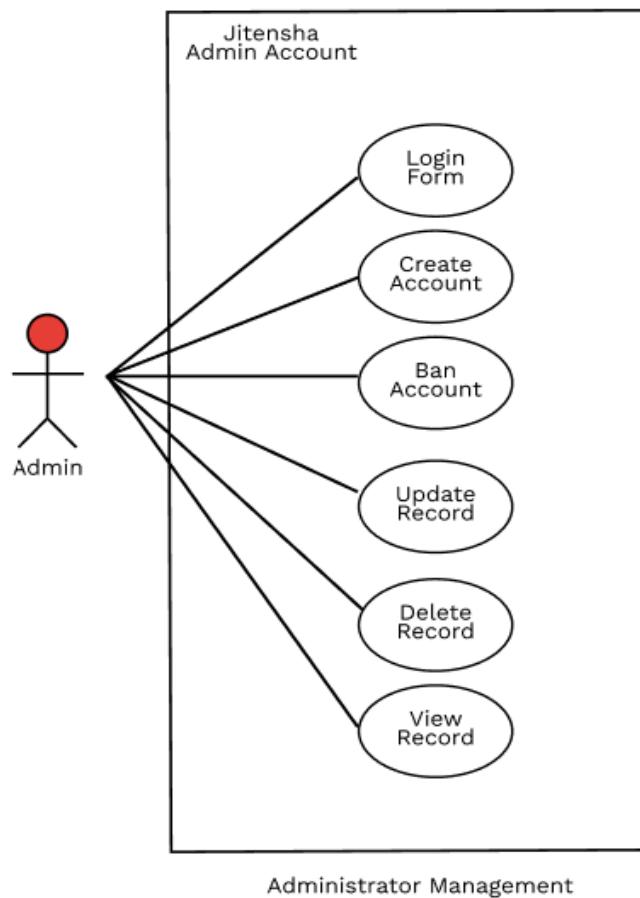


Figure 4.18

Title: Administrator Management - Admin Account

Summary: This use case describes the viewing of the records and capabilities of an admin..

○ **Actors:**

1. Admin- the one who wants to view records and database capabilities.

Creation Date: 22/02/ 2022 ***Date of Update:*** 22/03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

Preconditions

1. The administrator has a valid credited existing administrator account.
2. The administrator has the authority to use these features.

Main Success Scenario

1. The administrator opens the database.
2. The administrator logins his/ her account.
3. The administrator clicks view records.
4. The database shows all the records.
5. The administrator clicks “Add” to add an account record.
6. The administrator inputs the new record.
7. The system accepts it and is added to the database.
8. The administrator clicks the newly made record.
9. The administrator clicks the ‘Edit’ button to update it.
10. The administrator updates the aforementioned record.
11. The system accepts it and it is updated in the database.
12. The administrator clicks the “Disable” button to ban this account / record.
13. The system asks the administrator if he/ she wants to ban this record
14. The administrator answers: “Yes”.
15. The system accepts it and the newly made account is banned.
16. The administrator wants to delete the newly made record.
17. The administrator clicks the “Delete” button to delete the record.
18. The system asks the administrator if he/ she wants to delete the record.
19. The administrator answers: “Yes”.
20. The system accepts it and the newly made account is deleted.
21. The administrator has now used his/ her capabilities as a system administrator.

Alternative Sequence:

- A.1. The administrator inputted the wrong credentials.

1. The administrator follows the Main Success scenario# 1- 2.
2. The system emits an error message: “Invalid Username and Password”
 - a. The user re-enters the right credentials.
 - b. The user submits the login form
 - c. The system recognizes the inputted data and accepts the user login attempt.
3. The use case continues at Main Success scenario# 3.

Error Sequence:

- E.1. The administrator has no existing, certified, and valid administrator account.
1. The administrator follows the Main Success scenario# 1.
 2. The administrator has no existing and working administrator account.
 3. The administrator exits the database login form thus ending the use case.

UI (User Interface) Requirements

- Database system

Nonfunctional Requirements (optional)

- Fast authentication feature
- Verification feature
- Timestamp for the newly created account
- Timestamp for the administrator login.

Use Case Diagram	Reference Number: <i><<19>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

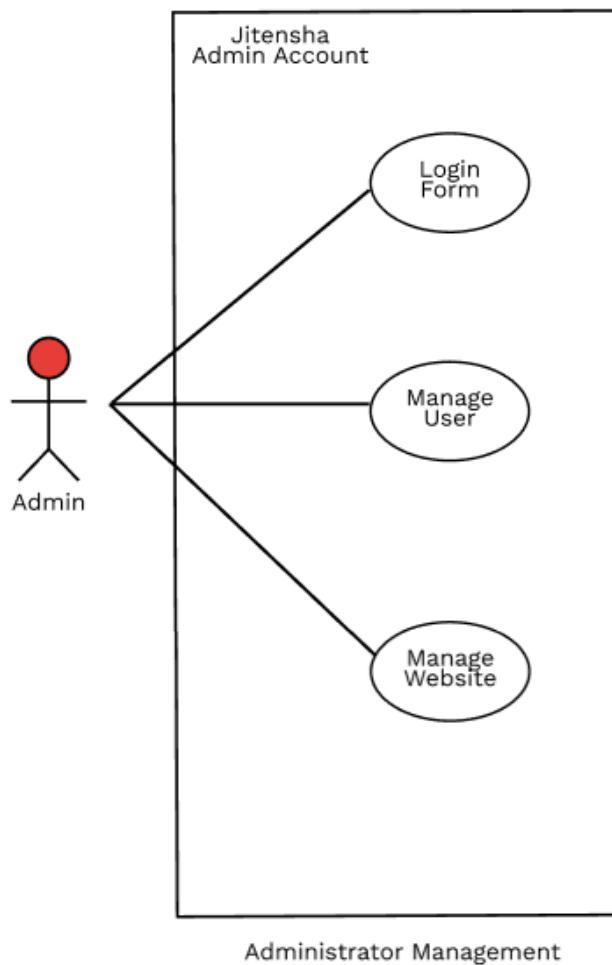


Figure 4.19

Title: Administrator Management - Admin Account (*Manage User and Website*)

Summary: This use case describes the managing, viewing of the records, and capabilities of an admin..

- **Actors:**

1. Admin- the one who wants to view records and database capabilities.

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

Preconditions

1. The administrator has a valid credited existing administrator account.
2. The administrator has the authority to use these features.
3. The database system is connected and configured to the Jitensha website.
4. The administrator wants to manage the user.

Main Success Scenario

1. The administrator opens the database.
2. The administrator logins his/ her account.
3. The administrator views the records and manages it e.g. delete, ban, edit, add, etc.
4. The administrator switches over to the Jitensha website
5. The administrator views and manages the Jitensha website e.g. oversees and checks the serviceability of each feature etc.
6. The administrator successfully manages the user and Jitensha website.

Alternative Scenario:

- A.1. The administrator inputted the wrong credentials.

1. The administrator follows the Main Success scenario# 1- 2.
 2. The system emits an error message: "Invalid Username and Password"
- a. The user re-enters the right credentials.
- b. The user submits the login form
- c. The system recognizes the inputted data and accepts the user login attempt.
3. The use case continues at Main Success scenario# 3.

Error Sequence:

- E.1. The administrator has no existing, certified, and valid administrator account.
1. The administrator follows the Main Success scenario# 1.
 2. The administrator has no existing and working administrator account.
 3. The administrator exits the database login form thus ending the use case.

UI (User Interface) Requirements

- Database system
- Jitensha website

Nonfunctional Requirements (optional)

- Fast authentication feature
- Verification feature
- Timestamp for the newly created account
- Timestamp for the administrator login.
- Timestamp for the activities done by the administrator.

Use Case Diagram	Reference Number: <i><<20>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

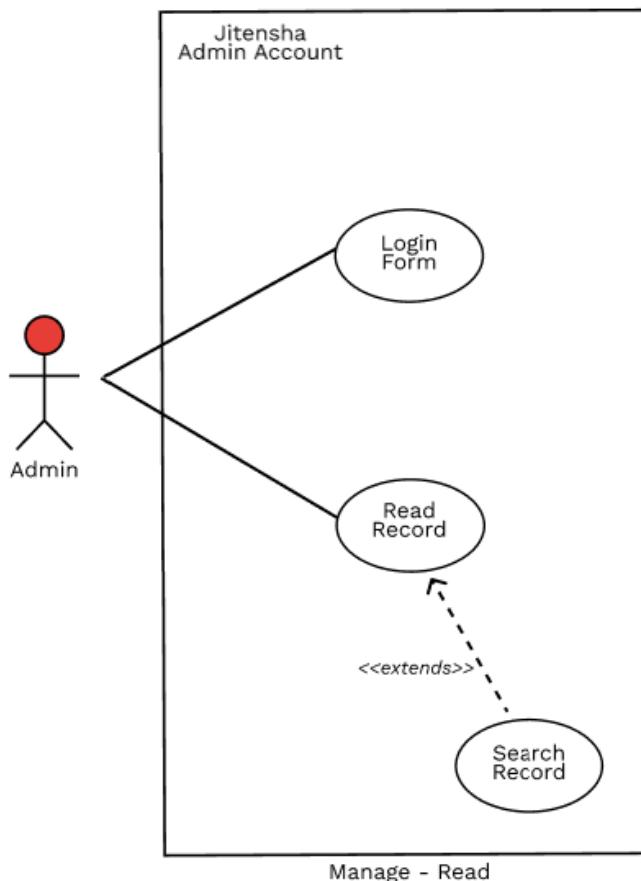


Figure 4.20

Title: Administrator Account- Read

Summary: This use case describes the steps needed to manage the page.

Actors:

1. Admin - the one who maintains and manages the page.

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Tucay, Gabriel T.

Flow of Events

Preconditions

1. The admin has an existing account.
2. The admin wants to search records.
3. The admin wants to read records.

Main Success Scenario

1. The admin opens the website - Jitensha.
2. The admin clicks the login form.
3. The admin logins their account.
4. The admin clicks the “Read Records” button.
5. The admin is redirected to the records.
6. The admin sees the records of all users.
7. The admin searches for record/s.
8. The admin is shown the specific searched records.
9. The admin is shown the detailed record.

Alternative Sequences:

A.1 The admin entered the wrong credentials for the login feature.

1. The user follows the Main Success scenario#1- 3
2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The admin re-enters the correct username and password credentials.
 - b. The system accepts and recognizes the account.
 3. The use case continues at Main Success scenario# 4.

A.2. The admin searched with wrong credentials of the user.

1. The admin follows the Main Success scenario# 1- 7.
2. The system emits an error message: “No record found.”
 - a. The admin re-enters the right credentials.
 - b. The admin clicks search.

- c. The system recognizes the inputted data .
- 3. The use case continues at Main Success scenario# 9.

Error Sequences:

E.1. The admin searches for non-existing account

- 1. The admin follows the Main Success scenario# 1-7.
- 2. The system will display a message: “No record found”.
- 3. The admin exits the “Records” page thus ending the use case

E.2. The administrator has no existing, certified, and valid administrator account.

- 1. The administrator follows the Main Success scenario# 1 -2 .
- 2. The administrator has no existing and working administrator account.
- 3. The administrator exits the database login form thus ending the use case.

UI (User Interface) Requirements

- User Interface is connected to the Jitensha System
- Read Records page
- Search bar
- List of all records
- Database system

Nonfunctional Requirements (optional)

- Fast authentication feature
- Verification feature
- Timestamp for the newly created account
- Timestamp for the administrator login.

Use Case Diagram	Reference Number: <i><<21>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

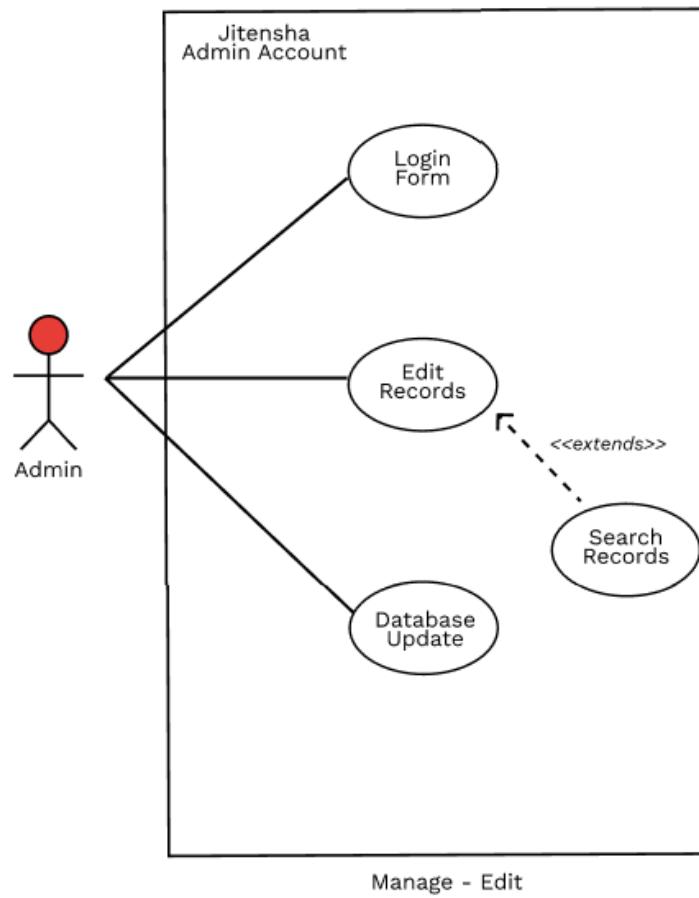


Figure 4.21

Title: Administrator Account- Edit

Summary: This use case describes the viewing of the records of an admin..

- **Actors:**

1. Admin - the one who wants to manage records and features

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Sevilla, Matthew M.

Flow of Events

Preconditions

1. The admins must have an existing account.
2. The admin wants to manage and edit records.

Main Success Scenario

1. The admin opens the website - Jitensha.
2. The admin clicks the login form.
3. The admin logins their account.
4. The admin clicks the “Read Records” button.
5. The admin is redirected to the records.
6. The admin sees the records of all users.
7. The admin searched for the specific user.
8. The admin selects a specific user.
9. The admin clicks the manage button.
10. The admin edits the record of the specific user.
11. The admin saves the edited record of the user.
12. The admin is redirected to the records page.

Alternative Sequences:

A.1 The admin entered the wrong credentials for the login feature.

1. The user follows the Main Success scenario#1- 3
2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The admin re-enters the correct username and password credentials.
 - b. The system accepts and recognizes the account.
 3. The use case continues at Main Success scenario# 4.

A.2. The admin searched with wrong credentials of the user.

1. The admin follows the Main Success scenario# 1- 7.

2. The system emits an error message: "No record found."
 1. The admin re-enters the right credentials.
 2. The admin clicks search.
 3. The system recognizes the inputted data .
3. The use case continues at Main Success scenario# 12.

A.3. The admin was not able to complete the required fields to save the record of the user

1. The admin follows the Main Success scenario# 1- 11.
2. The system emits an error message: "Please complete all the fields."
3. The admin fills up all the fields that are required.
4. The use case continues at Main Success scenario# 12.

Error Sequences:

E.1. The admin searches for a non-existing account.

1. The admin follows the Main Success scenario# 1-7.
2. The system will display a message: "No record found".
3. The admin exits the "Records" page thus ending the use case.

E.2. The administrator has no existing, certified, and valid administrator account.

1. The administrator follows the Main Success scenario# 1 -2 .
2. The administrator has no existing and working administrator account.
3. The administrator exits the database login form thus ending the use case.

UI (User Interface) Requirements

- Database system

Nonfunctional Requirements (optional)

- Fast authentication feature
- Verification feature
- Timestamp for the newly created account
- Timestamp for the administrator login.

Use Case Diagram	Reference Number: "><<22>>
	Version Number: "><<v1.0.>>
System Name: <i>Jitensha</i>	

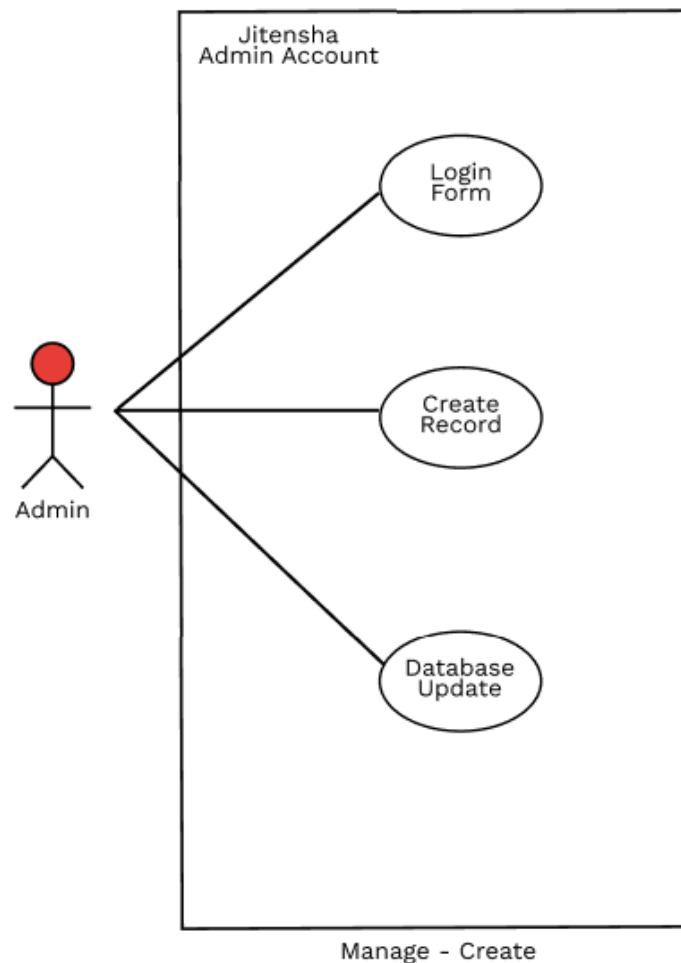


Figure 4.22

Title: Administrator Account - Create

Summary: This use case describes the steps needed to create records and update databases.

Actors:

1. Admin - the one who maintains and manages the page.

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Tucay, Gabriel T.

Flow of Events**Preconditions**

1. The admin has an existing account.
2. The admin wants to Create records.

Main Success Scenario

1. The admin opens the website - Jitensha.
2. The admin clicks the login form.
3. The admin logins their account.
4. The admin clicks the “Read Records” button.
5. The admin is redirected to the records.
6. The admin sees the records of all users.
7. The admin clicks the “Create Records”.
8. The system will show the forms.
9. The admin will fill up record credentials.
10. The admin clicks “Create”.
11. The system will generate successful message: “Record Created”

Alternative Sequences:

- A.1 The admin entered the wrong credentials for the login feature.

The user follows the Main Success scenario#1- 3

The system emits an error message: “Invalid Username/ Email and Password.”

- a. The admin re-enters the correct username and password credentials.
 - b. The system accepts and recognizes the account.
- The use case continues at Main Success scenario# 4.

- A.2 The admin put incomplete credentials into the “create record” form.

1. The admin follows the Main Success scenario# 1- 9.
 2. The system emits an error message: “Please fill up all fields.”
- a. The admin re-enters the right and complete credentials.
 - b. The admin clicks create.

- c. The system recognizes the inputted data .
- 3. The use case continues at Main Success scenario# 11

Error Sequences:

E.1. The admin creates records with incomplete credentials .

- 1. The admin follows the Main Success scenario# 1-10.
- 2. The system will display a message: “Please fill up all fields”.
- 3. The admin exits the “Records” page thus ending the use case

E.2. The administrator has no existing, certified, and valid administrator account.

- 1. The administrator follows the Main Success scenario# 1 -2 .
- 2. The administrator has no existing and working administrator account.
- 3. The administrator exits the database login form thus ending the use case.

UI (User Interface) Requirements

- Database system

Nonfunctional Requirements (optional)

- Fast authentication feature
- Verification feature
- Timestamp for the newly created account
- Timestamp for the administrator login.

Use Case Diagram	Reference Number: <i><<23>></i>
	Version Number: <i><<v1.0.>></i>
System Name: <i>Jitensha</i>	

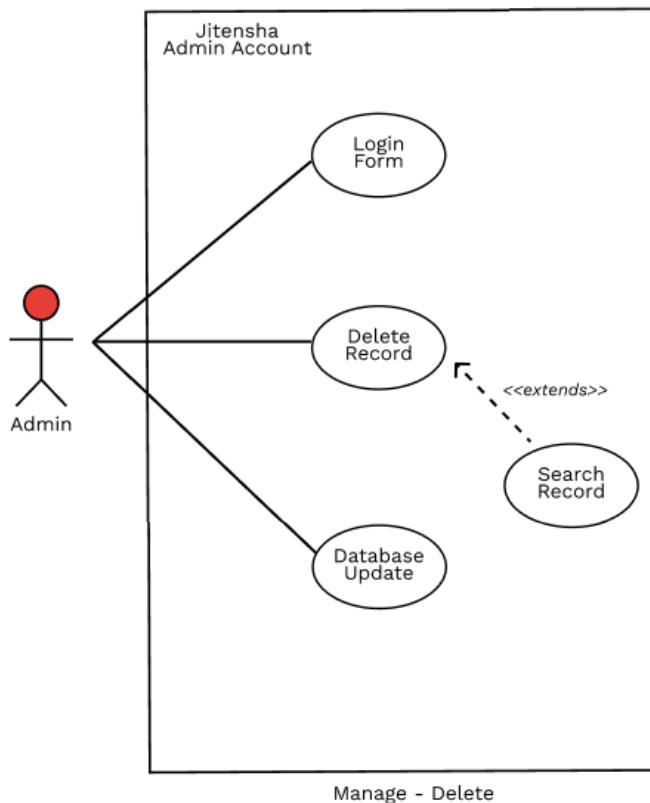


Figure 4.23

Title: Administrator Account - Delete

Summary: This use case describes the steps needed to delete records.

Actors:

1. Admin - the one who maintains and manages the page.

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Tucay, Gabriel T.

Flow of Events

Preconditions

1. The admin has an existing account.
2. The admin wants to delete records.
3. The admin wants to search records.
4. The admin wants to update the database.

Main Success Scenario

1. The admin opens the website - Jitensha.
2. The admin clicks the login form.
3. The admin logins their account.
4. The admin clicks the “Read Records” button.
5. The admin is redirected to the records.
6. The admin sees the records of all users.
7. The admin searches for record/s.
8. The admin is shown the specific searched records.
9. The admin is shown the detailed record.
10. The admin selects “Delete”.
11. The system will generate a confirmation message “Are You Sure You Want to Delete?”
12. The admin confirms; click “Yes”.
13. The system generates a successful message; “Successfully Deleted”.

Alternative Sequences:

A.1 The admin entered the wrong credentials for the login feature.

1. The user follows the Main Success scenario#1- 3
2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The admin re-enters the correct username and password credentials.
 - b. The system accepts and recognizes the account.
 3. The use case continues at Main Success scenario# 4.

A.2. The admin searched with wrong credentials of the user.

1. The admin follows the Main Success scenario# 1- 7.
2. The system emits an error message: “No record found.”
 - a. The admin re-enters the right credentials.
 - b. The admin clicks search.

- c. The system recognizes the inputted data .
3. The use case continues at Main Success scenario# 9.

A.3 The admin clicks “No” in the confirmation message.

1. The admin follows the Main Success scenario# 1-10.
2. The system will generate a confirmation message “Are you sure you want to delete?”
- a. The admin confirms and clicks “Yes”.
- b. The admin clicks search.
- c. The system recognizes the inputted data .
3. The use case continues at Main Success scenario# 13.

Error Sequences:

E.1. The admin searches for non-existing account

1. The admin follows the Main Success scenario# 1-7.
2. The system will display a message: “No record found”.
3. The admin exits the “Records” page thus ending the use case

E.2. The administrator has no existing, certified, and valid administrator account.

1. The administrator follows the Main Success scenario# 1 -2 .
2. The administrator has no existing and working administrator account.
3. The administrator exits the database login form thus ending the use case.

UI (User Interface) Requirements

- Database system

Nonfunctional Requirements (optional)

- Fast authentication feature
- Verification feature
- Timestamp for the administrator login.

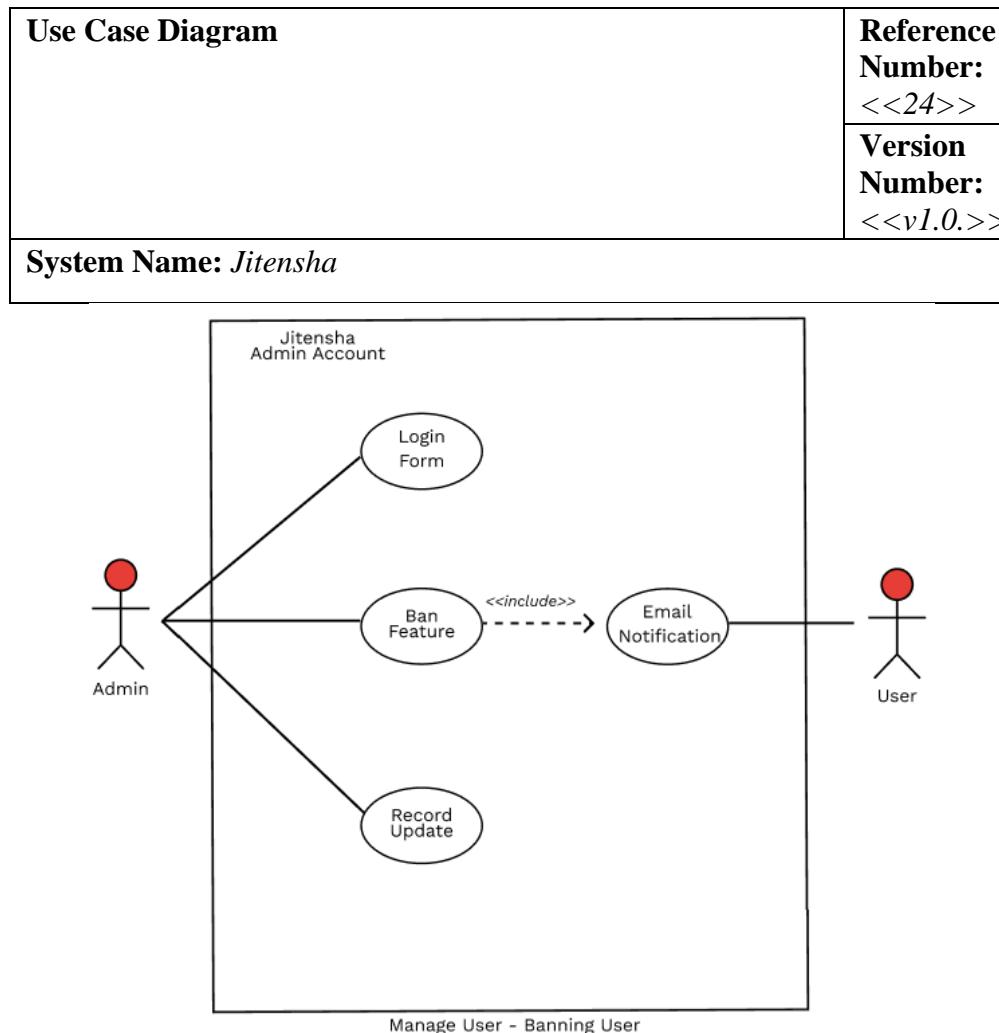


Figure 4.24

Title: *Manage Page -Ban User Account - Admin account*

Summary: This use case describes the steps needed in order to ban an account..

Actors:

1. Admin - the one who maintains and manages the page.

Creation Date: 22/02/ 2022 **Date of Update:** 22/03 / 2022

Version: v1.0

Person in Charge: Tucay, Gabriel T.

Flow of Events

Preconditions

1. The admin has an existing account.
2. The admin wants to ban an account.
3. The admin wants to deliver email notification to banned account/s .
4. The admin wants to update the record.

Main Success Scenario

1. The admin opens the website - Jitensha.
2. The admin clicks the login form.
3. The admin logins their account.
4. The admin clicks the “Read Records” button.
5. The admin is redirected to the records.
6. The admin sees the records of all users.
7. The admin searches for record/s.
8. The admin is shown the specific searched records.
9. The admin is shown the detailed record.
10. The admin selects “Ban Account”.
11. The system will generate a confirmation message “Are you sure you want to ban this account?”.
12. The admin confirms; click “Yes”
13. The system generates a success message: “Successfully banned”.
14. The system will automatically send a banning email notification.

Alternative Sequences:

A.1 The admin entered the wrong credentials for the login feature.

1. The user follows the Main Success scenario#1- 3
 2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The admin re-enters the correct username and password credentials.
 - b. The system accepts and recognizes the account.
 3. The use case continues at Main Success scenario# 4.
- The use case continues at Main Success scenario# 4. a

A.2. The admin searched with wrong credentials of the user.

1. The admin follows the Main Success scenario# 1- 7.
2. The system emits an error message: “No Record Found.”
 - a. The admin re-enters the right credentials.
 - b. The admin clicks search.
 - c. The system recognizes the inputted data .
 3. The use case continues at Main Success scenario# 9.

A.3 The admin clicks “no” in confirmation message

1. The admin follows the Main Success scenario# 1-10.
2. The system will generate a confirmation message “Are you sure you want to ban this account?”
 - a. The admin confirms and clicks “Yes”.
 - b. The system recognizes the inputted data .
 3. The use case continues at Main Success scenario# 13.

Error Sequences:**E.1. The admin searches for non-existing account**

1. The admin follows the Main Success scenario# 1-7.
2. The system will display a message: “No Record Found”.
3. The admin exits the “Records” page thus ending the use case.

E.2. The administrator has no existing, certified, and valid administrator account.

1. The administrator follows the Main Success scenario# 1 -2 .
2. The administrator has no existing and working administrator account.
3. The administrator exits the database login form thus ending the use case.

UI (User Interface) Requirements

- Database system

Nonfunctional Requirements (optional)

- Fast authentication feature
- Verification feature
- Timestamp for the administrator login.

Use Case Diagram	Reference Number: <<25>>
	Version Number: <<v1.0.>>
System Name: <i>Jitensha</i>	

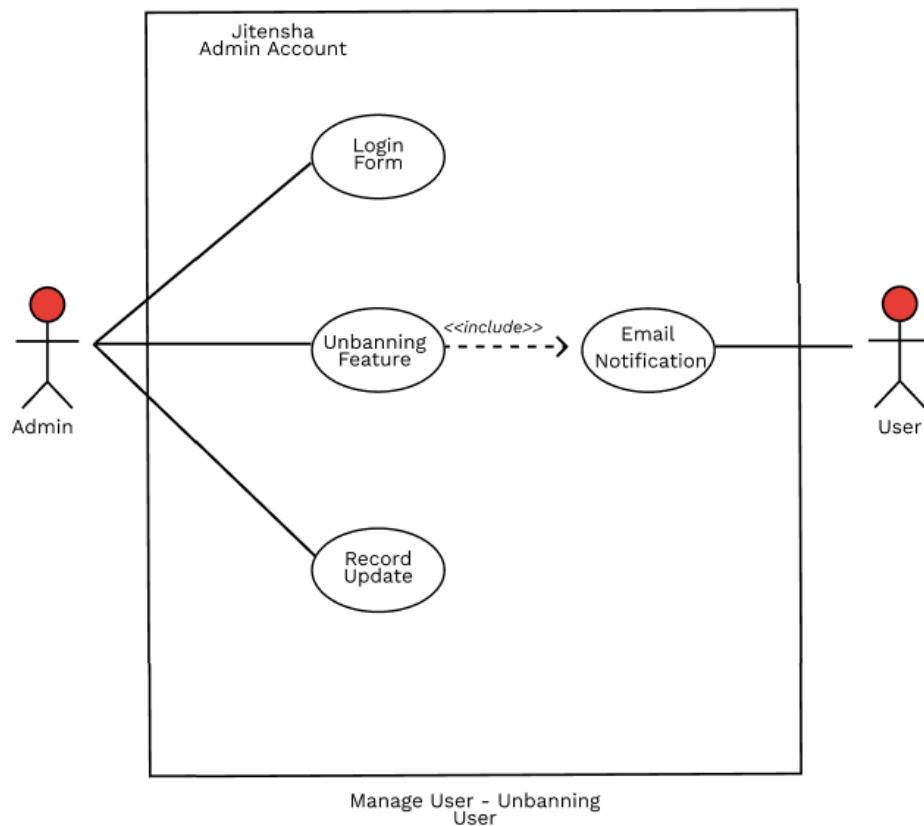


Figure 4.25

Title: Manage Page - Unban User Account - Admin account

Summary: This use case describes the steps needed in order to unban an account..

Actors:

1. Admin - the one who maintains and manages the page.

Creation Date: 22/02/ 2022 ***Date of Update:*** 22/03 / 2022

Version: v1.0

Person in Charge: Tucay, Gabriel T.

Flow of Events

Preconditions

1. The admin has an existing account.
2. The admin wants to unban an account.
3. The admin wants to deliver email notification to unbanned account/s .
4. The admin wants to update the record.

Main Success Scenario

1. The admin opens the website - Jitensha.
2. The admin clicks the login form.
3. The admin logins their account.
4. The admin clicks the “Read Records” button.
5. The admin is redirected to the records.
6. The admin sees the records of all users.
7. The admin searches for record/s.
8. The admin is shown the specific searched records.
9. The admin is shown the detailed record.
10. The admin selects “Unban Account”.
11. The system will generate a confirmation message “Are you sure you want to unban this account?”.
12. The admin confirms; click “Yes”
13. The system generates a success message: “Successfully unbanned”.
14. The system will automatically send a banning email notification.

Alternative Sequences:

A.1 The admin entered the wrong credentials for the login feature.

1. The user follows the Main Success scenario#1- 3
2. The system emits an error message: “Invalid Username/ Email and Password.”
 - a. The admin re-enters the correct username and password credentials.
 - b. The system accepts and recognizes the account.
 3. The use case continues at Main Success scenario# 4.

A.2. The admin searched with wrong credentials of the user.

1. The admin follows the Main Success scenario# 1- 7.

2. The system emits an error message: "No Record Found."
 - a. The admin re-enters the right credentials.
 - b. The admin clicks search.
 - c. The system recognizes the inputted data .
3. The use case continues at Main Success scenario# 9.

A.3 The admin clicks "No" in the confirmation message.

1. The admin follows the Main Success scenario# 1-10.
2. The system will generate a confirmation message "Are you sure you want to unban this account?"
 - a. The admin confirms and click "Yes"
 - b. The system recognizes the inputted data .
3. The use case continues at Main Success scenario# 13.

Error Sequences:

E.1. The admin searches for non-existing account

1. The admin follows the Main Success scenario# 1-7.
2. The system will display a message: "No Record Found".
3. The admin exits the "Records" page thus ending the use case

E.2. The administrator has no existing, certified, and valid administrator account.

1. The administrator follows the Main Success scenario# 1 -2 .
2. The administrator has no existing and working administrator account.
3. The administrator exits the database login form thus ending the use case.

UI (User Interface) Requirements

- Database system

Nonfunctional Requirements (optional)

- Fast authentication feature
- Verification feature
- Timestamp for the administrator login.
- Timestamp for the administrator login.

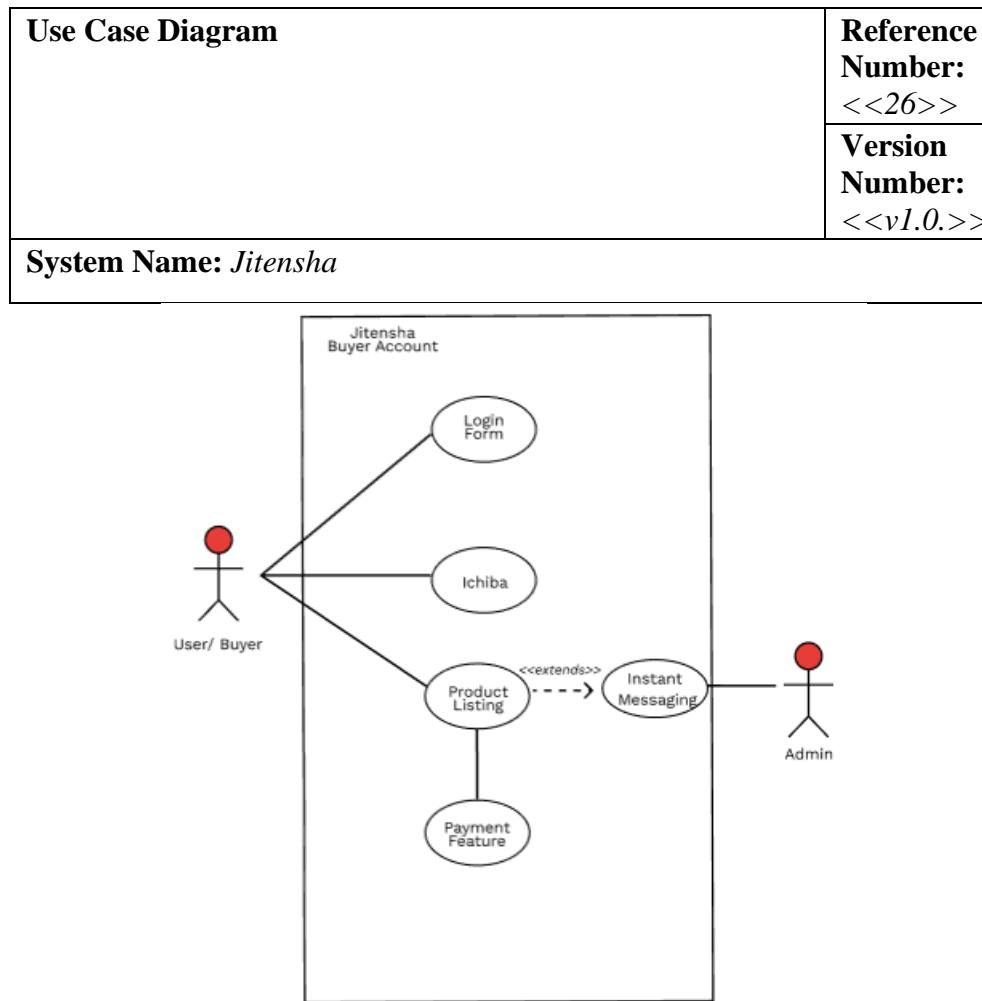


Figure 4.26

Title: Ichiba - Payment Feature (Buyer Account)

Summary: This use case describes the steps needed to use the payment feature successfully in Ichiba.

- **Actors:**

1. User/ Buyer - The one who wants to purchase an item in Ichiba.
2. User/ Seller- The one who owns the item listed for sale in Ichiba.

Creation Date: 09/07/ 2022 **Date of Update:** 09/07/ 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

○ **Preconditions:**

1. The buyer already has an existing account.
2. The buyer already has a verified account for selling and buying (separate verification).
3. The buyer wants to purchase an item in Ichiba.
4. The buyer can access Ichiba.
5. The buyer has access to their registered email address and phone number.
6. The product is a valid existing listing.

Main Success Scenario:

1. The buyer opens the website - Jitensha.
2. The buyer logins their account.
3. The buyer clicks the Ichiba feature.
4. The buyer sees the listing he/ she wants.
5. The buyer clicks on the listing.
6. The buyer decides to purchase the item.
7. The buyer clicks “Pay Now”
8. The buyer is met with the Payment feature interface.
9. The buyer chooses the mode of payment currently available.
10. The buyer corresponds to the details needed in the forms presented.
11. The payment goes through and the product listed is now sold.
12. The system now lists it as “Sold” or the quantity of the item is reduced; an update of the listing is done.
13. The buyer receives an email containing the order i.e. product purchased, billing information, and shipping address.
14. The buyer closes the feature and waits for updates in the tracker and from the seller.

Alternative Sequence:

A.1. The buyer did not login his./ her account first.

1. The buyer opens the website - Jitensha.
2. The buyer clicks the Ichiba feature.

3. The buyer is met with an error message: "You need a verified-seller account to access this feature. Please login your account if you have.".
4. The buyer goes back and logs his/ her account.

A.2. The buyer uses the search bar in Ichiba to find the wanted listing.

1. The buyer follows Main Success scenario #1-3.
2. The buyer cannot find the listing he/ she wants.
- a. The buyer uses the search bar to find the listing he/ she wants.
3. The buyer sees the listing he/ she wants.
4. The use case follows the Main Success scenario #5-14.

A.3. The buyer used the filter feature in Ichiba to find the wanted listing.

1. The buyer follows Main Success scenario #1-3.
2. The buyer cannot find the listing he/ she wants.
- a. The buyer uses the filter bar to find the listing he/ she wants.
- b. The buyer clicks the desired filter e.g. price, brand, part, etc.
- c. The buyer clicks the "Find" button.
- d. The system and website emits the filtered result.
3. The buyer sees the listing he/ she wants.
4. The use case continues at Main Success scenario #5.

A.4. The user wants to contact the admin first before purchasing the concerned item.

1. The buyer follows Main Success scenario #1-5.
2. The buyer wants to contact the admin first before purchasing the concerned item.
 - a. The buyer clicks the "Message" button.
 - b. The buyer is redirected to the instant messaging feature.
 - c. The buyer chats the admin for inquiries regarding the item.
 - c.a. The buyer's message was not sent.
 - c.b. The user clicks the message and clicks "Resend Message".
 - d. The system sends out a notification to the admin dashboard regarding the message.
 - e. The admin receives the message and replies.
2. The conversation details and content are stored in the database.
3. The use case continues at Main Success scenario #6

Error Sequence

E. 1. The user is not verified.

1. The user follows Main Success scenario #1-3.
2. The user is met with an error message: "You are not a verified seller and buyer yet, please verify first in order to sell.".
3. The user exits the feature thus ending the use case.

Post Conditions

1. The user - buyer - was able to purchase the item successfully.

UI (User Interface) Requirements:

- User Account (with seller and buyer verification)
- User Interface is connected to the Jitensha System
- Ichiba interface
- Payment Feature
- Instant Messaging
- Login form

○ Non-Functional Requirements (optional)

- Fast response time of request and dispatching.
- Immediate and automatic update in the respective records.
- Fast sending of email notification and text notification.
- All conversation details are safely stored in the database including the timestamps i.e. chat started and chat ended.
- Fast logging and authentication of the user when using the login feature

Use Case Diagram	Reference Number: "><<27>>
	Version Number: "><<v1.0.>>
System Name: <i>Jitensha</i>	

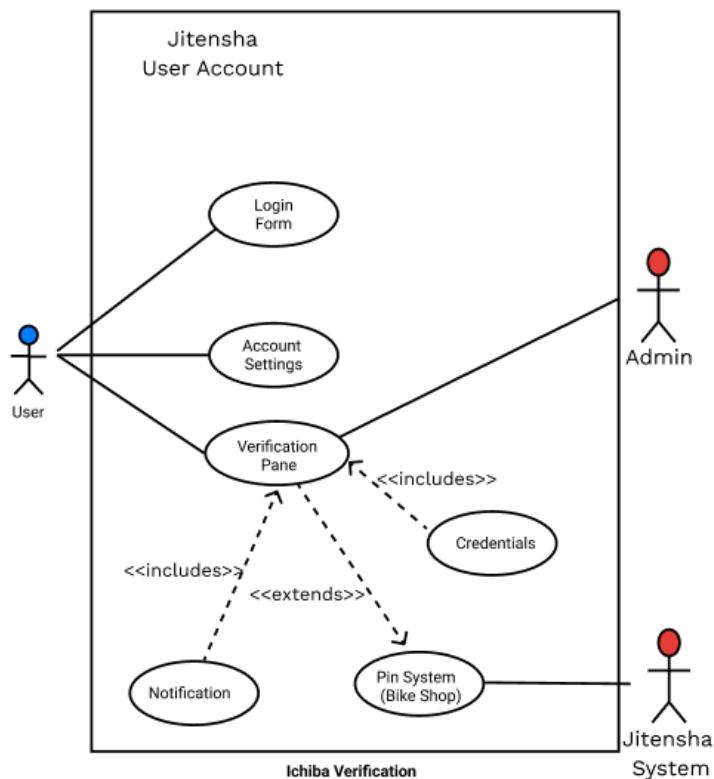


Figure 4.27

Title: Ichiba – Verification of Account

Summary: This use case describes the steps needed to use the payment feature successfully in Ichiba.

o o Actors:

1. User - The one who wants to verify the account in order to use Ichiba.
2. Admin- The one who will verify the user.
3. Jitensha System- this will only be activated if the user verifies as a bike shop.

Creation Date: 16/11/ 2022 **Date of Update:** 16/ 11 / 2022

Version: v1.0

Person in Charge: Rostrata, Marc Dominic C.

Flow of Events

o o Preconditions:

1. The user wants to use the Ichiba feature i.e. selling and buying from the marketplace.
2. The user has a verified account upon registration.

Main Success Scenario:

1. The user logs in the verified account.
2. The user clicks the “Account Settings”
3. The user clicks the “Verify Account”
4. The user is redirected to the verification pane.
5. The user is prompted to choose what kind of user he/she is registering as.
6. The user clicks the appropriate field: bike shop or a normal user.
7. The user inputs the needed credentials per type of user.
8. The user submits the data.
9. The admin receives the data in the dashboard.

10. The admin reviews the submitted requirements.
11. The admin approves the submitted requirements.
12. The system sends a notification of approval.
13. The user is now able to use the Ichiba feature for selling or buying.

Alternative Sequence:

A1. The user inputs the wrong credentials upon login.

1. The user inputs the credentials in the login form.
2. The system rejects it due to the wrong credentials inputted.
3. The user is prompted to re-input the credentials again.
4. The system accepts the inputted credentials.
5. The use case continues at Main Success Scenario #2.

A.2. The admin rejected the submitted requirements by the user.

1. The user follows the Main Success Scenario#1 -9
2. Tha admin rejected the submitted credentials.
3. The system renders a notification: the proposal was declined.
4. The user resubmits the proper credentials.
5. The use case continues at Main Success Scenario#10.

Error Sequence

E.1. The user has no existing surface level verified account.

1. The user inputs the credentials.
2. The system returns an error: no account under this email.

3. The user closes the UI thus ending the use case.

E.2. The user has an existing verified account.

1. The user follows Main Success Scenario#1-3.

2. The user sees that his/her account is already verified.

3. The user sees the submitted requirements from before.

4. The user has a verified account thus ending the use case.

Post Conditions

UI (User Interface) Requirements:

- . User Account (with basic level of verification)
 - . User Interface is connected to the Jitensha System
 - . Ichiba interface
 - . Verification Feature
 - . Admin Dashboard
 - . Login form
- o Non-Functional Requirements (optional)
- . Fast response time of request and dispatching.
 - . Immediate and automatic update in the respective records.
 - . Fast sending of notification of approval or denial.
 - . Fast logging and authentication of the user when using the login feature

Activity Diagram

<i>Activity Diagram of the Reference #1 and 2 Use Case</i>	Reference Number: <i><<#1>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Log in>></i>	

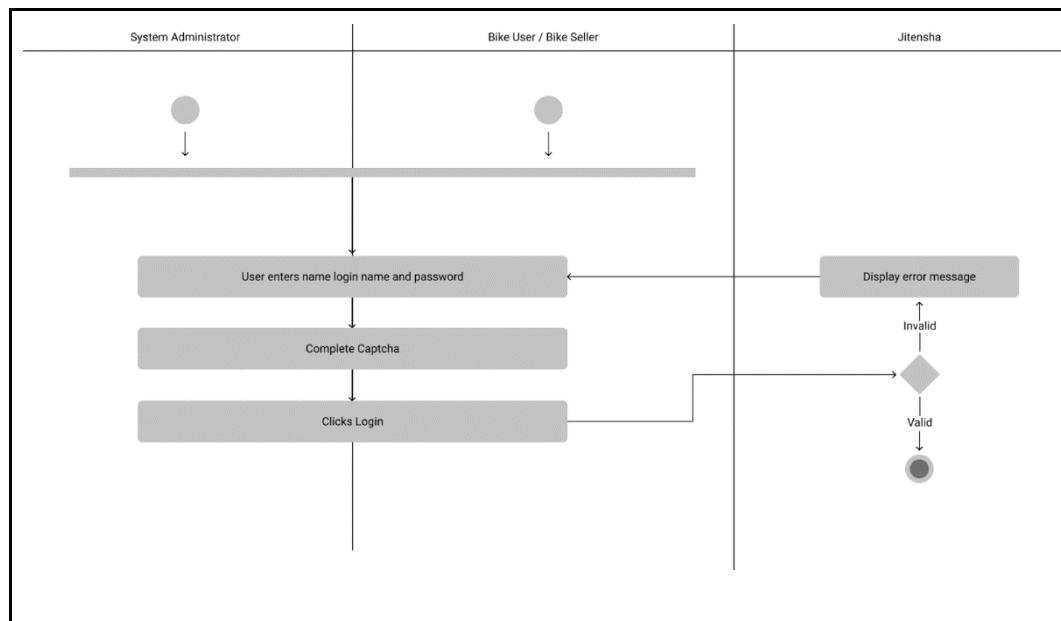


Figure 4.28

<i>Activity Diagram of the Reference# 3 Use Case</i>	Reference Number: <i><<#2>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Registration>></i>	

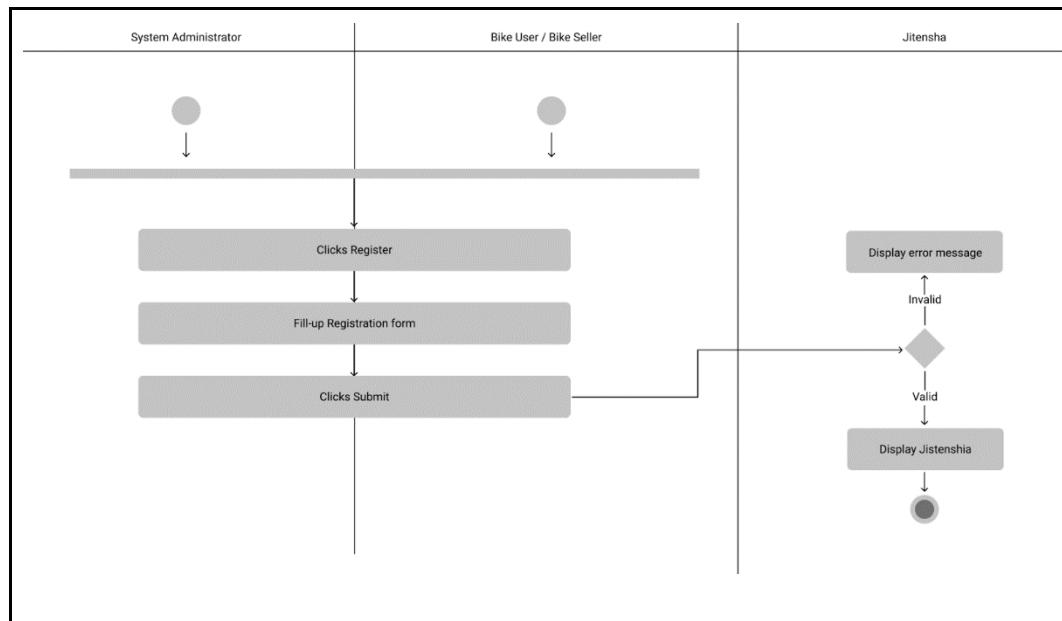


Figure 4.29

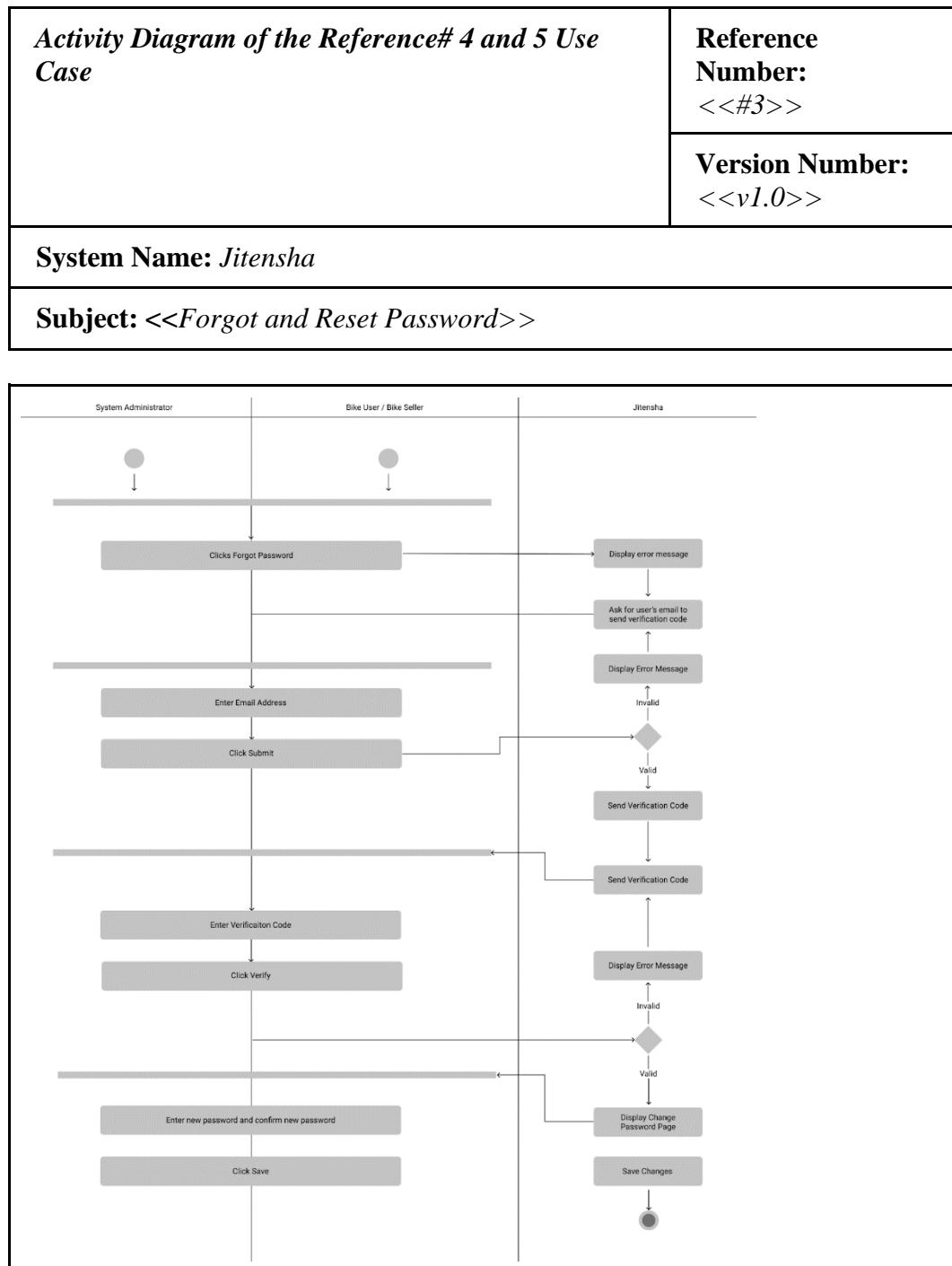


Figure 4.30

<i>Activity Diagram of the Reference# 6, 7, and 8 Use Case</i>	Reference Number: <i><<#4>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Marketplace CRUD>></i>	

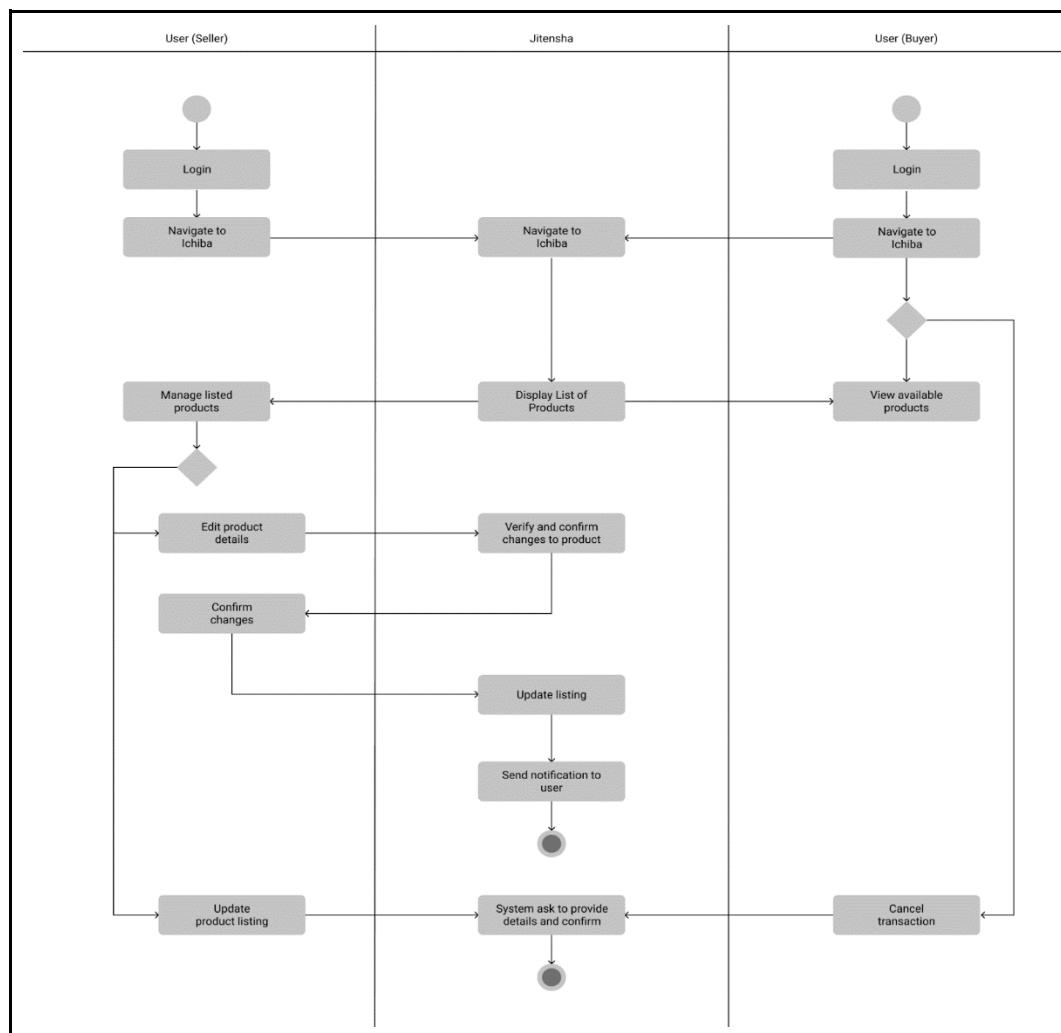


Figure 4.31

<p><i>Activity Diagram of the Reference# 9 Use Case</i></p>	Reference Number: <i><<#5>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Ichiba Instant Messaging>></i>	

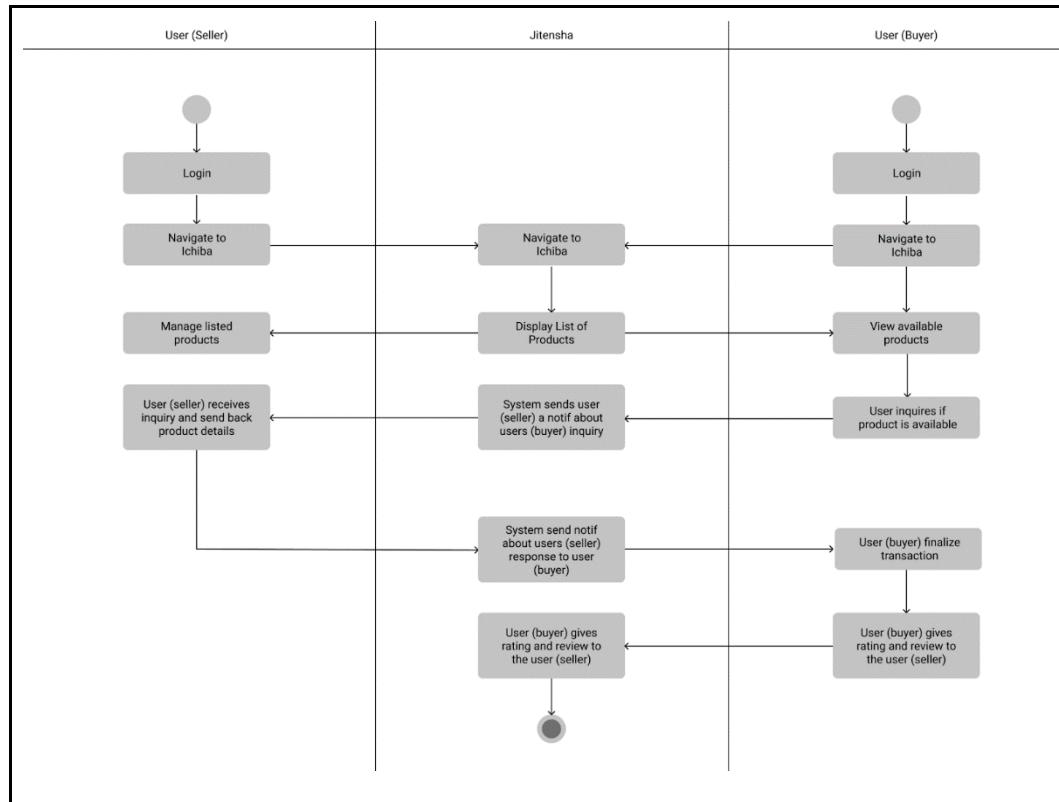


Figure 4.32

<i>Activity Diagram of the Reference# 10 and 11 Use Case</i>	Reference Number: <i><<#6>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Build and Bike without account>></i>	

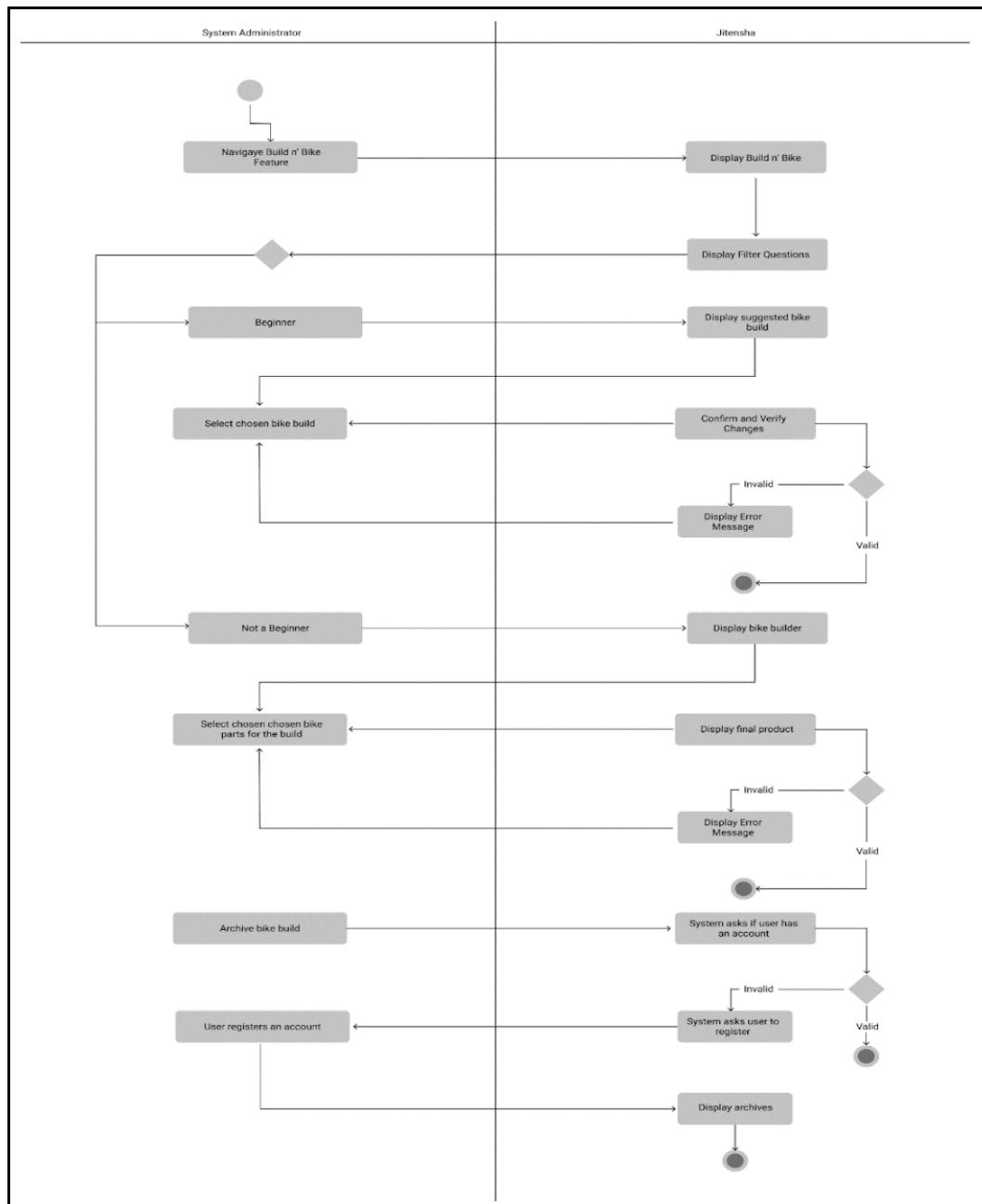


Figure 4.33

<i>Activity Diagram of the Reference# 12 Use Case</i>	Reference Number: <i><<#7>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Build and bike with account>></i>	

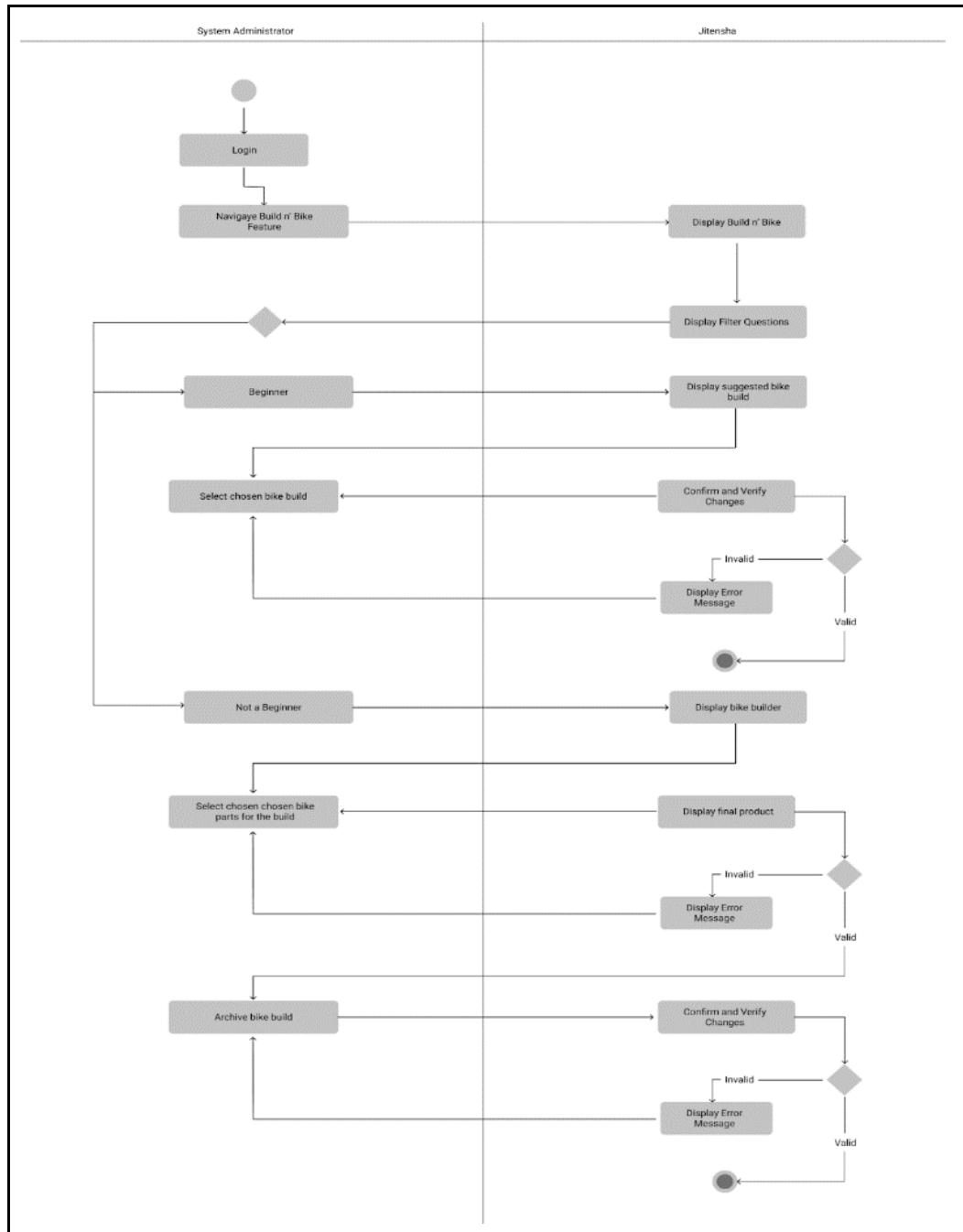


Figure 4.34

<i>Activity Diagram of the Reference# 13 Use Case</i>	Reference Number: <i><<#8>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Archive builds>></i>	

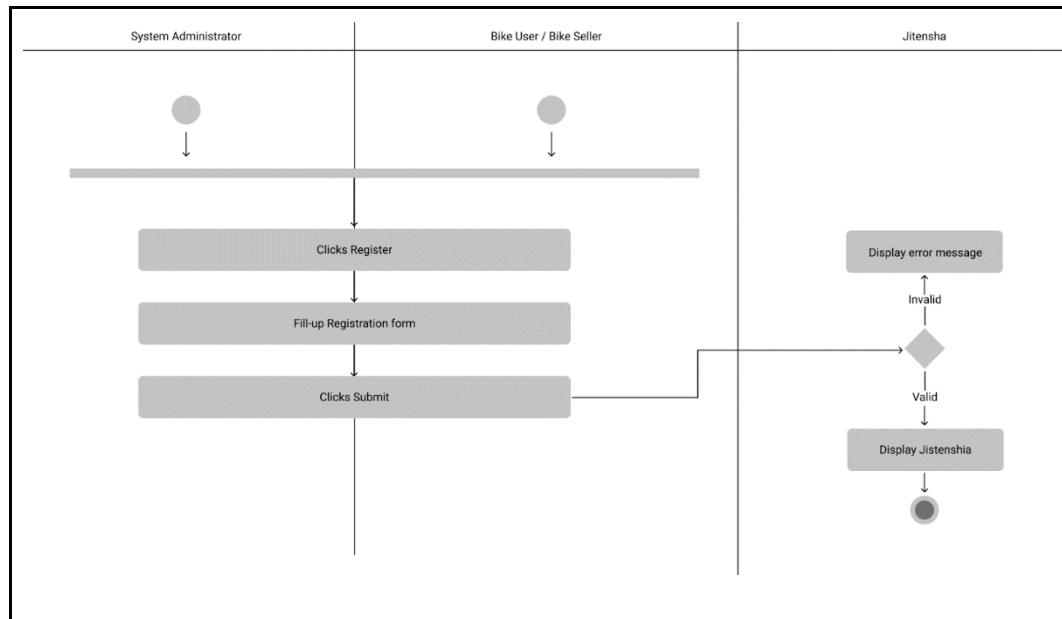


Figure 4.35

<i>Activity Diagram of the Reference# 13, 14, and 15 Use Case</i>	Reference Number: "><<#9>>
	Version Number: "><<v1.0>>
System Name: Jitensha	
Subject: <<Edit, Read, Delete of Archive Builds>>	

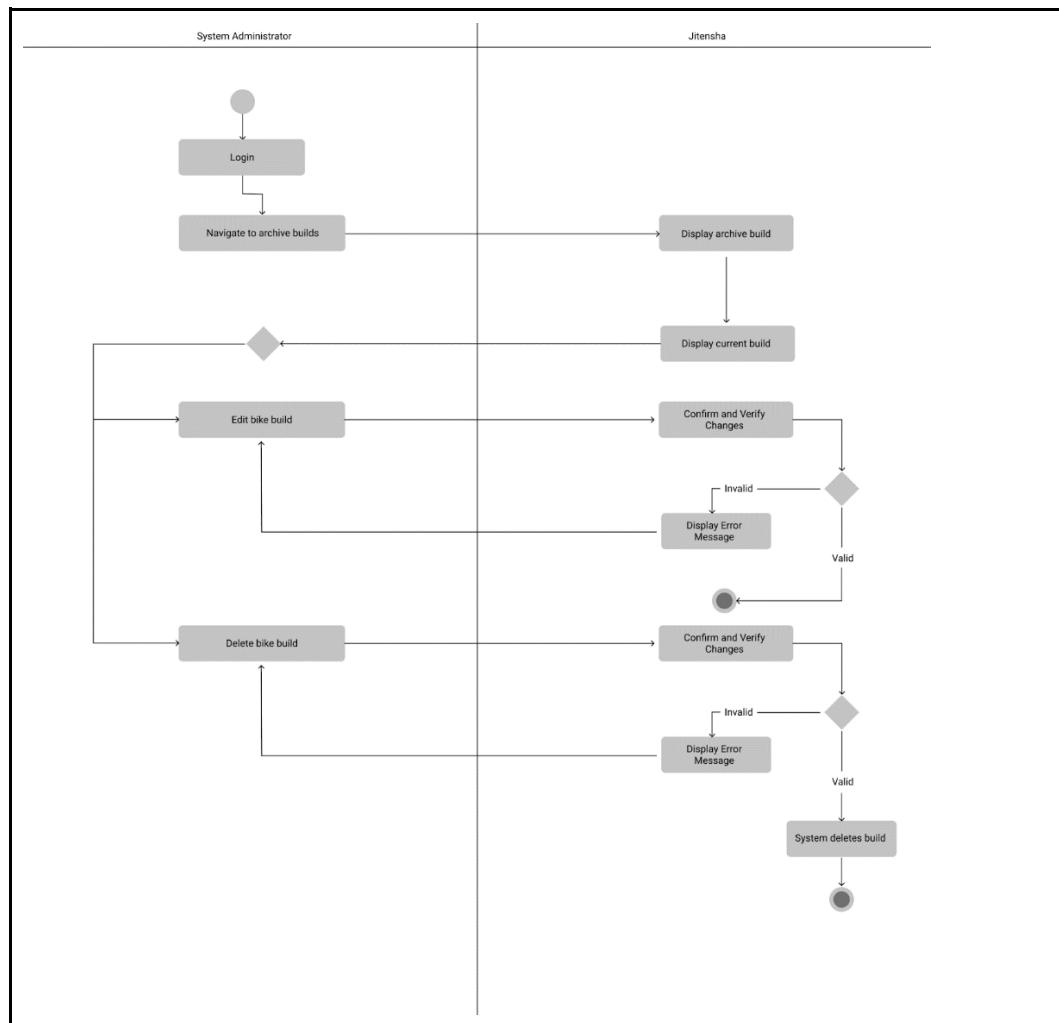


Figure 4.36

<i>Activity Diagram of the Reference# 16, 17, 18, 19, 20, and 21 Use Case</i>	Reference Number: <i><<#10>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<System Administrator>></i>	

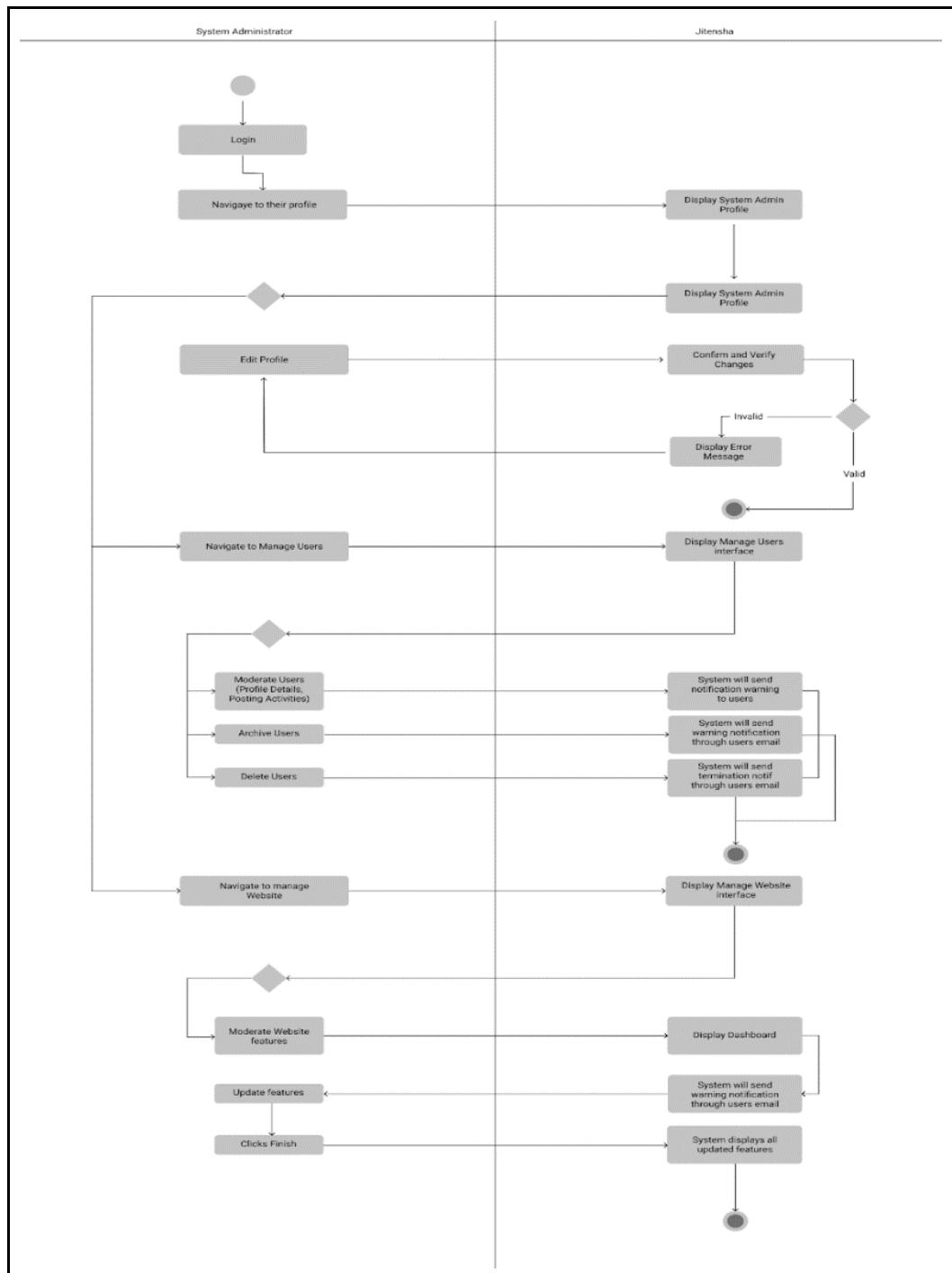


Figure 4.37

<i>Activity Diagram of the Reference# 22 Use Case</i>	Reference Number: <i><<#11>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Banning of Account>></i>	

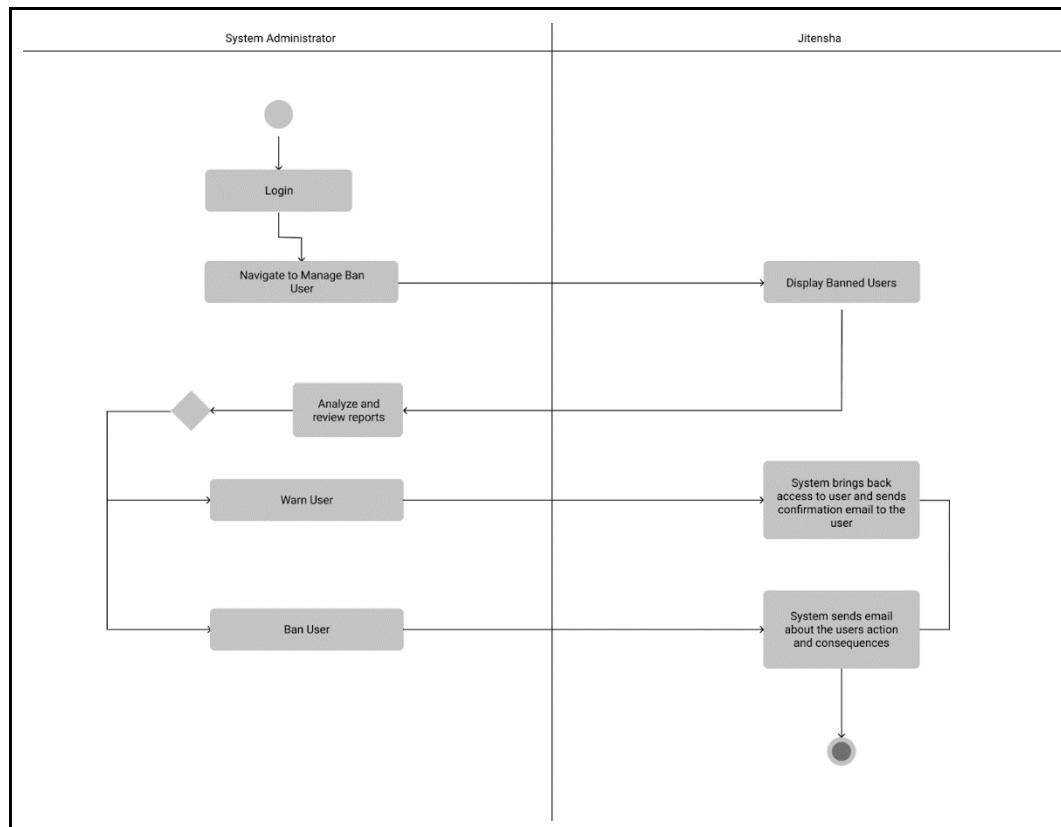


Figure 4.38

<i>Activity Diagram of the Reference# 23 Use Case</i>	Reference Number: <i><<#12>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Unbanning of Account>></i>	

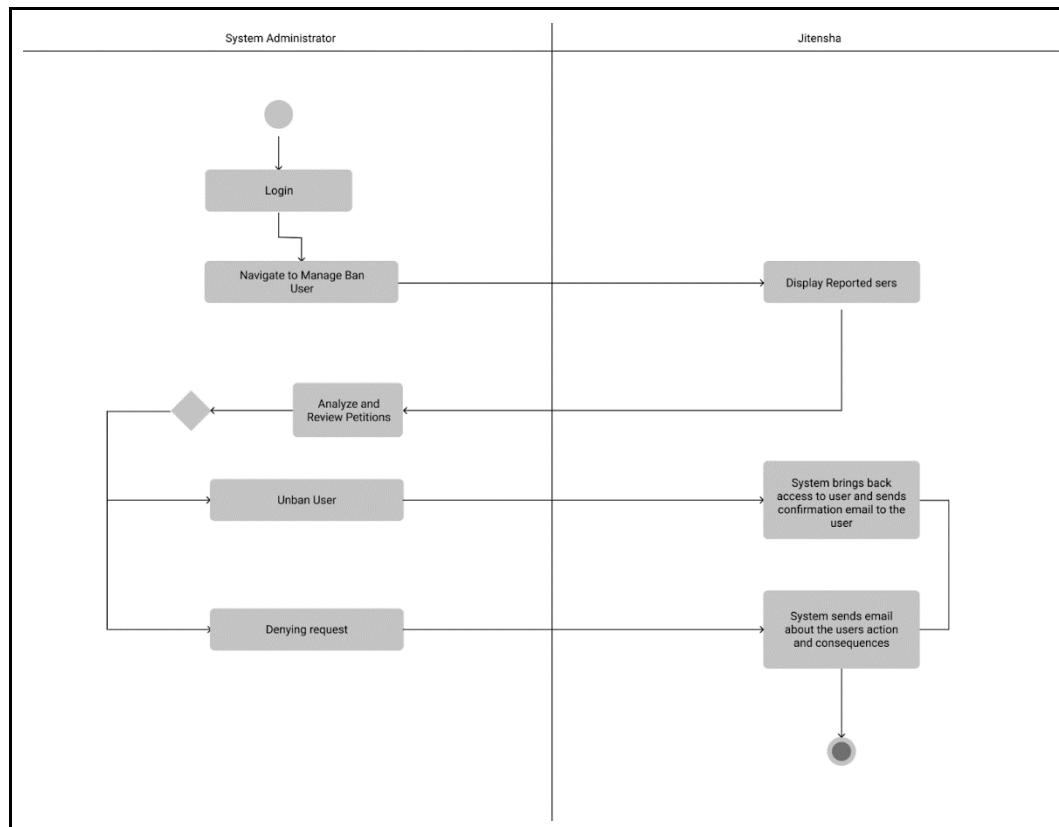


Figure 4.39

<i>Activity Diagram of the Reference# 24 Use Case</i>	Reference Number: <i><<#13>></i>
	Version Number: <i><<v1.0>></i>
System Name: <i>Jitensha</i>	
Subject: <i><<Payment Feature>></i>	

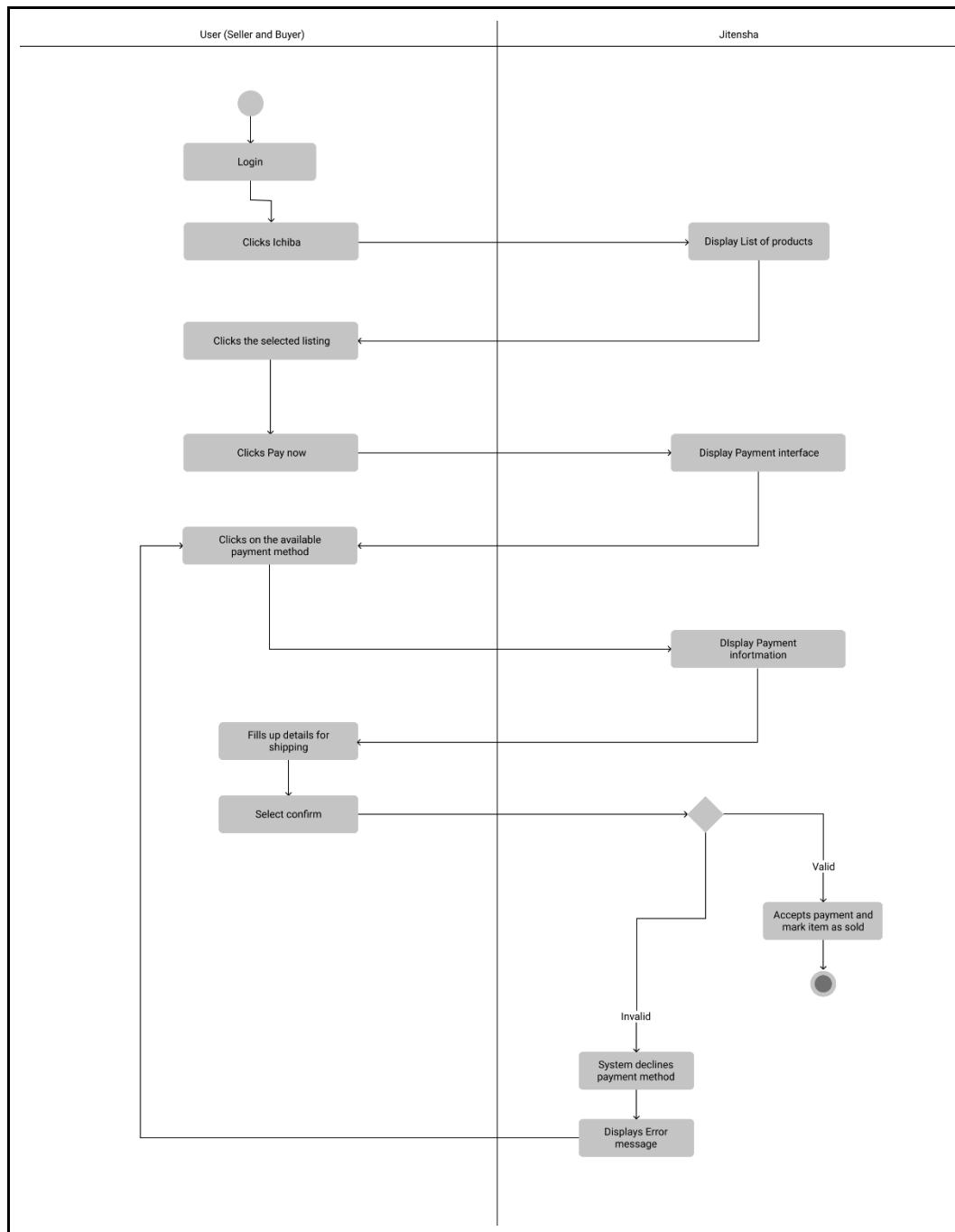


Figure 4.40

Description of Prototype

The developers created different features for the proposed system which includes: Login with Authentication, Registration, Forgot Password, Change Password, Build and Bike, Bike Shop Near Me, Bike Parts, Mechanics, and Ichiba. As for the system admin it includes: System Admin Dashboard, List of Shops, List of Users, List of Products that are posted in Ichiba, List of Purchase History, List of Withdrawals, List of Payments of the users, List of Transactions, List of FAQs, and List of Bike Parts where the system admin can add, edit, or delete an item for the Bike Parts Page.

Description of Prototype (Screenshots of the UI)

Landing Page/Home Page

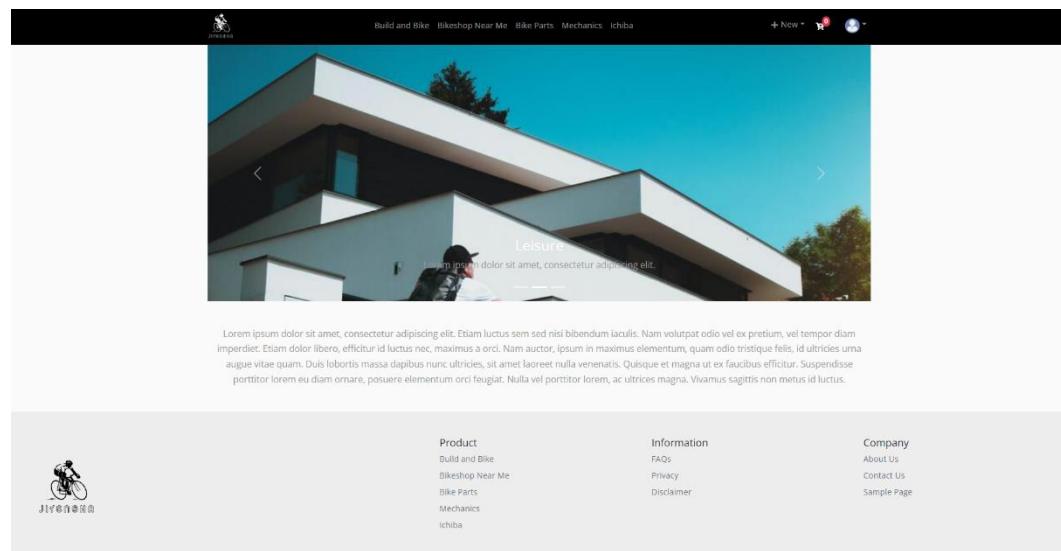


Figure 4.41 Landing Page

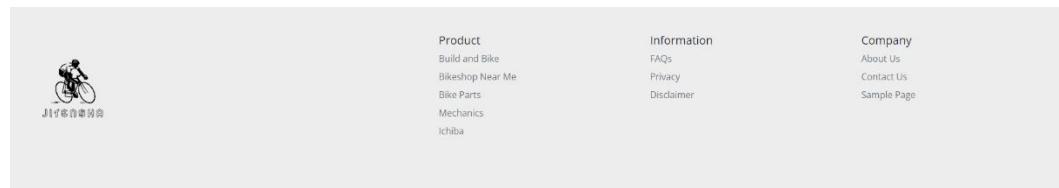


Figure 4.42 Footer

The image above is the landing page of the web based prototype “JITENSHA:The Usability of an Online Build a Bike Platform for Bike Users in NCR Plus.” One of the goals of JITENSHA is to give bike users, bike beginners to be specific, the opportunity to have a better understanding of having and building their own bike. The homepage shows JITENSHA’s objectives and goals while the footer shows information about the system as well as to help the user navigate.

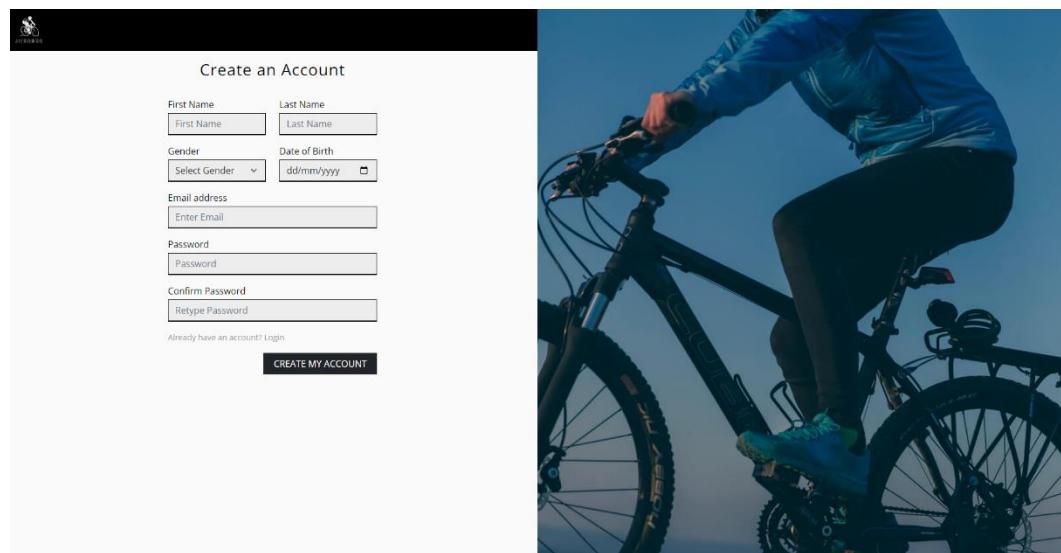


Figure 4.42 Registration

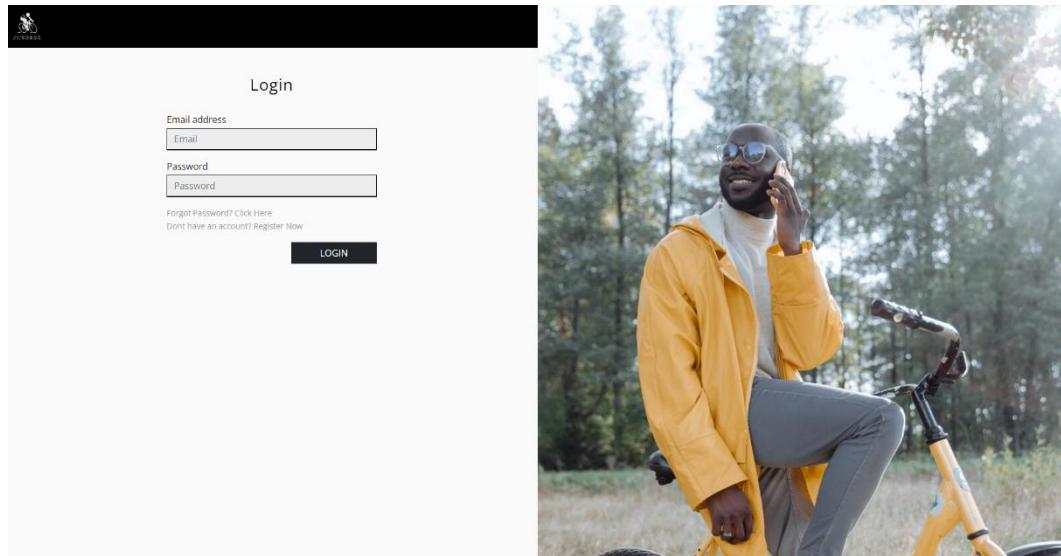


Figure 4.44 Login

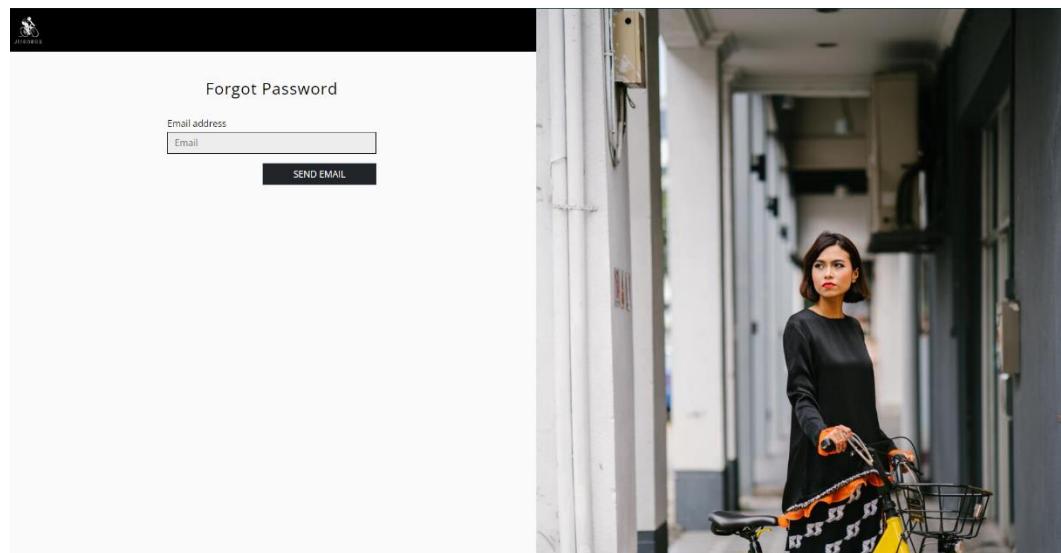


Figure 4.45 Forgot Password

As shown from the image above, we have the registration page, login page, and the forgot password page. The registration page is used for users to register or to create an account in order to login to the system. The login page is where the user can put their

unique username and password. Once the user is logged in, they can finally use the features of JITENSHA however the user must verify their account in order to post a listing in the Ichiba page. Lastly, we have the forgot password where the user can reset their password in case they forget. The user will be asked to input their email address and an instruction will be sent through their email where they can reset their password.

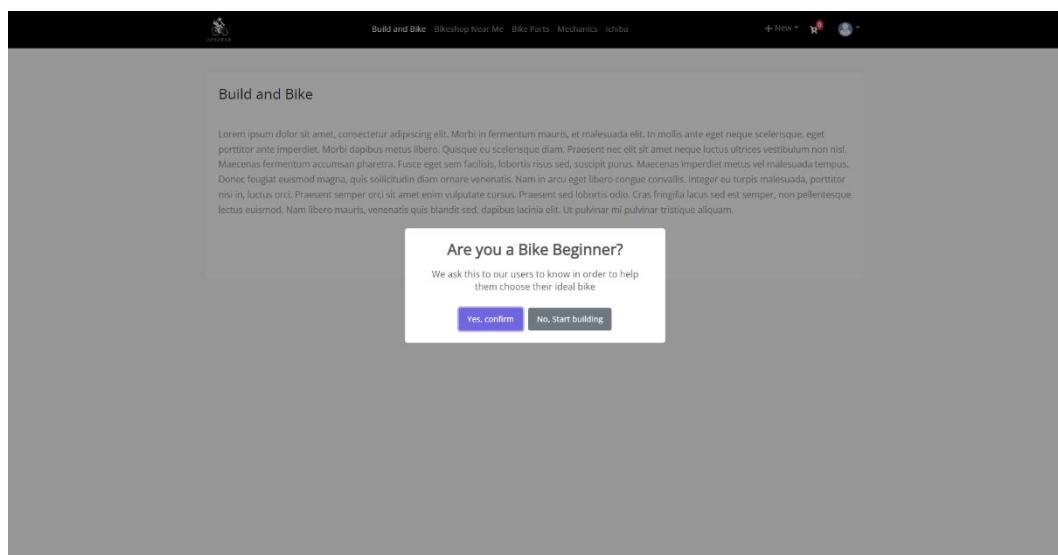


Figure 4.46 Build and Bike - Are you a Beginner

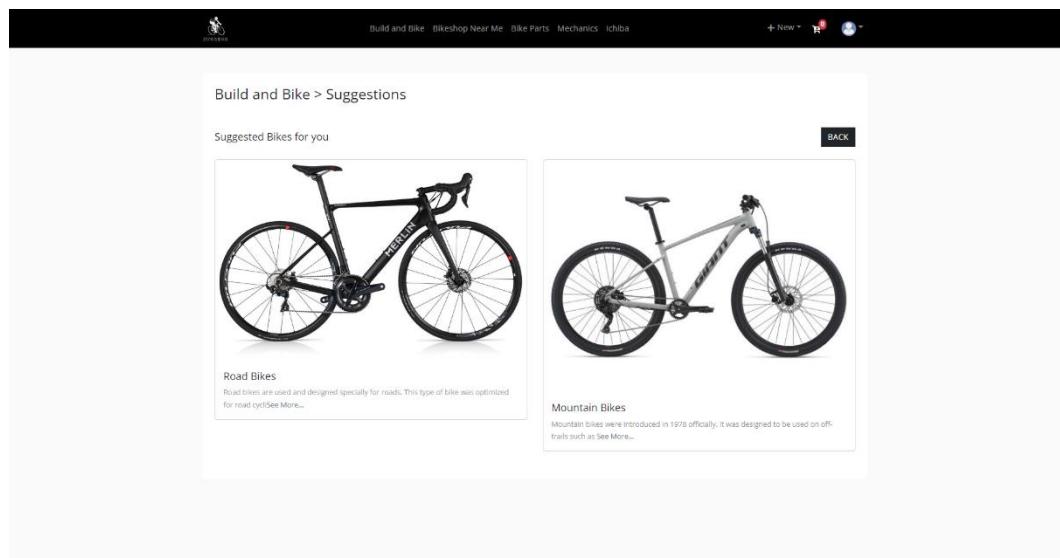


Figure 4.47 Build and Bike - questions answered

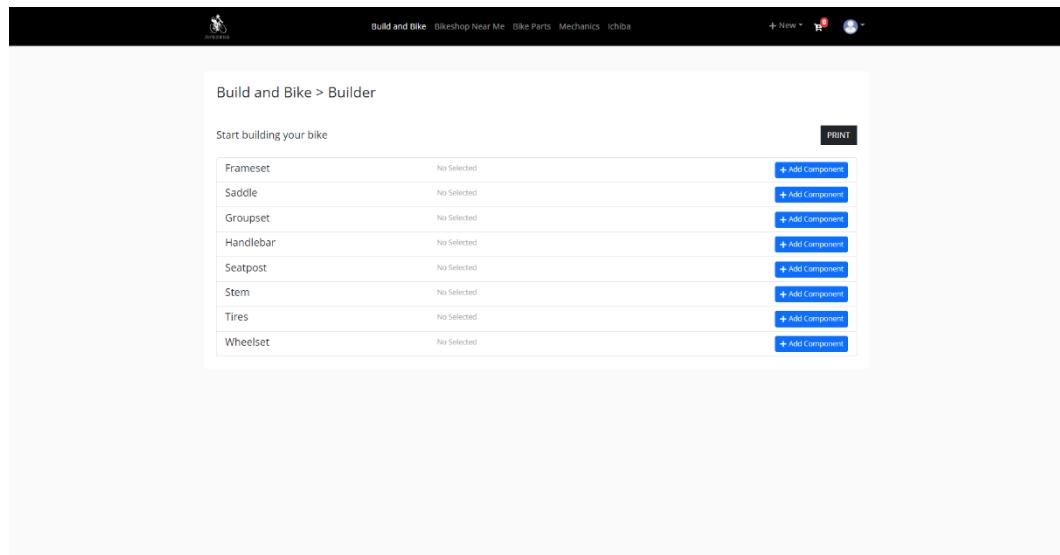


Figure 4.48 Build and Bike - if not a beginner

One of the features of JITENSHA is the Build and Bike where the user can build their own bike from scratch. However the user will be asked if he or she is a beginner. If the user is a beginner, the user will be asked questions on what kind of bike they are

looking for, their height and weight, what is the purpose in using the bike, etc. After answering the questions, the system will display suggested bikes for the user based on their answers from the questions. If the user is not a beginner, they can directly start building their own bike. The result of the fully built bike will be displayed after the user completed building their own bike.

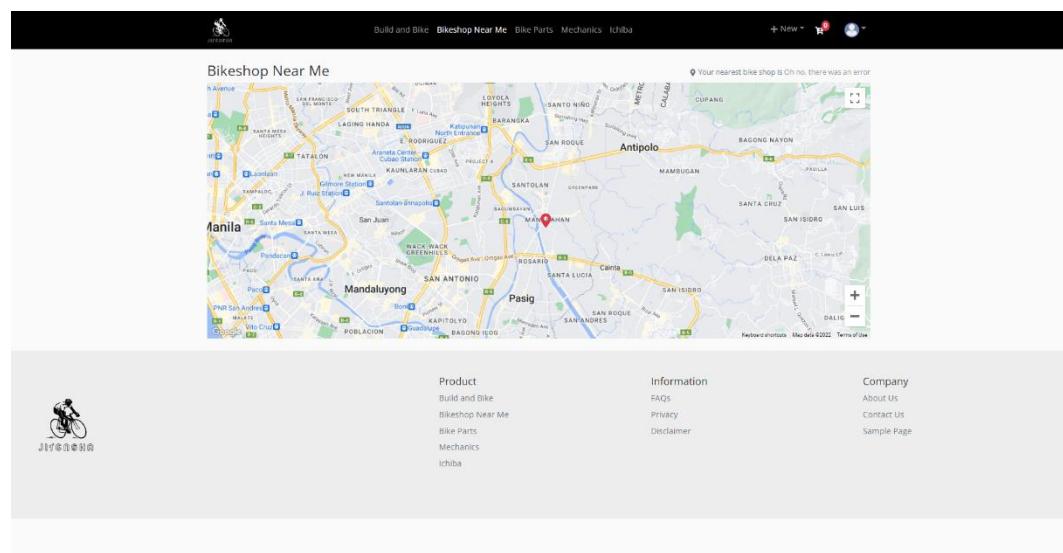


Figure 4.49 Bike Shop Near Me

The Bike Shop Near Me page shows the available bike shops near the area of the user. This is helpful if the user is looking for bike shops where they can check and buy parts for their bike.

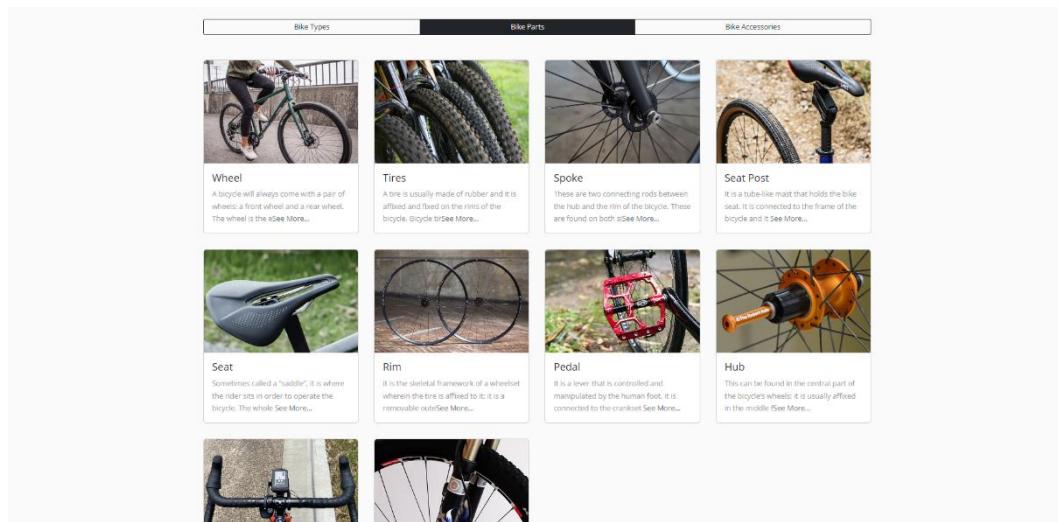


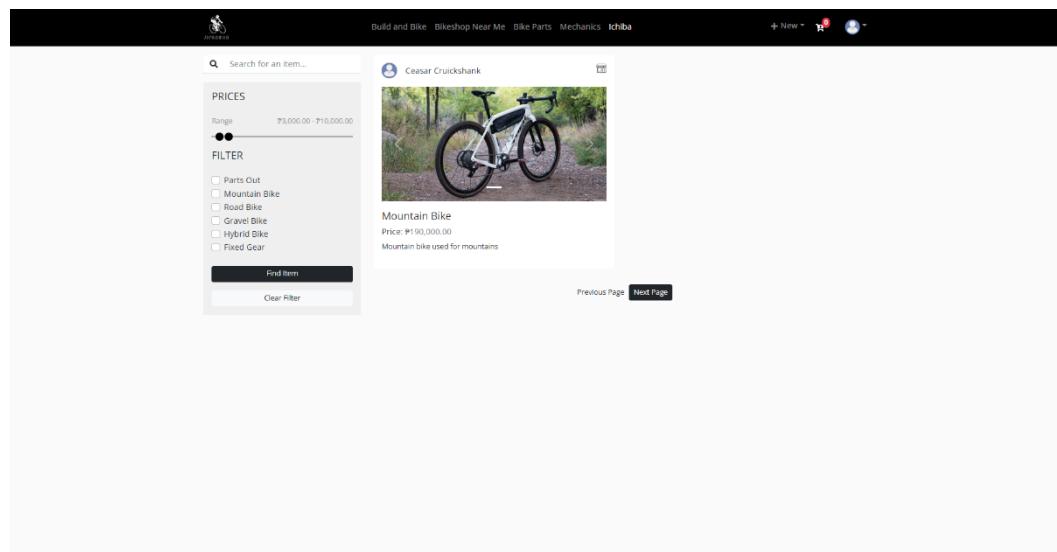
Figure 4.50 Bike Parts

The Bike Parts page shows the different parts and components of the bike and what it is used for. This will help the user to have a better understanding of each part of the bike. In this page the user can also check the types of bikes and bike accessories. The Bike Types page shows different kinds of bikes and what they are used for while the Bike Accessories page shows the accessories that the user can use for their bike.

This screenshot shows a website interface for a cycling resource. At the top, there are navigation links: Build and Bike, Bikeshop Near Me, Bike Parts, Mechanics, Ichiba, and a search bar. Below the header, the 'Mechanics' section is displayed. It includes a video thumbnail for 'GCN 30-Minute Bike Wash: How To Clean & Degrease Your Bike' with the text 'CLEAN YOUR BIKE IN 30 MINUTES'. To the right of the video, there is a description: 'This is a thorough bike wash that includes degreasing your drivetrain. It should take around 30 minutes. About once a week or so, your bike will need a thorough clean. By this we mean getting your bike on a stand, degreasing the drivetrain and thoroughly cleaning everything. Si shows you how to get your bike looking pretty much like new again.' Below the video, there is a 'Bike Tips' section with a thumbnail for 'Cycling Weekly' featuring a cyclist and the text 'Top 10 Common Mistakes and how to avoid them | Cycling Weekly'.

Figure 4.51 Mechanics

The Mechanics page shows tutorials on how the users can maintain their own bike and bike tips. This is very helpful and cost effective for the user because they won't have to go to a bike shop or bike mechanic to maintain their bikes.

*Figure 4.52 Ichiba*

The word *ichiba* means market and Japanese. The Ichiba is where the user can view bikes, parts and accessories that other users are selling. The users can search for the items that they wanted through the search feature. The sellers can create a listing, edit their listings and they can also delete their listings. However, the user must be verified if they want to buy or post a listing in Ichiba. The user can verify their account in the settings page under the verify account section.

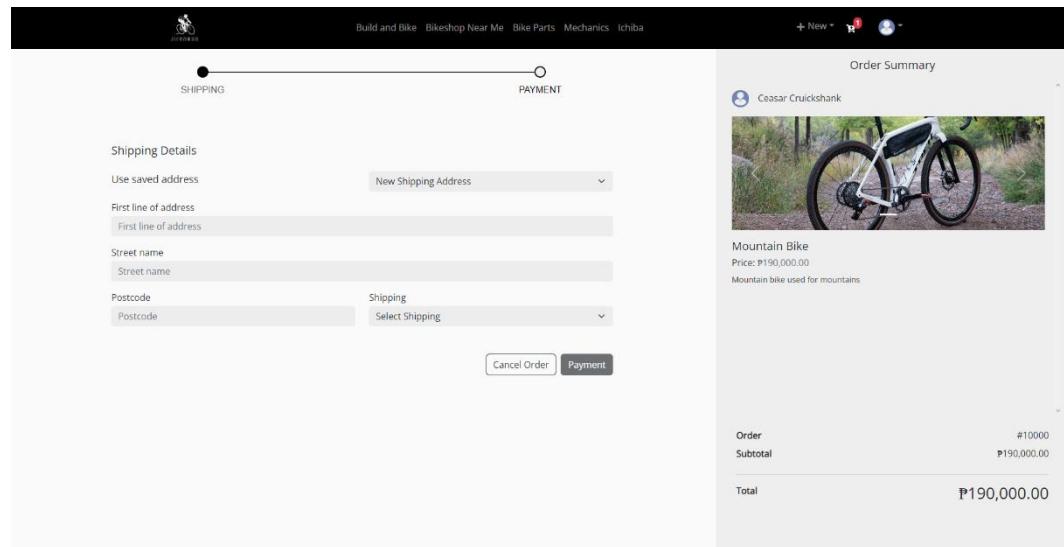


Figure 4.52 Checkout - shipping

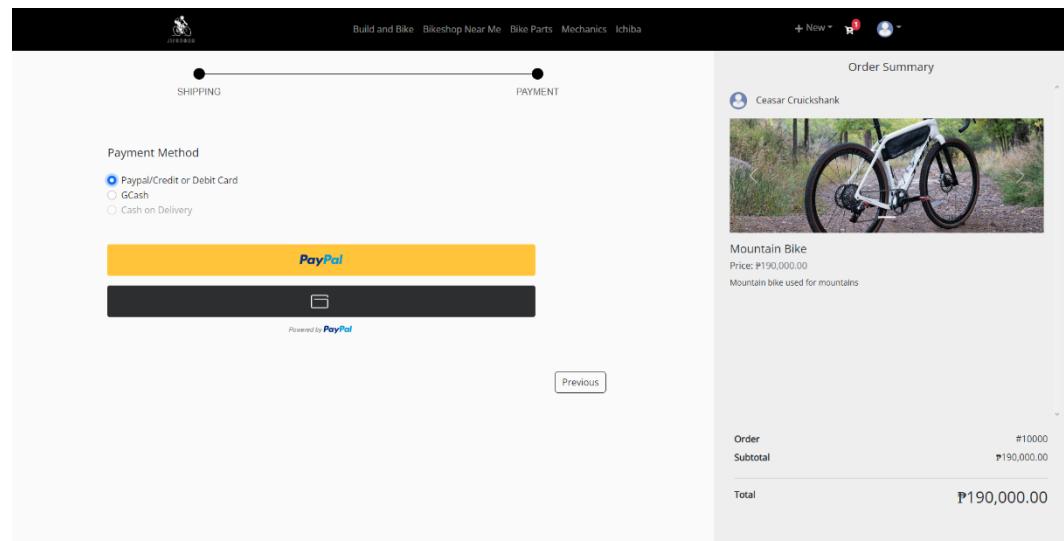


Figure 4.53 Checkout - Payment

The screenshot shows the 'Settings' page for a user profile. At the top, there is a navigation bar with links for 'Build and Bike', 'Bikeshop Near Me', 'Bike Parts', 'Mechanics', and 'Ichiba'. On the right side of the header are icons for 'New', a shopping cart with a red notification badge, and a user profile. Below the header, the word 'Settings' is displayed above a horizontal menu bar with tabs: 'Profile' (which is selected), 'Change Password', 'Notifications', 'Messages', 'Verify Account', and 'Build Archive'. On the left, there is a section titled 'Profile Photo' featuring a placeholder blue circular icon with a white person silhouette. Below it is a button labeled 'Upload New Avatar'. To the right, there is a section titled 'User Information' containing fields for 'First Name' (Bryan), 'Middle Name' (Optional), and 'Last Name' (Garcia). There are also dropdown menus for 'Gender' (Male) and 'Date of Birth' (30/10/2022), a field for 'Contact No.' (Contact No.), and a text area for 'About Me' (About Me). At the bottom, there is a field for 'Email address' (johnbryan306@gmail.com) and a large 'Update' button.

Figure 4.54 User Profile

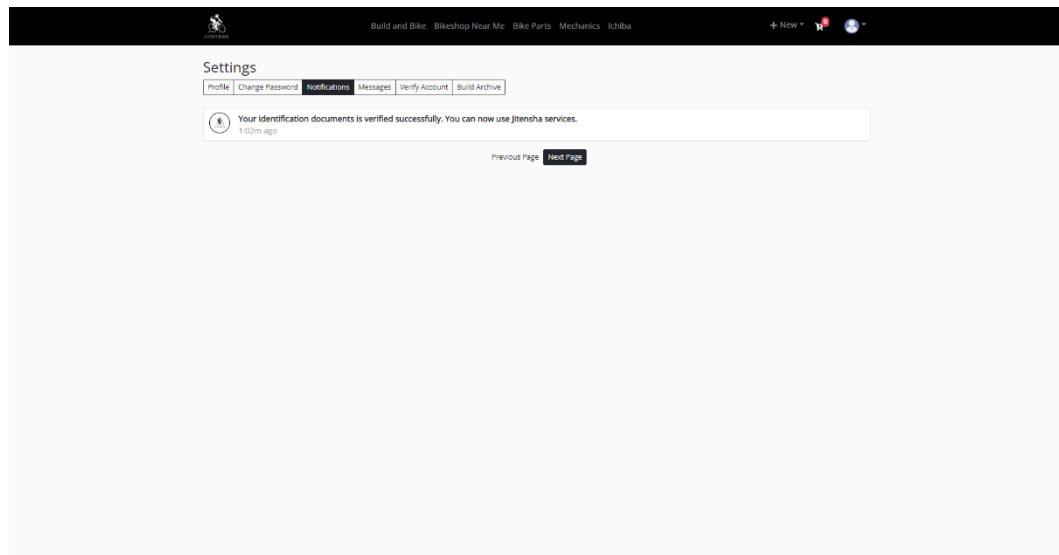


Figure 4.55 Notification

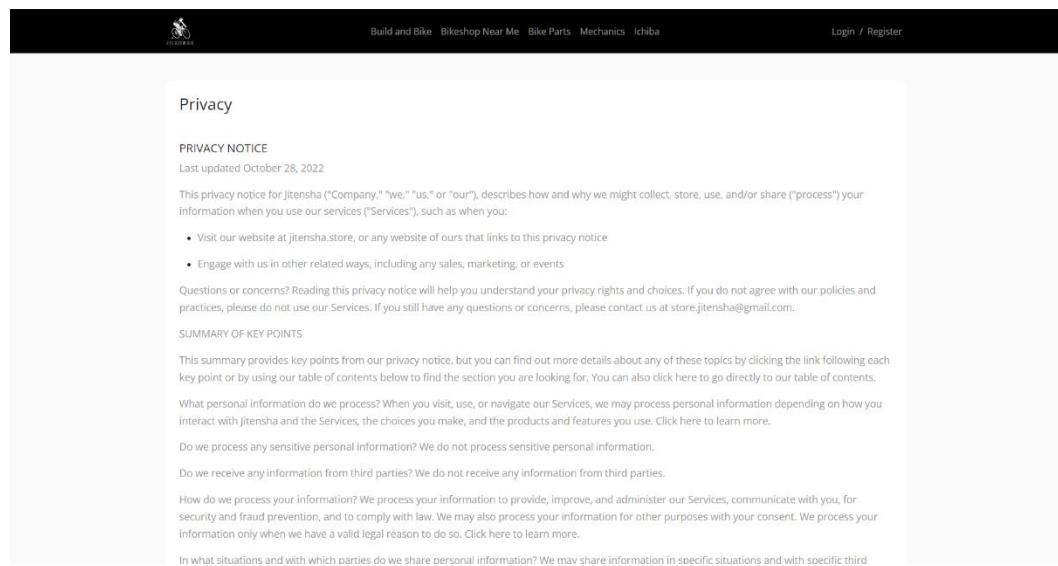


Figure 4.56 Privacy

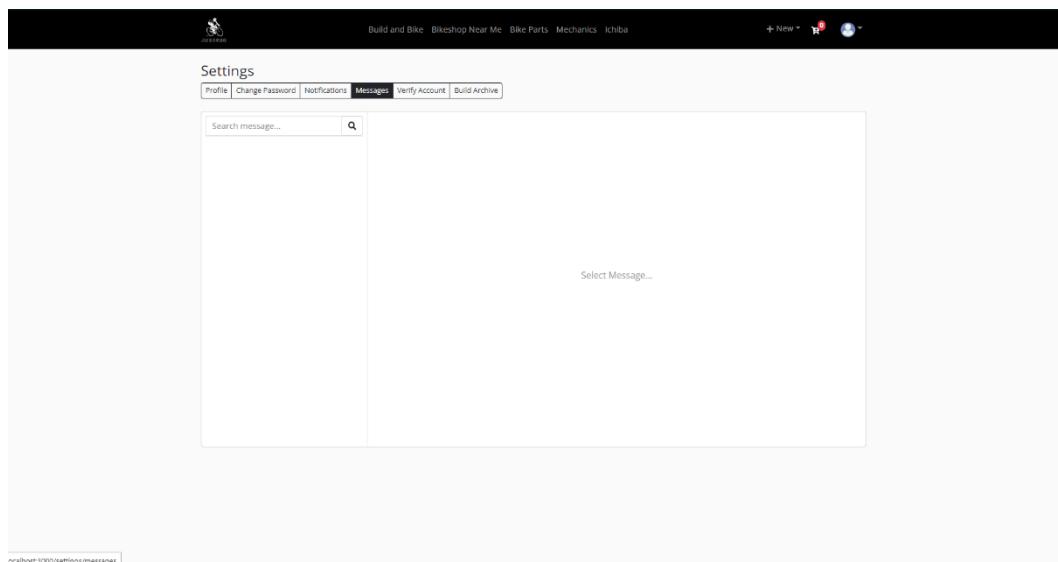


Figure 4.57 Messages

The images shown above are under the settings page. The user can access the settings page by clicking the user icon in the navbar. The user profile displays the personal information of the user. The notification page is where the user can see their

unread notifications and old notifications. The privacy page is where the user can edit their personal information such as name, username, password, email, profile picture, and other information. The messages page is where the user can view their messages where they can communicate with other users on the platform.

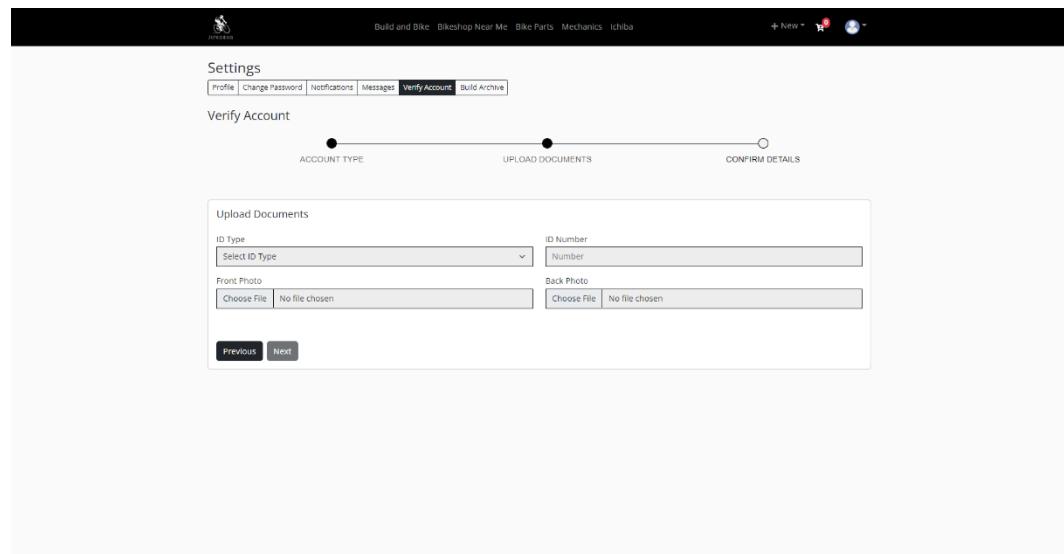


Figure 4.58 Verify Account (User)

The screenshot shows a web-based application for account verification. At the top, there are three tabs: 'ACCOUNT TYPE', 'UPLOAD DOCUMENTS', and 'CONFIRM DETAILS'. The 'UPLOAD DOCUMENTS' tab is active. Below the tabs, there are several input fields and a map.

- Upload Documents:**
 - Business Name:**
 - Business Address:**
 - Move or drag the marker to the store location:** A map of the Manila area with a red marker indicating the store's location.
 - Business Brief Description:**
- Business Email:** **Contact No.:**
- Business Logo:** **DTI Certificate of Registration:**
- BIR Certificate of Registration:** **Business/Mayors Permit:**

At the bottom left are 'Previous' and 'Next' buttons.

Figure 4.59 Verify Account (Bike Shop)

The verify account page is where the user can verify their account by filling up the required fields. The user will be asked to send their I.D. in order to check if the information in the fields matches in their personal I.D.. The user must verify their account in order to fully use the features in the Ichiba page such as selling and buying.

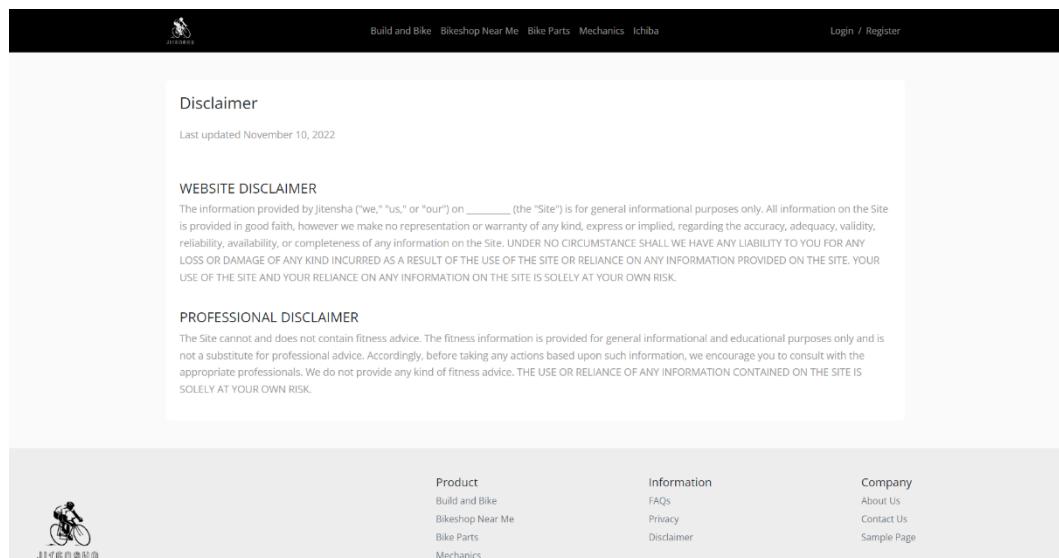


Figure 4.60 Disclamer

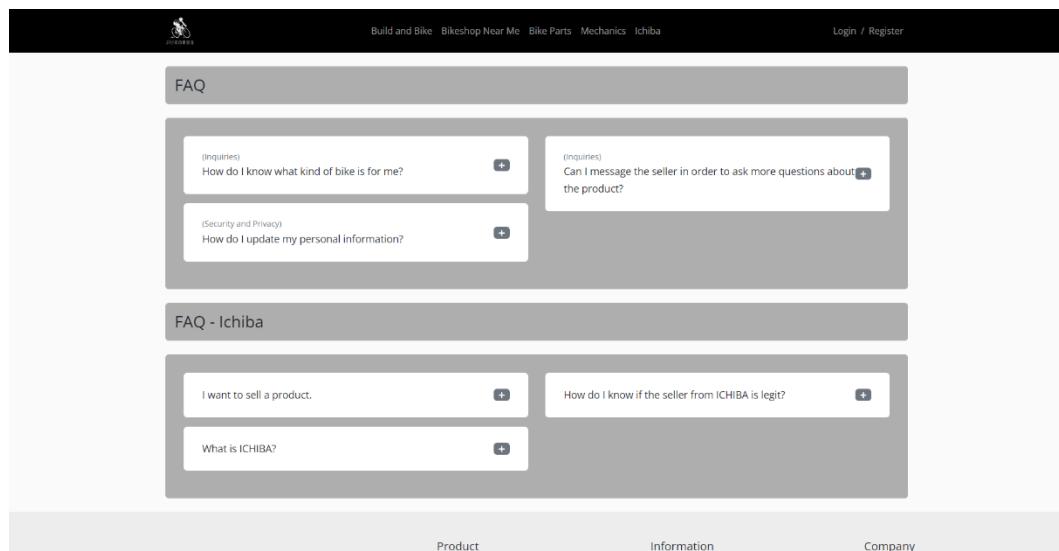


Figure 4.61 FAQ

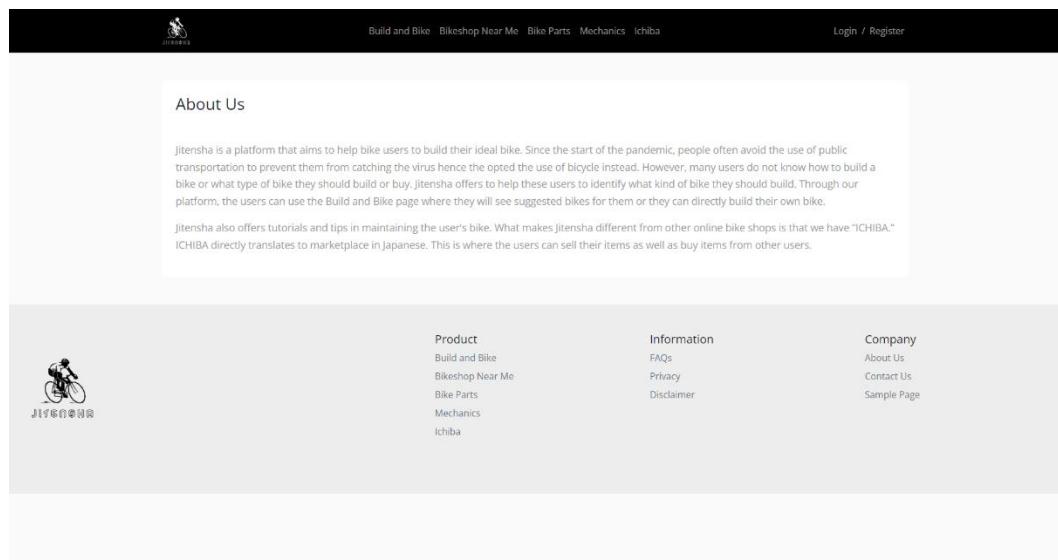


Figure 4.62 About Us

The FAQ or the Frequently Asked Questions page provides answers and information on common questions and concerns of the user. While the About Us page shows the information about the platform and what our mission and vision is. The about us page helps us connect with the user.

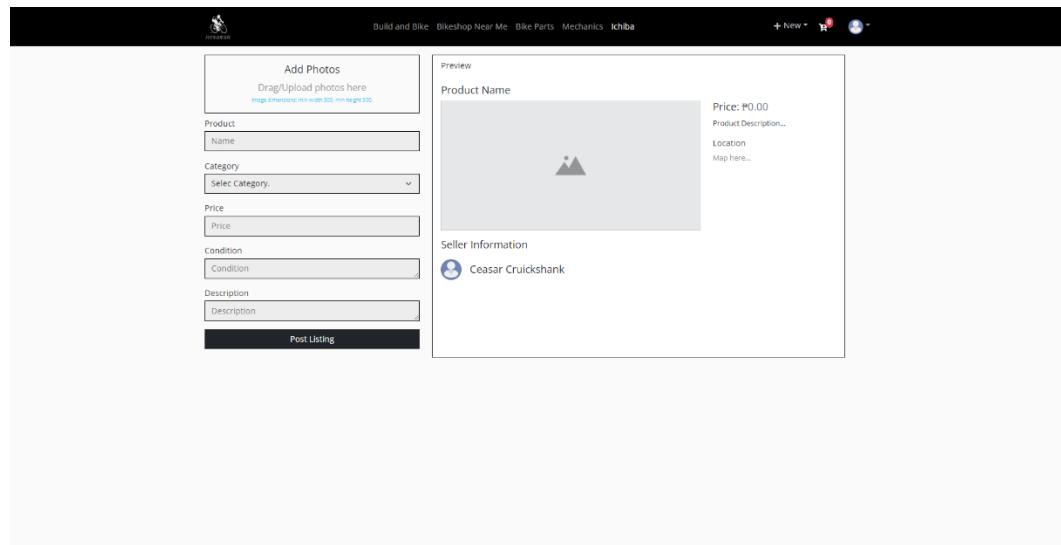


Figure 4.63 Add Product

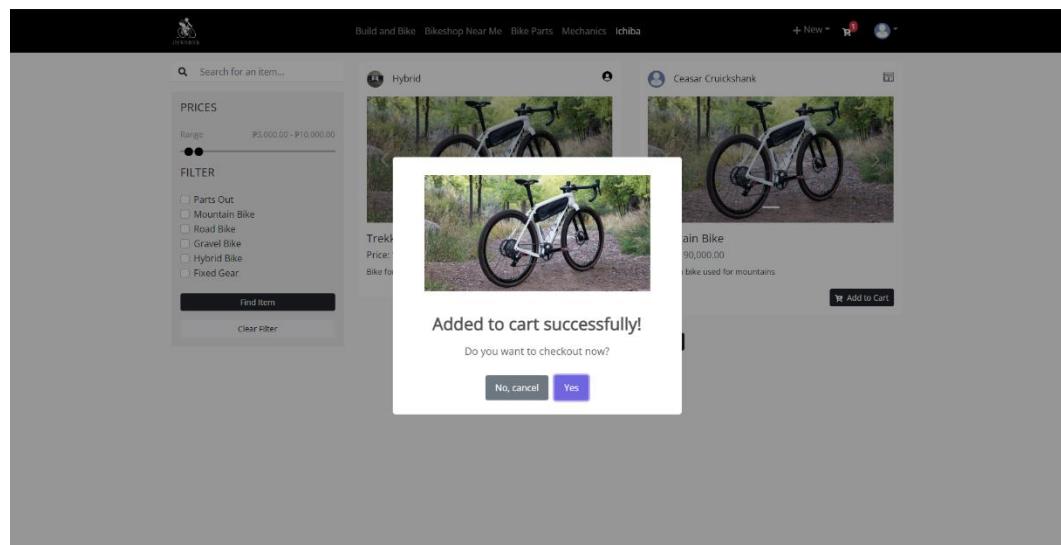


Figure 4.64 Add to Cart

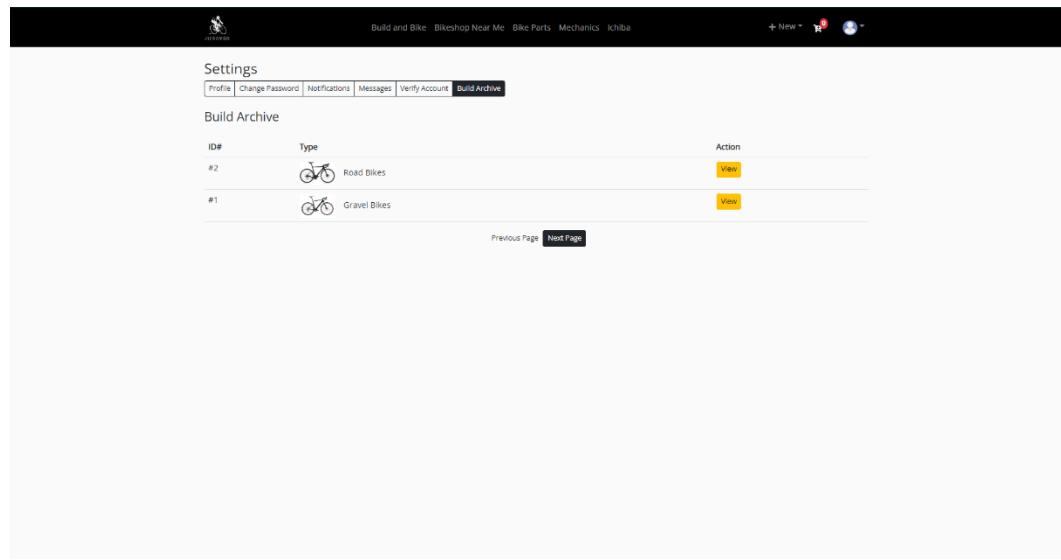


Figure 4.65Archive

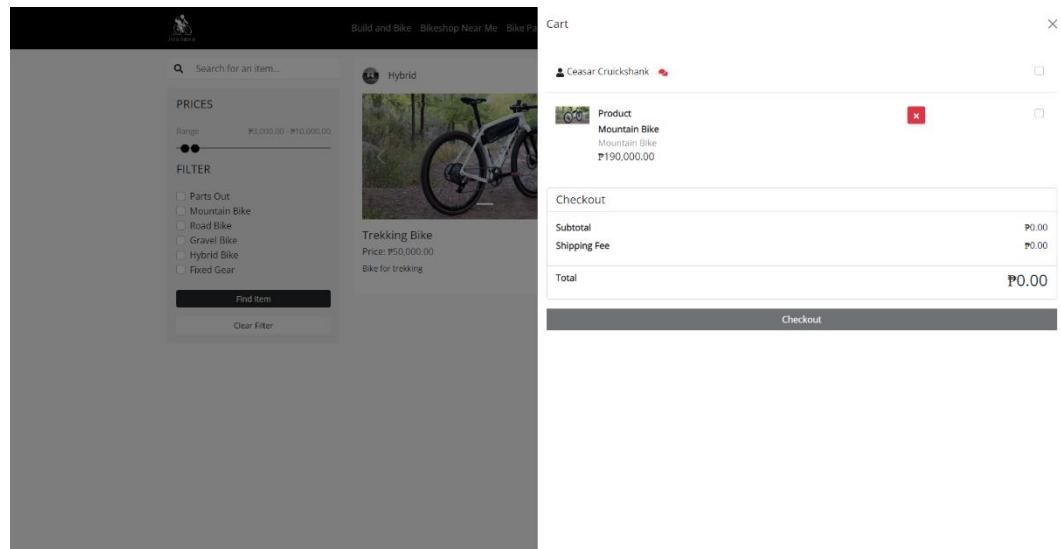


Figure 4.66 Cart

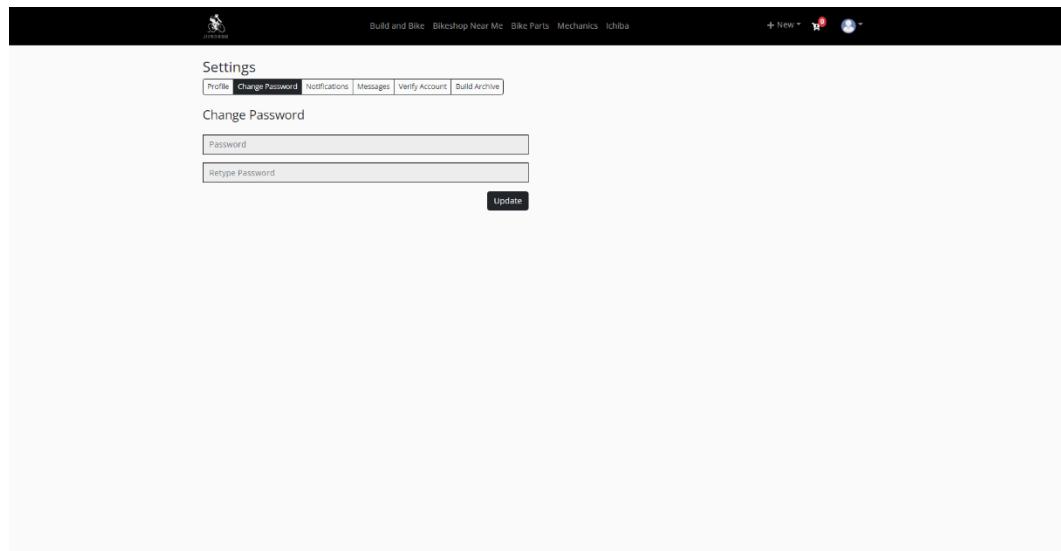


Figure 4.67 Change Password

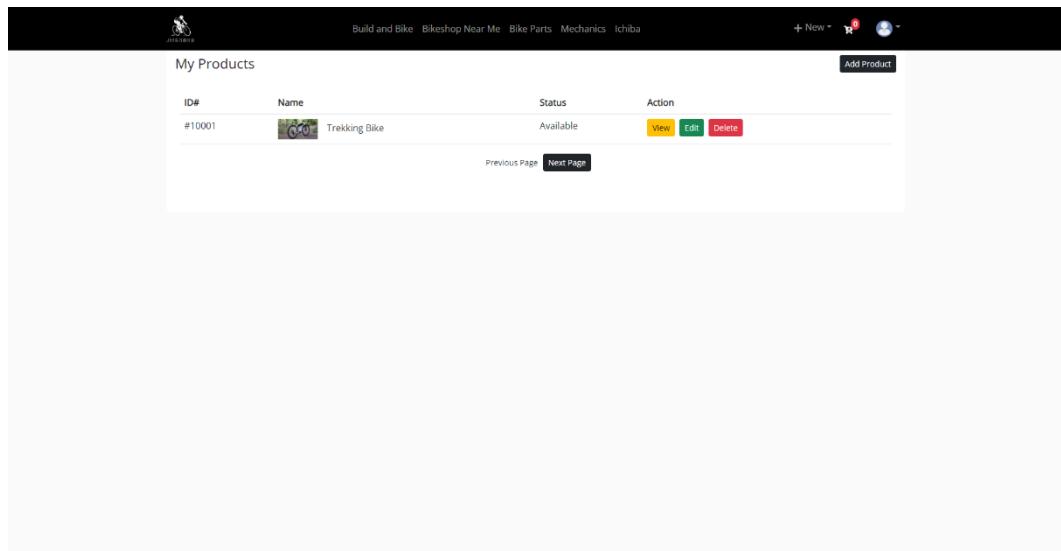


Figure 4.68 Product View

Purchase History							
Order	Products	Date	Total Price	Payment Status	Payment Method	Status	Action
#10000	Caesar Cruickshank Mountain Bike	Nov 16, 2022 11:18 PM	₱190,000.00	Unpaid	N/A	Pending	

Mountain Bike
Mountain Bike, ...
₱190,000.00
Pending

Previous Page Next Page

Figure 4.69Purchase History*Figure 4.70Admin Dashboard (Admin Page)*

ID	Photo	Name	Email	About	Registered on	Deleted on	Status	Action
2		Ibrahim Zulauf	user@gmail.com	Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum molestie mauris sit amet purus suscipit, eu rutrum sapien sollicitudin. Nulla ut venenatis libero, id ultrices magna. In vitae sem nibh. Quisque ipsum arcu, molestie id aliquet a, feugiat fermentum ante. Proin elementum felis ut diam varius sodales. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Vivamus vulputate, erat ut commodo mollis, odio lectus egestas ligula, at aliquam mi nibh in ligula. Nulla at purus sollicitudin, vestibulum tellus ac, dignissim est. Vestibulum felis lacus, congue id massa ac, hendrerit eleifend augue. Nulla facilisi. Aenean id enim rutrum, pretium felis id, auctor elit.	Nov 08, 2022 1:09 AM	N/A	Active	

Figure 4.71 Shop's Information (Admin Page)

ID	Photo	Name	Email	About	Registered on	Deleted on	Status	Action
8		waw awaw	somdom@gmail.com		Nov 16, 2022 11:53 AM	N/A	Active	
7		Bryan Garcia	johnbryan306@gmail.com		Nov 09, 2022 10:49 PM	N/A	Active	
6		Ka Dodong	ipaglabanangkapatnaingmaramay@mailinator.com		Nov 09, 2022 12:31 AM	N/A	Active	
5		Filthy Frank	frankku420@gmail.com		Nov 08, 2022 10:22 PM	N/A	Active	
4		Rom Som	universalomega902@gmail.com	Lorem	Nov 08, 2022 10:21 PM	N/A	Active	
3		Matthew Sevilla	sematt17.ms@gmail.com		Nov 08, 2022 9:56 PM	N/A	Active	

Figure 4.72 User's Information (Admin Page)

Product's Informations									
List of Products									
ID	Photo	Name	User	Sold	Created on	Deleted on	Status	Action	
10007		will	Matthew Sevilla	Available	Nov 09, 2022 8:56 PM	N/A	Approved	<button>Delete</button>	
10006		Matthew Sevilla	Filthy Frank	Available	Nov 09, 2022 3:12 PM	N/A	Approved	<button>Delete</button>	
10005		Gigachad	Ka Dodong	Sold	Nov 09, 2022 12:43 AM	N/A	Approved		
10004		He Man	Lorem ipsum dolor sit amet	Sold	Nov 08, 2022 11:06 PM	N/A	Approved		
10003		will	Lorem ipsum dolor sit amet	Available	Nov 08, 2022 11:04 PM	N/A	Approved	<button>Delete</button>	
10002		will	Lorem ipsum dolor sit amet	Available	Nov 08, 2022 10:14 PM	Nov 08, 2022 10:15 PM	Deleted		
10001		HELLO	Lorem ipsum dolor sit amet	Available	Nov 08, 2022 10:06 PM	Nov 08, 2022 10:15 PM	Deleted		
10000		esthetic bike	Lorem ipsum dolor sit amet	Available	Nov 08, 2022 10:21 AM	N/A	Approved	<button>Delete</button>	

Figure 4.73 List of Products (Admin Page)

Purchase's History								
List of Purchase								
Order	User	Products	Date	Total Price	Payment Status	Fulfillment Status	Created on	
#10018	Lorem ipsum dolor sit amet	Matthew Sevilla Mountain Bike ₱25,000.00	Nov 16, 2022 11:19 PM	₱25,000.00	Pending	Pending	Nov 16, 2022 11:19 PM	
#10017	Ka Dodong	esthetic bike Road Bike ₱1,000,000.00 will Hybrid Bike ₱1.00	Nov 14, 2022 3:04 PM	₱1,000,001.00	Unpaid	Pending	Nov 14, 2022 3:04 PM	
#10016	Matthew Sevilla	Gigachad Road Bike ₱10,000.00	Nov 13, 2022 11:33 PM	₱10,000.00	Paid	Ready to Ship	Nov 13, 2022 11:33 PM	
#10015	Matthew Sevilla	Gigachad Road Bike ₱10,000.00	Nov 13, 2022 11:32 PM	₱10,000.00	Unpaid	Pending	Nov 13, 2022 11:32 PM	
#10014	Matthew Sevilla	He Man Mountain Bike ₱100.00	Nov 09, 2022 10:54 PM	₱100.00	Unpaid	Pending	Nov 09, 2022 10:54 PM	
#10013	Matthew Sevilla	He Man Mountain Bike ₱100.00	Nov 09, 2022 10:53 PM	₱100.00	Paid	Ready to Ship	Nov 09, 2022 10:53 PM	
#10012	Matthew Sevilla	will Mountain Bike ₱10.00	Nov 09, 2022 10:52 PM	₱10.00	Unpaid	Pending	Nov 09, 2022 10:52 PM	
#10011	Bryan Garcia	Matthew Sevilla	Nov 09, 2022 10:50 PM	₱25,000.00	Pending	Pending	Nov 09, 2022 10:50 PM	

Figure 4.74 Purchase History (Admin Page)

The screenshot shows a web-based administrative interface titled "Withdrawal's Informations". On the left is a vertical sidebar with icons for navigation. The main content area has a header "List of Withdrawals" with a search bar. Below is a table with columns: ID, Date Created, Date Updated, User, Bank Details, Amount, Status, and Action. A "Next Page" button is at the bottom of the table.

Figure 4.75 Withdrawal Information (Admin Page)

The screenshot shows a web-based administrative interface titled "Frequently Asked Questions". On the left is a vertical sidebar with icons for navigation. The main content area has a header "List of Frequently Asked Questions" with a search bar. Below is a table with columns: ID, Question, Answer, and Action. The table lists several questions and their corresponding answers, such as "How do I know if the seller from ICHIBA is legit?" and "How do I update my personal information?". A "Next Page" button is at the bottom of the table.

Figure 4.76 FAQ (Admin Page)

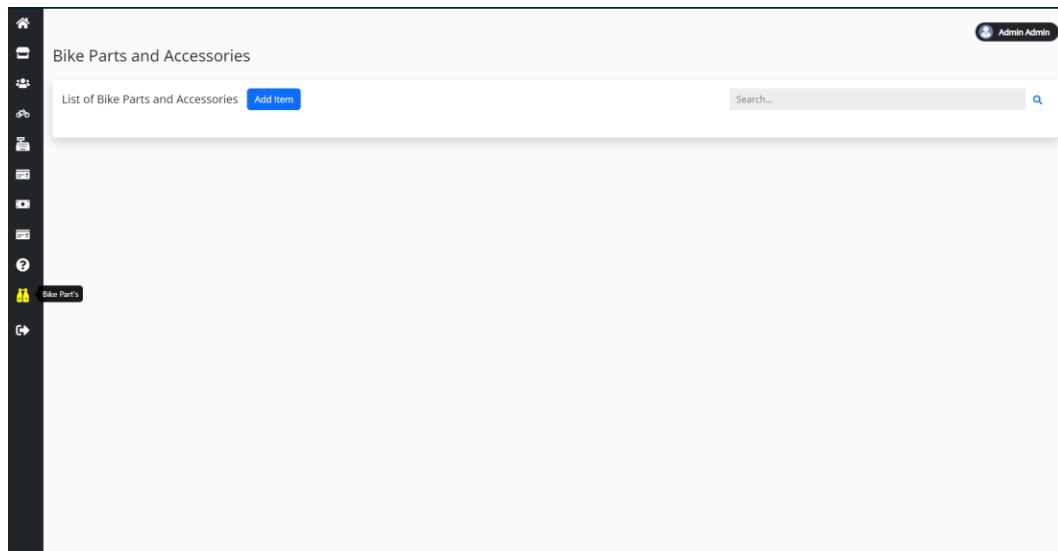


Figure 4.77 List of Bike and Accessories (Admin Page)

Functional Requirements

Users

- **Login** - Allows user to login
- **Logout** - Allows user to logout
- **View Profile** - Allows the user to view profile and personal information
- **Edit Profile** - Allows the user to edit personal information
- **Change Password** - Allows the user to change password.
- **Forgot Password** - Allows the user to reset password when the user forgets the said password.
- **Instant Messaging** - Enable users to message other user in the system
- **Notification** – Allow users to receive notifications in their personal accounts.
- **Email Notification** – Allow users to receive notifications through email..
- **Text Notifications** – Allow users to receive notifications through text messages.

- **Create Listing** - Allows users to create listings for their bicycle related products.
- **Delete Listing** - Allows users to delete their listings.
- **Edit Listing** - Allows users to edit their listings.
- **View Listing** - Allows users to view their listings and other user's listings.
- **Rate User** - Enable users to rate other users after a transaction.
- **Purchase-Payment Action**- Enables users to purchase and pay the concerned item to the merchant.
- **Bike Shop Locator**- Enables users to find and locate bike shops near them or the inputted location.
- **Build and Bike** - Enables users to build their own personalized custom bicycles.
- **Archive Build** - Enables users to archive their bicycle build.

System Administrator

- **Login** - Allows the System Admin to login
- **Logout** - Allows the System Admin to logout
- **Manage users** - enable the System Admin to manage all user
- **Ban User** - Allows the System Admin to ban users for misconduct.
- **Unban User** - Allows the System Admin to unban users after timeout.
- **Notification** – Allow users to receive notifications in their personal accounts.
- **Email Notification** – Allow users to receive notifications through email.
- **Text Notifications** – Allow users to receive notifications through text messages.

Non-Functional Requirements

Security

Any threats should be addressed and prevented by the system that it may come across.

- After creating an account, an email notification will be sent to the user for confirmation.
- An option for password visibility will be provided to make sure the user's password is correct.
- Encryption of the password to ensure the safety of user credentials in case a data breach occurs.
- Only a list of authorized system administrators can access all the data in the database.

- The password of the user is encrypted using *SHA - 256* in the database or Hash security.
- Must be in adherence to the PCI Data Security Standard and Consumer Protection Act
- There is a timestamp for every activity done by the user and administrator. This is for documentation purposes. This includes updated timestamps for every access of accounts.
- Disable right click for Account Profile, Login, Forgot Password, and Reset Password page.

User Friendly

The developers will ensure that the UI will be user friendly for the users. Coherent flow of the website will be guaranteed by the developers for easier human interaction. More so, the developers guarantee the color scheme that will be used is pleasing to the eye and professional.

Serviceability

- The developers will ensure the stability of the website and its features for the users and consumers. This includes the connectivity and availability of the website and system.
- The developers will ensure fast authentication of accounts for user accounts such as logging in, replacing passwords, and etc.

- The developers will ensure fast verification of newly created accounts and separate verification for those users who want to sell their products in the “Where to Buy” page.

Development and Testing

The IDE used for the development was Visual Studio Code, and the suggested software will run on XAMPP as its local server. Testing is complete through Google Chrome, a web browser that acts as a testing environment to examine the user interface and components of the suggested software. React.js, more commonly known as React, is an open-source, cost-free JavaScript library. The ideal way to create user interfaces is by assembling little pieces of code (components) into complete websites. Originally created by Facebook, Meta is now maintained by the open-source community. XAMPP, a test server and deployment platform that developers will utilize, is used to test the system's capacity, capability, and performance. An abbreviation for Cross-Platform, Apache, MySQL, and PHP is XAMPP. Its objective is to assure complete cloud deployment by examining whether the application is operating normally. Additionally, it is made to detect any difficulties or concerns. inside the program (XAMPP, n.d.). PHP is a programming language. using the MVC design pattern-compliant Laravel framework. A MVC Laravel is a modern framework that employs patterns. It used to be in the PHP programming language. It offers

several practical properties, such as a unit and an integrated layer for database abstraction, authentication, and testing. It has eliminated injection dependencies and includes authorisation as well (Laravel, n.d.). Unit testing is the testing technique used specifically.

Implementation Plan (Infrastructure/Deployment)

It should be highlighted that the researchers used the Agile Kanban technique for software management and development using DevOps. This technique allowed the developer to ensure transparency and meet deadlines within a week for two months, researchers should interact in real-time while working on the project. In terms of alterations to the research, project flow, and roles and duties, Kanban also allowed the researchers more flexibility. The researchers can complete or revise certain duties without delay because of the team leader's or member's consent because revisions are inevitable given the nature of the project's progress.

The researchers are able to prioritize which work has to be done by using a Kanban process. to be quickly completed starting at the top of the backlog. In order for the use of the system, the college will provide the designated capstone deployment server. be used as the web application deployment's hosting location.

Product Roadmap

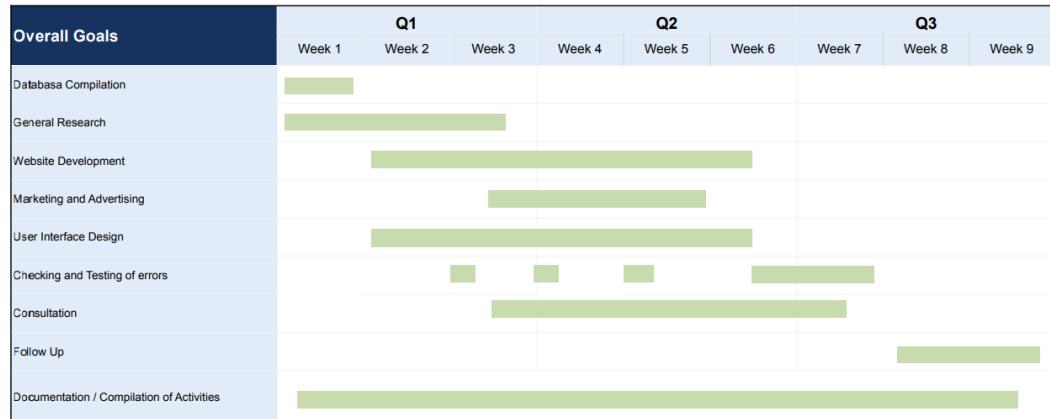


Figure 4.57 Overall Planning of the Capstone Project

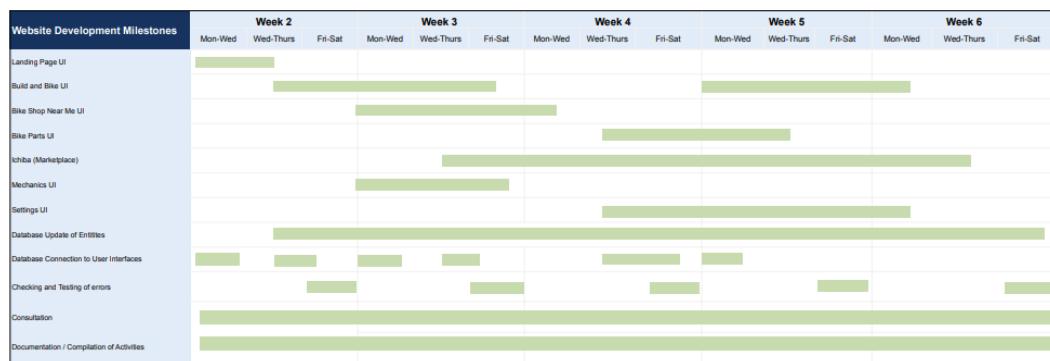


Figure 4.58 Website Development Schedule Plan

Implementation Results

As previously said, the kanban agile kanban was utilized to maintain track of overall project development. The deliverables for the project are shown on a kanban board, displaying which backlogs are still there over the course of a full week or a specific time period progress, followed by the researcher's completed backlogs.

TO DO	IN PROGRESS	DONE
-------	-------------	------

FAQs	Payment feature	Login
Contact Us	Messages	Registration
		Email Verification
		Mechanics Page
		Bike Parts Page

The Following is the timeline of backlogs that had been achieved through the course of the project's development:

- The first week consisted of Planning of the development of the project and the delegation of tasks per member. The developers gathered together to split the tasks that will be given according to the member's abilities.
- The second week consisted of the development of the user interface for Jitensha. The developers created a wireframe for the project's design. The developers also downloaded all the requirements needed for the development of the project. In this said week, the developers started with the database creation
- For the third week, the developers continued with its development. Some tasks have been started such as the different pages for the features of the system. Some of the developers started researching and studying on building some features of Jitensha. Such features that have been started are the Login and Register page.
- The fourth week consisted of the continuation of week 3. Since some features take a lot of time for the user to create. However, some features are now finished.
- For the fifth week of the development, the researchers have finished gathering assets that are needed for the systems such as images and its content. Features that are finished this week are the home page, bike parts page, and mechanics page. Other features are almost finished but need polishing.
- The sixth week completed a lot of features for the system such as the completed about us page, notification page, change password page, verification page, purchase history page, profile page, and product listing page. Some features such as the payment and messages are still having some problems in the development.

- In the seventh week, the developers have now finally completed the features that are having errors in the system. At this point, the system is finish
- The eight week consisted of completing the paper

Entity Relationship Diagram**Full Database Scheme**

Database Schema	Reference Number: 1
	Version Number: 2
System Name: Jitensha	
Subject: JITENSHA: The Usability of an Online Build a Bike Platform for Bike Users in NCR Plus	

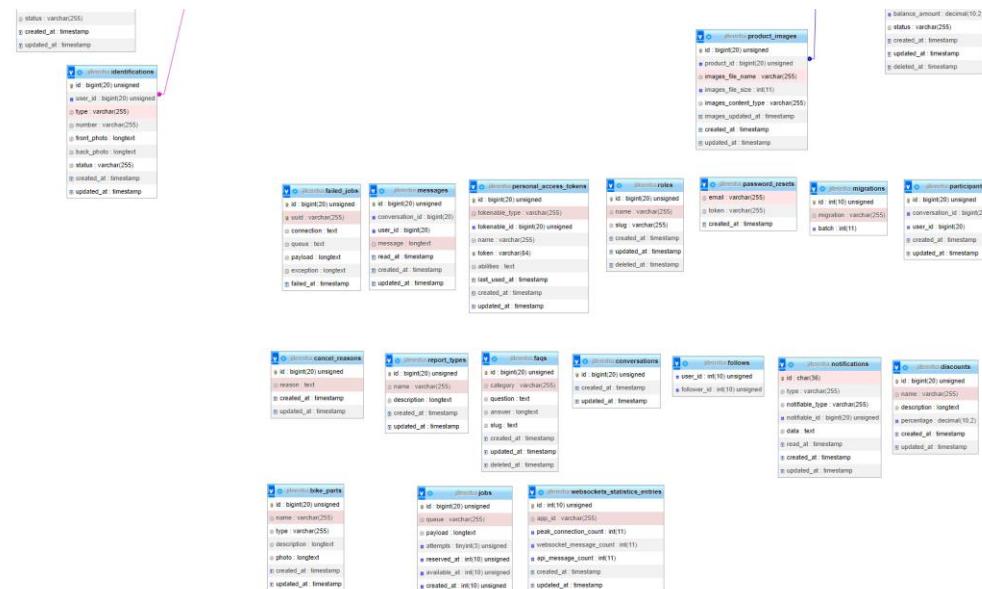


Figure 4.78

Data Dictionary

Data Dictionary System Name: Jitensha Subject: Users	Reference Number: 1 Version Number: 2
---	--

P K	Field Name	Data Type	Length	Nullabl e	Defau lt Value	Description
✓	id	bigint	20	No		Primary
	is_super	tinyint	1	No		
	role_id	Bigint	20	No		
	status	varchar	255	No		
	first_name	varchar	255	No		
	middle_name	varchar	255	Yes		
	last_name	varchar	255	No		
	photo	longtext		Yes		
	cover	longtext		Yes		

	contact_no	varchar	255	Yes		
	date_of_birth	date		Yes		
	address	longtext		Yes		
	about	longtext		Yes		
	latitude	varchar	255	Yes		
	longitude	varchar	255	Yes		
	email	varchar	255	No		
	email_verified_at	timestam p		Yes		
	contact_no_verified _at	timestam p		Yes		
	password	varchar	255	No		
	remember_token	varchar	100	Yes		

	created_at	timestamp		Yes		
	updated_at	timestamp		Yes		
	deleted_at	timestamp		Yes		

Table 4.26

Data Dictionary	Reference Number: 2
	Version Number: 2
System Name: Jitensha	
Subject: Answer	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	question_id	bigint	20	No		
	answer	longtext		Yes	Null	

	created_at	timestamp	255	Yes	Null	
	updated_at	timestamp	255	Yes	Null	

Table 4.27

Data Dictionary	Reference Number: 3
	Version Number: 2
System Name: Jitensha	
Subject: Answer_Bikes	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	bike_type_id	bigint	20	No		Primary
	question_id	bigint	20	No		
	answer_id	bigint		Yes	Null	

Data Dictionary	Reference Number: 4
------------------------	----------------------------

	Version Number: 2
System Name: Jitensha	
Subject: Balances	

Table 4.28

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	balance	decimal	10,2	Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.29

Data Dictionary	Reference Number: 5
------------------------	----------------------------

	Version Number: 2
System Name: Jitensha	
Subject: Bank_Details	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	id	Bigint	20	No		Primary
	user_id	Bigint	20	No		
	bank_name	Varchar	255	Yes	Null	
	account_name	Text		Yes	Null	
	account_number	Text		Yes	Null	
	account_type	Varchar	255	Yes	Null	
	created_at	Timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

	deleted_at	timestamp		Yes	Null	
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Table 4.30

Data Dictionary	Reference Number: 6
	Version Number: 2
System Name: Jitensha	
Subject: Bike_Builds	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	bike_type_id	bigint	20	No		
	status	varchar	255	No	Draft	
	created_at	timestamp		Yes	Null	

	updated_at	timestamp		Yes	Null	
--	-------------------	-----------	--	-----	------	--

Table 4.31

Data Dictionary	Reference Number: 7
	Version Number: 2
System Name: Jitensha	
Subject: Bike_Build_Component	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	bike_build_id	Bigint	20	No		Primary
	bike_component_id	Bigint	20	No		

Table 4.32

Data Dictionary	Reference Number: 8
	Version Number: 2
System Name: Jitensha	
Subject: Bike_Components	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	name	varchar	255	No		
	type	text		No		
	brand	text		Yes	Null	
	description	longtext		Yes	Null	
	photo	longtext		Yes	Null	
	created_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.33

Data Dictionary

Reference Number: 9

	Version Number: 2
System Name: Jitensha	
Subject: Bike_Parts	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	name	varchar	255	No		
	type	varchar	255	Yes		
	description	longtext		Yes	Null	
	photo	longtext		Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.34

Data Dictionary	Reference Number: 10
	Version Number: 2
System Name: Jitensha	
Subject: Bike_Types	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	name	varchar	255	No		
	description	longtext		Yes	Null	
	photo	longtext		Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.35

Data Dictionary	Reference Number: 11
	Version Number: 2
System Name: Jitensha	
Subject: Bike_Type_Components	

P K	Field Name	Data Type	Length	Nullabl e	Defau lt Value	Description
✓	bike_type_id	Bigint	20	No		Primary
	bike_componment_id	bigint	20	No		

Table 4.36

Data Dictionary	Reference Number: 12
	Version Number: 2
System Name: Jitensha	
Subject: Business_Information	

P K	Field Name	Data Type	Length	Nullab le	Defau lt Value	Description

✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	name	text		Yes	Null	
	address	longtext		Yes	Null	
	latitude	varchar	255	Yes	Null	
	longitude	varchar	255	Yes	Null	
	email	varchar	255	Yes	Null	
	logo	longtext		No		
	dti_certificate_of_registration	longtext		No		
	bir_certificate_of_registration	longtext		No		
	business_permit	longtext		No		

	brief_description	longtext		Yes	Null	
	status	varchar	255	No	Pending	
	created_at	timestam p		Yes	Null	
	updated_at	timestam p		Yes	Null	

Table 4.37

Data Dictionary	Reference Number: 13
	Version Number: 2
System Name: Jitensha	
Subject: Cancel_Reason	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	reason	text	20	Yes	Null	

	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.38

Data Dictionary	Reference Number: 14
	Version Number: 2
System Name: Jitensha	
Subject: Carts	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	Yes		
	checkout	tinyint		No	0	
	created_at	timestamp		Yes	Null	

	updated_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.39

Data Dictionary	Reference Number: 15
	Version Number: 2
System Name: Jitensha	
Subject: Carts_Items	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	cart_id	bigint	20	Yes		
	quantity	int	11	Yes	Null	
	price	decimal	10,2	Yes	Null	

	status	varchar	255	No	Pending	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.40

Data Dictionary	Reference Number: 16
	Version Number: 2
System Name: Jitensha	
Subject: Conversations	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	created_at	timestamp		Yes	Null	

	updated_at	timestamp		Yes	Null	
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Table 4.41

Data Dictionary	Reference Number: 17
	Version Number: 2
System Name: Jitensha	
Subject: Discounts	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	name	text	20	No		
	description	longtext		Yes	Null	
	percentage	decimal	10,2	Yes	Null	
	created_at	timestamp		Yes	Null	

	updated_at	timestamp		Yes	Null	
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Table 4.42

Data Dictionary	Reference Number: 18
	Version Number: 2
System Name: Jitensha	
Subject: Faqs	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	category	varchar	255	No		
	question	text		No		
	answer	longtext		No		
	slug	text		Yes	Null	

	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.43

Data Dictionary	Reference Number: 19
	Version Number: 2
System Name: Jitensha	
Subject: Follow	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	user_id	int	10	No		Primary
	follower_id	int	10	No		

Table 4.44

Data Dictionary	Reference Number:20
	Version Number: 2
System Name: Jitensha	
Subject: Identifications	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		
	user_id	bigint	20	No		
	type	varchar	255	No		
	number	varchar	255	No		
	front_photo	longtext		No		
	back_photo	longtext		No		
	status	varchar	255	No	Pending	

	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.45

Data Dictionary	Reference Number: 21
	Version Number: 2
System Name: Jitensha	
Subject: Jobs	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	queue	varchar	255	No		
	payload	longtext		No		

	attempts	tinyint	3	No		
	reserved_at	int	10	Yes	Null	
	available_at	int	10	No		
	created_at	int	10	No		

Table 4.46

Data Dictionary	Reference Number: 22
	Version Number: 2
System Name: Jitensha	
Subject: Likes	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		
	user_id	bigint	20	No		

	likeable_type	varchar	255	No		
	likeable_id	bigint	20	No		
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.47

Data Dictionary	Reference Number: 23
	Version Number: 2
System Name: Jitensha	
Subject: Messages	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	id	Bigint	20	No		Primary
	conversation_id	Bigint	20	No		

	user_id	Bigint	20	No		
	message	Longtext		Yes	Null	
	read_at	Timestamp		Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	Timestamp		Yes	Null	

Table 4.48

Data Dictionary	Reference Number: 24
	Version Number: 2
System Name: Jitensha	
Subject: Notification	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	char	36	No		Primary

	type	varchar	255	No		
	notifiable_type	varchar	255	No		
	notifiable_id	bigint	20	No		
	data	text		No		
	read_at	timestamp		Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.49

Data Dictionary	Reference Number: 25
	Version Number: 2
System Name: Jitensha	
Subject: Orders	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	id	bigint	20	No		
	user_id	bigint	20	No		
	payment_id	bigint	20	Yes	Null	
	shipping_address_id	bigint	20	No	Null	
	cash_on_delivery	tinyint	1	Yes	0	
	shipping	varchar	255	Yes	Null	
	total_amount	decimal	10,2	Yes	Null	
	status	varchar	255	No	Pending	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

	deleted_at	timestamp		Yes	Null	
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Table 4.50

Data Dictionary	Reference Number: 26
	Version Number: 2
System Name: Jitensha	
Subject: Order_Items	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	order_id	bigint	20	No		
	product_id	bigint	20	No		
	price	decimal	10,2	Yes	Null	
	status	varchar	255	No	Pending	

	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.51

Data Dictionary	Reference Number: 27
	Version Number: 2
System Name: Jitensha	
Subject: Participants	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	id	bigint	20	No		Primary
	conversation_id	bigint	20	No		

	user_id	bigint	20	No		
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.52

Data Dictionary	Reference Number: 28
	Version Number: 2
System Name: Jitensha	
Subject: Password_Resets	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	email	varchar	255	No		Primary
	token	varchar	255	No		

	created_at	timestamp		Yes	Null	
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Table 4.53

Data Dictionary	Reference Number: 29
	Version Number: 2
System Name: Jitensha	
Subject: Payments	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	id	bigint	20	No		
	user_id	bigint	20	No		
	reference_number	text	20	Yes	Null	
	method	varchar	255	Yes	Null	
	amount	decimal	8,0	Yes	Null	

	fee	decimal	8,0	Yes	Null	
	total	decimal	8,0	Yes	Null	
	status	varchar	255	Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.54

Data Dictionary	Reference Number: 30
	Version Number: 2
System Name: Jitensha	
Subject: Products	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description

✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	product_category_id	bigint	20	No		
	name	varchar	255	No		
	price	decimal	10,2	Yes	Null	
	condition	longtext		Yes	Null	
	description	longtext		Yes	Null	
	sold	tinyint	1	No	0	
	status	varchar	255	No	Pending	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

	deleted_at	timestamp		Yes	Null	
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Table 4.55

Data Dictionary	Reference Number: 31
	Version Number: 2
System Name: Jitensha	
Subject: Product_Category	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	name	varchar	255	No		
	description	longtext		Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.56

Data Dictionary	Reference Number: 32
	Version Number: 2
System Name: Jitensha	
Subject: Product_Images	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	id	bigint	20	No		Primary
	product_id	bigint	20	No		
	images_file_name	varchar	255	Yes	Null	
	images_file_size	varchar	255	Yes	Null	
	images_content_ty pe	varchar	255	Yes	Null	
	images_updated_a t	timestam p		Yes	Null	
	created_at	timestam p		Yes	Null	

	updated_at	timestamp		Yes	Null	
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Table 4.57

Data Dictionary	Reference Number: 33
	Version Number: 2
System Name: Jitensha	
Subject: Questions	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	type	varchar	255	No		
	required	varchar	255	Yes	Mandatory	
	question	timestamp		Yes	Null	
	created_at	timestamp		Yes	Null	

	updated_at	timestamp		Yes	Null	
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Table 4.58

Data Dictionary	Reference Number: 34
	Version Number: 2
System Name: Jitensha	
Subject: Ratables	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	user_id	varchar	255	No		
	ratable_type	varchar	255	Yes		
	ratable_id	bigint	20	No		
	rating	int	11	Yes	Null	

	review	text		Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.59

Data Dictionary	Reference Number: 35
	Version Number: 2
System Name: Jitensha	
Subject: Refund_Items	

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		

	order_id	bigint	20	No		
	product_id	bigint	20	No		
	cancel_reason_id	bigint	20	Yes	Null	
	amount	decimal	10,2	Yes	Null	
	reason	text		Yes	Null	
	status	varchar	255	No	Pending	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.60

Data Dictionary	Reference Number: 36
	Version Number: 2

System Name: Jitensha
Subject: ReportTables

P K	Field Name	Data Type	Length	Nullabl e	Defaul t Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	reportable_type	varchar	255	No		
	report_type_id	bigint	20	No		
	reportable_id	bigint	20	No		
	explanation	text	11	Yes	Null	
	created_at	timestam p		Yes	Null	
	updated_at	timestam p		Yes	Null	

Table 4.61

Data Dictionary	Reference Number: 37
	Version Number: 2
System Name: Jitensha	
Subject: Report_Types	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	name	varchar	255	No		
	description	longtext		Yes	Null	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.62

Data Dictionary	Reference Number: 38
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	Version Number: 2
System Name: Jitensha	
Subject: Roles	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	name	varchar	255	No		
	slug	varchar	255	No		
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.63

Data Dictionary	Reference Number: 39
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	Version Number: 2
System Name: Jitensha	
Subject: Shipping Addresses	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	address	longtext		No		
	street	longtext		No		
	postcode	longtext		No		
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.64

Data Dictionary	Reference Number: 40
	Version Number: 2
System Name: Jitensha	
Subject: Transactions	

P K	Field Name	Data Type	Length	Nullabl e	Default Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	order_id	bigint	20	No		
	product_id	bigint	20	No		
	payment_id	bigint	20	No		
	type	varchar	255	Yes	Null	

	amount	decimal	10,2	Yes	Null	
	service_fee	decimal	10,2	Yes	Null	
	total_amount	decimal	10,2	Yes	Null	
	balance_amoun t	decimal	10,2	Yes	Null	
	status	varchar	255	No	Pendin g	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.65

Data Dictionary	Reference Number: 41
	Version Number: 2
System Name: Jitensha	
Subject: User_Answers	

PK	Field Name	Data Type	Length	Nullable	Default Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	question_id	bigint	20	No		
	answer_id	bigint	20	No		
	input	longtext		Yes		
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.66

Data Dictionary	Reference Number: 42
	Version Number: 2
System Name: Jitensha	

Subject: Websockets_Statistics_Entries

P K	Field Name	Data Type	Length	Nullab le	Defau lt Value	Description
✓	id	bigint	20	No		Primary
	app_id	varchar	255	No		
	peak_connection_count	int	11	No		
	websocket_message_count	int	11	No		
	api_message_count	int	11	No		
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	

Table 4.67

Data Dictionary	Reference Number: 43
	Version Number: 2

System Name: Jitensha
Subject: Withdrawals

P K	Field Name	Data Type	Length	Nullabl e	Default Value	Description
✓	id	bigint	20	No		Primary
	user_id	bigint	20	No		
	bank_detail_id	bigint	20	No		
	amount	decimal	10,2	Yes	Null	
	status	varchar	255	No	Pending	
	created_at	timestamp		Yes	Null	
	updated_at	timestamp		Yes	Null	
	deleted_at	timestamp		Yes	Null	

Table 4.68

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Appendix A

Letter of Request

Good day! We are 4th year students of BS-Information Systems from De La Salle - College of Saint Benilde and we would like to know your opinion and experiences with regards to the problems faced by bike enthusiasts and users before and during the pandemic.

Data Privacy Notice

The researchers respect your right to privacy and are committed to protecting the confidentiality of your personal information thus have adopted necessary measures to secure it. The researchers are bound to comply with the Data Privacy Act of 2012 (RA 10173), its Implementing Rules and Regulations and relevant issuances of the National Privacy Commission.

By agreeing, you are consenting to our collection and use of information (including recording) in accordance with this Privacy Notice.

You may request access to your personal information, and/or have it corrected, erased or blocked on reasonable grounds. The researchers will also consider the request and reserve the right to deal with the matter in accordance with law.

Amendment/Modification of Data Privacy Policies

The researchers reserve the right to modify/amend this notice at any time in its sole discretion. The modification shall take effect immediately upon posting.

Email

I have read, understood, and agreed to the guidelines and procedures. I also agree to disclose and allow the sharing of my personal and sensitive personal information to the researchers for the aforestated purposes.

Yes

No

Appendix B**Data Gathering Instrument****Survey**

Name

Age

Email

Contact No.

Occupation

Select your location of stay

- Bulacan
- Caloocan
- Cavite
- Laguna
- Las Piñas
- Makati
- Malabon
- Mandaluyong
- Manila
- Marikina
- Muntinlupa
- Navotas
- Parañaque
- Pasay
- Pasig
- Pateros
- Quezon City
- Rizal

San Juan

Taguig

Valenzuela

Do you exercise outdoors?

Always

Often

Sometimes

Rarely

Never

Do you have a bike?

Rarely

Never

Do you use bicycles as a form of outdoor exercise?

Always

Often

Sometimes

Rarely

Never

What kind of bicycle do you have?

Mountain Bike

Road Bike

BMX

Touring Bike

Other

What kind of bicycle rider are you?

Beginner

Average (Leisure Level)

Competitive (Competition Level)

No Idea

How often do you bike?

Daily

Weekly

Monthly

Yearly

Besides for fitness, what do you use your bike for? Select all that apply.

Commuting to school

Commuting to work

Recreational and Leisure activities

Shopping

Business

Other

How knowledgeable are you in bike maintenance?

Excellent

Good

Fair

Poor

Very Poor

Do you maintain your own bike?

Yes

No

How much do you usually spend on maintaining your bike?

Below ₱500

₱1000

More than ₱1000

No Idea

Do you think having an online platform that has a bike maintenance guide feature would be helpful? Please rate from 1 - 5. (5 being the highest and 1 being the lowest)

1

2

3

4

5

Do you have an interest in building a bike?

Yes

No

How good are you in building your personal bike?

Far above standards

Above standards

Meets standards

Below standards

Far below standards

Not sure

How knowledgeable are you in building a bike?

Excellent

Good

Fair

Poor

Very Poor

How knowledgeable are you in bike brands?

Excellent

Good

Fair

- Poor
- Very Poor

Select the factors that you consider when building a bike

- Price
- Durability
- Style/Design
- Brand
- Comfortability
- Other

How interested are you in using the platform to advertise and sell your bike parts?

Note: Products can be either used or brand new. Kindly rate your interest from 1 -5

(With 5 being the highest and 1 being the lowest)

- | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> |

Are you interested in using the Bike Builder feature that the application will offer?

- Strongly Agree
- Agree
- Neither Agree or Disagree
- Disagree

Strongly Disagree

The Bike Builder will have an FAQ feature to ask the rider specific questions; are you interested in using the FAQ feature that application will offer?

Strongly Agree

Agree

Neither Agree or Disagree

Disagree

Strongly Disagree

Are you interested in using the Chatbot feature for questions frequently asked by a user?

Strongly Agree

Agree

Neither Agree or Disagree

Disagree

Strongly Disagree

Are you interested in using the Bike Shop Locator feature to locate the nearest bike shop around the user's area or inputted area?

Strongly Agree

Agree

Neither Agree or Disagree

- Disagree
- Strongly Disagree

Are you interested in using an Instant Messaging feature / Chat Feature to communicate with other users?

- Strongly Agree
- Agree
- Neither Agree or Disagree
- Disagree
- Strongly Disagree

Are you interested in using Bike Manuals and Maintenance to get more information about your bike?

- Strongly Agree
- Agree
- Neither Agree or Disagree
- Disagree
- Strongly Disagree

Appendix C**Curriculum Vitae**

John Bryan Guiab Garcia

18E Renoir, Le Grand Tower 3, Eastwood, Bagumbayan

Quezon City

Contact No. +63 9454734886

E-mail Address: johnbryan306@yahoo.com



EDUCATION

Tertiary Education 2018 – Present

Bachelor of Science in Information Systems

School of Management and Information Technology (SMIT)

De La Salle College of Saint Benilde

2544 Taft Ave., Malate, Manila, Philippines

Secondary Education

Claret School of Quezon City 2011 – 2014

Mahinhin St., UP Village, Diliman, Metro Manila

Quezon City

High School and Senior High School Graduate 2014 – 2018

La Salle Green Hills – Caloocan

343, 1556 Ortigas Ave, Metro Manila

Mandaluyong City

Primary Education

Falcon School

2004 – 2006

22 Dahlia Ave, Novaliches, Quezon City, 1118 Metro Manila

Quezon City

Claret School of Quezon City

2006 – 2009

Mahinhin St., UP Village, Diliman, Metro Manila

Quezon City

AWARDS, SEMINARS AND TRAININGS ATTENDED

Benilde Hacks 2019 – Hackathon

June 9, 2019

Topic: Exhibiting passion in developing

solutions towards agricultural sustainability

Web Design

De La Salle College of Saint Benilde

-

Dean's Lister 2021

A.Y. 2020- 2021 (Term 1: October –December)

De La Salle – College of St. Benilde

Dean's Lister 2021

A.Y. 2020- 2021 (Term 2: January – March)

De La Salle – College of St. Benilde

Skills to Succeed Academy

November 2021

Topic: Career Pursuit

Accenture

Skills to Succeed Academy

November 2021

Topic: Why do you want to be a...?

Accenture

Skills to Succeed Academy

November 2021

Topic: Find your future

Accenture

Benilde Hacks : IS Week 2021

2021

Topic: Encouraging Individuality, Fostering Innovation.

De La Salle – College of St. Benilde

Intrutech web development

2019

Website Development Training

Intrutech Enterprise

SKILLS

- Proficient in speaking English and Filipino
- Knowledgeable about programming languages (HTML, C#, Java, and Php)
- Leadership Experience
- Problem Solving Talent
- Communicational skills written and verbal
- Collaborative and Team Oriented with Teamwork skills

Sevilla Matthew Magdaluyo
#3 Bldg. 4 Cedar St. West Fairview Quezon City
Contact No. +63 9154909926
E-mail Address: matthewmsevilla@gmail.com



EDUCATION

Tertiary Education Bachelor of Science in Information Systems School of Management and Information Technology (SMIT) De La Salle College of Saint Benilde 2544 Taft Ave., Malate, Manila, Philippines	2018 - Present
Secondary Education FEU Diliman Sampaguita Avenue, Mapayapa Village III, Quezon City, 1101	2016 - 2018 2012 - 2016
Falcon School 22 Dahlia Ave, Novaliches, Quezon City, 1118 Metro Manila Quezon City	
Primary Education Falcon School 22 Dahlia Ave, Novaliches, Quezon City, 1118 Metro Manila Quezon City	2004 - 2006 2006 - 2009

AWARDS, SEMINARS AND TRAININGS ATTENDED

S2S Module : Job Hunting during the Pandemic

S2S Module: Career Pursuit

Web Design

De La Salle College of Saint Benilde

Dean's Lister 3rd Yr, AY 2020-2021

SKILLS

- Proficient in speaking English and Filipino
- Basic understanding in Japanese
- Knowledgeable about programming languages (HTML, C#, Java, and Php)
- Leadership Experience
- Time Management
- Problem Solving Skills
- Team Oriented
- Communicational skills written and verbal

ROSTRATA MARC DOMINIC CHUA

Lot 32 Seville St. BF Southland Classic Homes, Phase 4

Las Pinas City

Contact No. +63 9064121648

E-mail Address: *marcdominic.rostrata@benilde.edu.ph*



EDUCATION

Tertiary Education 2018 – Present

Bachelor of Science in Information Systems

School of Management and Information Technology (SMIT)

De La Salle College of Saint Benilde

2544 Taft Ave., Malate, Manila, Philippines

Secondary Education

High School and Senior High School Graduate 2012 - 2018

St. Paul College Balayan – Brgy. Caloocan

Balayan, 4213, Batangas

Primary Education

Pre-School and Elementary 2004 - 2012

Creative Dreams School - Brias St., Brgy 1

Nasugbu, 4231 Batangas

AWARDS, SEMINARS AND TRAININGS ATTENDED

- Benilde Hacks : IS Week 2021 2021

Topic: Encouraging Individuality, Fostering Innovation.

De La Salle – College of St. Benilde

Angela Maree Encomienda Award May 15,
2021

Topic: This award is given to those who have
the undeniable potential for leadership as
characterized by our Chairperson. They are
willing to go the extra mile even if it is an
uphill battle. This is one of the most prestigious
awards during initiation

TIPH (The Initiative Philippines)

Certificate of Achievement May 15, 2021

Topic: Completion of tasks: 8 out of 17 tasks done
for the organization initiation and for successfully
passing the initiation phase.

TIPH (The Initiative Philippines)

Make it Right: Promise
November 09, 2021

Topic: This is regarding about mental health

In studying and workplace – the general consensus
of the mental health is focused on this event.

College of Science

University of Sto. Tomas

Dean's Lister Award 2021

A.Y. 2020- 2021 (Term 1: October – December)

De La Salle – College of St. Benilde

Data Security and Cyber Security Seminar and Award 2019

Topic: Cyber Security and Data Security

Center for Development of Security Excellence and

Defense Counterintelligence and Security Agency

1st Runner Up in Current Events Competition 2016

Topic: Current events in 2016

Regional Competition held by Region IV- Batangas

Research and Debate Workshop 2016

Topic: This is an all- day seminar where research and debate is being discussed e.g. how to properly do a research and how to properly debate in the highest of standards

St. Paul College Balayan

Writer's Workshop

2015

Topic: The pen you yield is mightier than a sword.

St. Paul College Balayan

Science Symposium

2015

Topic: This is an all- day seminar where everything Science is discussed with experiments.

St. Paul College Balayan

SKILLS

- . Knowledgeable of programming languages (C#, Php, Java)
- . Knowledgeable of database (SQL, Hive, Cloudera, etc.)
- . Knowledgeable of Big Data i.e. Hadoop
- . Filipino, English, a little bit of Mandarin and Hokkien proficiency
- . Human Resource experience due to a current listed organization
- . Administrative Skills and Organizational Skills
- . Project Management Skills

- . Analytics and Critical Thinking
- . Written and Verbal Communication
- . Collaborative and Team Oriented with Teamwork skills
- . Good work ethics and Professionalism
- . Creative, Patient, Listening skills, Assertiveness, Self- Control
- . Leadership, Conflict Resolution, Good with people
- . Calm and Collected ; Calculated

Gabriel Torres Tucay

31 Dove st. Francisville Subdivision

Brgy. Mambugan, Antipolo City

gabriel.tucay@benilde.edu.ph

09058388355



EDUCATION

Grade School - Junior High School - 2006-2016 - Nazareth Christian School of Antipolo

Senior High School - 2016-2018 - La Salle College Antipolo

College - 2018-Present - BS-IS De La Salle College of Saint Benilde

HONORS/AWARDS

Loyalty Award -Nazareth Christian School of Antipolo - 2016

LANGUAGES

- English
- Tagalog

TECHNICAL SKILLS

- CSS
- HTML
- C#

PERSONAL SKILLS

- Communicating skills

- Cooperative
- Good at marketing
- Good at Stocks/items/financial Inventory
- can work under pressure
- Multi-tasking
- Entrepreneurial skills

Appendix D

User Manual

I. Introduction

1. System Overview

Jitensha system is a web-based e-commerce application that caters to bike enthusiasts and bike beginners. The system also allows users to sell and buy products from the integrated marketplace and instant messaging. Moreover, the user is also able to build their own specialized bicycles through the use of Jitensha's bike builder feature. It offers users added knowledge regarding anything about bicycles.

This user manual aims to help users understand the system and how to navigate the aforementioned features.

I.II. Users

Normal user

a. A normal user can be anyone who is interested in bicycles i.e. bike enthusiasts and bike beginners. A normal user can also sell their bike-related merchandise in the Ichiba market - given that the user is fully verified.

Bike Shop

a. .A Bike Shop user is a registered tangible shop who can sell their bike-related merchandise using the Ichiba market; the user must be fully verified first. This user can also use the bike builder feature of the system.

II. Getting Started

1. Access Level, Privileges, Process to gain access

A.1. Normal User

The access level of a normal user is straightforward. Upon registration, the

user is asked to verify his/her account using the registered email address.

The privileges: the bike shop user can access the Build and Bike feature.

In order to access the Ichiba (marketplace), the user must again verify their account in the account settings: populating the necessary fields i.e. valid ID etc. Once the user is fully authenticated, he/she can use the Ichiba feature: selling and buying

A.2. Bike Shop

The access level of a bike shop is straightforward. Upon registration, the

user is asked to verify his/her account using the registered email address.

The privileges: the user can access the Build and Bike feature.

In order to access the Ichiba (marketplace), the bike shop must again verify their account in the account settings: populating the necessary fields i.e. DTI registration, business permit, etc. Once the user is fully authenticated, he/she can use the Ichiba feature: selling and buying.

III. User Privileges

1. Edit Personal Information

1. Change Password

The user can change their password in the account settings. The fields are presented below:

The screenshot shows a 'Settings' menu with several tabs: Profile, Change Password, Notifications, Messages, Verify Account, and Build Archive. The 'Change Password' tab is currently selected. Below the tabs, there is a 'Change Password' section containing two input fields: one for 'Password' and one for 'Retype Password'. At the bottom right of this section is a dark-colored 'Update' button.

2. Verify Account

The user can verify their account using the verification feature in order to utilize the Ichiba feature. The UI for this is posted below:

This screenshot shows the 'Verify Account' step of the account setup process. At the top, there are tabs for Profile, Change Password, Notifications, Message, Verify Account, and Edit Archive. Below the tabs, a progress bar indicates the current step is 'VERIFY ACCOUNT'. The main area asks if the user is registering as a 'Bike Shop' or an 'Individual Personal Seller'. A dropdown menu is open, showing 'Select...' and 'Next'. The background features a dark header with navigation links like 'Build and Bike', 'Bikeshop Near Me', 'Bike Parts', 'Mechanics', and 'Info'.

The user is asked if he/she is registering as an individual personal seller or a bike shop. Choosing the two will render the following UI:

Individual Personal Seller:

This screenshot shows the 'VERIFY ACCOUNT' step for an individual personal seller. It includes fields for 'ID Type' (Select ID type), 'ID Number' (Number), 'Front Photo' (Choose File), and 'Back Photo' (Choose File). The 'Upload Documents' section contains fields for 'Business Name' (Business Name) and 'Business Address' (Business Address). A map of Manila is displayed with a red marker indicating the business location. The background header is identical to the previous screenshot.

Bike Shop seller:

This screenshot shows the 'VERIFY ACCOUNT' step for a bike shop seller. It includes fields for 'Business Name' (Business Name) and 'Business Address' (Business Address). A map of Manila is shown with a red marker. The 'Upload Documents' section contains fields for 'Business Brief Description' (Business Brief Description), 'Business Email' (Business Email), 'Contact No.' (Contact No.), 'Business Logo' (Choose File), 'DTC Certificate of Registration' (Choose File), 'Business Logo' (Choose File), 'BusinessMAYORS Permit' (Choose File), and 'BusinessMAYORS Permit' (Choose File). The background header is identical to the previous screenshots.

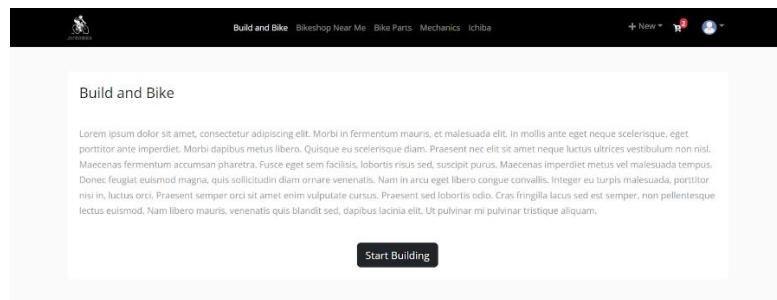
The user is prompted to input the needed information for the chosen type of user.

NOTE: for bike shops, the user is prompted to pin the location of their bike shop

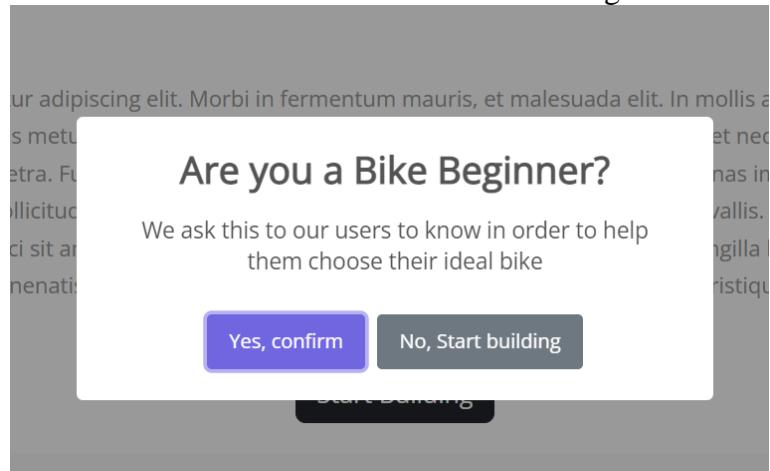
B. Build and Bike

1. Archive

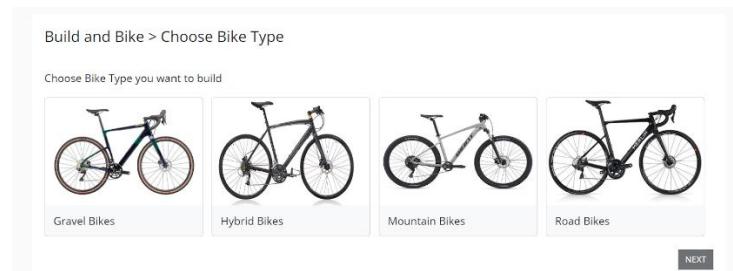
Both users can use the bike builder feature as long as they registered the account and verified their email address.



The user is asked what if he or she is a bike beginner or not:



Let us start with “No, Start Building” When pressed, it will render this UI:



The user is prompted to choose what kind of bike he/she wants to build. Right after clicking, the user is redirected to the component page.

Frameset	No Selected	+ Add Component
Saddle	No Selected	+ Add Component
Groupset	No Selected	+ Add Component
Handlebar	No Selected	+ Add Component
Seatpost	No Selected	+ Add Component
Stem	No Selected	+ Add Component
Tires	No Selected	+ Add Component
Hubs	No Selected	+ Add Component
Fork	No Selected	+ Add Component
Rims	No Selected	+ Add Component

After completing the necessary fields, the builder archives it automatically and can be seen in the “Build Archive” in “Account Settings”

ID#	Type	Action
#16	Hybrid Bikes	View
#15	Gravel Bikes	View
#14	Mountain Bikes	View
#13	Hybrid Bikes	View
#12	Road Bikes	View
#11	Hybrid Bikes	View
#10	Hybrid Bikes	View

If the user chose “Yes, confirm”, then the user is redirected to a questionnaire portion for the user to populate.

Build and Bike > Questionnaire

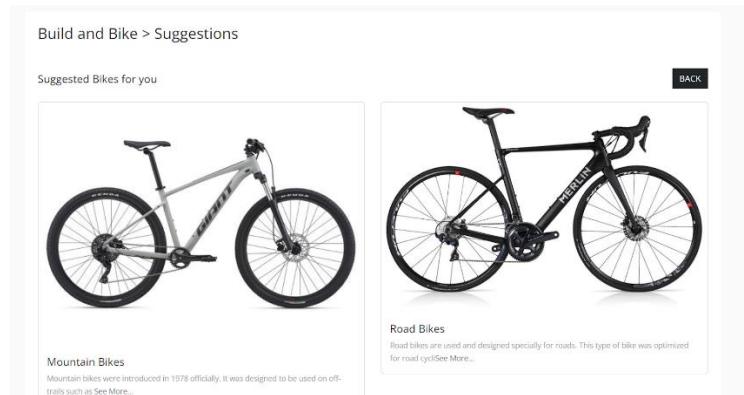
Purpose of use
 Short rides for fitness Sports and competitive level Transportation Long rides Trail Adventure Load-Carrying Fixed-wheel fan

Most common route could be taken
 Pavement Rough road Both pavement and rough road

Preferred Weight
 Light Weight Average Weight

SUBMIT

After completion of the fields, the user is redirected to the suggested bike builds which they cannot alter whatsoever. The suggested bike build is not saved in build archives.



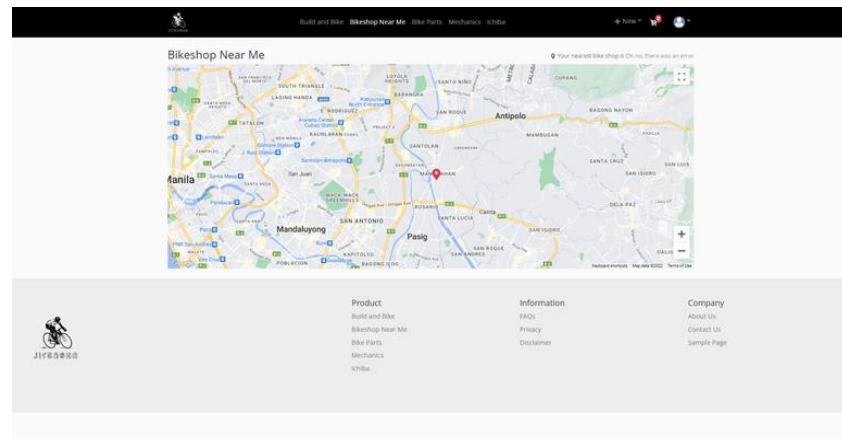
C. Bike Shop Near Me

C.1. Normal User

A normal user can only see the registered bike shops in the maps. The user will only be able to see those who registered (bike shops) in the Jitensha website.

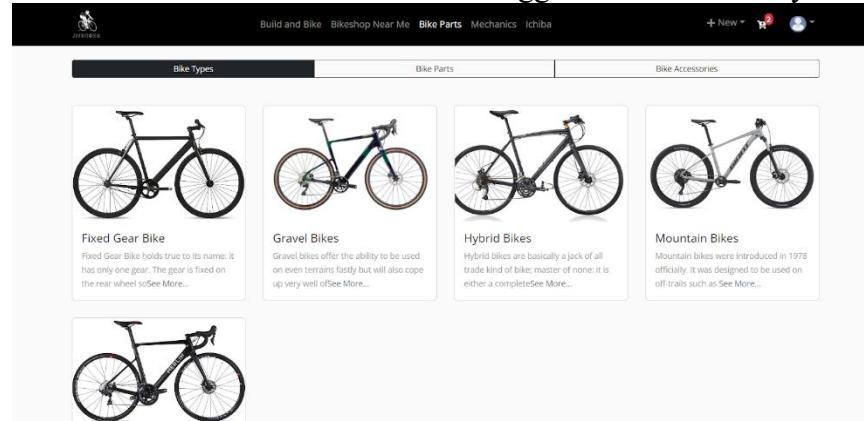
C.2. Bike Shop User

A bike shop user will be able to view his/her shop on the map - given if he/she was able to pin it as close as possible to his/her relative location. In order for this type of user to view, he/she must first verify the account in the "Account Settings". If else, the user will only be able to view other registered bike shops.



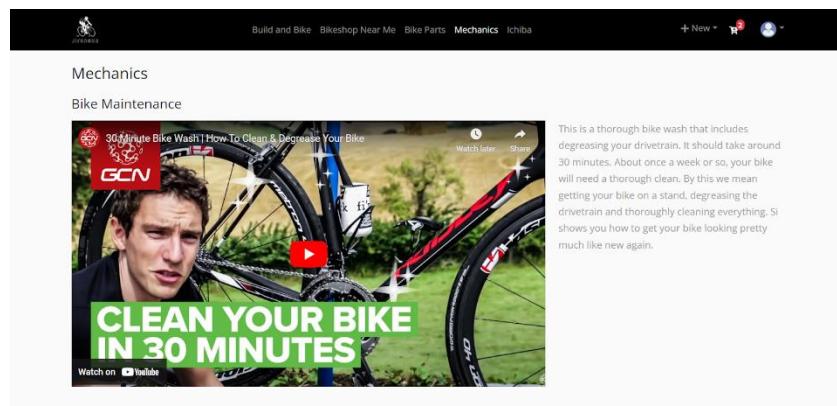
D. Bike Parts

Both user types are able to view the bike parts along with the contents and information given. Anyone can view this information even if he/she has no account or isn't logged in the Jitensha system.



E. Mechanics

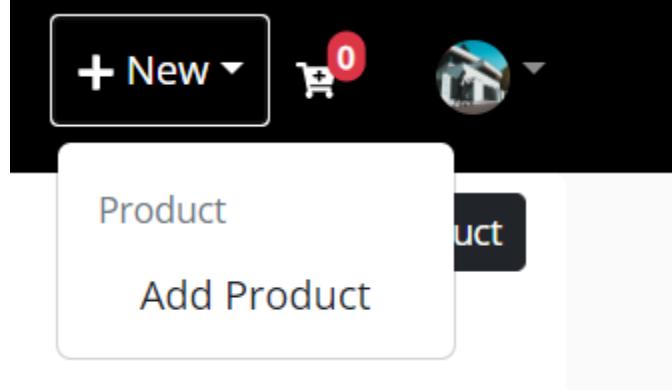
Both user types are able to view the mechanics page along with the contents and information given. Anyone can view this information even if he/she has no account or isn't logged in the Jitensha system. These are in video format.



F. Ichiba

In order to use the Ichiba feature, each user must first verify again under “Account Settings”. The system will ask the corresponding documents per user type. Everything is subjected for approval and once approved, the system will send a notification that he/she is approved and may use the services and offerings of Ichiba.

Listing a product is straightforward. Just click the new on the navigation bar.

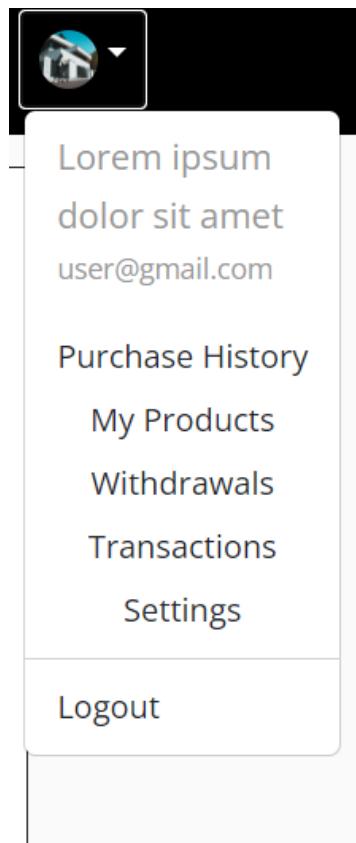


After clicking, the user is met with the corresponding fields for population.

The screenshot shows a two-panel interface for posting a product. On the left, a 'Product' form includes fields for 'Name', 'Category' (with a dropdown menu), 'Price', 'Condition', and 'Description'. A 'Post Listing' button is at the bottom. On the right, a 'Preview' panel shows a placeholder image with a small mountain icon, the price 'P0.00', and a 'Seller Information' section containing a placeholder profile picture and text.

After insertion of data, the user is met with a success notification that it is already posted.

If the user wishes to edit the products posted before, the user must only click the dropdown button under his/her picture in the navigation bar. For default users, the default photo is shown; if the user has edited and put up a picture, that picture will naturally show.

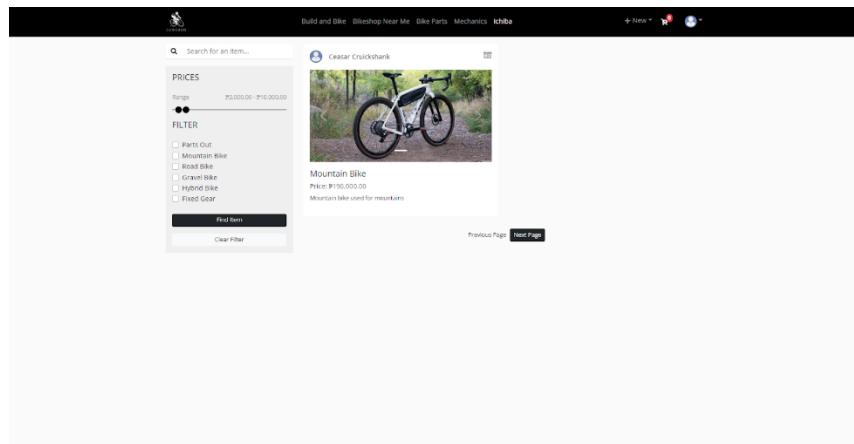


Upon clicking “My Products”, the user will be redirected to the UI of all the products listed. He/she can also add in this UI. The edit and delete buttons can be found here.

My Products			
ID#	Name	Status	Action
#10004	 He Man	Sold	<button>View</button>
#10003	 will	Available	<button>View</button> <button>Edit</button> <button>Delete</button>
#10000	 esthetic bike	Available	<button>View</button> <button>Edit</button> <button>Delete</button>

Previous Page [Next Page](#)

If a user wants to buy a product, he/she needs to be in the Ichiba page.



The user can choose the product he/she wants to procure and purchase. If the user adds it to the “Cart”, he/she can checkout immediately.

Cart

Cesar Cruickshank

Product
Mountain Bike
Mountain Bike
₱190,000.00

Checkout	
Subtotal	₱0.00
Shipping Fee	₱0.00
Total	₱0.00

Checkout

The user then is redirected to the checkout page; the user is prompted to enter the desired shipping address.

Build and Bike Bladshop Near Me Bike Parts Mechanics Ichiba + New

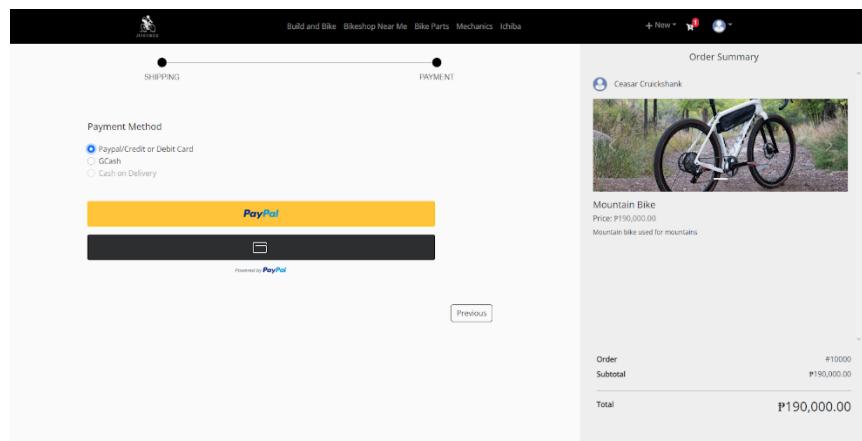
Order Summary

Cesar Cruickshank

Mountain Bike
Price: ₱190,000.00
Mountain bike used for mountains

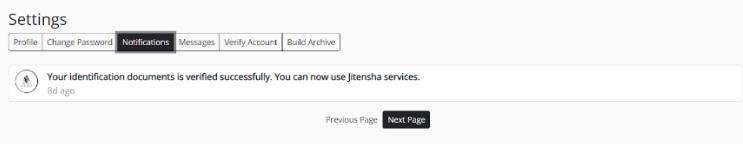
Order	
Subtotal	₱190,000.00
Total	₱190,000.00

Upon insertion, the user is prompted to choose what mode of payment he/she wants. Depending on the mode of payment, it will be redirected to the respective payment gateways.



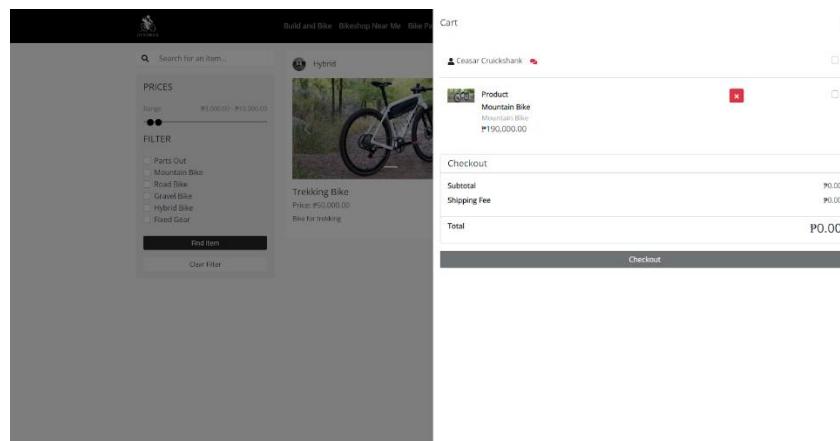
G. Notifications

The notification panel renders all the notifications received by the user: approval of verification and purchases.

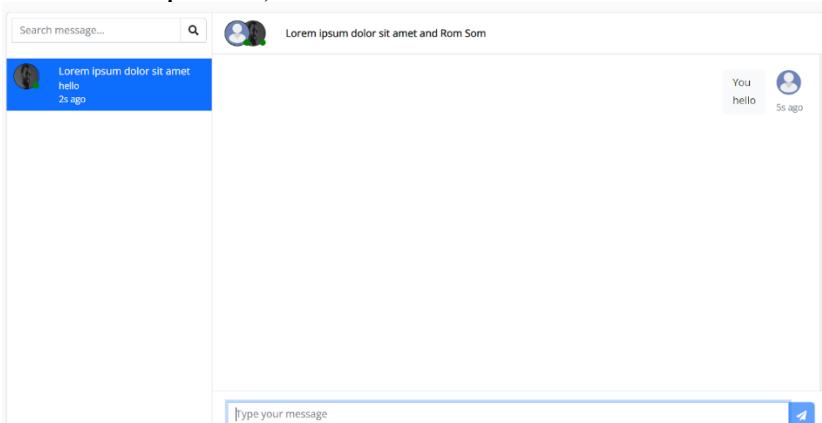


H. Messages

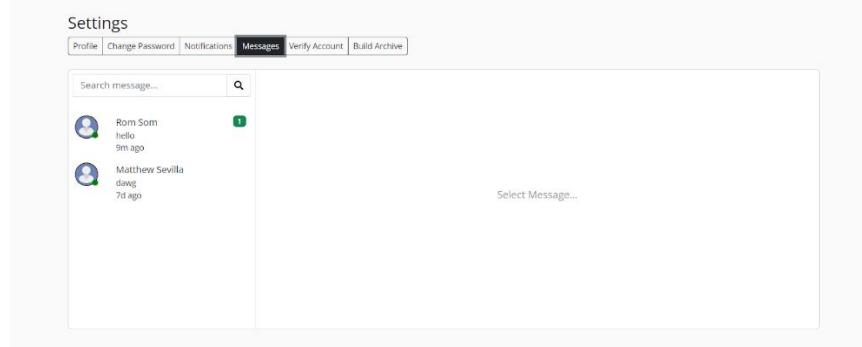
A user can actually message the seller regarding the item; it can be found in the cart-checkout widget. The button is in danger or red. Upon clicking, the user is redirected to the messaging platform.



The user can then send any message to the seller regarding the merchandise (this is if the user wasn't satisfied with the description on the listed product)



If the user wishes to view his/her messages, the user just needs to click the “Account Settings”. All of the messages will be displayed in the message panel.



NOTE: The user will only be able to contact other users if he/she is listed on Ichiba. Finding the user through the use of search features is not supported by the system as of now.

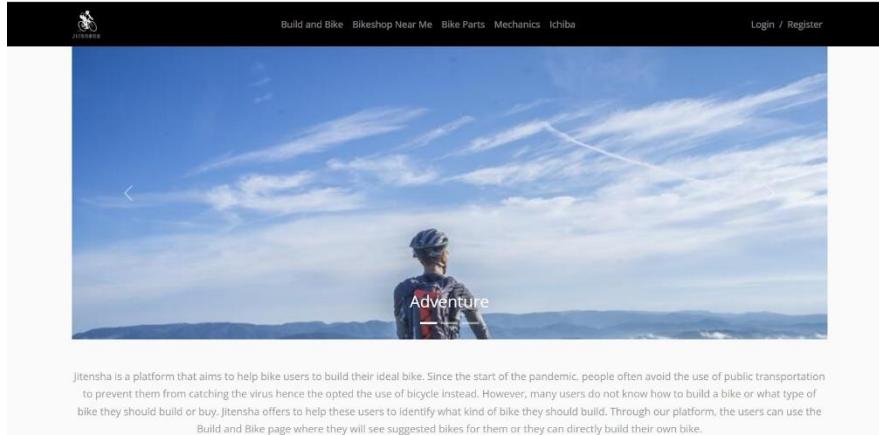
System Admin Manual

I. Introduction

A. System Overview

Jitensha system is a web-based e-commerce application that caters to bike enthusiasts and bike beginners. The system also allows users to sell and buy products from the integrated marketplace and instant messaging. Moreover, the user is also able to build their own specialized bicycles through the use of Jitensha's bike builder feature. It offers users added knowledge regarding anything about bicycles.

This user manual aims to help users understand the system and how to navigate the aforementioned features.



B. Role of Admin

1. The admin is an integral part of the system. The system administrator is responsible for the following:
 1. Manage User such as:
 1. Verifying users if the user is legitimate if the user sent a valid ID to the verify account page.



2. Edit User - The admin can edit the user's information.

Edit User

First Name	Chail
Middle Name	Middle Name
Last Name	CDC
Birthday	12/12/2000
Gender	Male
Phone No.	Contact No.
Email	yopomip629@sopulit.com

Save

3. Ban User - The admin can ban the user if the user is not legitimate or if they scam other users.

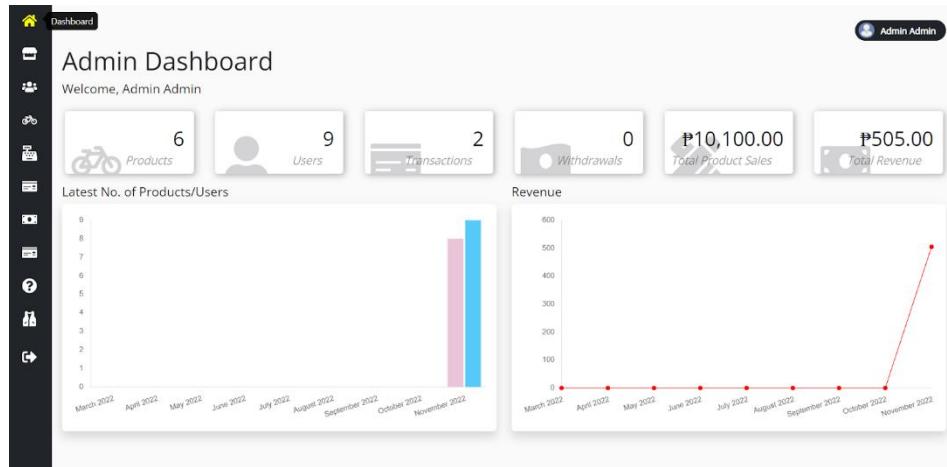
Ban User

Are you sure you want to ban Chail CDC?

Cancel **Confirm**

II. View Dashboard

- A. The user must click the "System Dashboard" button in order to see the system. The "Dashboard" will open as soon as the admin logged in to the system.



IV. Manage FAQ

A. The system admin can view the system FAQ

The Frequently Asked Questions page lists the following questions and their answers:

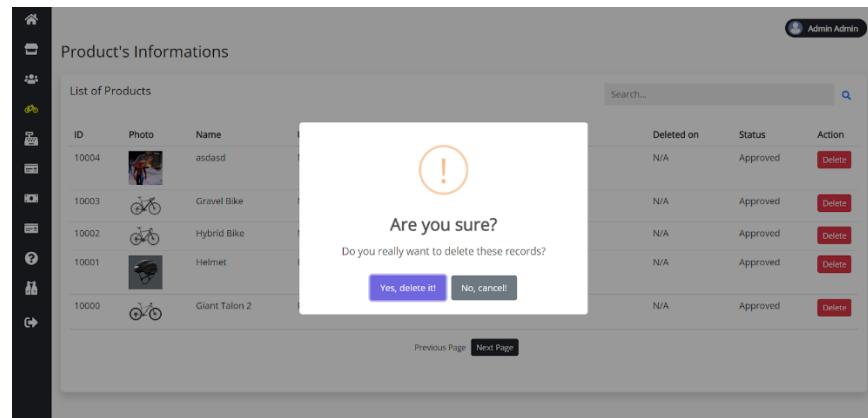
ID	Question	Answer	Action
6	I want to sell a product.	The user can post and sell their items in the ICHIBA page as long as the user's account is verified.	
5	How do I know if the seller from ICHIBA is legit?	In order for the users to use ICHIBA, they must first verify their account through the verify page in settings. The user will be asked to upload a valid ID to verify the user's identity.	
4	What is ICHIBA?	ICHIBA translates to marketplace in Japanese. This is where the users can sell their items as well as buy items from other users.	
3	How do I know what kind of bike is for me?	In the Build and Bike section, the user will be asked if it is their first time to build a bike. If the user is a beginner, they will be asked several questions and upon answering the questions they will be redirected to a page where they can see the suggested bikes.	
2	Can I message the seller in order to ask more questions about the product?	Yes, you can message the seller through the messages page.	
1	How do I update my personal information?	The user can update their personal information in the settings page. They can update their password, name, email address, contact information, etc.	

At the bottom, there are buttons for "Previous Page" and "Next Page".

V. Manage Products

A. Delete Posted Products in Jitensha

1. The system admin has the ability to delete posted products in the Ichiba page if the user posted something that is not related with the system.



VI. Manage Bike Parts

The screenshot shows a list of bike parts and accessories. The table has columns for ID, Type, Name, Description, and Action. The table contains four rows of data.

ID	Type	Name	Description	Action
27	parts	Bike Chains	A chain is made up of a series of links. Most chains have alternating wide and narrow links in a pattern that repeats for the length of the chain. Each link has two side plates, which are held together by rivets (also called pins) and a roller sits on the shoulder of the outer link. In some chains, there can be a separate bushing on either side of the roller, although these are usually absent from modern chains.	<button>Delete</button> <button>Edit</button>
26	accessories	Mud Guard	N/A	<button>Delete</button> <button>Edit</button>
25	accessories	Helmet	N/A	<button>Delete</button> <button>Edit</button>
24	accessories		N/A	<button>Delete</button> <button>Edit</button>

A. Add Product

1. The system admin can add products in the products page to add additional bike parts or accessories in the system. When adding a product, the system admin can choose what type of product they will

add, add a photo of the product as well as description and name of the product.

Add Item X

Type

Select type

Name

Name

Description

Description

Photo

Choose File

No file chosen

Close

Submit

B. Edit Product

1. The system admin can edit the product if the admin inputted the wrong information.

Update Item X

Type

Parts

Name

Bike Chains

Description

A chain is made up of a series of links. Most chains have alternating wide and narrow links in a pattern that repeats for the length of the chain.

Photo

Choose File

No file chosen

CloseSubmit

C. Delete Product

1. The system admin can delete the product that they posted.



Delete Bike Part

Are you sure you want to delete this item?

No, cancel

Yes

VII. View all purchase history in the system

- A. The system admin will be able to view all the purchase history in the system.

Purchase's History							
List of Purchase							
Order	User	Products	Date	Total Price	Payment Status	Fulfillment Status	Created on
#10019	Matthew Sevilla	Matthew Sevilla Mountain Bike ₱25,000.00	Nov 17, 2022 1:27 AM	₱25,000.00	Paid	Ready to Ship	Nov 17, 2022 1:27 AM

IX. View Payment History

- A. The system admin will be able to view all the payment history in the system.

ID	User	Order ID	Method	Reference Number	Amount	Fee	Total Paid	Status
2	Matthew Sevilla	#10001	GCash	src_jaScNxM8oFh8gww6ojx1rEW6	P2,000.00	P0.00	P0.00	Pending
1	Matthew Sevilla	#10000	GCash	src_Y39tN2USBLSkshcB2PMzZkb	P2,000.00	P0.00	P0.00	Pending

Appendix E

Test Case Results

Test Results

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCB U - A00 1	This situation will see if the user will be able to register and populate the fields using email and common personal information.	<ol style="list-style-type: none"> 1. Input name and email address. 2. Enter Gender and Birthday 3. Input password 4. Confirm Password 5. Submit 	<ul style="list-style-type: none"> • John (First name), Doe (Last Name) • bikeuser@gmail.com • Jitensha 123! 	<i>Success: the user will be able to register successfully.</i>	Behaved as expected.

TCB U - A00 2	This situation will see if the user will be able to register with missing fields	<ol style="list-style-type: none"> 1. Input First Name 2. Enter Gender and Birthday 3. Input Password 4. Input Confirm Password 5. Submit 	<ul style="list-style-type: none"> • John (First name) • bikeuser@gmail.com • Jitensha 123! 	<i>Success: the user will be able to register successfully. Last name required.</i>	Behav ed as expect ed.
TCB U - A00 3	The test case action will see if the user can submit the form using a password that is not within the standards of the system.	<ol style="list-style-type: none"> 1. Input name and email address. 2. Enter Gender and Birthday 3. Input password 4. Confirm Password 5. Submit 	<ul style="list-style-type: none"> • (First name), Doe (Last Name) • bikeuser@gmail.com • jitensha 123 	<i>Success: the user was not able to register successfully due to the password inserted was not in correct format</i>	Behav ed as expect ed.
TCB U - A00 4	The test case action will see if the user can submit the form using a password that is not	<ol style="list-style-type: none"> 1. Input name and email address. 2. Enter Gender and Birthday 3. Input password 4. Confirm Password 	<ul style="list-style-type: none"> • (First name), Doe (Last Name) • bikeuser@gmail.com • jitensha 	<i>Success: the user was not able to register successfully due to the password inserted was not in correct format</i>	Behav ed as expect ed.

	within the standard s of the system.	5. Submit			
TCB U - A00 5	The test case action will see if the user can submit the form using a password that is not within the standard s of the system.	1. Input name and email address. 2. Enter Gender and Birthday 3. Input password 4. Confirm Password 5. Submit	<ul style="list-style-type: none"> • (First name), Doe (Last Name) • bikeuser@gmail.com • jitensha! 	<i>Success: the user was not able to register successfully due to the password inserted was not in correct format</i>	Behav ed as expect ed.
TCB U - A00 6	The test case action will see if the user can submit the form using a password that is not within the standard s of the system.	1. Input name and email address. 2. Enter Gender and Birthday 3. Input password 4. Confirm Password 5. Submit	<ul style="list-style-type: none"> • (First name), Doe (Last Name) • bikeuser@gmail.com • Jitensha 	<i>Success: the user was not able to register successfully due to the password inserted was not in correct format</i>	Behav ed as expect ed.
TCB U -	The test case	1. Input name and	• (First name),	<i>Success: the user was not</i>	Behav ed as

A00 7	action will see if the user can submit the form using a password that is not within the standards of the system.	<p>email address.</p> <ol style="list-style-type: none"> 2. Enter Gender and Birthday 3. Input password 4. Confirm Password 5. Submit 	<p>Doe (Last Name)</p> <ul style="list-style-type: none"> • bikeuser@gmail.com • jitensha 123! 	<p><i>able to register successfully due to the password inserted was not in correct format</i></p>	expect ed.
TCB U- A00 8	The test case action will see if the user can submit the form using a password that is not within the standards of the system.	<ol style="list-style-type: none"> 1. Input name and email address. 2. Enter Gender and Birthday 3. Input password 4. Confirm Password 5. Submit 	<ul style="list-style-type: none"> • (First name), Doe (Last Name) • bikeuser@gmail.com • JITENS HA123! 	<p><i>Success: the user was not able to register successfully due to the password inserted was not in correct format</i></p>	Behav ed as expect ed.

TCBU-A009	The test case action will see if the user can submit the form using a password that is not within the standards of the system. Submit	1. Input name and email address. 2. Enter Gender and Birthday. 3. Input password and confirm password. 4. Confirm password. 5.	1. (First name, Do e (Last name) 2. <u>bik</u> <u>eus</u> <u>er</u> <u>@g</u> <u>mai</u> <u>l.co</u> <u>m</u> 3. (Age LL SP AC ES)	<i>Success: the user was not able to register successfully due to the password inserted was not in correct format</i>	Behaved as expected.
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Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output

TCBU - B001	This situation will see if the user will be able to login with correct email and correct password	<ol style="list-style-type: none"> 1. Input email 2. Input Pass word 	<ul style="list-style-type: none"> • bikeuser@gmail.com • Jitensha 123! 	<i>Success: The user was able to login with the correct credentials</i>	Beh aved as expe cted.
TCBU - B002	This situation will see if the user inputted wrong email credentials .	<ol style="list-style-type: none"> 1. Input email 2. Input Pass word 	<ul style="list-style-type: none"> • motorus e@gmai l.com • Jitensha 123! 	<i>Success: the user was not able to login successfully due to wrong email credentials inputted.</i>	Beh aved as expe cted.

TCBU-B003	This situation will see if the system will accept the user if he/she encoded the wrong password.	<ol style="list-style-type: none"> 1. Input email 2. Input Pass word 	<ul style="list-style-type: none"> • bikeuser@gmail.com • Jitensha 123 	<i>Success: the user was not able to login successfully due to wrong password credentials inputted.</i>	Behaved as expected.
TCBU-B003	This test case will see if the user can login even though he/she wasn't able to verify using the code sent to applied email	<ol style="list-style-type: none"> 1. Input email 2. Input Pass word 	<ul style="list-style-type: none"> • bikeuser@gmail.com • Jitensha 123! 	<i>Success: the user was not able to login successfully because the user wasn't able to verify it beforehand. The user is sent back to the verification-code panel.</i>	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCB U - C00 1	The test case will see if the user will be able to change the password sucessfull y via email reset password notificatio	<ol style="list-style-type: none"> 1. Click Forgot Password 2. Input Registered Email address 3. Click Send Email 	<ul style="list-style-type: none"> • bikeuser@gmail.com • Jitensha123! 	<i>Success: The user was able to reset password via Forgot Password</i>	Behaved as expected.

	n in the registered email address; the user will be redirected to the Jitensha reset password form.	<ol style="list-style-type: none"> 4. Click the reset password link sent to the registered email 5. input registered email 6. Input new password 7. Input confirm new password 			
TCB U - C00 2	This test case will see if the user inputted unregistered email using forgot password feature.	<ol style="list-style-type: none"> 1. Click Forgot Password 2. Input unregistered email 3. click send email 	<ul style="list-style-type: none"> • any@gmail.com 	<p><i>Success: The system showed an “Email sending Failed notification .”; The user was not able to reset password via Forgot Password feature.</i></p>	Behave d as expected.
TCB U - C00 3	This test case will see if the user input	<ol style="list-style-type: none"> 1. Click Forgot Password 	<ul style="list-style-type: none"> • bikeuser@gmail.com • Jitensha123! • Jitensha_987 	<p><i>Success: The system showed an “Password</i></p>	Behave d as expected.

	ted two different password in reset password form.	<ol style="list-style-type: none"> 2. Input Registered Email address 3. Click Send Email 4. Click the reset password link sent to the registered email 5. input registered email 6. Input new password 7. Input confirm new password 	<i>must match” notification.; The user was not able to reset password via Forgot Password feature</i>	
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The researchers conducted pre-testing and beta testing to the users before deploying the system to the server. These consist of the test case analysis together with the filled up beta testing forms below.

Test case analysis (Pre-testing)
 TCBU- Test Case Bike User
 TCBS - Test Case Bike Shop
 TCSA - Test Case System Administrator

User

Test Case Scenario - Registration

Test Case Scenario - Login

Test Case Scenario - Forgot Password

Test Case Scenario - Build and Bike - Beginner

Note: Assuming the account is already logged in.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU -D001	The test case will see if the user will be able to build their own bike if they are a beginner	<ol style="list-style-type: none"> 1. Click Build and Bike. 2. Click Start Building. 3. Select Yes 	<ul style="list-style-type: none"> • Questionnaire Answers 	<i>Success: the bike user was able to view the suggested bike builds.</i>	Behaved as expected .

Test Case Scenario - Build and Bike - Bike Enthusiast

Note: Assuming the account is already logged in.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-D002	The test case will see if the user will be able to build their own bike if they are a bike enthusiast	<ol style="list-style-type: none"> 1. Clic k Buil d and Bik e. 2. Clic k Star t Buil ding . 3. Sele ct No, Star t 	<ul style="list-style-type: none"> • Que stio nnai re Ans wer s • Bik e part com pon ents 	<i>Success: the bike user was able to view the different bike types and their corresponding bike components.</i>	Behaved as expected.

		Buil ding 4. Cho ose Bik e Typ e. 5. Add Co mpo nent			
--	--	---	--	--	--

Test Case Scenario - Bike Shop Near Me

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-E001	The test case will see if the user will be able to view the bike shops near him/her.	1. Clic k Bik e Sho p Nea r Me in	• N/A	<i>Success: the bike user was able to view the bike shop near me page: the maps.</i>	Behaved as expected.

		the navigation bar.			
--	--	---------------------	--	--	--

Test Case Scenario - Bike Parts

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-F001	Verify if the user can view different type of bike in the Bike Parts Page	1. Click Parts in navbar 2. Select Bike Types 3. Choose bike types	• N/A	<i>Success: the user was able to view different bike types</i>	Behaved as expected.
TCBU-F002	Verify if the user can view different type of bike parts in the	1. Click Parts in navbar	• N/A	<i>Success: the user was able to view different bike parts</i>	Behaved as expected.

	Bike Parts Page	2. Select Bike Parts 3. Choose bike parts			
TCBU-F003	Verify if the user can view different type of bike accessories in the Bike Parts Page	1. Click Parts in nav bar 2. Select Bike Accessories 3. Choose bike accessories	• N/A	<i>Success: the user was able to view different bike accessories</i>	Behaved as expected.

Test Case Scenario - Mechanics

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-G001	The test case will see if the user will be able to view the mechanics page	1. Click Mechanics in the nav bar	• N/A	<i>Success: the user was able to view the mechanics page</i>	Behaved as expected.

Test Case Scenario - Ichiba

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-H001	The test case will see if the user will be able to view the Ichiba page	1. Click Ichiba in the	• N/A	<i>Success: the user was able to view the Ichiba page</i>	Behaved as expected.

		nav bar			
TCBU-H001	The test case will see if the user tried to add a product with an unverified account.	1. Click Ichi ba in the nav bar 2. Click “+New” in the nab bar 3. Click Add Product	• N/A	<i>Success: the user was redirected to verify account form.</i>	Behaved as expected.
TCBU-H001	Verify if the user can Add to Cart	1. Select an Ite m in the Ichi ba pag e 2. Click Add to Cart 3. Click Yes			

		4. Click the checkbox 5. Select Checkout 6. Input shipping details 7. Click Payment method 8. Select Payment Method 9. Complete Order			
	Verify if the user can filter an item	1. Select an option from the checkbox			

		ckb oxe s in the filte r 2. cho ose pric e rang e 3. Clic k Fin d Ite m			
	Verify if the search for an item	1. Clic k Sear ch for an item 2. Inp ut Ite m you wan t to sear ch 3. Cho ose pric e rang e			

Test Case Scenario - Purchase history

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-I001	The test case will see if the user will be able to view the Purchase History page	1. Click the profile logo in the navbar 2. Click Purchase History	• N/A	<i>Success: the user was able to view the Purchase History page</i>	Behaved as expected.

Test Case Scenario - My Products

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-J001	The test case will see if the user will be able to view the My Products page	1. Click the profile logo in the navbar 2. Click My Products	<ul style="list-style-type: none"> • N/A 	<i>Success: the user was able to view the my product page</i>	Behaved as expected.
TCBU-J002	The test case will see if the user will be able to view the product in My Products page	1. Click the profile logo in the navbar 2. Click My	<ul style="list-style-type: none"> • N/A 	<i>Success: the user was able to view the product in my product page</i>	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		Product s 3. Click view button to the chosen product .			
TCBU-J003	The test case will see if the user will be able to edit the product in My Products page	1. Click the profile logo in the navbar 2. Click My	• Product Name: goodbik e	Success: the user was able to edit the product in my product page	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		Product s 3. Click edit button to the chosen product. 4. change product name			

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-J004	The test case will see if the user will be able to delete the product in My Products page	<ol style="list-style-type: none"> 1. Click the profile logo in the navbar 2. Click My Products 3. Click delete button to the chosen product. 4. Confirm 	<ul style="list-style-type: none"> • N/A 	<i>Success: the user was able to delete the product in my product page</i>	

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		to delete.			

Test Case Scenario - Withdrawal

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-K001	The test case will see if the user will be able to view the Withdrawal page	1. Click the profile logo in the navbar 2. Click Withdrawal	<ul style="list-style-type: none"> • N/A 	<i>Success: the user was able to view the Withdrawal page</i>	Behaved as expected.

Test Case Scenario - Transaction

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-L001	The test case will see if the user will be able to view the Transaction page	1. Click the profile logo in the navbar 2. Click Transaction	<ul style="list-style-type: none"> • N/A 	<i>Success: the user was able to view the Transaction page</i>	Behaved as expected.

Test Case Scenario - Settings

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
TCBU-M001	The test case will see if the user will be able to view the	1. Click the profile logo	<ul style="list-style-type: none"> • N/A 	<i>Success: the user was able to view the Settings page</i>	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
	Settings page	in the nav bar 2. Click Settings			
TCBU-M002	This test case will see if the user will be able to edit is/her user information/profile	1. Click the profile logo in the nav bar 2. Click Settings 3. Click Profile 4. Input/change details	• (Change Last name) re yes-sant os	<i>Success: the user was able to edit his/her profile information</i>	Behaved as expected.
TCBU-M003	This test case will see if the user will be able to change	1. Click settings 2. Click	• Change to new password	<i>Success: the user was able to change their password</i>	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
	their password	Change Pass word 3. Input New Pass word 4. Retype New Pass word 5. Update	d (Jite nsh a12 3!)		
TCBU-M004	This test case will see if the user would still be able to update their password if the confirm password is different	1. Click settings 2. Click Change Pass word 3. Input New Pass word	<ul style="list-style-type: none"> New Pass word: Jite nsh a45 6! Confirm Pass word: Test 123 ! 	<i>Success: the user was not able to change their password. Password must match</i>	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		4. Retype New Pass word 5. Update			
TCBU-M005	The test case will see if the user will be able to view notifications in Settings page	1. Click the profile logo in the navbar 2. Click Settings 3. Click Notification	• N/A	<i>Success: the user was able to view notification in Settings page</i>	Behaved as expected.
TCBU-M006	The test case will see if the user will be able to use messaging feature in Settings page	1. Click the profile logo in the navbar	• N/A	<i>Success: the user was able to use messaging feature in Settings page</i>	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		2. Click Settings 3. Click Messages			
TCBU-M007	This test will verify account for the user in the settings page	1. Click the profile logo in the navbar 2. Click Settings. 3. Click Verify Account 4. Select Individual/Personal Seller	<ul style="list-style-type: none"> • ID Type • Front ID photo • Back ID photo 	<i>Success: the user was able to send information for the verification of account</i>	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		5. Click Next 6. Select ID Type 7. Input ID number 8. Upload Front and Back photo of ID 9. Click Next 10. View Details 11. Click Submit			
TCBS-A001		1. Click the prof	<ul style="list-style-type: none"> • Business 	<i>Success: the user was able to send information</i>	Behaved as expected.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		<p>ile logo in the nav bar</p> <p>2. Clic k Sett ings .</p> <p>3. Clic k Veri fy Acc ount</p> <p>4. Sele ct Bik e Sho p</p> <p>5. Inp ut Bus ines s Na me</p> <p>6. Inp ut Bus ines s Add ress</p> <p>7. Pin in the map</p>	<ul style="list-style-type: none"> • Na me Bus ines s Add ress • Bus ines s Em ail • Con tact No. • Bus ines s Log o • DTI Cert ifica te of Reg istra tion • BIR Cert ifica te of Reg istra tion • Bus ines s/M ayor 's 	<i>for the verification of account</i>	

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		the stor e loca tion 8. Inp ut Brie f Bus ines s Des crip tion 9. Inp ut Bus ines s Em ail 10. Inp ut Con tact Nu mbe r 11. Up load Log o 12. Up load DTI Cert ifica te of Reg	Per mit		

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output
		<p>istration</p> <p>13. Upload BIR Certificate of Registration</p> <p>14. Upload Business/Mayor's Permit</p> <p>15. Click Next</p> <p>16. View Details</p> <p>17. Click Submit</p>			

System Administrator

Test Case Scenario - Dashboard

Note: Assuming the admin is already logged in.

Test Case no.	Action/Case	Test Steps	Input	Executed Output	Actual Output

TCSA-A001	The test case will see if the admin will be able to view the shops, products, users, withdrawals , transactions, FAQs, bike parts, purchase history.	1. Click all the relevant and wanted entities in the navigation bar.	• N/A	<i>Success: the admin was able to view the admin dashboard and its information.</i>	Behaved as expected.
TCSA-A002	The test case will see if the admin will be able to delete a user in the admin dashboard.	1. Click the user in the navigation bar. 2. Delete the user .	• N/A	<i>Success: the admin was able to delete the user in the admin dashboard.</i>	Behaved as expected.
TCSA-A003	The test case will see if the admin will be able to edit a user in the admin dashboard.	1. Click the user in the navigation bar	• Edit : First name (John) to	<i>Success: the admin was able to edit the information of the user in the admin dashboard.</i>	Behaved as expected.

		<p>2. Edit the user .</p>	<p>on bar.</p> <ul style="list-style-type: none"> • (Joe) • Edit : Gen der (Ma le) to (Fe mal e) • Add : Contact Nu mbe r (09 076 523 451) 		
TCSA-A004	The test case will see if the admin will be able to ban the user in the admin dashboard.	<p>1. Click the user in the navigation bar.</p> <p>2. Click the ban user button.</p>	<ul style="list-style-type: none"> • N/A 	<p><i>Success: the admin was able to ban the user in the admin dashboard.</i></p>	Behaved as expected.

TCSA-A005	The test case will see if the admin will be able to unban the user in the admin dashboard.	<ol style="list-style-type: none"> 1. Click the user in the navigation bar. 2. Click the unban user button. 	• N/A	<i>Success: the admin was able to unban the user in the admin dashboard.</i>	Behaved as expected.
TCSA-A006	The test case will see if the admin will be able delete the product in the admin dashboard.	<ol style="list-style-type: none"> 1. Click the product in the navigation bar. 2. Click the unban user button. 	• N/A	<i>Success: the admin was able to delete the product in the admin dashboard.</i>	Behaved as expected.
TCSA-A007	The test case will see if the admin was able to search	<ol style="list-style-type: none"> 1. Click Pur chase 	• #10 018	<i>Success: the admin was able to search successful</i>	Behaved as expected.

	successful purchase history.	Hist ory in the nav bar. 2. inpu t orde r num ber in the sear ch bar. 3. Clic k sear ch.		<i>purchase history.</i>	
TCSA-A008	The test case will see if the admin will be able add a bike part for the bike part page in the admin dashboard.	1. Clic k the bike part s in the navi gati on bar. 2. Clic k the add item butt on. 3. Enc ode and pop	• Sele ct Typ e: Part s • Fra me Seat Stay • Des crip tion : Ma kes the seat stab le fro m	<i>Success: the admin was able to add an item in the bike parts page.</i>	Behaved as expected.

		ulat e the fiel ds and uplo ad a pict ure to be use d for disp lay/ exa mpl e.	<ul style="list-style-type: none"> the rear . . • Ima ge: Fra me Seat Stay Ima ge 		
TCSA-A009	The test case will see if the admin will be able edit a bike part for the bike part page in the admin dashboard.	<ol style="list-style-type: none"> 1. Clic k the bike parts in the navigation bar. 2. Clic k the edit button. 3. Cha nge some of the info 	<ul style="list-style-type: none"> • Sele ct Typ e: Acc esso ries • Wat er Bott le • Des crip tion : This can be use d by the cycl ist 	<i>Success: the admin was able to edit an item in the bike parts page.</i>	Behaved as expected.

		rma tion usin g the for m.	to hyd rate the mse lves .. • Ima ge: Wat er Bott le Ima ge		
TCSA-A010	The test case will see if the admin will be able delete a bike part for the bike part page in the admin dashboard.	1. Clic k the bike parts in the navi gati on bar. 2. Clic k the dele te butt on.	• N/A	<i>Success: the admin was able to delete an item in the bike parts page.</i>	Behaved as expected.

Beta testing forms and results

Name: Michail Dela Cruz

User Type: Individual User

Responses cannot be edited.

Jitensha Beta Testing Form

Good day! We are the researchers that provided you a survey on the development of the system called JITENSHA: The Usability of an Online Build-a-Bike Platform for Bike Users in NCR Plus. We need your assistance in evaluating the system's features before it is finished. As a result, the outcomes of your testing efforts will be used to assess and improve its efficacy and efficiency.

*Required

Email *
michail.dela.cruz@banilde.edu.ph

Name *
Michail Dela Cruz

Part I. Instructions: After the presenter has navigated you throughout the website's functions, please fill up the necessary form below. Untitled section

Register *

Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Login *

Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Forgot Password *

Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Build and Bike *

Build and Bike *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Bike Shop Near Me *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Bike Parts *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Mechanics *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Ichiba *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Edit Profile *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Change Password *

 [View Instructions](#)

Change Password *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Notifications *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Messages *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Verify Account *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Build Archive *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Part II. Instructions: Please answer the following questions based on your evaluation/perception upon using the website. Select only your best answer.

How useful do you think Jitensha to Bike beginners, Bike Enthusiast, and Bike Shops? *

- Very Useful
 Somewhat Useful
 Not Useful
 Not Very Useful

Are the features of Jitensha easy to use? *

- Very Easy
 Somewhat Easy
 Not Easy
 Not Very Easy

Are there any changes you would like to make towards Jitensha's developed website? *

- Yes
 No

If yes, please specify:

.....

How appealing do you think Jitensha's effective in terms of web design? *

- Very Appealing
 Somewhat Appealing
 Not Appealing
 Not Very Appealing

If you have any suggestions/comments about Jitensha, please comment is down below. *

n/a

Name: Zach Gabriel Estrella

User Type: Individual User

Responses cannot be edited

Jitensha Beta Testing Form

Good day! We are the researchers that provided you a survey on the development of the system called JITENSHA: The Usability of an Online Build a Bike Platform for Bike Users in NCR Plus. We need your assistance in evaluating the system's features before it is finished. As a result, the outcomes of your testing efforts will be used to assess and improve its efficacy and efficiency.

* Required

Email *

zachgabriel.estrella@benilde.edu.ph

Name *

Zach Gabriel Estrella

Part I. Instructions: After the presenter has navigated you throughout the website's functions, please fill up the necessary form below. Untitled section

Register *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Login *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Forgot Password *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory

Forgot Password *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Build and Bike *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Bike Shop Near Me *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Bike Parts *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Mechanics *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Ichiba *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Edit Profile *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Change Password *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Notifications *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Messages *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Messages *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Verify Account *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Build Archive *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Part II. Instructions: Please answer the following questions based on your evaluation/perception upon using the website. Select only your best answer.

How useful do you think Jitensha to Bike beginners, Bike Enthusiast, and Bike Shops? *

- Very Useful
 Somewhat Useful
 Not Useful
 Not Very Useful

Are the features of Jitensha easy to use? *

- Very Easy
 Somewhat Easy

Are there any changes you would like to make towards Jitensha's developed website? *

- Yes
 No

If yes, please specify:

Insert official content instead of lorem ipsum

How appealing do you think Jitensha's effective in terms of web design? *

- Very Appealing
 Somewhat Appealing
 Not Appealing
 Not Very Appealing

If you have any suggestions/comments about Jitensha, please comment is down below. *

N/A

Name: Melyssa Dawn Gullon

User Type: Individual User

Responses cannot be edited

Jitensha Beta Testing Form

Good day! We are the researchers that provided you a survey on the development of the system called JITENSHA: The Usability of an Online Build a Bike Platform for Bike Users in NCR Plus. We need your assistance in evaluating the system's features before it is finished. As a result, the outcomes of your testing efforts will be used to assess and improve its efficacy and efficiency.

* Required

Email *

melyssa_dawn_gullon@dlsu.edu.ph

Name *

Melyssa Dawn Gullon

Part I. Instructions: After the presenter has navigated you throughout the website's functions, please fill up the necessary form below. Untitled section

Register *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Login *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Forgot Password *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory

Build and Bike *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Bike Shop Near Me *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Bike Parts *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Mechanics *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Ichiba *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Edit Profile *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Change Password *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Notifications *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Messages *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Verify Account *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Build Archive *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Part II. Instructions: Please answer the following questions based on your evaluation/perception upon using the website. Select only your best answer.

How useful do you think Jitensha to Bike beginners, Bike Enthusiast, and Bike Shops? *

- Very Useful
- Somewhat Useful
- Not Useful
- Not Very Useful

Are the features of Jitensha easy to use? *

- Very Easy
- Somewhat Easy
- Not Easy
- Not Very Easy

Are there any changes you would like to make towards Jitensha's developed website? *

- Yes
- No

If yes, please specify:

.....

How appealing do you think Jitensha's effective in terms of web design? *

- Very Appealing
- Somewhat Appealing
- Not Appealing
- Not Very Appealing

If you have any suggestions/comments about Jitensha, please comment is down below. *

Hoping to see animated elements in the UI in the future!

Name: Franchesca Teng

User Type: Individual User

Responses cannot be edited

Jitensha Beta Testing Form

Good day! We are the researchers that provided you a survey on the development of the system called JITENSHA: The Usability of an Online Build a Bike Platform for Bike Users in NCR Plus. We need your assistance in evaluating the system's features before it is finished. As a result, the outcomes of your testing efforts will be used to assess and improve its efficacy and efficiency.

* Required

Email *

franchesca.teng@benilde.edu.ph

Name *

Franchesca Teng

Part I. Instructions: After the presenter has navigated you throughout the website's functions, please fill up the necessary form below. Untitled section

Register *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Login *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Forgot Password *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory

Build and Bike *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Bike Shop Near Me *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Bike Parts *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Mechanics *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Ichiba *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory
-

Edit Profile *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Change Password *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Notifications *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Messages *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Verify Account *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Build Archive *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Part II. Instructions: Please answer the following questions based on your evaluation/perception upon using the website. Select only your best answer.

How useful do you think Jitensha to Bike beginners, Bike Enthusiast, and Bike Shops? *

- Very Useful
- Somewhat Useful
- Not Useful
- Not Very Useful

Are the features of Jitensha easy to use? *

- Very Easy
- Somewhat Easy
- Not Easy
- Not Very Easy

Are there any changes you would like to make towards Jitensha's developed website? *

- Yes
- No

If yes, please specify:

.....

How appealing do you think Jitensha's effective in terms of web design? *

- Very Appealing
- Somewhat Appealing
- Not Appealing
- Not Very Appealing

If you have any suggestions/comments about Jitensha, please comment is down below. *

Good website, very simple to use.....

Name: Roshan Thakwani

User Type: Bike Shop User

Responses cannot be edited

Jitensha Beta Testing Form

Good day! We are the researchers that provided you a survey on the development of the system called JITENSHA: The Usability of an Online Build a Bike Platform for Bike Users in NCR Plus. We need your assistance in evaluating the system's features before it is finished. As a result, the outcomes of your testing efforts will be used to assess and improve its efficacy and efficiency.

* Required

Email *

thakwanir@gmail.com

Name *

Roshan Thakwani

Part I. Instructions: After the presenter has navigated you throughout the website's functions, please fill up the necessary form below. Untitled section

Register *

Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Login *

Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Forgot Password *

Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory

Build and Bike *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Bike Shop Near Me *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Bike Parts *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Mechanics *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Ichiba *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Edit Profile *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Change Password *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Notifications *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Messages *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Verify Account *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Build Archive *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Part II. Instructions: Please answer the following questions based on your evaluation/perception upon using the website. Select only your best answer.

How useful do you think Jitensha to Bike beginners, Bike Enthusiast, and Bike Shops? *

- Very Useful
 Somewhat Useful
 Not Useful
 Not Very Useful

Are the features of Jitensha easy to use? *

- Very Easy
 Somewhat Easy
 Not Easy
 Not Very Easy

Are there any changes you would like to make towards Jitensha's developed website? *

- Yes
 No

If yes, please specify:

Page responsiveness: Some pages consist of heavy image files, slowing down loading time. This can be improved for better user experience.

How appealing do you think Jitensha's effective in terms of web design? *

- Very Appealing
- Somewhat Appealing
- Not Appealing
- Not Very Appealing

If you have any suggestions/comments about Jitensha, please comment is down below. *

So far, the system looks very professional and it has all the utilities/features needed for good user interaction which can possibly increase conversion rates.

Name: Ysabel Pan

User Type: Bike Shop User

Responses cannot be edited

Jitensha Beta Testing Form

Good day! We are the researchers that provided you a survey on the development of the system called JITENSHA: The Usability of an Online Build a Bike Platform for Bike Users in NCR Plus. We need your assistance in evaluating the system's features before it is finished. As a result, the outcomes of your testing efforts will be used to assess and improve its efficacy and efficiency.

* Required

Email *

nogaviola@up.edu.ph

Name *

Ysabel Pan

Part I. Instructions: After the presenter has navigated you throughout the website's functions, please fill up the necessary form below. Untitled section

Register *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Login *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Forgot Password *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory

Build and Bike *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Bike Shop Near Me *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Bike Parts *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Mechanics *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Ichiba *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Edit Profile *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Change Password *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Notifications *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Messages *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Verify Account *

- Very Satisfactory
 Somewhat Satisfactory
 Somewhat Unsatisfactory
 Very Unsatisfactory

Build Archive *

- Very Satisfactory
- Somewhat Satisfactory
- Somewhat Unsatisfactory
- Very Unsatisfactory

Part II. Instructions: Please answer the following questions based on your evaluation/perception upon using the website. Select only your best answer.

How useful do you think Jitensha to Bike beginners, Bike Enthusiast, and Bike Shops? *

- Very Useful
- Somewhat Useful
- Not Useful
- Not Very Useful

Are the features of Jitensha easy to use? *

- Very Easy
- Somewhat Easy
- Not Easy
- Not Very Easy

Are there any changes you would like to make towards Jitensha's developed website? *

- Yes
- No

If yes, please specify:

.....

How appealing do you think Jitensha's effective in terms of web design? *

- Very Appealing
- Somewhat Appealing
- Not Appealing
- Not Very Appealing

If you have any suggestions/comments about Jitensha, please comment is down below. *

N/A

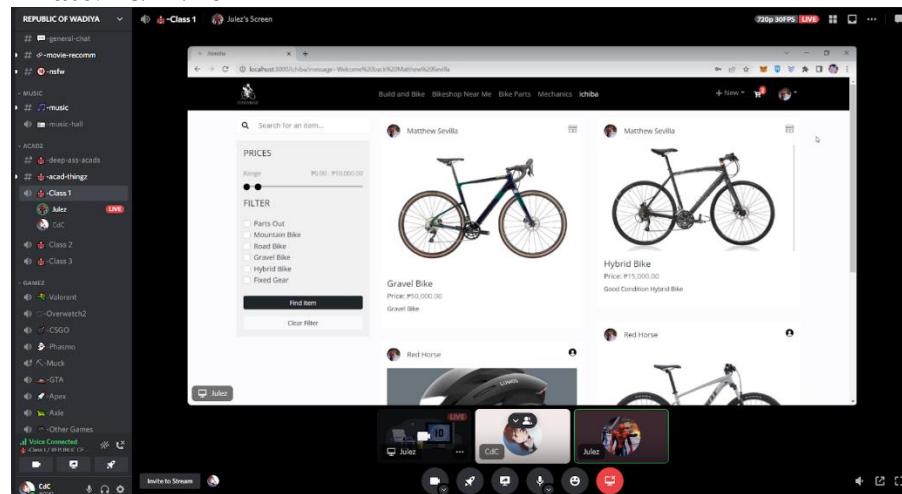
Appendix F

Pictures showcasing data gathering and investigation done

User Role: Individual User

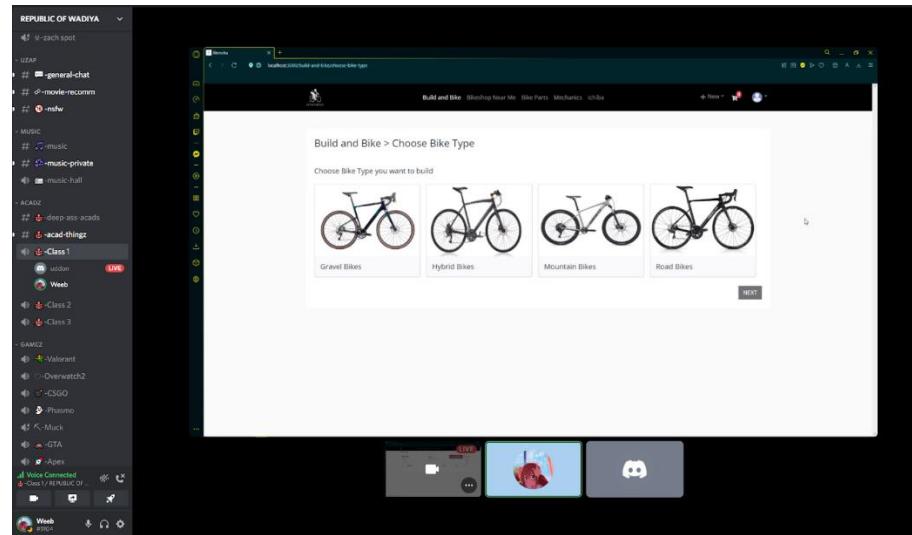
Respondent name: Chail Dela Cruz

Date: 18/11/2022

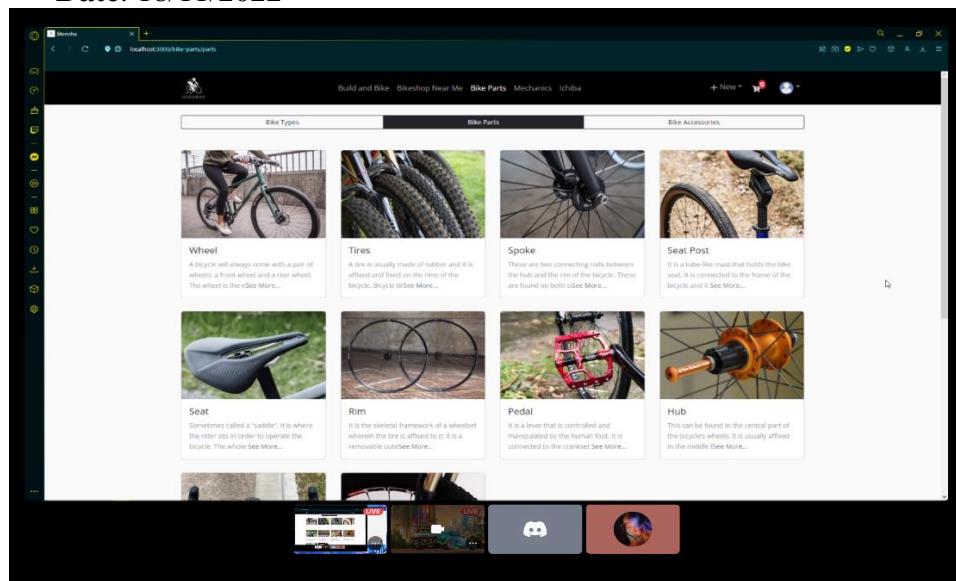


Respondent name: Zach Estrella

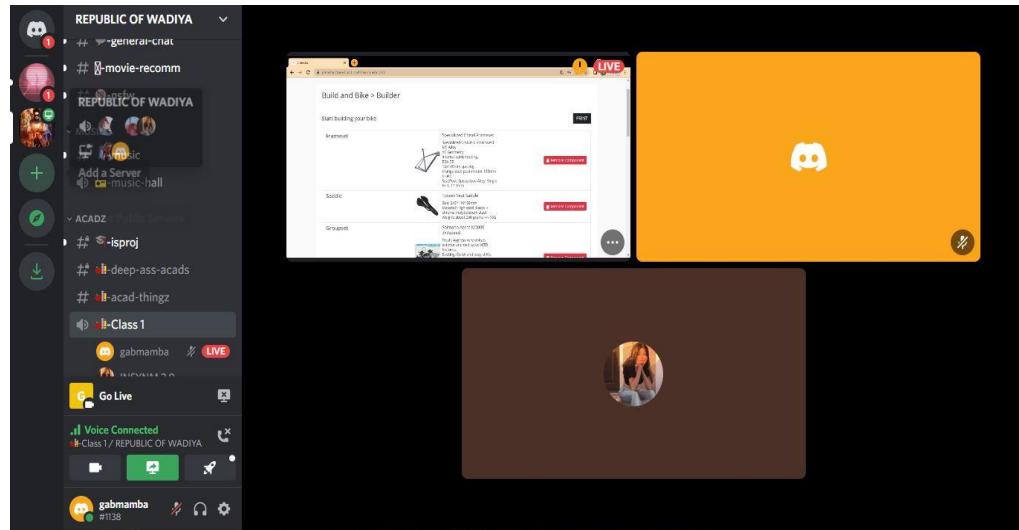
Date: 18/11/2022



Respondent name: Melyssa Dawn Gullon
Date: 18/11/2022



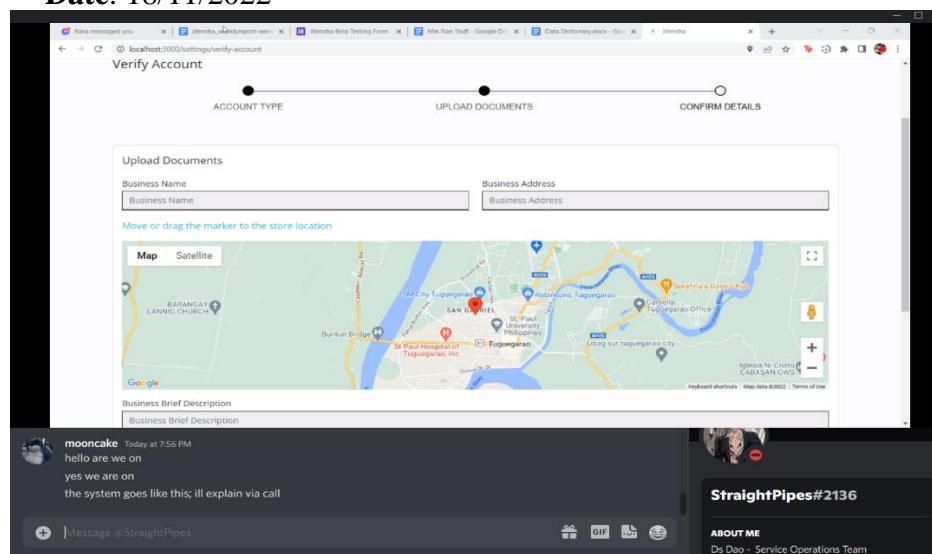
Respondent name: Franchesca Teng
Date: 18/11/2022



User Role: Bike Shop User

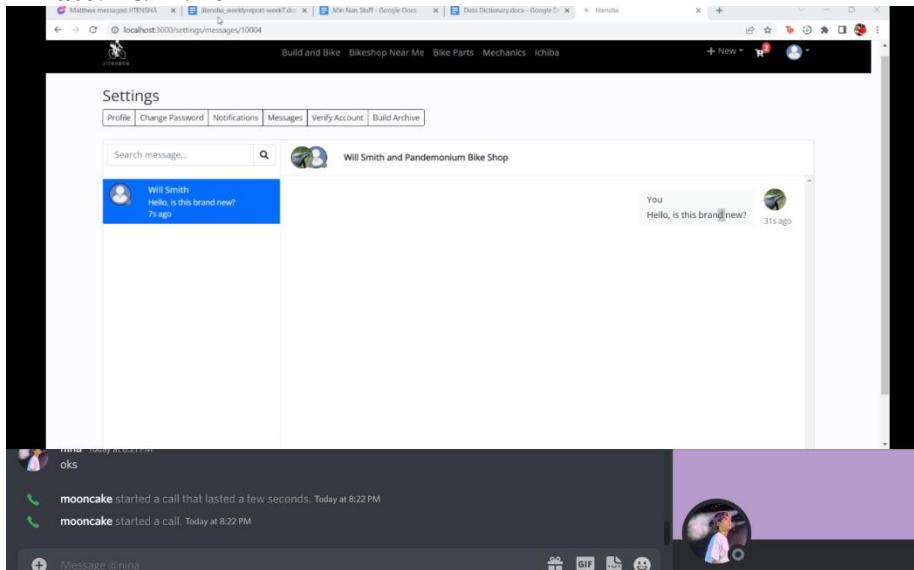
Respondent name: Rosh Thakwani

Date: 18/11/2022



Respondent name: Ysabel Pan

Date: 18/11/2022



Appendix G

Third Party Source/API

Paymonggo Services

```
<?php

namespace App\Services;

use Illuminate\Http\Request;
use Illuminate\Support\Facades\Route;
use Luigel\Paymongo\Facades\Paymongo;

class PayMongoService
{
    /**
     * The app instance.
     *
     * @var
     */
    public function __construct()
    {
```

```
}

public function getPaymentIntent($id)
{
    $paymentIntent = Paymongo::paymentIntent()->find($id);

    return $this->dismount($paymentIntent);
}

public function card(array $payload = [])
{
    try {
        $paymentMethod = Paymongo::paymentMethod()-
>create([
            'type' => 'card',
            'details' => [
                'card_number' => (string)
$payload['card_number'],
                'exp_month' => (int)
$payload['expiration_month'],
                'exp_year' => (int)
$payload['expiration_year'],
                'cvc' => (string) $payload['cvc'],
            ],
            'billing' => [
                'name' => $payload['card_holder'],
                'email' => $payload['email'],
            ],
        ]);
        $paymentIntent = Paymongo::paymentIntent()-
>create([
            'amount' => $this-
>checkoutAmount($payload['amount'], config('payment-
fees.paymongo.card.other'), config('payment-
fees.paymongo.card.percentage')),
            'payment_method_allowed' => [
                'card',
            ],
            'payment_method_options' => [
                'card' => [
                    'request_three_d_secure' => 'any',
                ],
            ],
            'description' => $payload['description'],
            'statement_descriptor' =>
$payload['statement_descriptor'],
            'currency' => $payload['currency'],
        ]);
    } catch (\Exception $e) {
        $this->log($e);
        return $this->error($e);
    }
}
```

```
]) ;

$payment = Paymongo::paymentIntent() ->find($this->dismount($paymentIntent) ['id']) ->attach($this->dismount($paymentMethod) ['id']);

return $this->dismount($payment);
} catch (Exception $e) {

\Log::info($e);

return $e;
}

public function source($type = '', array $payload = [])
{
try {
$this->webHook();
$source = Paymongo::source() ->create([
'type' => $type,
// 'amount' => $this->checkoutAmount($payload['amount'], 0, 0.029),
'amount' => $payload['amount'],
'currency' => $payload['currency'],
'redirect' => [
'success' => $this->redirectUrl('success',
	payload['payment_id'] ?? ''),
'failed' => $this->redirectUrl('failed',
	payload['payment_id'] ?? ''),
],
'billing' => [
'name' => $payload['name'],
'email' => $payload['email'],
],
]);
}

return $this->dismount($source);
} catch (Exception $e) {

\Log::info($e);

return $e;
}
}
```

```
public function payment(array $payload = [])
{
    try {
        $payment = Paymongo::payment()
            ->create([
                // 'amount' => $this->checkoutAmount($payload['amount'], 0, 0.029),
                'amount' => $payload['amount'],
                'currency' => $payload['currency'],
                'description' => $payload['description'],
                'statement_descriptor' =>
                    $payload['statement_descriptor'],
                'source' => [
                    'id' => $payload['id'],
                    'type' => $payload['type'],
                ],
            ]);
    }

    return $this->dismount($payment);
} catch (Exception $e) {

    \Log::info($e);

    return $e;
}
}

public function redirectUrl($status = '', $payment_id = null)
{
    return url('/').'/purchase-history?' . http_build_query(['payment_id' => $payment_id,
        'status' => $status]);
}

public function webHook()
{
    try {
        $webhooks = Paymongo::webhook()->all();

        Paymongo::webhook()->create([
            'url' =>
                url('/api/payment/paymongo/postback'),
            'events' => [
                'source.chargeable',
            ],
        ]);
    }
}
```

```
        if (count($webhooks) === 0) {
            Paymongo::webhook()->create([
                'url' =>
                    url('/api/payment/paymongo/postback'),
                'events' => [
                    'source.chargeable',
                ],
            ]);
        }

        return true;
    }

    return true;
} catch (Exception $e) {

    \Log::info($e);

    return $e;
}

public function getPaymentFee($amount = 0, $other_fee = 0,
$percentage = 0)
{
    return ($amount * $percentage) + $other_fee;
}

public function getTotalAmount($amount = 0, $other_fee =
0, $percentage = 0)
{
    return $this->getPaymentFee($amount, $other_fee,
$percentage) + $amount;
}

public function getTotalPaymentFee($amount = 0, $other_fee =
0, $percentage = 0)
{
    return round($this->getPaymentFee($this-
>getTotalAmount($amount, $other_fee, $percentage), $other_fee,
$percentage));
}

public function checkoutAmount($amount = 0, $other_fee =
0, $percentage = 0)
{
```

```
        return (int) ($this->getTotalPaymentFee($amount,
$other_fee, $percentage) + $amount);
    }

    public function dismount($object)
    {
        $reflectionClass = new
\ReflectionClass(get_class($object));
        $array = [];
        foreach ($reflectionClass->getProperties() as
$property) {
            $property->setAccessible(true);
            $array[$property->getName()] = $property-
>getValue($object);
            $property->setAccessible(false);
        }

        return $array;
    }
}
```

Twillio

```
<?php

namespace App\Services;

use App\Helpers\Utils;
use Twilio\Exceptions\RestException;
use Twilio\Rest\Client;

/**
 * A service class to send sms.
 *
 * @author carl
 * @return bool
 */
class TwilioSms
{
    public static $twilioSms;
    public static $countryCodes;

    public static function init()
    {
```

```
self::$twilioSms = new Client(
    config('services.twilio.account_sid'),
    config('services.twilio.auth_token')
);

self::$countryCodes =
json_decode(file_get_contents(storage_path() . '/json/Countries.json'), true);
}

public static function send(array $sms)
{
    self::init();

    try {
        $number =
self::validateNumberToInternationalFormat($sms['number'],
$sms['country']);

        return self::$twilioSms
            ->messages
            ->create($number,
[
    'from' =>
config('services.twilio.phone_number'),
    'body' => $sms['content'],
]
);
    } catch (RestException $e) {

        \Log::info($e);

        return false;
    }

    return false;
}

public static function lookUp($number)
{
    self::init();

    $phone_number = self::$twilioSms
->lookups
->v1
->phoneNumbers($number)
```

```
->fetch(
    [
        'type' => 'carrier',
    ]
);

    return $phone_number->carrier;
}

public static function validateNumberToInternationalFormat($number, $country_code =
'PH')
{
    $country_codes = self::$countryCodes;
    $country_code =
self::getCountryCodeByName(strtoupper($country_code));
    $default_country_code = '63';
    $number = preg_replace("/\([0-9]+?\)/", '', $number);
    $number = preg_replace('/[^\d]/', '', $number);
    $number = ltrim($number, '0');
    if (array_key_exists($country_code, $country_codes)) {
        $pfx = $country_codes[$country_code];
    } else {
        $pfx = $default_country_code;
    }
    if (! preg_match('/^'. $pfx .' /', $number)) {
        $number = $pfx.$number;
    }

    return '+' . $number;
}

public static function getCountryCodeByName($countryName)
{
    $countrys = self::$countryCodes;
    $country_code = 'PH';
    foreach ($countrys as $country) {
        if ($country['name'] === $countryName) {
            $country_code = $value['code'];
        }
    }

    return $country_code;
}
```

```
import { useState, useEffect } from 'react';
import { OverlayTrigger, Tooltip } from 'react-bootstrap';
import { Navigate, useLocation, useNavigate, Outlet } from 'react-router-dom';
import { FaHome, FaUsers, FaMotorcycle, FaMapMarkerAlt, FaSignOutAlt } from 'react-icons/fa';
import { LinkContainer } from 'react-router-bootstrap';
import { useDispatch } from 'react-redux';
import OneSignal from 'react-onesignal';
import { useAuth } from 'hooks/useAuth';
import Header from 'pages/shared/Header';
import Cart from 'pages/products/Cart';
import { fetchUser } from 'redux/reducers/user';

function Auth() {
    const auth = useAuth();
    const dispatch = useDispatch();
    const navigate = useNavigate();
    const location = useLocation();

    useEffect(() => {
        if (auth.isAuthenticated) {
            oneSignalInit();

            dispatch(fetchUser());
        }
    }, [auth.isAuthenticated]);

    const oneSignalInit = async () => {
        await OneSignal.init({
            appId: '81357323-82b7-456f-9950-b74203a22c39',
            autoRegister: true,
            notifyButton: {
                enable: false,
            },
        });
        OneSignal.setExternalUserId(auth.getId().toString());
        OneSignal.sendTags({
            name: auth.getName,
            user_id: auth.getId,
            role_id: auth.getRoleId,
        });
        OneSignal.setSubscription(true);
    };

    if (!auth.isAuthenticated) {
```

```
        return <Navigate
      to="/login?message=Please%20login%20to%20access%20this%20page"
      state={{ from: location }} />;
    }

    if (auth.isAdmin) {
      return <Navigate to="/admin/dashboard" state={{ from:
location }} />;
    }

    return (
      <Cart>
        <Header />
        <Outlet />
      </Cart>
    )
}

export default Auth;
```

Linode

```
'disks' => [

  'local' => [
    'driver' => 'local',
    'root' => storage_path('app'),
  ],

  'public' => [
    'driver' => 'local',
    'root' => storage_path('app/public'),
    'url' => env('APP_URL').'/storage',
    'visibility' => 'public',
  ],

  's3' => [
    'driver' => 's3',
    'key' => env('AWS_ACCESS_KEY_ID'),
    'secret' => env('AWS_SECRET_ACCESS_KEY'),
    'region' => env('AWS_DEFAULT_REGION'),
    'bucket' => env('AWS_BUCKET'),
    'url' => env('AWS_URL'),
    'endpoint' => env('AWS_ENDPOINT'),
  ],
]
```

```
        'use_path_style_endpoint' =>
env('AWS_USE_PATH_STYLE_ENDPOINT', false),  
  
        'visibility' => 'public',  
        'options' => [  
            'CacheControl' => 'max-age=315360000, no-  
transform, public',  
        ],  
  
    ],  
  
],
```

Sendinblue

```
'mailers' => [  
    'smtp' => [  
        'transport' => 'smtp',  
        'host' => env('MAIL_HOST', 'smtp.mailgun.org'),  
        'port' => env('MAIL_PORT', 587),  
        'encryption' => env('MAIL_ENCRYPTION', 'tls'),  
        'username' => env('MAIL_USERNAME'),  
        'password' => env('MAIL_PASSWORD'),  
        'timeout' => null,  
        'auth_mode' => null,  
    ],  
  
    'ses' => [  
        'transport' => 'ses',  
    ],  
  
    'mailgun' => [  
        'transport' => 'mailgun',  
    ],  
  
    'postmark' => [  
        'transport' => 'postmark',  
    ],  
  
    'sendmail' => [  
        'transport' => 'sendmail',  
        'path' => env('MAIL_SENDMAIL_PATH',  
'/usr/sbin/sendmail -t -i'),  
    ],  
  
    'log' => [  
        'transport' => 'log',
```

```
        'channel' => env('MAIL_LOG_CHANNEL'),
    ],

    'array' => [
        'transport' => 'array',
    ],

    'failover' => [
        'transport' => 'failover',
        'mailers' => [
            'smtp',
            'log',
        ],
    ],
    'sendinblue' => [
        'transport' => 'sendinblue',
    ],
],
```

Pusher

```
import { useEffect } from 'react';
import LaravelEcho from 'laravel-echo';
import { isDev, WEB_SOCKET_AUTH, BASE_URL } from './config';

let Echo;

function Socket(token) {
    window.Pusher = require('pusher-js');
    Echo = new LaravelEcho({
        broadcaster: 'pusher',
        key: 'wzQK8vsdwMlyogC8AJN19tSI52gDDNcJ091mb9SnN7ip8wWPkd',
        wsHost: BASE_URL,
        wsPort: 6001,
        wssPort: 443,
        enabledTransports: ['ws', 'wss'],
        disableStats: true,
        cluster: 'eu',
        ...(isDev() ? { forceTLS: false } : {}),
    });
}

Echo.connector.pusher.config.authEndpoint = WEB_SOCKET_AUTH;
```

```
    Echo.connector.pusher.config.auth.headers['Authorization'] =  
`Bearer ${token}`;  
  
    return Echo;  
}  
  
export default Socket;
```

Google Map

```
import { useState, useEffect } from 'react';  
import { Container, Image, OverlayTrigger, Popover } from  
'react-bootstrap';  
import { useNavigate } from 'react-router-dom';  
import GoogleMapReact from 'google-map-react';  
import { FaStore, FaMapMarkerAlt } from 'react-icons/fa';  
import { useGetNearestBikeShopQuery, useGetBikeShopsQuery, }  
from '../.../redux/services/business';  
import { useUpdateLocationMutation } from  
'.../.../redux/services/user';  
import Loader from 'pages/shared/Loader';  
  
const AnyReactComponent = ({ text, style, shop = null }) => {  
  const navigate = useNavigate();  
  
  return (  
    <div className="text-center" style={style}>  
      {shop ? (  
        <OverlayTrigger  
          placement="top"  
          overlay={  
            <Popover className="border-0 shadow">  
              <Popover.Header as="h2" className="bg-white border-0">{shop?.name}</Popover.Header>  
              <Popover.Body>  
                <p className="mb-0 small">Address:  
{shop?.address}</p>  
                <p className="mb-0 small">Email:  
{shop?.email}</p>  
                <p className="mb-0 small">Contact No.:  
{shop?.contact_no}</p>  
              </Popover.Body>  
            </Popover>  
      )}  
    >  
    <div type="button" onClick={() =>  
      navigate(`/user/${shop?.user_id}`)} className="" style={{  
marginLeft: -35 }}>
```

```
        <Image src={shop.logo} width={35} height={35}
      className="rounded-circle border" />
    </div>
  </OverlayTrigger>
) : <h3 className="text-danger"><FaMapMarkerAlt /></h3>
</div>
)
}

const NearestBikeShop = ({ latitude, longitude, distance }) =>
{
  const { data, error, isLoading, isFetching, refetch } =
useGetNearestBikeShopQuery({ latitude, longitude, distance });

  useEffect(() => {
    refetch();
  }, []);

  return (
    <div>
      <p className="mb-0 small">
        <span className="text-muted"><FaMapMarkerAlt /> Your
nearest bike shop is </span>
        {error ? (
          <>Oh no, there was an error</>
        ) : isLoading ? (
          <>Loading....</>
        ) : data ? (
          <span className="text-dark">{data.name}
        ({data.distance} km)</span>
        ) : null}
      </p>
    </div>
  );
};

function Index() {
  const [coords, setCoords] = useState(null);
  const [zoom, setZoom] = useState(13);
  const [opacity, setOpacity] = useState(1);
  const [updateLocation] = useUpdateLocationMutation();
  const { data, error, isLoading, isFetching, refetch } =
useGetBikeShopsQuery();

  useEffect(() => {
    getLocation();
    refetch();
  }, [
```

```
}, []);

const showPosition = async position => {
  try {
    await updateLocation({
      latitude: position.coords.latitude,
      longitude: position.coords.longitude
    });
  } catch (error) {
    console.log(error);
  }

  setCoords(position.coords);
};

const getLocation = () => {
  if (navigator.geolocation) {
    navigator.geolocation.getCurrentPosition(showPosition);
  } else {
    alert('Geolocation is not supported by this browser.');
  }
};

console.log(data, error)

return (
  <Container>
    <div className="mt-4 mb-4">
      <div className="d-flex justify-content-between align-items-center">
        <h3>Bikeshop Near Me</h3>
        {coords ? (
          <NearestBikeShop
            key={JSON.stringify(coords)}
            latitude={coords?.latitude}
            longitude={coords?.longitude}
          />
        ) : null}
      </div>
      <div style={{ height: 500, width: '100%' }}>
        {error ? (
          <>Oh no, there was an error</>
        ) : isLoading ? (
          <></>
        ) : data ? (
          <>
            {coords ? (
              <Image alt="Map showing the location of the nearest bikeshop" style={{ width: '100%', height: '100%' }} />
            ) : null}
          </>
        ) : null}
      </div>
    </div>
  );
};
```

```
<GoogleMapReact
    onDrag={() => setOpacity(0)}
    onDragEnd={() => setOpacity(1)}
    bootstrapURLKeys={{ key:
'AIzaSyB2oIzPM2BVv20ZyUmVwiKBULqnQ6LZppc' }}
    defaultCenter={{
        lat: parseFloat(coords.latitude ?? 0),
        lng: parseFloat(coords.longitude ?? 0),
    }}
    defaultZoom={zoom}
>
<AnyReactComponent
    style={{ opacity: opacity }}
    lat={parseFloat(coords.latitude ?? 0)}
    lng={parseFloat(coords.longitude ?? 0)}
    text="You"
/>
{data?.map((shop => ({
    ...shop,
    latitude: parseFloat(shop.latitude),
    longitude: parseFloat(shop.longitude)
}))).map((shop => (
    <AnyReactComponent
        style={{ opacity: opacity }}
        key={shop.id}
        lat={shop.latitude}
        lng={shop.longitude}
        text={shop.name}
        shop={shop}
        />
    )))}
</GoogleMapReact>
) : <p>Loading Map...</p>
/>
) : null}
</div>
</div>
</Container>
)
}

export default Index;
```