

WeFIX: A WEB-BASED APPLICATION FOR HOME SERVICES

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CHAPTER I

INTRODUCTION

1.1 Background of the Study

People are buried up in a heavy work culture, as everyone is engaged with busy schedules, and hectic tasks which make them deviate from family life. If any issues encounter unexpectedly, it distracts them and makes them choose over the work they have to accomplish primarily. It is important to manage both professional and family life. In such circumstances every one of us would have fantasized about a kind of house which doesn't have any leaks in pipes, if it doesn't have any mess in fixing a furniture and a kind of house which never face any maintenance issues and every one of us have thought that a life would be much better if no point of issue arises in getting a service at your doorstep and if there is no mess in bargaining a labor for home service. Convergence of information technology and communication technology has created an environment where we can access information, get services online from anywhere anytime, even at the state of mobility. Such access to information and online services is possible just by the use of our fingertips through web-based applications. These web-based applications can be grouped as personal, perishable, transaction oriented, location specific, corporate and entertainment.

Since the massive widespread of COVID-19 virus there have been a lot of innovative systems online. We weren't able to go out and seek a skilled worker that can fix the appliances and our personal stuff. So, giving that big change to our lives, our goal is to design and develop a system that provides many services at your doorstep in just one click. A web based app that provides a variety of services like plumbers, repair persons, cleaners, electricians, and many more. When someone requires assistance for domestic tasks, the problem occurs due to inaccessibility of service skilled or a trustworthy provider who provides faultless service on request. Home service system affords the foremost convenient unrestricted approach to urge your

household work to finish. This technique helps in providing finest results to all or any domestic troubles with high efficacy and ease. The system helps in connecting the skillful in-house experts and gets service done on quickly.

1.2 Objectives of the Study

The study aims to develop a web-based system for door to door services to prevent exposure from the other people since the frightening virus has a rapid transmission most especially when they interact. It is specifically intended to meet the following objectives:

1. To develop an on-demand service platform for home services with respect to time sensitivity and scheduling capacity.
2. To map using Geographic Information System (GIS) technology to locate the location of the customers in Bauan Area.
3. To create a dashboard for the administrator to maintain the booking requests.

1.3 Scope and Limitations

The study focused on the development of a web-based application called WeFix. The researchers aimed to design, develop and implement the system in a timely manner. The web-based application provides a better home service provider to the people who are in the Bauan area. Also, the proposed system is in finding technical solutions for providing the most efficient way for the customer to look or find the service they need by just clicking on their mobile phones. The system is designed for the customers that contains a login screen which they have to register themselves before logging in to the system. After logging in, the customers need to put their location so the GPS will automatically locate your point. After setting up your

location the system will provide you with the choices of the services that are included in our system or the customers may search for their various services including house cleaning, painting, electrical, plumbing, appliance repair etc. Else, this system only focuses on the service provider that system has.

1.4 Purpose and Description

To understand the researcher's work better, here are the details regarding their services. In their developed web app, they deliver home services through this and stay connected to every user within the working hours. Included in their offers are services regarding the technical problems and needs at home that people are likely to encounter. As the time passes, various technological services become apparent or the norm, and that is why we developed this app which makes it easier and more convenient to solve technical problems at home.

After giving the description regarding their offers, they will now proceed with their purpose which tells the clear path where their web-based application is heading. The researchers aim to provide convenience to the users through home services via web-based application. As such, they are committed to enrich people's lives by creating a comfortable, friendly, and safe home space using a variety of our home services. It's also their objective to make the application accessible, affordable, and understandable to the world. Not only that, they also strive to become a leading service provider of products and innovative solutions for homes. As the services and technology continue to ascend, we aspire to bestow comforts and wonder to homeowners. With that said, their purposes serve as their strategic plan for success and how they see ourselves in the future.

1.5 Definition of Terms

Database - is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).

Geographic Information System (GIS)- is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface. A geographic information system (GIS) is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface. (National Geographic)

Global Positioning System or GPS tracker. GPS tracking is the surveillance of location through use of the Global Positioning System (GPS) to track the location of an entity or object remotely. The technology can pinpoint longitude, latitude, ground speed, and course direction of the target. (TechTarget,2021)

Home Services - this includes; house cleaning, painting, electrical, plumbing, appliance repair etc.

Information and Communication Technologies- ICT refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums. (TechTerms,2010)

Location Based Services – refers to the usage of mobile devices in provision of location sensitive

information to users (EGNOS, n.d.).

Service Provider - those are the people who offer services.

Social System- the patterned series of interrelationships existing between individuals, groups, and institutions and forming a coherent whole. It is also the formal organization of status and role that may develop among the members of a relatively small stable group (such as a family or club) (Merriam Webster)

UML (Unified Modeling Language) - is a standardized modeling language consisting of an integrated set of diagrams, developed to help system and software developers for specifying, visualizing, constructing, and documenting the artifacts of software systems, as well as for business modeling and other non-software systems. (Visual Paradigm)

CHAPTER II

Review of Related Systems and Studies

This chapter deals with the review of related literature and research closely associated with the present study as well as elaborating their similarities and disparity with each other. More so, it discusses the conceptual framework of the study.

2.1 Technical Background

This section goes through the technical aspects or principles that are relevant to the project's progress in detail. The concept of the algorithm to be used, as well as the software and programming tools required to complete the project. The technical knowledge used to develop the project and the programming tools and software used were discussed in this section.

WeFix is a kind of web based system that can help workers to get more jobs even though they're just in their own houses. Mainly, this software consists of three modules present: The first one is the admin, second one is the user and lastly is the service provider. Admin has an important role in the project; he can manage all the details, booking, updating and many more while the user can see a list of home services and book it as per his requirements. Throughout the time of creation of the system, the proponents used the variety of software. The develop system will be using HTML and CSS codes. Since these two are the most used by most websites to create visually engaging web pages, user interface web. HTML will be used for the page layout of the web page and CSS is for the design of the web page. While, PHP and JavaScript engage

the back end and functionality of the website. These technologies are matured enough to attain our system.

The proposed system can run on any technological device that supports Windows and Internet service. It is also accessible by Android phones. Furthermore, the proponents will use MySQL for the database of the system. Since it is the most popular open source database, and was connected to the system as a help in updating, editing and retrieving the data from the developed system. This system allows the users to easily find service without going out of their homes. In contrast to the situation of the user, the service providers will display their credentials and their specializations in the field of services. The admin is the one that will update the service provider's details.

2.2 Related System/Related Studies

Location based mobile services is the use of mobile devices to be able to provide users with location sensitive information such that a user can access information based on a suitable or preferred location. Mobile location based services make use of the Geographic location of personal phone or navigational device and use embedded satellite navigation receivers or network-based technologies like triangulation from the location of the base station transmission cells to be able to determine the position of the device (EGNOS, n.d.)

Based on the study of Gikundi, D. (2017), social media is another avenue that has been used for marketing various handyman services where user's profiles and contacts can be obtained online. For one to find a reliable service provider, the process is lengthy and tedious as one must go through a variety of pages (Sponser, 2015). This process is also not very reliable and accurate as Facebook is open to all users hence it is common for one to get an unreliable handyman

service provider or even an imposter or fraudster posing to be a service provider. Handyman services in Nairobi, Kenya is a good example of a Facebook page used by handyman service providers in Kenya to market their services.

As stated by Dr. Agrawal et al. (2020), AtDoorStep will help in reducing the burden of the customers by taking care of their basic house needs and services. It would behave as a platform to get connected to the most reliable, trustworthy and skilled laborers for their in-house services. AtDoorStep will help the workers, small businessmen, retailers etc to adapt to the changing trend of technology and not be at loss or behind in any way. It is a small step towards reducing unemployment. The proposed system provides wide ranging services at the customer's doorstep. The framework is made such that both the customer as well as the worker (not highly educated) can easily understand and face no problem while using the app.

In accordance with S. Rachitha et al. (2019) few technologies are currently being used to locate the services within a particular area. The users wanted a system that will provide them with handymen details located in their area or near their area which is not there in existing systems. The system serves to build trust with the clients in providing quality of service with the help of rating features and work history information of the servicemen. It is an interactive, easy to use system and suitable for on demand services which is a distinguishing factor from other systems. It provides users with details of servicemen in consideration to the nearest location, best price offered and highest rating score making it more efficient as compared to the current systems. The new system is of great importance to the informal sector as it involves the process of acquiring these servicemen with the current rise and demand of them in this sector.

In conformity with Dubey et al. (2018) there's a developing request for finding specialized specialists and related administrations effectively and more particular to the area. To

serve in this setting, this inquiry about work has proposed a framework to look and enlist a specialized proficient based on the user's area. We have outlined and created an app and website for the arrangement of handymen administrations accessible in consumer's region. Testing of the ultimate application was fulfilled and input was collected from potential clients.

A system developed by N. M. Indravasan et al. (2018), is a web-based application that provides a variety of services like plumbers, movers and packers, repair persons, cleaners, electricians, painters, taxi service laundry and many more. To make it comfortable for all the users the system also provides a mobile environment which offers ease in accessing our services. A very simple process is carried out to book a service(s), and our system is specialized with providing a confirmation email about the selected service. People can choose the particularity of service required by uploading the image of desired specification. System is versatile as service can be booked from everywhere to anywhere you desire.

According to K. Aravindhana et al. (2020) the existing systems contain the small print of the service providers which may be viewed by the users who require the household services to be done. The system provides services like gas services, plumbing services and electrical services. Users can view the services through the system and that they can contact the actual providers to urge the services. The user has got to register to utilize the service that's provided by the system. The system acts as the intermediary between the user who is in need of services and therefore the provider who offers the service. Within the present system, the users can only be ready to get the small print about the service providers they do not have the choice to register for the services required and therefore the tracking of such services. Users can give feedback about the services that were provided to them.

Based on the article of Fatemeh Salehi and Leila Ahmadian (2017) about the application of GIS in identifying the priority areas for maternal care and services, this application provides them with the capability to identify high priority areas which need maternal care. According to current population policies in Iran and the probable increase in the fertility rate, it is wise to plan proper schedules to improve health care services for pregnant women in Kerman.

This research paper established the factors that lead to acquisition of handyman services as increased busy and hectic lives led by people today, work, family time and other commitments which leads to demand for odd jobs. A number of existing technologies are already currently being used to determine and locate handyman services within an area. From the data collected, it was clear that the users were in need of a new system that would strive to address the shortcomings of the already existing systems. First, the users wanted a system that would provide them with the details of a handyman near their location or current place of settlement which is not the case with the already existing systems. The research discovered that the existing systems currently used to locate handyman services lack in providing trust in the quality of service being provided by handymen as desired by the clients. The results led to the development of a Handyman application with both a web and mobile interface to streamline the process of locating Handyman services within a locality.

Bernard Shibwabo in the Journal of Systems Interrogations (2017)

According to Dharani K. et al.(2018), a worker's activity contains a Google map with a find path button and two text views of duration and distance. Whenever a worker receives an order notification, if the worker accepts that order a push notification with confirmation message will be sent to that specific user and duration, distance and path will be shown to both worker and Customer. Then an alarm will ring on both user and worker sides to make them alert. Both

can also communicate with each other via SMS or Call, as the numbers will be shown after confirmation.

2.3 Synthesis

As mentioned by Farvaque (2013), 'One can distinguish between "care" activities and "non-care" activities, depending on the state of being of the recipient of the service or his/her needs. One can say that care services are provided to (dependent) persons with special needs (long-term care for older people, care services to disabled persons, childcare services), while "non-care" services will rather be provided so as to improve the well-being of the recipients. However, it is important to note that the same service (e.g., cleaning the home) can be considered as part of the overall care provided to a dependent person, or just a convenience service helping non-dependent people to have more free time or better conciliate their work-life balance. As well as far as conciliation issues are concerned, the distinction can sometimes be difficult to maintain'

In line with the research of EGNOS, n.d. Location primarily based mobile services is the use of mobile devices, to be ready to give users with location sensitive data specified a user will access data supported by an acceptable or most popular location. Mobile location primarily based services create use of the Geographic location of non-public phone or guidance devices and use embedded satellite navigation receivers or network-based technologies like triangulation from the situation of the bottom station transmission cells to be ready to verify the position of the device. Additionally, from the data collected by Bernard Shibwabo, it was clear that the users were in need of a new system that would strive to address the shortcomings of the already existing systems. The research also discovered that the existing systems currently used to locate handyman services lack in providing trust in the quality of service being

provided by handymen as desired by the clients. The results led to the development of a Handyman application with both a web and mobile interface to streamline the process of locating Handyman services within a locality.

Social media is another avenue that has been used for marketing various handyman services where user's profiles and contacts can be obtained online. For one to find a reliable service provider, the process is lengthy and tedious as one must go through a variety of pages (Sponser, 2015). Significantly, Hence this "AtDoorStep" system proposed by Dr. Agrawal et al. that will help the workers, small businessmen, retailers etc to adapt to the changing trend of technology and not be at loss or behind in any way. It is a small step towards reducing unemployment. Further, it provides wide ranging services at the customer's doorstep. The framework is made such that both the customer as well as the worker can easily understand and face no problem while using the app.

Moreover, the system developed by N. M. Indravasan et al. (2018), provides a variety of services like plumbers, movers and packers, repair persons, cleaners, electricians, painters, taxi service laundry etc. A very simple process is carried out to book a service(s), and their system is specialized with providing a confirmation email about the selected service. People can choose the particularity of service required by uploading the image of desired specification. System is versatile as service can be booked from everywhere to anywhere that the user desires. Not only Indravasan has developed a system, but also K. Aravindhana et al. (2020), according to him their existing systems contain the small print of the service providers which may be viewed by the users who require the household services to be done. The system provides services like gas services, plumbing services and electrical services. Users can view the services through the system which they'll contact the particular providers to urge the services. The user possesses to

register to utilize the service that's provided by the system. The system acts because the intermediary between the user who is in need of services and so the provider who offers the service. Within the current system, the users can only be able to get the little print about the service providers they do not have the selection to register for the services required and thus the tracking of such services. Users can give feedback about the services that were provided to them.

In conformity with Dubey et al. (2018) there's a developing request for locating specialized specialists and related administrations effectively and more particular to the world. To serve during this setting, this inquiry about work has proposed a framework to appear and enlist a specialized proficient supporting the user's area. They outlined and created an app and website for the arrangement of handymen administrations accessible in consumer's region. Testing of application was fulfilled and input was collected from potential clients. In fact, S. Rachitha et al. (2019) also confirms that few technologies are currently being employed to locate the services within a selected area. The users wanted a system which will provide them with handymen details located in their area or near their area which isn't there in existing systems. The system serves to create trust with the clients in providing quality of service with the assistance of rating features and work history information of the servicemen. it's an interactive, easy to use system and suitable for on demand services which could be a distinguishing factor from other systems. It provides users with details of servicemen in consideration to the closest location, best price offered and highest rating score making it more efficient as compared to the present systems.

Depending on the article of Fatemeh Salehi and Leila Ahmadian (2017) the application of GIS provides them with the capability to identify high priority areas which need maternal care. According to current population policies in Iran and the probable increase in the fertility rate, it

is wise to plan proper schedules to improve health care services for pregnant women in Kerman. Moreover, Dharani K. et al.(2018) states that a worker's activity contains a Google map with a find path button and two text views of duration and distance. If the worker accepts that order a push notification with confirmation message is sent to its specific user and duration, distance and path are going to be shown to both worker and customer whenever a worker receives an order notification. Then an alarm will ring on both the user and worker sides to alert them. Both also can communicate with one another via SMS or Call, because the numbers are going to be shown after confirmation.

2.4 Framework

The conceptual framework serves as the guide for the researchers in pursuing the study. The conceptual paradigm shown in Figure 1 presents the general concept of the study.

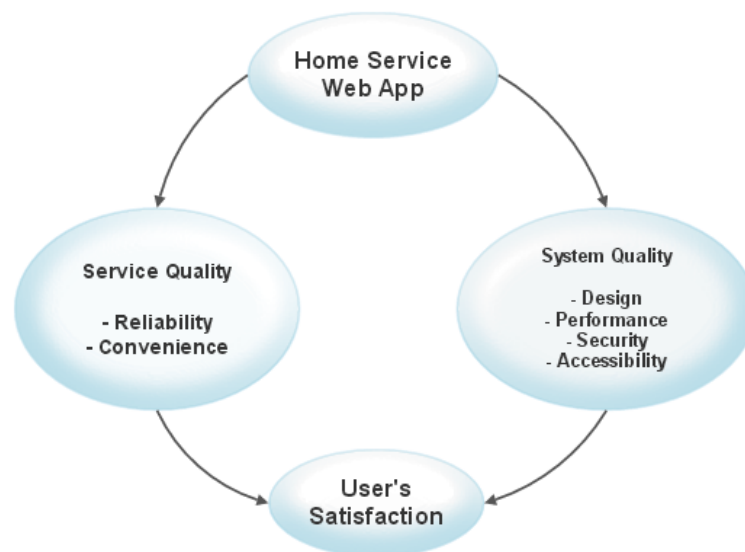


Figure 1. Conceptual Framework of the Study

Figure 1 illustrates the conceptual framework of the system and how the user will be satisfied regarding the reliability and convenience under service quality. And the design, performance, security and accessibility under system quality.

CHAPTER III

Design and Methodology

3.1 Software Methodology Model

The development model of the web-based application was used to guide the developers in developing the application to meet its objectives. It is an incremental type of development. The developers used the Agile methodology as their model for developing the application as shown in figure 2.

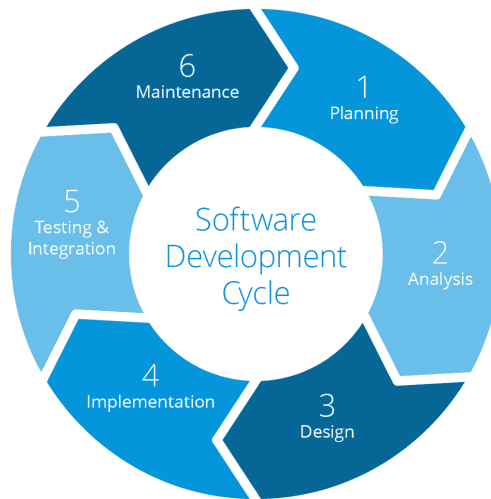


Figure 2. Agile Software Development

Agile methodology is a software development method that is people-focused, communication-oriented and flexible, in which it is ready to adapt to expected change at any time. It is focused on shortening timeframe and cost and improving quality, reacting appropriately to expected and unexpected changes and learning focuses improvement during and after the system development.

3.1.1 Planning Phase

The first stage is planning which involves developing a strategy on how the set goals are going to be established. The time required to perform each activity and develop each functionality is estimated, a schedule formulated and milestones are also set. This helps in identifying the resources for developing the system and in allocating time.

3.1.2 Analysis Phase

The second phase is Analysis, the researchers analyze how the developed system will meet the needs of their users effectively through the use of the latest technology. They conducted a plan for the development of the application and determined its possible features and content. This phase also involves analyzing a list of functional, nonfunctional and technical system requirements as gathered from the users to assist in determining the feasibility of the system to be developed.

3.1.3 Design Phase

In this phase, the researchers started to plan for the design of the application by making drafts of the possible user interface and how the system will work. Unified Modelling Language (UML) notion was used for modelling and designing diagrams to present both structural behavioral aspects of the system (Object Management Group, 2015). The study employed two different UML diagrams for its design which included a use case diagram, and sequence diagram.

3.1.4 Implementation Phase

This stage involves the actual development of the system regarding the designs discussed above. This involved the creation of a web application linked to a database. For the web application, the system will be using HTML and CSS codes. Since these two are the most used by most websites to create visually engaging web pages, user interface web. HTML will be used for the page layout of the web page and CSS is for the design of the web page. While, PHP and JavaScript engage the back end and functionality of the website. And for the database, the developers will use MySQL for the storage and retrieval of data. Since it is free, open source, light, easy to use and to customize.

3.1.5 Testing and Integration Phase

System testing process involved testing the application after development using the following techniques;

Usability testing- this was done to determine the usability of the application.

Functional Testing- this was done to test the systems' functional and non-functional requirements.

Compatibility Testing- this involved testing the web application on different web browsers to ensure compatibility.

Performance Testing- this was done for checking the amount of time the application would take to process a request or perform a certain functionality by performing queries and observing how long it took to execute and accomplish them.

3.2 Requirement Analysis

Web-based applications are a particular type of software that allows users to interact with remote servers through a web browser interface. The web-based application has two major actors: the customer and the service provider. The requirements for the web application for WeFix Home Services within the locality of Bauan is divided into hardware and software requirements; functional and non-functional requirements.

3.2.1 Hardware Requirements

The table below shows the different hardware requirements that the researchers considered to acquire the best quality in using the program, and to meet the expected

performance of the web-based home services application. The users must at least have these hardware specifications to execute the application without causing delays.

Table 1
Hardware Requirements

Component	Minimum	Recommended
Processor	1.9 gigahertz (GHz) x86- or x64-bit dual core processor with SSE2 instruction set	3.3 gigahertz (GHz) or faster 64-bit dual core processor with SSE2 instruction set
Memory	2-GB RAM	4-GB RAM or more
Display	Super VGA with a resolution of 1024 x 768	Super VGA with a resolution of 1024 x 768

3.2.2 Software Requirements

Table 3.2. shows the mobile application requirements of the developed application as well as the software needed such as HTML, CSS, JavaScript and PHP. These were languages used for the system development and android versions that application is compatible with.

Table 2

Software Requirements

Software	Requirements
Operating System	Android 7.0 up to the latest Android Version, Windows Operating System
Web/Mobile Platform	Android phones, Computer

3.2.3 Functional Requirements

Functional requirements are the capabilities, functions and basic processes that the implemented application must be able to perform. These include:

- a. Register an account - where service providers and clients should be able to register and set an email and password to have access to the system.
- b. Login and Logout – for users to Login to the application they must provide their correct username and password credentials and they need to logout to exit the system.
- c. Search for a home service(s) - This involves login to the application, selecting the home service category i.e. plumber, electrician, mechanic etc.
- d. Locate home services - the client should enter his/her location and the system will search for a home service near the client's current location and within the selected category.

- e. View service providers profile - after the search results the client can select different services on the map to view their profile details which include number of jobs completed and rating score given.
- f. Book for home service(s) -after viewing the profile for different home services the client proceeds to booking to make a request on the preferred service.
- g. Accept and decline booking – the service provider is notified by the system every time there is a new request and he/she can choose to accept or reject the request by their clients.
- h. Rate Service - once the system registers the service as work done which appears in the provider's profile, the client can input a five-star rating widget which the client can select from one to five star which is calculated as 1 -5 rating score by the application.

3.2.4 Non-Functional Requirements

These are requirements that any system can perform without but are desirable qualities that make the system interactive and user friendly. They include:

- a. Security - the back-end web application has an administrator who has authority over the usernames and passwords. Error reporting by keeping error logs for purposes of resolving issues.
- b. Performance – the system should have a reasonable response time when performing its functions
- c. Availability - the system should be available all the time.

- d. Scalability – the system should easily allow for future improvements and upgrades.
- e. Integrity – the system should make sure that stored data is not altered or corrupted.
- f. Reliability – the system should be reliable to perform user tasks.

3.3 Design

This section will describe three sections in detail namely system design or architecture, database design and the system's graphical user interface (GUI). System design or architecture will focus on UML diagrams specifically, use case and sequence diagrams. While in database design, ER diagrams will be used.

3.3.1 System Design or Architecture

3.3.1.1 Use Case

Use cases are used to model the various processes in the system and how external entities interact with them. The actors here include client, service provider, and administrator.



Figure 3. Use Case Diagram

Use Case: Admin

The administrator has the authority to manage the whole system from Approve or Decline requests sent by the service provider and the deletion of the service provider that have been resigned or fired and to Locate the location of the user's address.

1. Click Login to view the service provider registered in the website.
2. Click the view services provider's list of requests to locate the address of the user in the map.
3. Click Approve or Decline.

4. Click Manage the service providers details to edit or delete some information about the service provider's credentials.

Use Case: User

A user should have an android phone or laptop to be able to use the system.

1. Click the Log In/Sign Up button to have an account.
2. Then Enter your location in order to locate your location.
3. Search the service you need
4. Then View the service provider's list.
5. Select your desired service provider.
6. Book your schedule and make payments.
7. When it's done the user needs to rate the service.

Use Case: Service Provider

The service provider is required to register on the website/mobile app in order to be added on the WeFix app list. And to get the direction of the client before going to the exact location.

1. Click *Register as Service Provider*.
2. Click Register if done.
3. A message will be sent once the admin has approved the information of the service provider.
4. Get Direction of the clients before departing.

3.3.1.2 Sequence Diagram

Figure 4 shows the major sequence of events of the client user from searching to booking of the home service and to rating the service provider.

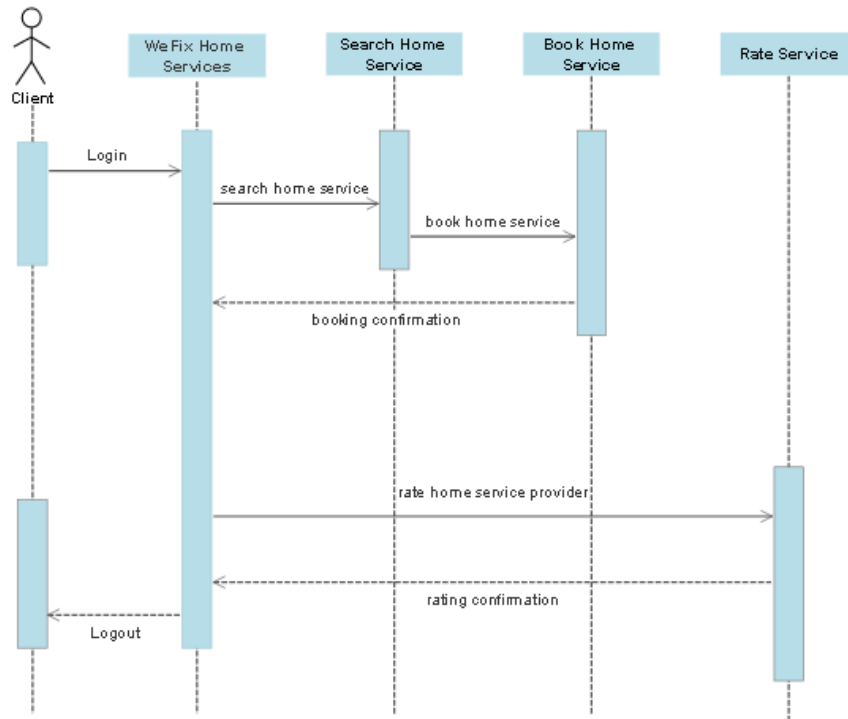


Figure 4. Sequence Diagram

3.3.2 Database Design

The application handles private and confidential data about the client and service provider that is transmitted across the website application. Device of the various users to the system's database. Figure 5 shows the ERD Diagram for the database used in the application which was normalized to help improve the integrity of the data in the application. The main table in the diagram is the service provider's table that has relations to all the other tables.

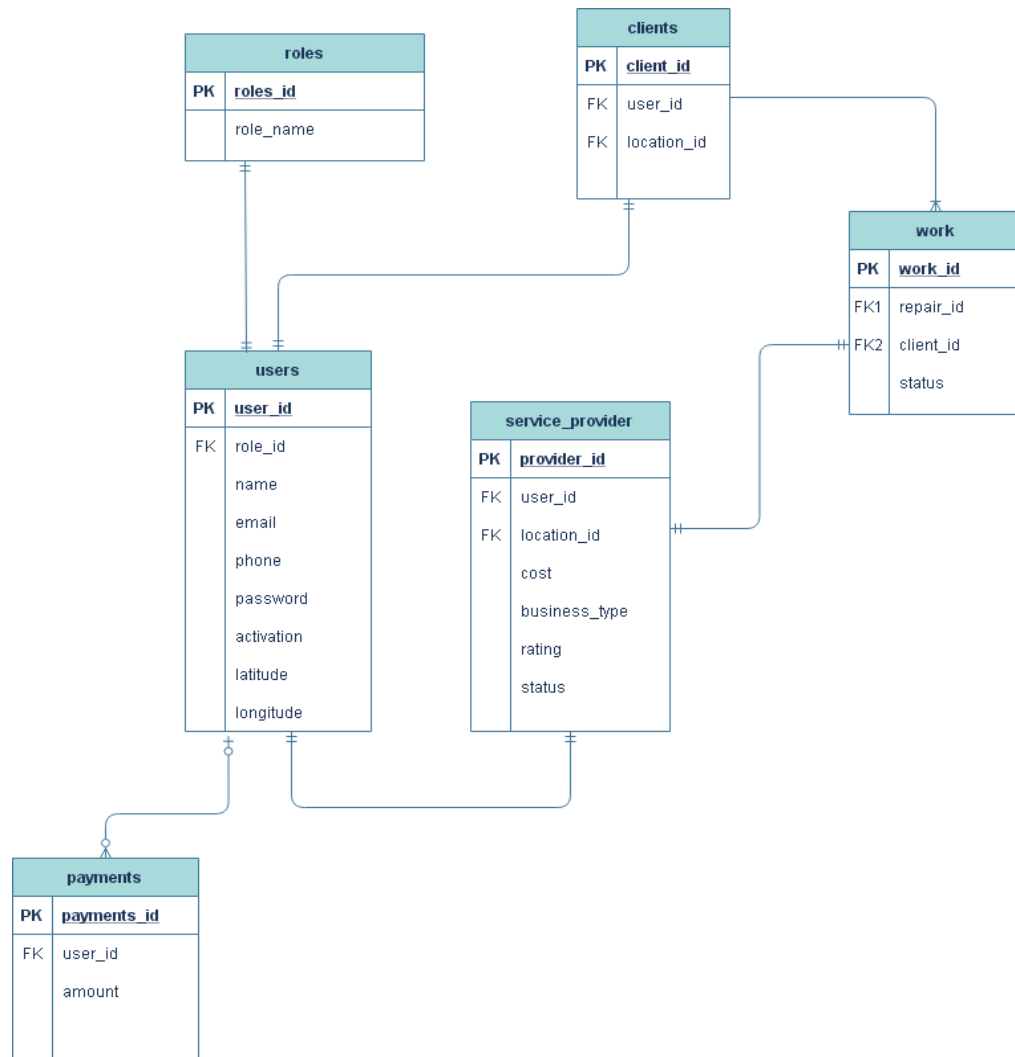


Figure 5. Entity Relationship Diagram

3.3.3 GUI

The figure below shows the mockup designs of the system's user interfaces.

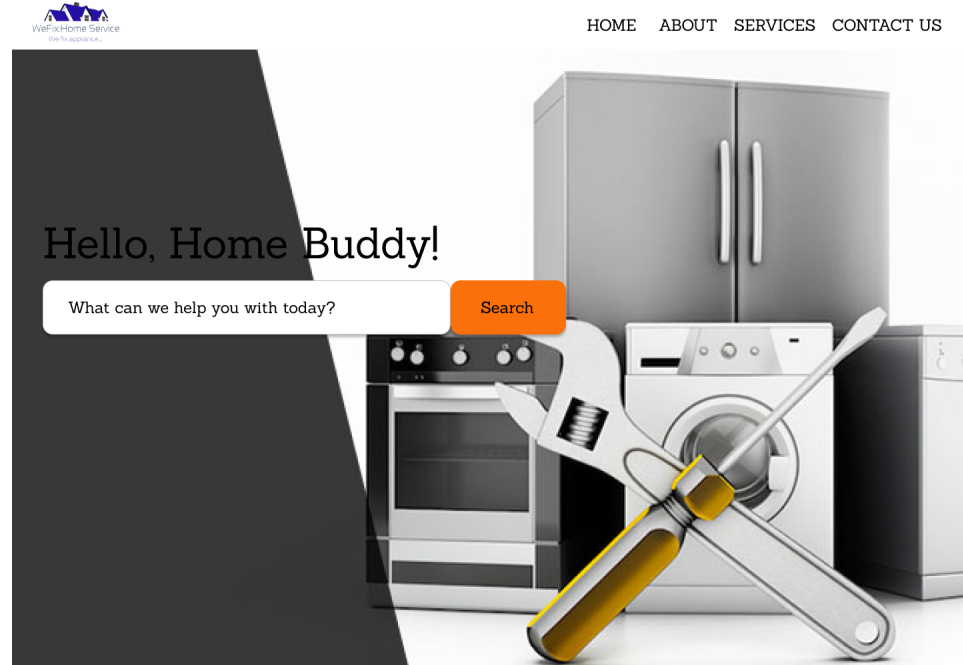



Figure 6. General Home Page

The figure shown above is the home page or the welcome page of the website. This will be the first thing that the user or the admin would see. In this page the user can access the home page wherein they can put the service. Also, they will be choosing from the three modules if they were a client, admin or applying as a service provider. Furthermore, they can also click the “About” “Service” and “Contact Us”.



Welcome, [Home Buddy!](#)

[LOG IN](#)

or sign up with

Google

Facebook

Figure 7. Login Form

The figure shown above is for the client to login their account or could just simply sync their account by signing in with a Google or Facebook account.

[My Profile](#)

[DASHBOARD](#)

[Service Provider](#)

[Location](#)

[Logout](#)

Booking Requests

View Service Provider's Application Form

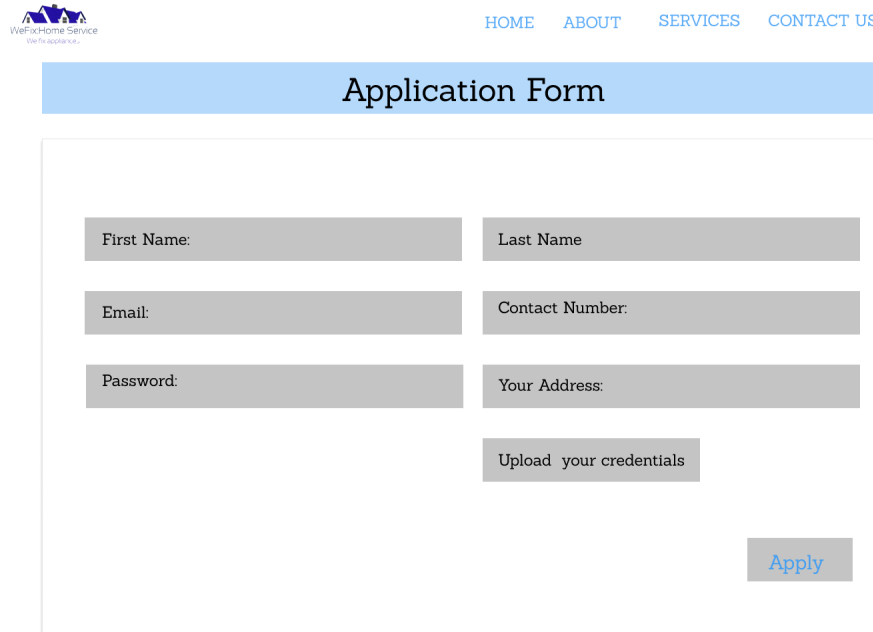
Total Bookings

View Service Provider's List

Location Map

Figure 8. Admin Account/Dashboard

The Figure shown above is for the administrator to access all the transactions of the system and to accept or decline the service provider that will apply on their website.



The screenshot displays the 'Application Form' for service providers on the 'WeFixHome Service' website. The website's header includes a logo on the left and navigation links for 'HOME', 'ABOUT', 'SERVICES', and 'CONTACT US' on the right. The form itself is titled 'Application Form' in a blue header bar. Below this, the form is organized into several input fields: 'First Name:', 'Last Name', 'Email:', 'Contact Number:', 'Password:', and 'Your Address:'. Each label is followed by a grey rectangular input box. Additionally, there is a button labeled 'Upload your credentials' and a blue 'Apply' button at the bottom right of the form area.

Figure 9. Service Provider Application Form

The figure shown above is the online application form of the service provider that wanted to be part of the team. The service provider should indicate or upload the credentials about their professionalism and how years they've been in that field.

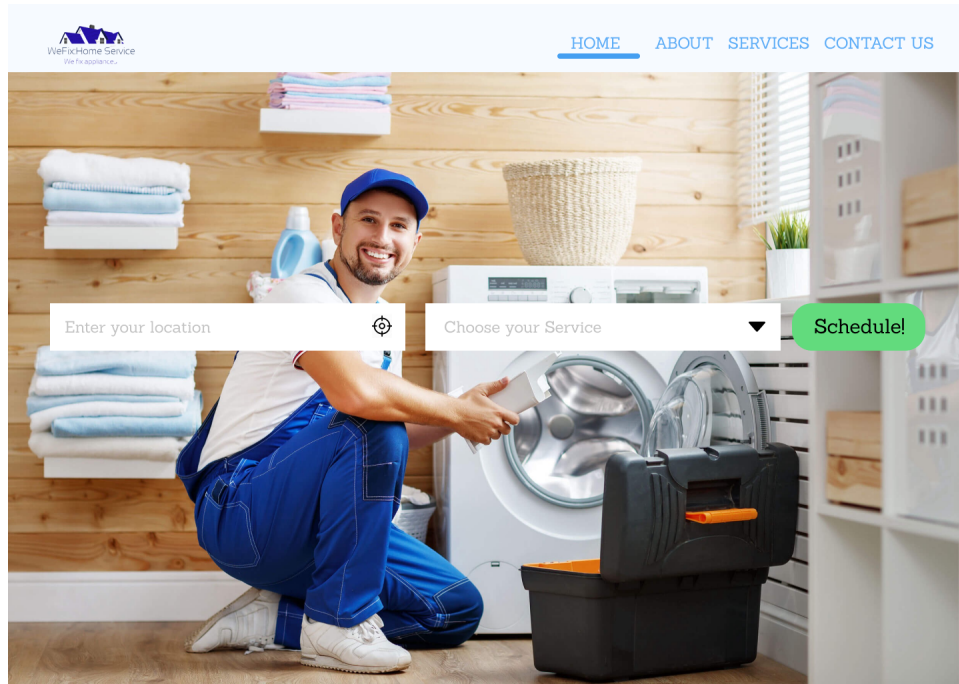


Figure 10. Home Page 2 (Client's)

The figure shown above is for the client to first input their location or just simply turn on their location services for the system to easily access their current location before choosing the services in the service page.



Book your Schedule

Full Name:

Phone Number

of House/Street

Barangay:

City:

Postal Code:

Book

Figure 11. Booking Form

The figure shown above is the booking form wherein after the client has finished picking out the service provider they need to fill up the form and enter their full address in order for the admin to locate the client's location.

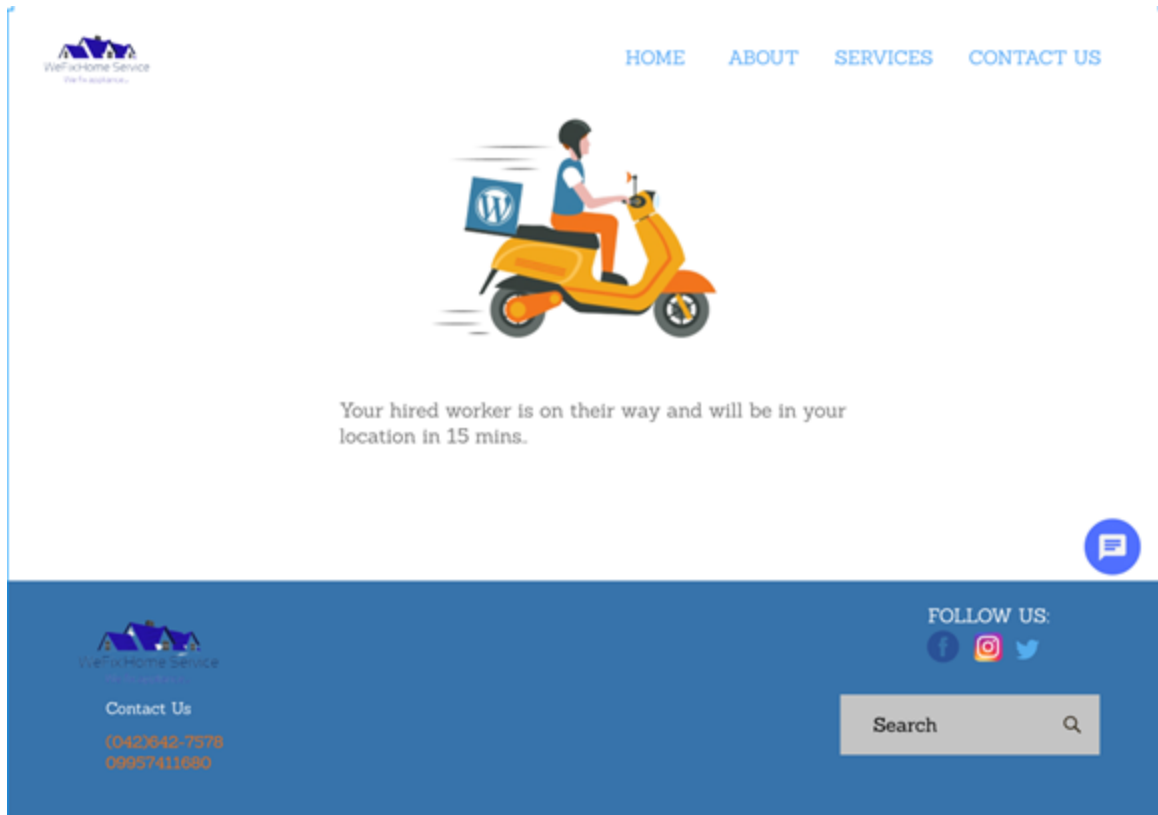


Figure 12. Tracking Hired Worker

The figure shows the estimated time of the worker's arrival. This will help the customer to know when their hired worker will arrive.

3.4 Development

3.4.1 Software

Software requirements deal with the software tools used in developing the system. These helped to meet the objectives in development of the mobile application. This would help the clients around Bauan Area.

The proposed system will be utilizing Windows Operating System as its development platform. In the said system, this would be available to use on a computer that operates on a Windows OS, preferably Windows 7 up to the existing windows. Since

Windows is the most widely used operating system, the proponents have decided to develop the proposed system utilizing its compatibility and reliability.

3.4.2 Database

MySQL would be the proponents' choice for the proposed system's database. Since the proposed system would be handling user's and service provider's data, the proponents opted for a database management system that is comprehensible, easy to use and secured data. The proponents would be utilizing its flexibility and compatibility; user records would require large capacity to store data with, which MySQL excels at. Furthermore, it is open source, thus it would allow the proponents to store more room for customization and if the users would like to add unique requirements to the server.

3.4.3 Hardware for Development

The proponents will be using android phones and a computer for the development of the proposed system. The proponents will use android phones or smartphones to test the GPS location feature of the proposed system. In addition, the android phone will serve as the tracking device of the service providers since they need to locate the location of the user's address. Lastly, the proponents will use a computer for the development of the system. The computer's role is to control the hardware, create a user and service provider interface, and provide a platform for a door to door home service.

3.5 Testing

This Section covers testing of the web-based application to ensure that it works well, the testing was divided into two sections, developer testing and user testing. The first tests done by the developer where to ensure that the various functionalities were working well, the tests included:

3.5.1 Unit Testing

During unit testing, the developers individually tested features such as buttons, processes, and system responses. This is necessary for each component of the system to function properly and correctly.

3.5.2 Compatibility Testing

Compatibility testing was done to ensure that the application runs on major device versions. This would ensure users running different browser versions would be able to use the web application with ease and without any problems.

3.5.3 Search Home Services Testing

This was tested to make sure that when the client selects the desired category of service, the system searches for a home service in that category. And when the client clicks on any home service providers that includes their profile details, they can send their request by filling in the booking form.

3.5.4 Register as Service Provider Testing

In this section the registration of the service provider was tested. Starting filling in the fields for registration and after the provider receives a success message upon

successful registration and is taken back to the Login screen and can Login normally to the system.

3.5.5 Rate Service Provider Testing

This functionality was tested to make sure that when a home service provider finishes his work, the client can rate his services for the system to register this work as done.

3.5.6 Data Gathering

In this section, the researchers come up with the idea to take an interview with their possible users which are the service providers and the home owners that will help them to determine if the proposed project will benefit them in this time of pandemic.

3.6 Deployment Plan

The deployment plan specifies the design, strategy, meeting the requirements, developing the system and execution of the project. Before, during and after the implementation, the schedule of the process provides details regarding system support and the gantt chart. It is an important matter because it will impact how fast your product will respond to changes.

Table 3
Deployment Plan

Task Name	Duration	Expected Start	Actual Start	Expected Finish
Initial Planning	30 Days	March 26, 2021	April 1, 2021	April 25, 2021
Data Gathering	5 Days	April 18, 2021	April 18, 2021	April 23, 2021
Requirement Analysis	25 Days	May 01, 2021	May 01, 2021	May 25, 2021
Design	20 Days	May 28, 2021	May 28, 2021	June 17, 2021
Development	90 Days	June 20, 2021	June 20, 2021	September 20, 2021
Testing	20 Days	September 25, 2021	September 25, 2021	October 15, 2021

Implementation	1 Day	October 16, 2021	October 16, 2021	October 17, 2021
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3.7 Risk Management Plan

In this section it shows the possible risks that encounter or may encounter while developing the project.

Table 4
Risk Management Plan

Risk ID	RISK DESCRIPTION	Likelihood of Occurrence (High, Medium, Low)
1	Power Outage	Low
2	Bugs when Updating	High
3	Scope Variation	Medium
4	Human Error	High
5	Technical Error	Low
6	Internet Connectivity	High
7	Schedule and Time	Medium

3.7.1 Risk Matrix and Guide

A risk matrix is basically a visual representation of the risks impacting a project to encourage businesses to build mitigation strategy.

Table 5

Risk Matrix and Guide

Risk Matrix Key	SEVERITY			
	Acceptable	Tolerable	Undesirable	Intolerable
Improbable	LOW	MEDIUM	MEDIUM	HIGH
Possible	LOW	MEDIUM	HIGH	EXTREME
Probable	MEDIUM	HIGH	HIGH	EXTREME

APPENDICES

A. Schedule and Timeline (Gantt Chart)

Table 6

Schedule and Timeline (Gantt Chart)

ACTIVITIES	W1	W2	W3	W4	W5	W6	W7	W8	W9
Planning									
a. Project Assessment									
b. Project Agreement									
c. Data Gathering									
Design									
a. UI Design									
b. Database Design									
Development									
a. Database Development									
b. System Development									
c. Error Checking									
d. Quality Assurance									
Launch									
a. Final Testing									
b. System Development									

B. Project Teams and their Responsibilities

a. Ayanah Rose M. Cabral

i. System Developer

1. Responsible for the coding of the system.
2. Responsible for testing and modifying systems to ensure that they operate reliably.

ii. System Maintenance

1. Diagnosing and fixing errors, possibly ones found by users.
2. Making necessary alterations to or corrections in the information systems.

b. Ma. Marinela S. Briones

i. System Analyst

1. Implements computer system requirements by defining and analyzing system problems; designing and testing standards and solutions.

c. Regine May A. Perez

i. System Designer

1. Work with analysts on the feasibility of a conceptual design by taking technical specifications prepared by the analyst and designing system components to meet the set requirements.

C. Budget Cost Management Plan

Payment for Panelist:

Chairman : Php 300 x1 = Php 300.00

Members(2)	:	Php 250.00	= Php 500.00
Adviser	:	Php 500.00 x1	= Php 500.00
Grammarian	:	Php 500.00 x1	= Php 500.00
Food Budget	:	Estimated Budget Cost	=
Other Necessities	:	Estimated Budget Cost	=

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