ONLINE BUILDING SERVICE COMMUNITY

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ONLINE BUILDING SERVICE COMMUNITY

SAN AKRAM ALI

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Bachelor of Computer Science (Software Engineering)

School of Computing
Faculty of Engineering
Qaiwan International University

February 2022

DECLARATION

I declare that this thesis entitled *"ONLINE BUILDING SERVICE COMMUNITY"* is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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DEDICATION

This thesis is dedicated to my brother, who taught me that the best kind of knowledge is that which is learned for its own sake. It is also dedicated to my mother, who taught me that even the largest task can be accomplished if it is done one step at a time.

ACKNOWLEDGEMENT

In preparing this thesis, I was in contact with many people, researchers, academicians, and practitioners. They have contributed towards my understanding and thoughts. In particular, I wish to express my sincere appreciation to my main thesis supervisor, Professor Ms. Fariaa Abdulmajed, for encouragement, guidance, critics and friendship. Without their continued support and interest, this thesis would not have been the same as presented here.

My fellow student should also be recognised for their support. My sincere appreciation also extends to all my colleagues and others who have provided assistance at various occasions. Their views and tips are useful indeed. Unfortunately, it is not possible to list all of them in this limited space. I am grateful to all my family member.

ABSTRACT

The advent of digital platforms has revolutionized service industries by bridging the gap between service providers and consumers. This project introduces an innovative web-based platform designed to connect workers offering building services with homeowners seeking such services. By leveraging the power of the internet, this platform aims to facilitate seamless interactions, negotiations, and service agreements, providing a much-needed solution in regions like Kurdistan where such digital services are scarce. The platform offers a user-friendly interface where both service providers and consumers can create accounts, showcase their needs or skills, and connect with each other based on proximity and specific requirements. This approach not only simplifies the process of finding and hiring skilled workers but also provides a variety of options, enabling users to make informed decisions with ease. The development of this platform is grounded in thorough research and analysis of user needs, ensuring that the system is tailored to meet the demands of both parties effectively. The design incorporates modern technological solutions, including advanced software and hardware components, to ensure a robust and efficient service. Moreover, the platform is designed with comprehensive features such as use case diagrams, sequence diagrams, and activity diagrams to map out user interactions and system functionalities. This detailed design ensures a seamless user experience and effective system operation. The ultimate goal of this project is to create a bridge that not only connects workers and homeowners but also enhances the overall service experience. By providing a wide range of options and simplifying the process of requesting services, the platform aims to save users time and reduce the complexity often associated with finding reliable service providers. This digital solution represents a significant step forward in the service industry, offering a practical and efficient tool for managing building service needs.

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LIST OF ABBREVIATIONS

FAQ	Frequently Asked Question
HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
PHP	Hypertext Preprocessor
WIFI	Wireless Fidelity
LAN	Local Area Network
RAM	Random Access Memory
UML	Unified Modeling Language

LIST OF APPENDIX

CHAPTER 1

INTRODUCTION

1.1. Introduction

Creating a new website that serve building services by online would be a good opportunity for worker and the ones who request for services inside his/her house, apartment and building to find each other much easier. beside that anyone can find and request the nearest worker around. The website will be a connection between workers and house owners so they can bargain and make a deal together. The users will have a wider variety of option when requesting a service which this help making her/his decision easier. Right now, in Kurdistan we do not have a website like that so it could be a good business idea to give opportunity to the users to show their works and requests. Every user can have their own account and search for any work or costumer based on their needs and everyone can see your profile. after finding the worker based on your request, you can contact him and come up with a deal. Also, for the workers if they see anyone announcing a problem on their house so, he can contact him to make a deal with the house owner.

1.2. Problem background

Every one of us have faced issues with our houses, apartments and places that we live in or even buildings and places that we work at, we need services such as; electricity, water, drainage, plumbing, lightning, heating, air conditioning, security and many more. It is not easy finding suitable people or companies that work on these services. Most of us don’t have time to seek for appropriate people that would be able to do those jobs based on our needs and requests, which mainly concerns how long will they take to finish the job, how much will they charge and others. I believe that it would be very useful to make a website that would solve those issues or at least make the process much easier and much

more efficient. The main idea of the website would be like a community that only focuses on services for buildings. The website would have mainly three users; companies that have building services, individuals that work on building services and normal people who seek for those services. So, on the main page of the website will have all the companies that offer services with the latest offered services. there would be a specific page for individual workers and what services they have to offer, so anyone who registers as a worker can post their job on the website. And for normal users they have two options; they can search for a specific service and see all the available workers and their detail or they can post a request for a custom job so that workers can review and contact if they meet the requirement.

1.3. Project Aim

We are all have our own smart phone and laptop and we are always using it to make our life much easier. The main aim in this project is to make a bridge between the workers which work on house, apartments and buildings services with the owners of the places that they have a problem with their building. Finding the worker or the owner of the place by a website and receiving the information about the worker or the owner by online makes the process much easier while we all want to save our time instead of searching for a worker by driving into bazar without knowing if the worker has free time or not. here are some answers of the daily questions about how this project affect society: why we are making it online? People always want to get done their works in the easiest way, finding the client or the worker on your desktop or laptop save much time than searching for it by yourself. how can they communicate? If I have an issue with my electricity in my house I will search for a worker on the website while the worker has uploaded their information about the work, the location, how he works, payment etc... How the workers can upload their information? They can sign up into the website and have their own account which it will be like a business account.

1.4. Project Objectives

Here are some objectives that we are planning to involve it on the website:

- The website will make the process of requesting services much easier.
- The users will have a wider variety of option when requesting a service.
- The website will be also useful for workers to be known by more people.
- Companies can also advertise their building works and share their offers.
- Users can search for any kind of services that their building requires.
- Users can post a request for a custom work and worker can contact the user.
- The website should have a user-friendly interface so that it is easy to use.

1.5. Project Scopes

like its mentioned before the scope of this project is making a connection between the workers and the clients so they come up with a deal. Focusing on how this website will save time without making the user confused about the section that they want to find on the website. The reason behind this for the users is making it easy and handy interface. the users can make the communication with the other user after reading the information about it. every user can have their own account and the point of having account is that every user can see and rate the other user and the review will show up on the user's main account.

1.6. Project Importance

As we know in Kurdistan, we do not have such a website or an application about online building services which that means anyone who seek for finding a worker or a building owners cannot have the benefits of the internet that now exploded everywhere meanwhile everyone have internet connection, so we can have a hand of serving our society by creating an online building services website. another benefit which we mentioned it before is that we can make a bridge between the house owners and the workers so they can communicate faster.

1.7. Report Organization

having an online building service can make a big effect of serving our society by focusing on how it will have a hand in developing online marketing. every user can search for any kind of services and every worker can develop his work by advertising and promoting his work. of course, giving rating will make a fair competition between the workers and the companies.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

In this chapter we are trying to give you a brief information about how can we get for our project and making a literature review. first, we will have a case study which we will talk about the user requirement by making a survey for understanding needs of the users how they want the online services to be. reviewing current available system and prototypes will be also included in this chapter. for example, we will review a current online building service and give our opinion about the system and the interface or how can the website serve the users. after reviewing the existing system, we are going to compare it to our project. the technology we are using in the project will also will be included.

2.2. Current System Analysis

Identifying user requirements by making a survey would be much easier because of questioning people who like online building services will give us the exact opinion about their perspectives about serving online. As shown, we asked 34 people 14 questions who are interested in maintenance for their buildings/houses. we know that in Kurdistan we don’t have much online services so one of the points that we have taken in the survey is that people in Kurdistan like to request the orders by online which it means that having an online website for building services is a good idea and it will have a big footprint for marketing inside Kurdistan. workers also want to make their works or businesses online. they can find their clients easier and more professional. A survey has been done for online building services and here is the result:

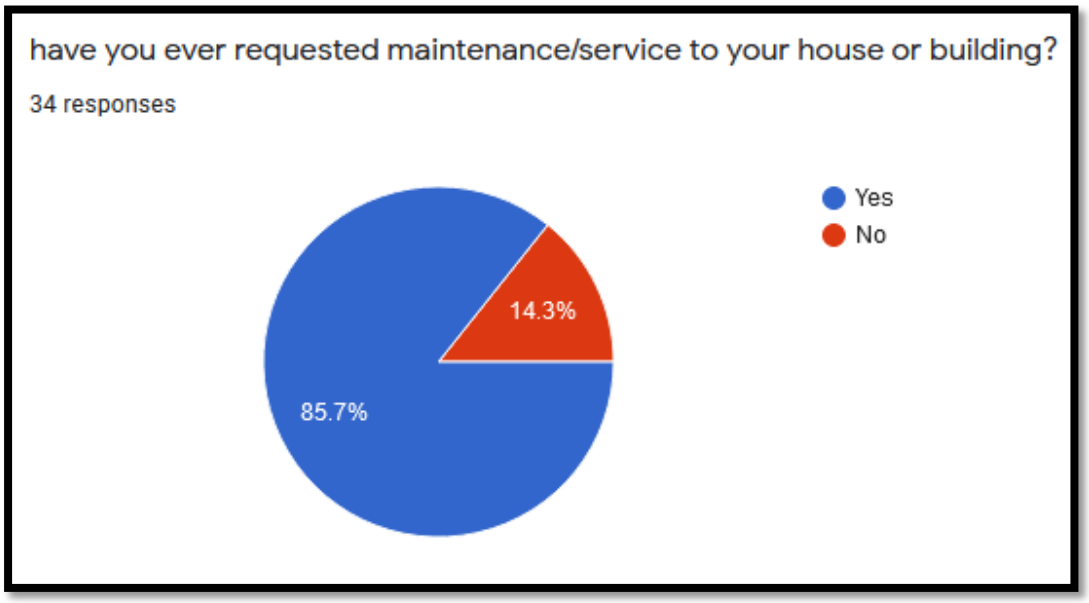


Figure 2.1 Survey

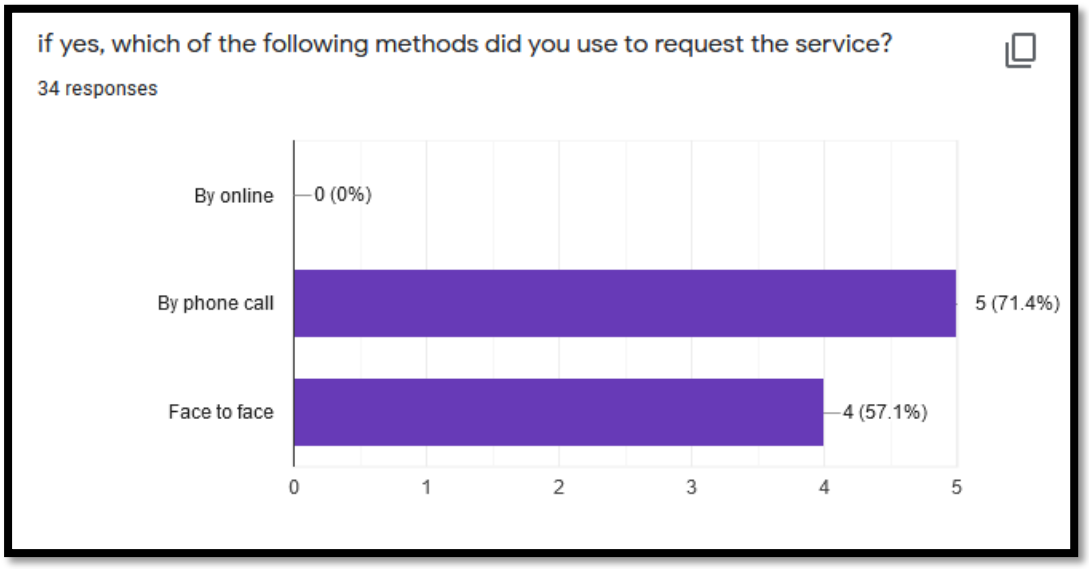


Figure 2.2 Survey

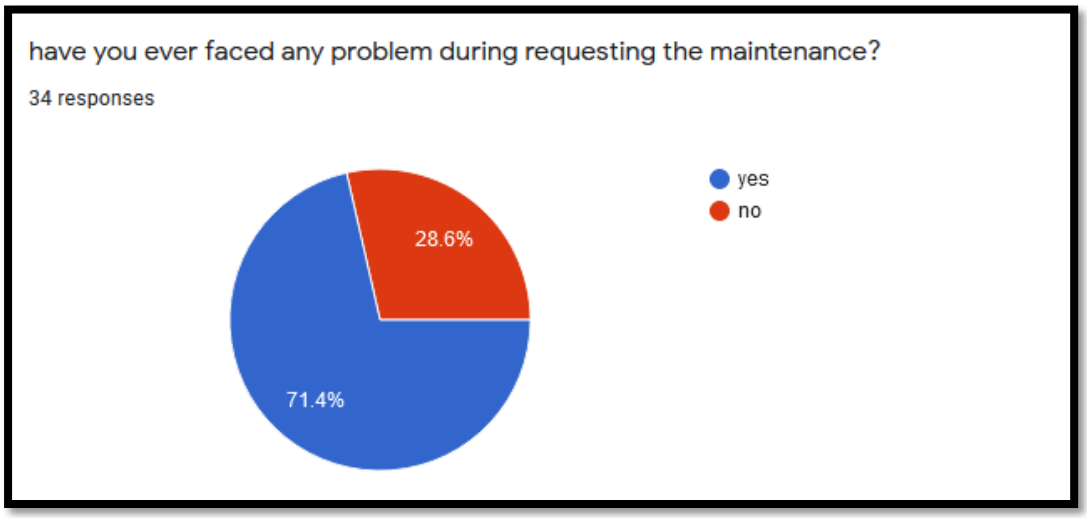
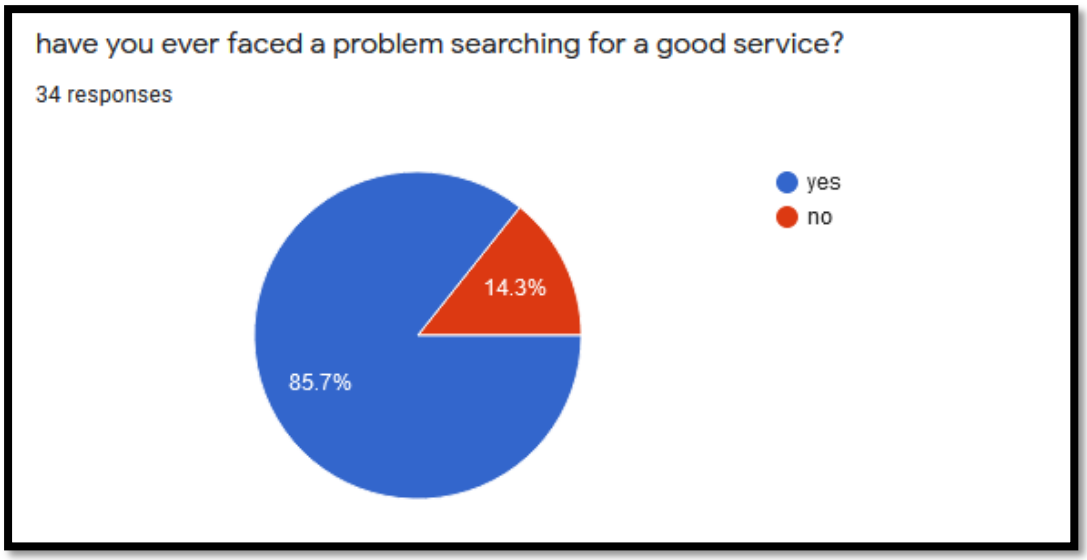


Figure 2.3 Survey



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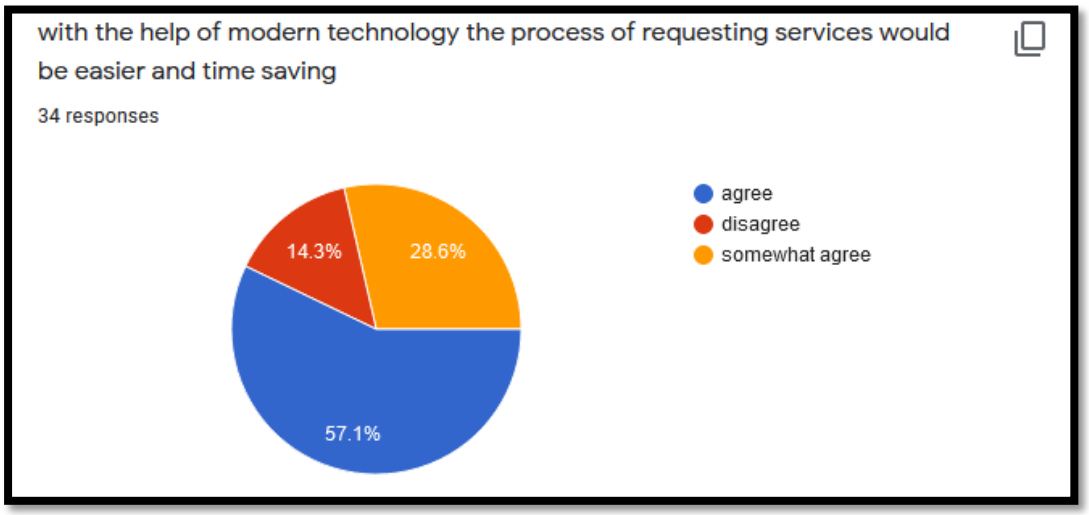

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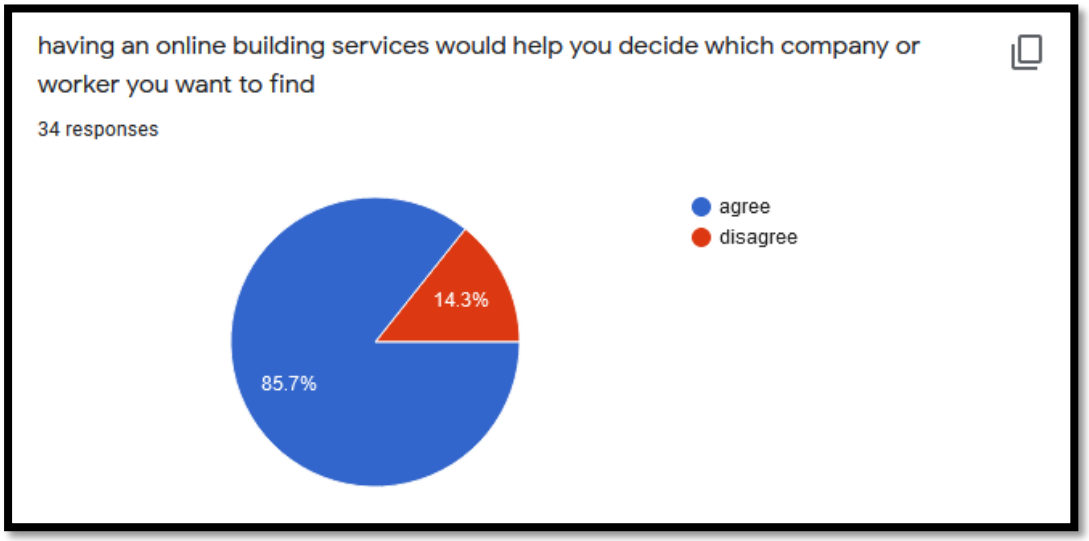

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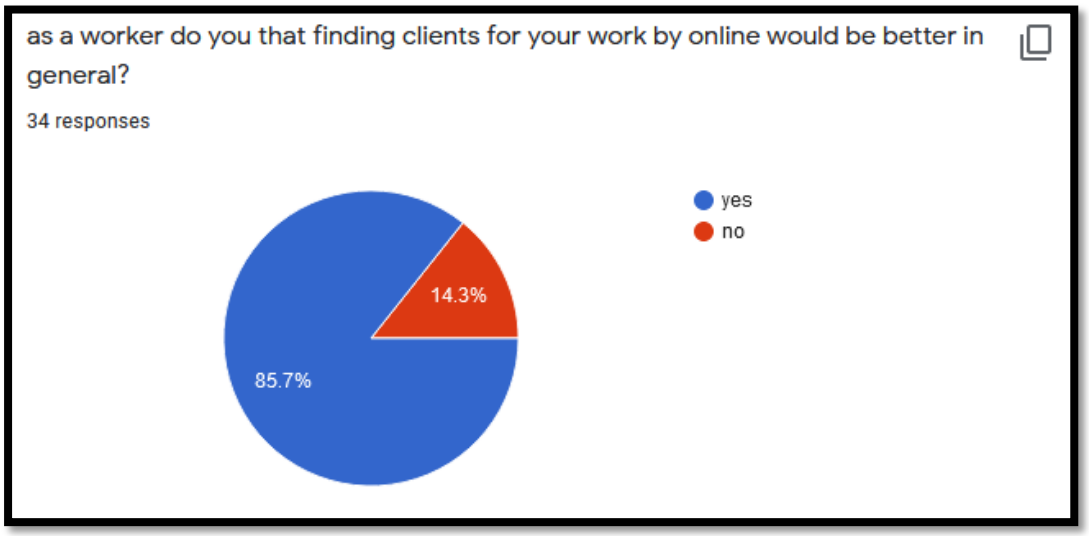


Figure 2.7 Survey

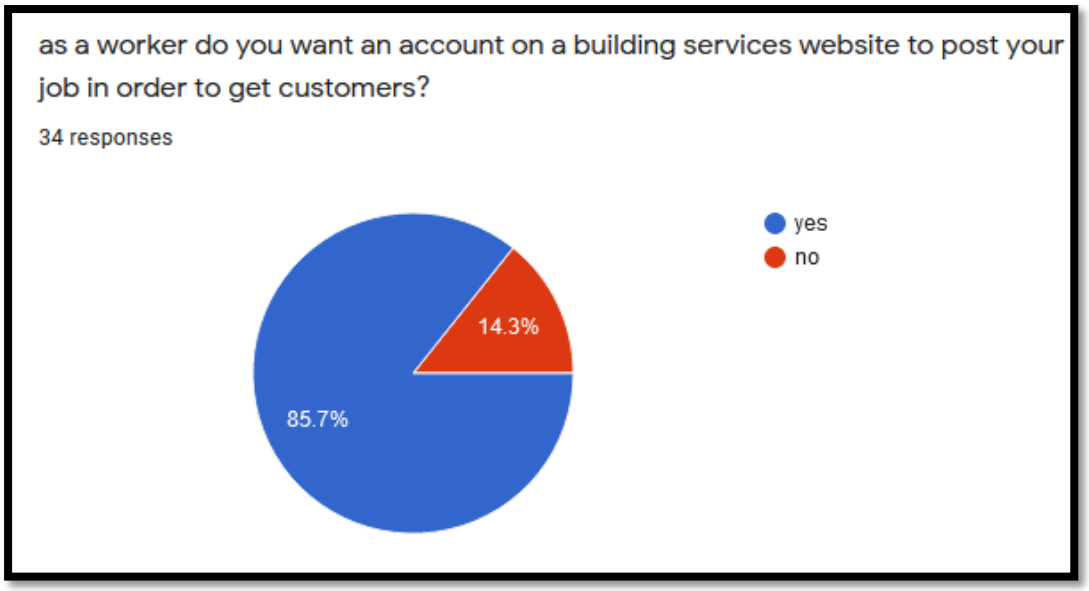
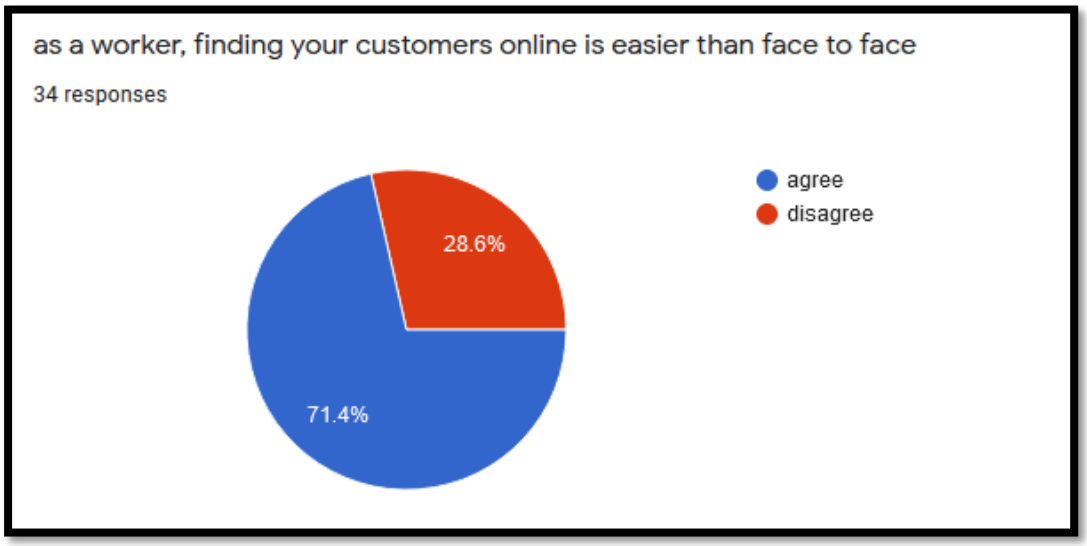


Figure 2.8 Survey



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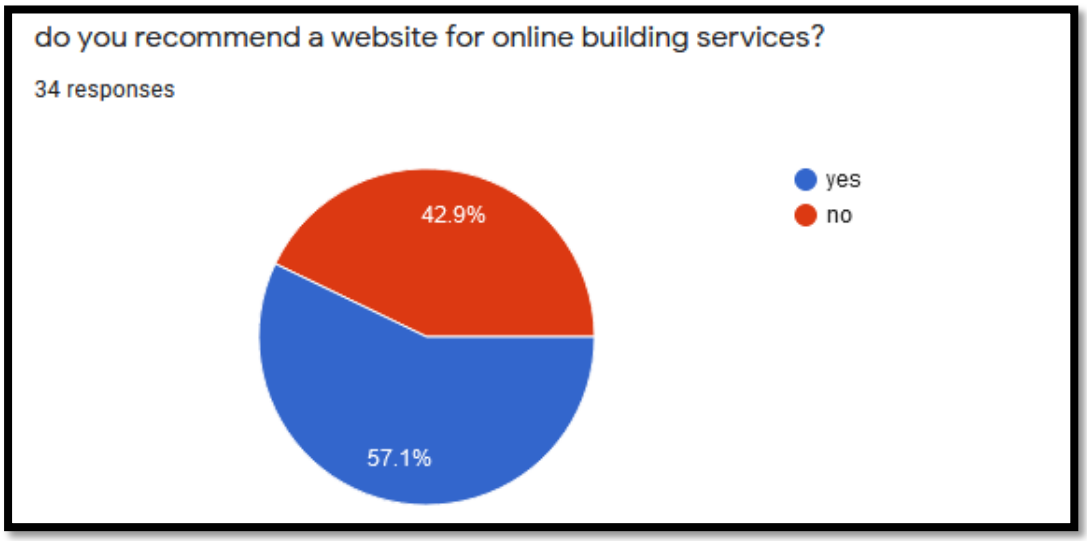

Figure 2.10 Survey

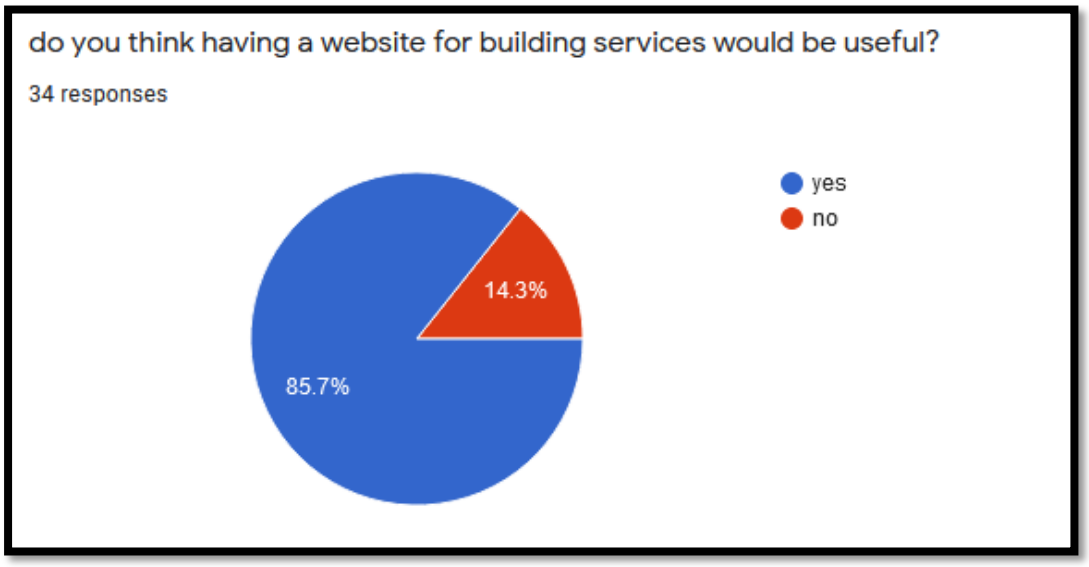

Figure 2.11 Survey

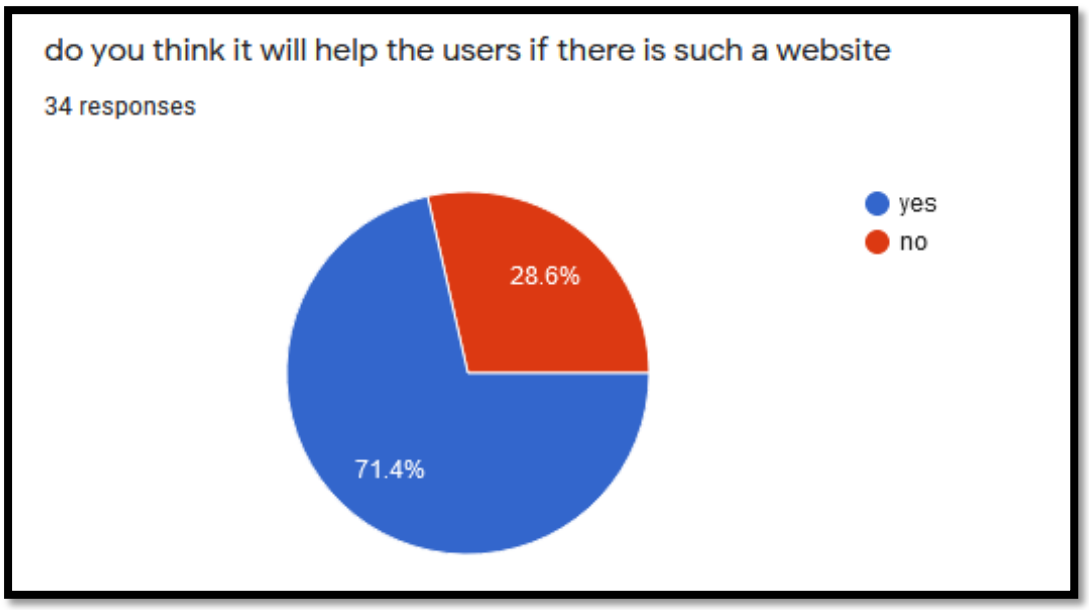

Figure 2.12 Survey

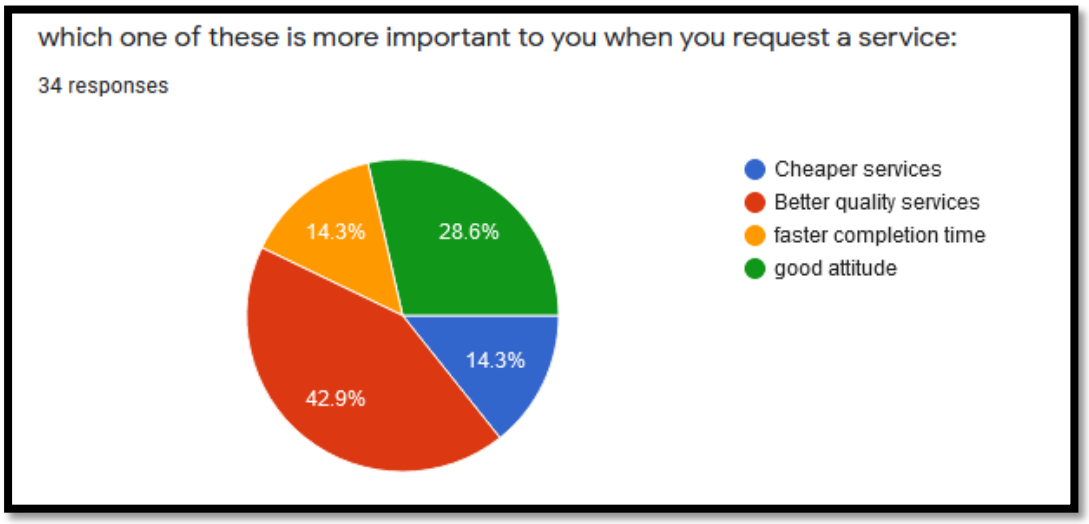

Figure 2.13 Survey

On another side we have interviewed a worker inside the main bazar in Sulaimani city who has a plumbing shop called Ali Star. we asked Mr. Ali that what is your opinion about having an online account on a website like this and he said that it will make his work opportunity bigger and it will be a great idea for both of workers and clients.

2.3. Comparison Between Existing Systems

An example for an available current system for building services is a website which it is lunched in a city in Utah state of America in a city called Salt Lake. this website provided a team which they work for the customers. for example, if I have an electrical problem inside my building through this website, I can reach to the workers which they are working for the website.

after contacting them they come to your building and fix the problem that you have. you can pay them by credit card also paper check payments are accepted. if you have a look at the interface of the website you can see that design is somehow complicated because the first you see is permitting process and FAQ for questioning the team about the process of requesting a worker and it makes reaching to the workers complicated and confusing. another problem that this website has is they provided the workers without telling you who is the worker who is coming to your building/house.

2.4. Literature Review of Technologies Used

we can make an easy design for our website by having an account as a client or a worker. when you open the website, you directly see the option if you are a client or a worker. as we mentioned before our website is a bridge between clients and workers so they can find each other by uploading their information and location.

for example, as an electrical worker I can create my own account and upload my identity and my works example to give the clients a better view about my experience. so, the client that requests the worker can consider that they want someone near to their building or having a good experience. the other website that we have found it does not have a section for the workers and no one can join them because they have their own team as workers. it's a basic comparison between one current available system with our project. let's make the comparison between other existing system:

Table 2.1 Review of Technology

Title of the current system	Strength	Weakness
WitsEnterprice	Easy contact to the workers team	Not providing any option what problem you are facing
SLC building services	Have building inspection	Bad interface, not having a search engine
MyEscambia	Easy to reach, good interface,	Dose not show any information about the workers

2.5. Chapter Summary

In this project we are making a website so for creating it HTML, CSS and Bootstrap is going to be used for the front end. back end will be created by JavaScript and PHP by using Visual Studio for developing and coding. MySQL will be used for creating the database by creating it with MySQL workbench. The database is deploying on a server and the website will be going to be installed on a domain.

CHAPTER 3

SYSTEM DEVELOPMENT METHODOLOGY

3.1. Introduction

This chapter presents the methodology selected for the project and outlines the step-by-step implementation of each phase, providing an explanation of the purpose and objectives of each phase. Additionally, it will discuss the tools that will be utilized for the project, including the software and hardware components. We will also elaborate on the carefully chosen software and hardware options that best suit our project requirements. Furthermore, we will provide details on the necessary hardware and software requirements for the development and operation of the system.

3.2. Methodology Choice and Justification

For this project, we have opted for the Agile Development Methodology as our chosen approach. Agile methodology distinguishes itself from traditional software development methodologies by placing a strong emphasis on the individuals involved in the project and their collaborative efforts. By fostering collaboration within self-organizing cross-functional teams, and utilizing the most suitable methods for their specific context, Agile methodology aims to generate effective solutions.

3.3. Phases of Methodology

The Agile methodology unfolds its effectiveness through a series of five stages, collectively known as the software development lifecycle. These stages are Ideation, Development, Testing, Deployment, and Operations. In our project, we will describe each of these phases in detail, highlighting their significance and explaining why we have chosen to incorporate them into our project. By providing comprehensive explanations for the utilization of each phase, we aim to demonstrate how they contribute to the overall success and efficiency of our project.

3.3.1. Stage 1: Ideation

The ideation stage marks the initial step in any successful Agile software development project. During this stage, the Agile product owner collaborates closely with stakeholders, the business team, developers, and potential app users to shape the project's vision. This is achieved through the following activities:

- **Defining the new software's aim and goal**
  showing our point or purpose for the clients and the users to see what they are capable to do if they start working on our website.
- **Identifying and documenting the needs of the business and users**
  An example of how the system works and how users interact with each other can be illustrated as follows: In this system, both workers and clients have the ability to directly message each other. When a client is in need of a worker's services, they can search for workers based on specific criteria such as skills or experience. Once the client finds a suitable worker, they can view their profile to gather information about their past experience and expertise. This allows the client to make an informed decision before initiating contact with the worker. The messaging feature enables seamless communication between the client and worker, facilitating further discussion, negotiation, and collaboration throughout the project or service engagement.

3.3.2. Stage 2: Development

Following the ideation stage, teams can proceed with the development phase, which involves initiating the creation of the program's first iteration. During this phase, all the necessary tasks related to manufacturing the program are undertaken. These tasks encompass various activities such as coding, designing, implementing features, and integrating different components to build a functional software product. The development phase focuses on translating the project vision and requirements into tangible software that aligns with the desired functionality and objectives.

3.3.3. Stage 3: Testing

- Checking the code.
- Addressing bugs and errors.
- Preforming trail runs

3.3.4. Stage 4: Deployment

The Agile team distributes the software to the cloud or an on-premise server once it is ready for release.

3.3.5. Stage 5: Operations

As users actively interact with the website, valuable opportunities arise to collect their feedback and incorporate improvements into future iterations. This feedback can come in the form of user suggestions, bug reports, usability issues, or any other input provided by the users. By actively listening to user feedback, the development team can gather insights into areas that require enhancement or adjustment. These insights can then be utilized to implement improvements in subsequent iterations or releases of the website. This iterative approach allows for continuous refinement of the website based on real user experiences, ultimately leading to an enhanced and user-centric product.

3.4. Technology Used Description

For the front-end development of the website, we will be utilizing HTML, CSS, and Bootstrap. These technologies will enable us to create the structure, layout, and design of the website, ensuring a visually appealing and responsive user interface. On the back end, we will be employing JavaScript and PHP as the primary programming languages. JavaScript will enable us to add interactivity and dynamic functionality to the website, while PHP will handle server-side processing and database connectivity. To facilitate the development and coding process, we will be using Visual Studio, which provides a comprehensive integrated development environment (IDE) with robust features and tools for efficient coding and debugging. For managing the website's data, we will be utilizing MySQL as the database management system. MySQL Workbench will assist us in creating and designing the database structure, enabling efficient storage and retrieval of information. Once the development and testing phases are complete, the website and its associated database will be deployed on a server. Additionally, the website will be installed on a domain, making it accessible to users through a specific web address.

3.5. System Requirement Analysis

To ensure smooth usage of the website, users will require a minimum hardware configuration including an Intel Core i5 processor from the 5th generation or newer, 6GB of RAM, and at least 2GB of free storage. Additionally, users will need either a LAN (Ethernet) or a wireless adapter (Wi-Fi) to establish a network connection and access the website. On the software front, users will need a personal computer running Windows 7 or a newer version of the operating system. Additionally, they will need to have PHP and HTML installed, along with the other software components mentioned earlier (such as Visual Studio for development and coding, and MySQL Workbench for database creation). By meeting these hardware and software requirements, users will be able to effectively access and utilize the website, ensuring optimal performance and functionality.

3.6. Chapter Summary

For our project, we have opted for the Agile Development Methodology and successfully implemented all of its phases in a simplified manner. We have visualized our project plan through the utilization of a simple UML (Unified Modelling Language) diagram, which provides an overview of the system's structure and relationships. Additionally, we have created a Gantt chart, which outlines the project timeline and tasks, aiding in efficient project management and resource allocation.

In terms of technology, we have chosen to employ HTML, CSS, and Bootstrap for the front-end development of the website, enabling us to create an aesthetically pleasing and responsive user interface. On the back end, we have utilized JavaScript and PHP to add interactivity and handle server-side processing. Visual Studio has been employed as our preferred development environment to streamline the coding and debugging process.

To meet the system analysis requirements, we have carefully considered the software and hardware components. MySQL has been selected as the database management system, and MySQL Workbench has been utilized to design and create the database structure efficiently. As for hardware, we recommend users to have a minimum of an Intel Core i5 processor (5th generation or newer), 6GB of RAM, and at least 2GB of free storage. Users will also need either a LAN (Ethernet) or a wireless adapter (Wi-Fi) for network connectivity. By incorporating these technologies and fulfilling the system analysis requirements, we have ensured the development of a well-planned and technologically sound project.

CHAPTER 4

REQUIREMENTS ANALYSIS AND DESIGN

4.1. Introduction

In this chapter we are going to explain the requirement and design of the project. first, we will create use case diagram to show what are the users capable of, and what are they can access. then a sequence diagram to show every use case's work and how they are connecting together. an activity diagram to show the system and a class diagram will be also concluded. finally, we create a bird eye view by using architecture diagram.

4.2. Requirements Analysis

Use case diagram:

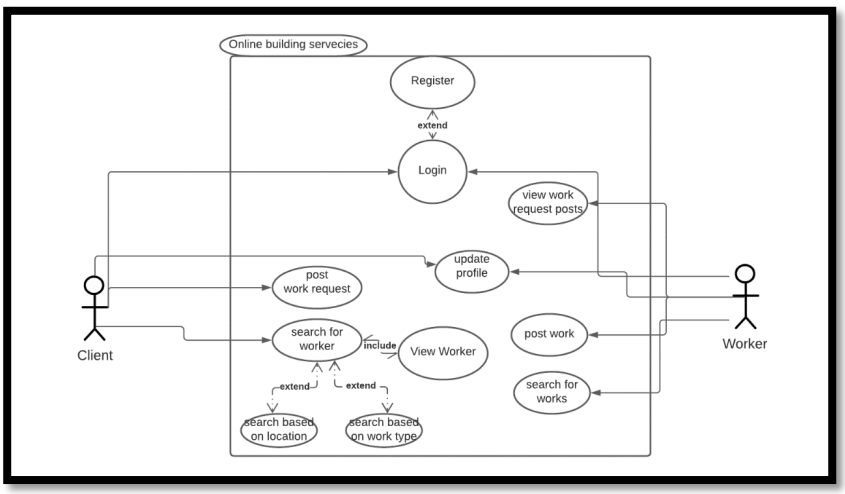

Figure 4.1 Use Case

The use case diagram shows two users accessing into the system. for example, worker can view work request post by client or post their work into the system etc...

Client Sequence Diagram:

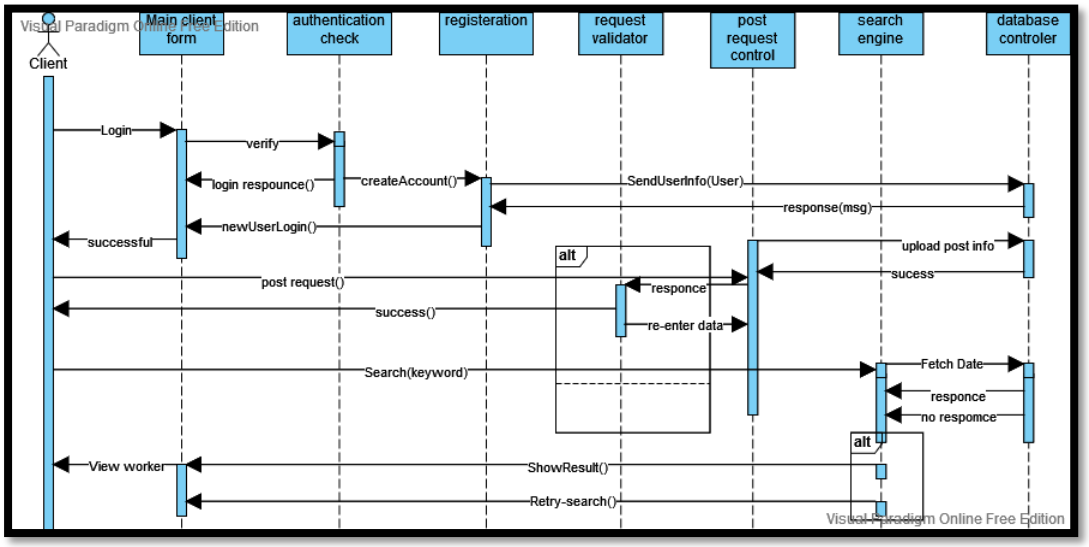

Figure 4.2 Sequence diagram

It shows how the client login into the system and creating his account. how the client sends users info to the database or search for something and many more.

Worker Sequence Diagram:

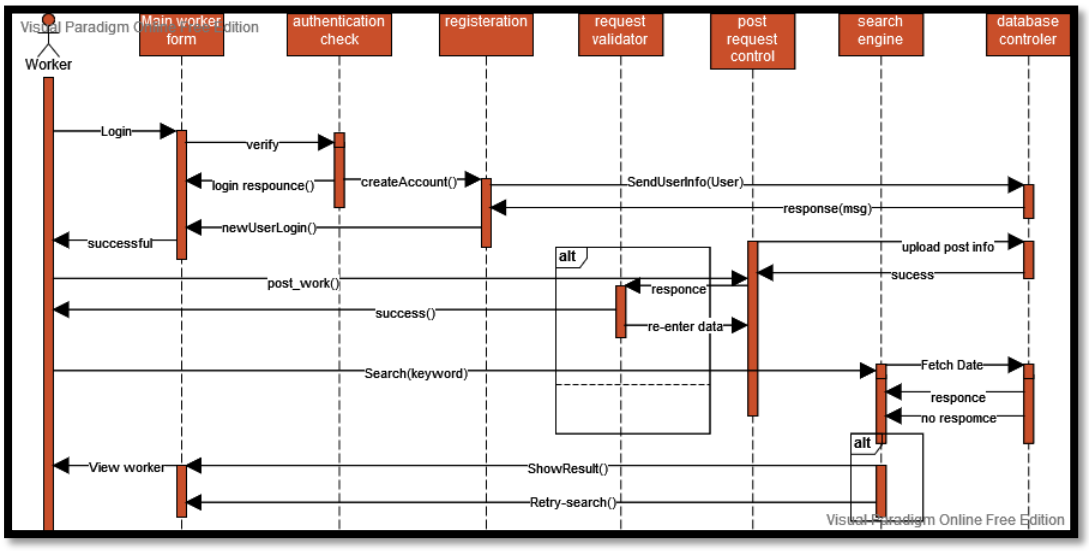

Figure 4.3 Sequence diagram

Activity diagram:

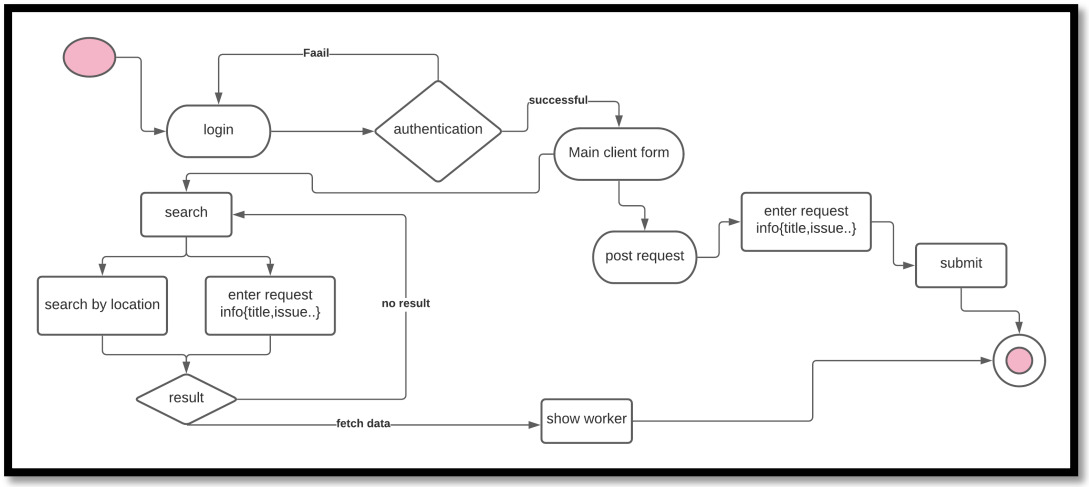

Figure 4.4 Activity diagram

Showing how you can enter the website and ask for something that you what. for example, you are going to search for a worker by location if there is no result you have to search again.

4.3. Project Design

This is the class diagram of the system:

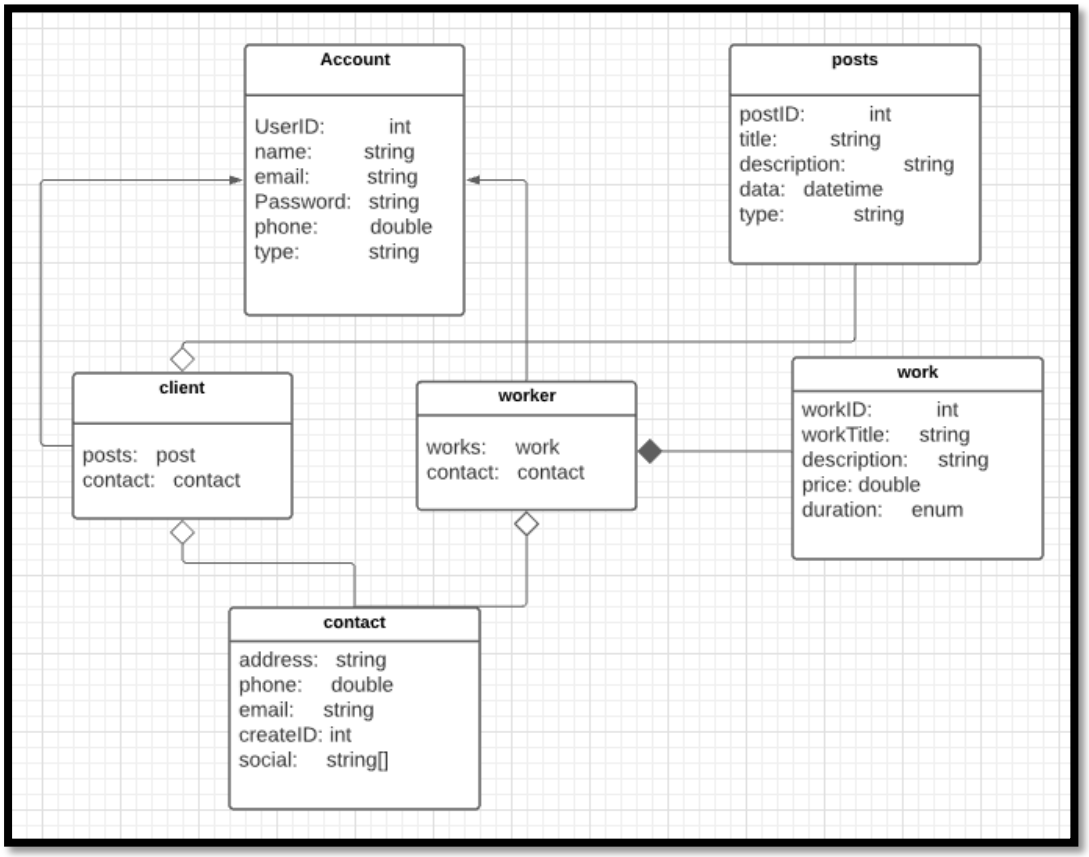

Figure 4.5 Class diagram

It shows the relationship between each class.

Architecture design:

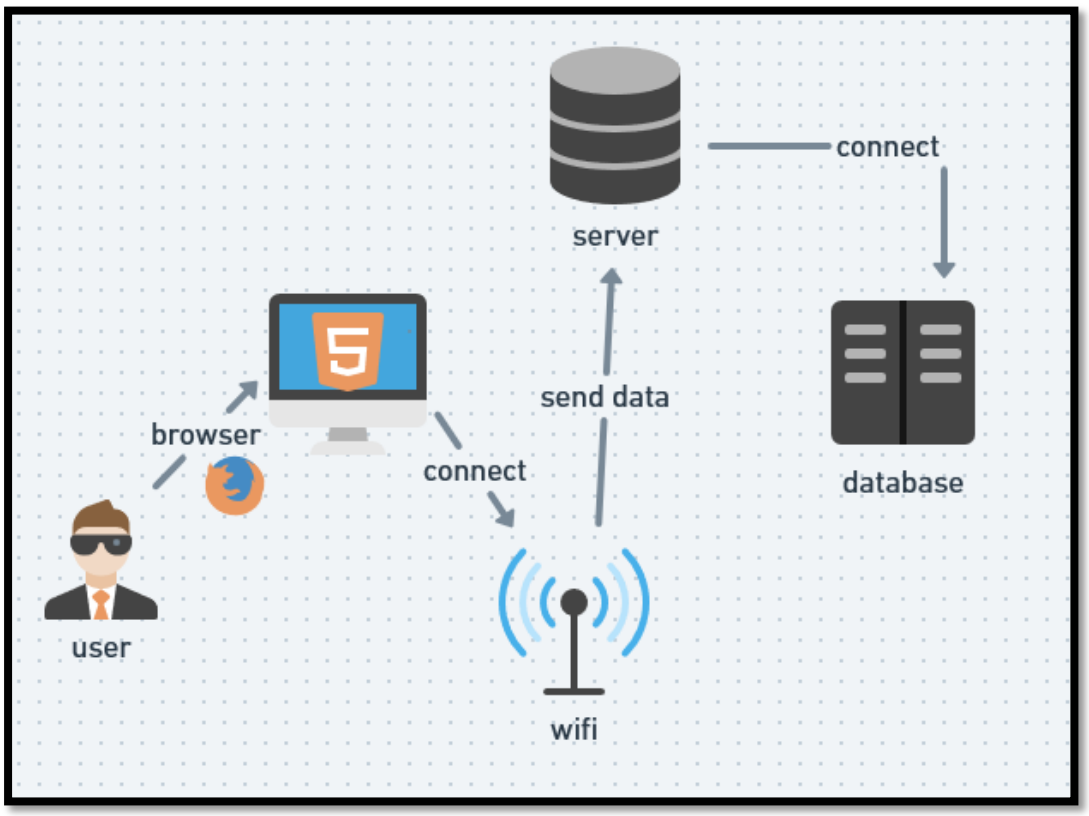

Figure 4.6 Architecture design

4.4. Database Design

This is the ERD diagram; The Purpose of the ERD diagram is to inform us of the relationship between the classes and what are the relations.

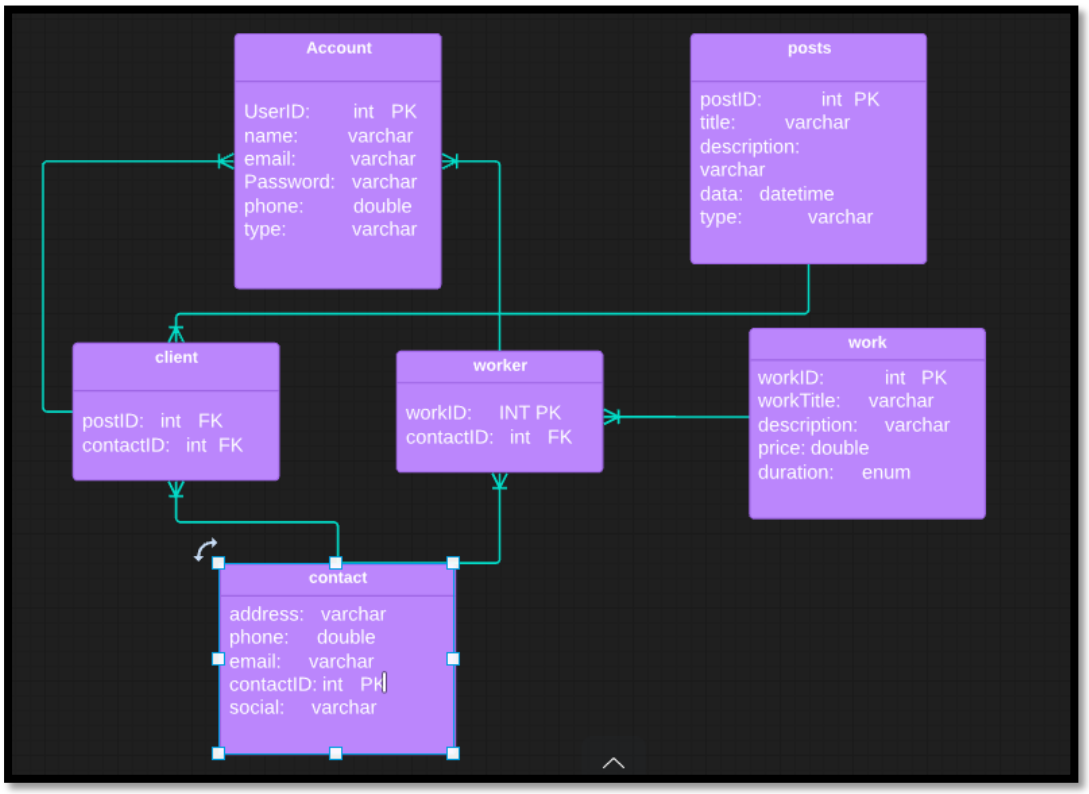

Figure 4.7 ERD Diagram

4.5. Chapter Summary

In chapter 4 we created the use case diagram which shows the two users how they are going to access to the website. based on the use case we created the sequence diagram and the activity diagram which it explains the system with more detail.

The class diagram shows how we designed it by showing how many classes that we have. the Architecture design is showing that when the user uses a computer and connects to the server and the database. ERD diagram will tell us the relationship between the classes and what are the relations.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1. Introduction

We are all have our own smart phone and laptop and we are always using it to make our life much easier. The main aim in the project is making a bridge between the workers which work on house, apartments and buildings services with the owners of the places that they have a problem with their building. we focused on how this website save time without making the user confused about the section that they want to find on the website and making the communication with the other user after reading the information about it. about the object the website makes the process of requesting services much easier and the users have a wider variety of option when request service.

5.2. Achievements

Based on the literature review the proposed project have made a case study which it's about user requirement. reviewing current available system and prototypes also included. for example, reviewing a current online building service and giving opinion about the system and the interface or how can the website serve the users and survey is also included in the proposed project. about the design there is use case diagram, ERD, sequence diagram and an architecture diagram to show how the user interact with the system.

5.3. Testing the System

Landing page:

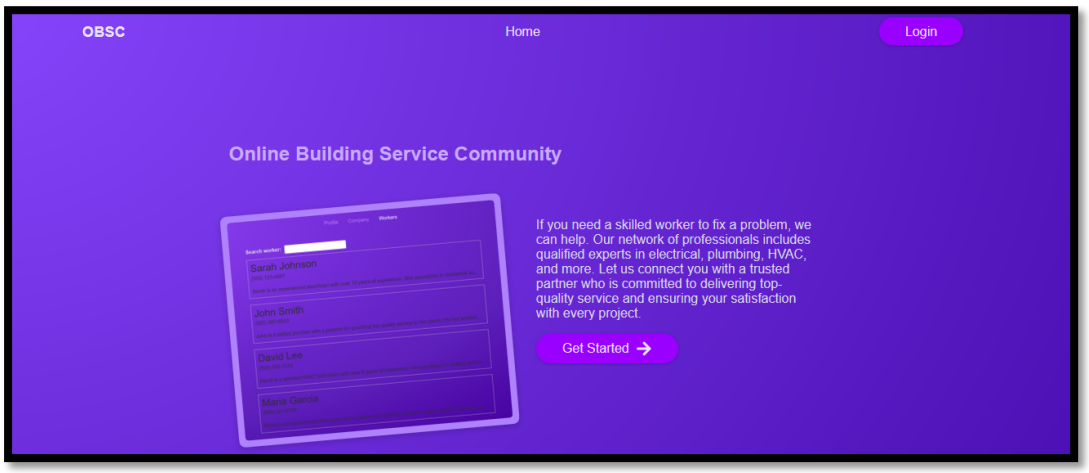

Figure 5.1 Landing Page

Client Page:

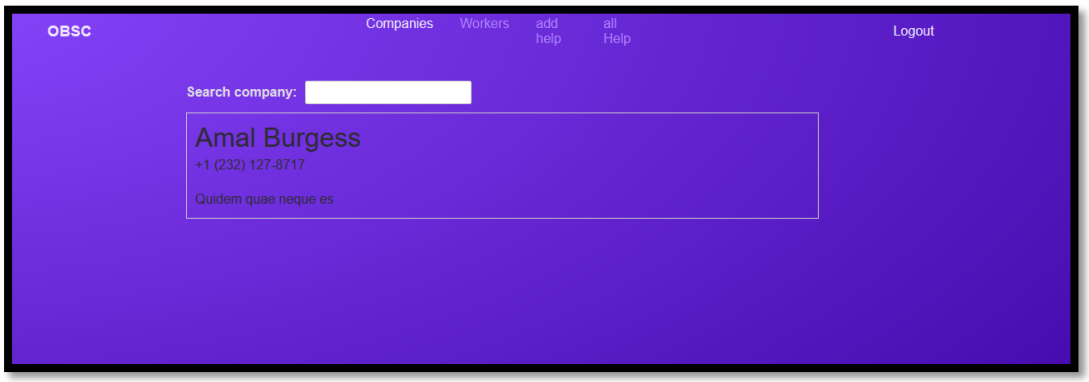

Figure 5.2 Client Page

Worker Page:

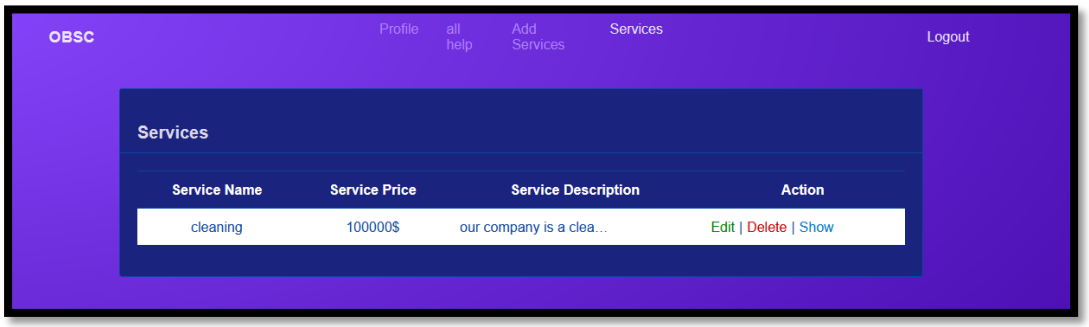

Figure 5.3 Worker Page

Add Help User:

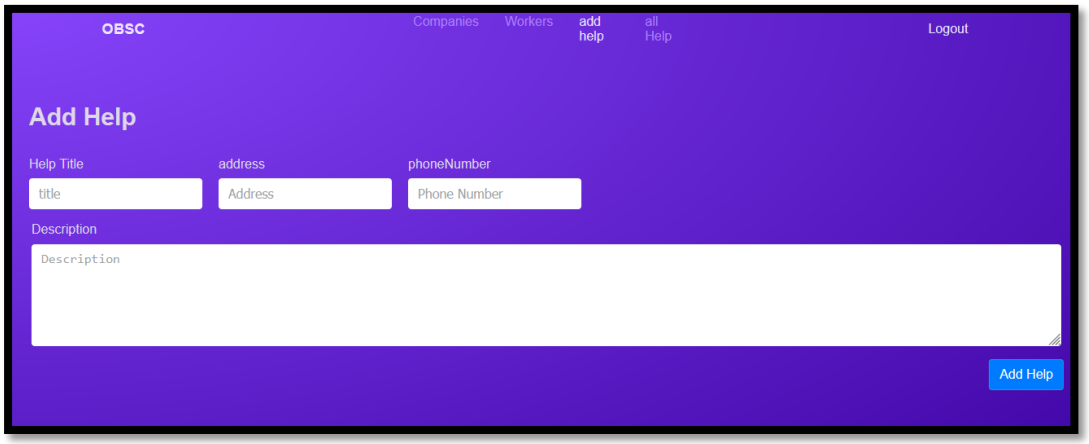

Figure 5.4 Add Help User

5.4. System's core Function

The website I developed utilizes a combination of technologies to deliver its core functionality. The database management system employed is MongoDB, with a JSON (JavaScript Object Notation) file serving as the data source. MongoDB provides a flexible and scalable solution for storing and retrieving data, allowing for efficient management of information within the website. The use of a JSON file allows for structured data storage, enabling seamless integration with other components of the system. For the back-end operations, JavaScript is employed as the programming language.

JavaScript serves as the foundation for implementing various functionalities and logic within the website. With its wide range of libraries and frameworks, JavaScript offers versatility and flexibility in handling data processing, server-side operations, and dynamic content generation. It allows for smooth interaction between the user interface and the database, enabling efficient retrieval and manipulation of data. In terms of the user interface, the website utilizes HTML (Hypertext Markup Language) and CSS (Cascading Style Sheets) as the markup languages. HTML defines the structure and layout of the web pages, including headings, paragraphs, forms, and other elements. CSS, on the other hand, provides styling and presentation capabilities, allowing for customization of colors, fonts, spacing, and overall visual appeal. Together, HTML and CSS create a visually appealing and user-friendly interface, enhancing the overall user experience.

The integration of these technologies empowers the website to deliver its core function effectively. With MongoDB as the database management system, JavaScript as the back-end programming language, and HTML/CSS as the markup languages, the website achieves efficient data storage, dynamic functionality, and an engaging user interface. This combination enables seamless interactions, reliable data management, and an enjoyable user experience for visitors to the website.

CHAPTER 6

CONCLUSION

6.1. Summary of Findings

This project set out to bridge the gap between service providers and service seekers in the building maintenance and repair sector through the development of a user-friendly website. The project's objectives were to simplify the process of finding and hiring skilled workers, ensure efficient communication, and provide a variety of options for service seekers.

Throughout the development process, we employed the Agile Development Methodology, which allowed for iterative improvements and close collaboration among stakeholders. The methodology's stages—Ideation, Development, Testing, Deployment, and Operations—were meticulously followed to ensure the project's success.

We achieved significant milestones, including the creation of comprehensive diagrams such as use case diagrams, sequence diagrams, activity diagrams, class diagrams, and architecture diagrams. These visual aids helped in understanding the system's structure, user interactions, and overall functionality.

The website's core functionalities were implemented using a robust combination of technologies. MongoDB served as the database management system, offering flexibility and scalability. JavaScript was used for back-end operations, ensuring dynamic functionality and efficient data processing. HTML and CSS were employed for the front-end, providing a visually appealing and responsive user interface.

6.2. Contributions to the Field

This project contributes to the field of web development and service management in several ways:

1) Enhanced User Experience: The website offers a streamlined process for service requests, reducing the time and effort required by users to find and hire workers.
2) Scalability and Flexibility: Using MongoDB and JavaScript ensures that the system can handle a growing number of users and data without compromising performance.
3) Comprehensive Design: The use of various diagrams provided a clear and detailed understanding of the system's architecture and functionality, facilitating better planning and implementation.
4) Agile Methodology: Demonstrating the effectiveness of Agile in web development projects, this project showcases how iterative development and stakeholder collaboration can lead to successful outcomes.

6.3. Challenges and Limitations

Despite the project's successes, several challenges were encountered:

1) Integration Issues: Ensuring seamless integration of various components, particularly the database and user interface, posed significant challenges.
2) User Feedback: Gathering and implementing user feedback in real-time required careful planning and iterative testing.
3) Technical Constraints: Limited resources and hardware capabilities sometimes hindered the development process.

These challenges were addressed through iterative testing, stakeholder collaboration, and continuous improvement, but they highlighted areas for potential future enhancement.

6.4. Future Work

Several opportunities for future work have been identified:

1) Mobile Optimization: Enhancing the website's mobile responsiveness to ensure seamless access across all devices.
2) Advanced Features: Introducing features such as real-time chat support, user ratings, and reviews to further improve user interaction and trust.
3) Scalability: Implementing advanced database management techniques to handle larger datasets and more complex queries efficiently.
4) Security Enhancements: Strengthening security measures to protect user data and ensure privacy.

6.5. Final Thoughts

This project successfully developed a platform that bridges the gap between service providers and seekers in the building maintenance sector. By leveraging modern web development technologies and methodologies, we created a user-friendly, efficient, and scalable solution. The insights gained and challenges faced during this project provide valuable lessons for future endeavors, contributing to the continuous improvement and innovation in the field of web development and service management.

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APPENDIX A
SOFTWARE REQUIRMENT DOCUMENTATION

Software Requirements Specification

Project Title

Version 1.0

25/6/2023

Computing Department/ Software Engineer

Revision Page

a. Overview

This paper aims to elaborate on the software requirements for the development of ONLINE BUILDING SERVICE COMMUNITY.

b. Target Audience

The target audience for this system are as follows.

- Worker
- Employer

c. Project Team Members

San Akram Ali.

d. Version Control History

Version	Primary Author(s)	Description of Version	Date Completed
1.0	**San Akram Ali**		**25th/6/2023**

1. Introduction

The purpose of this document is to outline the requirements and specifications for the development of an online platform that bridges the gap between workers in the house, apartment, and building services industry and the owners of the places requiring their services.

2. Scope

The scope of the project is to create a user-friendly website that facilitates communication and collaboration between workers and clients in the building services industry. The website aims to provide the following features and functionalities:

2.1 Features

- Users can request services easily and conveniently through the website.
- Users have access to a wide variety of options when selecting a service provider.
- The website acts as a platform for workers to increase their visibility to potential clients.
- Companies can advertise their building works and share promotional offers.
- Users can search for specific services based on their building requirements.
- Users can post custom work requests, and workers can contact the user directly.
- The website should have an intuitive and user-friendly interface.

2.2 Out of Scope

- Financial transactions and payment processing will not be handled by the website.
- The website will not provide scheduling or appointment management functionalities.

3. Project Objectives

- Simplify the process of requesting and providing building services.
- Offer users a wide range of choices when selecting service providers.
- Increase the visibility and reach of workers in the building services industry.
- Provide companies a platform to advertise their services and promotions.
- Enable users to search for and request specific services as per their building needs.
- Allow users to post customized work requests and connect with interested workers.
- Develop a user-friendly interface to ensure ease of use for all users.

4. Functional Requirements

The functional requirements for the website include:

4.1 User Registration and Accounts:

- Users should be able to create accounts and access personalized features.
- User accounts should include information such as contact details and work history.
- Users should be able to rate and review other users' services.

4.2 Service Request and Provider Selection:

- Users should be able to submit service requests through the website.
- Service providers' information, including location, working methods, and payment terms, should be available to users.
- Users should have the ability to search and filter service providers based on their requirements.
- Users should be able to select a service provider based on reviews and ratings.

4.3 Custom Work Requests:

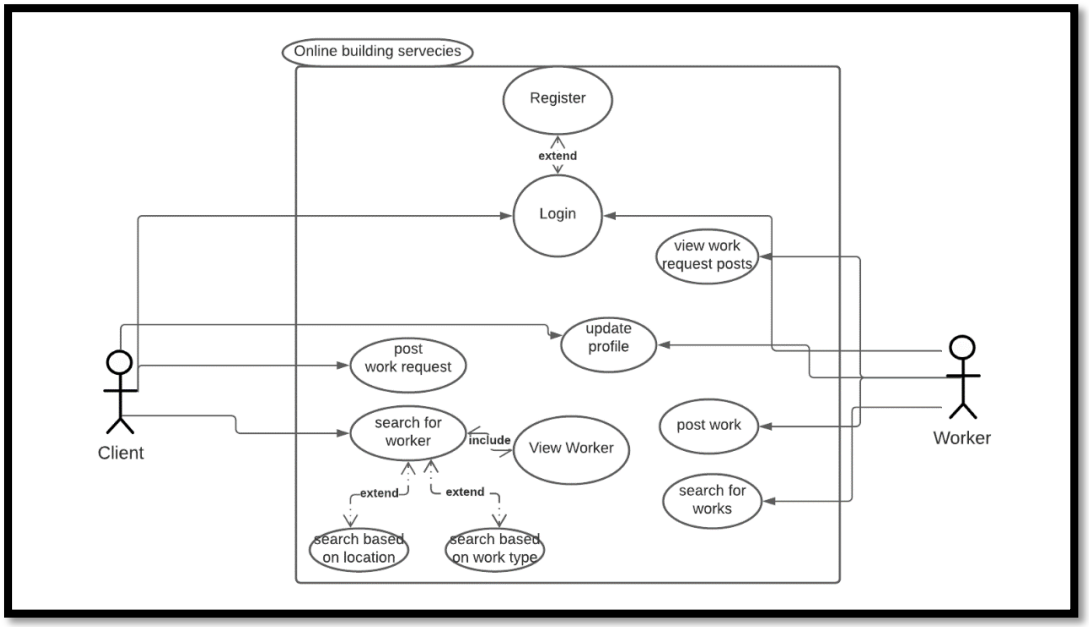
- Users should be able to post customized work requests on the website.
- Workers should have the ability to browse and respond to these requests.

5. Performance

- The website should provide fast response times, even during peak usage.
- The system should be capable of handling a large number of concurrent users.

5.1 Security

- User accounts and personal information should be securely stored and protected.
- Secure communication protocols should be implemented to safeguard user data.



Appendix B

Software Design Documentation

1. Introduction

1.1 Purpose

This documentation places its primary emphasis on the design specification intricacies of the Application System. Within the realm of system development, it not only vividly elucidates the physical design intricacies but also delves into the multifaceted aspects of the system architecture. The content herein provides a detailed and comprehensive exploration of the design elements, ensuring a thorough understanding of the intricacies involved in crafting the Application System.

1.2 Scope

The App provides a user-friendly platform connecting owners with a variety of services, from. Users can easily book appointments and manage.

1.3 Overview

This document serves as a comprehensive overview of the envisaged system, delving into the background and purpose that underscore its inception. Beyond elucidating the system's essence, it meticulously analyzes and delineates the intricacies of the system architecture. Moreover, this document encapsulates the system's data design, offering a detailed exploration of the various data models employed, including but not limited to entity-relationship diagrams (ERDs) and data dictionaries. Additionally, it scrutinizes the design nuances of the user interface, ensuring a holistic understanding of the system's form and function.

2. System Architectural Design

2.1 Architecture Model

The architecture of a system, serving as its conceptual design, delineates the structure and operational behaviors. Users or actors interacting with the system are categorized into three layers: the data access layer, application layer, and business logic layer. Each layer possesses distinct rules, characteristics, and responsibilities. The application layer functions as the system's User Interface, facilitating user interaction and access to system functions. Acting as a mediator between the application layer and the data access layer, the business logic layer serves as a controller, validating user input and facilitating the transfer of data from the application layer to the data access layer.

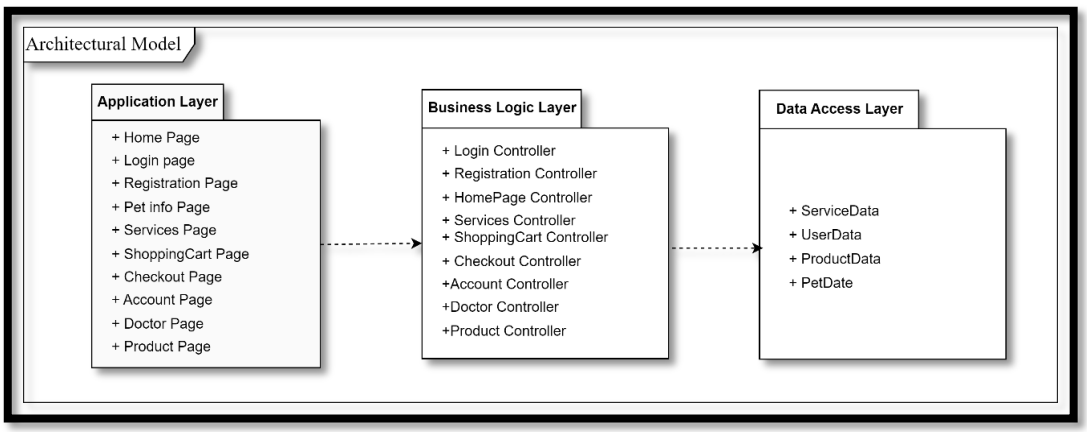


Figure 1: System Architecture

3. Data Design

3.1 Data Description

Database Design serves as a structure for storing, retrieving, and analyzing data, enabling the definition of organization and operations. The Entity Relationship Diagram (ERD) is a database architecture derived from creating a model centered on entities, attributes, and relationships. This model provides a visual representation of how data is organized and interconnected within the database.

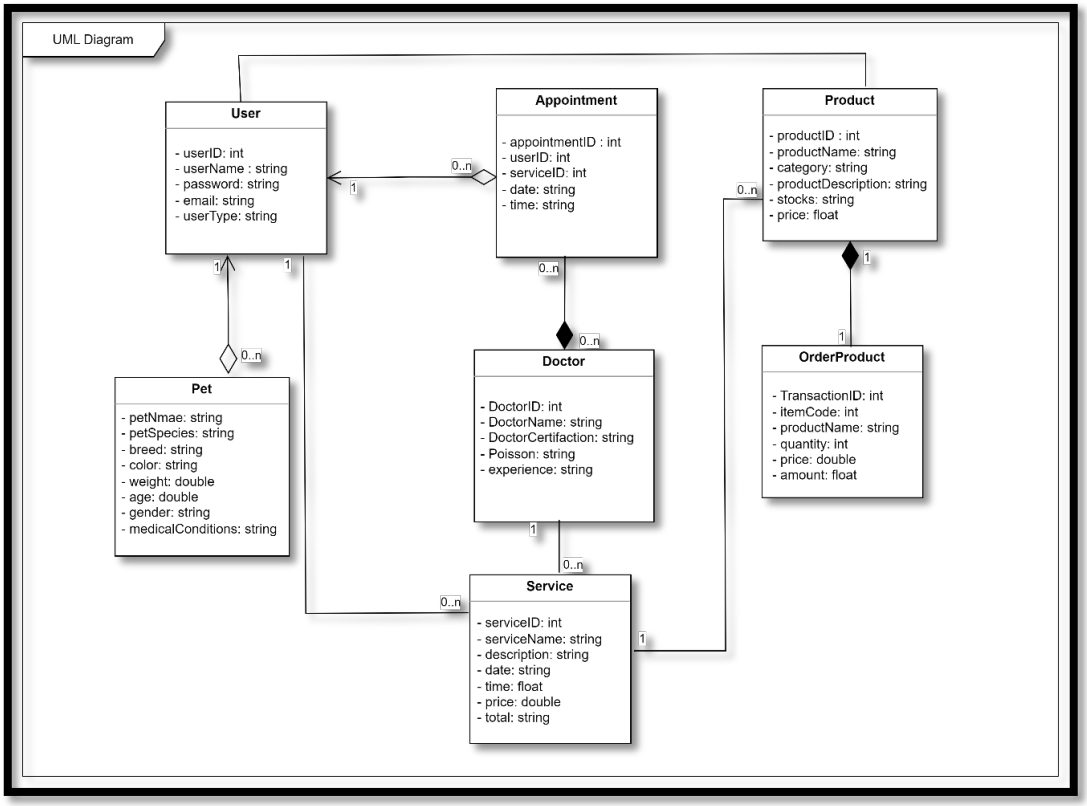


Figure 2: UML diagram

3.2 Data Dictionary

The data dictionary for this service application encompasses several interconnected tables. The "User" table stores user information, including identification, login credentials, and user type. The "Product" table details various products with attributes like name, category, stock, and price. The "OrderProduct" table tracks transactions, recording item codes, quantities, prices, and total amounts. The "Doctor" table manages information about doctors, including certification, position, and experience. The "Pet" table holds data about pets, such as name, species, and medical conditions. Appointments are recorded in the "Appointment" table, specifying user and service IDs, date, and time. Lastly, the "Service" table outlines services, including name, description, date, time, price, and total cost. Each table's attributes are defined with their respective data types, lengths, and specifications regarding null values and multivalued characteristics, providing a comprehensive overview of the application's data structure.

Appendix C
Software Testing Documentation

1. Introduction

1.1 Purpose

This document holds the pivotal objective of validating our methodology, ensuring the seamless and efficient functionality of all components. The testing process plays a critical role in offering the initial indications of potential errors that might impede the system's adherence to specifications. The testing protocol for this system encompasses three distinct types: black box testing, white box testing, and user acceptance testing. This comprehensive approach ensures a thorough evaluation, guaranteeing the robustness and accuracy of the system based on predefined specifications.

1.2 Black Box Testing

Black box testing, also known as behavioral testing, is a testing methodology utilized when the tester is not acquainted with the internal structure or design of the system. Its primary objective is to assess the functionalities of the system. Test cases are devised with defined input values and anticipated output results for each process, aiming to validate the behavior of the system's functions. The presented table provides an exemplar of black box testing applied to the login function, wherein users are required to input their username and password for system access.

1.3 User Acceptance Testing

User Acceptance Testing (UAT), also known as end user testing, is a software testing phase executed by end users to assess the acceptability of the software. It takes place after functional, system, and regression testing, serving as a final check. The aim of UAT is to confirm that the system aligns with the organization's specifications. End users, well-versed in business requirements, perform validation testing during this phase.

1.3.1 Login (UC001)

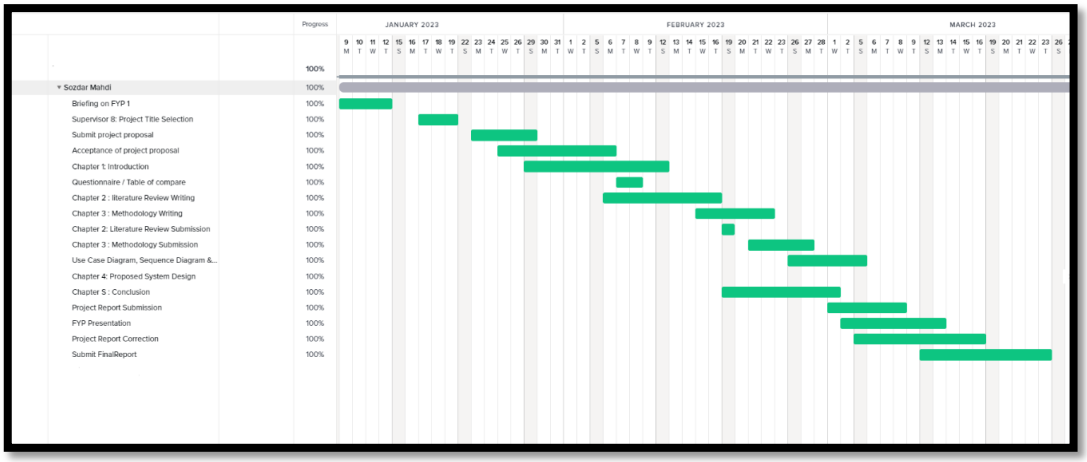
TC#	Input	Expected Result	Pass/Fail
1	Leave all field empty and click "Sign In" button	Display error message "Invalid username and password"	Pass
2	Enter username as "admin", password as "123admin" and click "Sign In" button	Display error message "Invalid username or password"	Pass
3	Enter username as "admin@gmail.com", password as "123admin" and click "Sign In" button	Display error message "Invalid username or password"	Pass
4	Enter username as "admin@gmail.com", password as "123admin" and click "Sign In" button	Redirect to Home page	Pass

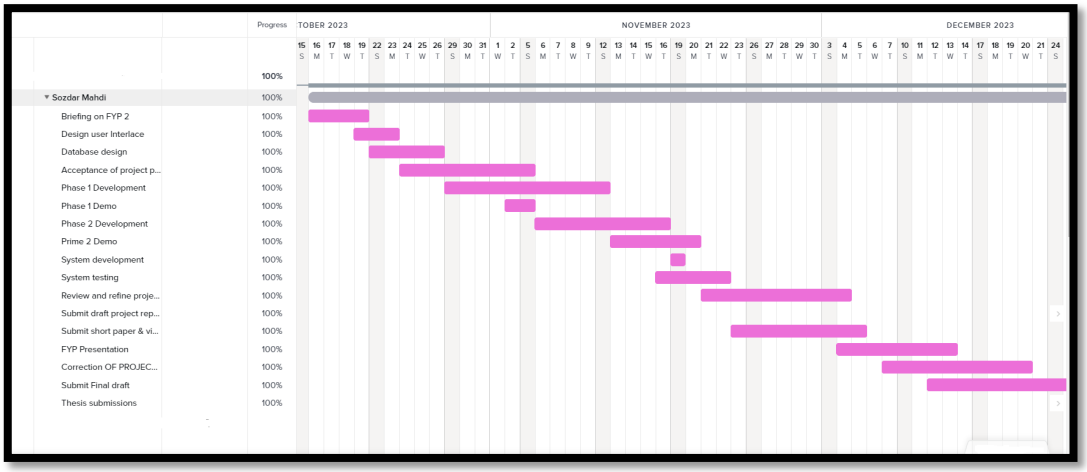
1.3.2 Registration (UC002)

TCG	Input	Expected Result	Pass/Fail
1	Leave all field empty, click "Register" button.	Display Error Message "Invalid usemame"	Pass
ni	Enter name, phone number, password and confirm password. Click "register" button	Display Error Message "Invalid username"	Pass
3	Enter username as "admin", name as "Sozdar", phone number as "0771016543", password and confirm password. Click "register" button	Display Error Message "Invalid username	Pass
4	Enter usemame as "admin@gmail.com", name as "Sozdar", phone number as "0771016543", password and confirm password. Click "register" button	Display "Successfully Registered" and redirect to login pa2e	Pass

Appendix D

Gantt Chart


Progress
JANUARY 2023
FEBRUARY 2023
MARCH 2023
100%
Sozdar Mahdi 100%
Briefing on FYP 1 100%
Supervisor 8: Project Title Selection 100%
Submit project proposal 100%
Acceptance of project proposal 100%
Chapter 1: Introduction 100%
Questionnaire / Table of compare 100%
Chapter 2 : literature Review Writing 100%
Chapter 3 : Methodology Writing 100%
Chapter 2: Literature Review Submission 100%
Chapter 3 : Methodology Submission 100%
Use Case Diagram, Sequence Diagram &... 100%
Chapter 4: Proposed System Design 100%
Chapter 5 : Conclusion 100%
Project Report Submission 100%
FYP Presentation 100%
Project Report Correction 100%
Submit FinalReport 100%


Progress
TOBER 2023
NOVEMBER 2023
DECEMBER 2023
100%
Sozdar Mahdi 100%
Briefing on FYP 2 100%
Design user Interface 100%
Database design 100%
Acceptance of project p... 100%
Phase 1 Development 100%
Phase 1 Demo 100%
Phase 2 Development 100%
Prime 2 Demo 100%
System development 100%
System testing 100%
Review and refine proje... 100%
Submit draft project rep... 100%
Submit short paper & vi... 100%
FYP Presentation 100%
Correction OF PROJEC... 100%
Submit Final draft 100%
Thesis submissions 100%