

**“ONE MART: AN ULTIMATE WEB-BASED ALL-IN ONE HOME
SERVICE SOLUTION IN BD”**

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FINAL YEAR DESIGN PROJECT REPORT

This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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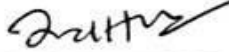
This Project titled **“ONE MART: AN ULTIMATE WEB-BASED ALL-INONE HOME SERVICE SOLUTION IN BD”** Design And Implementation Of E-commerce Based Website:”, submitted by ID: 201-15-14245, Sumon Roy & ID: 201-15-14261, Md. Tanvir Ahmed to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on **13-07-2024**.

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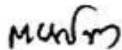
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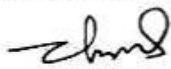
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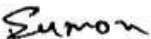
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ABSTRACT

OneMart thus comes as one of the most sophisticated platforms that are disrupting the market space of home services management. Again, it is developed using the solid MERN stack and utilizes the versatility of React. The frontend is built as a progressive and react js for frontend with the assistance of Tailwind CSS for simplified abstractions. On the backend, Express js enables easy coordination of activities between the users and service providers on the server-side and thus is greatly relied on. MongoDB is used for the database management of data securely and fulfills the functionalities like user profiles, service listing, and real-time updates. OneMart presents a client-oriented model with carefully developed tools that make each stage of service usable and smooth. The live chat sets up an efficient way of addressing the customer's concerns. An example of this is the appointment booking systems that enable users to check the real-time availability and confirmation of appointments to increase the efficiency of the scheduling. Easy availability and select options are made easier by the incorporation of Google maps, which allows users to search for nearby services. Thus, by considering both usability and security aspects, OneMart not only complies with the existing standards, but goes beyond the expectations of the contemporary consumer who anticipates both efficiency when searching for a particular service, and trustworthy tools for providing services. This dedication to making improvements and enhancing the customers' experience places OneMart as the pioneers of the home service category as it targets to liberate homeowners with an extensive and easy to use solution. when maintaining traditional values and adapting to the new level of consumers requirements.

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CHAPTER 1

INTRODUCTION

1.1 One Mart

Services to be provided at homes are cheaper, reliable, and professional more so today than in the past due to the busy society. To this, a web-based startup, OneMart has taken up the challenge of raising the standards by establishing a web-based firm that only vets professional service providers and matches them instantly to customers in the Bangladeshi market. Whether for the maintenance of an Air Conditioner, procuring parts to fix a computer, to repair household appliances, or arrange for electricity and water bills, OneMart has all your home requirements.

As such, only has the concept of outlet displayed this idea of innovation that OneMart seeks to use to give what the people want through the power of technology. It has an organized interface that enhances the identification of the service a user is in need of. Competitive features like live chat 24x7 hours. Moreover, application of map, such as Google Map assists users to find the nearest service providers, making it another notch effective and convenient to use.

This software, developed by the MERN stack (MongoDB, Express.js, React.js, and Node. OneMart is an Asynchronous, Scalable, Performance Driven Application The following design aspect is used to build OneMart. The frontend part is coded using HTML, CSS in the form of Tailwind CSS and UI library called Daisy UI and using React.js developers converting user script into a better-looking and more interactive UI. The backend, developed with the use of Node.js and Express.js – It is a safe, fast and reliable intermediary for the transmission of user and requested data and for the requested services As a NoSQL database MongoDB offers the flexibility demanded for the storage of the diverse services data and users profiles storage. You can save your money with OneMart on getting Most affordable home services in Bangladesh like never before! It also helps to find and order needed services and, at the same time, to ensure that people who offer such services are serious and worthy of trust. Newly, OneMart has been shaped as the main service supplier for home preservation and repair needs making the consumers life much easier and convenient across.

1.2 Motivation

Therefore, the need for OneMart is based on the following factors: There is a growing need for a reliable and efficient home services solution in Bangladesh. Due to the growing population, people have less time, and with urbanization most of them do not want to get dirty fixing electrical issues on appliances and plumbing. The conventional techniques to seek service-providers are always time-consuming, ineffective, and undependable thus, the customers are left stranded in search of prompt and efficient assistance.

OneMart has solved this end-to-end by way of a large technology gap in the country whereby customers and professionals can be brought together in a very easy manner. Our mission is one few have the will to stomach by so doing, our goal is to eliminate all the possible alibis that anybody can use not to maintain his or her home by providing the most efficient, reliable and effective home maintenance solutions. We have a live chat, and you know Google Map integration for a better experience of finding, booking and managing our home services. OneMart is focused on altering the procedures of home services in Bangladesh and making our users lives easier and less burdensome.

1.3 Objectives

The main goals of this Project are:

- Introduce easy service scheduling: They must design a simple and fast model of booking the home services by the users.
- Bachelorify Quality and Reliability: Enable the customers to engage the described professionals for quality services to be rendered to them.
- Live Chat for Improved Featured User Experience.
- Service Delivery: Employees use Google Maps Location to find Users and determine the Speed and Efficiency of Service of Service providers (Source: Uber).
- More Transparency: It is possible to create a directory of the service, and beside the minimal description, the price and the rating of the provider so that the customer can choose the most appropriate service.
- Secure User Data: Release with extra utilities as options including service with JWT authentication to maintain the privacy of users.
- This is done with the goal of establishing horizontal scalability, MERN stack is selected, and it will be used right from the start to ensure that the platform can grow,

the more the consumer pulls, the more the service you will be delivering.

- Data management: Storing and executing with MongoDB to properly use the Service Data and User Profile while getting them.
- Continuous Improvement: Create a procedure that will help in getting the views of the customers that will be useful in improving features and services provided by the platform.
- Design for Accessibility and Inclusivity: Accessibility and interactivity of the platform for the different people or segments of the community in the different regions of Bangladesh.

1.4 Expected Outcomes

The expected outcomes for "One mart" include:

- Instant Bookings: Enables customers to book a home service instantly with minimum taps and, and without the annoyance of having to spend time to hire reliable home service.
- Verified Professional Service providers: The following are the key service offerings that one-Mart will ensure that it delivers quality and reputable services to its customers from the Verified Professional Service providers:
- Attractive UI: The Website will be more attractive for users, live chat, this will link and enhance the consumer relations profile.
- Fast service delivery: Follow the nearest supplier and get the satisfaction in the same day service delivery.
- In general, the service listing will make the market location clear, help create trust between users and service providers and also describe the service with the price included.
- Thus, Readily Implementable Social Media Login with enhanced Data Security and Privacy: The JWT authentication applied in this solution will incorporate a level of security in relation to the data, and the users can trust this platform.
- Scalable Platform: There is a good framework being used for the development of OneMart called MERN stack, which is even capable of being self-scaled up as the user grows larger and gives consistent replay ability.

- **Diverse Data Assets Sourcing:** MongoDB is leveraged to handle the accumulation of several service related data and customers profiles that are crucial for services orchestration and management on the platform.

Therefore, a feedback system should prompt a continuous improvement of the platform by collecting feedback on the issues faced by the users and subsequently resolving an issue in a shorter time span.

OneMart: Socio demographic access: Desired one mart needs to be highly accessible and inclusive for the population of different demographics in Bangladesh so that it can later achieve the objective of mass adoption by the population.

1.5 Project Management and Financial Analysis

1.5.1 Project Management:

Flexible development: Aiming to integrate Agile project management model as the main approach to the development to maintain the flexibility during the creation phase. Cut your project down into swallowable pieces and add features piece-meal, deploy these features and incorporate new/modified features into the application based upon the feedback and demand from your users.

Scrum WorkStream- This is useful when creating your Scrum project and for managing your sprints, daily meetings or stand up meetings, and the sprint review. Thus it enhances the interaction process and data exchange among the developers

Projects Priorities: When prioritizing the projects, the significance and the added value obtained after the change on the impact and the Coordination with other related projects should be taken into consideration. This will enable you to first set basic level features of the product and then only start aiming at next level features which are in reality known as secondary features it will help you in the development of the product's first milestone.

And Communication Rights: Create links that define lines of communication that the development team has with the stakeholders. And further, to keep engaged with each of these team members on slack, Outlook and other forms of checklists and updates to ensure that the flow of work is well understood by all these team members, and which of these

tasks are problematic, which decisions are to be made.

Resource Management this entails acquiring and deploying resources for the project regarding time, schedule and costs as agreed. Increase organizational effectiveness with performance quantification that takes place on a regular basis to help establish the level of effective resource utilization.

Risk Management: Risk assessment should be done at the initiation level of your project; devise risk management to control those risks. Another wise principle is to always monitor threats that may emerge in the course of the undertaking and counter them at the soonest possible time to prevent them from marrying the outlook of the project.

Quality assurance —develop a procedure that would guarantee that the deliverables are of good quality and meet the laid down standards. Continue to perform test, code review and quality assurance and locate those defects before they affect expensive downstream work.

1.5.2 Financial Analysis:

Budget: Finalize OneMart's budget for the first months to set aside for creating its exposure and the basic development issues and some money in marketing and the general expenses bound to happen during operations. Divide the money logically: ensure that each component in the project receives adequate funding which at the same time will not harm the feasibility of the project.

Before you invest in a project, you need to estimate its cost and below are some examples of project parts that you should estimate: software, hardware, personnel, advertising, and service of facilities. Some of the strategies that can be prescribed to generator are as follows: Generator can guide that the one time estimate and the recurrent expense can be used as a framework of the best financial plan which is free from any ambiguity.

Revenue Model : Determine, how, OneMart Going to generate it's revenue such as; Service fees, Subscription plans, Commission based from service providers and Advertising revenue. Say, try out various revenue strategies whereby you are in a position to make cash while making the user a beneficiary.

Develop predictions and plans, and working models, projections, and appraisals to establish the viability of a business venture; Establish quite accurate estimates of the future financial outcomes of OneMart by assembling and analyzing historical data in relation to the market and tendencies. Going to Hunt Opportunities – Determining the areas where we could be able to get some more funding for our project. Solutions might include venture capital, angel or seed funding or even crowdfunding to help generate the funding for these activities.

Figure: 1.5.2.1 Financial Analysis

SN	Components	Estimated Cost (BDT)
01	Domain and Hosting	2500-3000
02	Development and Integration	5000-6000
03	User Interface Design	2500-3500
04	Backend Infrastructure (Node.js, MongoDB, Express.js)	3000-4000
05	Live Chat Feature	2000-3000
06	Documentation and Report Writing	500-1000
07	Miscellaneous (e.g., licenses, tools)	3000-4000
08	Contingency (10% of total)	12% of total cost
09	Total Estimated Cost	16,000-26,000

The estimated total cost 16,000 BDT. Offering a comprehensive understanding of the financial requirements for executing the project. These estimates will guide our budget planning and resource allocation strategies.

1.6 Report Layout

Developing a thorough report layout for "One Mart" entails organizing several parts to highlight the specifics of the project, its stages of development, its features, and its results. An outline for the report layout may be seen below:

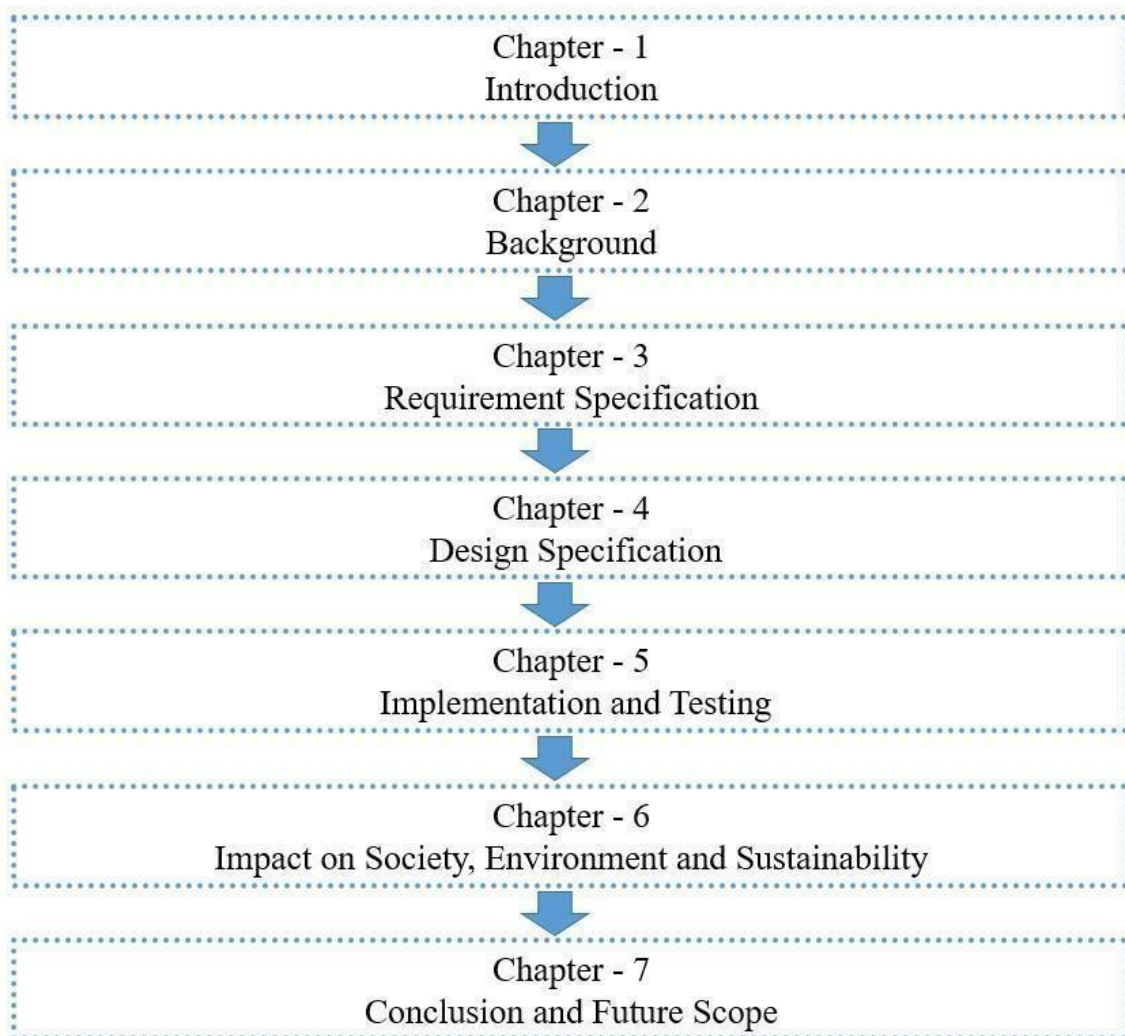


Figure 1.6.1: Report Layout of this Project.

1.7 Summary

The One Mart market in Bangladesh presents significant challenges due to traditional search methods and decentralized property listings. "One Mart" aims to address these issues by offering a user-centric online platform that streamlines the rental process, provides personalized recommendations, and facilitates transparent communication between renters and property owners. Motivated by the desire to alleviate these challenges, the project integrates advanced technology, including a live chat feature to enhance efficiency and user satisfaction. The primary objectives include efficient communication, personalized recommendations, a user-friendly interface, and enhanced transparency. The project scope encompasses interface design, database development, live chat functionality, search capabilities, mobile compatibility, security measures, and scalability. Expected outcomes include improved rental experiences, increased efficiency, enhanced user satisfaction, optimized matching, and valuable market insights. By aligning with these objectives, "One Mart" aims to redefine the rental housing experience and contribute to a more efficient and transparent market ecosystem.

CHAPTER 2

BACKGROUND

2.1 Terminologies

Here are terminologies related to "One Mart":

- Service Provider - Professional or company which is registered on OneMart for providing home services such as computer repairs and installation of graphics cards, AC repair, Electrical, Plumbing It solution and appliance repair etc.
- User: An independent individual or a family who is in search of home services to be provided at their home go through the OneMart's service catalogue, scheduling appointments with the service providers and interact through messaging.
- Live Chat is an IMCC option where a customer can type a letter to a customer support officer or service provider, to get assistance online immediately.
- Google Maps Integration: integration of google maps in order to enable users to find required service providers nearby. To provide the navigation facility using google maps.
- Service Listing: Obtain the description and price of a certain home service together with the provider's review and rating for the given home service accessible on the OneMart platform.
- This involves the process whereby through One smart and its interface, the particular user sets an appointment with a preferred service provider, at a certain time.
- Rating and Reviews: Such feedback for the provider is common after the consumer service provider dispenses service to depict the quality of the service as a tool to assist other potential consumers in making a choice.
- Dashboard: A window that is located in the platform that is controlled by the OneMart and through which its permitted clients can get a brief summary of an account, the services bought, and the communication history.

The stack in use to develop applications such as React and Node.js. They are referred to as the MEAN stack which comprises MongoDB, Express.js, React.js and Node. Essential for front-end web platform development at one mart.

2.2 Related Work

It is established that One Mart works amid numerous online services, warranty count, Computer accessories, Repair booking management platforms. Many other related services have similar capabilities and are available, all of which have different advantages and options [1].

UrbanClap (now Urban Company) - UrbanClap is an e-commerce venture that offers home services by professional service partners across a range of categories such as salon at Home. Consequently, UrbanClap is a few steps ahead, proving that such a service is possible and relevant in the growing market which actually lays a solid foundation for OneMart's business idea and services [2].

Another more familiar on-demand service platform in the US is TaskRabbit. Through this platform, customers can get local freelancers for house services, home repairs, cleaning, and moving services, etc. The way TaskRabbit manages its service provider's selection and quality standard could be a model for OneMart to build this trustworthy freelancer network [3].

Sheba.xyz is not a futuristic tech firm specializing in AI and robotics, a shadowy organization known for covert operations, or an ambitious space exploration mission. Rather, it is the largest online service marketplace in Bangladesh, providing a one-stop solution for home and office services [1].

Poshorabd.com is an online marketplace in Bangladesh that connects customers to a wide range of professional service providers for household and office needs. It offers over 150 service categories, allowing customers to book appointments and manage transactions through the platform. The service aims to provide a hassle-free and reliable experience, with pre-agreed rates, secure payments, and customer support. Poshorabd has received positive reviews for the quality of service and professionalism of its providers. It serves as a one-stop solution for customers to find the right service professionals in Bangladesh [4].

Handy - One of the biggest USA household services marketplaces specializing in cleaning,

maid, handyman, and similar services. House many insights to better the user experience for OneMart using handy as reference because the business offers convenient user interfaces, simple tactics of booking of a service, and most importantly, it emphasizes on the user experience [5].

This is an Indian website that is offering home services ranging from beautician, personal trainer to even a house mechanic. From the set of service categories that have been identified in the house joy model, OneMart can learn from and customer feedback mechanisms that can be adopted into the company's model [6].

Helping, Another large international service that allows people to receive home cleaning services within a few hours. As for the strategy applied to the OneMart case, it is noteworthy to single out the technology-intensive matching of the customers with the professional cleaners and the service of bookings management, which may bring a number of insights regarding how the services would be delivered and vice versa – how the operations would be improved [7].

Foodpanda is a leading online food delivery platform that connects customers with a vast array of restaurants and food options across multiple countries. Its user-friendly interface and efficient ordering system make it convenient for users to satisfy their culinary cravings. Foodpanda's mission is to provide a seamless and enjoyable dining experience, and it continues to expand its reach and enhance its services to meet the evolving needs of customers worldwide [8].

Uber Eats is a prominent online food delivery platform that connects customers to a vast array of restaurants across numerous countries. Launched by Uber in 2014, the service has expanded significantly, now operating in over 6,000 cities in 45 countries. Uber Eats enables users to order a diverse range of cuisines, with deliveries facilitated by Uber drivers using various modes of transportation. While the platform has faced some challenges, it remains one of the leading food delivery services globally, offering features like real-time order tracking and the ability to order from various retail outlets [9].

Amazon Home Services is a platform that connects customers with pre-screened professionals across various service categories, offering upfront pricing, verified reviews, and a satisfaction guarantee. The service is integrated with Amazon's e-commerce platform, providing a convenient way for customers to find and schedule services alongside their product purchases. Amazon carefully selects and vets the service providers to ensure high-quality work and a positive customer experience [10].

Hence these associated works allocate numerous powerful models and systems in the on-request home administrations industry and by virtue of this will guide OneMart on the most proficient method to take adequate measures in enhancing their stage to meet the needs of the Bangladeshi present market [4].

2.3 Comparative Analysis

This is especially a highlight of One Mart as it aggregate in one site both the service to construct the portfolio, job search and application. Lastly, we present an analysis of identical services such as One Mart that would reveal the position that the service takes.

OneMart:

Some of the many businesses that can be started include; computer hardware and accessories; Air conditioning and repair; electricians; plumbers; washing machine and refrigerator repair and others. Trough the inclusion of a chatbot and live and also inclusion of Google Map to identify near service providers in the app.

UrbanClap [Urban Company]

The firm offers services in the sectors which include beauty and personal care to repair services in homes. This depends on the proper screening of the providers and the adequate coverage time for the same.

TaskRabbit:

Resume type description that encompasses furniture installation, moving services and a handyman service. Older than TaskRabbit. It tends to comprise more of the current local

freelance job seekers. The aspects related to the utilization of information technologies and communication tools in completing the task and its control.

Handy Offers:

Cleaning Handyman Services Easy to get a table and can arrange your time table quickly.

Housejoy:

The services can be home services of beauty or fitness, repair services among other services. Idle Rich: broad service categories; whether a specific service a user has; and the type of service users have. We have also provided a convenient online service to track your reservation and for internet service arrangement.

Helping:

Home cleaning services. As FAST as possible, the cleaners are allocated to the customers' orders. Availability and scheduling simplified - The option of repetition of the schedule.

UX UI is short for user interface and experience.

OneMart:

Built with: HTML, Tailwind CSS, Daisy UI and React Responsive and Attractive Interface in website. The database is rather convenient for searching and finding the needed service.

2.4 Comparison Between Existing Work

Figure: 2.4.1 Comparison Table

SL No	Criteria	MY Website	Others Website		
		One Mart	Thumbtack	Task Rabbit	HomeAdvisor
1.	User Friendly	yes	yes	no	yes
2.	User Experience	yes	no	yes	no
3.	Search option	yes	yes	yes	yes
4.	Best Pricing	yes	no	yes	yes

5.	All Categories	yes	yes	yes	no
6.	Google login	yes	yes	yes	no
7.	Live Chat	yes	no	yes	yes

2.5 Challenges

The reason for the development of one mart has its own reasons and these are the demerits likely to be faced: Integrated services have their complexities and the design of an interface is to be very strategic taking into consideration the usability of multiple services in one platform. In the case of real time keep-as-current for the appointments and service availability, one needs a decent spate back-end and decent database management. Moreover, the fluent communication with the users and to make the chatbot and the live chat easily comprehensible to the NLP and RTCE are the significant aspects. Making it to the nearest service providers with the help of Google Maps is a little complicated owing to the necessity of a proper integration of the Google API and good geolocation skills. This is especially the case due to the aspect of data accountability and security since the data must be protected by enhancing security features and adhering to the law on data protection. However, it should be expandable for future changes that might also encompass the increasing number of users, the enlargement of the list of services offered online. Thus, the user satisfaction is important and so also is the right and strong or valid trust between users and service providers, therefore the need to introduce a strong system of review and rating of services offered by different service providers and also correct and consistent Price and service information. Therefore, it is these challenges that have to be met to attain an integrated and reliable home service portal.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

BPM for OneMart entails drawing out a process flow of the platform which can help the platform to streamline its operations for the use of the clients. The process starts with users looking for home services on the platform with the help of smooth navigation and divided subcategories. Customers proceed to engage the chatbot for inquiries or use the live help for immediate assistance in ensuring that they locate the appropriate provider. Once a specific service is chosen, the appointment booking system refers to the service provider's schedule to verify the appointment and store the appointment information in the MongoDB database. Google Map is integrated to it which enables user to reach the nearest service providers as well as monitor on the status of the service. They get alerted with the new booking requests, sort it out with the help of backend interface and update status of the services in real time. The targeting users can then rate and review the provider, which contributes to the formation of a clear system and reliable environment. This BPM guarantees that along the chain from the reception of the user's queries, through the provision of home services up to the reception of the response is well brought in a coherent and optimized manner to give a reliable home service platform result.

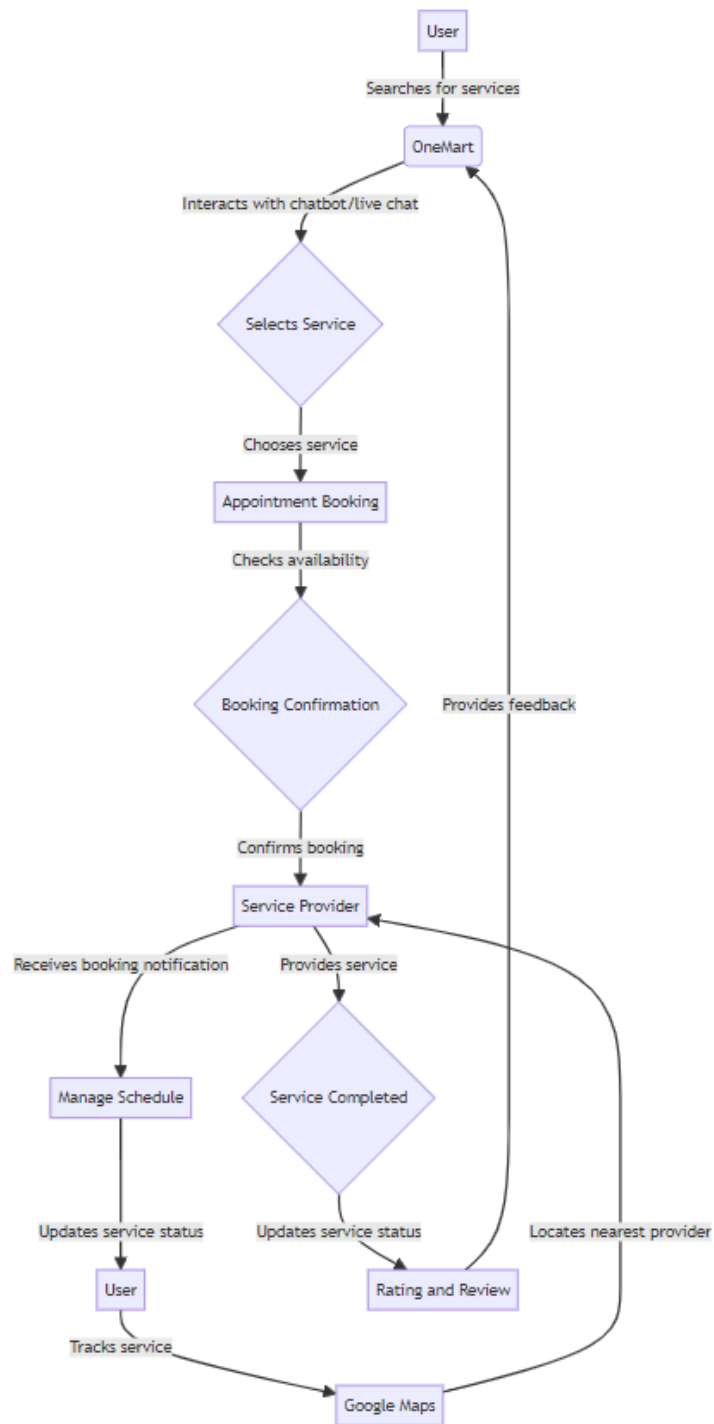


Figure 3.1.1: Business Process Modelling

3.2 Requirement Collection and Analysis

Requirement Collection and Analysis for "One Mart" involves a systematic approach to gathering and understanding the needs of system administrators, organizers, and customers.

Stakeholder Identification:

Customers:

- With regards to the target market, there are two broad categories that the firm can target which includes those interested in home services. Through Service Providers For instance repair services such as, Computer repair, Air conditioning repair, Electricians & plumbers and Appliance repair.

Admins:

- Individuals who are running the OneMart members and the entire platform Investors Partners, Any of those, and more so anyone who has any vested interest in the growth success of the particular platform.

Requirement Gathering Methods:

- Conversations with people who may use or be affected by the products services, face-to-face to hear about their issues concerns. Sending questionnaires and surveys to a larger pool of target users to embody the most desirable features and quantify the problems.

Stakeholder Interviews:

- Collect input using stakeholder interviews, Stakeholder Interviews Collect input using stakeholder interviews. It becomes necessary to hold focus groups to enable the understanding of the topic in question more deeply.

Browser Testing:

- Understand what your browser is capable of that is, and depending on the kind of functions it offers and kind of mistakes it is capable of pointing out.

Competitor Analysis:

- When it comes to the analytical work, one has to review existing platforms to discover where the benchmark has been set.
- Insight: Insight would reveal the precise ongoing process people are employing when searching and choosing their home services (Observation).

Functional Requirements:

- User Registration and Login: Open user account creation and absolutely free of charge for all users service providers. Detailed overview of Posts, Prices and Health check application. A payment gateway attributed to the Core of Processing transactions.
- Live Chat: Able to quickly get in touch with support by opening the live chat buttons.
- Google Map Integration: You could use this aspect to identify and expose the nearby provider carriers.

3.3 Use Case Modeling and Description

Use Case Modeling for "One Mart" covers situations such as services, chatbot, google map, booking system. Every instance describes how system administrators, organizers, and consumers interact with one another, outlining certain features and user roles in the platform's process.

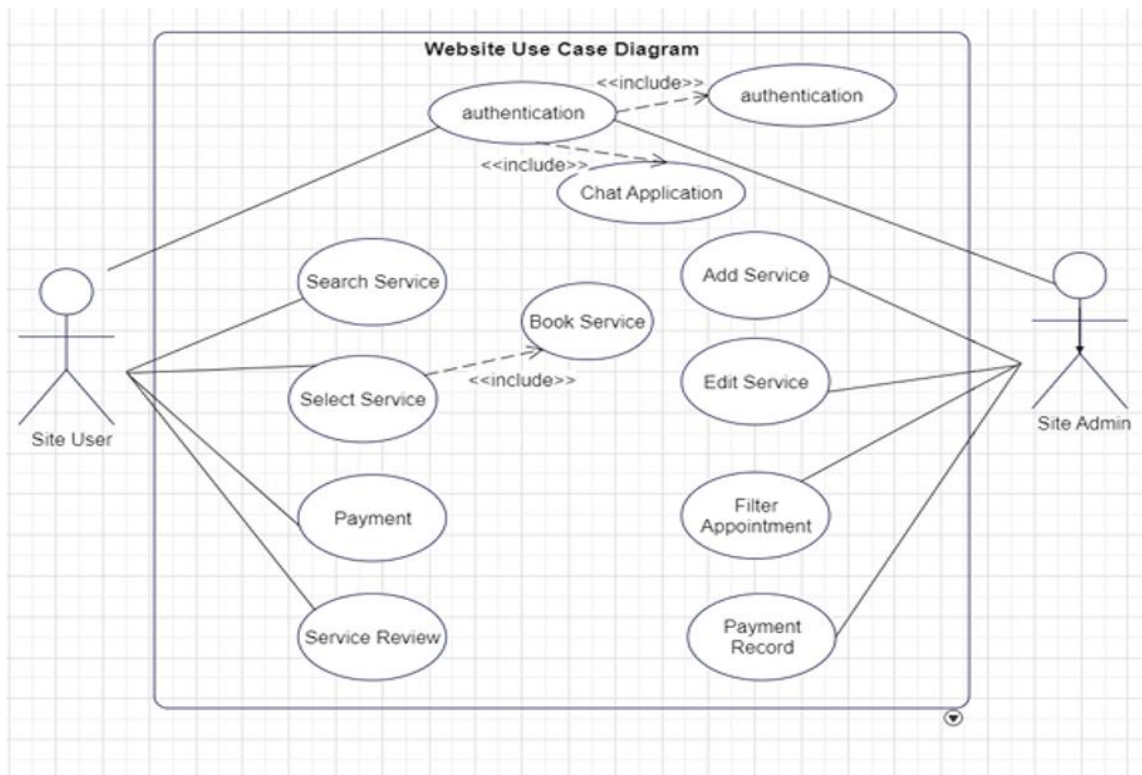


Figure 3.3.1: Use Case Diagram.

3.4 Software Development Life Cycle

The development of the "One Mart" web application follows a structured Software Development Life Cycle (SDLC) to ensure consistency and successful completion. We have used the agile model in this web application for software development. The SDLC stages for this project are as follows:



Figure 3.4.1: SDLC

3.5 Logical Data Model

"One Mart" has a logical data model with the following entities: users, itineraries, course, locations, and preferences. Interactions are defined by the relationships between these entities, users customize preferences, services, live chat, google map, booking system

.

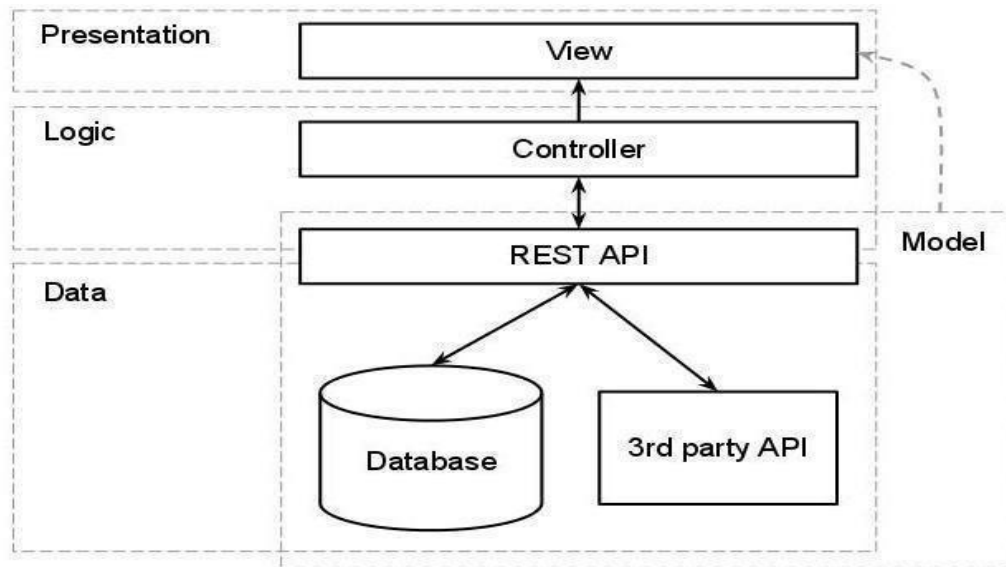


Figure 3.5.1: Logical Data Modeling

3.6 Design Requirement

Design requirements for "One Mart" encompass various aspects to ensure an effective and user-friendly system:

Scalability:

- It should grow from single user to millions but from hundred to thousand service provider network (as thousands service provider network which forwards the money secretary to windows users so that the experience of the user is not compromised).

Maintaining:

- All this should be done for modularity - The design of the system should be modularized. Module: A module is also a single unit of execution and self-generating within one or a few portions of your app.

Modularity:

- The system design should be modularized, where each module is a self-contained unit of execution and can be easily extended or modified in the future.

Extensibility:

- The system should be designed to be simple to extend and modify as the business requirements evolve over time.

Security:

- Security measures should be implemented across all tiers of the system to protect customers' personal information and transactions, including encryption, secure signature systems, and fundamental security tests.

Reliability:

- It also limits the running of the system with subtypes such that it is running full-time. Put in failover, catch and address for SLO before the customer notices

Performance:

- Increases the systems throughput as the response time is reduced to make a good user's experience. This also includes how to perform tuning on the database and the kind of caching mechanism you are employing, or even how you can balance loads, and among others.

User Experience (UX):

- Design the size of the system user interface, and all the interactions wherever create size: small, In addition ensure the size: small; While enhancing the user experience and satisfaction of the system users, the interface and interactions must be size small, To further enhance the size of the user delight on the system, try to make size, small.
- The system should be designed in a way that all forms of possibilities based on the possibilities of different disabled clients are possible in line with the WCAG and other standards.
- Tab, window, and OS, but, always, people. Apart from that, test the system on different emulators to ensure that a single app is fine on all the platforms.

Documentation:

- Documentation to convey the concept of how technical aspects of the completed design has been done, what is achievable with the current design and how it can be turned on and off for usage purposes for developers, administrators and even the final end users. This involves the technical documentation, manual for users, and how to write API documentation that should be included for correct Installation and System Operation.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

The One Mart boasts a clean and user-friendly interface, meticulously designed to offer an optimal user experience. The front-end development leverages powerful tools and frameworks such as React, HTML, HTML preprocessors, Tailwind CSS, and Daisy UI. This combination ensures a visually appealing and highly functional user interface that caters to a wide range of users, irrespective of the device or browser they use.

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One of the standout features of The One Mart's front end is its responsive full-page design, achieved through Bootstrap 4 and anime algorithms. This ensures that the site looks and performs well on any device, providing a seamless experience whether users are on a desktop, tablet, or smartphone. The use of Bootstrap 4 allows for a fluid grid layout, while anime algorithms add engaging animations that enhance the user experience without overwhelming it.

Tailwind CSS and Daisy UI contribute significantly to the site's aesthetics and usability. Tailwind CSS offers a utility-first approach to styling, allowing for rapid and efficient design iterations. Daisy UI, on the other hand, provides a set of pre-designed components that integrate seamlessly with Tailwind, ensuring a consistent and cohesive design language throughout the site.

For beginners, the use of JavaScript libraries like Grid Layout is a great introduction to front-end development. Grid Layout simplifies the creation of complex, responsive grid structures, making it easier to design layouts that adapt to different screen sizes. This is particularly useful for creating a user interface that remains intuitive and easy to navigate, regardless of the device.

The design philosophy of The One Mart focuses on familiar and intuitive user experiences. By prioritizing clear formatting, functioning interface components, and obvious signals, the platform ensures that users can easily search for, select, and interact with services. This approach not only enhances customer satisfaction but also encourages increased activity on the site.

In conclusion, The One Mart's front-end development is a testament to the power of combining modern web technologies with a user-centric design philosophy. By leveraging tools like React, HTML preprocessors, Tailwind CSS, Daisy UI, and Bootstrap 4, the platform delivers a responsive, engaging, and intuitive user experience. This thoughtful design strategy ultimately drives customer satisfaction and fosters a more active user base.

4.2 Back-end Design

The OneMart back-end architecture is crafted to ensure robustness, scalability, and security, delivering seamless performance. The core technologies include Node.js, Express.js, and MongoDB, creating a powerful stack for a dynamic and reliable server-side environment. Node.js serves as the backbone of OneMart's server-side logic, providing a non-blocking, event-driven architecture that efficiently handles numerous concurrent requests. This high performance and scalability make Node.js ideal for OneMart's dynamic requirements.

Express.js, a minimalist web framework for Node.js, structures the server-side logic and develops a stable API. It facilitates the creation of RESTful APIs for CRUD (Create, Read, Update, Delete) operations, efficiently managing service listings, user data, and booking information.

MongoDB, a NoSQL database, offers flexibility and scalability for storing dynamic data like service listings, user data, and booking information. Its schema-less design allows rapid development and easy adaptation to data structure changes, supporting large data volumes and horizontal scaling without performance loss.

OneMart's back-end architecture handles numerous concurrent user requests through load balancing, clustering, and efficient database indexing. Emphasizing security, it incorporates robust authentication, secure password storage, token-based authentication, and multi-factor

authentication. Data validation and exception handling ensure data integrity, accuracy, and a stable user experience.

OneMart's back-end, leveraging Node.js, Express.js, and MongoDB, provides a solid, scalable, and secure infrastructure. This combination ensures efficient server-side logic, dynamic data storage, and robust security measures, catering to a high volume of concurrent users while maintaining data integrity and security.

4.3 Interaction Design and User Experience (UX)

We are conversely rather significantly concerned with interaction design and User Experience (UX) since the improvement of these aspects directly contributes toward the usability of the product and on-average UX of OneMart. This is how these factors are dealt with: This is how these factors are dealt with.

Logstash's Intuitive Interface: Logstash continues to have a clean design with easy mechanisms to get around as well as a plain process. It offers the functionality of searching by services and their providers and also helps them view their profile and book the service with ease.

Responsive Design: OneMart is designed to be always adaptable to smaller devices as it is designed to scale nicely to fit the screen size of any device used to access the web application. Model Admin has a good outlook on both the larger and smaller screens of the computers used in this project such as the Desktops, the Tablets, and the Mobiles. The layout and content are presented actively, because responsive design is used.

About user-centered design it can be stated that the design is being done around and for the user or users. The design is user-centric. Collecting user research & feedback can change the features, content and the way of interaction on the platform and meet users' expectations.

Communication users have feedback and clues easily understandable all the time they use the system. Instructions, input field, retaining labels, and highlighting must be applied for dragging and dropping coupled with error messages and progress bar will assist the user to follow steps in case of complex processes.

Streamlined Task Flows: It minimizes the number of barriers in sub-steps of processes such as service booking and/or payment. Originating from the user's perspective, activities are eliminated to streamline the user experience.

In other words, the design serves the needs and demands of individual users concerning disabilities and complies with the WCAG [Web Content Accessibility Guidelines]. This meets the principle of Inclusive Design. Keyboard navigation, screen reader compatibility and high contrast modes are also applied.

Interactive Elements: Micro interactions on the page, transitions and animations to make the user feel more interested and wow. Each of the interactions contributes to building up the value of the interfaces and the general environment for users.

Brand Identity: It sustains in-brand color, typography and imagery so as to ensure and ascertain continuation of the same brand image to the users of the design.

OneMart aims for a feature satisfying experience and a great interaction design and UX before, during and after a user uses the platform.

4.4 Implementation Requirements

The following technical, operational, and developmental elements are included in the implementation requirements for "One Mart":

❖ **Front End Technologies**

- HTML
- CSS
- Tailwind CSS
- Daisy UI
- React Js

❖ **Back End Technologies**

- Express Js
- NoSQL

- MongoDB
- Node Js
- ❖ Tools
- Composer
- Web Browser
- Visual Studio Code (IDE)

4.5 Home Page

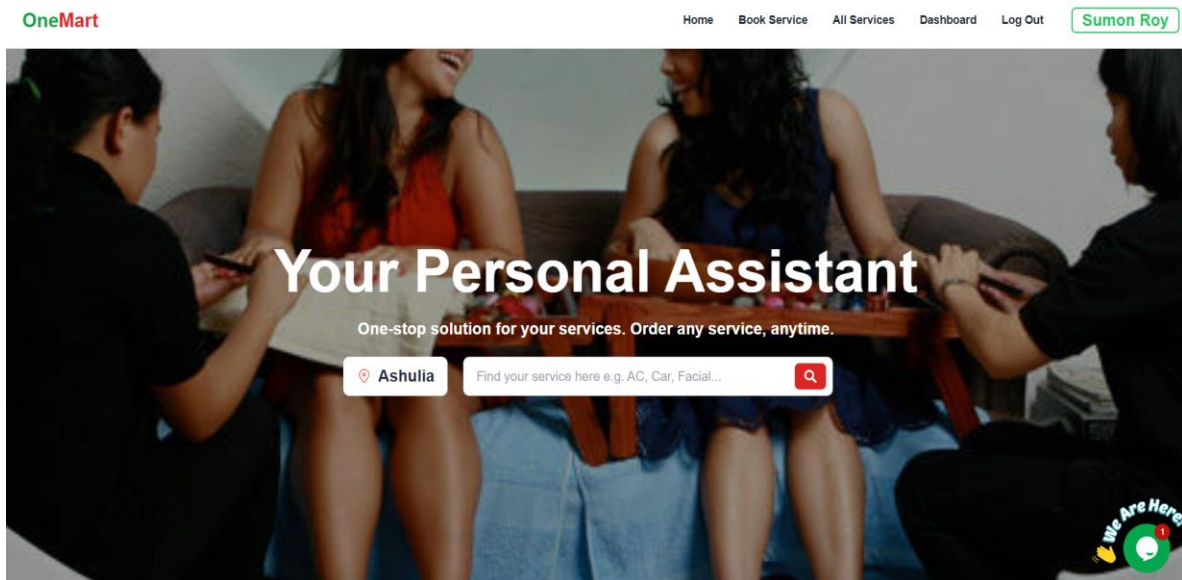


Figure 4.5.1: Home Page

Here's a breakdown of the elements on the homepage:

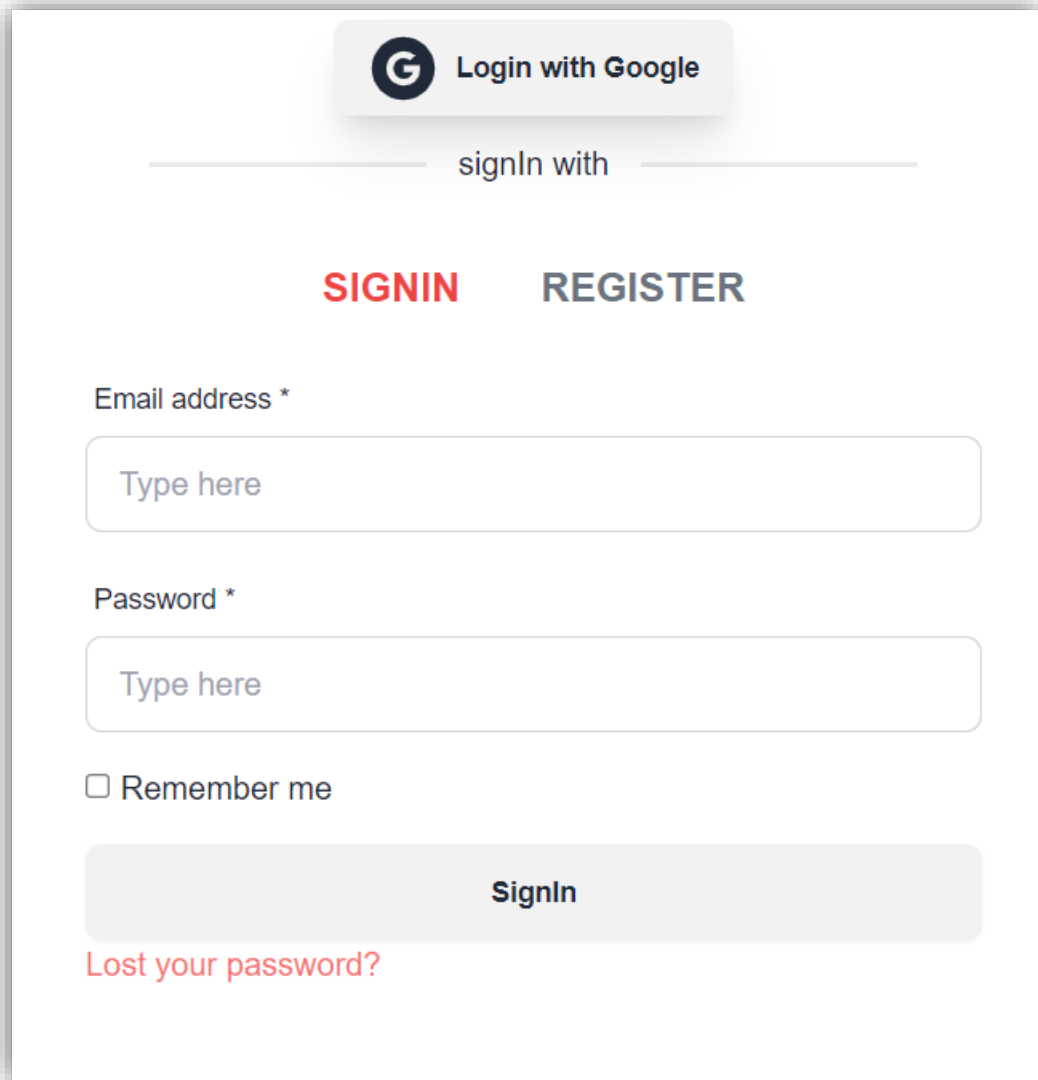
Banner: The banner at the top reads "One Mart". There's also a slider component that might allow users to browse through different property types or featured listings.

Search Bar: Below the banner, there appears to be a search bar where users can input their search criteria to filter service.

Live Chat: One Mart offers a convenient live chat feature directly on the homepage, ensuring users can receive instant assistance while navigating the site. Whether users have questions about properties, need help with booking, or require support with services, the live chat is readily available to provide real-time solutions and enhance overall user

experience. This interactive tool fosters immediate communication and customer satisfaction, making it easier for users to engage and find what they need swiftly.

4.6 Signin & Signup Page



 Login with Google

signIn with

SIGNIN REGISTER

Email address *

Type here

Password *

Type here

☐ Remember me

SignIn

Lost your password?

Figure 4.6.1: login and signup page

Here's a breakdown of the elements on the login page:

Sign Up:

Registration Form: Users begin by accessing the "Sign Up" page or modal on the

homepage.

Input Fields: They fill out required fields such as name, email address, phone number, and password.

Service Details: Depending on the platform, users may also input details about the services they offer or intend to provide.

Verification: A verification step might be included, such as confirming the email address through a link sent to the registered email.

Completion: Upon successful registration, users are typically redirected to the login page or logged into their account directly.

Sign In:

Login Page: Users access the "Sign In" page from the homepage or via a dedicated link

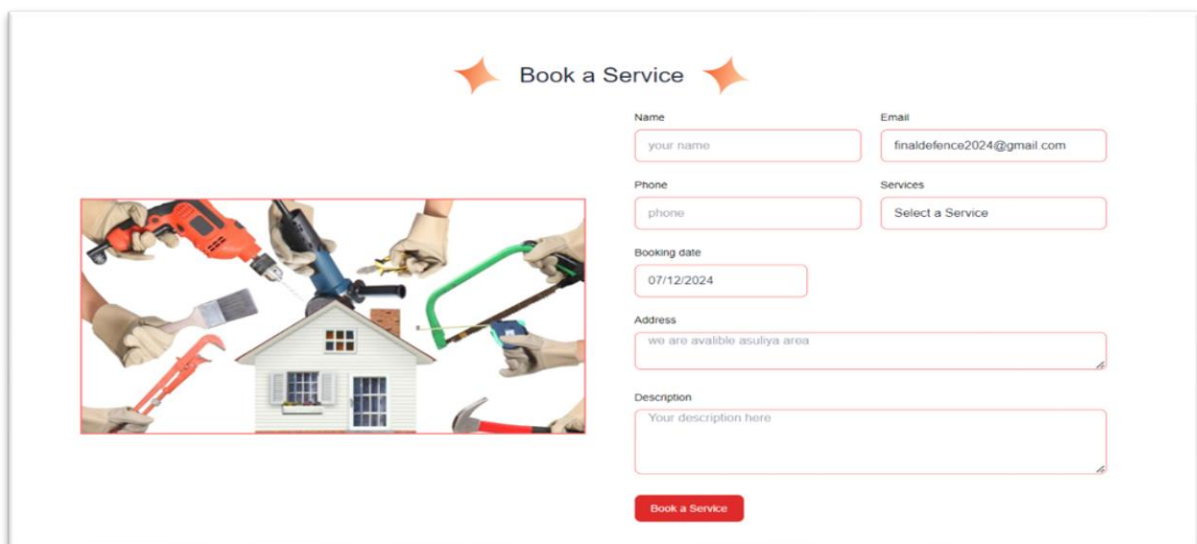
Credentials: They enter their registered email address and password.

Authentication: The platform verifies the credentials against stored data.

Access Granted: Upon successful authentication, users gain access to their dashboard or the main platform interface.

Forgot Password: There's usually an option for users to recover their account via email by clicking on a "Forgot Password" link, which guides them through resetting their password securely.

4.7 Book Service



Book a Service

Name your name	Email finaldefence2024@gmail.com
Phone phone	Services Select a Service
Booking date 07/12/2024	
Address we are available asulya area	
Description Your description here	
Book a Service	

Figure 4.7.1: Book service

Booking Home Services:

Service Selection: Users navigate to the service booking section where they can browse through available services such as plumbing, electrical work, cleaning, etc.

Service Details: They select their desired service and specify additional details such as service date, time preferences, and any specific requirements.

Location Input: Users provide their location details where the service is required, ensuring accurate service delivery.

Provider Selection (Optional): Depending on the platform, users may have the option to choose a specific service provider based on ratings, reviews, or availability.

Confirmation: After reviewing their booking details, users confirm the booking request.

Payment (if applicable): If payment is required upfront or after service completion, users proceed to make payment securely through integrated payment gateways.

Booking Confirmation: Upon successful booking, users receive a confirmation notification via email or SMS, detailing the booked service, date, time, and any other relevant information.

Service Delivery: On the scheduled date and time, the service provider arrives at the specified location to perform the booked service.

Feedback and Review (Optional): After service completion, users may be prompted to provide feedback or reviews based on their experience, contributing to the service provider's reputation and future bookings.

4.8 Payment Gateway

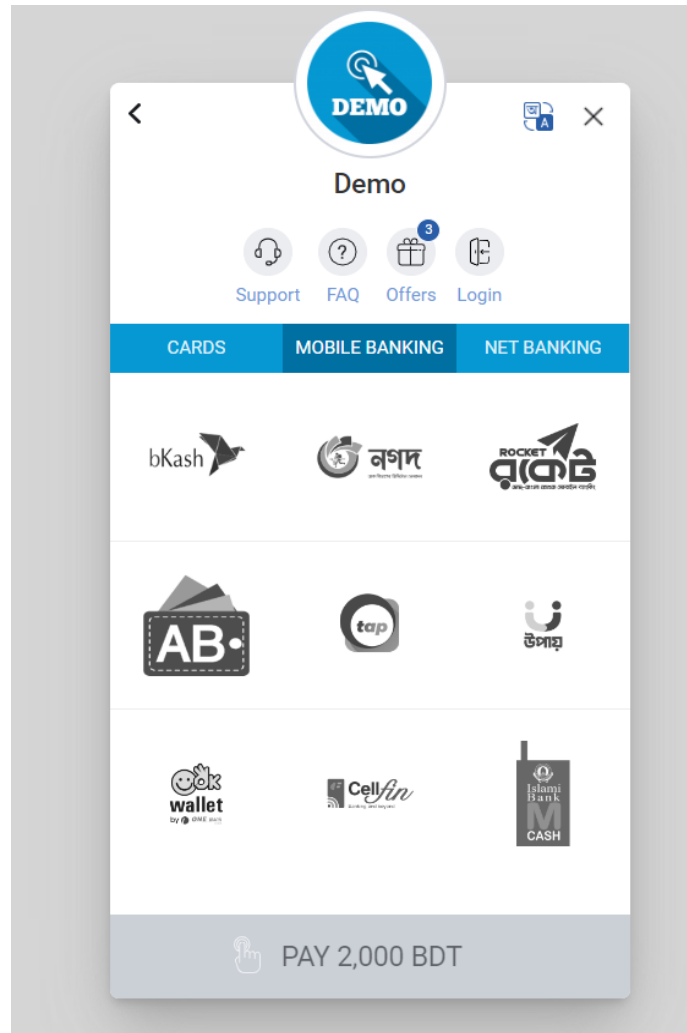


Figure 4.8.1: Payment

"One Mart" enables service providers to conveniently pay property owners through SSLCommerz, a trusted payment gateway widely used in Bangladesh. This integration ensures that all transactions benefit from robust encryption, thereby enhancing security and fostering trust. SSLCommerz supports a variety of payment methods such as credit/debit cards, mobile banking, and internet banking, providing users with flexibility and ease of use. The integration process is smooth, facilitated by backend API endpoints that ensure seamless communication between the frontend and the payment gateway. Moreover, payments are swiftly confirmed, promptly notifying both renters and property owners of successful transactions. This streamlined integration significantly improves the efficiency and user experience of the rental process.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

By using Database Tables, the application can effectively store, manage, and retrieve data, providing a reliable foundation for the application's functionality and ensuring data integrity, security, and performance.

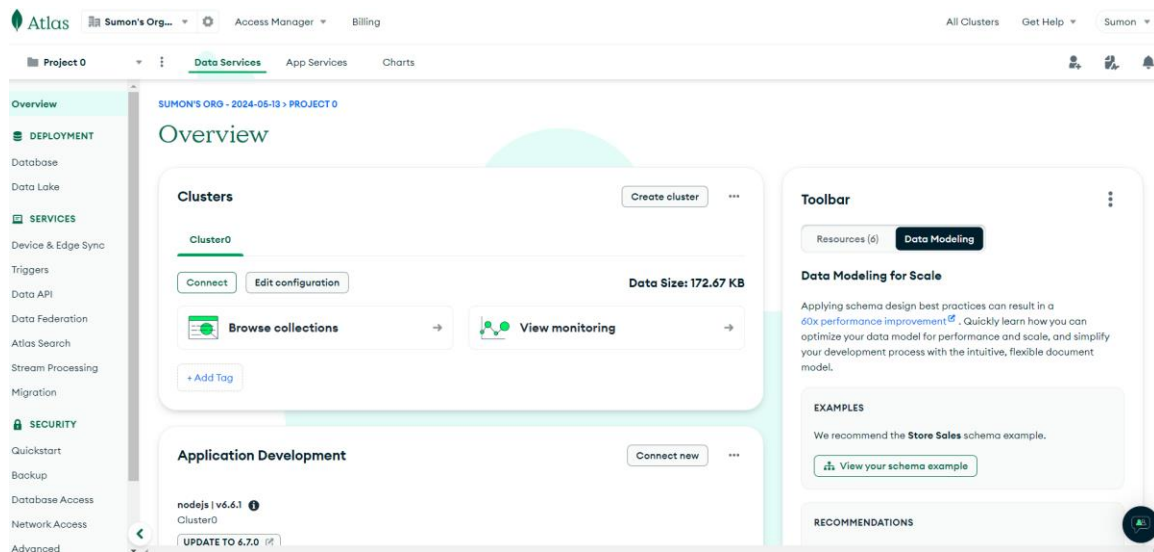


Figure 5.1.1: Database Architecture.

5.2 Implementation of Front-end Design

The front-end design of One Mart" focuses on creating an intuitive and responsive interface, enabling easy navigation, personalized services, chatbot, google map, booking system and efficient management for users worldwide

This is the home page of One Mart. Here show some options such as login option, booking system, Discussion Forum, etc.

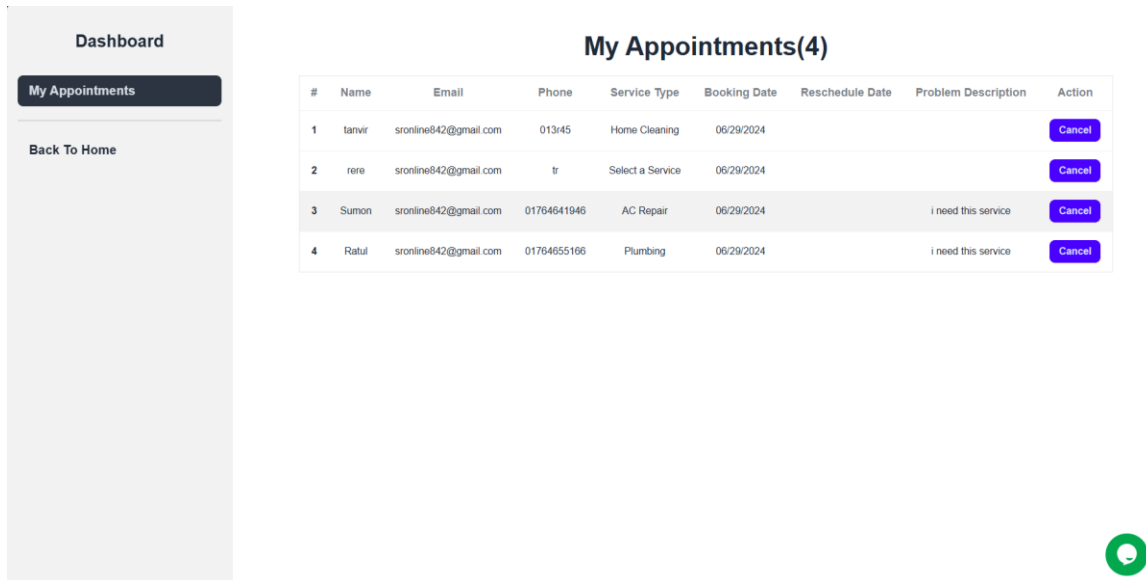


Figure 5.2.1: Admin Dashboard Design.

This page is the admin dashboard of One Mart. And this page shows many options to control this website. And also show revenue and earning options etc.

This is the vendor dashboard of "One Mart". By using this dashboard vendors create services etc. And it is also shown in front of this dashboard the pending, earning, and services. This page is the consumer dashboard or consumer profile page of One Mart. This page shows the details of the consumer and the consumer can also edit his or her profile information

5.3 Testing Implementation

An organized strategy is used in the testing implementation for One Mart" to guarantee the platform's performance, security, usability, and usefulness. This is a summary of the testing Testing Types:

Unit Testing: This is testing that focuses on testing the specific code outside the other code; it allows one test Component or Function and checks if it performs as it was intended.

Integrational Testing is a technique used to demonstrate that all the components in a project integrate well; and all the modules' functionalities are efficient.

Cannot solve any problem –One –This work establishes all that is between the interface and the update of a database.

Regression Testing:

New changes should not delete the basic functionalities or spoil it; there should be free and

open competition among the new changes to get to the top of the CHAOS chart.

Performance Testing:

Load Performance testing is performed in order to check the system's freezing when it is at a particular level of loads, stress. Security Testing where we point and note that the said system should be secure enough otherwise there should not be any opportunity for the attacker to get in. Guarantee that several disabled people have the ability to use the developed system

Testing Procedures:

Planning for Testing Plan a test: Test plan should contain the test aims and objectives and the test cases which should be established while having in mind the need to launch the product.

Testing Execution:

Among all the types of fully automated testing tools you can get to assist you in doing the testing, however, if you want to perform the test manually, then the necessary action is to enumerate the test cases.

Reporting Bugs:

In a bid to write a document on any bug or issue that may be identified whenever testing is going on.

Bugs Fixing:

Contact the system administrator if any issues were raised and sort it out and check to ensure all is well and as it should be Regression Testing Again, you run your Regression testing. This will help make sure that the update you made did not bring another problem.

User Acceptance Testing (UAT):

In UAT, end-users should be involved as their key tasks include providing certification to the system functionalities and also the usability of the same.

Attachment:

Simply the attachment, and the alerting when there is any attachment for performance monitoring, anything that involves alerting, within the performance monitoring system.

5.4 Test Results and Reports

Test results and reports for OneMart refer to the assessments on the overall effectiveness of the platform's features along with its stability, reliability, and usability. Integration proved that the search for services, communication with the chatbot and live support staff, appointment scheduling, and the use of Google Map functionality was working as expected. Implementational testing proved that the system was capable of handling large traffic and provided fast response at all times. Security testing helped to detect and eliminate potential threats to users and made sure that data did not violate the protection rules. User acceptance testing (UAT) was carried out with actual users and they attested the efficiency of the platform and their ability to successfully use it for their needs. These were captured in elaborate test reports that showed efficiency indices and the specific areas of strength and improvement needed to guarantee a fail-safe and superior service delivery for OneMart.

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT, AND SUSTAINABILITY

6.1 Impact on Society

Convenience and Accessibility: One mart is situated in a place where one can conveniently hire people to sort out their home issues and relax instead of doing it themselves as some do not get enough time to do the home service all by themselves.

Job creation OneMart Local through acting as a platform for connecting both service providers and customers encourages economic growth of the local economy which, to a certain extent, is dependent on the skilled professionals such as plumbers, electricians ACR among others.

Entrepreneurship Development on Big Market Segment:

- OneMart Small empower small service providers to sell unto a segment of the population that they would otherwise not be able to penetrate and provides the opportunity for them to compete with the large firms hence encouraging entrepreneurship and economic development.

Better Standard of Living:

- OneMart's principal mission is to offer stable and secure home services to offer its consumers the maximum levels of accessibility to home repair and maintenance services to make life substantially more comfortable and safer.
- In this manner, OneMart helped to conserve the environment since they encouraged the concept of repair as well as owned the live cycle and waste of domestic apparatus and systems.

Social Equity & Inclusion:

- OneMart has continued to support accessibility and inclusion for its customers and this company follows some standards to help persons with disabilities or any types of disabilities to be able to do the basic tasks they require to live at home hence covering for social equity and inclusion.

Community Engagement & Trust: It is able to establish trustworthy community-based connections with both ends of the transaction, which receives immediate validation On

OneMart is ultimately able to provide the local services demanded by the community while maintaining that ‘sense of community’.

6.2 Impact on the Environment

OneMart’s environmental influences are based on an organization’s capability to contain carbon emissions and resource utilization compared to the presumed service delivery method. Since home services can be booked remotely and scheduled online, the use of the platform reduces the physical movement which in turns reduces transportation pollutants emissions. Besides, OneMart entails electronic transactions both in sales and administration, eliminating use of papers and therefore combating impacts like deforestation. Moving further on the platform development, it is also important to implement the energy efficient technologies and actions in the work of the platform. In addition, OneMart can change suppliers’ and consumers’ behavioral patterns by offering eco-friendly services and encouraging the community to respect the environment. Such measures keep OneMart with the objectives of improving the delivery of services and at the same time assist in fostering environmental conservation through practicing efficient and effective use of resources within the society.

6.3 Ethical Aspects

The major components of One Mart are ethical since this is the guideline by which the platform is built and regulates the actions of both the company and the users for their advantage.

OneMart - Privacy Protection:

- We value your data and the consideration you’ve given to this because it is very standard so we keep your data safely, securely and we only use it for a legitimate reason based on your permission in accordance with data protection.

Service Providers:

- OneMart value its service providers and treats them with probity, understanding, integrity, and ethical standard in relation to the carrier service provider employment relationship;

Ensured Equal Access to Services and Opportunities:

- One has to avoid discriminating when extending the One Pro Services to a User or Pro on the ground of race, gender, religion and sexual orientation.

Quality and Safety Standards:

- Key quality and safety standards of the services that OneMart has listed includes the service provider should have complied with all the laws and regulations that relates to the service are delivery as well as providing high levels of health, safety, & security for the users and their belongings in accordance to general industry standards.

Consumer Protection:

- OneMart has preventions for unsavory incidents that a consumer may think are underhanded and the company has means of recourse if service is subpar, refunds or another form of compensation.

Social licensing:

- The following social and environmental impacts are considered by OneMart: minimizing negative effects of a company's activities on people and environment, and maximizing the positive representation of the local economy and society.

6.4 Sustainability Plan

Environmental Sustainability:

- For this reason, the power-saving system is put in place, lawlessness rates are decreased and people initiate the campaign to stop emitting greenhouse gasses.

Responsible Data Handling Privacy:

- This must be undertaken through following stringent data privacy regulations, standard as well as policies to ensure that the individual data is secure and also assure individuals of the policy to acquisition, storage and processing of information.

Social Responsibility:

- Community Engagement: Interact with communities through such hypertrophic contributions pro-actively defined that include gift, volunteer services and non-profit organizations affiliation for solution the social problems and development of the communities.

Escalation Pathways:

- Develop guidelines for system escalation and suggestion on enhancing the services, interface and sustainable forms based on the stakeholders perspective.

Ethical Business Practices:

- Employees and service providers density, guarantee of legal minimum wages and employees rights to benefits, training and development opportunities of the employees depending on the existing legislation in the country.

Employee Engagement:

- Employee Well Being: Ensure that interventions include the capsule of workers health promotion, working and family life support and work environment promotion to the health, safety and well-being of persons at your workplace.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

We explained how we would create a OneMart – an online portal where a user can order various services from the certified service providers in the surrounding area necessary for maintenance of households. Developed with the use of technologies like MERN, it provides the service lists, chatbot assistance, live chat option, and Google map option for the services nearby.

At every point of the project, we have always been concerned on how to balance ethics and optimality, sustainability and comfort to the users etc. Green Initiatives — This will help concerning the surroundings by shrinking the ecological footprint of the platform. Data Management Processes secure data belonging to the users and uphold their privacy. Concerning its social responsibility, community engagement activities and the continuous improvement process are carried out.

Ethical compliance is managed by humanity on how friendly they are to its employees and service providers which makes Human Resource Engagement programs to foster a proper working environment. The types of services at the hard interfacing core of this platform can be expected to reach every home and set up social, economic empowerment, job creation and sustainable change.

Thus, OneMart offers the consumers a convenient solution in the form of a one-stop shop as they offer all the needed services around the house in Bangladesh. The platform was created as a mission-based organization and knows how to do everything on ethical grounds and is meant to make a positive change in global ethical sense by implementing those practices that are friendly to the business world, friendly to the stakeholder as well as friendly for the user. At OneMart, where it relates to home services it always follows the right and ethical strategy and hopes to make this one of the most reliable and reputed Home service business entities in the Facility services Industry with the ongoing company wide. Widen Service Categories:

- Hence, the services which might be provided by OneMart depend on the type of customers to be served and the trend of the market which can include services such as lawn mowing, security system installation and pet sitting among others.

Geographic Expansion:

- Which could simply be a movement of extending the platform to other areas in Bangladesh itself or to a neighboring country hence, the movement would be to a larger market and a set of users. It will cause a better understanding of the environment that is required to elevate the recommendation engines and personalization algorithms necessary to display a set of suggestions that are befitting the user's preferences, behavior, and age in other words, a more effective way to give support to quite a modern, and more relevant, mobile application for iOS and Android that could serve them the same helping function but, at the same time, abide by the platform's approaches.

Advanced Live Chat Features:

- Applying working NLP and ML to improve additional capabilities of the chatbot to further make an interaction with it useful as well as to co-operate with those that do routine tasks together with me.

IoT:

- You can build on the IoT (Internet of Things) niche to connect IoT devices for the home appliances and systems' remote monitoring and operation to provide more value to the user groups.

Partnerships and collaborations:

- Complement it with the new business or service to be accessed in order to offer more value added to the new startup, additional onto the existing.

7.2 Scope for Further Developments

"One Mart" - website" presents several prospects for additional development and improvement:

The identified areas of improvement for the OneMart business idea include several significant fields that promote the improvement of its utility, customer interest, productivity,

and client base. First, increasing and improving features is essential, for instance, developing new types of services based on the user needs and popular trends, improving the slightly complicated appointment booking system which even can offer the options like recurrent bookings and flexible timetable. The following technological disruptions are essential, such as using Artificial Intelligence for integrating recommendation and forecasting of human forecast, IoT for home service major automated requests, and using Blockchain for secure recordations of transactions. As for the growth in the number of active users, it is possible to create a separate, devoted mobile application, update and expand the section with ratings and discussions, popularize a set of customer reward programs. Organizational performance can be improved through moving applications to the cloud, applying robotics or integrating the use of big data and analytics into processes. They should ensure internationalization, which involves creating localized platforms and appropriate partnerships for services' delivery. Finally, it is vital to guarantee and strengthen the security measures to protect users' data and follow all the regulations of data protection. With the want of becoming OneMart's first stop home service platform; these initiations holistically ensure provision of diverse home services that offer solutions to different consumers' needs, as well as ensuring business sustainability, besides satisfying the buyers need.

7.3 Limitations and Conflict of Interest

Here are some considerations for limitations and conflicts of interest for "One Mart," a home services provider in Ashulia and Savar, Bangladesh:

Limitations

Geographical Limitation: "One Mart" offers services only in Ashulia and Savar, limiting access for customers outside these areas in Dhaka.

Service Scope: The website may not cover all types of home services, potentially limiting the range of services available to customers.

Capacity Constraints: Depending on the demand and resources available, there may be limitations on how many service requests "One Mart" can fulfill simultaneously.

Conflicts of Interest

Preference for Local Providers: There might be a conflict of interest if "One Mart" prioritizes local service providers in Ashulia and Savar over providers from other areas in Dhaka.

Financial Interests: If "One Mart" receives commissions or incentives from specific service providers, there could be a conflict of interest in recommending those providers over others.

Customer Prioritization: Balancing the interests of customers in Ashulia and Savar versus potential customers in other parts of Dhaka may create conflicts in resource allocation and service prioritization.

Managing these limitations and conflicts of interest involves transparent communication with customers about service availability, fair treatment of all service providers, and clear policies to ensure equitable service delivery across the areas served

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Appendix A

Complex Engineering Problems (EP) and Complex Engineering Activities (EA) Analysis

Title: “One Mart : An Ultimate Web-Based All-In One Home Service Solution In Bd ”

Students ID: 201-15-14245 & 201-15-14261

CO Description for FYDP-Phase-I

CO Description for FYDP

CO	CO Descriptions	PO
Phase -I		
CO1	Integrate recently gained and previously acquired knowledge to identify a Web Based Find Home BD problem for the Final Year Design Project (FYDP)	PO1
CO2	Analyze different aspects of the goals in designing a solution for this FYDP	PO2
CO3	Explore diverse problem domains through a literature review, delineate the issues, and establish this goals for the FYDP	PO4
CO4	Perform economic evaluation and cost estimation and employ suitable project management procedures throughout the development life cycle of the FYDP	PO11
Phase -II		
CO5	Design and develop technical solutions and system components or processes that meet specified requirements, ensuring compliance with public health and safety standards, as well as considering cultural, socioeconomic, and environmental factors in this FYDP	PO3
CO6	Choose and apply appropriate methodologies, resources, and contemporary engineering and IT technologies to address complex engineering processes, encompassing prediction and modeling, while adhering to relevant constraints in this FYDP	PO5
CO7	Analyze societal, health, safety, legal, and cultural considerations, along with associated responsibilities, in the context of professional engineering practice and the resolution of this problem, employing logical reasoning guided by contextual understanding.	PO6
CO8	Comprehend and evaluate the enduring sustainability and impact of professional engineering endeavors in addressing intricate engineering challenges within social and environmental frameworks.	PO7

CO9	Implement ethical principles and adhere to professional standards and norms in this FYDP	PO8
CO10	Capable of operating proficiently both individually and as a team member or leader across diverse teams and interdisciplinary settings in this FYDP.	PO9
CO11	Proficiently communicate with the engineering community and broader society regarding complex engineering endeavors, including the ability to comprehend and generate comprehensive reports and design documentation, as well as provide and receive clear instructions throughout this FYDP.	PO10
CO12	Acknowledge the importance of self-directed and life-long learning within the evolving landscape of technology, and possess the readiness and capability to engage in lifelong learning endeavors.	PO12

Addressing of COs, Knowledge Profile (K), and Attainment of Complex Engineering Problems (EP):

SN	EP Definition	Attainment	CO	Justification (with Knowledge Profile)	References
1.	EP1: Depth of Knowledge required	Yes	CO1, CO2, and CO3	Our project requires strong skills in client-server architecture, JavaScript, MongoDB, Express.js, React.js, Node.js, and Tailwind CSS (K1-K2) to build a solid groundwork. Problem-solving abilities (K3), system design expertise (K4), and effective data management (K5) are crucial for enhancing performance and scalability.	Page no: [1 & 17-18] Section: [1.1, 3.2]
				Focusing on user experience (K6), we prioritize designing responsive interfaces to improve usability. Embracing continuous learning (K7) ensures our project evolves dynamically to align with industry standards and user	

				requirements.	
2.	EP2: Range of Conflicting Requirements	Yes	CO2	Developing a user-friendly home services provider platform includes incorporating AI chatbot, live chat features, and secure video capabilities. Effectively handling conflicting requirements such as data privacy compliance and ensuring accuracy of user-generated content is essential. Recruiting skilled professionals guarantees authenticity. Maintaining a balance between user engagement and privacy concerns necessitates clear communication about data usage and implementing strong privacy controls to encourage platform adoption.	Page no: [13-14 & 14] Section: [2.4, 2.5]
3.	EP3: Depth of analysis required	Yes	CO2	Choosing the right features, payment gateway, and addressing potential security vulnerabilities require in-depth analysis and decision-making.	Page no: [23-24] Section: [4.2]
4.	EP4: Familiarity of Issues	No	CO3	Entering a new domain (home service marketplace requires research and understanding of existing solutions and user behavior.	Page no: [10-12 & 13-14] Section: [2.2, 2.4]

5.	EP6: Extends of stakeholders involved and conflicting	Yes	CO3	Balancing needs of users, service providers, and platform administration requires managing diverse stakeholders.	Page no: [17-18] Section: [3.2, 3.3]
6.	EP7: Interdependence	Yes	CO3	Different modules like user registration, booking system, and payment processing need to be designed and integrated seamlessly.	Page no: [17-19] Section: [3.2, 3.3, 3.4]
7.	EP8: Budget and Cost Estimation	Yes	CO4	Estimating development costs, server maintenance, and marketing expenses is crucial for project planning. Buying Domain Hosting and other cost 12000 taka (Approximately).	Page no: [04-05] Section: [1.5]

Appendix B

Addressing CO11 with Complex Engineering Activities (EA) [Some or all of the following]:

SN	EA Definition	Attainment	CO	Justification	References
1.	EA1: Range of resources	Yes	CO11	This system's creation utilizes different domains, careful allocation of financial resources for infrastructure, marketing, and development, and employs tools such as Visual Studio Code. It employs a variety of programming languages (JavaScript, with a background in Excess.js, and node.js for backend, React.js for frontend), frameworks, and MongoDB for efficient implementation.	Page no: [19] Section: [3.5]
2.	EA2: Level of interaction	No		N/A	N/A
3.	EA3: Innovation	No		N/A	N/A
4.	EA4: Consequences for society and the environment	Yes		This project focuses on creating social impact and fostering community through a unified platform that enhances the accessibility of home services. It aims to promote transparent and secure transactions between users and service providers while leveraging AI chatbots to improve communication and offer personalized support. Privacy, security, and ethical business standards are prioritized, building trust and	Page no: [31-34] Section: [5.1, 5.2, 5.4]

				convenience within the housing community. Overall, the platform aims to strengthen societal well-being and promote sustainable living.	
5.	EA-5: Familiarity	Yes		The comparative analysis of our rental services site assesses competitors such as Shebaxy.com to emphasize the distinctive features of our platform, including advanced security measures, personalized services, and enhanced customer engagement. This evaluation guides strategic decisions, improving our competitive position and value proposition in the market.	Page no: [9-12] Section: [2.1, 2.3]

Addressing CO (4, 9, 10, and 12):

SN	COs	Attainment	Justification	References
1	CO4	Yes	The project addresses CO4 by integrating financial management practices such as budgeting, resource allocation, cost management, and risk mitigation. It ensures effective distribution of funds, monitors expenditures, and identifies areas for optimization while upholding quality standards.	Page no: [7] Section: [1.6]
2	CO9	Yes	The project maintains ethical standards by giving priority to user privacy, ensuring transparency in data handling, offering unbiased recommendations, respecting cultural sensitivities, and promoting accessibility. These efforts aim to build trust, transparency, and integrity among all stakeholders.	Page no: [32] Section: [5.3]
3	CO10	No	N/A	N/A
4	CO12	Yes	During the project's implementation phase, there is a strong emphasis on continuous learning through various testing protocols, automated frameworks, and CI/CD pipelines. This approach ensures continual improvement and adaptation to new technological trends, with results analysis aimed at refining the	Page no: [17-19,23] Section: [3.2, 3.3, 3.4,

			platform to enhance its effectiveness.	3.5, 4.2]
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