

# American International University-Bangladesh (AIUB)

## Department of Computer Science Faculty of Science & Technology (FST)

### All in One Home Service

A Software Requirement Engineering Project Submitted  
By

Semester: Spring_22_23		Section:	Group Number:	
SN	Student Name	Student ID	Contribution (CO1+CO2)	Individual Marks
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The project will be evaluated for the following Course Outcomes

Evaluation Criteria	Total Marks (50)	
Introduction, Format, Submission, Defense	[10 Marks]	
System Overall Description & Functional Requirements	[10 Marks]	
System Quality Attributes and Project Requirements	[10 Marks]	
UML and E-R Diagram with Data Dictionary	[10 Marks]	
UI/UX Prototyping	[10 Marks]	



# **Software Requirements Specification**

**for**

## **All in One Home Service Provider**

**Version 2.0 approved**

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# Revision History

Name	Date	Reason for Changes	Version
Group 2	28/3/2023	Reference remove from 1.1, correct 2.2 diagram connection, 2.3 table alignment, missing non-functional requirements and error in use case diagram.	1.0
Group 2	16/4/2023	Update activity diagram.	2.0

## 1. Introduction

### 1.1 Purpose

This software requirements specification (SRS) document is intended to identify the software requirements for a Household Service Provider System. This provides details of both functional and non-functional requirements our service provider system. This document intended to create a clear understanding among all stakeholders regarding the system. On the other hand it build a common platform for communication among the stakeholders which is a very fundamental part to maintain.

The Household Service Provider System is designed to provide a platform for households to access various services such as housekeeping, plumber, electrician, packer & mover. The system aims to simplify the process of finding and hiring service providers while also ensuring the quality of services provided. This home service provider systems also provide insurance and other protections for service providers and customers.

The purpose of this document is to define the software requirements for the Household Service Provider System. The system is expected to provide benefits such as convenience, efficiency, and cost-effectiveness to its users. The objectives of the system are to streamline the service provider selection process, ensure quality services, and provide a platform for communication between service providers and customers. And our main motive is to make this daily household works easier and quicker. Our service is available for every stage and category of people. But our main target customers are bachelors, who fall into big trouble for these household works.

There is some sort of separate vision and scope document available for this system, and that document serves as the primary reference for defining the software requirements of the Household Service Provider System (Sheba.xyz).

## 1.2 Document Conventions

This Software Requirements Specification (SRS) document for the Household Service Provider System follows a set of conventions and standards to ensure clarity and consistency. The document is written very simply but uses a specific format to define specific identities. Bold words used in content titles. Normal words are used for hardware and software requirements for running this home service system.

This document helps provide relevant information to stakeholders, creates a good vehicle for interaction, and provides high-level information about project concepts in context. The report also provides a window for stakeholders to better understand the project. This document is intended to provide interested parties with user-friendly and accessible system information during the development of this system. In terms of requirements, each requirement statement in this document is assigned a unique identifier, priority level, and description. The priority level of each requirement statement is used to indicate its relative importance in the system. These conventions and standards are employed in this document to ensure that the software requirements for the Household Service Provider System are clearly defined, easily understood.

**Table 1: Abbreviations used in the SRS documents.**

Abbreviations	Full form
SRS	Software Requirements Specification
SQL	Structured Query Language
AOHSP	All in One Home Service Provider
IDE	Integrated Development Environment

## 1.3 Intended Audience and Reading Suggestions

The intended audience for this SRS (Software Requirements Specification) is a wide range of stakeholders involved in the development of the Home Service Provider System. This includes developers, project managers, marketing staff, users, testers, and documentation writers.

The rest of the SRS contains detailed information about the software requirements and specifications for the Household Service Provider System. It is organized into various sections, including the introduction, overall description, specific requirements, and appendices. The target audience for this document is Project Managers, Domain Experts, Developers, and Requirements Engineers. Audience such as:

- **Developers** (Writing, testing, and maintaining the service provider system code.)
- **Project managers** (Managing the project from start to finish, including scheduling, budgeting.)
- **Marketing staff** (Ensure that it reaches its target audience.)
- **Users** (Request for the services.)
- **Testers** (Testing the whole project.)
- **Documentation writers** (Create documentation for the product or service, including user manuals, technical specifications etc.)
- **Worker/ Staff** (Manager, Plumber, housekeeper, Car cleaner etc.)

As per the document is intended for project managers, developers, testers, marketers, users, and document authors so, the document is divided into four parts. Foreword

1. Introduction
2. Description
3. System features
4. Interface requirements

At first by working in these part separately it will give a clear over view of and understanding about our AOHSP document. In introduction part it give a clarity check about all the functionalities are used throughout this document. In the description section it describes the environment in which the software operates, including hardware platforms, operating systems and versions. Including the other software components and applications. Third part is all about features. And lastly it will show the interface requirements and design in 4<sup>th</sup> part.

## 1.4 References

**Sheba.xyz :** Sheba.xyz is a Bangladeshi online service marketplace that connects service providers with customers through a mobile app and website. They offers a wide range of home services, including cleaning, plumbing, electrical work, pest control, beauty services, and healthcare services. Customers can browse the list of services, compare prices, and book a service provider based on their location, availability, ratings, and reviews. They can also track the status of their booking and make payments through the app. (<https://www.sheba.xyz/>)

**Angie's List /Angi:** This website allows homeowners to search for and review local service providers in various categories such as home improvement, cleaning, landscaping, and pest control. Providers can create profiles and receive ratings and reviews from clients. However, Angie's List does not offer booking, scheduling, or payment features. (<https://www.angi.com/>)

## 2. Overall Description

### 2.1 Product Perspective

All in One Home Service Provider is a new, self-contained product aimed at providing a platform for households to easily connect with service providers for a range of services such as cleaning, cooking, gardening, and more. The system will be designed to facilitate the entire process from selecting a service provider to scheduling and payment. Also the most unique feature is it provide some weekly, monthly offers and give some special discounts to the customer who have the membership card.

The origin of this product is rooted in the growing demand for convenient, reliable and affordable household services, and the need for a centralized platform to connect service providers with potential clients. This product is not a follow-on member of an existing product family, nor is it a replacement for any existing systems.

In terms of the larger system, the Household Service Provider System will be an independent platform that will interface with external systems such as payment gateways and email services. The system will also include interfaces for service providers and clients to interact with the system and exchange information.

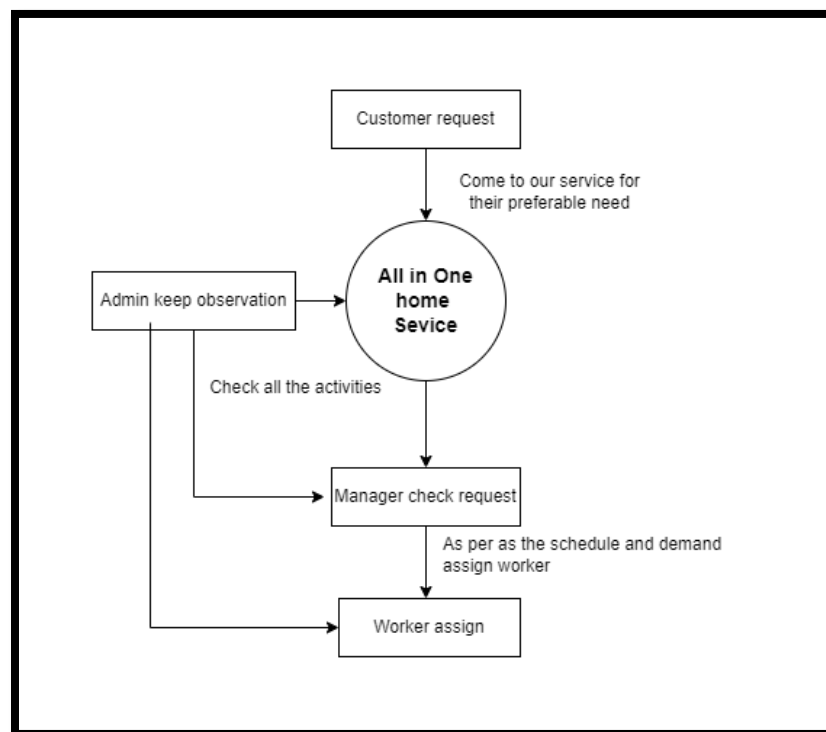


Figure 2.1(a): Context Diagram of AOHSP

A simple diagram that shows the major components of the overall system of internal architecture and how it will be deployed:

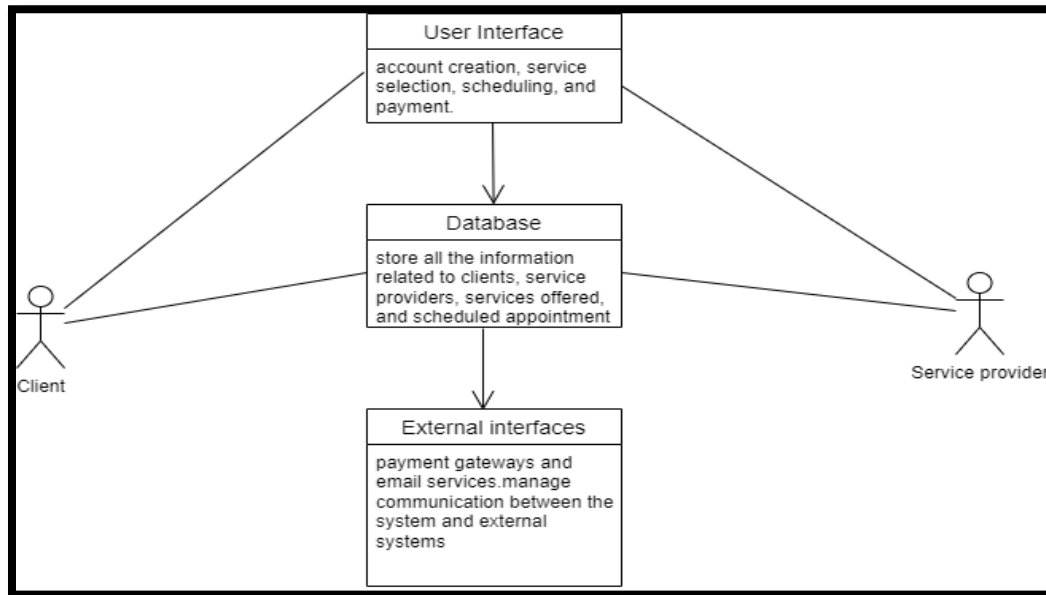


Figure 2.1(b): Deployment and Internal architecture

As shown in the diagram, the Household Service Provider System will consist of three major components: the user interface, the database, and the external interfaces. The user interface will provide the main interface for clients and service providers to interact with the system. The database will store all the information related to clients, service providers, services offered, and scheduled appointments. The external interfaces will include interfaces to external systems such as payment gateways and email services.

## 2.2 Product Functions

We have identified different user classes for this product. According to the user classes user privileges are different. Product are listed below along with user classes below. But before that the main users of our AOHSP are:

- Admin
- Manager
- Worker
- Customer

❖ From the Admin's perspective the system is capable of doing the following functionalities-

- Sign up
- Sign out



- Update id
- Delete id
- Send mail
- Assign Manager
- Finance

❖ From the Manager's perspective the system is capable of doing the following functionalities-

- Sign up
- Assign worker
- Crud worker
- Finance
- Verify worker
- Check membership

❖ From the Worker's perspective the system is capable of doing the following functionalities-

- Sign up
- Sing out
- Create worker
- Update worker
- View profile
- View service
- Send mail

❖ From the Customer's perspective the system is capable of doing the following functionalities-

- Registration
- Edit profile
- Add to cart
- Payments
- Contact
- Order history
- Customized order
- Preorder
- View service
- Cancel service
- Add schedule
- Feedback or rating

Here are the major functions that the Household Service Provider System should perform:

- Allow service providers/manager to create a profile with their services, availability, and pricing information.
- Enable customers to search for service providers based on location, service type, availability, and pricing.
- Allow customers to book services from service providers and pay for them through the platform.
- Enable service providers to accept or reject booking requests from customers.
- Allow service providers to communicate with customers through the platform to discuss service details and scheduling.
- Enable customers to rate and provide feedback on service providers after the service is completed.
- Allow service providers to view their ratings and feedback to improve their services.
- Provide an admin dashboard for the platform owner to manage users, services, and payments.
- Generate reports on platform usage, revenue, and user activity for the admin.

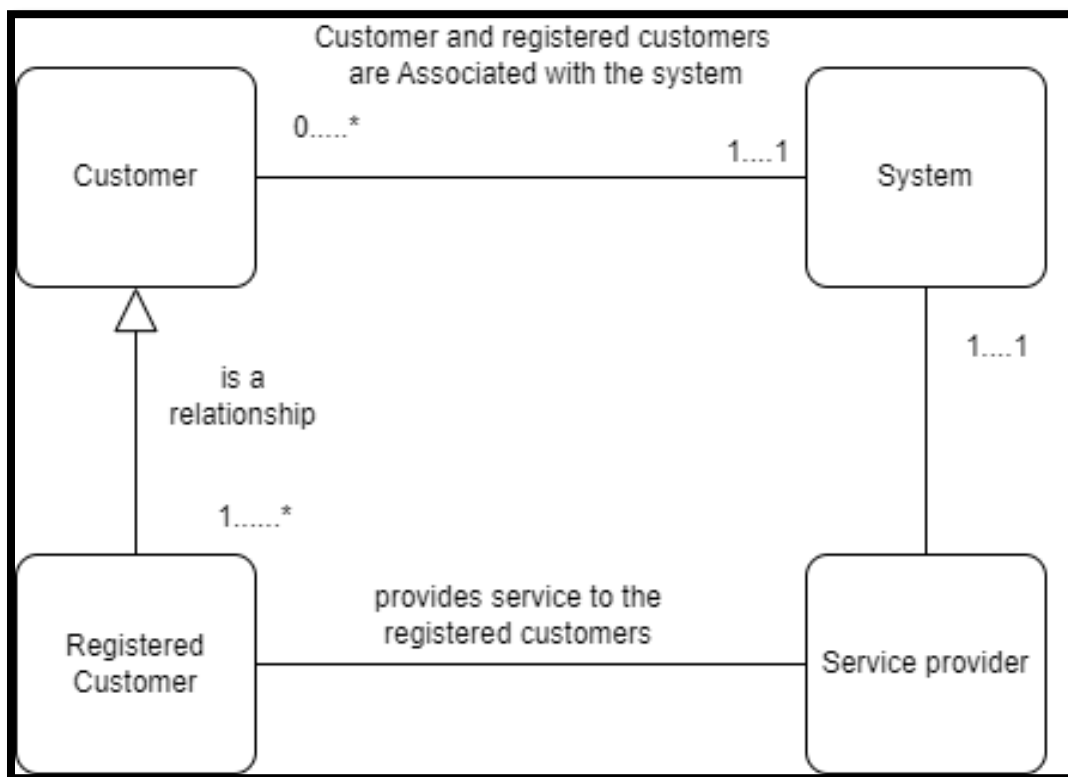


Figure 2.2: System functions

## 2.3 User Classes and Characteristics

For the All in One Home Service Provider, the following user classes are anticipated:

User Class	Characteristics
<b>Admin</b>	These users will manage the system and provide support to Service Providers and Clients. They will have access to all the system's features and will require high-level technical expertise in order to maintain the system's security and functionality.
<b>Managers</b>	These users will oversee the operations of the Service Providers and Clients. They will use the system to monitor the performance of Service Providers, manage finances, and analyze data. They will require a high level of technical expertise as well as managerial and financial knowledge.
<b>Worker</b>	These users will be the primary users of the system. They will be professionals who provide household services such as cleaning, cooking, gardening, and other domestic chores. They will have technical expertise in their respective fields and will require access to all the features of the system, including client management, job scheduling, and billing.
<b>Customer</b>	These users will be the Registered customers of the Service Providers. They will use the system to book appointments, manage their accounts, and provide feedback. They may have varying levels of technical expertise, so the system should be easy to use and navigate.
<b>Guests</b>	These users will be individuals who visit the system's website but do not have an account. They may be potential Clients or Service Providers who are exploring the system's features. The system should be user-friendly for these users, as they may not have a high level of technical expertise.

The most important user classes for this product is Manager, as they are the primary users of the system and will generate the system's revenue. Administrators are also important as they ensure the system's security and functionality, and oversee the operations and finances of the system. Guests are less important but still need to have a good user experience in order to convert them into Clients .

## 2.4 Operating Environment

Serial	Description
1	Accessible from all types of browsers at any time.
2	System will run in Windows, Linux, MacOS.

## 2.5 Design and Implementation Constraints

### 2.5.1 User Experience

The system is design as, it will be very user-friendly and intuitive, providing a seamless experience for users to book and manage their household services. The user interface also designed as all the functions give a proper view and description about the specific term.

### 2.5.2 Budget

The development and implementation cost of the system should be kept within the predetermined budget. The cost for designing, testing, and deploying the system should be optimized to achieve maximum efficiency while staying within budget. Therefore, the cost for designing and prototyping has to be reduced in order to achieve better planning and development team. The prototyping can be outsourced along with development of some of the modules to efficiently using the budget.

### 2.5.3 Integration

It is a must, for this system to be designed to integrate with third-party applications and services, such as payment gateways or social media platforms. The integration should be seamless and error-free to ensure a smooth user experience.

### 2.5.4 Device Compatibility

For our system, it will be compatible with different devices, including desktops, laptops, tablets, and smartphones. The website should be responsive, allowing for optimal viewing and interaction across different screen sizes and resolutions.

### 2.5.5 Service Quality

The system should ensure high-quality service delivery by service providers. The system should allow users to provide feedback on service quality, and appropriate measures should be taken to address any issues or complaints.

## 2.6 User Documentation

The following User documentation will be provided:

### 2.6.1 Booking Services

To book a service, users need to select the type of service they require, such as cleaning, plumbing, or electrical work. They can then choose a service provider based on their ratings, availability, and pricing. Users can schedule a service appointment by selecting a date and time that is convenient for them.

### 2.6.2 Installation Guide

This covers details about how to login, create account, install, set up, and use our product, order, payment system. It build as to show step-by-step instructions that guide customers through the process installation and setup process.

### 2.6.3 Feedback

After the service is completed, users can provide feedback on the quality of the service. They can rate the service provider based on their performance and provide comments or suggestions for improvement.

### 2.6.4 Product Manual

If we want documentation that demonstrates every step regarding how to use and make the most of our offerings, the product manual is the right choice. It comprises examples, video tutorials, and how-to articles that explain how our product works.

## 3. System Requirements

### 3.1 System Features

#### 1. Customer Login

##### Functional Requirements (FRs)

- 1.1 The software shall allow customers to login with their username and password.
- 1.2 The login credentials (username and password) will be verified with database records.
- 1.3 If the login successful, the customer will be notified.
- 1.4 If invalid credentials are given then the customer will be notified by an email.
- 1.5 If the number of login attempt exceed its limit (3 times), the system shall block the user account login for one hour.

**Priority Level:** High

**Precondition:** Customer is registered.

**Cross-references:** N/A

## **2. Customer Sign Up**

### **Functional Requirements (FRs)**

- 2.1 The system shall allow customers to sign up for an account.
- 2.2 The customer will have to fill up a form requesting their information and credentials and any required credentials such as (Email, Phone) will be verified by tokens.
- 2.3 If an account with the same email or phone already exists then the customer will be notified.

**Priority Level:** High

**Precondition:** Customer must have valid email and phone number.

**Cross-references:** N/A

## **3. Browse Shop**

### **Functional Requirements (FRs)**

- 3.1 The system shall allow customers to view the shop page.
- 3.2 The customer can navigate to the shop page and view all the available service.

**Priority Level:** Medium

**Precondition:** None

**Cross-references:** N/A

## **4. View all Services**

### **Functional Requirements (FRs)**

- 4.1 Customers can view any individual service and its details.
- 4.2 The customer will have to click on a service to view it and can see its details, price, and related services.

**Priority Level:** Medium

**Precondition:** None

**Cross-references:** 3.1, 3.2

## **5. Add Any Service to Cart**

### **Functional Requirements (FRs)**

5.1 The system shall allow customer to add any service to their wish list.

5.2 The customer will add the specific service to their cart by clicking the corresponding button.

**Priority Level:** High

**Precondition:** Customer should be logged in & Service/ Worker must be available.

**Cross-references:** 1.3, 2.1

## **6. Remove service from Cart**

### **Functional Requirements (FRs)**

6.1 The customer will be allowed to completely remove any booked service from their cart.

6.2 The customer will have to navigate to the cart page and click a remove button corresponding to the specific service to completely remove it.

**Priority Level:** Medium

**Precondition:** Customer's cart should not be empty, Customer should be logged in.

**Cross-references:** 1.3, 2.1, 5.1, 5.2

## **7. Set Schedule**

### **Functional Requirements (FRs)**

7.1 Customer can set schedule to get the service on his preferable time.

7.2 Customer set time, date specifically.

**Priority Level:** High

**Precondition:** Customer need to login and select a service.

**Cross-references:** 1, 2.1

## **8. Confirm Order**

### **Functional Requirements (FRs)**

8.1 The customer will be able to confirm their current order based on their cart.

8.2 The customer will have to provide the necessary details and credit card info to confirm their order and after verifying the system will confirm the order.

8.3 If any invalid information is given then the customer will be notified with an alert

**Priority Level:** High

**Precondition:** Customer's cart should not be empty, the credit card information must be valid and customer should be logged in with a valid account.

**Cross-references:** 1.1, 1.2, 2.2, 5.1, 5.2, 7.1

## **9. Leave Review**

### **Functional Requirements (FRs)**

9.1 Customers can leave review for any individual service.

9.2 The customer will have to click on a service to review it and can post it.

**Priority Level:** Medium

**Precondition:** Customer should be logged in with a valid account

**Cross-references:** 1.2, 2.2 & 8.1

## **10. Accept Orders**

### **Functional Requirements (FRs)**

10.1 The system will let the owner to accept any specific order.

10.2 The owner will have to select an order and click accept button.

10.3 The accepted order data will be recorded in the database.

**Priority Level:** High

**Precondition:** Owner must have an account

**Cross-references:** 1, 2 & 8.3



### 3.2 Non-Functional/Quality Requirements

**QA1: Usability:** This system should be able to navigate to each page under a maximum of 10 seconds. All buttons should give a response to the user from 2 to 5 seconds. After placing an order, the user should receive a confirmation email under at least 2 to 3 minutes.

**Priority Level:** High

**Precondition:** N/A

**Cross-references:** QA2, QA5

**QA2: Availability:** The system should be available for 20.5 hours a day and all 7 days of the week, with a 30 minutes max downtime per day for server reset, database backup & data integrity check.

**Priority Level:** High

**Precondition:** N/A

**Cross-references:** QA5, QA8

**QA3: Security:** All user data should be protected and kept private. User passwords should be saved after being hashed using a high complexity hashing algorithm.

**Priority Level:** High

**Precondition:** N/A

**Cross-references:** QA7

**QA4: Scalability:** The project is intended to be released in the global market therefor there will be users from all regions. To handle user requests in the future the project must be highly scalable so that the system does not get over whelmed by the increasing number users, user requests or user data.

**Priority Level:** Medium

**Precondition:** N/A

**Cross-references:** QA1, QA3

**QA5: Efficiency:** The server should send a response from a minimum of 2 seconds to a maximum of 10 seconds. At least 25% of the processing capacity and RAM available to the program must be idle.

**Priority Level:** Low

**Precondition:** N/A

**Cross-references:** QA1

**QA6: Flexibility:** The software should be adaptable to minor changes and have the ability to produce additional outputs using existing data in the database.

**Priority Level:** High

**Precondition:** N/A

**Cross Reference:** QA8

**QA7: Integrity:** The database must have robust cyber security measures to safeguard against any unauthorized access, theft, or modification of data. Only authorized personnel with proper access credentials or administrator privileges will be permitted to perform maintenance tasks. Moreover, the database must be regularly backed up during server downtime as a backup measure.

**Priority Level:** High

**Precondition:** N/A

**Cross Reference:** QA3

**QA8: Robustness:** The software should be able to handle unexpected situations and recover from errors or failures quickly and smoothly.

**Priority Level:** Low

**Precondition:** N/A

**Cross Reference:** QA6

### **3.3 Project Requirements**

#### **3.3.1 Tool**

The system developer needs PHP, JavaScript to develop Backend Application and run it on Apache server and to run PHPMyAdmin SQL server for MySQL database, Node JS to develop Frontend Application with NextJS and any type of code editor

#### **3.3.2 Budget**

The project requires the development of a software solution within a budget of 15 lakh taka. The software must meet the specified requirements and deliverables, and rest will be determined through consultation with the stakeholders.

#### **3.3.3 Time**

This project can find both advantages and difficulties within a six-month period. On one hand, this length of time allows for adequate planning, execution, and completion of the project. This enables the team to approach the project in a methodical manner, while also having the flexibility to modify their approach as necessary. On the other hand, unforeseen problems or obstacles may emerge during this time that cannot be easily accommodated within the given timeframe. Therefore, it is essential to establish clear schedules and priorities early in the project, with frequent progress

updates to ensure that the project remains on course. Overall, a six-month timeline can be a feasible and achievable schedule for many projects, provided that the team remains adaptable, communicative, and committed to delivering quality results.

### **3.3.4 Resources**

- **Human Resource**
  - Project manager: 1 person
  - Software developer: 4 persons
  - Software tester: 2 persons
- **Hardware/Networking device**
  - Personal computer: 5 desktops and 2 laptops
  - Router – 1
  - Repeater – 1
  - Server – 1
  - Switch – 1
- **Reusable components**
  - Sub-system or module
  - Data-Base management system

## 4. Design and Interface Requirements

### 4.1 UML Diagrams

- Use Case Diagram

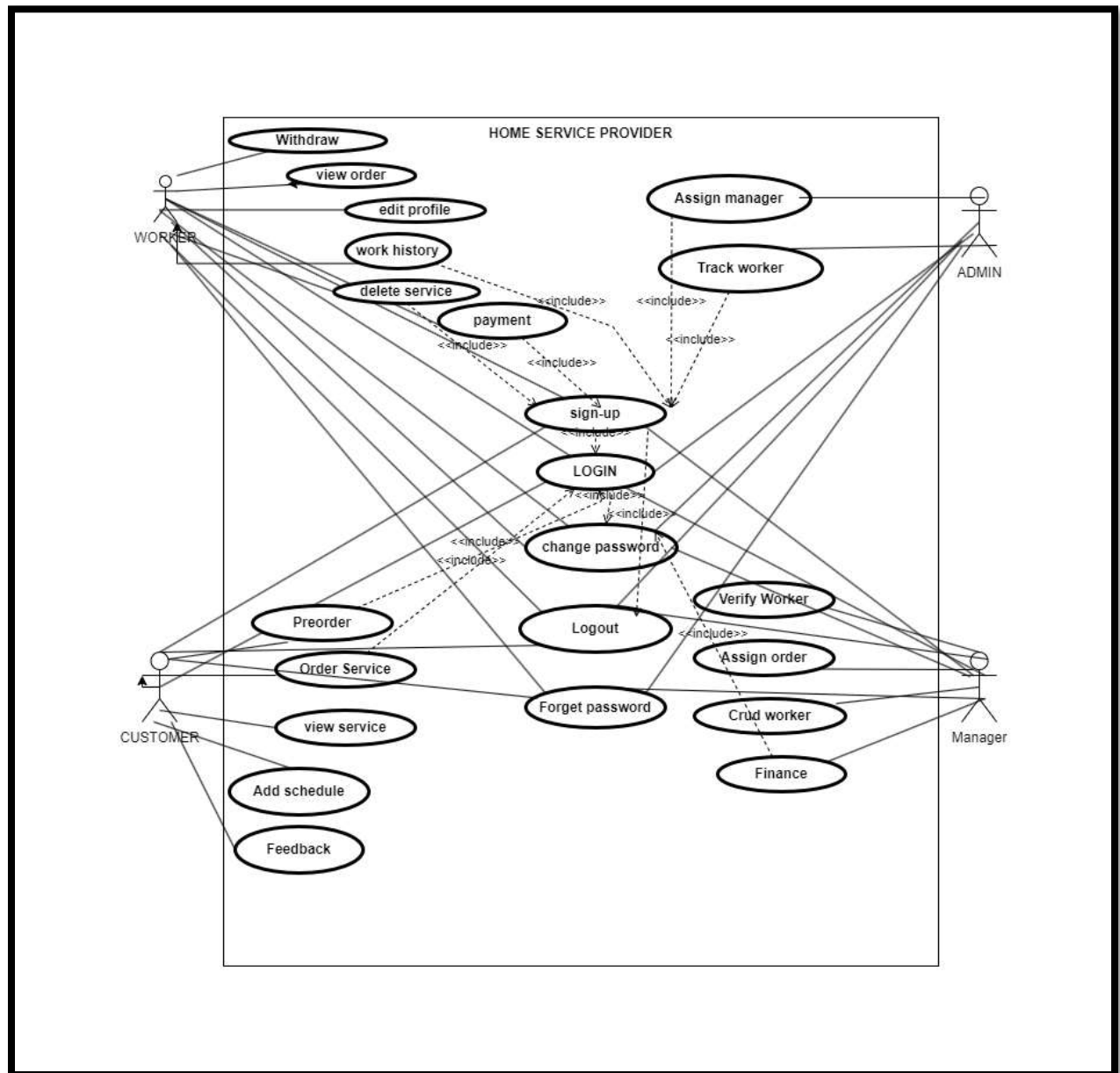


Figure 4.1: Use case diagram

- **Class Diagram**

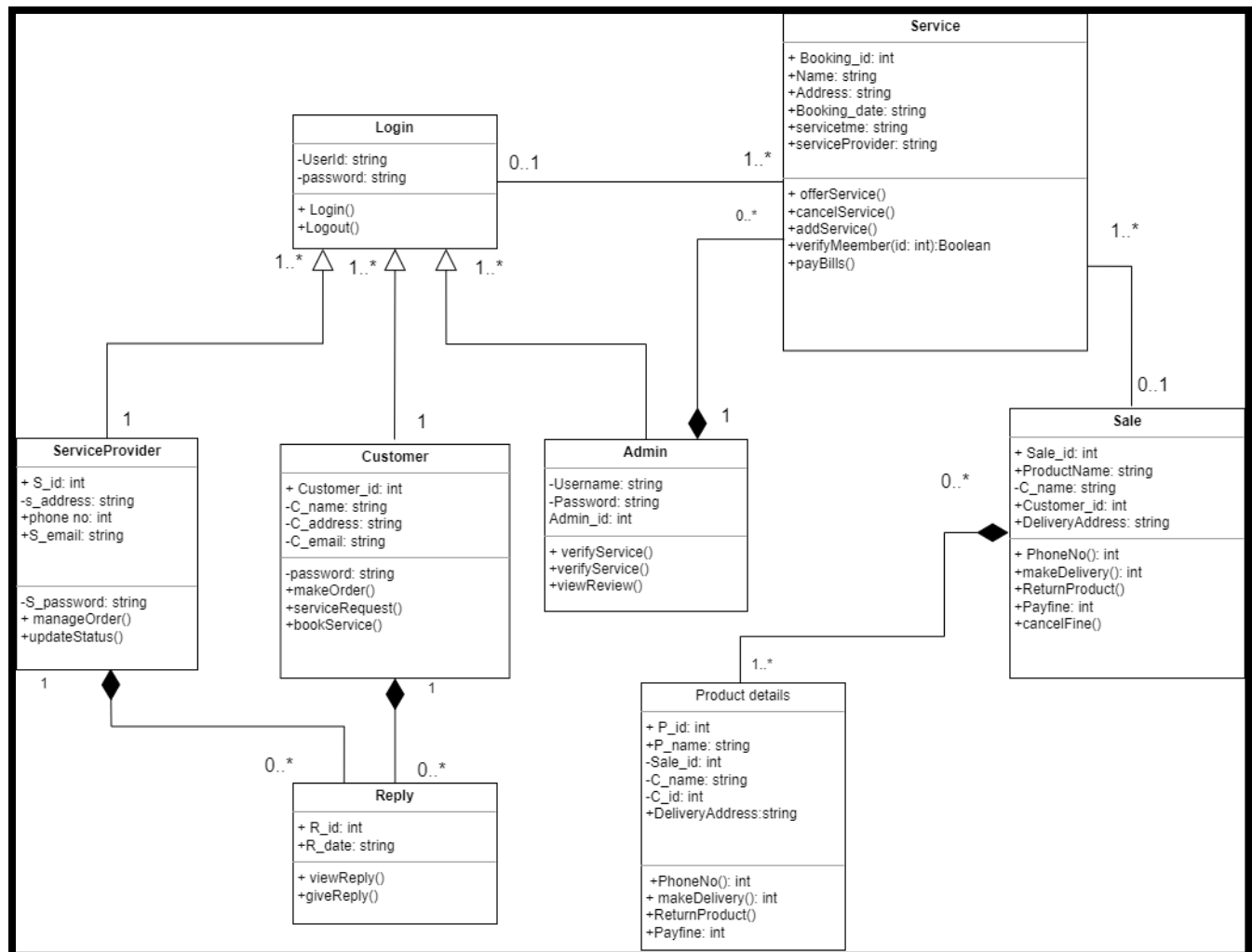


Figure 4.2: Class diagram

- Activity Diagram

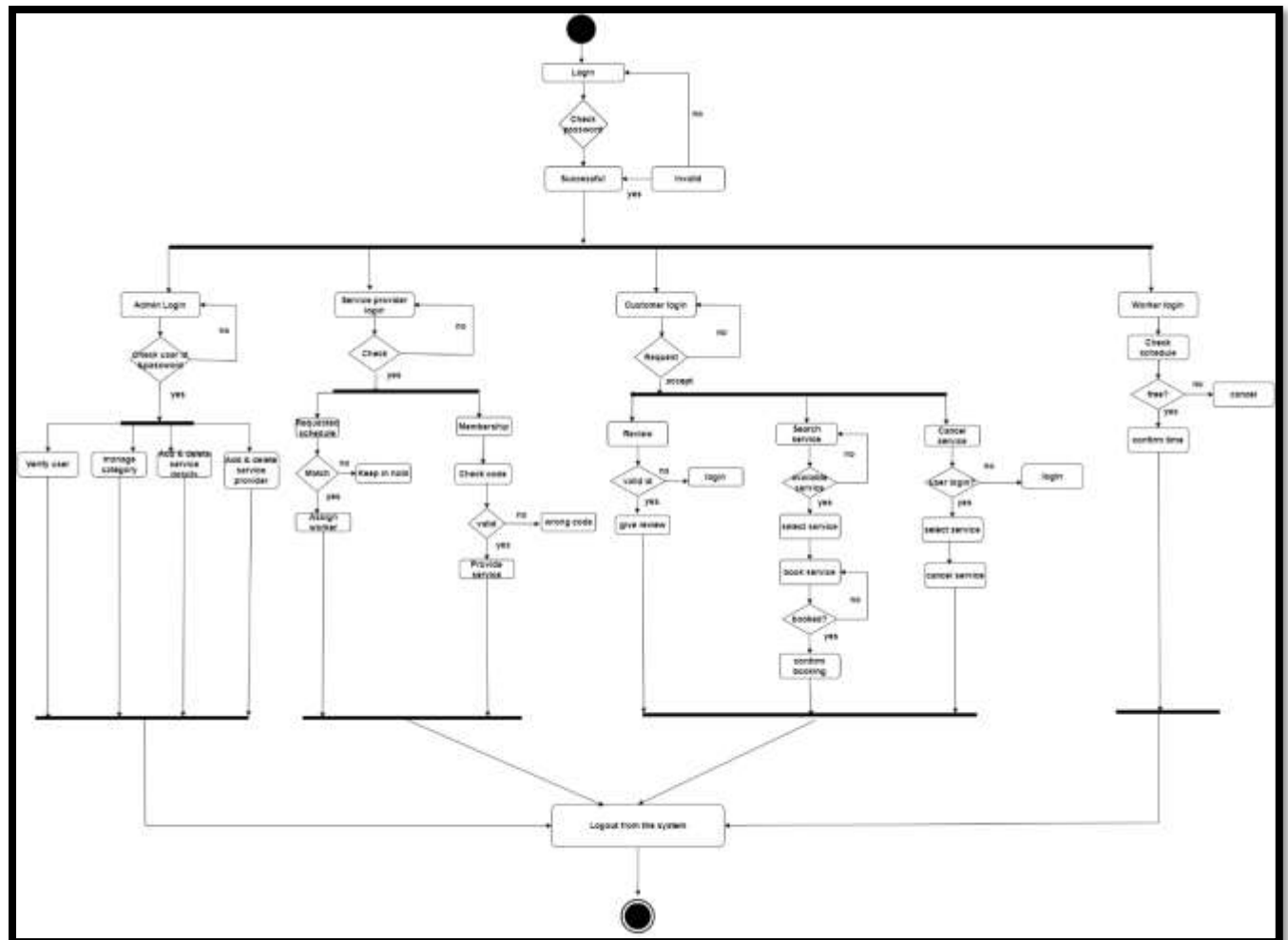


Figure 4.2: Activity diagram

- E-R diagram

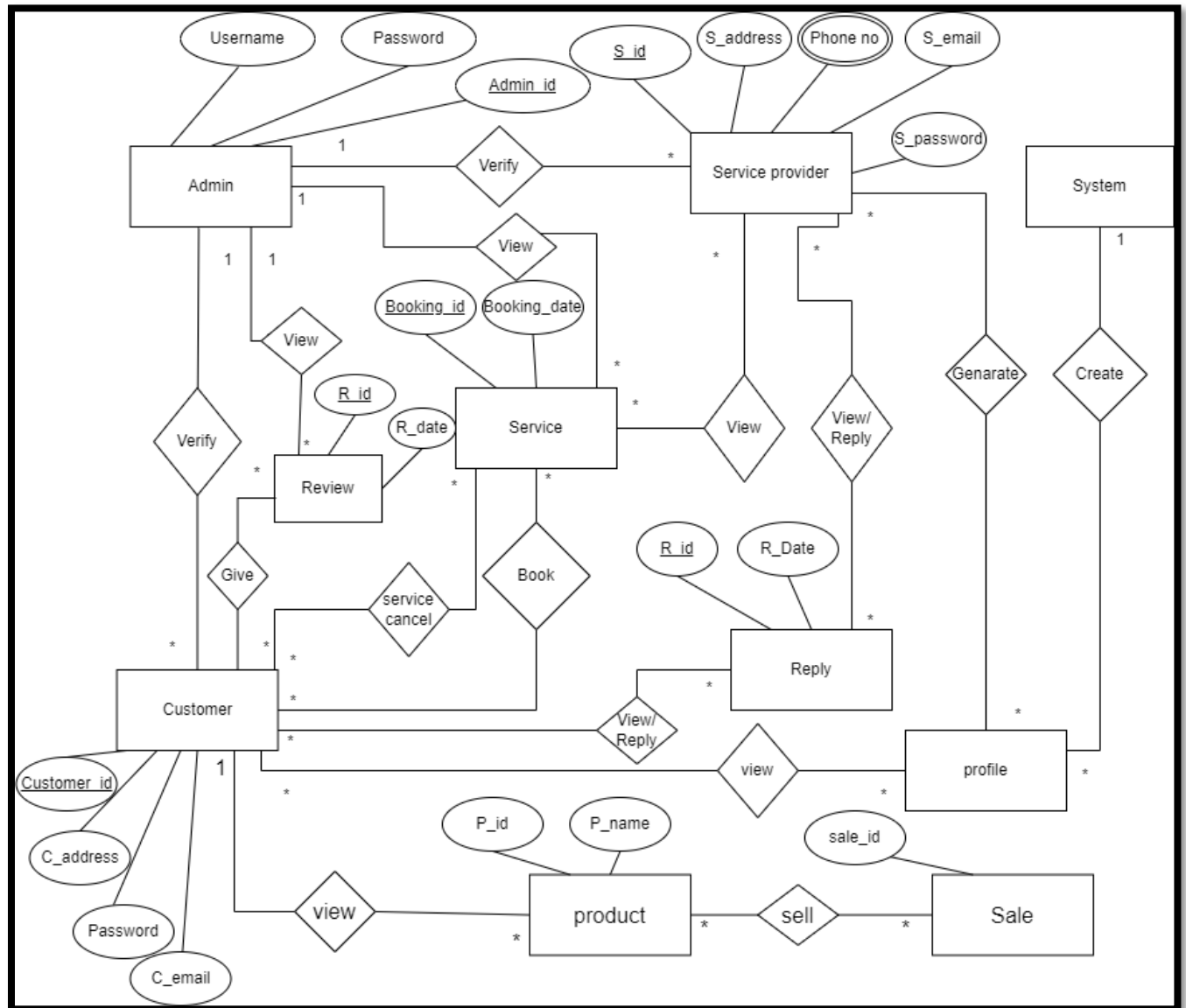


Figure 4.2: E-R diagram

## 4.2Data Dictionary

Entity	Attribute	Type/ Size	Validation	Key
Admin	UserName	Text(50)	Required	
Admin	Password	Text(100)	Required	
Admin	Admin_id	Int	Required	Primary
Service Provider	S_id	Int	Required	Primary
Service Provider	S_address	Text(200)		
Service Provider	Phone-no	Int	Required	
Service Provider	S_email	Text(200)	Required	
Service Provider	S_password	Text(100)	Required	
Service	Booking_id	Int	Required	Primary
Service	Booking_date	Date(8)	Valid Date	
Review	R_id	Int	Required	Primary
Review	R_date	Date(8)	Valid Date	
Customer	Customer_id	Int	Required	Primary
Customer	C_address	Text(200)		
Customer	Password	Text(100)	Required	
Customer	C_email	Text(200)	Required	
Reply	R_id	Int	Required	Foreign
Reply	R_date	Date(8)	Valid Date	
Profile				
System				



### 4.3 UI/UX Design Specification

The Canva tool was used to develop the prototypes of this project such as User Interface (UI) and User Experience (UX).

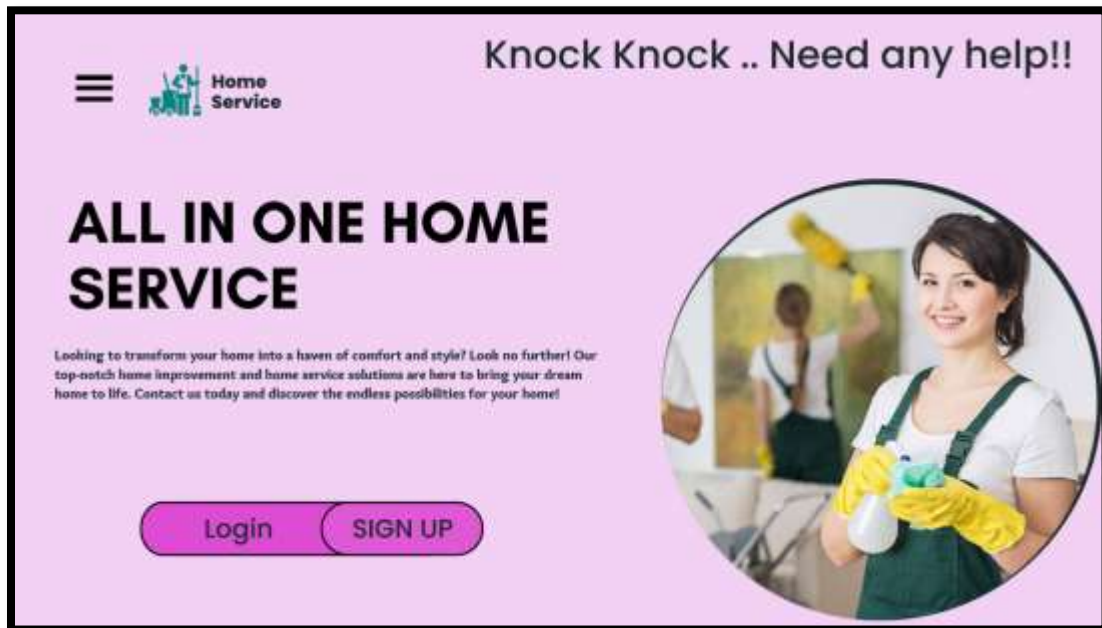


Figure 4.3.1: Home page



Figure 4.3.2: Sign up page

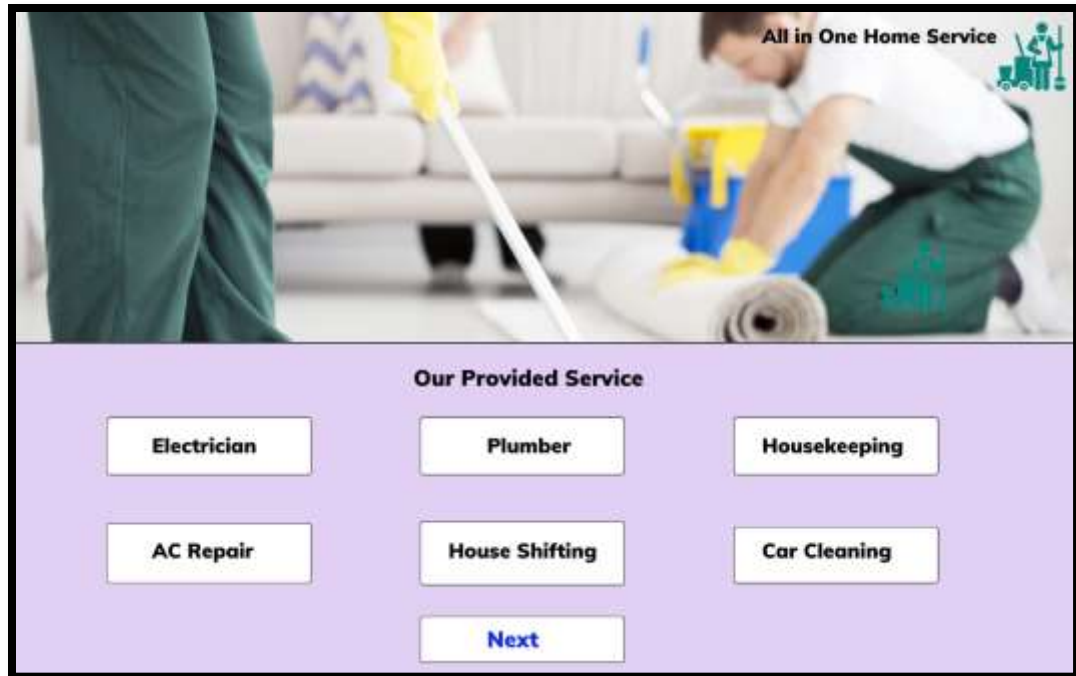


Figure 4.3.3: Provided Services



Figure 4.3.4: Electrician Page

All in One Home Service

## Customer Details

Please enter your name

Sadia Islam Niha

Please enter Email

nihaislam202@gmail.com

Phone Number

01715030777

Set Schedule

dd----yyyy-|--

Why do you need electrician?

- o Connecting or disconnecting the electricity supply
- o Removing, repairing an electrical installation.
- o Replaces conduit and wiring as needed.
- o Replaces circuit breakers as needed.
- o Performs other related duties assign.

CONFIRM BOOKING

Figure 4.3.5: Set booking

All in One Home Service

HOME
About us
Service
Contact
Overview service
Next

## SELECT YOUR PACKAGE

### WEEKLY

Enjoy your weekly package from us...

- ✓ AC repair
- ✓ Car Cleaning
- ✓ Housekeeping

4000 TK

### MEMBERSHIP

If you have our membership card you can choose any of these package

- ✓ House Shifting
- ✓ Housekeeping +Ac repair
- ✓ AC repair + Plumber

3700 TK

### MONTHLY

Enjoy your monthly package from us...

- ✓ House Shifting
- ✓ AC repair
- ✓ Electrician

4700 TK

Next

Figure 4.3.6: Offers page

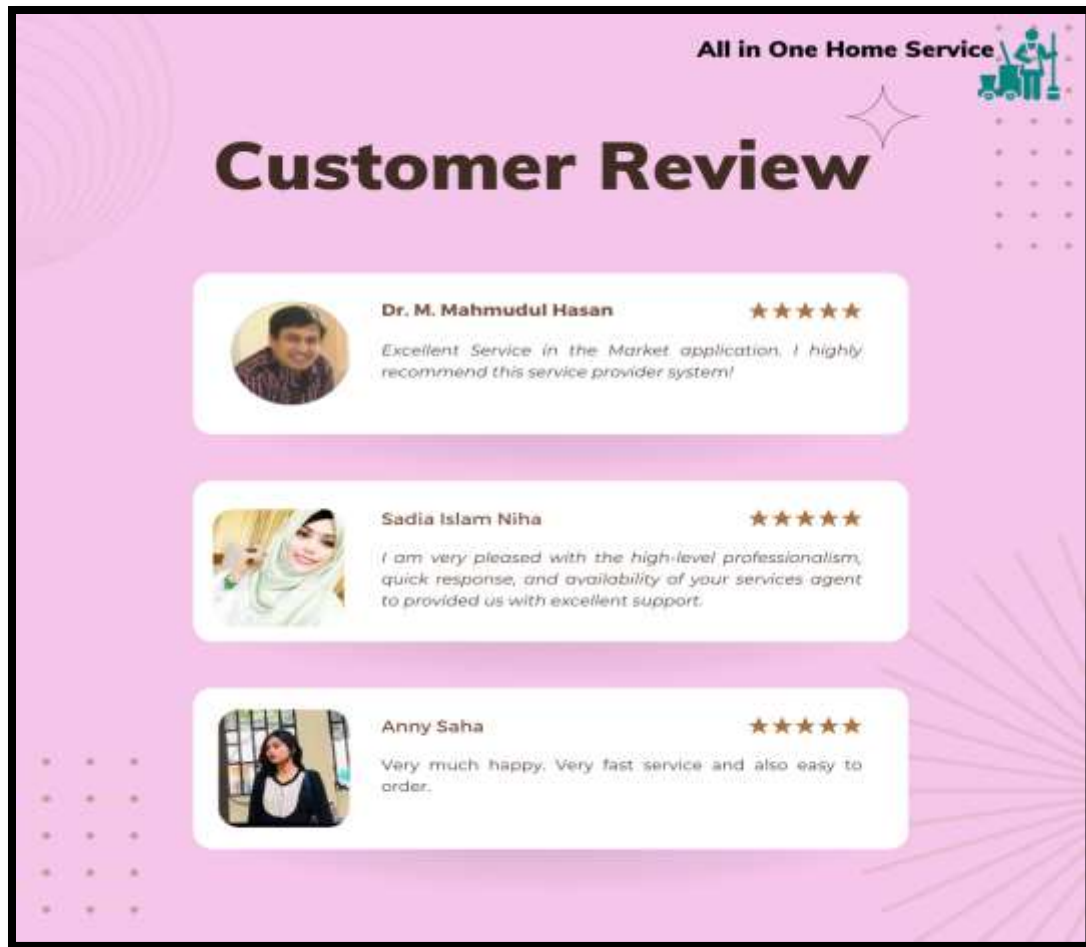


Figure 4.3.7: Customer review page