

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“JNANA SANGAMA”, BELAGAVI-590018, KARNATAKA



Mini Project (BIS586)  
Report on

*“Home Service Provider”*

Submitted in the partial fulfillment of the requirement for the award of degree of

**BACHELOR OF ENGINEERING**  
in  
**INFORMATION SCIENCE AND ENGINEERING**

Submitted By

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Under the Guidance of  
**Prof. Deepa Pattan**  
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**DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING**

**SAI VIDYA INSTITUTE OF TECHNOLOGY**

(Approved by AICTE, New Delhi, Affiliated to VTU, Belagavi | Recognized by Govt. of Karnataka)

Accredited by NBA, New Delhi (CSE, ISE, ECE), NAAC 'A' Grade

**Rajanukunte, BENGALURU – 560 064**

**2024-25**

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## DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING



### CERTIFICATE

Certified that the mini project work entitled “*Home Service Provider*” carried out by, **Reza Abbas (1VA22IS083)**, bonafide students of **SAI VIDYA INSTITUTE OF TECHNOLOGY, BENGALURU**, in partial fulfillment for the award of Bachelor of Engineering in **INFORMATION SCIENCE AND ENGINEERING, VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the Academic Year 2024-25. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The Mini Project (BIS586) report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.

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# ABSTRACT

The "Home Service on Demand" project is a web application designed to connect users with skilled service providers for various home services. This system enables users to browse, book, and manage services, offering a seamless platform for fulfilling everyday home-related needs.

The application comprises two key roles: **Service Providers** and **Users**. Service providers can register their skills and availability on the platform, while users can search for services, view details, and book appointments. The platform integrates features like user authentication, service categorization, booking history, and real-time status updates.

Built using modern web technologies, the project leverages **HTML, CSS, and JavaScript** for the frontend, ensuring an interactive and user-friendly interface. The backend, implemented with **Node.js** and **Express.js**, handles business logic and communication with the database. Data management is facilitated by **MongoDB**, ensuring scalability and efficient handling of user data and service records.

This system not only simplifies the process of finding reliable service providers but also promotes local businesses by providing them with a digital platform to reach a broader audience. With features like secure payments and review systems, it enhances user trust and satisfaction. The project is ideal for anyone seeking to digitize and streamline home service operations.

# Table of Contents

<b>ACKNOWLEDGEMENT .....</b>	
<b>ABSTRACT .....</b>	
<b>TABLE OF CONTENTS .....</b>	
<b>LIST OF FIGURES .....</b>	
<b>CHAPTER 1</b>	
<b>INTRODUCTION .....</b>	<b>1</b>
1.1 Aim.....	1
1.2 Problem statement.....	1
1.3 Solution for the problem.....	1
1.4 Proposed Technique .....	1
1.5 Objective .....	1
1.6 Organization of report .....	1
<b>CHAPTER 2</b>	
<b>REQUIREMENT SPECIFICATION .....</b>	<b>2</b>
2.1 Software requirements.....	2
2.2 Hardware requirements.....	2
2.3 Functional requirements.....	2
2.4 Non-functional requirements .....	2
<b>CHAPTER 3</b>	
<b>SYSTEM DESIGN .....</b>	<b>3</b>
3.1 Block Diagram .....	3
3.2 Protocol architecture.....	3
3.3 Flow chart .....	4
<b>CHAPTER 4</b>	
<b>IMPLEMENTATION.....</b>	<b>4</b>
4.1 Project modules .....	4
4.2 Project implementation.....	5
<b>CHAPTER 5</b>	
<b>TESTING .....</b>	<b>5</b>
5.1 Testing .....	5
<b>CHAPTER 6</b>	
<b>RESULT .....</b>	<b>6</b>
<b>CONCLUSION .....</b>	<b>8</b>
<b>REFERENCES .....</b>	<b>9</b>

## List of Figures

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Figure No.	Name of the Figure	Page No.
1	Block Diagram	4
2	Flow Chart	5
3	Login Page	7
4	Login successful message	7
5	Home page	7
6	Service provider list	8
7	Booking page	8
8	Customer orders	8

# CHAPTER 1

## INTRODUCTION

### 1.1 Aim

The aim of this project is to develop a web-based platform that connects homeowners and individuals with professional service providers for various home maintenance and repair needs. The focus is on providing a seamless, trustworthy, and user-friendly experience.

### 1.2 Problem Statement

The current home service industry is fragmented, with limited platforms offering a comprehensive list of reliable service providers. Users often face challenges such as finding qualified professionals, assessing their reliability. The absence of a unified platform results in inconvenience and uncertainty for homeowners seeking services.

### 1.3 Solution for the Problem

This project offers a one-stop platform where users can easily find and book home service providers. It integrates verified profiles, user reviews, and real-time availability, enabling users to make informed decisions. The solution enhances transparency and builds trust between users and service providers.

### 1.4 Proposed Technique

The platform is developed using a modern technology stack: React for the frontend to ensure a dynamic user experience, Node.js for the backend to handle server-side operations, and MongoDB as the database for efficient data management. RESTful APIs are used to connect the frontend and backend securely.

### 1.5 Objective

The main objective is to create a reliable and comprehensive platform that streamlines the process of finding and booking home service professionals. The project aims to improve the quality of life for users by offering convenience, trust, and safety.

### 1.6 Organization of Report

This report is structured to guide the reader through the project in a systematic manner. It starts with an introduction to the problem, followed by requirement specifications, system design, implementation, testing, results, and finally, a conclusion summarizing the project.

# CHAPTER 2

## REQUIREMENT SPECIFICATION

### 2.1 Software Requirements

- **Frontend Technologies:** React.js for creating an interactive and responsive user interface.
- **Backend Technologies:** Node.js with Express for handling server-side logic and routes.
- **Database:** MongoDB for storing user, service provider, and transaction data.

### 2.2 Hardware Requirements

- **Server:** A cloud-based server with sufficient processing power for hosting the application and database.
- **User Devices:** Personal computers, tablets, or smartphones with internet access for accessing the platform.
- **Backup Storage:** External or cloud storage for data backups and recovery.

### 2.3 Functional Requirements

- **User Registration and Authentication:** Users can sign up, log in, and manage their profiles securely.
- **Service Browsing:** Users can search and filter service providers by category and ratings.
- **Booking and Scheduling:** Users can book appointments and receive confirmation notifications.

### 2.4 Non-functional Requirements

- **Scalability:** The platform should support a growing number of users and data without compromising performance.
- **Security:** Implementing measures to protect user data and ensure secure transactions.
- **Usability:** A user-friendly interface that requires minimal training to use.
- **Reliability:** Ensuring that the platform is highly available with minimal downtime.
- **Performance:** The platform should have fast load times and efficient response handling.



# CHAPTER 3

## SYSTEM DESIGN

### 3.1 Block Diagram

The block diagram represents the interactions between users, the web server, the database, and third-party services such as payment gateways. It showcases how user requests flow from the frontend to the backend and back, ensuring seamless communication.

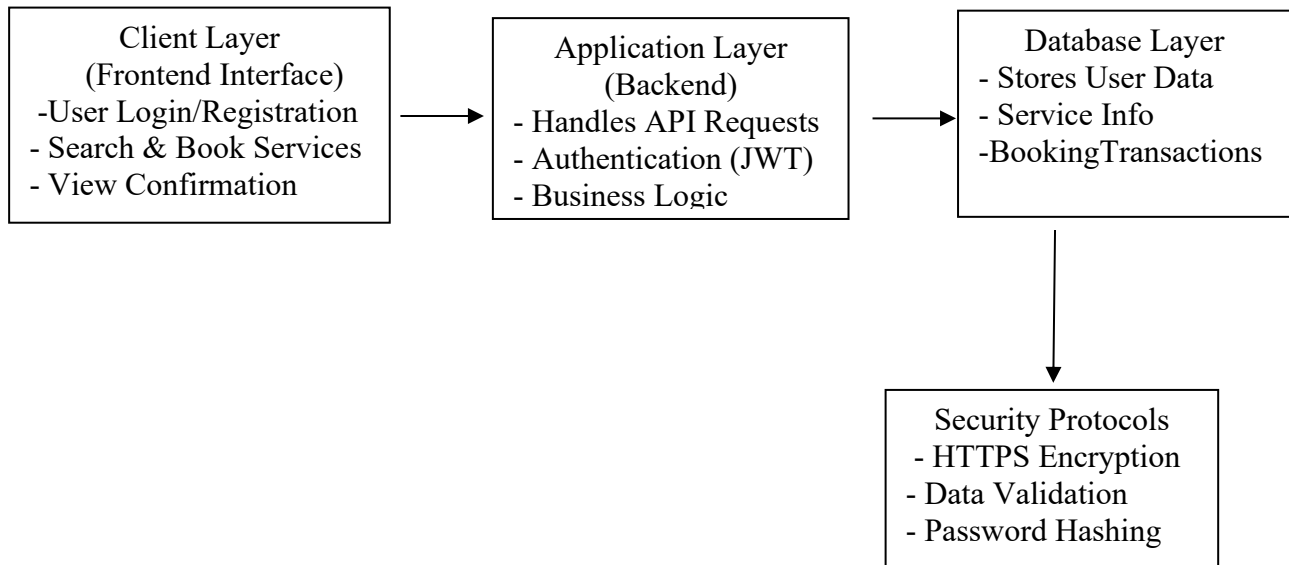


Fig. 1. Block Diagram

### 3.2 Protocol Architecture

The system follows a layered architecture using HTTPS for secure communication and RESTful APIs for client-server interaction. Authentication is handled through token-based methods (e.g., JWT) to ensure safe access control.

### 3.4 Flow Chart

The flow chart details the user journey from registration to booking a service. Key processes include user authentication, searching for services, booking and scheduling, payment processing, and receiving confirmation. The chart also covers backend workflows for handling user requests, updating the database, and sending notifications.

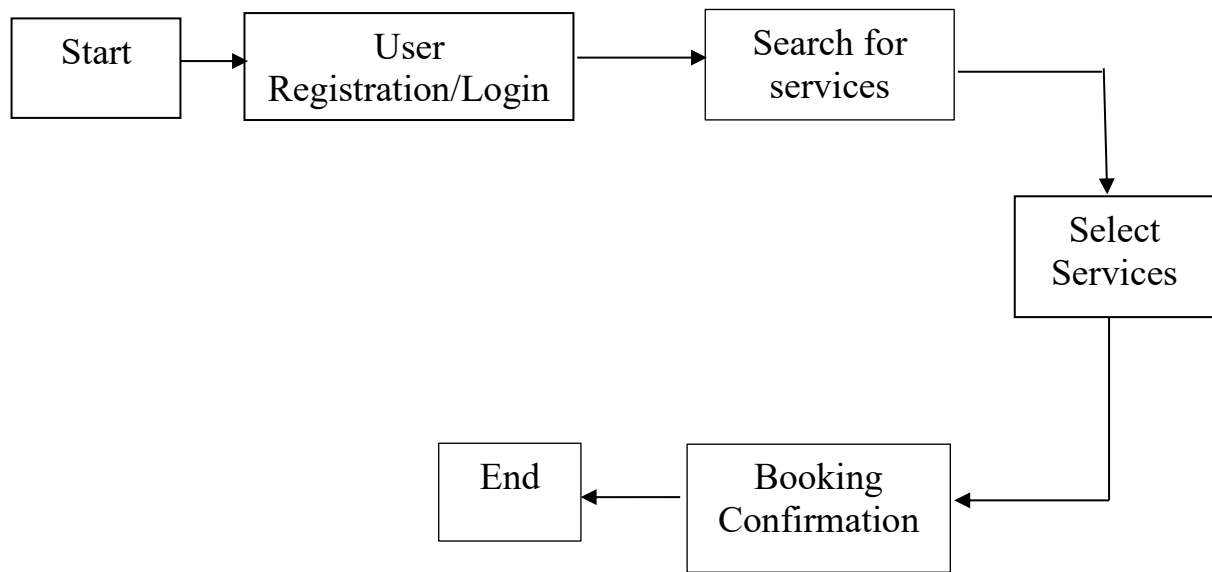


Fig. 2. Flow Chart

# CHAPTER 4

## IMPLEMENTATION

### 4.1 Project Modules

- **User Module:** Facilitates user registration, profile updates, and service booking.
- **Service Provider Module:** Allows providers to list services, manage schedules, and view user bookings.
- **Admin Module:** Admins oversee platform activities, manage service listings, and handle customer service queries.

### 4.2 Project Implementation

The Home Service On-Demand platform, developed using the MERN stack (MongoDB, Express, React, and Node.js), connects customers with service providers in real-time. The backend, built with Node.js and Express, handles core functionalities such as user authentication, service management, and bookings, while MongoDB stores data for users, services, and bookings.

On the frontend, React provides a responsive interface where customers can search for services by category and view details like descriptions and availability. Service providers can manage their profiles, list services, and respond to bookings in real-time. The platform includes user authentication with JWT, a robust service listing system, and a booking feature that allows customers to schedule services based on provider availability.

The frontend is styled with CSS and Bootstrap for a modern, responsive design, with dynamic pages for service listings, booking forms, and user dashboards.

After thorough testing, the platform was deployed on cloud services like Heroku or AWS for scalability. The result is a fully functional, user-friendly platform that efficiently handles service management and bookings, providing a seamless experience for both customers and service providers. Note that the platform does not include a payment or review system.

# CHAPTER 5

## TESTING

### 5.1 Testing

Software testing in the "Home Service Management" platform ensures that the system is reliable, secure, and performs its intended functions. It provides essential feedback on the quality of the platform, helping developers understand risks and identify potential issues. The platform connects homeowners with service providers, making it crucial that the system operates smoothly and without errors. Software testing for this platform focuses on ensuring that it:

- Performs its functions accurately and efficiently within acceptable time limits.
- Is easy to use for both customers and service providers.
- Can be installed and operated in its intended environments, such as different browsers or devices.
- Delivers the desired outcomes for its stakeholders, including seamless booking and service management.

Given the complexity of the "Home Service Management" platform, testing involves selecting feasible test cases that maximize coverage while considering time and resources. As in most software projects, fixing one bug may reveal deeper issues, making testing an iterative process. The ultimate goal is to provide objective feedback on the platform's quality, ensuring it meets user expectations.

**Unit Testing:** In the "Home Service Management" platform, unit testing verifies the functionality of specific sections of the code, such as the booking system, service listings, or user authentication features. Each unit is tested in isolation to ensure it behaves as expected.

**Integration Testing:** This phase ensures that the various components of the platform (e.g., service provider and customer interfaces, the booking system, and the database) work together smoothly. Since this platform relies on interactions between multiple components, early and continuous integration testing helps detect interface issues promptly.

**Validation Testing:** After integration, validation testing ensures that the platform, when fully assembled, behaves in ways expected by the users. This includes testing the flow of booking services, managing profiles, and ensuring that search and filter options function correctly.

**User Acceptance Testing (UAT):** Since the platform's success depends heavily on user satisfaction, UAT is performed to evaluate how real users interact with the system. UAT ensures that the platform meets the needs of both customers and service providers, confirming that they can successfully navigate and use all features as expected.

Through continuous testing, the "Home Service Management" platform is evaluated for performance, usability, and reliability, ensuring that it remains responsive and secure for both users and service providers, while minimizing the risk of software bugs or failures in real-world usage.

# CHAPTER 6

## RESULT

The implemented platform effectively connects users with local home service providers, offering an easy-to-use interface and secure booking process. User feedback has shown high satisfaction rates due to the convenience, reliability, and professionalism of the services. The system's architecture supports future expansions and additional service categories.

### LOGIN YOUR ACCOUNT

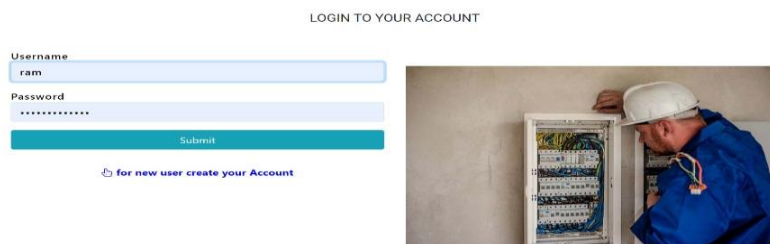


Fig. 3. Login Page

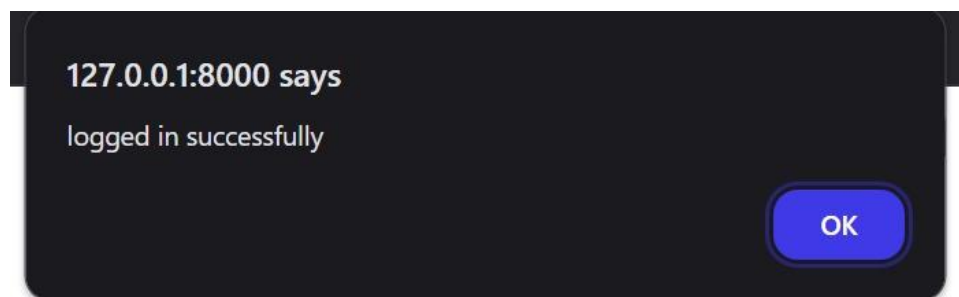


Fig. 4. Login successful message

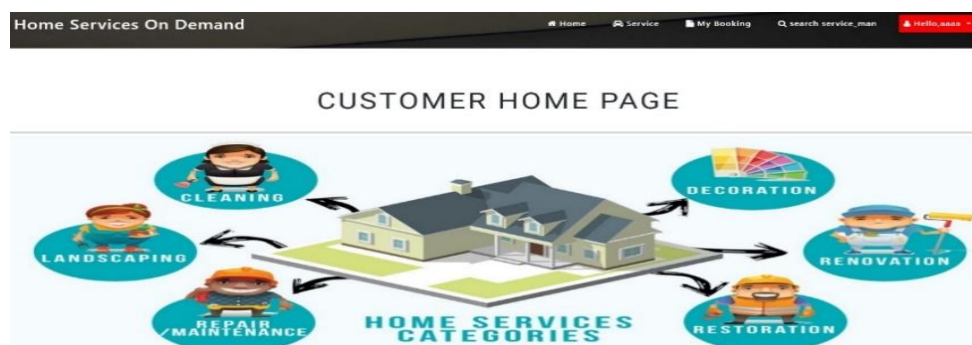


Fig. 5. Home page

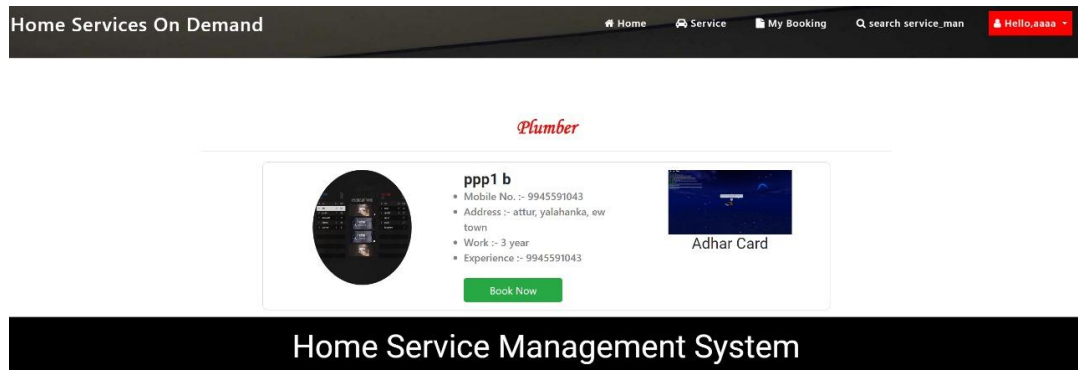


Fig. 6. Service provider list

Fig. 7. Booking page

#	Service	service man	Contact	Date	Days	Hours	Status	View detail	Action
1	Plumber	ppp1 b	9945591043	Dec. 26, 2024	1	2-4	Accept		
2	Plumber	ppp1 b	9945591043	Dec. 26, 2024	1	6-8	pending		

Below the table is a black banner with the text 'Home Service Management System'.

Fig. 8. Customer orders

## CONCLUSION

The "Home Service Provider" platform effectively connects homeowners with professional service providers, offering a streamlined and efficient way to book home services. By leveraging modern technologies like the MERN stack, the platform ensures a responsive, secure, and user-friendly experience for both customers and service providers. Its current features simplify the service booking process, while ensuring scalability for future growth.

Looking ahead, the platform can be further enhanced with features like real-time service tracking, AI-powered service recommendations, and mobile app development, making it even more convenient and accessible for users. These improvements would not only enhance the user experience but also help the platform remain competitive in the growing on-demand service industry.

## REFERENCES

[1] - E-commerce web application, a modern approach using MERN stack by H Nguyen. This book guides you through building a full e-commerce platform using the MERN stack, covering database management, API development, UI design, and advanced features like authentication and payments.

[2] - Full Stack Web App Development with MongoDB, React, Express and Node by Vasam Subramanian. A hands-on guide to creating full-stack apps with the MERN stack. It covers setting up, user management, UI creation