HomeLance

Find your dream home!

Submitted By

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PROJECT REPORT

This Report is Presented in Partial Fulfillment of the course

CSE415: Web Engineering Lab in the Computer Science and Engineering Department

DAFFODIL INTERNATIONAL UNIVERSITY

Dhaka, Bangladesh

December 14, 2024

DECLARATION

We hereby declare that this lab project has been done by us under the supervision of **Mr. Shababul Alam**, Lecturer, Department of Computer Science and Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere as lab projects.

Submitted To:

Mr. Shababul Alam
Lecturer
Department of Computer Science and Engineering
Daffodil International University

Submitted By:

Mahfujur Rahman Student ID: 212-15-14718 Dept. of CSE, DIU	**Jannatul Ferdush** Student ID: 212-15-14735 Dept. of CSE, DIU

COURSE & PROGRAM OUTCOME

The following course have course outcomes as following:.

Table 1: Course Outcome Statements

CO's	Statements
CO1	**Define** and **Relate** classes, objects, members of the class, and relationships among them needed for solving specific problems
CO2	**Formulate** knowledge of object-oriented programming and Java in problem solving
CO3	**Analyze** Unified Modeling Language (UML) models to **Present** a specific problem
CO4	**Develop** solutions for real-world complex problems **applying** OOP concepts while evaluating their effectiveness based on industry standards.

Table 2: Mapping of CO, PO, Blooms, KP and CEP

CO	PO	Blooms	KP	CEP
CO1	PO1	C1, C2	KP3	EP1, EP3
CO2	PO2	C2	KP3	EP1, EP3
CO3	PO3	C4, A1	KP3	EP1, EP2
CO4	PO3	C3, C6, A3, P3	KP4	EP1, EP3

The mapping justification of this table is provided in section **4.3.1**, **4.3.2** and **4.3.3**.

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Chapter 1

Introduction

1.1 Introduction

Nowadays people face many problems when they cannot Wind and get information about home when they need it. There is too much time consumed Winding a perfect home. The system of home rental and relocation services would be a solution to the problems that citizens face. Renting systems in the houses also can simplify the work for the rental manager to check, manipulate and rent their houses. This is more effective and efWicient for rental managers. This search system is based on the owners and the customers. The Owner is updated on the Apartment details, and rent details. The Customer is detailed about the room space, room rent, and address details also.HomeLance is an innovative web application developed using HTML, CSS, JavaScript, PHP, and MySQL. The application enables users to search for properties by applying filters like property type, location, and rent/sell options. It also allows property owners to list their properties with pictures and details. The application integrates user and admin functionalities, ensuring seamless management and interaction.

1.2 Motivation

The traditional process of buying, renting, or selling properties is time-consuming and inefficient, requiring physical visits and significant effort. HomeLance aims to streamline this process by providing a digital platform where users and property owners can interact conveniently, saving time and effort. This motivation stems from the need to simplify property transactions and enhance user experience.

1.3 Objectives

- To create an easy-to-use platform for users to find properties efficiently.
- To allow property owners to list properties with complete details, including images.
- To provide advanced filtering options for property searches.
- To offer admin functionalities for managing users and property listings.
- To calculate property installment plans and facilitate user-agent communication.

1.4 Feasibility Study

To evaluate the feasibility of **HomeLance**, a comparative analysis was conducted based on similar research studies, case studies, and existing web applications in the domain of real estate property management. Here's a summary of the findings:

Similar Research Studies and Projects

1. **Existing Platforms**
   Established platforms like **Zillow** and **Realtor.com** offer property search and listing services. However, these are primarily focused on developed markets and lack localization for countries like Bangladesh. Key features include:

   - Advanced property filters (e.g., type, location, price).
   - Visual property representation via images and videos.
   - Agent contact options.

2. **Case Study on Local Property Portals**
   Bangladeshi platforms such as **Bproperty.com** and **Entalhomebd.com** serve similar purposes. However:

   - They often charge higher commissions for property listings.
   - They lack installment calculation features and seamless agent-user communication.

3. **Methodological Contributions**
   Research studies on real estate platforms emphasize the importance of:

   - User-friendly design.
   - Advanced filtering for quick and precise results.
   - Integration of multimedia (images/videos) for a better property overview.

Contribution of Existing Web Applications:

Platform	Strengths	Limitations
Zillow	Global reach, robust filters, extensive property database.	Not localized for Bangladesh, lacks affordability focus.
Bproperty.com	Strong focus on Bangladeshi market, property expertise.	High commission rates, fewer innovative features like installment plans.
Entalhomebd.com	Localized, integrates buy/sell/rent options.	Limited detailed property information and weak agent-user interaction.

1.5 Gap Analysis

HomeLance addresses these gaps by:

1. **Localization:**
    - Focusing entirely on the Bangladeshi market with tailored features for local users and property owners.
2. **Affordable Listings:**
    - Charging a reasonable 5% commission, making it more accessible for property owners to list their apartments.
3. **Comprehensive Filters:**
    - Introducing advanced filtering options, such as property type, location, rent/sell options, and price range.
4. **Advanced Property Insights:**
    - Providing installment calculations directly on the property details page.
    - Offering high-quality images and videos for better property assessment.
5. **Seamless Communication:**
    - Enabling direct contact with property owners or agents through messaging, phone calls, and email integration.
6. **Enhanced User Experience:**
    - Developing a user-friendly, mobile-responsive platform for smooth navigation and efficient searches.

Gap Analysis Summary:

Existing Gap	Solution Offered by HomeLance
Lack of localization	Fully localized platform tailored for Bangladesh.
High listing costs	Affordable 5% commission for revenue.
Limited search filters	Advanced filtering by type, location, price range, and rent/sell options.
Missing advanced features	Includes installment calculators and agent communication tools.
Poor multimedia support	High-quality images and video content for properties.
Poor user experience	Responsive, intuitive UI with fast loading times and organized listings.

1.6 Project Outcome

The HomeLance project aims to deliver a robust and innovative web application that addresses the challenges faced by users and property owners in the real estate market. The anticipated outcomes of the project are as follows:

1. Functional Platform for Property Transactions

- A fully operational website where users can search for properties, view detailed information, and contact property owners or agents.
- Property owners can list their apartments with descriptions, images, and videos, ensuring increased visibility and quicker transactions.

2. Enhanced User Experience

- A user-friendly interface with advanced filtering options (property type, location, rent/sell, price range) to simplify the search process.
- Responsive design to ensure accessibility across different devices, including desktops, tablets, and mobile phones.

3. Streamlined Property Management for Admins

- Admin functionalities to manage users, properties, and platform activities efficiently.
- Ensures platform integrity by monitoring and moderating user feedback, property listings, and reported issues.

4. Time and Cost Savings for Stakeholders

- Users can save time and money by reducing the need for physical visits to explore properties.
- Property owners can list and advertise their apartments cost-effectively with a low 5% commission fee.

5. Improved Transparency and Trust

- By providing clear property details, including photos, videos, pricing, and installment calculations, the platform fosters transparency.
- Direct communication tools (messaging, phone calls, email) between users and agents ensure reliability and build trust.

6. Impact on the Real Estate Market in Bangladesh

- HomeLance can revolutionize the real estate market by offering a modern, digital solution tailored to local needs.
- Promotes a culture of online property transactions, reducing dependency on traditional, time-consuming methods.

7. Scalability and Future Enhancements

- The platform is designed to handle a growing user base and database of properties as demand increases.
- Future updates can include features like augmented reality (AR) property tours, real-time booking systems, and integration with payment gateways.

Chapter 2

Proposed Methodology/Architecture

This chapter outlines the technical and architectural framework of the HomeLance application. It includes an in-depth analysis of requirements, system design specifications, and a description of the methodologies employed for the successful implementation of the platform.

2.1 Requirement Analysis & Design Specification

The requirement analysis phase defines the essential features, functionalities, and technical specifications of the system, ensuring that the HomeLance platform meets its objectives and user expectations.

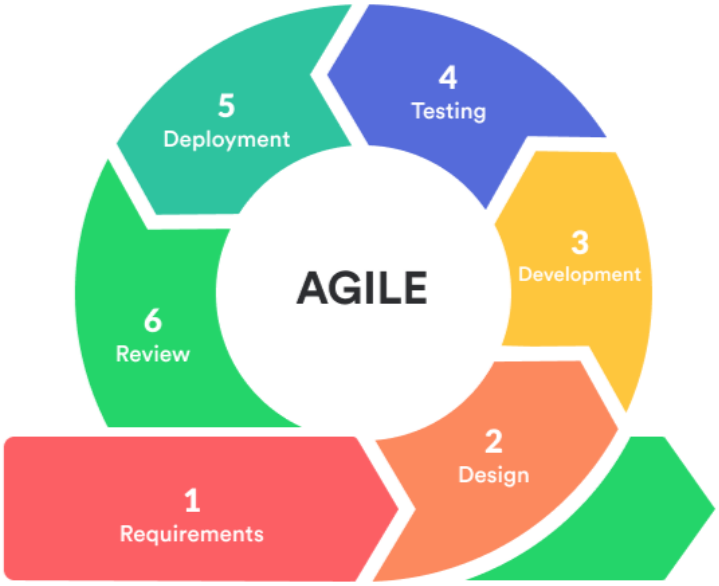
2.1.1 Overview

The HomeLance system is a web-based application that connects property seekers and property owners while offering administrative tools for platform management. The application aims to create a seamless experience by integrating advanced filtering options, multimedia property previews, and direct communication tools.

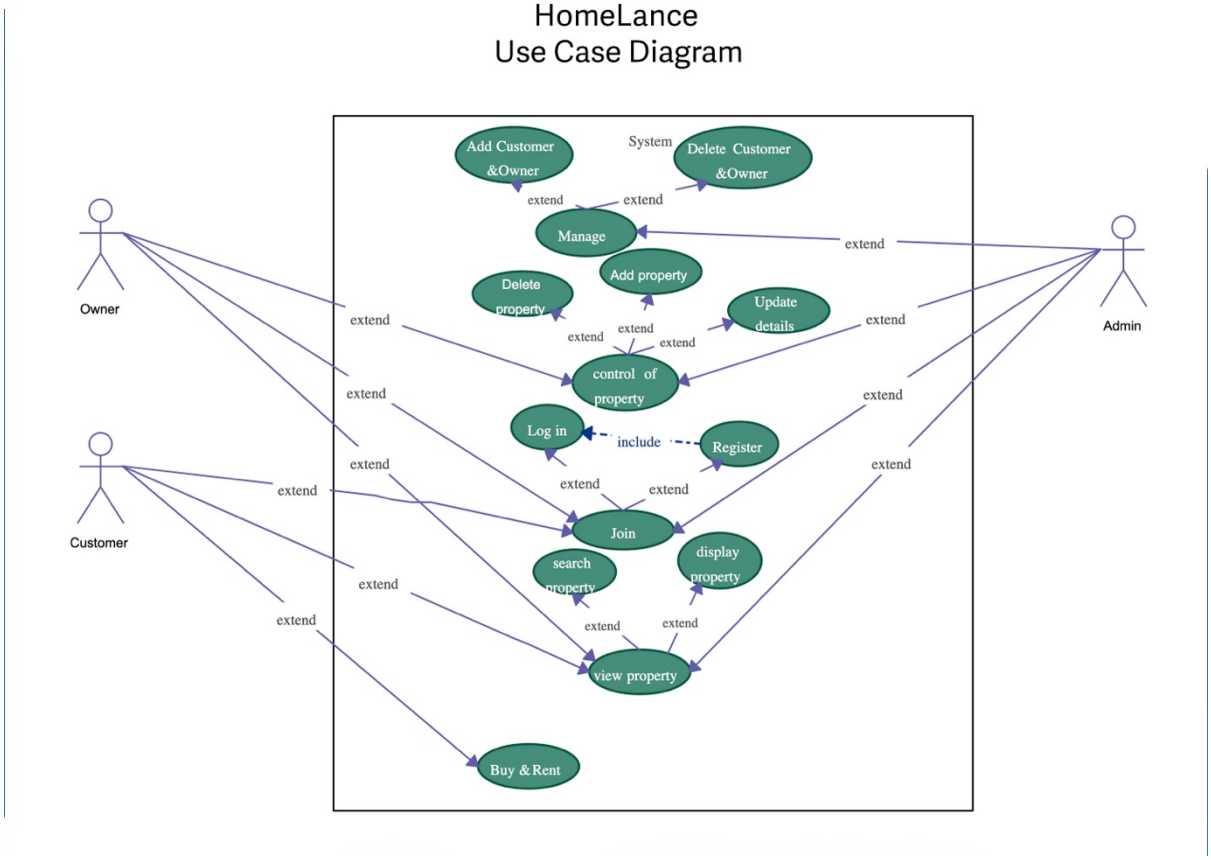
Core requirements include:

- A responsive and intuitive user interface.
- A backend system for secure data handling and efficient functionality.
- A scalable database to store user, property, and transaction data.
- An admin dashboard for managing users, properties, and transactions.

SDLC



USE CASE DIAGRAM



2.1.2 System Architecture Design

The system design follows a three-tier architecture, dividing responsibilities among the **frontend**, **backend**, and **database layers**. This ensures modularity, scalability, and efficient system performance.

1. **Frontend Layer**

    - Technologies: HTML, CSS, JavaScript
    - Features:

        - User-friendly interface for browsing, searching, and filtering properties.
        - Property detail pages showcasing images, videos, and installment calculators.
        - Responsive design for accessibility on different devices.

2. **Backend Layer**

    - Technology: PHP
    - Features:

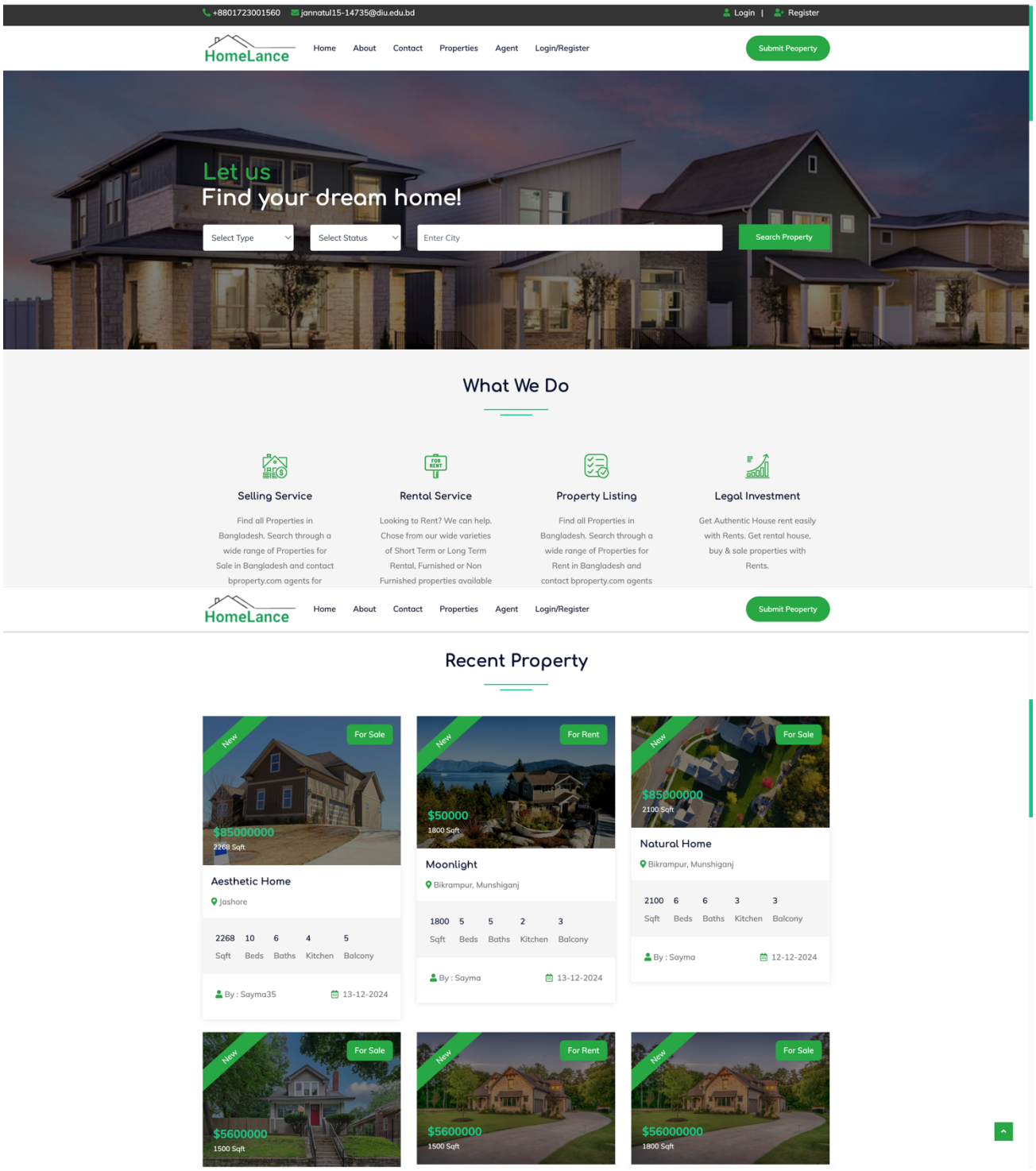
        - User authentication and session management.
        - Handling property listings, search filters, and property detail retrieval.
        - Communication functionalities (contact forms, messaging).

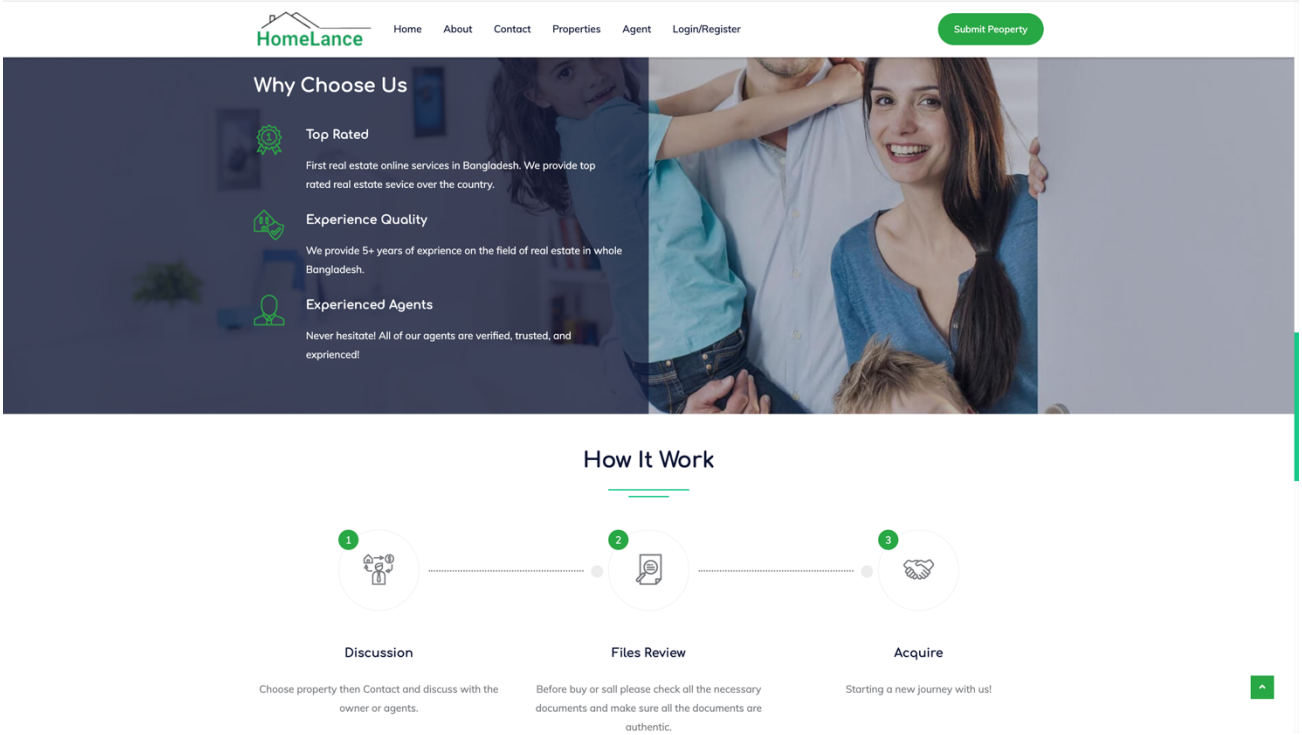
3. **Database Layer**

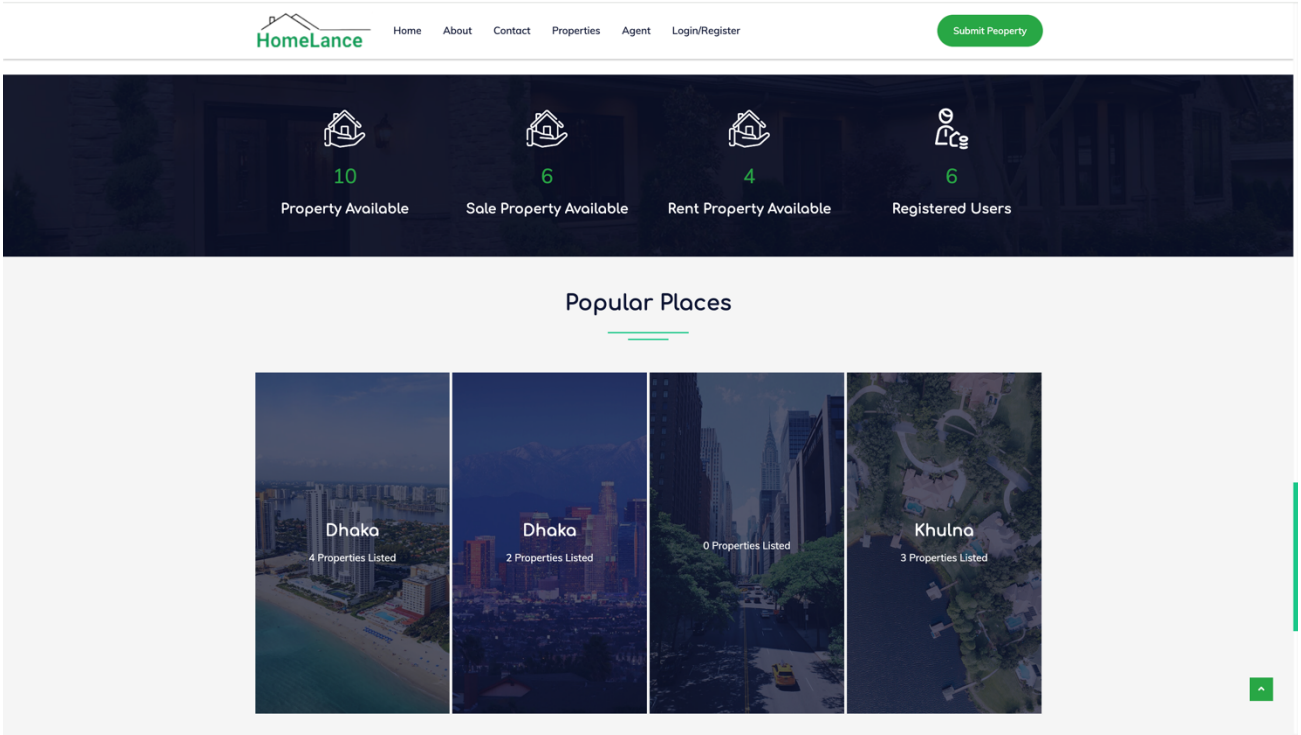
    - Technology: MySQL (managed via phpMyAdmin)
    - Features:

- Storage of user data (e.g., login credentials, feedback).
- Property-related information, including multimedia files.
- Records of transactions and admin activities.

2.1.3 UI Design




HomeLance
Home
About
Contact
Properties
Agent
Login/Register
Submit Peoperty
Why Choose Us
Top Rated
First real estate online services in Bangladesh. We provide top rated real estate sevice over the country.
Experience Quality
We provide 5+ years of exprience on the field of real estate in whole Bangladesh.
Experienced Agents
Never hesitate! All of our agents are verified, trusted, and exprienced!
How It Work
1
2
3
Discussion
Choose property then Contact and discuss with the owner or agents.
Files Review
Before buy or sall please check all the necessary documents and make sure all the documents are authentic.
Acquire
Starting a new journey with us!


HomeLance
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About
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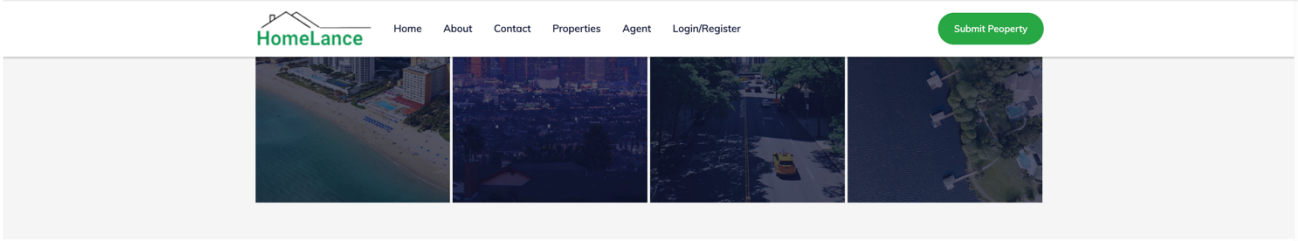
Login/Register
Submit Peoperty
10
Property Available
6
Sale Property Available
4
Rent Property Available
6
Registered Users
Popular Places
Dhaka
4 Properties Listed
Dhaka
2 Properties Listed
0 Properties Listed
Khulna
3 Properties Listed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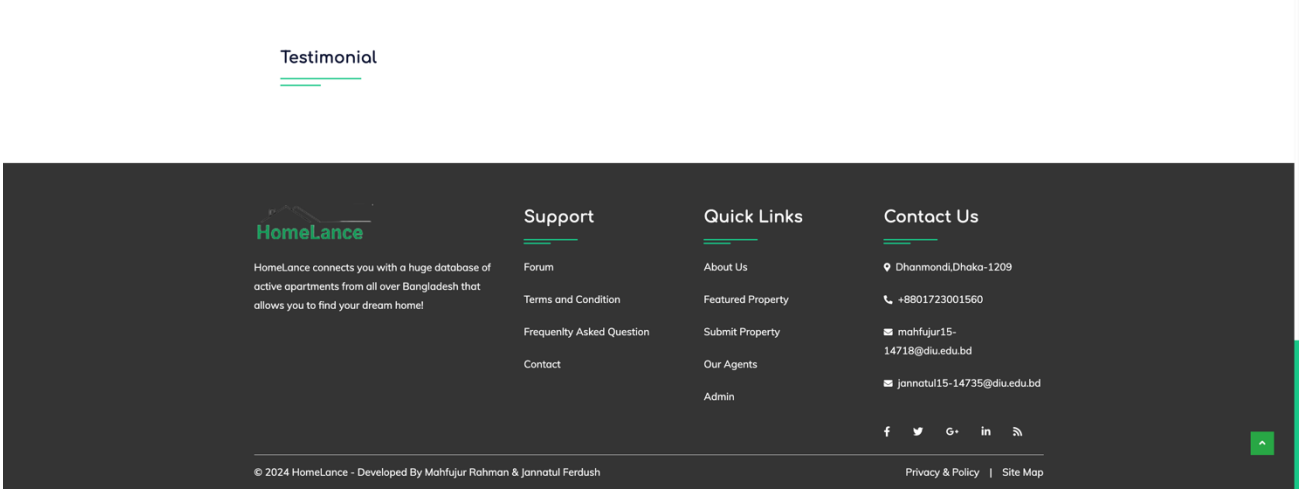
Testimonial
HomeLance
HomeLance connects you with a huge database of active apartments from all over Bangladesh that allows you to find your dream home!
Support
Forum
Terms and Condition
Frequenlty Asked Question
Contact
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Featured Property
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Our Agents
Admin
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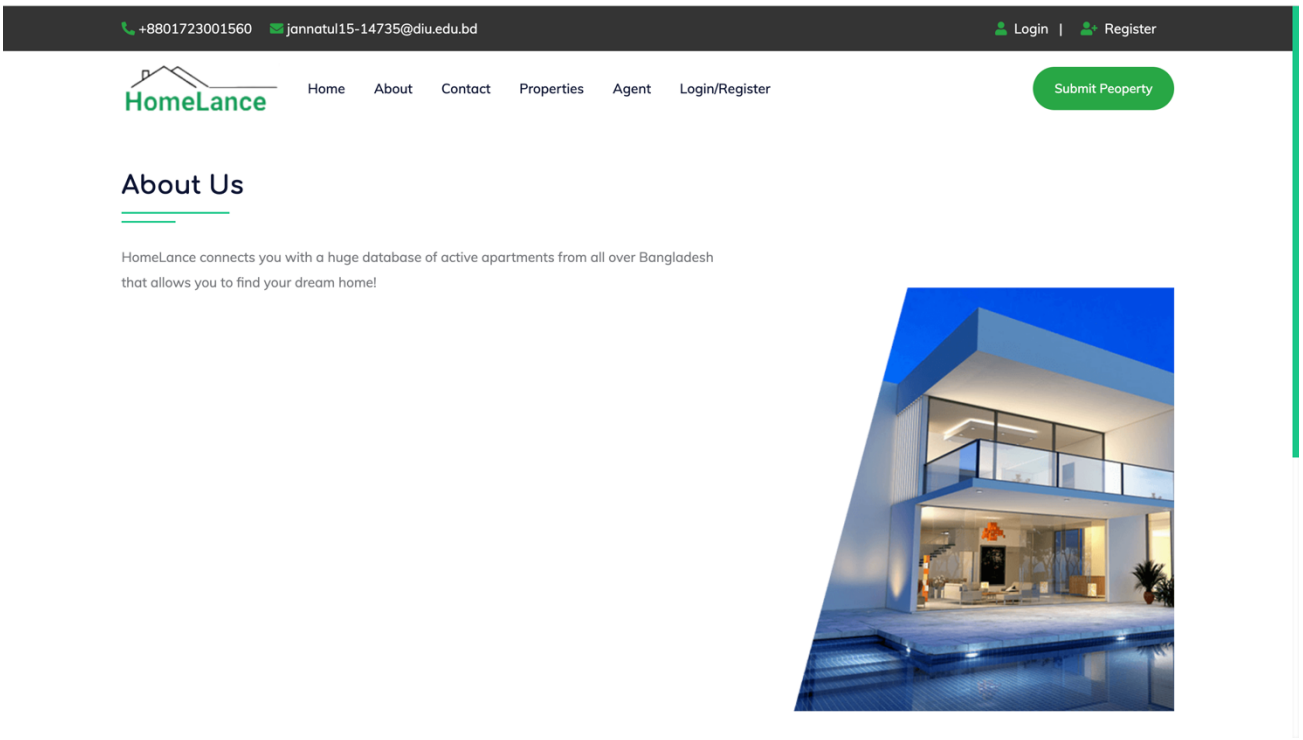
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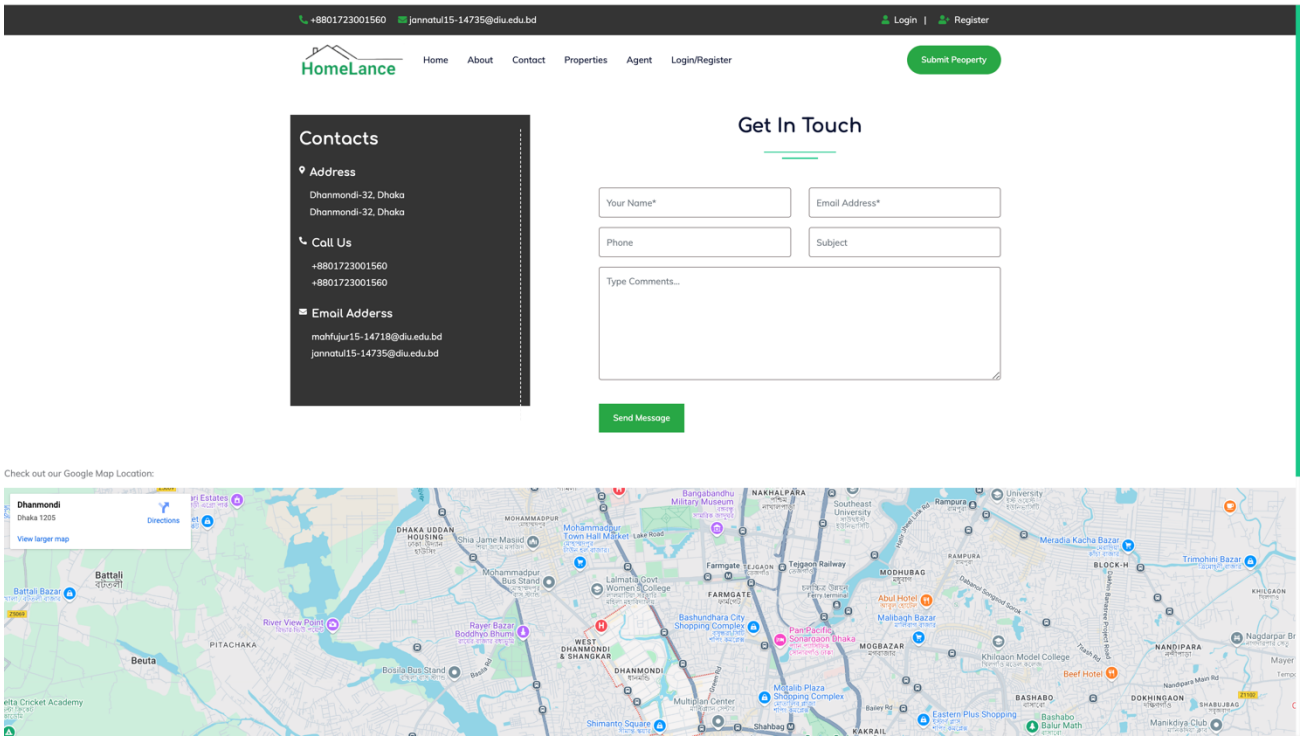
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mahfujur15-14718@diu.edu.bd
jannatul15-14735@diu.edu.bd
Get In Touch
Your Name*
Email Address*
Phone
Subject
Type Comments...
Send Message
Check out our Google Map Location:
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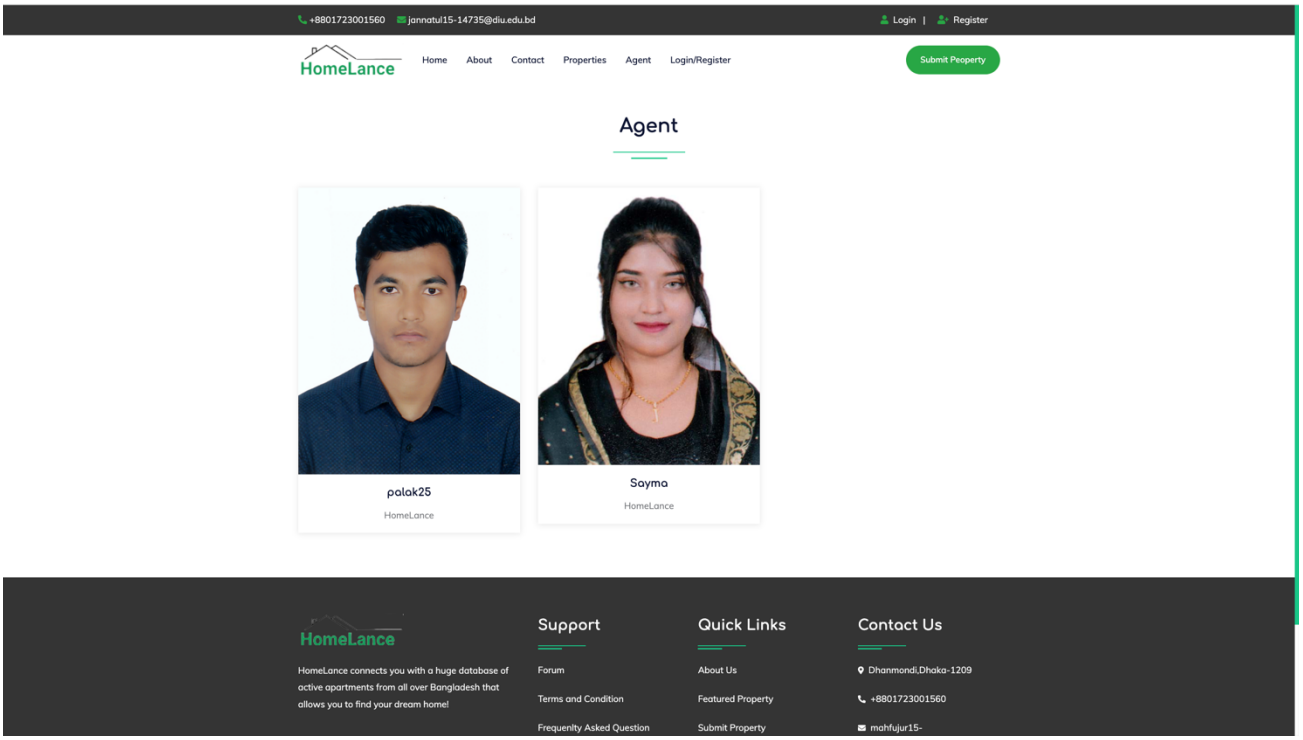
Dhaka 1205
Directions
View larger map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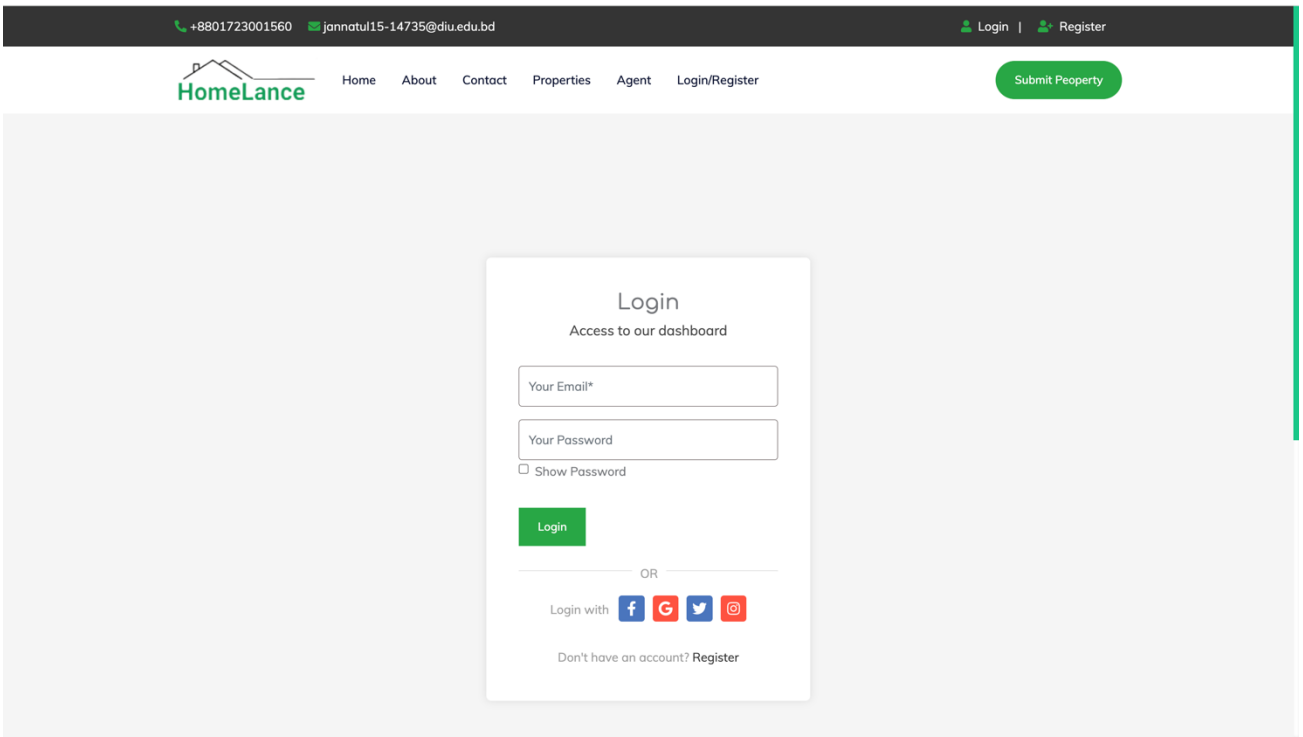
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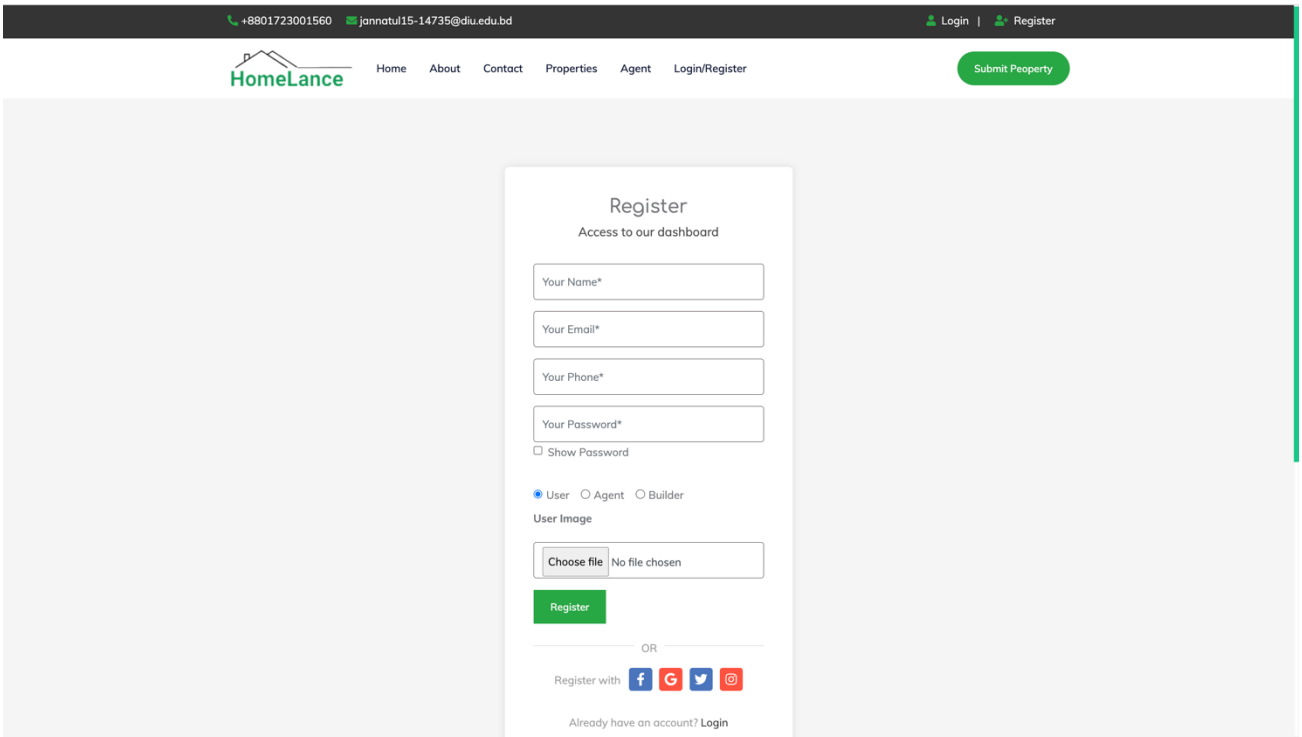
Login
Access to our dashboard
Your Email*
Your Password
Show Password
Login
OR
Login with
Don't have an account? Register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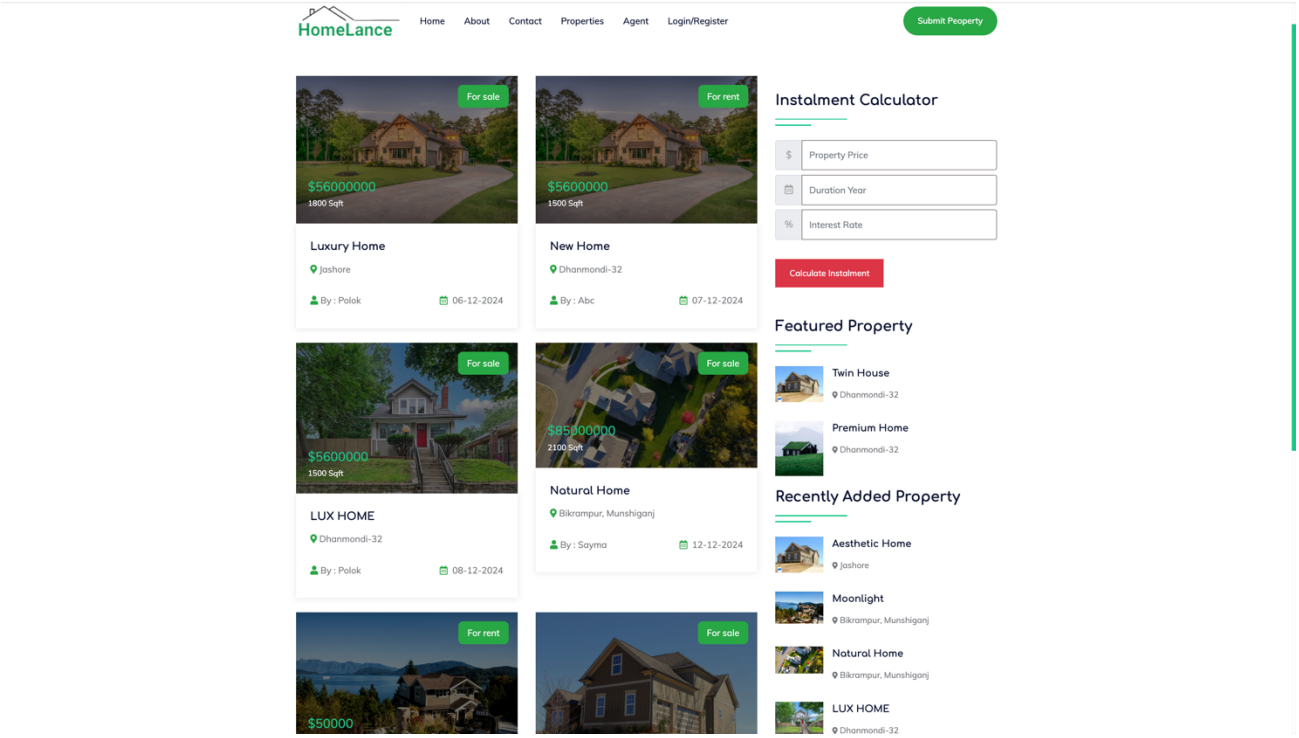
Submit Peoperty
Register
Access to our dashboard
Your Name*
Your Email*
Your Phone*
Your Password*
Show Password
User
Agent
Builder
User Image
Choose file
No file chosen
Register
OR
Register with
Already have an account? Login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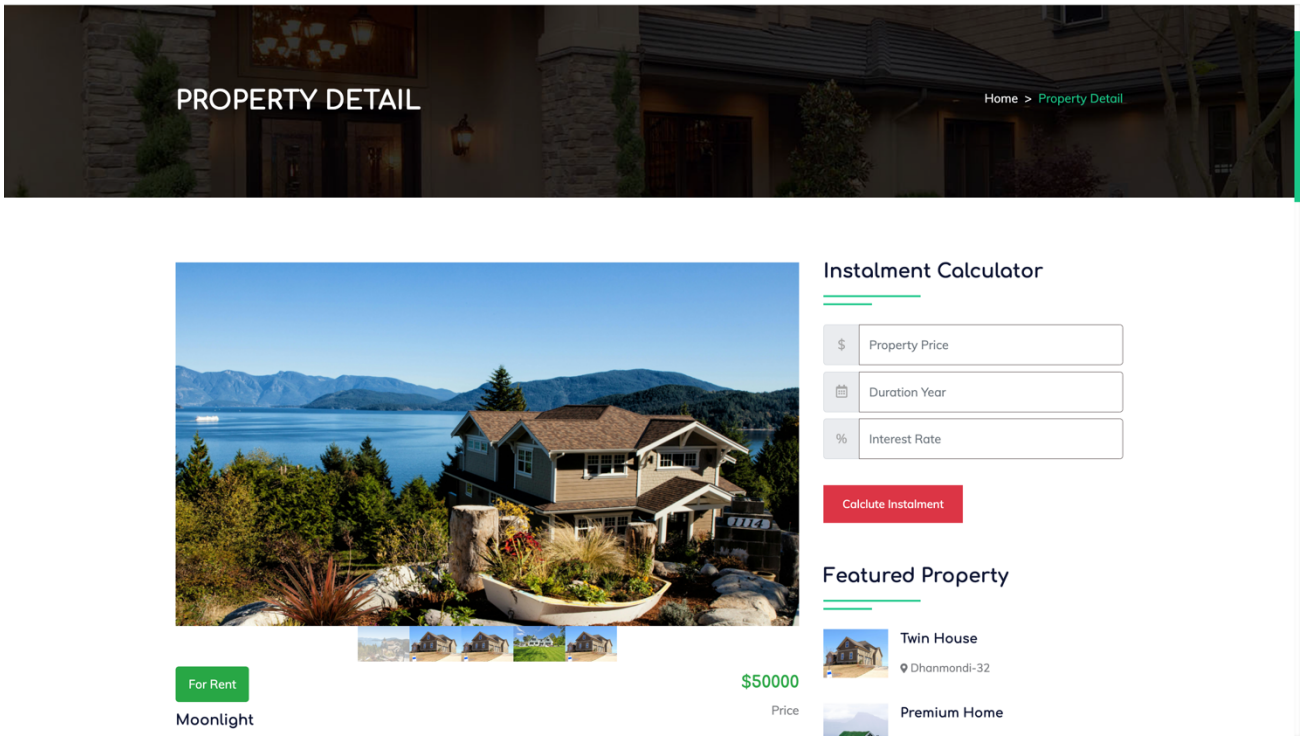
Submit Peoperty
For sale
$56000000
1800 Sqft
Luxury Home
Jashore
By : Polok
06-12-2024
For rent
$5600000
1500 Sqft
New Home
Dhanmondi-32
By : Abc
07-12-2024
For sale
$5600000
1500 Sqft
LUX HOME
Dhanmondi-32
By : Polok
08-12-2024
For sale
$85000000
2100 Sqft
Natural Home
Bikrampur, Munshiganj
By : Sayma
12-12-2024
For rent
$50000
For sale
Instalment Calculator
Property Price
Duration Year
Interest Rate
Calculate Instalment
Featured Property
Twin House
Dhanmondi-32
Premium Home
Dhanmondi-32
Recently Added Property
Aesthetic Home
Jashore
Moonlight
Bikrampur, Munshiganj
Natural Home
Bikrampur, Munshiganj
LUX HOME
Dhanmondi-32


PROPERTY DETAIL
Home > Property Detail
Instalment Calculator
Property Price
Duration Year
Interest Rate
Calclute Instalment
Featured Property
Twin House
Dhanmondi-32
Premium Home
For Rent
Moonlight
$50000
Price

HomeLance

Home About Contact Properties Agent Login/Register

Submit Peoperty

For Rent

$50000

Price

Moonlight

Bikrampur, Munshiganj

1800	5	5	3	1	2
Sqft	Bedroom	Bathroom	Balcony	Hall	Kitchen

Description

This spacious 2,500 sq ft apartment offers comfortable living with 4 bedrooms, 4 bathrooms, and balconies with wide windows for natural light. The well-designed kitchen, ample parking spaces, elevators, and top-notch security with CCTV and fire exits ensure convenience and safety. Electricity backup and dedicated guard and maintenance staff provide peace of mind.

Property Summary

BHK :	3 BHK	Property Type :	Apartment
Floor :	2nd Floor	Total Floor :	7 Floor
City :	Munshiganj	Division :	Dhaka

Features

Dhanmondi-32

Premium Home

Dhanmondi-32

Recently Added Property

Aesthetic Home

Jashore

Moonlight

Bikrampur, Munshiganj

Natural Home

Bikrampur, Munshiganj

LUX HOME

Dhanmondi-32

Twin House

Dhanmondi-32

Hello Home

Dhanmondi-32

Home Square

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Features

Property Age : 10 Years

Type : Apartment

Swiming Pool : Yes

Security : Yes

Parking : Yes

Dining Capacity : 10 People

GYM : Yes

Church/Temple : No

3rd Party : No

Elevator : Yes

CCTV : Yes

Water Supply : Ground Water / Tank

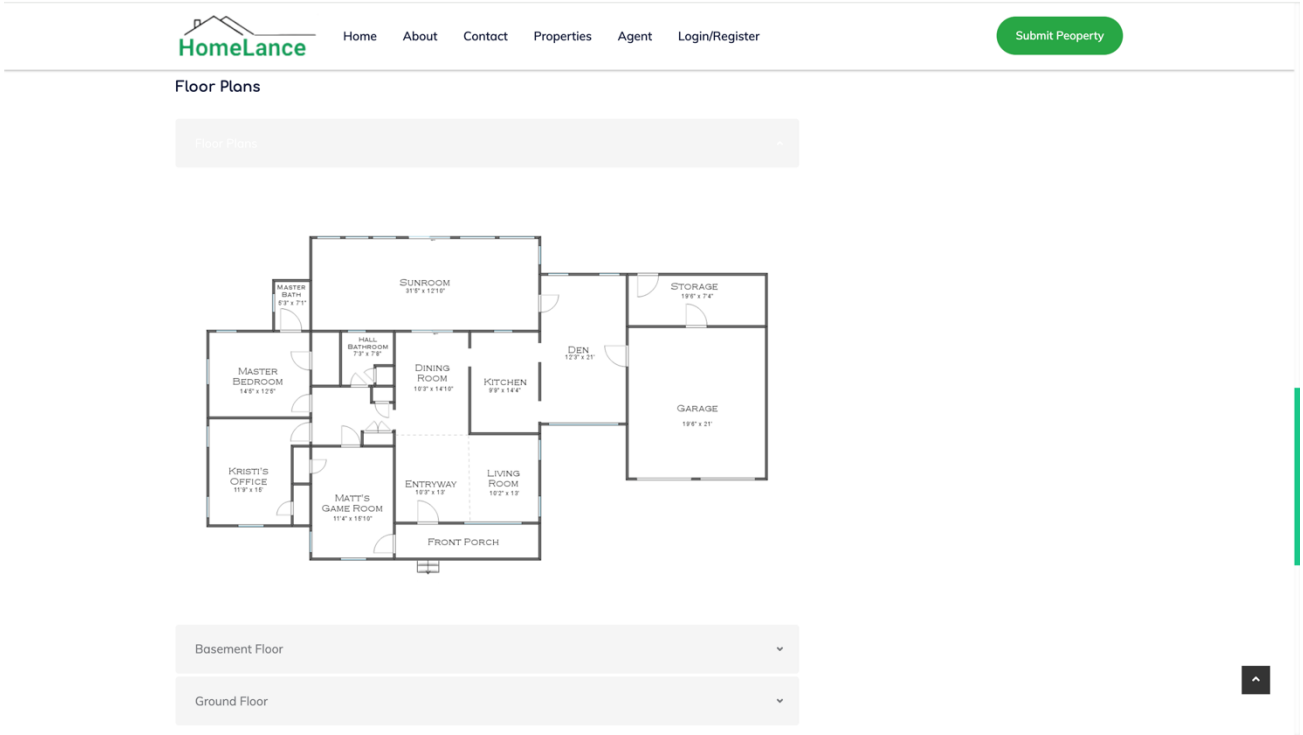
Floor Plans

Floor Plans

Dhanmondi-32

Home Square

Jashore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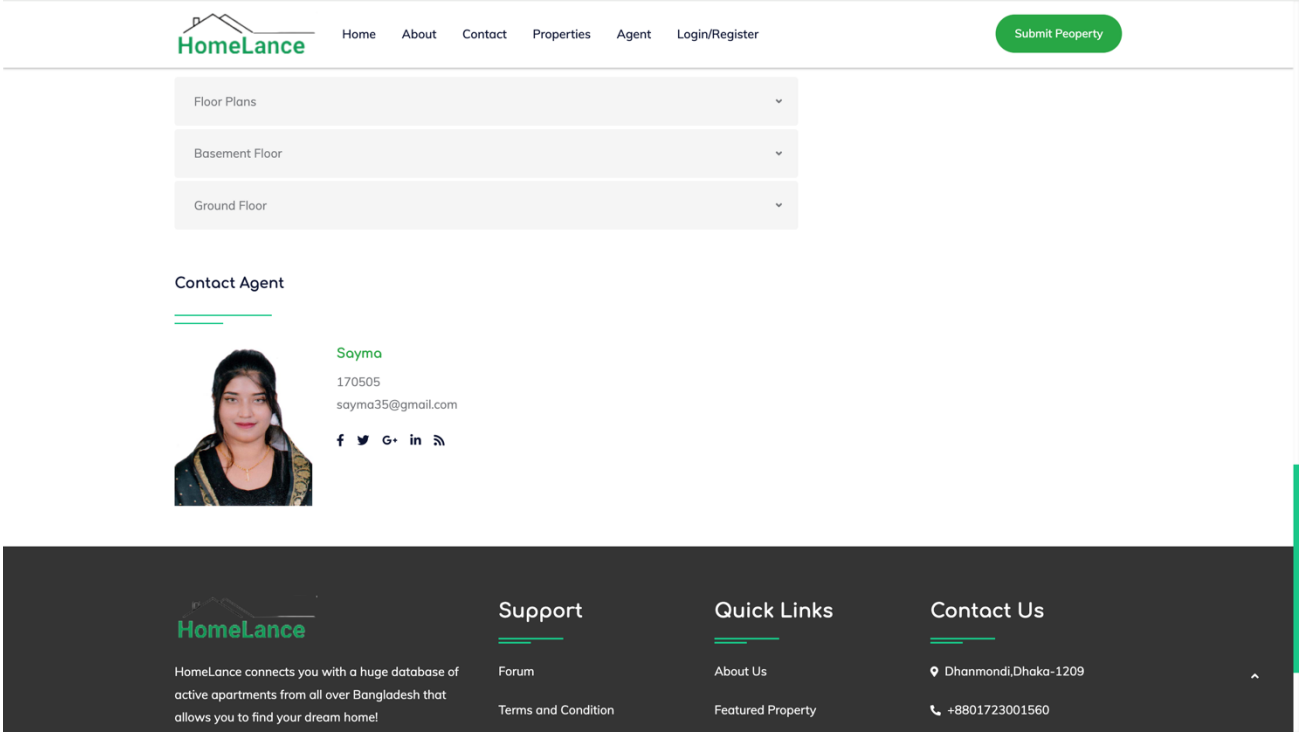
Floor Plans
Sunroom
Master Bath
Storage
Hall Bathroom
Master Bedroom
Dining Room
Kitchen
Den
Garage
Kristi's Office
Matt's Game Room
Entryway
Living Room
Front Porch
Basement Floor
Ground Floor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Basement Floor
Ground Floor
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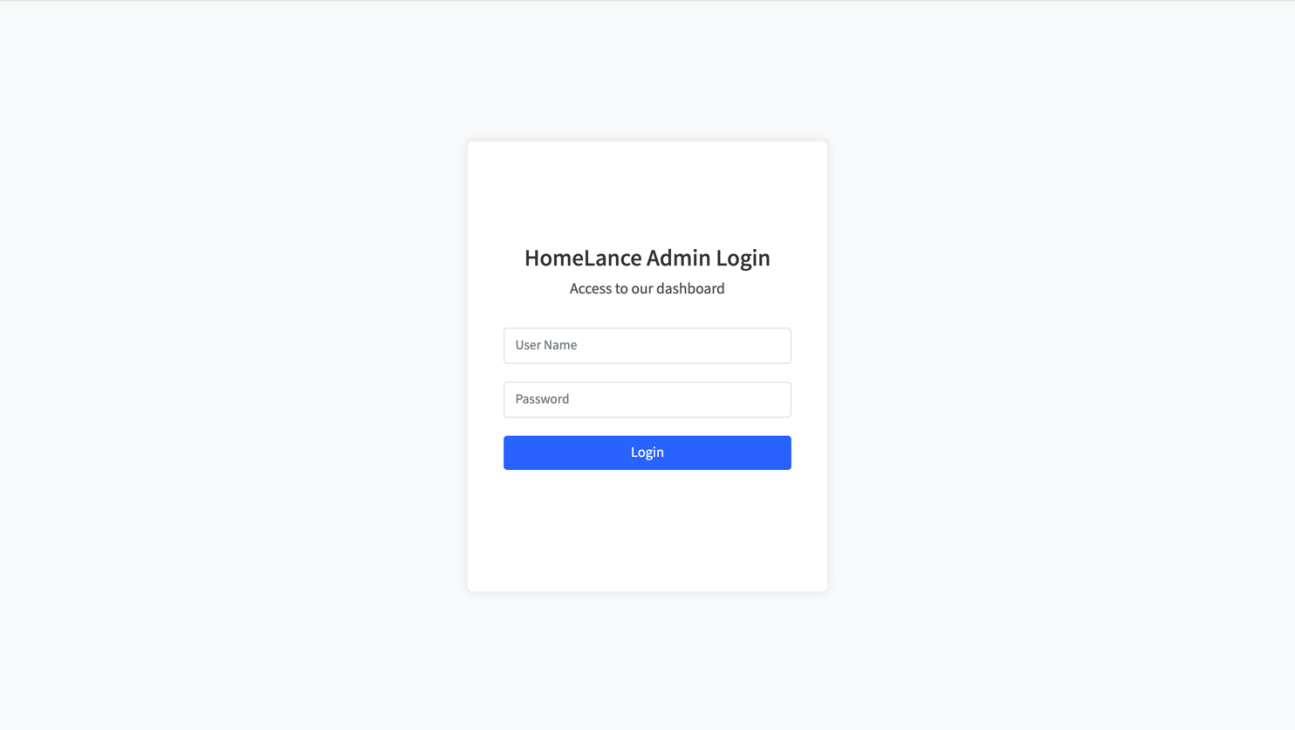
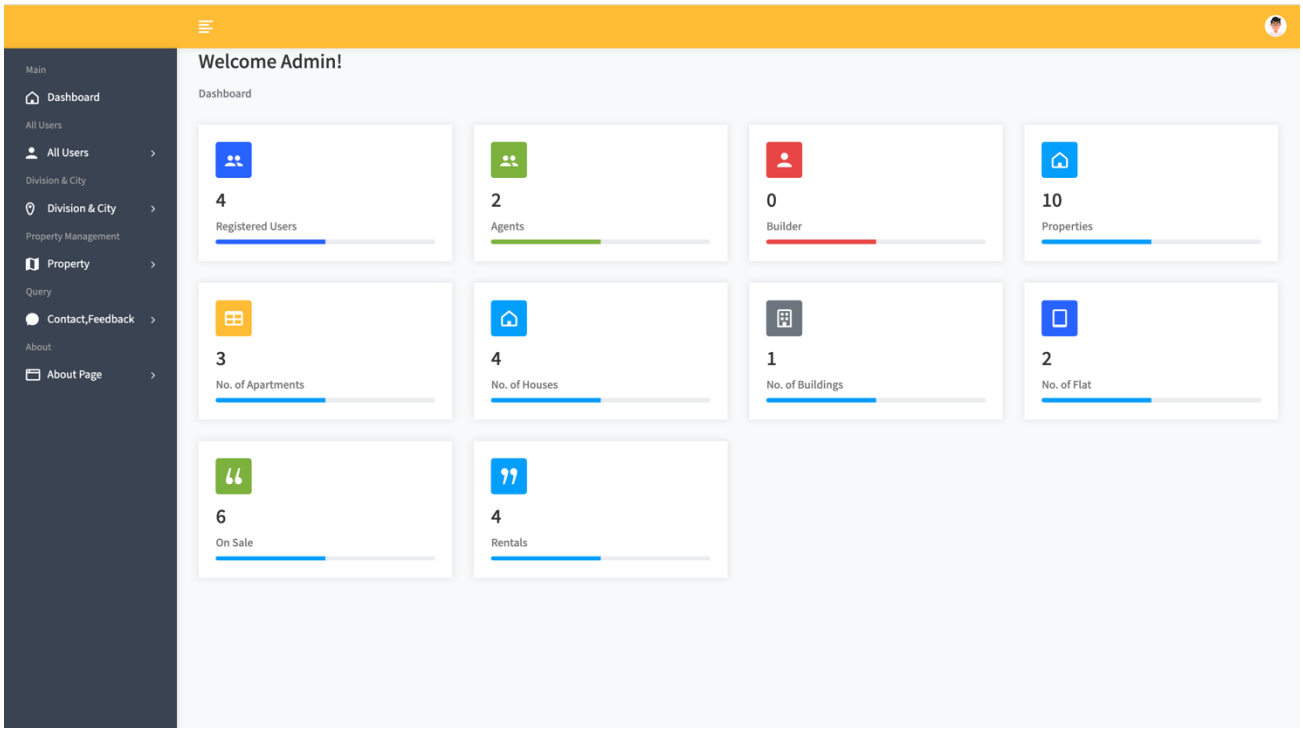

HomeLance Admin Login
Access to our dashboard
User Name
Password
Login


Main
Dashboard
All Users
All Users
Division & City
Division & City
Property Management
Property
Query
Contact,Feedback
About
About Page
Welcome Admin!
Dashboard
4
Registered Users
2
Agents
0
Builder
10
Properties
3
No. of Apartments
4
No. of Houses
1
No. of Buildings
2
No. of Flat
6
On Sale
4
Rentals

2.2 Overall Project Plan

Phases and Milestones

The project is divided into four main phases:

1. **Requirement Gathering and Planning**

    - Objective: Collect system requirements and finalize the design architecture.
    - Deliverables: Requirement specification document, initial UI wireframes, and system architecture plan.

2. **Development**

    - Objective: Develop the frontend and backend components and integrate the database.
    - Deliverables: Functional modules for user registration, property listing, search filters, and admin dashboard.

3. **Testing**

    - Objective: Perform functionality, performance, and user acceptance testing to ensure system reliability and responsiveness.
    - Deliverables: A bug-free, optimized application ready for deployment.

4. **Deployment and Feedback Collection**

    - Objective: Deploy the application on a server and collect user feedback for future updates.
    - Deliverables: Fully operational platform and a feedback report.

Chapter 3

Implementation and Results

This chapter describes the technical implementation of the HomeLance platform, evaluates its performance, and discusses the results obtained during the development and testing phases.

3.1 Implementation

The implementation process of HomeLance involved creating a comprehensive platform using modern web development technologies. The development was divided into the following components:

- **Frontend Development:**
  The user interface was built using HTML, CSS, and JavaScript to ensure responsiveness and interactivity. Users can navigate through the platform easily, perform property searches using filters, and view detailed information about properties, including images and descriptions.
- **Backend Development:**
  Server-side logic was implemented using PHP, which handled tasks such as processing user requests, managing data, and ensuring secure interactions with the database.
- **Database Integration:**
  MySQL, managed via phpMyAdmin, was used to store user details, property listings, and transaction data. Queries were optimized for fast retrieval, ensuring a smooth user experience.
- **Admin Dashboard:**
  An admin panel was developed to allow management of users and property listings. Admins can add, delete, or modify records and monitor platform activity to ensure smooth operations.
- **Additional Features:**
  The platform includes a property installment calculator and integrated contact options (message, email, phone) to directly connect users with property agents.

3.2 Performance Analysis

To ensure the system's efficiency and reliability, several performance metrics were analyzed:

- **Responsiveness:**
  The platform was tested for adaptability to different devices, ensuring consistent functionality and appearance across desktops, tablets, and smartphones.
- **Search Efficiency:**
  Filters such as property type, location, and rent/sell options were optimized to provide instant results, even with large data sets.

- **Scalability:**
  The system's ability to handle increasing numbers of users and property listings was evaluated, confirming its capacity to scale with growing demand.
- **Security:**
  Data security measures were implemented to protect user information and ensure secure communication between the frontend and backend systems.

3.3 Results and Discussion

The HomeLance platform successfully met its objectives by creating a user-friendly, efficient, and secure application for property transactions.

- **Ease of Use:**
  Users found the platform intuitive, with all necessary information accessible in one place. The filter options and installment calculator simplified decision-making processes.
- **Property Visibility:**
  Property owners benefitted from increased visibility and better management of their listings, making it easier to attract potential buyers or tenants.
- **Admin Management:**
  The admin functionalities ensured that the platform remained organized and reliable, enabling smooth operations and maintenance.

The project highlighted the effectiveness of combining modern web technologies to solve real-world problems. Future enhancements could include advanced features like virtual property tours and AI-driven recommendations to further improve the user experience.

Chapter 4

Engineering Standards and Mapping

This chapter provides a detailed analysis of how the HomeLance project aligns with engineering standards, impacts society and the environment, and addresses complex engineering problems. The focus is on ethical aspects, sustainability, project management, and problem-solving methodologies.

4.1 Impact on Society, Environment, and Sustainability

4.1.1 Impact on Life

HomeLance improves quality of life by reducing the time, effort, and cost associated with property transactions. The platform enables users to find properties conveniently and make informed decisions with access to detailed property information and installment calculations.

4.1.2 Impact on Society & Environment

The platform minimizes the need for physical property visits, leading to a reduction in carbon emissions from transportation. It supports digital transformation in the real estate sector, contributing to a sustainable and environmentally friendly ecosystem.

4.1.3 Ethical Aspects

HomeLance adheres to ethical standards by promoting transparency in property transactions. Users are provided with accurate property details, and privacy is ensured through secure data handling and communication protocols.

4.1.4 Sustainability Plan

The platform's sustainability plan includes regular updates to meet user expectations, integration of advanced technologies, and a feedback mechanism for continuous improvement. By adopting a digital-first approach, the platform ensures long-term relevance and minimizes environmental impact.

Goal	Action Plan
Reduce Carbon Footprint	Encourage digital property viewing.
Enhance Platform Longevity	Incorporate user feedback and updates.
Promote Ethical Practices	Ensure data security and transaction clarity.

4.1 Project Management and Team Work

Budget and Revenue Model

The project was developed with a minimal budget due to the use of open-source technologies. The revenue model includes a 5% commission on each property transaction.

Cost Analysis:

- **Development Cost:** BDT 3,00000 (including domain, hosting, and team effort).
- **Maintenance Cost:** BDT 50,000 per year for server and updates.
- **Alternate Budget:** BDT 1,50000 (using cost-optimized hosting and free tier services).

Rationale for Alternate Budget: The alternate budget reduces initial costs without compromising platform functionality, allowing gradual scaling as revenue increases.

Team Work

The project was developed collaboratively, with each team member assigned specific tasks such as frontend development, backend development, database management, and testing. Agile methodology ensured timely delivery and flexibility.

4.2 Complex Engineering Problem

4.2.1 Mapping of Program Outcome

In this section, provide a mapping of the problem and provided solution with targeted Program Outcomes (PO's)

Table 4.1: Justification of Program Outcomes

PO's	Justification
PO1	Demonstrates in-depth knowledge of web development and database management.
PO2	Applies analytical skills to design user-centric property transaction solutions.
PO3	Solves real-world challenges by integrating advanced search filters and tools.

4.3.2 Complex Problem Solving

The project addresses multiple dimensions of problem-solving, as outlined in Table 4.3.

Table 4.3: Mapping with Complex Problem Solving

EP	Dimension	Rationale
EP1	Depth of Knowledge	Expertise in web and database technologies.
EP2	Conflicting Requirements	Balances user needs, admin controls, and scalability.
EP3	Depth of Analysis	Evaluates user feedback for continuous improvement.
EP4	Familiarity with Issues	Considers common challenges in property platforms.
EP5	Applicable Codes	Adheres to web development and data security standards.
EP6	Stakeholder Involvement	Engages property owners, users, and agents actively.
EP7	Interdependence of Components	Ensures smooth integration of frontend, backend, and database.

4.3.3 Engineering Activities

The development process involved a wide range of engineering activities.

Table 4.4: Mapping with Engineering Activities

EA	Activity Dimension	Rationale
EA1	Range of Resources	Utilized open-source technologies efficiently.
EA2	Level of Interaction	Facilitated seamless user-agent communication.
EA3	Innovation	Integrated advanced filtering and installment tools.
EA4	Consequences for Society and Environment	Promotes digital transformation and sustainability.
EA5	Familiarity	Applied known methodologies for robust development.

Chapter 5

Conclusion

This chapter provides a comprehensive overview of the project's outcomes, highlights its limitations, and outlines potential directions for future work to enhance the platform further.

5.1 Summary

The HomeLance project successfully developed a user-friendly platform for property transactions. The application leverages HTML, CSS, JavaScript, PHP, and MySQL to enable seamless interaction between property owners, users, and administrators. Key functionalities such as advanced filtering options, property listing with images, and installment calculations were implemented effectively. The platform addresses gaps in traditional property transaction methods by reducing time, cost, and environmental impact.

5.2 Limitations

Despite its achievements, the project has some limitations:

1. **Geographic Scope**: Currently, the platform is limited to specific locations within Bangladesh.
2. **Scalability**: While functional for a moderate number of users and properties, the system may require optimization to handle larger datasets and concurrent users.
3. **Mobile Optimization**: Although responsive, the user experience on mobile devices can be improved for better accessibility.
4. **Limited Revenue Model**: The reliance on a single revenue stream (5% commission) may need diversification for long-term sustainability.

5.3 Future Work

To overcome the limitations and enhance the platform, several avenues for future development are identified:

1. **Expanded Geographic Coverage**: Extend the platform’s services to other regions and eventually to an international audience.
2. **Advanced Features**: Incorporate features such as real-time chat between users and agents, AR/VR property tours, and AI-driven property recommendations.
3. **Mobile Application**: Develop a dedicated mobile app to improve accessibility and user experience.
4. **Scalability Improvements**: Optimize the database and server architecture to handle increased traffic and larger datasets.

5. **Enhanced Revenue Streams**: Introduce subscription plans for premium features and targeted advertisements for property owners and agents.

By addressing these limitations and implementing future enhancements, the HomeLance platform can continue to evolve as a comprehensive and reliable solution for property transactions, setting a benchmark in the real estate industry.

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