



*Green University of Bangladesh*

*Department of Computer Science and Engineering (CSE)  
Semester: (Fall, Year: 2023), B.Sc. in CSE (Day)*

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# **Housing Marketplace Web Application**

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*Course Title: Integrated Design Project II  
Course Code: CSE 406  
Section: 203 D2*

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[For teachers use only: **Don't write anything inside this box**]

<u>Lab Project Status</u>	
<b>Marks:</b>	<b>Signature:</b>
<b>Comments:</b>	<b>Date:</b>

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# Chapter 1

## Introduction

### 1.1 Overview

The real estate industry is a significant sector of the economy that plays a pivotal role in connecting buyers and sellers of properties. As society embraces the digital age, there is a growing demand for online real estate platforms that simplify property searches, streamline communication, and provide a wealth of information for prospective buyers, renters, sellers, and agents.

With the advancement in technology, the demand for online real estate platforms has been steadily increasing. Buyers and sellers now expect a streamlined and transparent experience. They want to access property information, view high-quality images, and communicate securely with ease, all from the convenience of their computers or mobile devices. It is in this context that the development of a full-stack, responsive real estate website becomes not only relevant but imperative.

This project aims to create a fully responsive, full-stack real estate website using React, catering to the needs of potential buyers and sellers in the real estate market. [1]

### 1.2 Motivation

The motivation behind this project stems from the increasing reliance on digital solutions for everyday tasks. For example, [2]

- In the real estate sector, the need for a user-friendly platform that simplifies property search, provides essential information and facilitates contact between buyers and sellers is evident.
- Our website seeks to address this need by offering a feature-rich, responsive, and intuitive real estate platform.
- One of the key motivators for this project is making easy the complex processes involved in real estate transactions.

## **1.3 Problem Definition**

### **1.3.1 Problem Statement**

The real estate industry faces several critical challenges that hinder its efficiency, transparency, and accessibility. The conventional methods of buying, selling, and renting properties are marked by inefficiencies and a lack of user-centric solutions. This online system has some challenges that has to face them.

The existing real estate platforms often fall short of providing efficient and precise property search and filtering options. Users struggle to find properties that match their specific criteria, leading to time-consuming and frustrating experiences. Property listings frequently lack comprehensive and engaging information. Users may encounter complex and non-intuitive user interfaces that hinder their ability to explore properties effectively.

Effective communication between buyers, renters, sellers, and real estate professionals is essential for successful property transactions. However, existing platforms often lack secure and integrated messaging systems. These challenges collectively contribute to inefficiencies in the real estate industry, leading to lost opportunities for buyers, renters, and sellers, and generating unnecessary frustration and stress in property transactions.

### 1.3.2 Complex Engineering Problem

Table 1.1: Complex Engineer Problem for our Smart Home

Name of the P Attributes	Explain how to address
<b>P1: Real estate website</b>	A real estate website is an online platform designed to facilitate the buying, selling, renting, or leasing of real estate properties, which include residential, commercial, industrial, and land properties.
<b>P2: Conflicting Requirements</b>	No, I didn't have any conflicting requirements.
<b>P3: Depth of analysis for Website</b>	For a real estate website, we should consider various aspects to ensure a comprehensive assessment of the website's performance, usability, and effectiveness.
<b>P4: Familiarity issues of real estate website</b>	A real estate website typically refers to challenges or difficulties that users encounter when they are not accustomed to the platform, its interface, or its unique features. These issues can hinder user engagement, frustrate visitors, and even lead to users abandoning the website.
<b>P5: Stakeholder Involvement</b>	Our project has stakeholder involvement with my course teacher, university, lab technician, lab server, and my university friends all are connected
<b>P6: Interdependence of Web development Project</b>	Yes, I have interdependence for our project.

## 1.4 Design Goals/Objectives

The primary objectives of this real estate website project are to design, develop, and deliver a platform that serves the needs of various stakeholders in the real estate industry. So, the main objectives of this project are:

- To create a user-friendly and responsive real estate website that can be easily accessed by any device, including desktops, laptops, tablets, and mobile phones.
- To implement a full-stack solution that includes a robust backend server to manage data efficiently.
- Develop a comprehensive property listing system that allows property sellers and agents to create detailed property listings.
- To implement advanced search and filtering options to enable users to refine their property searches efficiently. These options should include location-based filters, property type filters, price range filters, and more.

- Create a secure messaging system that facilitates direct communication between property buyers and sellers, ensuring privacy and security.

## **1.5 Application**

The application of this real estate website project is extensive, encompassing a wide range of benefits for various stakeholders within the real estate ecosystem and beyond. There are some of the applications of real estate website:

1. **Efficient Property Search:** The real estate website will provide an intuitive and robust property search feature. Users can easily find properties based on their preferences, including location, price range, property type, and other customizable filters.
2. **Comprehensive Property Information:** Potential buyers and renters will have access to comprehensive property listings.
3. **Time and Effort Savings:** By offering a user-friendly, all-in-one platform, the project aims to save users valuable time and effort that would otherwise be spent on multiple websites or in-person property visits.
4. **Data Analytics:** The website can provide valuable insights into user behavior, market trends, and property performance.
5. **Direct Communication:** The website will incorporate a secure messaging system that facilitates direct communication between sellers/agents and potential buyers/renters