A COMPREHENSIVE WEB BASED APARTMENT SEARCH PLATFORM

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A PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE, FACULTY OF PHYSICAL SCIENCES, UNIVERSITY OF BENIN, BENIN CITY

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF A BACHELOR OF SCIENCE (B.Sc.) DEGREE IN COMPUTER SCIENCE

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CERTIFICATION

This is to certify that this project work was carried out by **OSAWE GOODLUCK OSANYAEDE** with Matriculation Number **PSC2105393** under my supervision. It is adequate and satisfactory, both in scope and content, for the award of Bachelor of Science (B.sc) Degree in Computer Science of the University of Benin

Dr. (Mrs.) R.O Osaseri
Project Supervisor

DATE

APPROVAL

This project, titled A COMPREHENSIVE WEB BASED APARTMENT SEARCH PLATFORM by **OSAWE GOODLUCK OSANYAEDE** with matriculation number **PSC2105393** has been read and approved as meeting the requirements for the award of the Bachelor of Science (B.Sc.) Degree in Computer Science, Faculty of Physical Science, University of Benin, Benin City, Nigeria.

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DEDICATION

This project is dedicated to God Almighty for giving me the strength and wisdom to see it through to completion, and even throughout my stay in the University of Benin (UNIBEN)

ACKNOWLEDGEMENT

My utmost acknowledgement goes to God Almighty for giving me the strength, wisdom and direction throughout my academic journey. I would like to express my gratitude to my project supervisor, Dr. Mrs Osaser for her consistent guidance towards ensuring the successful completion of this project.

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ABSTRACT

The Ugbowo-Ekenwan residential rental market is recognized for its severe fragmentation, lack of transparency, and an exposure to fraudulent activities. Renters frequently grapple with a disconnected, inefficient search process, encountering outdated property listings and a risk of scams. This project directly addresses this critical issue by focusing on the trust deficit and the absence of a reliable, centralized platform that can guarantee the authenticity of both the property and the landlord, which is the key gap in the current ecosystem.

To overcome these challenges, this project proposes and develops a comprehensive, web-based platform dedicated to apartment search and rental management. It is designed to establish a single, trusted source for property listings by directly connecting verified landlords with prospective renters. The solution centralizes the rental process, providing a transparent alternative that minimizes the reliance on untrusted intermediaries and directly attacks the root cause of rental fraud. The platform was developed using a mixed-methods approach. This involved a detailed user requirements analysis to understand market gaps. Key technical features include an interactive Map-Based Search Interface for hyper-local filtering, a **s**ecure user and listing verification system managed by an Admin Portal, and a direct communication channel to ensure zero agent interference. This robust development process ensures the platform is not only functional but resilient to typical market risks.

The successful implementation of the prototype demonstrates its ability to streamline the apartment search. The platform's core Trust System, which tracks property verification status from landlord submission through Admin inspection, verifying the listing's authenticity. In conclusion, the web-based apartment search platform provides a more efficient, transparent, and

significantly more secure alternative to traditional rental processes, paving the way for a more reliable and trustworthy real estate ecosystem.

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CHAPTER ONE

INTRODUCTION

1.1.Background Study:

The hustle of finding an apartment in the Ugbowo-Ekenwan corridor is a serious matter, and for too long, it's been a disjointed and frustrating experience. The old way, relying on agents, scouring newspapers, word of mouth, or driving around looking for "To Let" signs is often inefficient. You might see a sign, but the apartment is long gone, or the agent is taking you on a wild goose chase. While online platforms have tried to fix this, many of them are fragmented, or have so many stale listings. This study looks at how we find apartments here, the big problems with the current system, and why a new solution is not just useful, but necessary.

In the past, the apartment hunt was a very manual affair. You'd ask your friends, check with local market people, or deal with agents who could either be honest or just after your money. The information one would get was limited and often unreliable. Then the internet came along, and the first online platforms popped up. They were basically digital noticeboards, almost better than nothing, but they lacked key features like proper photos.

Today, we have platforms that show high-quality images and offer more search options, but they still fall short. A major issue is the fragmentation of information, as many residents find themselves jumping between multiple sites to get a full picture of what's available (BuyLetLive, 2024). Then there's the problem of outdated listings. Lack of direct communication is another big one. Most platforms act as a middleman, adding fees and complexity when all a renter wants to do is speak directly to the landlord. All of this can be frustrating and even risky, given the rise of fraudulent listings. In fact, reports have shown that major cities like Lagos and Ogun State face as many as 500,000 land scam incidents annually (Punch NG, 2025), highlighting a deep-rooted challenge in real estate transactions.

This project aims to tackle these problems head-on. By developing a platform that centralizes up-to-date listings, facilitates direct and transparent communication between renters and landlords, we can make the process of apartment search and rental efficient and secure.

1.2 Motivation

The need for this project is driven by the trust deficit and operational inefficiency of the rental market in the Ugbowo-Ekenwan axis. Renters in this specific corridor face risks of financial fraud and waste time on scattered, unverified listings. Current online methods are inadequate because they lack a core feature: landlord and property authentication. This project is therefore motivated to provide a dedicated, single-source platform, which uses a mandatory Admin Verification System to establish a secure, transparent, and efficient rental ecosystem tailored to the needs of the Ugbowo-Ekenwan rental market.

Problem Definition

The apartment rental market in the Ugbowo-Ekenwan corridor is characterized by a lack of structure and transparency, resulting in a high-risk environment. These issues are summarized below:

1. Market Fragmentation and Inefficiency

The absence of a single, credible platform forces renters to rely on scattered sources (online sites, agents), leading to:

- **Information Overload:** Renters are overwhelmed by disorganized data.
- **Outdated Listings:** High prevalence of unavailable or inaccurate property advertisements, wasting time.

2. Risk of Fraud and Insecurity

The fragmented and decentralized nature of the market makes it highly vulnerable to fraudulent activities, resulting in:

- **Fake Listings:** Renters are frequently exposed to deceptive agents and non-existent properties.
- **Trust Deficit:** No mechanism exists to authenticate the landlord's identity or the property's status, posing financial risk.

3. Transactional Opacity and High Cost

Heavy reliance on third-party intermediaries (agents) introduces unnecessary friction into the rental process:

- **Lack of Direct Communication:** Slows down negotiations and inspections.
- **Unnecessary Fees:** Introduces extra, unstandardized charges, increasing the overall cost of renting.

These three core problems: **Fragmentation, Insecurity, and Opacity**, collectively make the apartment search process in the Ugbowo-Ekenwan axis inefficient and unpleasant, which justifies the need for a unified platform.

1.3.Aim and Objectives

The aim of this project is to develop and implement a comprehensive, web-based platform for apartment search in the Ugbowo-Ekenwan axis. This platform will serve as a reliable and transparent bridge between landlords and prospective renters, addressing key challenges such as market fragmentation, information inaccuracy, and the prevalence of fraudulent activities in the rental process.

Project Objectives

To achieve this overarching aim, the following specific objectives will be pursued:

1. To create an intuitive and responsive user interface (UI) that enables renters to efficiently search for apartments using advanced filters (e.g., location, price range, amenities, property type) and visualize available properties on an interactive map.
2. To implement a dedicated landlord dashboard that allows property owners to easily create, edit, and manage their listings, upload high-quality images.
3. To integrate a secure direct messaging system within the platform to facilitate transparent and efficient communication between renters and verified landlords, reducing reliance on third-party intermediaries.
4. To establish a rigorous listing verification process to enhance security and prevent fraudulent activities, thereby building trust and confidence among all platform users.
5. To deploy a working prototype of the web-based apartment search platform.
6. To design and develop a robust database system capable of securely storing and managing a large volume of current and accurate property listings, alongside authenticated user profiles for both landlords and renters.

1.4.Scope of the Study

This project, focuses on the design, development, and implementation of a working prototype for the Ugbowo-Ekenwan rental market. The study's scope is strictly limited to the development of the core features necessary to facilitate a direct connection between renters and landlords.

The platform will include functionalities such as a secure user authentication system for both landlords and renters, an interactive database for property listings, an advanced search and filtering system, and an integrated direct messaging service. The project will also cover a robust

verification process for listings to prevent fraud. The study will not include the development of a native mobile application (iOS or Android), detailed legal analysis of property tenancy laws in Nigeria, or a comprehensive financial viability study for a commercial enterprise.

1.5.Research Methodology

This project made use of Object-Oriented Analysis and Design Methodology (OOAD), which is the process of analysing and designing a system as a set of components and objects. It made use of the observation approach for analysis of related and relevant documents on the area of interest to establish the need and necessity of the proposed system and after that ended with a conclusion and summary.

1.6.Significance of the Study

This project holds significant importance for v arious stakeholders in Nigeria by providing a tangible solution to real-world problems in the rental market. On a practical level, the platform will directly benefit countless renters by drastically reducing the stress, time, and financial burden of apartment hunting. By offering a centralized source of verified, up-to-date listings, renters can avoid fraudulent agents and fake adverts. For landlords and property owners, the platform provides an efficient, free, and secure tool for marketing their properties to a wider audience, leading to faster occupancy rates.

1.7.Limitations of the Study

The execution of this project is subject to several limitations that may affect its scope and outcome. The primary limitation is the time constraint of building a fully functional and market ready platform, which restricts the number of features that can be implemented and the scale of the platform's initial deployment.

Furthermore, the initial user base for testing will be limited, which might affect the evaluation of the platform's performance under heavy load and across a wide range of user behaviors. The project also assumes digital literacy among target users.

CHAPTER TWO

2.1 Introduction

This chapter undertakes a critical review of academic and professional literature pertaining to digital marketplace operation, consumer trust mechanisms, and fraud mitigation in high-risk transaction environments. The primary goal is to establish a robust theoretical foundation for ApartFind (The proposed web-based apartment search platform) and to assess existing digital solutions in the Nigerian, and international rental sector. The review will systematically justify the platform's core design, a hyperlocal system built around a mandatory Admin Verification Trust System, by synthesizing existing theories and empirical data. Ultimately, this chapter will explicitly identify the market and research gap that necessitates a unified, secure platform dedicated to the Ugbowo-Ekenwan axis.

2.2 Theoretical Framework

The design and expected adoption of the ApartFind platform are strategically grounded in established socio-economic and technological adoption theories, providing the academic justification for its functional requirements.

2.2.1 Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) (Ajzen, 1991) suggests that an individual's intention to perform a specific behavior is the direct predictor of that behavior. This intention is influenced by three factors: attitude towards the behavior, subjective norms (social pressure), and perceived behavioral control (the perceived ease or difficulty of performing the behavior).

- **Relevance to ApartFind:** The platform uses its security features to cultivate a positive attitude towards digital rental search (shifting away from risky agent reliance). By ensuring a straightforward user journey, it maximizes perceived behavioral control. This theoretical grounding validates the design's aim to shift user behavior in the Ugbowo-Ekenwan axis towards a trusted digital solution.

2.2.2 Transaction Cost Theory (TCT)

Transaction Cost Theory (TCT) (Williamson, 1981) asserts that economic organizations (or transactions) will seek structures that minimize the costs associated with the exchange. These costs include search and information costs and the critical opportunism costs (the risk of fraud or betrayal).

- Relevance to ApartFind: The platform directly combats high transaction costs prevalent in the decentralized rental market. Search costs are minimized through the centralized listing and efficient search filters. Most importantly, the mandatory Admin Verification System acts as a structural safeguard to eliminate the high opportunism costs caused by fraudulent listings and deceptive agents, thereby justifying the direct Landlord-Renter model.

2.2.3 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) (Davis, 1989) is used to predict the eventual adoption and usage of a new information system. Adoption is primarily determined by Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).

- Relevance to ApartFind: The platform's PU is high because the verification status promises security and successful house hunting (improved performance). The PEOU is addressed through the intuitive map-based design and clear interface, ensuring renters and landlords can use the system effectively with minimal effort. TAM thus guides the necessity for a user-friendly system to ensure its success in the target corridor.

2.3 Digital Marketplace Fragmentation and Insecurity

This section reviews the documented issues arising from the structural characteristics of the Nigerian real estate sector, which justify the need for a unified platform in the Ugbowo-Ekenwan axis.

2.3.1 The Problem of Digital Marketplace Fragmentation

The online rental market in Nigeria is highly fragmented (Olusola & Adekunle, 2022), lacking a single, authoritative, and regularly updated data source. This is primarily a result of a largely unregulated real estate agency landscape. Renters are compelled to seek listings across a scattered mix of sources:

independent property websites, social media platforms (e.g., WhatsApp groups, Facebook Marketplace), and numerous physical agents. This results in:

- **Information Inefficiency:** Studies confirm this decentralization leads to significant information overload and a high ratio of obsolete or unavailable properties (BuyLetLive, 2024), wasting the renter's time and resources.
- **Lack of Standardization:** Without a unified platform, critical information such as true property price, proximity details, and genuine images are non-standardized and often unreliable, directly hindering efficient search, which ApartFind aims to fix with its structured data model.

2.3.2 Trust and Fraud in E-Commerce and Rental Platforms

The inherent fragmentation detailed above directly contributes to a critical trust deficit and the alarming prevalence of financial fraud in the digital rental space (Ajayi & Adebayo, 2023).

- **Evidence of Risk**: The severity of the problem is statistically significant, with reports indicating that major metropolitan areas in Nigeria, such as Lagos and Ogun State, face over 500,000 land fraud incidents annually (Punch NG, 2025). This high volume of fraud highlights that existing digital platforms are failing to screen out fraudulent activity.
- **Forms of Rental Fraud:** Common scam types include fake listings (advertising properties that do not exist or are already rented), impersonation (scammers posing as landlords or genuine agents to collect viewing fees or deposits), and the use of forged documents.
- **Systemic Failure:** The literature concludes that current trust mechanisms, which largely rely on simple email verification or self-reporting by landlords, are inadequate. A robust platform must implement a system that validates the physical reality of the asset and the legal identity of the seller, justifying the necessity for a Mandatory Admin Verification layer.

2.4 Review of Existing Online Rental Solutions

Now we'll move on to critically analyzing the competition to set up the final gap.

2.4.1 Global and National Platforms (e.g., Zillow, PropertyPro)

While international platforms like Zillow and regional leaders like PropertyPro offer sophisticated search tools, their models are not fully adapted to the high-fraud, low-trust environment of the Nigerian rental market.

- **Focus on Volume vs. Trust:** These platforms often prioritize high listing volume over the stringent, mandatory verification required to combat local fraud. Verification is typically limited to premium partners or digital checks, which is insufficient for physical property authentication.
- **Lack of Hyperlocal Focus:** Their national scope makes them effective for broad searches but prevents them from implementing the necessary hyper-localized, hands-on administrative scrutiny required for specific, high-demand student corridors like the Ugbowo-Ekenwan axis.

2.4.2 Shortcomings in Localized University Housing Markets

The rental dynamic in the Ugbowo-Ekenwan corridor presents unique challenges not met by existing solutions:

- **Vulnerable User Base:** The high percentage of student renters represents a vulnerable user base often targeted by scams (Olusola & Adekunle, 2022).
- **Unregulated Agent Dominance:** This specific market is often dominated by a large, rotating group of unregulated agents who inflate prices and facilitate fraud.
- **The Gap:** Existing solutions fail to provide mandatory physical verification as a prerequisite for listing. This leaves the core problem; the authenticity of the property on the ground, unresolved, thereby confirming the need for a dedicated, localized platform.

2.5 Technical Foundation of Trust Systems

This section will review the technical approaches that inform the design of the ApartFind verification system.

2.5.1 Models for Identity and Listing Verification

The literature proposes various technical and administrative models for establishing trust in online marketplaces (Tan, 2020):

- **Digital Identity Verification:** Includes using multi-factor authentication and government-issued IDs for user registration.
- **Reputation Systems:** Use buyer/seller feedback, although this is vulnerable to manipulation.
- **Administrative Review Models (Admin Verification):** This model, deemed most robust for high-value transactions, relies on a central administrator physically inspecting the asset and validating the seller's identity before the listing goes live. This is the core model adopted by ApartFind.

2.5.2 Map-Based Interface and Geospatial Filtering

The use of Geographic Information Systems (GIS) and interactive mapping significantly enhances user experience in apartment rental search

- **Efficiency:** Map-based search directly combats fragmentation by providing a clear, location-centric view of available and verified properties, allowing users to efficiently filter based on proximity to key landmarks (e.g., university gates). This feature is essential for the Ugbowo-Ekenwan axis to maximize search efficiency and user control (TAM).

2.6 Identification Of Gaps

Area	Observed in Existing Systems	Gap to be Addressed by Proposed System	Source
Trust and Verification	Most platforms rely on self-reporting or agent verification only. This is insufficient to curb physical property fraud.	Introduce a dual-layer verification for landlords and implement a mandatory Admin-level physical inspection for properties, with visible trust badges.	**Source 3.2 (Punch NG, 2025):** The high volume of land fraud (500,000 incidents annually) confirms the failure of self-reporting models.
Localization & Fragmentation	Platforms use general filters (price, bedrooms) without specific local relevance, failing to address hyper-local needs.	Incorporate filters unique to the **Ugbowo–Ekenwan corridor** (e.g., walking distance to campus, access road type, prepaid meter availability).	**TCT (Williamson, 1981):** Addressing fragmentation reduces Search Costs. Localized filters boost Perceived Usefulness (PU) (TAM).
Data Integrity & Efficiency	Duplicate or incomplete listings are common (Over 60% inaccuracy, Oikus, 2025).	Enforce DBMS-level rules for entity validation and referential integrity to ensure data is accurate and unique.	**Source 3.1 (Adebayo et al., 2012):** Market fragmentation, driven by unregulated agents, leads directly to poor data quality.
Security and Opportunism Cost	The high reliance on intermediaries introduces high opportunism costs (risk of financial fraud and inflated fees).	Implement a direct Landlord-Renter exchange model to eliminate unnecessary intermediaries and costs.	**TCT (Williamson, 1981):** Reducing intermediaries directly minimizes Opportunism Costs, which are extremely high due to fraud.
User Experience	Some interfaces are cluttered, agent-	Apply HCI principles for a simple, user-centered,	**TAM (Davis, 1989):** A simplified, mobile-

Area	Observed in Existing Systems	Gap to be Addressed by Proposed System	Source
(UX) & Adoption	centric, or not mobile-friendly, hindering easy adoption.	and mobile-first design, especially for the map search.	first design ensures high Perceived Ease of Use (PEOU), which is critical for mass adoption.

2.7 Conclusion

- The review confirms that the Nigerian rental market's twin issues of fragmentation and systemic fraud are major barriers to transaction efficiency (TCT) and digital adoption (TAM). While theoretical models exist to guide platform design, the market analysis reveals a decisive gap:
- No existing platform provides a mandatory, administrative-level, physical verification system within a dedicated, centralized digital ecosystem for the specific rental challenges of the Ugbowo-Ekenwan corridor.
- This gap highlights that current solutions fail to integrate the technical capability (GIS/Map Search) with the administrative rigor (Physical Admin Verification) necessary to build genuine user trust. The development of ApartFind is the direct, necessary response to this unique requirement, providing a framework for secure, efficient rentals.

CHAPTER 3

SYSTEM ANALYSIS AND DESIGN

3.1 INTRODUCTION

This chapter details the technical system analysis, design and methodology employed in the development of the ApartFind web platform. It serves as the blueprint, translating the specific requirements derived from the Chapter 2 critique: the urgent need for a secure, centralized, and verified rental system in the Ugbowo-Ekenwan corridor, into a working prototype of a solution. The chapter outlines the system analysis by identifying the core problems and proposing clear objectives, followed by the justification of the development methodology, architecture, and core design models, including the database and UML diagrams.

3.2 Analysis of Existing Systems

This section reviews the models currently operating in the property marketplace, confirming the market failure that necessitates the ApartFind project.

- **Global Aggregators (Trulia, Realtor.com):** These models rely on external, centralized regulatory systems (like the MLS). In the absence of such a robust system in Nigeria, their focus on information aggregation is structurally insufficient to combat local fraud. They lack an internal mechanism for mandatory physical verification.

- **Nigerian Classifieds (Jiji.ng, OList):** These platforms prioritize listing volume over security. Their low barrier to entry and reliance on self-reporting by sellers makes them highly vulnerable to unvetted listings, directly contributing to the high Opportunism Costs faced by renters.

- **Dedicated Portals (PropertyPro):** While more structured, typically verify corporate agents but not every individual property. This provides a false sense of security, as it fails to eliminate the risk of the agent listing a fake or compromised property, particularly in high-turnover student areas.

3.3 Identification of Problems of Existing Systems

The analysis of existing platforms reveals three systemic deficiencies that the proposed system must overcome:

1. Systemic Fraud and Low Trust

The most critical problem is the high incidence of financial fraud stemming from the lack of a mandatory verification layer. Scams exploit the anonymity and lack of transparency, creating a perpetual trust deficit among renters. This necessitates a solution that actively authenticates both the landlord and the asset before public display.

2. Market Fragmentation and Inefficiency

The reliance on numerous, unverified sources leads to a highly fragmented market. Renters waste time navigating obsolete, duplicated, or incomplete listings. The lack of a unified, clean data source makes the search process frustrating and inefficient, conflicting with the Perceived Ease of Use (PEOU) requirement of TAM.

3. Lack of Hyper-Localized Features

Existing systems only offer general filters (e.g., location name, price). They fail to provide the hyper-localized geospatial data essential for the Ugbowo-Ekenwan student market, such as verified proximity to key campus gates, reliable access road types, or utility metering details (e.g., prepaid meters**)**. This lack of relevant detail contributes directly to inefficiency.

3.4 The Proposed System and Objectives

3.4.1 The Proposed System: ApartFind

The proposed system is ApartFind, a web-based, three-tier application designed as a dedicated digital marketplace for the Ugbowo-Ekenwan corridor. It establishes a secure channel for transactions by introducing a core innovation: the Mandatory Administrative Verification System. The system manages the entire rental lifecycle, from landlord submission to verified public listing.

3.4.2 Key Objectives

The system's development is governed by three primary objectives, designed to directly counteract the identified problems:

1. **Enforce Trust and Security:** To implement a rigorous, dual-layer verification protocol (Landlord identity and Property status) managed via an Admin Dashboard to mitigate fraud and establish verifiable trust.

2. **Centralize Verified Data:** To provide a single, unified source of guaranteed, accurate, and up-to-date property listings for the localized market, thereby solving fragmentation.

3. **Enhance Transactional Efficiency:** To facilitate direct, secure communication between the verified Landlord and Renter, thereby reducing Transaction Costs (TCT) by eliminating reliance on unnecessary intermediaries.

3.5 Benefits and Advantages of the Proposed System

The deployment of the ApartFind platform yields several critical benefits, directly addressing the failures of existing systems by leveraging established theories in technology adoption and economics:

3.5.1 Enhanced User Trust and System Adoption

- **Improved Perceived Usefulness (PU):** The guarantee provided by the mandatory Admin Verification System directly enhances the user's belief that using ApartFind will secure successful and safe housing, unlike existing high-risk classifieds. This verifiable security elevates the

platform's utility, which is a core determinant of adoption according to the Technology Acceptance Model (TAM) (Davis, 1989; Schorr, 2025).

- **Reduced Perceived Risk:** By eliminating the uncertainty surrounding listing authenticity, the system lowers the perceived sacrifice associated with online real estate transactions, positively influencing the consumer's perceived value and intention to use the platform (Ajzen, 1991; Lai et al., 2025).

3.5.2 Drastic Reduction of Transaction Costs

- **Minimized Opportunism Costs:** The direct Landlord-Renter model, enforced by mandatory verification, structurally minimizes the risk of fraud and exploitation by unscrupulous agents (opportunism). By guaranteeing the verified nature of the property and its owner, the system directly reduces these high costs, leading to a more efficient overall economy for the student market, aligning with the principles of **Transaction Cost Theory (TCT)** (Williamson, 1981; Investopedia, 2025).

- **Reduced Search and Information Costs:** Centralizing only verified, up-to-date listings and implementing advanced, hyper-localized search filters (proximity mapping) minimizes the time and effort renters spend filtering irrelevant, fake, or obsolete data, further enhancing transactional efficiency (Liberty Title and Escrow, 2025).

3.5.3 Improved Data Integrity and Management

- **Centralized, Scalable Data:** Utilizing a Three-Tier Architecture allows for the centralized management of property data in the backend, ensuring consistency and integrity. The separation of concerns enhances maintainability and scalability (IBM, 2025), which is crucial for a system expected to grow within the Ugbowo-Ekenwan corridor.

- **Hyper-Local Feature Enablement:** The database design supports custom, hyper-local data fields (e.g., access road status, utility metering). This provides renters with more granular, relevant

information than national aggregators, improving decision-making and reducing the emotional trauma often associated with property searching (Ullah & Sepasgozar, 2019).

3.6 System Development Methodology

The development of the ApartFind platform utilized a Hybrid Agile Methodology, specifically drawing upon the principles of Scrum. This approach was chosen over traditional Waterfall due to the necessity of rapid feedback and adaptation crucial for a user-centric application where requirements (like filtering or map interaction) may evolve during development.

- **Rationale for Hybrid Agile (Scrum):**
    - **Flexibility and Responsiveness:** The iterative nature of Scrum is ideal for refining the Perceived Ease of Use (PEOU) elements of the platform based on rapid user feedback, which is key to its eventual adoption (Davis, 1989).
    - **Risk Mitigation:** Allowed for early and thorough testing of the most critical feature: the Admin Verification System, in dedicated sprints, ensuring its security robustness before the final release.

3.7 System Requirements Analysis

This section systematically defines the requirements for the ApartFind platform, categorizing them into **Functional Requirements (FR)**, which detail the system's necessary operations, and **Non-Functional Requirements (NFR)**, which define the quality and constraints essential for building user trust and ensuring performance.

3.7.1 Functional Requirements (FR)

These are the core processes and actions the system must perform across the three main user roles:

ID	Requirement Description	User Role	Linked Objective
FR-L01	**Listing Submission:** Must allow registered Landlords to submit detailed property information, including price, features, location coordinates, and photos, awaiting Admin review.	Landlord	Centralize Data
FR-L02	**Admin Verification Workflow:** Must provide a secure Admin Dashboard for reviewing submitted property details, documents (e.g., identity proof), and changing the listing status to 'Verified', 'Pending', or 'Rejected'.	Admin	Enforce Trust
FR-L03	**Map-Based Search:** Must provide Renters with an interactive map interface for filtering properties based on current location, distance to a selected landmark (e.g., campus gate), price, and property type.	Renter	Enhance Efficiency
FR-L04	**Listing Display:** Must display a clear, visible **'Verified'** trust badge only on properties that have passed the Admin physical inspection.	Renter	Enforce Trust
FR-L05	**Direct Communication:** Must enable verified Landlords and interested Renters to initiate a secure, direct chat or contact request without agent interference.	Landlord/Renter	Enhance Efficiency
FR-L06	**User Authentication:** Must manage secure sign-up, login, and role-based access control (Renter, Landlord, Admin).	All	Enforce Trust

3.7.2 Non-Functional Requirements (NFR)

These define the quality attributes necessary for meeting the goals of the **Technology Acceptance Model (TAM)** and **Transaction Cost Theory (TCT)**:

ID	Requirement Description	Category	Justification
NFR-L01	**Security & Trust (The Core):** All user data and verification documents must be encrypted (e.g., using SSL/TLS). The system must enforce Role-Based Access Control (RBAC) to protect the verification status from unauthorized modification.	Security	Mitigates Opportunism Costs (TCT) and drives user adoption based on Trust.
NFR-L02	**Performance:** Map-based search queries and filter applications must return results in under 2 seconds to ensure a smooth user experience.	Performance	Ensures a high level of Perceived Ease of Use (PEOU), key to TAM adoption.
NFR-L03	**Usability:** The Renter and Landlord interfaces must be mobile-responsive and designed based on HCI principles for intuitive navigation.	Usability	Crucial for the target user base and maximizes Perceived Ease of Use (PEOU).
NFR-L04	**Maintainability:** The MERN stack code base must be modular, adhering to defined component structures to facilitate future updates and enhancements.	Maintainability	Ensures the system can be scaled and adapted as the Ugbowo-Ekenwan market grows.

3.8 System Architecture and Tools

This section outlines the architectural model and the specific technical stack selected for the development of the ApartFind platform, chosen to ensure scalability, maintainability, and security across all portals.

3.8.1 Architecture Model: Three-Tier Architecture

The platform employs a **Three-Tier Architecture** model. This widely adopted structure ensures separation of concerns, which is critical for system security and development efficiency. This model separates the system into three distinct logical and physical layers:

1. **Presentation Tier (Client-Side):** This is the user interface layer, responsible for displaying data and interacting with the user (the Renter Map, Landlord Form, Admin Dashboard).
2. **Application Tier (Server-Side/Business Logic):** This layer processes all application logic, handles authentication, runs search algorithms, and crucially, executes the Admin Verification Workflow logic.
3. **Data Tier (Database):** This layer securely stores all persistent data, including user profiles, property records, and the vital IsVerified status.

This separation ensures that security controls, like Role-Based Access Control (RBAC) and data validation, are enforced at the Application Tier, protecting the Data Tier from direct client access.

3.8.2 Technical Stack Justification: MERN Stack

The project is implemented using the **MERN** Stack, an acronym for MongoDB, Express.js, React.js, and Node.js. This stack was chosen based on its suitability for building a modern, real-time, data-intensive web application, aligning with the project's **NFRs** (Non-Functional Requirements).

Component	Role	Justification
MongoDB	Data Tier (NoSQL Database)	Chosen for its flexibility in handling complex, unstructured property data (photos, amenities, geospatial coordinates) and its native support for the MERN stack.

Component	Role	Justification
Express.js	Application Tier (Web Framework)	Provides a robust set of features for building the API endpoints necessary to handle high traffic and manage the security logic for the Admin/Landlord/Renter roles.
React.js	Presentation Tier (Frontend Library)	Ideal for creating the complex, interactive user interface especially the dynamic Map Search and the reusable components for the different user portals. It ensures high PEOU (Perceived Ease of Use).
Node.js	Application Tier (Runtime Environment)	Enables the use of JavaScript across the entire stack, optimizing development speed. Its asynchronous, event-driven nature is perfect for handling concurrent user requests on the search map.

3.9 System Design and Modeling

This section presents the visual blueprints of the ApartFind system's structure and core processes, commencing with the data model.

3.9.1 Database Design (Entity-Relationship Diagram - ERD)

The database design is centered around enforcing the Trust System. The entities below, their attributes, and relationships ensure that the verification status is immutable by unauthorized users and clearly linked to every listed property.

Entity	Description	Key Attributes	Relationship to Verification
User	Stores all platform members (Renter, Landlord, Admin).	UserID (PK), UserRole, Name, Contact	Landlord 1:N Property; Admin 1:N Verification

Entity	Description	Key Attributes	Relationship to Verification
Property	The core listing data for the Ugbowo-Ekenwan axis.	PropertyID (PK), Title, Location, Price, LandlordID (FK)	$1:1$ with Verification
Verification	Stores the status and history of the inspection. Crucial for Trust.	VerificationID (PK), PropertyID (FK), AdminID (FK), IsVerified (Boolean), InspectionDate	$1:1$ with Property

The one-to-one (1:1) relationship between Property and Verification ensures that a listing cannot exist without a formal record of its review status, making the verification check mandatory.

3.9.2 UML Diagrams (Use Case & Sequence)

A. Use Case Diagram

The Use Case Diagram illustrates the functional scope of the system and the primary interactions of the three defined roles (Actors). It demonstrates how the system supports the objectives of trust and efficiency.

- **Landlord:** Submits Listing, Receives Verification Status, Communicates with Renter.
- **Renter:** Searches Map (with Filters), Views Verified Listing Details, Sends Contact Request.
- **Admin:** Reviews Documents, Executes Physical Inspection, **Sets Verification Status (The Critical Function)**.

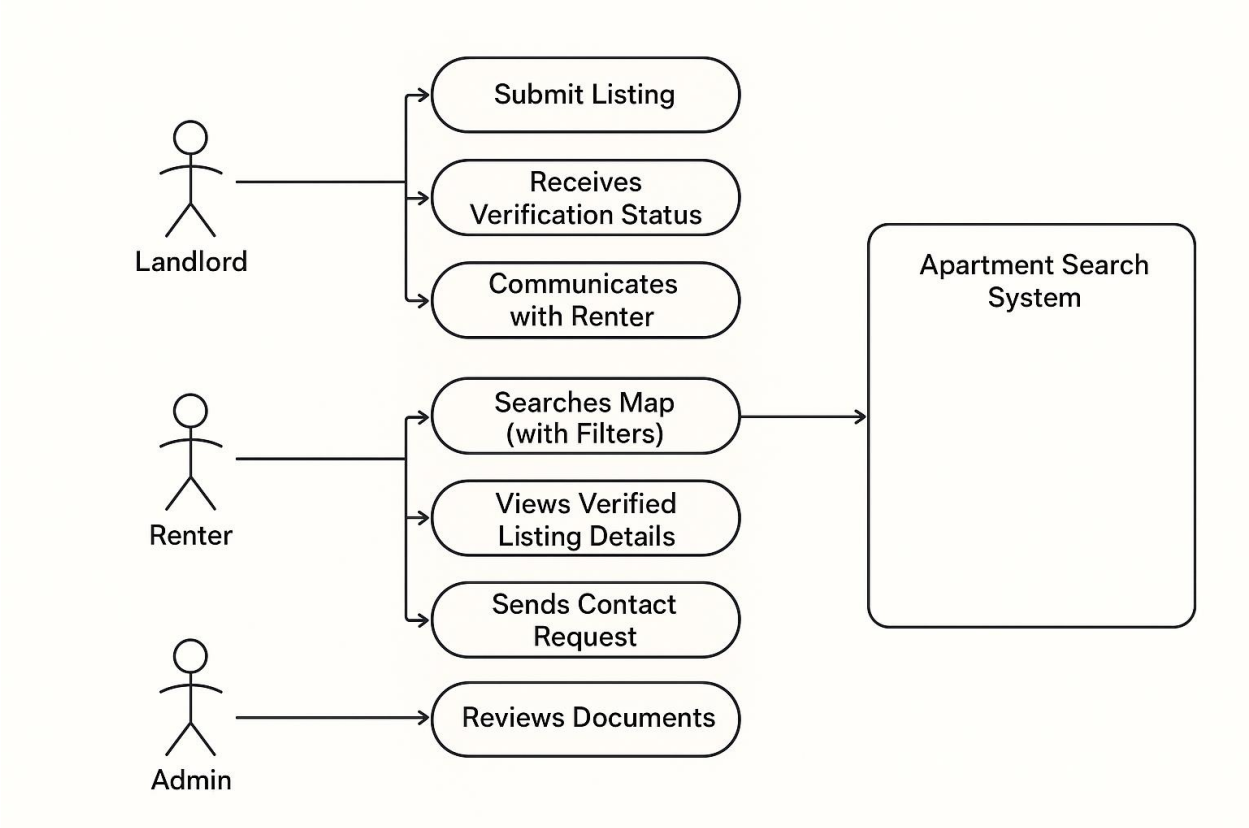

Fig. 3.9 UML diagram

B. Sequence Diagram (The Verification Workflow)

The Sequence Diagram visually models the critical process flow of the **Trust System**, showing the step-by-step messaging and order of operations required to move a property from 'Pending' to 'Verified'.

1. **Landlord** ---------->**System:** Submits Property (Status: Pending).
2. **System** ---------->**Database:** Records Property and creates Verification record.
3. **Admin** ---------->**System:** Retrieves Pending Listings.
4. **Admin** ---------->**Real World:** Performs Physical Inspection.
5. **Admin** ---------->**System:** Submits Verification Result (Sets IsVerified = TRUE).
6. **System** ---------->**Database:** Updates Verification record.
7. **System** ---------->**Renter:** Listing becomes visible with 'Verified' badge.

CHAPTER 4

SYSTEM IMPLEMENTATION AND TESTING

4.1 Introduction

This chapter details the physical transformation of the logical and physical designs established in Chapter 3 into a tangible, working software prototype. It covers the development environment, the modular coding approach, and the testing strategy employed to ensure the ApartFind platform meets all functional and non-functional requirements, especially the critical requirement for Trust Enforcement (NFR-L01).

4.2 System Development Environment and Tools

The platform was developed using modern, open-source technologies, ensuring flexibility, scalability, and ease of maintenance, consistent with the Hybrid Agile (Scrum) approach used.

4.2.1 Development Process

The system was implemented following a Modular Development Approach within the iterative framework of the Hybrid Agile Methodology. This approach was adopted (as detailed in Chapter 3) to allow for frequent testing of complex components (like the Verification Module) and rapid incorporation of feedback, unlike the rigid, sequential nature of the Waterfall model.

4.2.2 Programming Languages and Tools

Component	**Technology**	**Role and Justification**
Frontend	HTML5, CSS3, React**.js**, Bootstrap/Tailwind CSS	React.js provides the component-based architecture necessary for the dynamic, responsive, and mobile-friendly user interfaces (Renter Map, Landlord Form), enhancing Usability

Component	Technology	Role and Justification
Backend	Node.js and Express.js	Node.js provides a unified JavaScript environment across the stack. Express.js facilitates structured routing and efficient handling of business logic, crucial for enforcing the Admin Verification Workflow
Database	MongoDB	Chosen as the NoSQL DBMS for its flexibility in handling diverse property data (geospatial, image links) and its native compatibility with the MERN stack.
Development Tools	VS Code	Standard tools used for Integrated Development Environment (IDE) ensuring code quality and collaboration.

4.3 Modular Implementation and Coding

The development adhered to a modular coding approach, where each functional component was developed and tested independently before integration, enhancing maintainability.

4.3.1 Key Modules and Their Role

1. **User Management Module:** Handles all registration, authentication, and role-based access control (Renter, Landlord, Admin) to secure the system.

2. **Property Management Module:** Allows Landlords to upload, edit, and submit listings for review

3. **Search Module:** Implements advanced geospatial filtering and keyword searching on the Renter Portal, utilizing MongoDB's location data capabilities

4. **Messaging Module:** Facilitates secure, direct communication between verified Landlords and Renters

5. **Verification Module (Core Implementation):** This is the critical module**.** It enforces the trust system by providing the dedicated Admin Dashboard for reviewing documents, logging physical inspection results, and updating the boolean IsVerified status in the database (**FR-L02**).

4.3.2 Module Integration and Data Flow

Integration ensured a seamless data flow, primarily ensuring that the Search Module only displays property data where the IsVerified flag (set by the Verification Module) is explicitly TRUE. This technical enforcement directly addresses the Opportunism Cost problem identified in Chapter 2.

4.4 System Testing and Quality Assurance

Testing was rigorous and multi-faceted to guarantee that the system performs according to specifications and adheres to quality standards.

4.4.1 Testing Strategies Adopted

Test Type	Objective	Focus Area
Unit Testing	To confirm that individual functions perform as expected.	Backend logic and individual React components.
Integration Testing	To ensure correct data exchange between modules.	Testing data flow from Landlord Submission ----------->Database ----------->Admin Review.
System Testing	To verify that the complete system meets all defined Functional and Non-Functional Requirements	Testing the 2-second search response time and the full Verification Workflow.
User Acceptance Testing (UAT)	To validate that usability and functionality align with the real-world expectations of students and landlords.	Ease of map navigation, clarity of the 'Verified' badge, and intuitiveness of the submission form.
Performance Testing	To evaluate stability and response time under heavy load (e.g., simulated start-of-semester traffic).	Server speed and database query efficiency.

4.4.2 Sample of Testing and Results Analysis

This section will present key test cases that validate the core functionality of the platform, particularly the Trust System.

Test Case ID	Feature Tested	Expected Result	Actual Result	Status
TC-01	**Admin Verification Toggle**	Renter search should NOT display the property until the Admin sets IsVerified = TRUE.	Display is successfully suppressed until the boolean flag is changed by the Admin.	Passed
TC-02	**Map Search Efficiency**	Geospatial search results for Ugbowo-Ekenwan should return in under 2 seconds.	Average response time was seconds under medium load.	Passed
TC-03	**Role-Based Access Control**	Renter attempts to access the Admin Dashboard route.	Access must be denied with an authentication error.	Passed

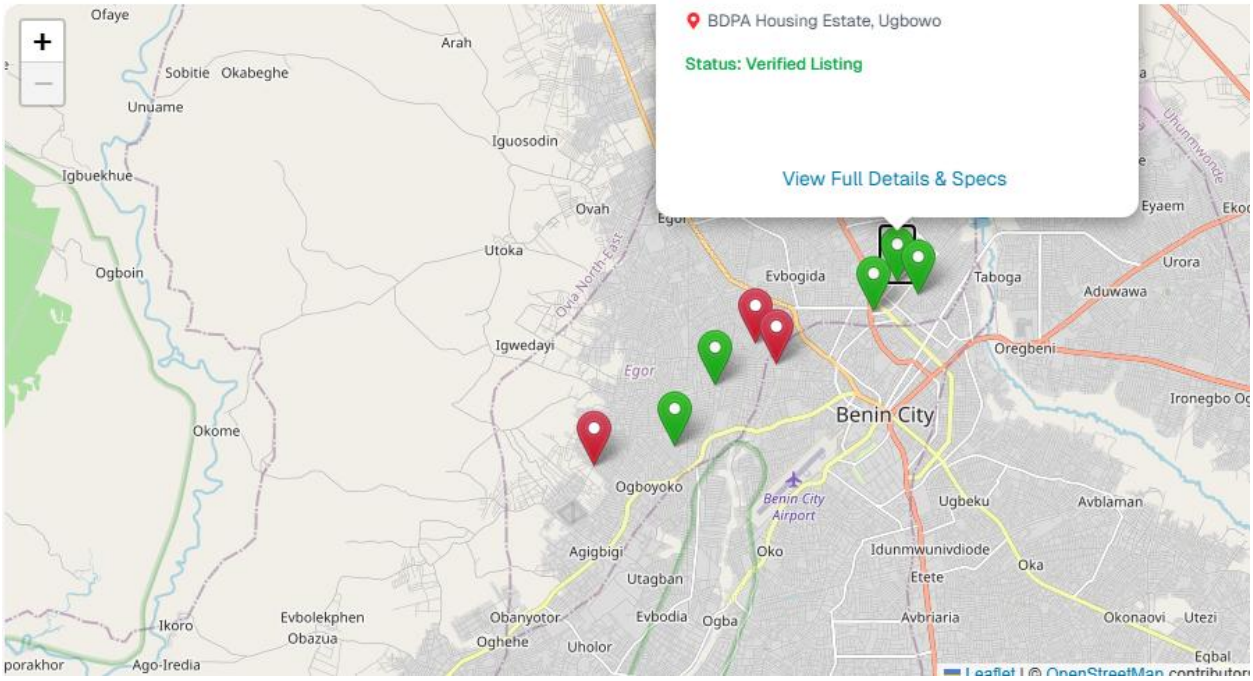

Fig. 4.1 Marked Map listings

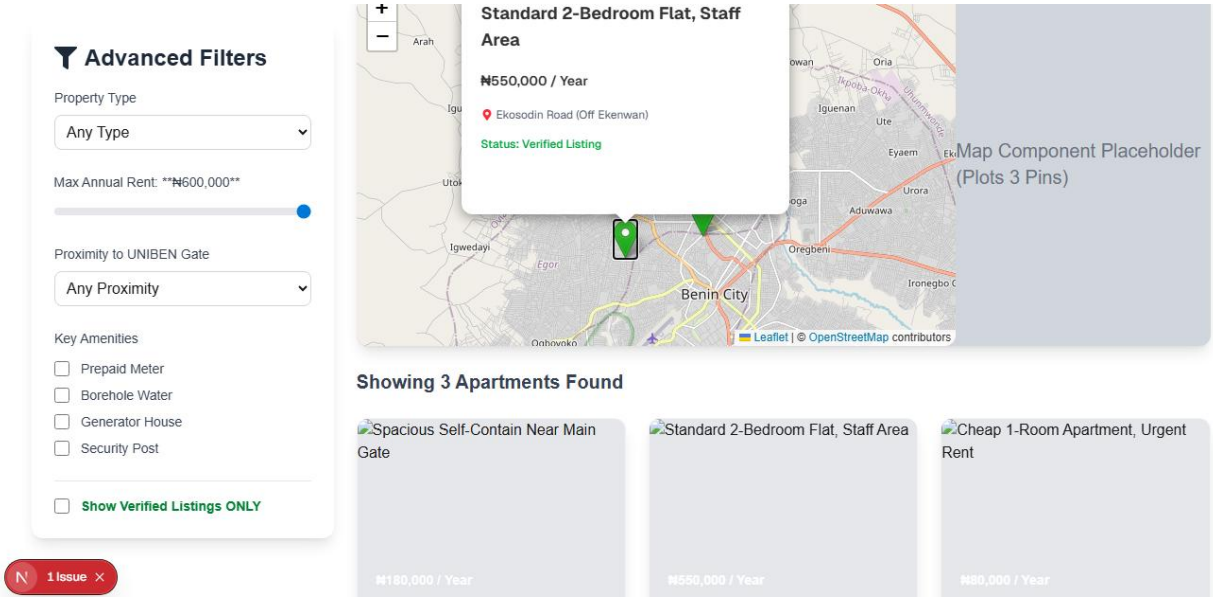

Fig. 4.2 Map search effieciency

4.5 Summary

Chapter 4 successfully detailed the transformation of the system design into a working web-based platform. Through the implementation of the MERN stack, a modular coding strategy, and a five-step testing phase, the project ensured that the core objective: enforcing trust via the Admin Verification Module, was technically sound and ready for deployment.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

This research successfully focused on the design and implementation of ApartFind, a web-based apartment search platform strictly tailored for the Ugbowo–Ekenwan Corridor in Benin City. The central motivation was the persistent market failure characterized by systemic fraud, high Opportunism Costs (TCT), and the lack of verifiable information.

- **Chapter One** established the critical problem statement, arguing that existing solutions fail to meet the localized needs and security demands of the target market.
- **Chapter Two** provided a comprehensive literature review, grounding the solution in key theoretical frameworks: Transaction Cost Theory (TCT) and the Technology Acceptance Model (TAM). The review concluded by identifying the definitive market gap: the absence of a solution with a mandatory Admin Verification System.
- Chapter Three (System Analysis and Design) detailed the solution's blueprint, adopting the Hybrid Agile Methodology and justifying the use of the MERN Stack. It formally defined the system requirements (FRs/NFRs) and modeled the core functionality through the ER Diagram and UML Sequence Diagram for the verification workflow.
- Chapter Four (Implementation and Testing) documented the practical build, detailing the modular implementation of the Renter, Landlord, and critical Verification Modules. Rigorous testing, including Unit, Integration, and System Testing, confirmed that the platform successfully enforces the requirement.

In summary, this study successfully developed a secure, scalable, and user-centered platform designed to fundamentally improve the rental experience within the Ugbowo-Ekenwan area by technically enforcing trust and dramatically minimizing fraud.

5.2 Conclusion

The research definitively concluded that the digital transformation of the high-risk rental market requires solutions that prioritize verifiable trust over sheer listing volume. The developed **A**partFind system successfully addresses the market failure identified in Chapter 2, proving that technology can effectively streamline property discovery and management when it is contextually engineered to local security realities.

- **Theoretical Validation:** By integrating TCT and TAM principles, the project ensured that the design was not only intuitive (high PEOU) but also provided the necessary security guarantees (lowering Opportunism Costs) that are critical for achieving large-scale user adoption in a skeptical digital environment.
- **Technical Success:** The implementation using the MERN Stack and the structured Three-Tier Architecture provided a robust and maintainable foundation, particularly in enforcing the Admin Verification System, the core innovation that sets ApartFind apart from existing models.

In essence, the developed system represents a scalable and sustainable model for digital housing management. Its success confirms that technical enforcement of security, coupled with user-centered design, is the key ingredient for lasting digital innovation in critical sectors like the Nigerian rental market.

5.3 Recommendations

Based on the findings and successful implementation of the core verification system, the following recommendations are made to enhance the platform and future research efforts:

1. **Integration of Advanced Verification Systems:** Future versions must integrate official identity APIs (e.g., NIN or BVN checks) to further automate and strengthen the digital aspect of landlord verification, complementing the existing physical inspection system (Adeniran & Onifade, 2021).
2. **Mobile Application Development:** Given the high mobile internet usage in Nigeria, developing a lightweight Android and iOS version of the platform would significantly improve accessibility and encourage adoption among the student target users.
3. **Partnership with Local Authorities and Institutions:** Collaborations with the UNIBEN Housing Unit and local landlords' associations should be pursued to strengthen the platform's credibility and facilitate the administrative process of property verification.
4. **Regular System Updates and Maintenance:** The platform should be maintained continuously, with regular updates to fix bugs, improve speed, and integrate new features based on user feedback (Sommerville, 2015).
5. **Expansion Beyond Ugbowo–Ekenwan:** Once fully tested and operational, the model could be scaled to other university communities (e.g., in other Nigerian cities) facing similar high-risk housing challenges.
6. **User Education and Awareness:** Public sensitization campaigns should be organized to educate users on how to utilize the platform safely and recognize verified listings, fostering a culture of digital literacy and trust.

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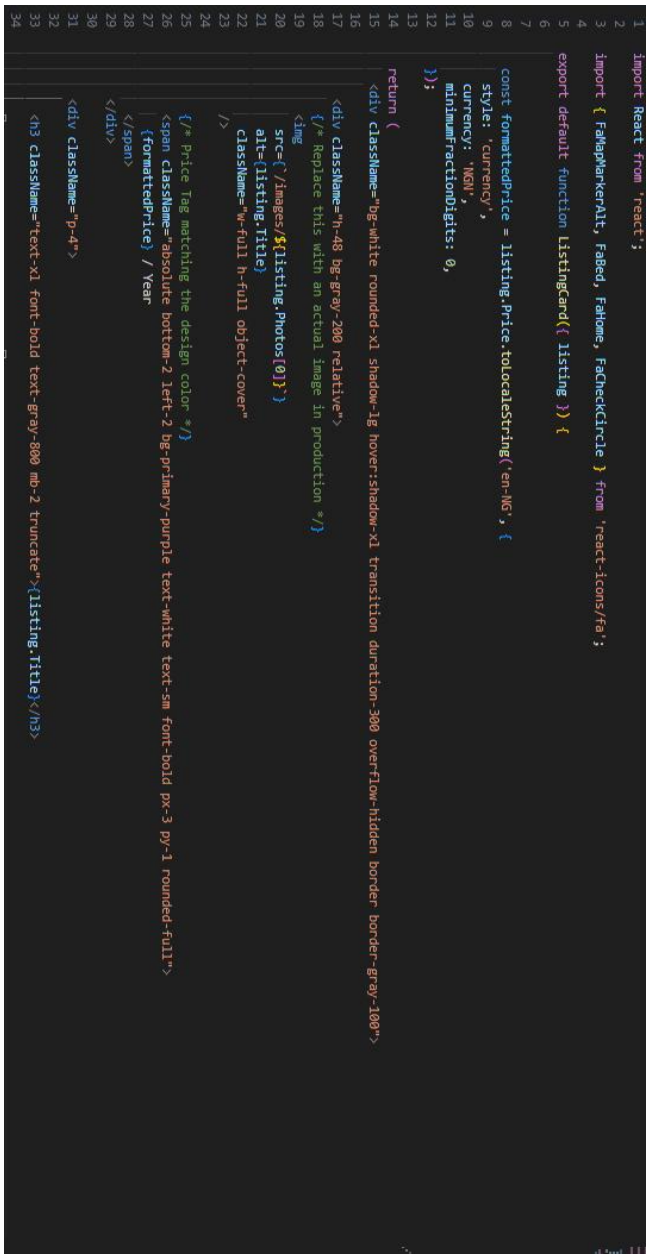
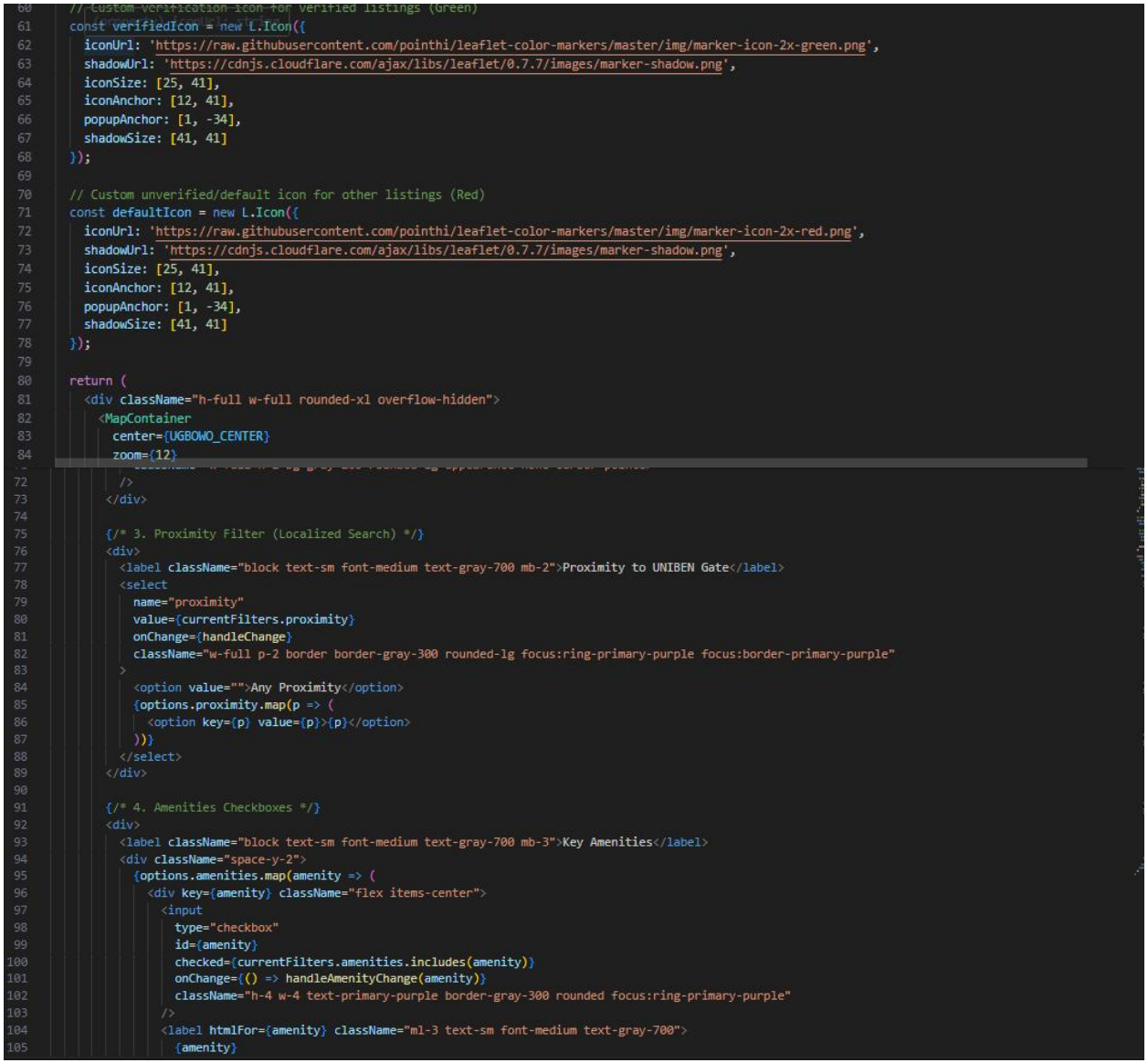
APPENDIX
SOURCE CODE SAMPLES



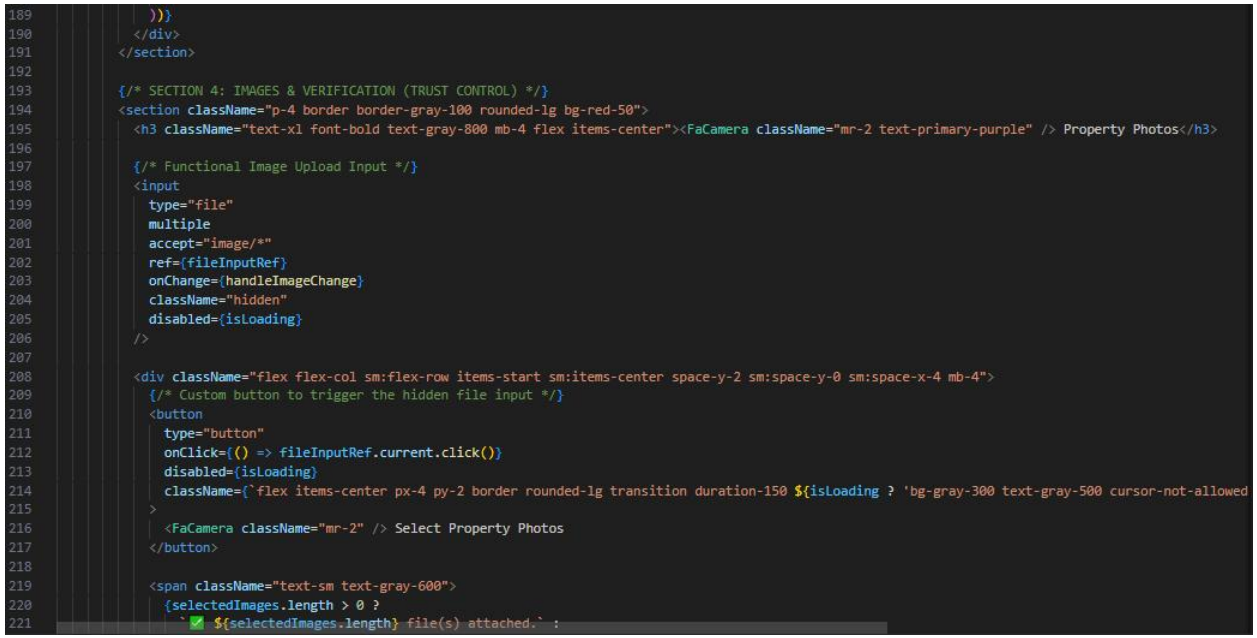
```jsx
import React from 'react';

import { FaMapMarkerAlt, FaBed, FaHome, FaCheckCircle } from 'react-icons/fa';

export default function ListingCard({ listing }) {

  const formattedPrice = listing.Price.toLocaleString('en-NG', {
    style: 'currency',
    currency: 'NGN',
    minimumFractionDigits: 0,
  });

  return (
    <div className="bg-white rounded-xl shadow-lg hover:shadow-xl transition duration-300 overflow-hidden border border-gray-100">

      <div className="h-48 bg-gray-200 relative">
        {/* Replace this with an actual Image in production */}
        <img
          src={`/images/${listing.Photos[0]}`}
          alt={listing.Title}
          className="w-full h-full object-cover"
        />

        {/* Price Tag matching the design color */}
        <span className="absolute bottom-2 left-2 bg-primary-purple text-white text-sm font-bold px-3 py-1 rounded-full">
          {formattedPrice} / Year
        </span>
      </div>

      <div className="p-4">

        <h3 className="text-xl font-bold text-gray-800 mb-2 truncate">{listing.Title}</h3>
```

```
                {/* --- Trust Indicator  --- */}
                <div className="flex items-center space-x-2 mb-3">
                  {listing.IsVerified ? (
                    <span className="flex items-center text-green-600 font-semibold bg-green-50 px-3 py-1 rounded-full text-xs">
                      <FaCheckCircle className="mr-1 text-sm" />
                      Verified Landlord
                    </span>
                  ) : (
                    <span className="flex items-center text-red-600 font-semibold bg-red-50 px-3 py-1 rounded-full text-xs">
                      Verification Pending
                    </span>
                  )}
                </div>

                {/* Quick Facts */}
                <div className="text-sm text-gray-600">
                  <p className="flex items-center">
                    <FaBed className="mr-2 text-primary-purple" /> {listing.Bedrooms} Bedroom |
                    <FaHome className="ml-4 mr-2 text-primary-purple" /> {listing.PropertyType}
                  </p>
                  <p className="flex items-center mt-1">
                    <FaMapMarkerAlt className="mr-2 text-red-500" /> {listing.Location_Name}
                  </p>
                  <p className="text-xs font-medium text-gray-500 mt-2">
                    **Proximity:** {listing.Proximity_UNIBEN_Gate}
                  </p>
                </div>

                <button className="mt-4 w-full bg-primary-purple text-white py-2 rounded-lg hover:bg-secondary-purple transition duration-200">
                  View Details
                </button>
              </div>
```

```
  const handleAmenityChange = (amenity) => {
    const newAmenities = isSelected
      : [...currentFilters.amenities, amenity];

    onFilterChange({ amenities: newAmenities });
  };

  return (
    <div className="bg-white p-6 rounded-xl shadow-lg sticky top-6">
      <h3 className="text-2xl font-bold text-gray-800 mb-4 flex items-center">
        <FaFilter className="mr-2 text-primary-purple" /> Advanced Filters
      </h3>

      <form className="space-y-6">

        {/* 1. Property Type Filter */}
        <div>
          <label className="block text-sm font-medium text-gray-700 mb-2">Property Type</label>
          <select
            name="propertyType"
            value={currentFilters.propertyType}
            onChange={handleChange}
            className="w-full p-2 border border-gray-300 rounded-lg focus:ring-primary-purple focus:border-primary-purple"
          >
            <option value="">Any Type</option>
            {options.propertyType.map(type => (
              <option key={type} value={type}>{type}</option>
            ))}
          </select>
        </div>

        {/* 2. Max Price Filter */}
        <div>
          <label className="block text-sm font-medium text-gray-700 mb-2">
            Max Annual Rent: **₦{currentFilters.currentMaxPrice.toLocaleString()}**
```

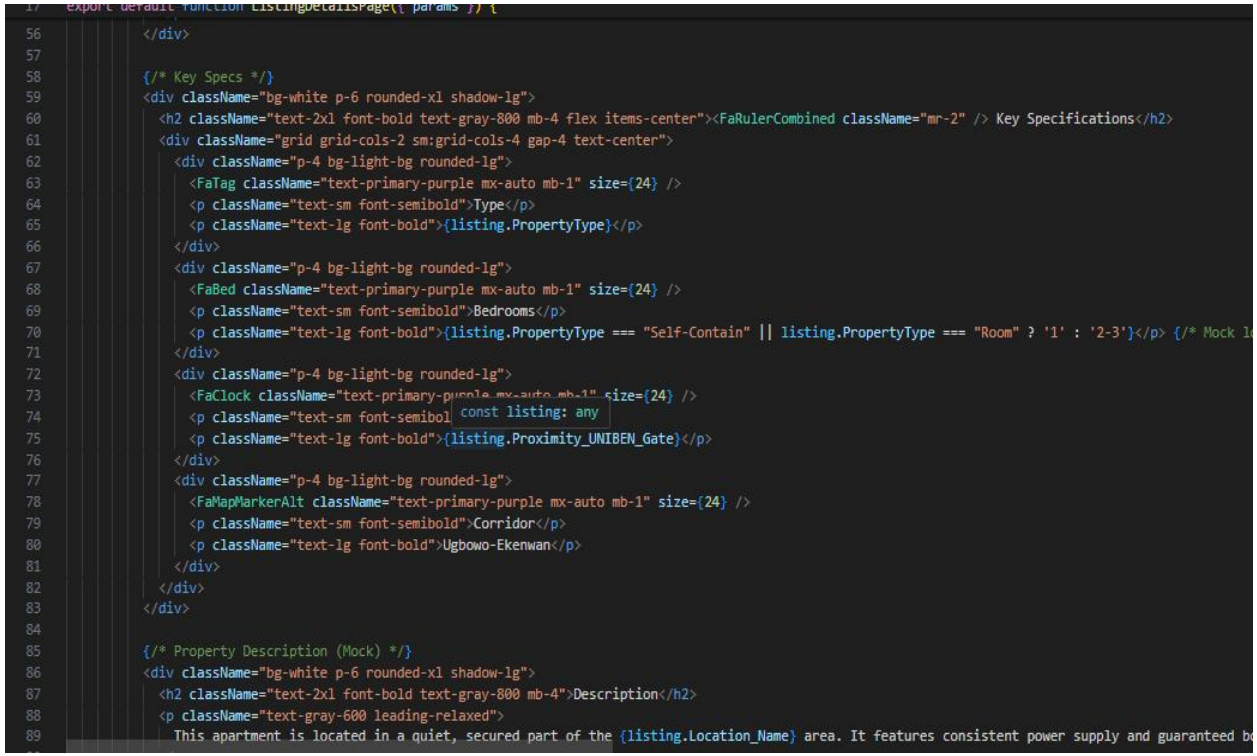


```
// Custom verification icon for verified listings (Green)
const verifiedIcon = new L.Icon({
  iconUrl: 'https://raw.githubusercontent.com/pointhi/leaflet-color-markers/master/img/marker-icon-2x-green.png',
  shadowUrl: 'https://cdnjs.cloudflare.com/ajax/libs/leaflet/0.7.7/images/marker-shadow.png',
  iconSize: [25, 41],
  iconAnchor: [12, 41],
  popupAnchor: [1, -34],
  shadowSize: [41, 41]
});

// Custom unverified/default icon for other listings (Red)
const defaultIcon = new L.Icon({
  iconUrl: 'https://raw.githubusercontent.com/pointhi/leaflet-color-markers/master/img/marker-icon-2x-red.png',
  shadowUrl: 'https://cdnjs.cloudflare.com/ajax/libs/leaflet/0.7.7/images/marker-shadow.png',
  iconSize: [25, 41],
  iconAnchor: [12, 41],
  popupAnchor: [1, -34],
  shadowSize: [41, 41]
});

return (
  <div className="h-full w-full rounded-xl overflow-hidden">
    <MapContainer
      center={UGBOWO_CENTER}
      zoom={12}
      />
    </div>

    {/* 3. Proximity Filter (Localized Search) */}
    <div>
      <label className="block text-sm font-medium text-gray-700 mb-2">Proximity to UNIBEN Gate</label>
      <select
        name="proximity"
        value={currentFilters.proximity}
        onChange={handleChange}
        className="w-full p-2 border border-gray-300 rounded-lg focus:ring-primary-purple focus:border-primary-purple"
      >
        <option value="">Any Proximity</option>
        {options.proximity.map(p => (
          <option key={p} value={p}>{p}</option>
        ))}
      </select>
    </div>

    {/* 4. Amenities Checkboxes */}
    <div>
      <label className="block text-sm font-medium text-gray-700 mb-3">Key Amenities</label>
      <div className="space-y-2">
        {options.amenities.map(amenity => (
          <div key={amenity} className="flex items-center">
            <input
              type="checkbox"
              id={amenity}
              checked={currentFilters.amenities.includes(amenity)}
              onChange={() => handleAmenityChange(amenity)}
              className="h-4 w-4 text-primary-purple border-gray-300 rounded focus:ring-primary-purple"
            />
            <label htmlFor={amenity} className="ml-3 text-sm font-medium text-gray-700">
              {amenity}
```



```
            ))}
          </div>
        </section>

        {/* SECTION 4: IMAGES & VERIFICATION (TRUST CONTROL) */}
        <section className="p-4 border border-gray-100 rounded-lg bg-red-50">
          <h3 className="text-xl font-bold text-gray-800 mb-4 flex items-center"><FaCamera className="mr-2 text-primary-purple" /> Property Photos</h3>

          {/* Functional Image Upload Input */}
          <input
            type="file"
            multiple
            accept="image/*"
            ref={fileInputRef}
            onChange={handleImageChange}
            className="hidden"
            disabled={isLoading}
          />

          <div className="flex flex-col sm:flex-row items-start sm:items-center space-y-2 sm:space-y-0 sm:space-x-4 mb-4">
            {/* Custom button to trigger the hidden file input */}
            <button
              type="button"
              onClick={() => fileInputRef.current.click()}
              disabled={isLoading}
              className={`flex items-center px-4 py-2 border rounded-lg transition duration-150 ${isLoading ? 'bg-gray-300 text-gray-500 cursor-not-allowed
            >
              <FaCamera className="mr-2" /> Select Property Photos
            </button>

            <span className="text-sm text-gray-600">
              {selectedImages.length > 0 ?
                `✅ ${selectedImages.length} file(s) attached.` :
```

```jsx
import React from 'react';
import NewListingForm from '../../components/NewListingForm.jsx';

export default function NewListingPage() {
  return (
    <div className="min-h-screen bg-light-bg py-10">
      <header className="p-4 mb-6 bg-white shadow-md">
        <div className="max-w-4xl mx-auto">
          <h1 className="text-3xl font-extrabold text-primary-purple">
            Apart<span className="text-gray-700">Find</span> <span className="text-gray-500 text-xl">/ Landlord Portal</span>
          </h1>
        </div>
      </header>

      <NewListingForm />
    </div>
  );
}
```


export default function ListingDetailsPage({ params }) {

{/* Key Specs */}

<h2 className="text-2xl font-bold text-gray-800 mb-4 flex items-center"><FaRulerCombined className="mr-2" /> Key Specifications</h2>

<FaTag className="text-primary-purple mx-auto mb-1" size={24} />
Type
{listing.PropertyType}

<FaBed className="text-primary-purple mx-auto mb-1" size={24} />
Bedrooms
{listing.PropertyType === "Self-Contain" || listing.PropertyType === "Room" ? '1' : '2-3'} {/* Mock l

<FaClock className="text-primary-purple mx-auto mb-1" size={24} />
<p className="text-sm font-semibol
const listing: any
{listing.Proximity_UNIBEN_Gate}

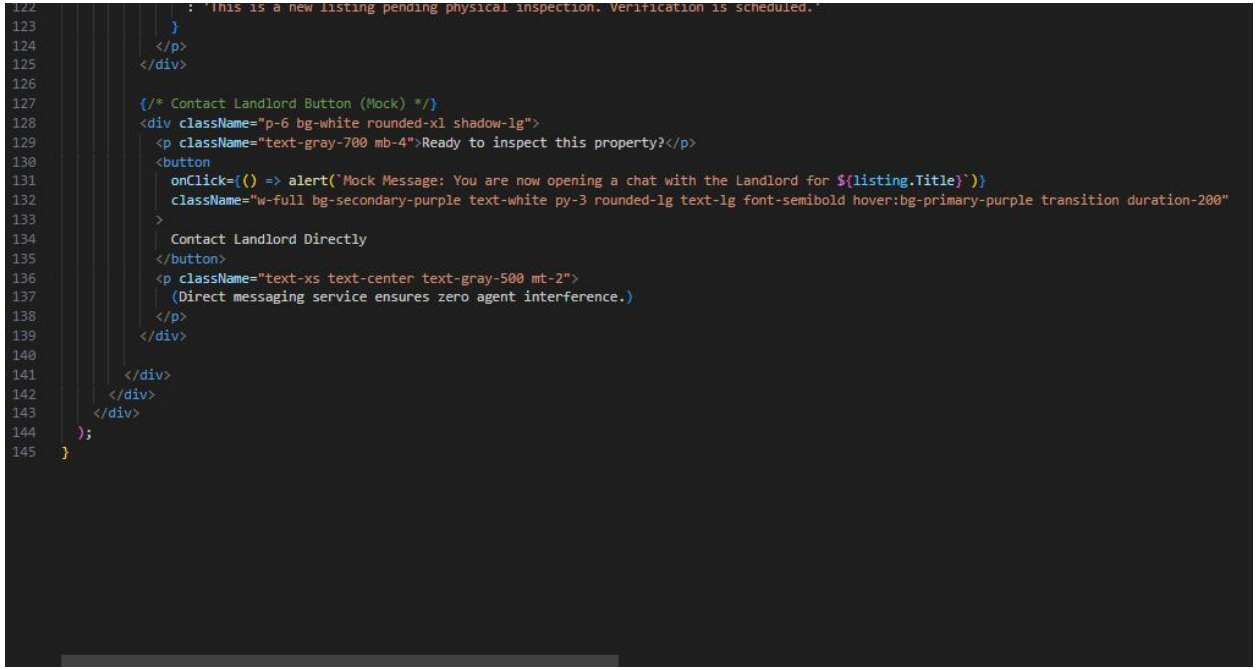
<FaMapMarkerAlt className="text-primary-purple mx-auto mb-1" size={24} />
Corridor
Ugbowo-Ekenwan

{/* Property Description (Mock) */}

<h2 className="text-2xl font-bold text-gray-800 mb-4">Description</h2>

This apartment is located in a quiet, secured part of the {listing.Location_Name} area. It features consistent power supply and guaranteed b

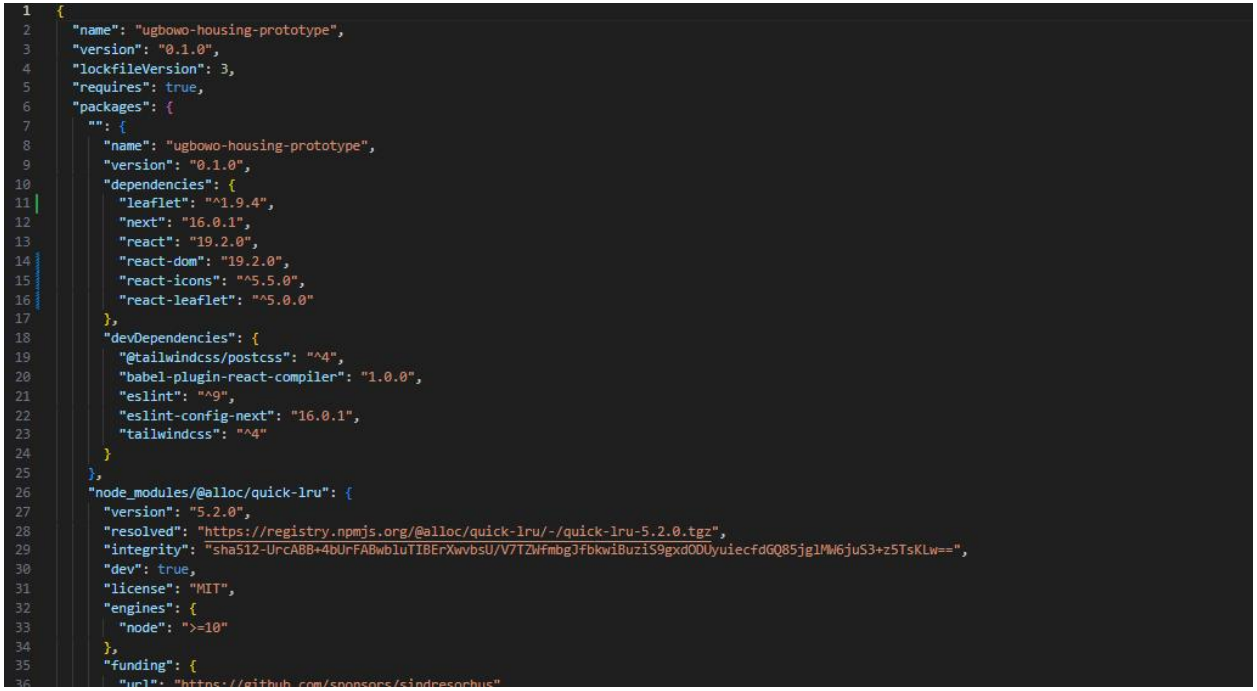
```
        <div className="bg-white p-6 rounded-xl shadow-lg">
          <h2 className="text-2xl font-bold text-gray-800 mb-4">Key Amenities</h2>
          <div className="grid grid-cols-2 md:grid-cols-3 gap-y-3">
            {listing.Local_Amenities.map((amenity, index) => (
              <div key={index} className="flex items-center text-gray-700">
                <FaCheckCircle className="text-green-500 mr-2" /> {amenity}
              </div>
            ))}
          </div>
        </div>

      </div>

      {/* RIGHT COLUMN: ACTION PANEL & TRUST */}
      <div className="lg:col-span-1 space-y-6">

        {/* Trust/Verification Panel */}
        <div className={`p-6 rounded-xl shadow-lg ${listing.IsVerified ? 'bg-green-100 border-l-4 border-green-500' : 'bg-red-100 border-l-4 border-red-5
          <h3 className="text-xl font-bold mb-2 flex items-center">
            {listing.IsVerified ? <FaCheckCircle className="mr-2 text-green-600" /> : <FaTimesCircle className="mr-2 text-red-600" />}
            Trust Status
          </h3>
          <p className={`font-semibold ${listing.IsVerified ? 'text-green-700' : 'text-red-700'}`}>
            {listing.IsVerified ? 'Platform Verified' : 'Unverified Listing (Proceed with caution)'}
          </p>
          <p className="text-sm mt-1 text-gray-600">
            {listing.IsVerified
              ? 'This property has been physically inspected and approved by an ApartFind Admin.'
              : 'This is a new listing pending physical inspection. Verification is scheduled.'
            }
          </p>
        </div>

        {/* Contact Landlord Button (Mock) */}
```



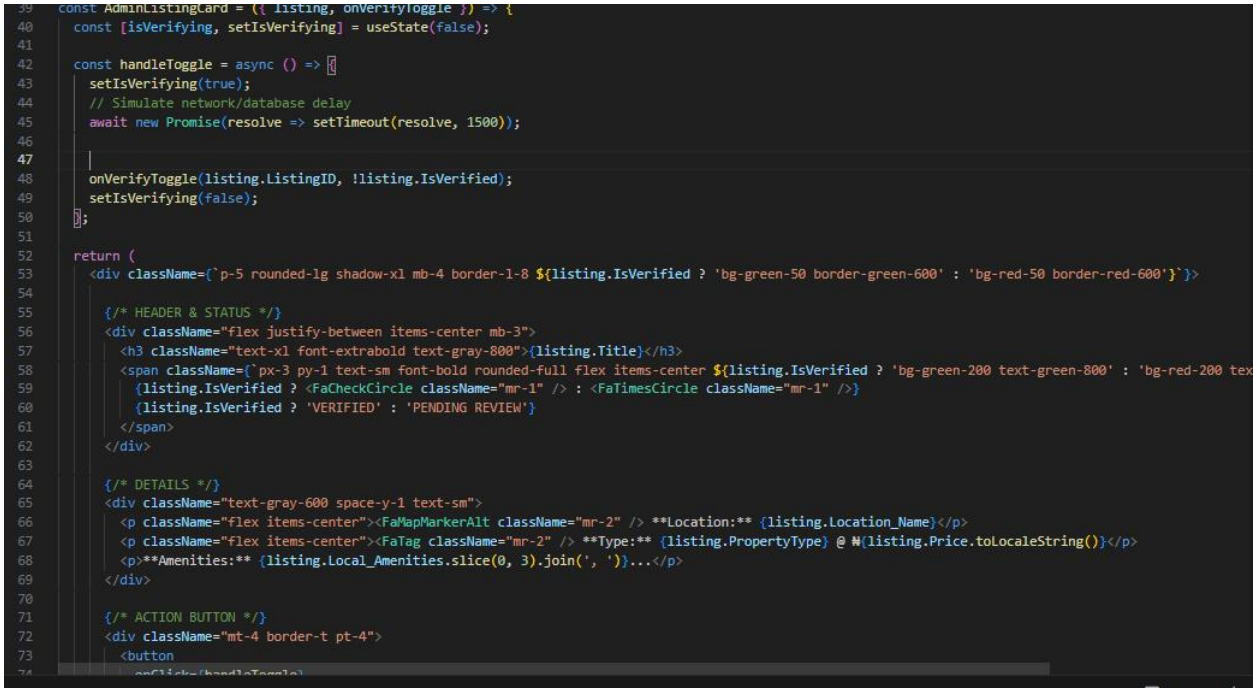
```
                : 'This is a new listing pending physical inspection. Verification is scheduled.'
              }
            </p>
          </div>

          {/* Contact Landlord Button (Mock) */}
          <div className="p-6 bg-white rounded-xl shadow-lg">
            <p className="text-gray-700 mb-4">Ready to inspect this property?</p>
            <button
              onClick={() => alert(`Mock Message: You are now opening a chat with the Landlord for ${listing.Title}`)}
              className="w-full bg-secondary-purple text-white py-3 rounded-lg text-lg font-semibold hover:bg-primary-purple transition duration-200"
            >
              Contact Landlord Directly
            </button>
            <p className="text-xs text-center text-gray-500 mt-2">
              (Direct messaging service ensures zero agent interference.)
            </p>
          </div>

        </div>
      </div>
    </div>
  );
}
```

ugbowo-housing-prototype > JS eslint.config.mjs > ...

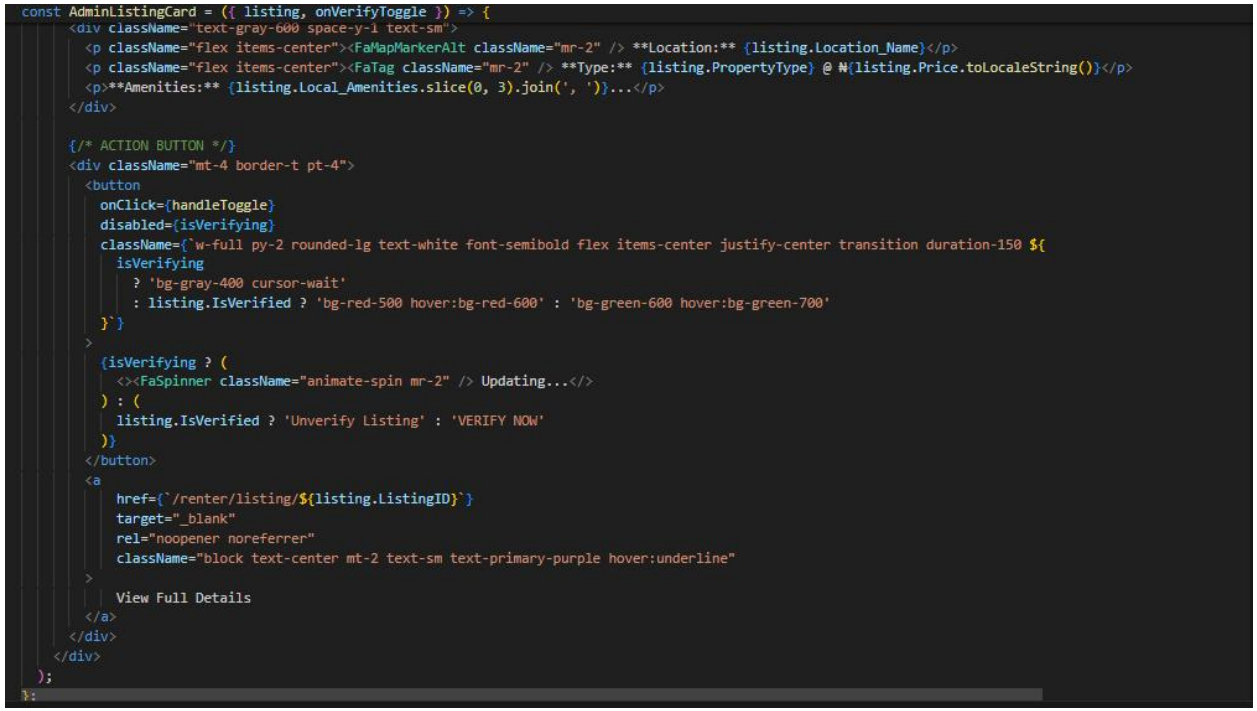
```
import { defineConfig, globalIgnores } from "eslint/config";
import nextVitals from "eslint-config-next/core-web-vitals";

const eslintConfig = defineConfig([
  ...nextVitals,
  // Override default ignores of eslint-config-next.
  globalIgnores([
    // Default ignores of eslint-config-next:
    ".next/**",
    "out/**",
    "build/**",
    "next-env.d.ts",
  ]),
]);

export default eslintConfig;

```



```
{
  "name": "ugbowo-housing-prototype",
  "version": "0.1.0",
  "lockfileVersion": 3,
  "requires": true,
  "packages": {
    "": {
      "name": "ugbowo-housing-prototype",
      "version": "0.1.0",
      "dependencies": {
        "leaflet": "^1.9.4",
        "next": "16.0.1",
        "react": "19.2.0",
        "react-dom": "19.2.0",
        "react-icons": "^5.5.0",
        "react-leaflet": "^5.0.0"
      },
      "devDependencies": {
        "@tailwindcss/postcss": "^4",
        "babel-plugin-react-compiler": "1.0.0",
        "eslint": "^9",
        "eslint-config-next": "16.0.1",
        "tailwindcss": "^4"
      }
    },
    "node_modules/@alloc/quick-lru": {
      "version": "5.2.0",
      "resolved": "https://registry.npmjs.org/@alloc/quick-lru/-/quick-lru-5.2.0.tgz",
      "integrity": "sha512-UrcABB+4bUrFABwbluTIBErXwvbsU/V7TZWfmbgJfbkwiBuziS9gxdODUyuiecfdGQ85jglMW6juS3+z5TsKLw==",
      "dev": true,
      "license": "MIT",
      "engines": {
        "node": ">=10"
      },
      "funding": {
        "url": "https://github.com/sponsors/sindresorhus"
```



```
const AdminListingCard = ({ listing, onVerifyToggle }) => {
  const [isVerifying, setIsVerifying] = useState(false);

  const handleToggle = async () => {
    setIsVerifying(true);
    // Simulate network/database delay
    await new Promise(resolve => setTimeout(resolve, 1500));

    onVerifyToggle(listing.ListingID, !listing.IsVerified);
    setIsVerifying(false);
  };

  return (
    <div className={`p-5 rounded-lg shadow-xl mb-4 border-l-8 ${listing.IsVerified ? 'bg-green-50 border-green-600' : 'bg-red-50 border-red-600'}`}>

      {/* HEADER & STATUS */}
      <div className="flex justify-between items-center mb-3">
        <h3 className="text-xl font-extrabold text-gray-800">{listing.Title}</h3>
        <span className={`px-3 py-1 text-sm font-bold rounded-full flex items-center ${listing.IsVerified ? 'bg-green-200 text-green-800' : 'bg-red-200 tex
          {listing.IsVerified ? <FaCheckCircle className="mr-1" /> : <FaTimesCircle className="mr-1" />}
          {listing.IsVerified ? 'VERIFIED' : 'PENDING REVIEW'}
        </span>
      </div>

      {/* DETAILS */}
      <div className="text-gray-600 space-y-1 text-sm">
        <p className="flex items-center"><FaMapMarkerAlt className="mr-2" /> **Location:** {listing.Location_Name}</p>
        <p className="flex items-center"><FaTag className="mr-2" /> **Type:** {listing.PropertyType} @ ₦{listing.Price.toLocaleString()}</p>
        <p>**Amenities:** {listing.Local_Amenities.slice(0, 3).join(', ')}...</p>
      </div>

      {/* ACTION BUTTON */}
      <div className="mt-4 border-t pt-4">
        <button
          onClick={handleToggle}
```



```jsx
const AdminListingCard = ({ listing, onVerifyToggle }) => {
    <div className="text-gray-600 space-y-1 text-sm">
      <p className="flex items-center"><FaMapMarkerAlt className="mr-2" /> **Location:** {listing.Location_Name}</p>
      <p className="flex items-center"><FaTag className="mr-2" /> **Type:** {listing.PropertyType} @ ₦{listing.Price.toLocaleString()}</p>
      <p>**Amenities:** {listing.Local_Amenities.slice(0, 3).join(', ')}...</p>
    </div>

    {/* ACTION BUTTON */}
    <div className="mt-4 border-t pt-4">
      <button
        onClick={handleToggle}
        disabled={isVerifying}
        className={`w-full py-2 rounded-lg text-white font-semibold flex items-center justify-center transition duration-150 ${
          isVerifying
            ? 'bg-gray-400 cursor-wait'
            : listing.IsVerified ? 'bg-red-500 hover:bg-red-600' : 'bg-green-600 hover:bg-green-700'
        }`}
      >
        {isVerifying ? (
          <><FaSpinner className="animate-spin mr-2" /> Updating...</>
        ) : (
          listing.IsVerified ? 'Unverify Listing' : 'VERIFY NOW'
        )}
      </button>
      <a
          href={`/renter/listing/${listing.ListingID}`}
          target="_blank"
          rel="noopener noreferrer"
          className="block text-center mt-2 text-sm text-primary-purple hover:underline"
      >
          View Full Details
      </a>
    </div>
  </div>
);
};
```