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**LALITPUR ENGINEERING COLLEGE**  
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**A PROPOSAL PROJECT REPORT ON  
"RENTAL ROOM FINDER"**

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A Proposal on  
the Project Titled

**RENTAL ROOM FINDER**

Submitted as a part of requirement of  
the curriculum of Software Engineering

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# Abstract

The Rental Room Finder simplifies the hectic process of finding an ideal rental room. Using modern technology and a user-centric approach, it efficiently matches users with suitable accommodations based on their preferences. The platform's user-friendly interface allows customization of search criteria, such as location, budget, and facilities, saving users valuable time and effort. Rental Room Finder provides detailed room listings with images, verified reviews, and owner contact information. This empowers users to make informed decisions based on real experiences from previous Customer. Facilitating communication between customer and owner, messaging system and inquiries, negotiations, contract and agreements. In summary, the Rental Room Finder revolutionizes the rental search process, offering convenience, reliability, and security. By empowering users with personalized options and transparent information, it provides a stress-free experience for both owner and customer.

**Keywords:** *"Search Criteria ", "Budget", "Messaging", "Contract", "Agreement"*

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# 1 INTRODUCTION

## 1.1 Background

The search for rental rooms has traditionally been a time-consuming and frustrating endeavor. With the rise of digital technologies, online platforms have emerged to address this challenge. However, many existing rental room finder platforms lack user-friendly interfaces, accurate information, and personalized recommendations. These shortcomings often lead to suboptimal matches between renters and available rooms. Our project builds upon the evolving landscape of digital solutions to create a rental room finder that prioritizes user needs, transparency, and convenience.

## 1.2 Problem Statement

Finding the perfect rental room has become a challenge. One needs to surf over all the town, ask locals for the available room. Walking all day to find room is too much hectic process. Whether you're a student seeking a quiet place for focused studying, a young professional starting a new chapter in a city, or an adventurer exploring a new locale, the search for the ideal living space can be both exciting and overwhelming. So our "Rental Room finder" is your ultimate solution for effortless and efficient rental room discovery.

## 1.3 Scope

This project will focus on developing a web-based application for rental room finder. The application will have interface for users to search for rental rooms based on their preferences, such as location, budget, facilities, and room types. The platform will also incorporate contract system to provide users with legal contract and prevent risk of scam. . Additionally, the application will facilitate direct communication between users and property owners, enabling seamless interactions and information exchange. The scope also includes the implementation of secure user profiles and a database to store accommodation details.

## 1.4 Objective

- Develop an intuitive and responsive web-based application for users to search, compare, and select rental rooms.
- Enable direct communication between Customer and Owners



## 2 LITERATURE REVIEW

The search for rental room has been a significant concern in cities areas, particularly among students, young professionals, and those relocating for work or education. Vrbo, Love Home Swap, Flip key apps advertise properties and owner data. While each of these system serves crucial roles, they lack a comprehensive approach that address user needs, security. This literature review on rental room system can address challenges and potential solutions related to rental room finders, focusing on user experience, technology integration, and data reliability. We aim to address the problem and create a user friendly easy interface so that any age user can use it easily and reliable data of room with contract. This project aims to contribute to a more efficient secure and user-friendly rental room finder experience.

### 2.1 Existing

- **Vrbo**

Vrbo (Vacation Rental by Owner) is a company that only offers vacation rental properties, so you won't be tiptoeing around anyone's prized coffee mugs or wondering what's behind a locked closet door. Vrbo specializes in spacious homes located in popular destinations throughout six continents. However, it is has expensive themes only that can't be afford by normal user and complex processing to finalize rent.

- **Love Home Swap**

Love Home Swap is less renting, more trading places. It was founded by a British mother of two who enjoyed this type of arrangement and wanted to create a secure site for temporarily exchanging beautiful homes. On the platform, you can find more than 80,000 homes – ranging in price, style, and amenities – in 160 countries. Love Home Swap gets major kudos from customers for the high-end appeal of the properties. However it has same problem as Vrbo.

- **Flip Key**

Flip Key, a subsidiary of Trip advisor, lists more than 800,000 properties in 190 countries. Similar to Trip advisor, you are able to sort through a variety of features and amenities when browsing the site. Whether you want a sleek condo, a villa with a pool or a hot tub, or an apartment that's within walking distance of bars and restaurants, you can easily sort through hundreds of listings. Flip Key draws upon the information Trip advisor has collected to display traveler reviews, nearby restaurants and attractions, and other helpful know-how that could make planning your trip easier. In this site lack of local, simple properties make normal student, young new professional, a adventurer hard to find their ideal simple rental room only lavish and price properties are available.

## **2.2 Proposed**

In this proposed project, the "Rental Room Finder" interface for users to search for rental rooms based on their preferences, such as location, budget, amenities, and room types. the application will facilitate direct communication between users and property owners, enabling seamless interactions and information exchange.

The project recognizes the complexities to find the perfect ideal room in today's world where one has to walk, travel whole cities and ask different local about to the rents room. The primary objective is to create intuitive and responsive web-based application for users to search, compare, and select rental rooms. Enable direct communication between Customer and Owners.

The web-application is accessible through a clean and user-friendly web interface. Overall, the "Rental Room Finder" project aims to offer a ultimate solution for effortless and efficient rental room discovery.

## **3 FEASIBILITY STUDY**

### **3.1 Economic Feasibility**

Economical feasibility is a crucial aspect of any project, including the development of a rental room finder. The costs associated with developing and maintaining the platform must be weighed against the potential benefits and returns. The initial investment in software development, user interface design, database management, and server hosting needs to be carefully evaluated. Additionally, the project's impact on cost savings for users, who would spend less time and effort searching for accommodations, contributes to its overall economic viability. The MERN stack offers a seamless and cost-effective approach to building a dynamic and responsive application, ensuring a high-quality user experience while minimizing development expenses. The use of open-source tools eliminates substantial licensing costs, making our project economically viable.

### **3.2 Operational Feasibility**

Operational feasibility for the "Rental Room Finder" web app is driven by key factors like user-friendliness, Criteria Customization, and Secure legal process. Its UI is user friendly. The app's interface is designed to be intuitive, ensuring users can easily navigate without advanced technical knowledge. Maintenance and support are expected to be straightforward, reducing the need for complex technical assistance. Overall, the "Rental Room Finder" web app is operationally feasible, offering a ultimate solution for effortless and efficient rental room discovery.

### **3.3 Technical Feasibility**

The "Rental Room Finder" web app utilizes the MERN (MongoDB, Express.js, React, Node.js) stack for technical feasibility. React and Node.js are used for frontend and backend development, respectively. These technologies are well-established with substantial backing from reputable organizations which ensures the availability of

extensive technical support within the development community. Additionally, compatibility with various devices and operating systems, as well as the ability to handle potential traffic spikes, will be evaluated to ensure the platform's technical feasibility. Therefore, the "Rental Room Finder" project is technically feasible with rich well-supported technologies.

## 4 METHODOLOGY

### 4.0.1 Software Development Life Cycle

For the study of research methods, or, more formally, ‘a contextual framework’ for research of this project, spiral model was chosen among all others as it enables gradual releases and refinement of a product through each phase of the spiral as well as the ability to build prototypes at each phase. Spiral model is one of the most important Software Development Life Cycle models, which provides support for Risk Handling. It has four phases: Planning, Design, Construct and Evaluation. A software project repeatedly passes through these phases in iterations (called Spirals in this model) as shown in the figure below. The Radius of the spiral at any point represents the expenses (cost) of the project so far, and the angular dimension represents the progress made so far in the current phase. In each phase of the Spiral Model, the features of the product dated and analyzed, and the risks at that point in time are identified and are resolved through prototyping.

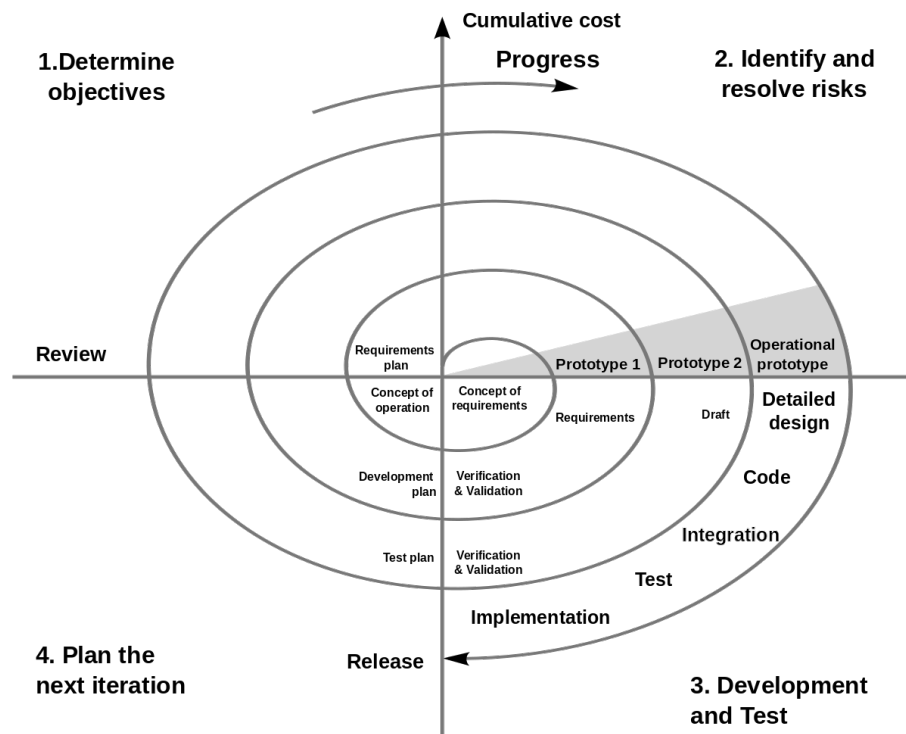


Figure 1: Spiral Model of Software Development

- **Planning Phase**

Requirements are gathered from the customers and the objectives are identified, elaborated, and analyzed at the start of every phase. Then alternative solutions possible for the phase are proposed in this quadrant.

- **Risk Analysis Phase**

During the second quadrant, all the possible solutions are evaluated to select the best possible solution. Then the risks associated with that solution are identified and the risks are resolved using the best possible strategy. At the end of this quadrant, the Prototype is built for the best possible solution.

- **Development and Testing Phase**

During the third quadrant, the identified features are developed and verified through testing. At the end of the third quadrant, the next version of the software is available.

- **Evaluation and Planning next Phase**

In the fourth quadrant, the Customers evaluate the so far developed version of the software. In the end, if the Customers are satisfied with the software, then, it is released, else, planning for the next phase is started.

#### 4.0.2 System Development Tools

- **MongoDB (Database)**

MongoDB serves as the foundational database, storing essential user data, task details, journal entries, and digital detox preferences. Its flexible schema allows us to adapt the data model as the app evolves, ensuring efficient data management.

- **Express.js (Backend)**

Express.js provides a robust backend framework, handling HTTP requests and

responses, routing, middleware, and interacting with the database. This framework enables efficient server-side logic, ensuring smooth data flow between the frontend and the database.

- **React (Frontend)**

React forms the heart of our frontend development, offering a component-based architecture for building interactive user interfaces. Its fast rendering and reusable components enable a seamless user experience while managing tasks, reflecting, and engaging with digital detox features.

- **Node.js (Runtime Environment)**

Node.js serves as the runtime environment for the backend, allowing us to use JavaScript on the server-side. This enables consistent code throughout the stack and leverages the extensive Node.js package ecosystem, enhancing development efficiency.

- **Git and GitHub (Version Control and Collaboration)** Git enables efficient version control, allowing our development team to track changes, collaborate seamlessly, and manage different code branches effectively. We utilize GitHub as a remote repository to host our project's source code, enabling version history tracking, code review, and easy collaboration among team members. This setup ensures a structured and collaborative approach to development, making it easier to manage code changes, review contributions, and maintain a reliable and up-to-date codebase for the "Rental Room Finder" app.

## 5 SYSTEM DESIGN AND ARCHITECTURE

### 5.1 System Overview

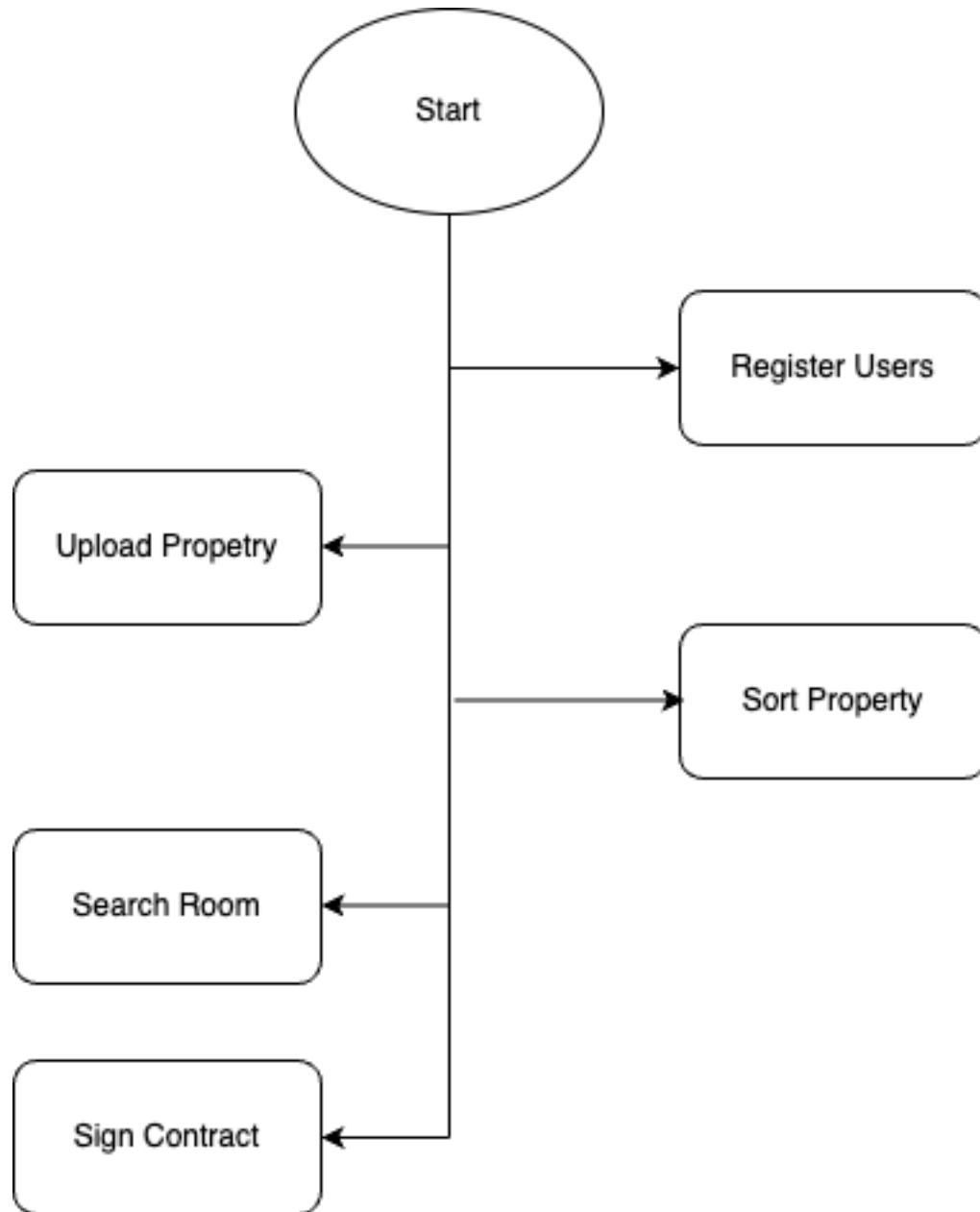


Figure 2: Block Diagram of System



## 5.2 Use Case Diagram

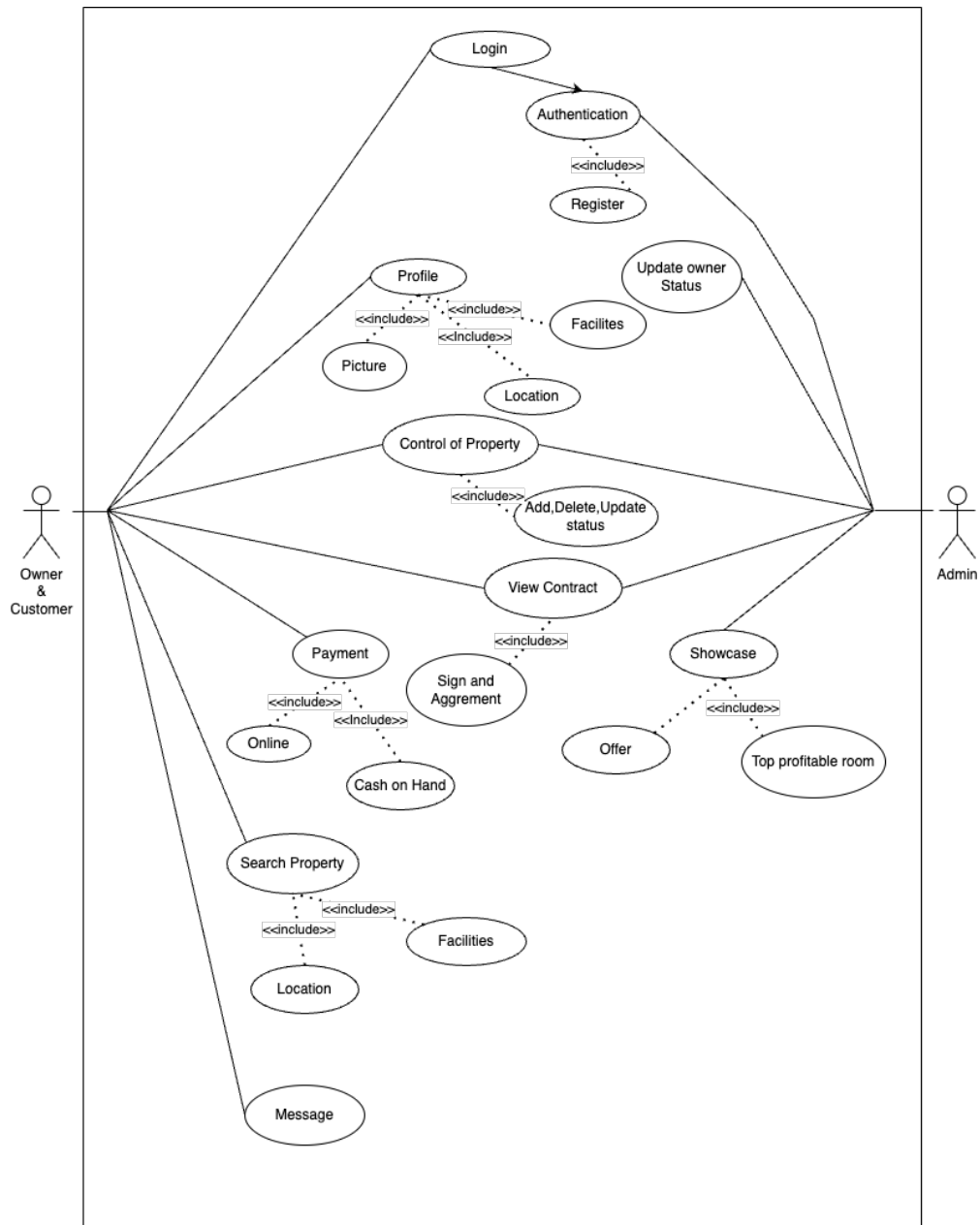


Figure 3: Use Case Diagram

### 5.3 Data Flow Diagram

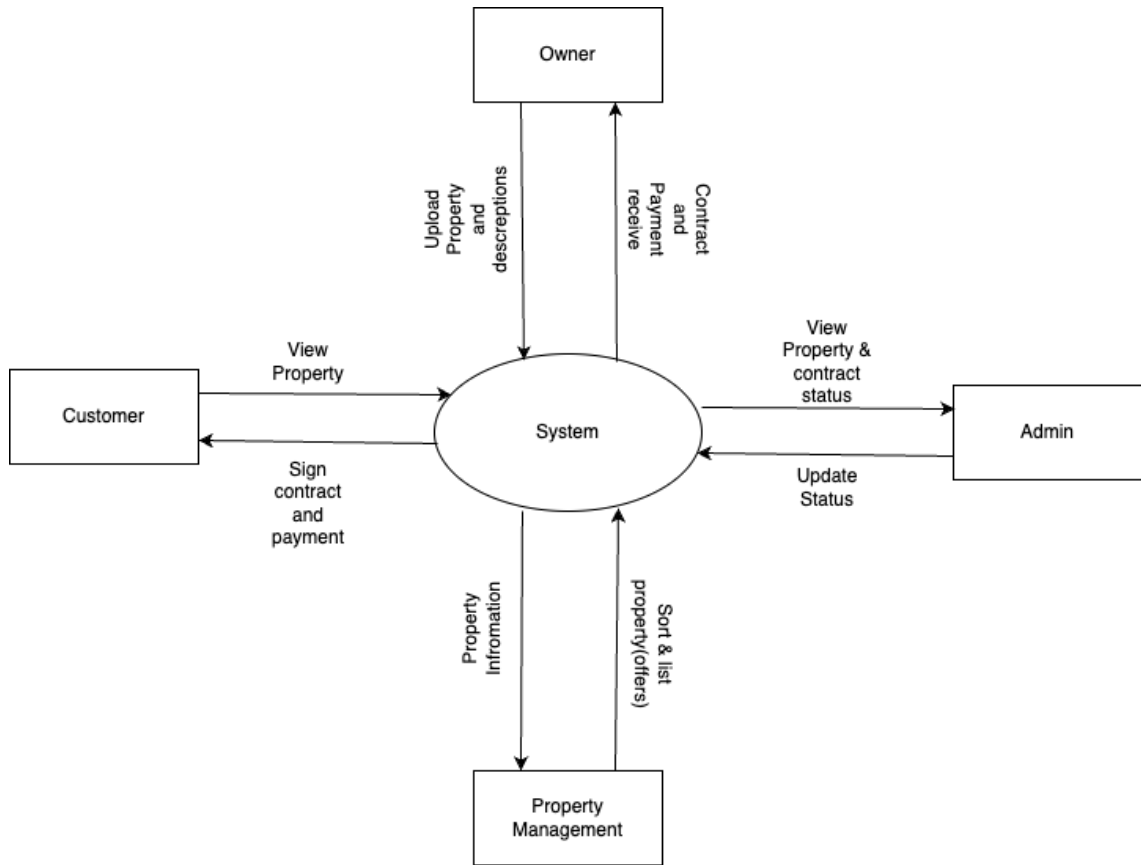


Figure 4: Level 0 DFD diagram

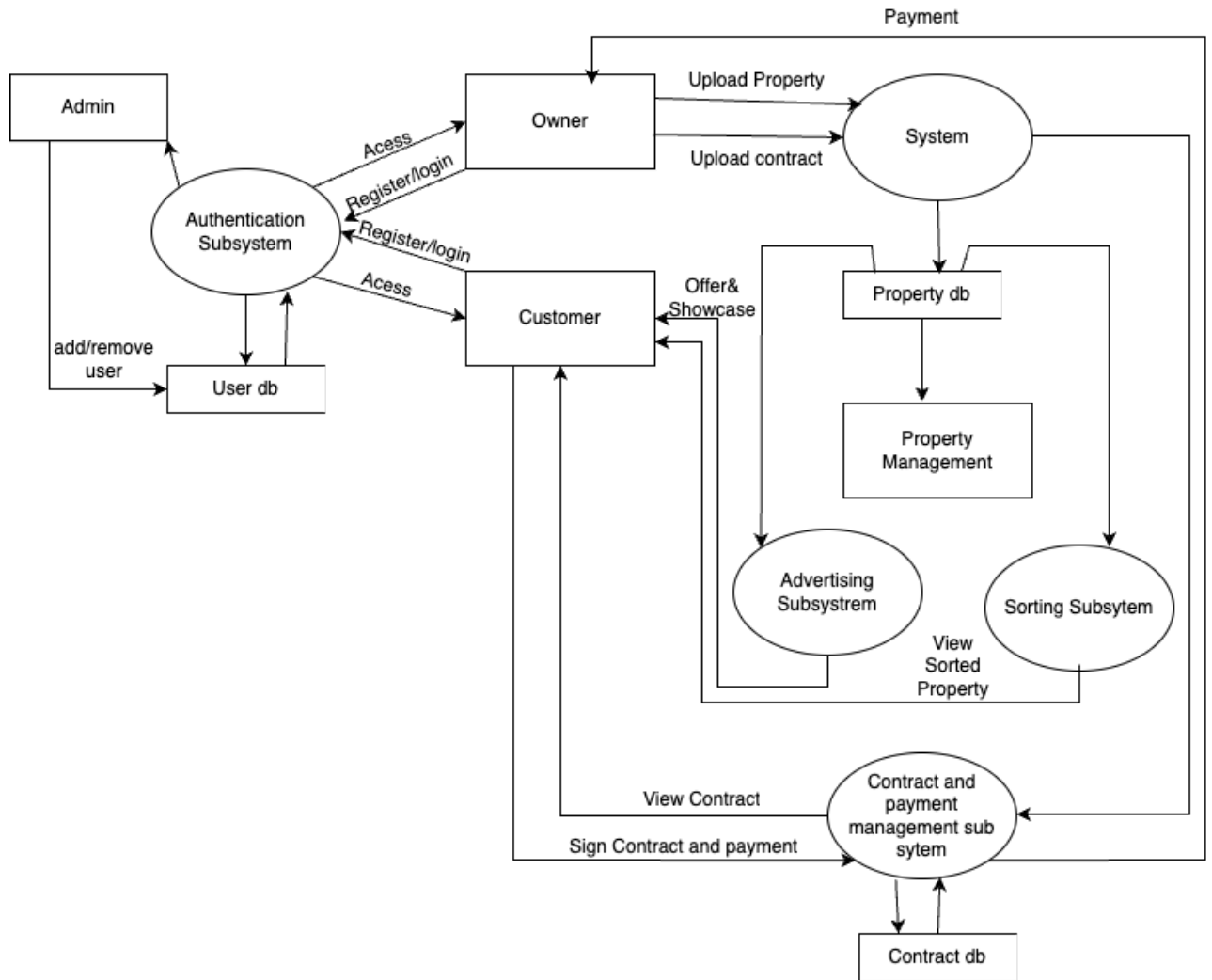


Figure 5: Level 1 DFD diagram

## 5.4 Activity Diagram

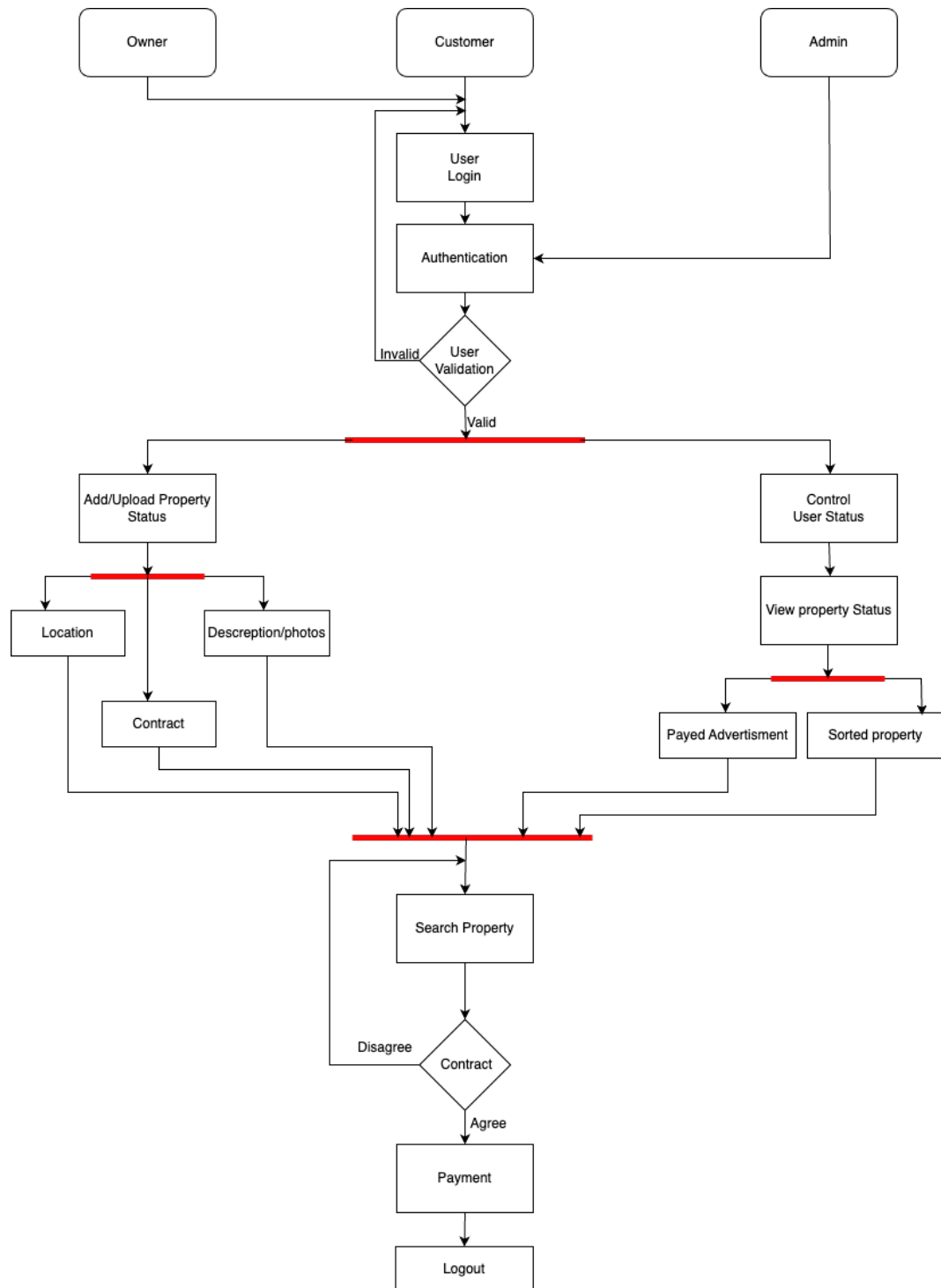


Figure 6: Activity Diagram

## 5.5 Sequence Diagram

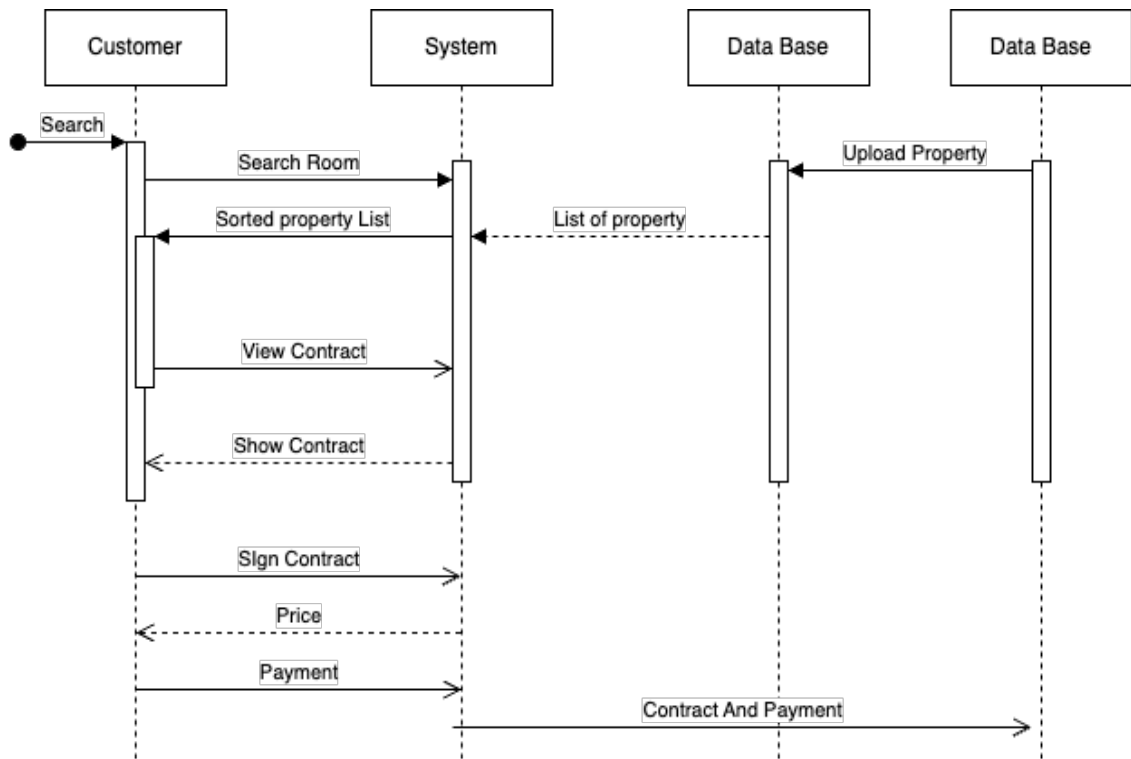


Figure 7: Sequence diagram for searching and finalizing rental room

## 5.6 Class Diagram

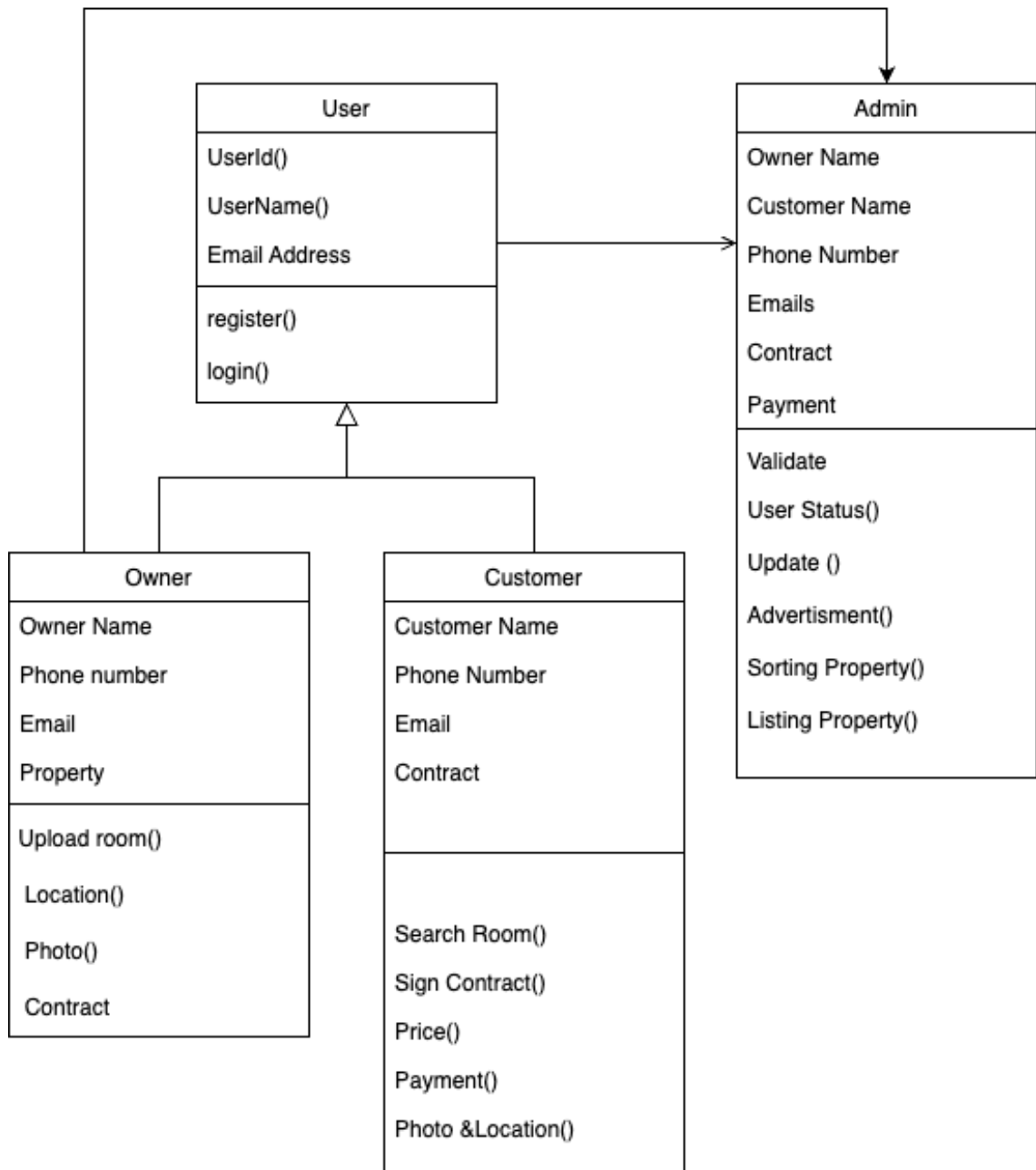


Figure 8: Class Diagram for Rental Room Finder

## 5.7 Entity Relationship Diagram

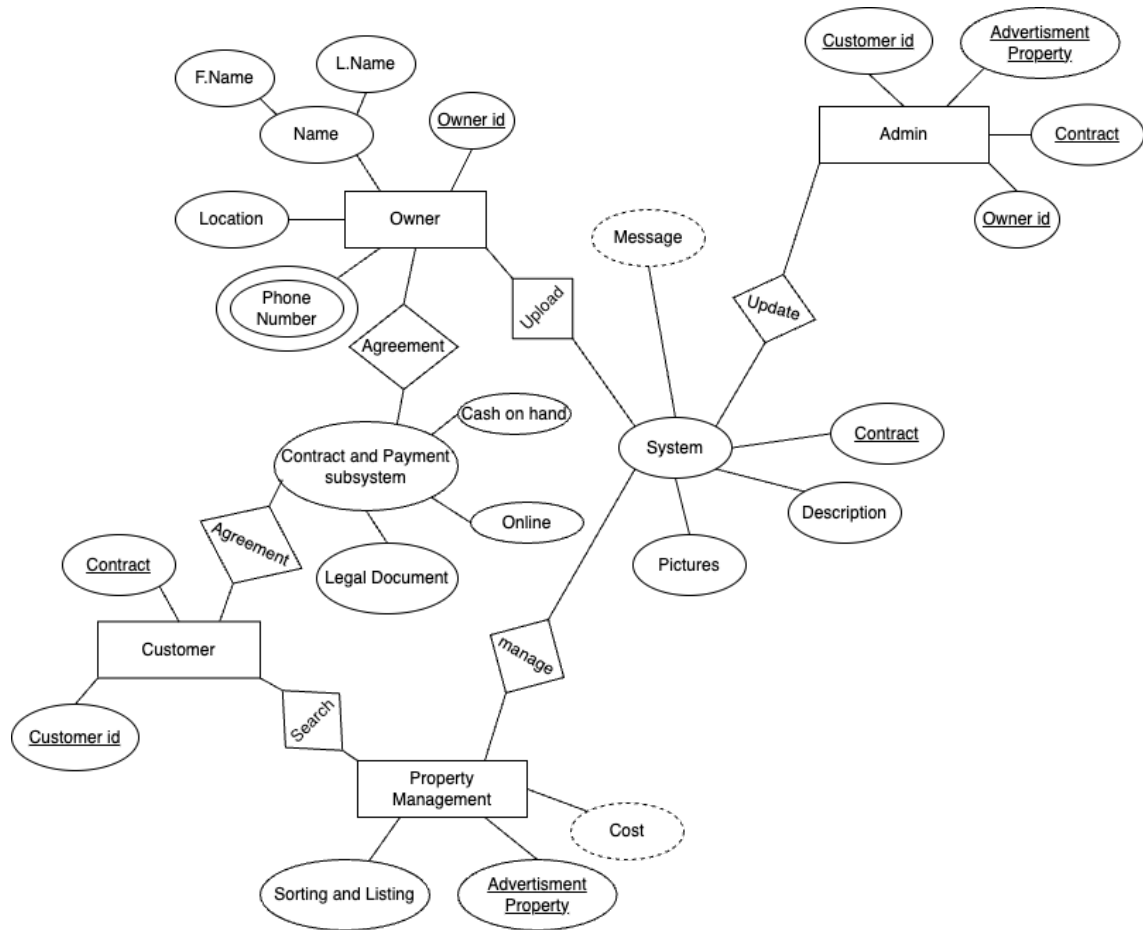


Figure 9: Entity Relationship Diagram for Rental Room Finder

## Expected Outcomes

The development and implementation of the rental room finder is anticipated to yield several positive outcomes that will benefit both users and property owners. Firstly, The rental room finder aims to provide users with an easy and efficient platform for searching, comparing, and selecting rental rooms. Users can expect a streamlined and user-friendly interface that simplifies the entire process, ultimately saving time and reducing frustration. Second, The platform will offer a up-to-date database of rental rooms, providing users with a wide range of options to choose from with their preferences, budget, and location requirements. Third, Its provide communication features that enable interactions between users and property owners. Fourth, By providing a comprehensive and easy-to-use platform, the project aims to contribute to cost savings for users and prevent expenses associated with traditional search methods. Overall "Rental room finder" emphasizes user-centric design, enhanced transparency, efficient communication, and overall convenience. Through these outcomes, the project aims to make a tangible and positive impact on individuals' experiences and interactions within the rental market.



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