A Project Report on

Rent Me Home

Submitted in partial fulfilment of the

requirement for the award of the degree of

B. Tech

GALGOTIAS UNIVERSITY

(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

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12,2021

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CANDIDATE'S DECLARATION

I/We hereby certify that the work which is being presented in the thesis/project/dissertation, entitled **"Rent ME HOME"** in partial fulfillment of the requirements for the award of the <u>Btech</u> submitted in the School of Computing Science and Engineering of Galgotias University, Greater Noida, is an original work carried out during the period of month, Year to Month and Year, under the supervision of Vikas Srivastav, Assistant Professor, Department of Computer Science and Engineering/Computer Application and Information and Science, of School of Computing Science and Engineering , Galgotias University, Greater Noida

The matter presented in the thesis/project/dissertation has not been submitted by me/us for the award of any other degree of this or any other places.

<div align="right">

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This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

<div align="right">

Supervisor Name

Designation

</div>

<u>Acknowledgement</u>

I would Like to express my special thanks of gratitude to my Project guide "Mr. Vikash Srivastava" for their able guidance and support throughout the project. I would also like to thank VC mam and Dean sir for Providing me with all the facility that are required.

Last But not the least we want to thank our parents for always supporting us and being such an inspiration for us. Without their support we wouldn't have been here. So with due regards, we express our gratitude to them.

Date: Mohd Oun Zaidi

23/12/2021   Pratyush Sundram

CERTIFICATE

The Final Thesis/Project/ Dissertation Viva-Voce examination of Mohd Oun Zaidi(19SCSE1010288) and

Pratyush Sundaram(19SCSE1010175) has been held on _____23/12/2021_____ and his/her work

is recommended for the award of Btech in computer science.

Signature of Examiner(s)   **Signature of Supervisor(s)**

Signature of Project Coordinator   **Signature of Dean**

Date: 23 December, 2021

Place: Greater Noida

Abstract

Our project is about an application development for house available for rent in a particular area. We have seen that there has always been a problem for people who don't have their own house in different cities. To find a home for rent according to their requirements has never been easy, so we are willing to provide them a platform where they can easily search for houses on rent according to their requirements, budgets market distance, transport availability, location etc. We will be providing them feedback option too so that they can select and decide with previous renter's feedback. We will also be minimizing the cost of brokers that they charge for this purpose. There will be direct contact between house owner and our customer. Things will be kept confidential and transparent between owner and customer as keeping the privacy of both the parties. We will be using java JavaScript html CSS programming languages for frontend and backend development of our application.

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Chapter 1
Introduction

1.1 What is Web App Development?

Web application development is the creation of application programs that reside on remote servers and are delivered to the user's device over the Internet. A web application (web app) does not need to be downloaded and is instead accessed through a network. An end user can access a web application through a web browser such as Google Chrome, Safari, or Mozilla Firefox. A majority of web applications can be written in JavaScript, Cascading Style Sheets (CSS), and HTML5.

Web application development will typically have a short development life-cycle lead by a small development team. Front-end development for web applications is accomplished through client-side programming. Client refers to a computer application such as a web browser. Client-side programming will typically utilize HTML, CSS and JavaScript. HTML programming will instruct a browser how to display the on-screen content of web pages, while CSS keeps displayed information in the correct format. JavaScript will run JavaScript code on a web page, making some of the content interactive.

Server-side programming powers the client-side programming and is used to create the scripts that web applications use. Scripts can be written in multiple scripting languages such as Ruby, Java and Python. Server-side scripting will create a custom interface for the end-user and will hide the source code that makes up the interface.

A database such as MySQL or MongoDB can be used to store data in web application development.

Application development is the process of creating a computer program or a set of programs to perform different tasks that a business requires. From calculating monthly expenses to scheduling Sales reports, application help business automate processes and increase efficiency.

Every app-building process follows the same steps:

- Gathering Requirements
- Designing protypes
- Testing
- Implementation
- Integration

The iOS platform powers apps built for iPhone and iPad. To develop an app for iPhone or iPad, you need to use the Objective-C coding language and the Cocoa framework. You also need to use an IDE (integrated development environment) called Xcode, Note that Xcode only runs on the Mac, So, you will need a Mac to make an iOS app.

Android. apps, are developed with the Java coding language and the Android Software Development Kit, which runs on Mac, PC or Linux. You also need to use an IDE such as Eclipse. There are other mobile platforms such as windows phone, but iOS and android are definitely the most popular. Most training focuses on these platforms.

1.2 What is Rental System?

A property management system (PMS) is a software application for the operations of hospitality accommodations and commercial residential rental properties. PMS provides a centralized computer system to organize, schedule and perform the day-to-day functions and transactions involved in accommodations businesses.The Home Rental System is Searching in Based on the Apartment House for rent in metropolitan cities. The Home Rental System is Based on the Owners and the Customers. The Owner is updated on the Apartment details, and rent details. The Customer is details about the Room space, Room rent and the Address Details also. The Home Rental System is best Suitable the owners because time save and the only contact and the eligible person and there is no need to explain the room details on the speak. The Home Rental System is best application in the city place. The customer contact and the easily search and the suitable place of House and based the Money, Limit Person is based on the suitable house. The Home Rental System is saving the time also. The Rental Management System is
used to easily identify the suitable place in Save time, cost also. Hence this system is best applicable for the above reasons making House rental an easy process through an online system.

Advantages of Online House Rental Services

- This online house rental solution is fully functional and flexible.
- It is very easy to use.
- This online House rental system helps in back-office administration by streamlining and standardizing the procedures.
- It saves a lot of time, money and labour.
- Eco-friendly: The monitoring of the Housing activity and the overall business becomes easy and includes the least of paper work.
- The software acts as an office that is open 24/7.
- It increases the efficiency of the management at offering quality services to the customers.

1.3 Tools and Technology used

TOOLS USED:
- Android Studio

Languages Used for App Development:
• HTML: Page layout has been designed in HTML
• CSS: CSS has been used for all the designing part

• JavaScript: All the validation task and animations has been developed-by JavaScript
• PHP: All the business and frontend logic has been implemented in PHP
• MySQL: MySQL database has been used as database for the project
• Apache2: Project will be run over the Apache2 server

We can configure this project on following operating system.
Android
IOS
Windows
Mac
Linux

System Required:
● Windows 10
● 8gb RAM
● Fast Processor

1.5 ADMIN MODULE

This Admin module contain the complete details about customer and view the customer complaints.
There are some modules like login, user view, add/view rooms, send message to customer, view complaint from
customer. Login is use to create a login and sign in to the login. User view contain the user details. The admin
can add and view the rooms. If the admin want to contact customer they can send a message. Any complaint by
customer that can be view by the admin. The sub modules are:
1. LOGIN
2. USER VIEW
3. ADD/VIEW ROOMS
4. VIEW COMPLAINT FROM CUSTOMER

CHAPTER-2
Literature Survey

Literature review is a text written by someone to consider the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic. Main goals are to situate the current study within the body of literature and to provide context for the particular reader (Cooper, 1998).

2.1 Government Strategy and Incentives in The Housing Sector

Some of the dominant strategies for housing and service provision for the Kenya's urban poor include slum upgrading and site and service schemes. However, the efficiency of these strategies has been limited by ambivalent government attitude to irregular settlement. These strategies have failed because of a reliance on inappropriate building by-laws and infrastructural standards and modern designs, construction technology and conventional building materials that all make housing unaffordable to the poor, even after subsidies. Thus, government initiatives in assisting house owners in management have proven to be pathetically slow with many of the houses provided being economically and socially irrelevant, this further prompting the rise of informal settlement (Macoloo, 1994).

2.2 The Role of The Private Sector In House Management

Private sector housing management is defined as any process which is not connected at all with the actions of the state neither directly constructed by state nor financially sponsored by the state where production is not expected to have a social element (Golland, 1996). (Ambrose and Barlow, 1987) have argued that three factors are important in influencing the level of new house building. These are direct capital investment by the state for public housing, state support for

production and consumption and changes in the profitability of house builders in the private sector. The private sector can play an important role in housing provision provided that the state offers sufficient and appropriate incentives to the sector (Mitullar, 2003). The clear motivation that underlies the private sector is profit (or potential profitability) with profit maximizing options being in the context of housing, producing and selling more of the product; reducing the cost of production through lower raw material and wage costs and finally increasing the price of the product or service (Hancock, 1998).Profitability in housing is advocated to be based on three variables; House prices, land prices and building costs, where: Profit=House prices-{Land prices + Building costs} (Golland, 1996).

2.3 The Emerging Housing Rental Tech Start-ups

- One of the hardest parts, while moving to a new city is to find out a platform where people could easily find out affordable homes for rent. Well, this problem has been solved by many real estate tech startup companies like Zillow, WeLive, Roomi, and OpenDoor. These start-ups are trying to solve such problems, faced by people while moving to a new place, city or country.
- Real estate tech start-ups, are using the latest technology to disrupt the market. They have already enhanced the way we buy, rent, sell and manage residential and commercial properties.

- Talking about one of the real estate techs start-ups, Bungalow, the U.S.-based housing start-up, is also responsible to shape the real estate market. According to the latest report from TechCrunch, "The housing start-up, Bungalow, has secured $14 million in series A round of funding led by Khosla Ventures."
- On the other hand, there are other housing rental start-ups, which have been emerging in the market for disruption. This is what you can see in this image.
- You might be knowing that the real estate market has already matured. Or, we can say, this industry is heating up.
- Talking about the revenue, according to the latest report from Grand View Research, Inc.,"The global real estate market is expected to generate a revenue of USD 4,263.7 billion by 2025."

2.4 Residential Rental Housing:

Magnitude and Trends: According to the Census of India, in 2011, there were 246.7 million households (except institutional5 households) in India, out of which 213.6 million households lived in owned6 houses (86.6%), 27.4 million households lived in rented7 houses (11.1%) and 5.8 million households lived in any other8 houses (2.4%) (Table 1).

Table 1: Levels of and Changes in the Ownership Status of the Households in India, 2001 and 2011

	2001		2011		2001–11 (Changes)	
	Numbers (Millions)	As Proportions of HHs (in %)	Numbers (Millions)	As Proportions of HHs (in %)	Numbers (Millions)	As Proportion of HHs in 2001 (in %)
Total (rural and urban)						
Owned	166.4	86.7	213.6	86.6	47.2	28.4
Rented	20.2	10.5	27.4	11.1	7.1	35.3
Any other	5.4	2.8	5.8	2.4	0.4	7.8
Total	192	100	246.7	100	54.8	28.5
Rural						
Owned	130.5	94.4	159	94.7	28.5	21.9
Rented	4.9	3.6	5.6	3.4	0.7	14.9
Any other	2.9	2.1	3.2	1.9	0.3	11.6
Total	138.3	100	167.9	100	29.6	21.4
Urban						
Owned	35.9	66.8	54.5	69.2	18.7	52.1
Rented	15.3	28.5	21.7	27.5	6.4	41.8
Any other	2.5	4.7	2.6	3.3	0.1	3.5
Total	53.7	100	78.9	100	25.2	46.9

Source: Author's calculation using tables on houses, household amenities and assets, house-listing and housing data, Census of India, 2001 and 2011.

Startup	Headquarters	Total Funding	Model
Common	New York	$60M	Operates a network of co-living houses in multiple cities.
Starcity	San Francisco	$20M	Rents rooms in furnished shared flats; offers organized outings, cleaning and other services.
Roomi	New York	$17M	Vets and matches roommates.
Ollie	New York	$15M	Co-living in studios and shared suites with hotel-like services and group events.
HubHaus	Los Altos, Calif.	$11M	Rents rooms in shared houses, targeting working professionals.
HomeShare	San Francisco	$6M	Shared housing in downtown high-rises, including standard and partitioned rooms.
Flip	New York	$3M	Marketplace for sublets and short-term housing.
Bedly	New York	$3M	Move-in ready apartments and shared units for short-term rentals.
Roam	New York	$3M	Operates an international network of co-living spaces.

2.5 Housing Rental Apps, Which Are In-Demanding

Furthermore, there is another real estate start-up named Open-door that is San Francisco-based tech start-up company. The company has secured $325M in a Series E round of funding led by General Atlantic, Access Technology Ventures, and Lennar Corporation in order to make the process easier for buying and selling homes right from its housing rental app.

ZILLOW

Founded in 2005, Zillow is the U.S. based home and real estate company, which provides a real estate app, allowing its users, including homeowners, buyers, sellers, renters, real estate agents, landlords, to find and share information about homes, real estate, mortgages, and home improvements.

ROOMI

Launched back in 2015, the U.S.-based housing rental company, Roomi, offers a mobile app, which helps, users find flexible & affordable co-living solutions. You can consider Roomi, the best app to find rental homes

99ACRES
Created by the popular property search portal 99acres.com, this app offers the same user experience as the website, on the go. The app, which is free for Android users, allows you to browse, properties, for rent, along with high quality pictures, videos and maps. It is best known for the numerous options it provides, with listings of around 10 lakhs, properties, across, the country. It also promises instant contact between landlords and interested tenants through phone call.

MAGICBRICKS
Another app version of a property portal, Magic Bricks uses GPS to zero in on your preferred location and helps you search for properties across all major, Indian cities. It boasts a simple, intuitive interface that, lets you contact homeowners with just a tap. Though.it caters primarily to property buyers and sellers, renters an also use this app to their advantage. You can set alerts, for when properties, that, matches your preference become available, and let the app do the rest.

HOUSING.COM
Housing.com is a Mumbai-based real estate search portal which allows customers to search for housing based on geography, number of rooms, and various other filters. The company has 6,000 brokers and serves 40 cities in India including Chennai, Mumbai, Bengaluru, Kolkata and Delhi.

In urban sector, the increase in the number of total households and of the households living in rented houses, between 2001 and 2011, was 25.2 million and 6.4 million, respectively, implying that more than a quarter of the addition to the total number of urban households were the households living in rented houses.

Figure 2: Share of Households Living in Rented Houses in the Total Number of Households in India and in Rural and Urban Sectors, 1991, 2001 and 2011
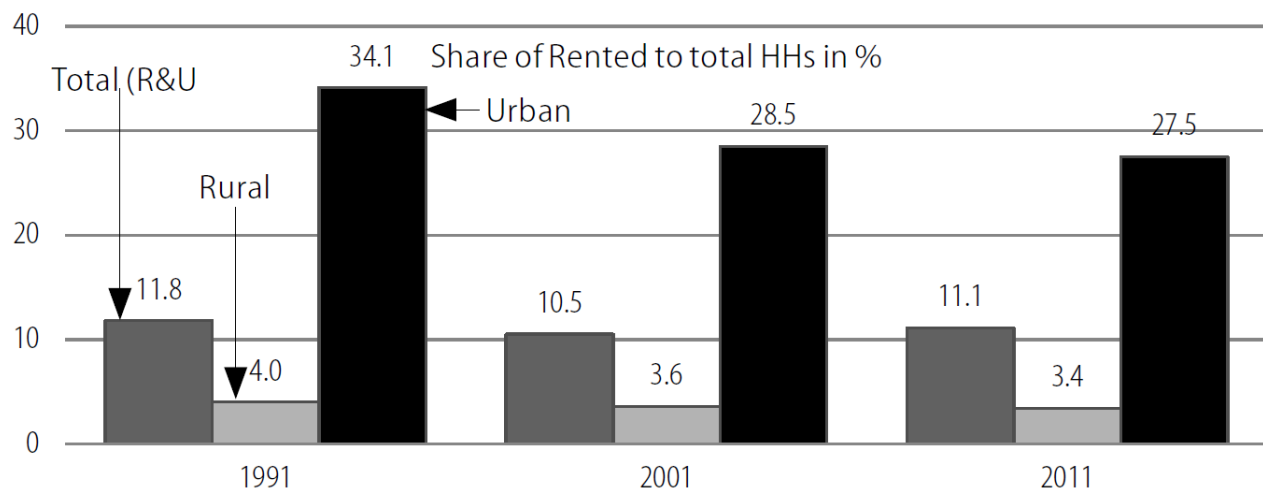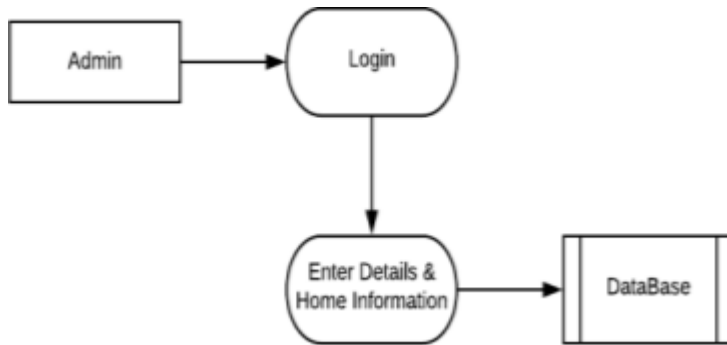

Source: Census of India.

Chapter 3
REQUIREMENTS AND ANALYSIS

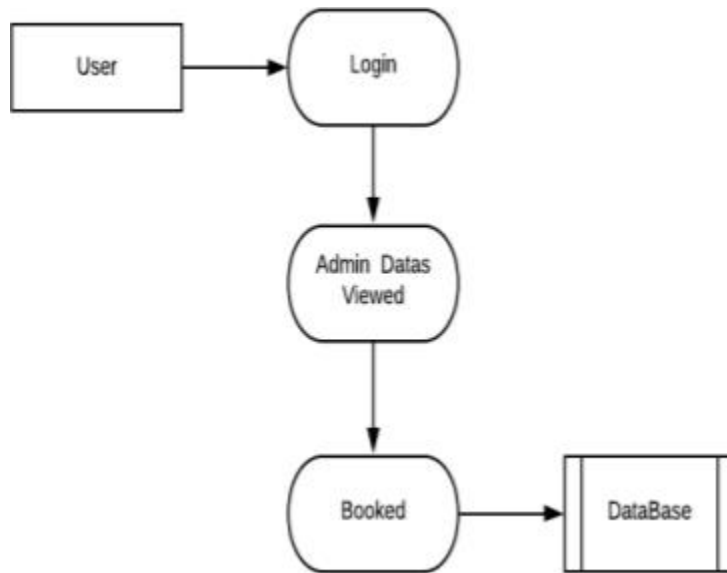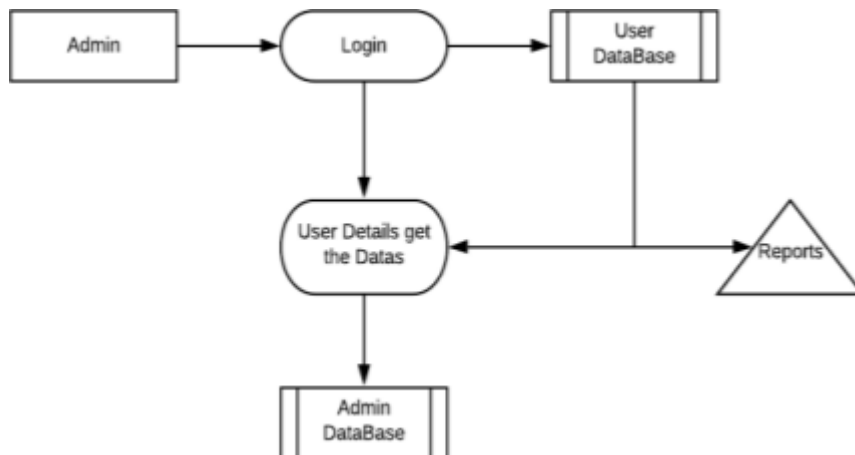## 3.1 System Flow Diagram

Level 0:

Level 1:

Level 2:

Level 3:

Level 4:

3.2 Functional Requirements

Requirement analysis is a software engineering technique that is composed of the various tasks that determine the needs or conditions that are to be met for a new or altered product, taking into consideration the possible conflicting requirements of the various users.

Functional requirements are those requirements that are used to illustrate the internal working nature of the system, the description of the system, and explanation of each subsystem. It consists of what task the system should perform, the processes involved, which data should the system holds and the interfaces with the user. The functional requirements identified are:

☐ Customer's registration: The system should allow new users to register online.

☐ Online reservation of House: Customers should be able to use the system to make booking and online reservation.

◻ Automatic update to database once reservation is made or new customer registered: Whenever there's new reservation or new registration, the system should be able update the database without any additional efforts from the admin.

◻ Feedbacks to customers: It should provide means for customers to leave feedback.

3.3 Non-Functional Requirements

It describes aspects of the system that are concerned with how the system provides the functional requirements. They are:

a. Security: The subsystem should provide a high level of security and integrity of the data held by the system, only authorized personnel of the company can gain access to the company's secured page on the system; and only users with valid password and username can login to view user's page.

b. Performance and Response time: The system should have high performance rate when executing user's input and should be able to provide feedback or response within a short time span usually 50 seconds for highly complicated task and 20 to 25 seconds for less complicated task.

c. Error handling: Error should be considerably minimized and an appropriate error message that guides the user to recover from an error should be provided. Validation of user's input is highly essential. Also the standard time taken to recover from an error should be 15 to 20 seconds.

d. Availability: This system should always be available for access at 24 hours, 7 days a week. Also in the occurrence of any major system malfunctioning, the system should be available in 1 to 2 working days, so that the business process is not severely affected

3.4 Database

A database is an organized collection of data. It is the collection of schemas, tables, queries, reports, views, and other objects. The data are typically organized to model aspects of reality in a way that supports processes requiring information, such as modelling the availability of rooms in hotels in a way that supports finding a hotel with vacancies.

A database management system (DBMS) is a computer software application that interacts with the user, other applications, and the database itself to capture and analyze data. A general-purpose DBMS is designed to allow the definition, creation, querying, update, and administration of databases. Well-known DBMSs include MySQL, PostgreSQL, MongoDB, MariaDB, Microsoft

SQL Server, Oracle, Sybase, SAP HANA, MemSQL and IBM DB2. A database is not generally portable across different DBMSs, but different DBMS can interoperate by using standards such as SQL and ODBC or JDBC to allow a single application to work with more than one DBMS. Database management systems are often classified according to the database model that they support; the most popular database systems since the 1980s have all supported the relational model as represented by the SQL language. Sometimes a DBMS is loosely referred to as a "database".

3.5 ER- Diagram

An ER diagram can be used to design logical database schemas. An ER model is a high- level description of the data and the relationships among the data, rather than how data is stored. It focuses on identifying the entities and the relationship among the entities.

In the ER diagram of Online Shopping the relationship between the customer to product is one to many as same customer can buy multiple products, also for category to product is one to many as for a single category have different product. Also here mentioned the relationship between the tables, mention the primary key of the table. Here another important part is that its mention all the entities of the table. Online Shopping System ER diagram give below:
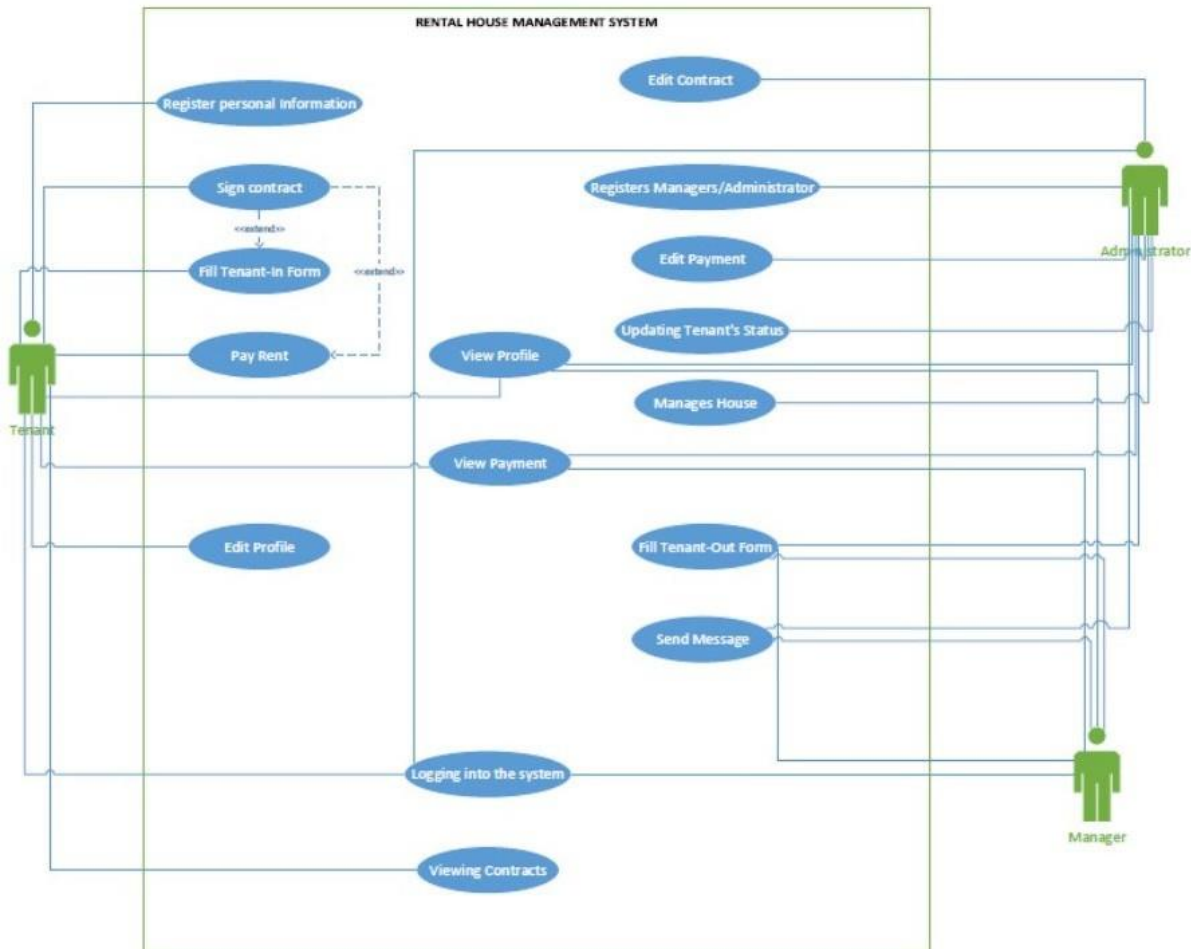
3.6 DFD Diagram

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its process aspects. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated.
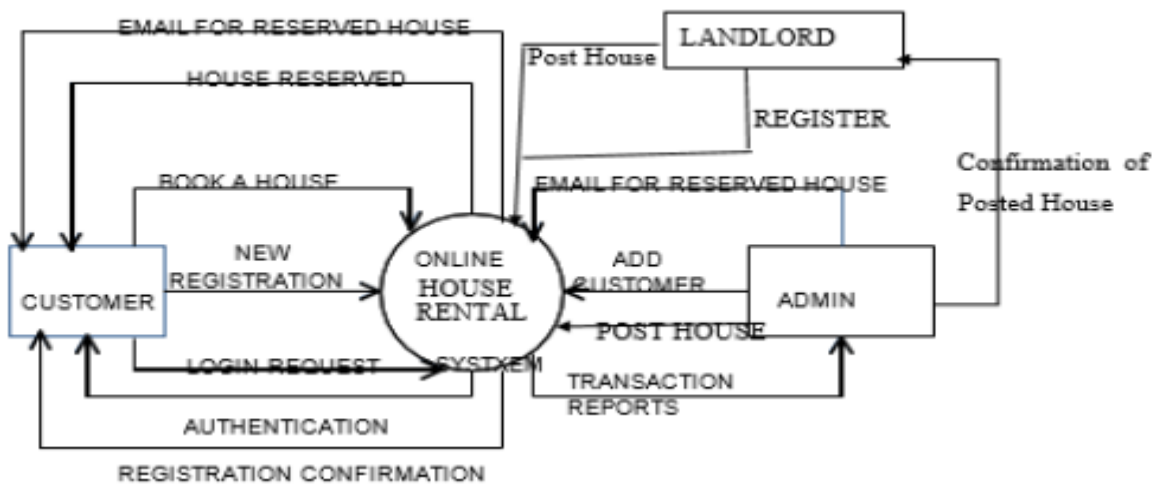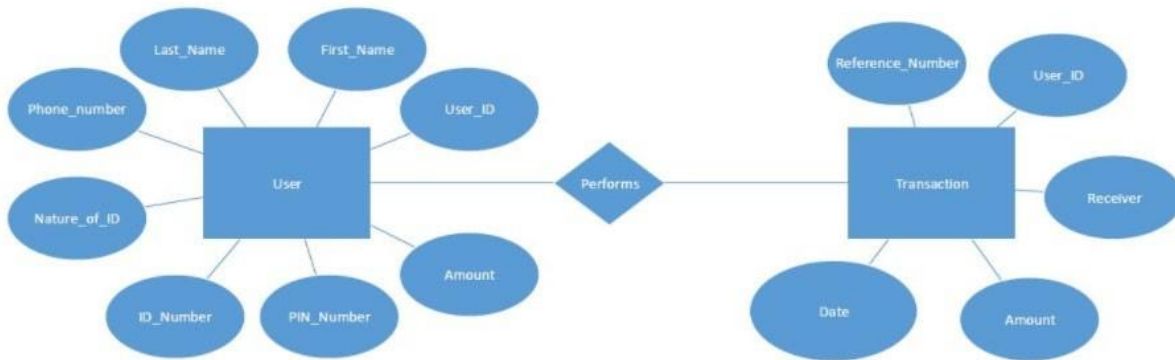
Functions of Customer:
☐ New Registration
☐ Login Request
☐ Registration Confirmation by the System
☐ Reserve House
☐ House Issued by the System
☐ Email received for Reserved House.

Functions of System Administrator
☐ Add Customers/Tenants/landlords
☐ Send E-Mails for Reserved House
☐ View Transaction reports
☐ Post Vacant Houses

Functions of Landlord:
☐ Register in the system
☐ Post a New house
☐ Send House Confirmation to System Administrator

Chapter 4
Functionality/Working of the Project

4.1 Salient Features

- This online house rental solution is fully functional and flexible.
- It is very easy to use.
- This online House rental system helps in back-office administration by streamlining and standardizing the procedures.
- It saves a lot of time, money and labor.
- Eco-friendly: The monitoring of the Housing activity and the overall business becomes easy and includes the least of paper work.
- The software acts as an office that is open 24/7.
- It increases the efficiency of the management at offering quality services to the customers.

4.2 Project Working Plan

S.NO	Task Name	Duration
1	Initiation	3-4 Days
2	Planning 2.1 Scope Statement 2.2 Plan schedule 2.3 Budget	1 Week
3	Execution 3.1 SRS documentation 3.2 Front End Development 3.3 Database Management	3-4 Months
4	Testing	10-15 Days
5	Submission	

4.3 Budget:

S.No	Requirement	Amount
1	Development	No cost
2	Testing	1k
3	API required	1-2k
4	Database Storage required	1k
5	Server	5k
	Total:	9K

Chapter 5

Results and Discussion

5.1 Requirement Elicitation:

5.1.1System Required:

- Windows 10
- 8gb RAM
- Fast Processor

5.1.2 Tools Required:

(I)Android Studio:
Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on IDEA software and designed specifically for Android development. It is available for download on Windows, mac OS and Linux based operating systems or as a subscription-based service in 2020. It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development.

Android Studio was announced on May 16, 2013 at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in June 2014. The first stable build was released in December 2014, starting from version 1.0.

On May 7, 2019, Kotlin replaced Java as Google's preferred language for Android app development. Java is still supported, as is C++.[14]

Features:
A specific feature of the Android Studio is an absence of the possibility to switch autosave feature off.

The following features are provided in the current stable version:
(1)Gradle-based build support
   Android-specific refactoring and quick fixes
   Lint tools to catch performance, usability, version compatibility and other problems

(2)ProGuard integration and app-signing capabilities
   Template-based wizards to create common Android designs and components

(3)A rich layout editor that allows users to drag-and-drop UI components, option to preview layouts on multiple screen configurations.

(4) Support for building Android Wear apps
Built-in support for Google Cloud Platform, enabling integration with Firebase Cloud Messaging (Earlier 'Google Cloud Messaging') and Google App Engine.

(5)Android Virtual Device (Emulator) to run and debug apps in the Android studio.
Android Studio supports all the same programming languages of IntelliJ (and CLion) e.g. Java, C++, and more with extensions, such as Go; and Android Studio 3.0 or later supports Kotlin[21] and "all Java 7 language features and a subset of Java 8 language features that vary by platform version." External projects backport some Java 9 features.[23] While IntelliJ states that Android Studio supports all released Java versions, and Java 12, it's not clear to what level Android Studio supports Java versions up to Java 12 (the documentation mentions partial Java 8 support). At least some new language features up to Java 12 are usable in Android.

Once an app has been compiled with Android Studio, it can be published on the Google Play Store. The application has to be in line with the Google Play Store developer content policy

(ii) Html:
The HyperText Markup Language, or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img /> and <input /> directly introduce content into the page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), former maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since

1997.[2] A form of HTML, known as HTML5, is used to display video and audio, primarily using the <canvas> element, in collaboration with javascript.

(iii) CSS:
Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML.[1] CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts.This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, which reduces complexity and repetition in the structural content; and enable the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device.

The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable.

The CSS specifications are maintained by the World Wide Web Consortium (W3C). Internet media type (MIME type) text/css is registered for use with CSS by RFC 2318 (March 1998). The W3C operates a free CSS validation service for CSS documents.

In addition to HTML, other markup languages support the use of CSS including XHTML, plain XML, SVG, and XUL.

Syntax
CSS has a simple syntax and uses a number of English keywords to specify the names of various style properties.

A style sheet consists of a list of rules. Each rule or rule-set consists of one or more selectors, and a declaration block.

Selector
In CSS, selectors declare which part of the markup a style applies to by matching tags and attributes in the markup itself.

(iv)Java Script

JavaScript (/ˈdʒɑːvəˌskrɪpt/),[10] often abbreviated JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS.[11] Over 97% of websites use JavaScript on the client side for web page behavior, often incorporating third-party libraries. All major web browsers have a dedicated JavaScript engine to execute the code on the user's device.

JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard.[14] It has dynamic typing, prototype-based object-orientation, and first-class functions. It is multi-paradigm, supporting event-driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).

The ECMAScript standard does not include any input/output (I/O), such as networking, storage, or graphics facilities. In practice, the web browser or other runtime system provides JavaScript APIs for I/O.

JavaScript engines were originally used only in web browsers, but are now core components of some servers and a variety of applications. The most popular runtime system for this usage is Node.js.

Although Java and JavaScript are similar in name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design.

Creation at Netscape
The first web browser with a graphical user interface, Mosaic, was released in 1993. Accessible to non-technical people, it played a prominent role in the rapid growth of the nascent World Wide Web.[15] The lead developers of Mosaic then founded the Netscape corporation, which released a more polished browser, Netscape Navigator, in 1994. This quickly became the most-used.

During these formative years of the Web, web pages could only be static, lacking the capability for dynamic behavior after the page was loaded in the browser. There was a desire in the burgeoning web development scene to remove this limitation, so in 1995, Netscape decided to add a scripting language to Navigator. They pursued two routes to achieve this: collaborating with Sun Microsystems to embed the Java programming language, while also hiring Brendan Eich to embed the Scheme language.

Netscape management soon decided that the best option was for Eich to devise a new language, with syntax similar to Java and less like Scheme or other extant scripting languages. Although the new language and its interpreter implementation were called LiveScript when first shipped as part of a Navigator beta in September 1995, the name was changed to JavaScript for the official release in December.

The choice of the JavaScript name has caused confusion, implying that it is directly related to Java.

At the time, the dot-com boom had begun and Java was the hot new language, so Eich considered the JavaScript name a marketing ploy by Netscape.

Adoption by Microsoft
Microsoft debuted Internet Explorer in 1995, leading to a browser war with Netscape. On the JavaScript front, Microsoft reverse-engineered the Navigator interpreter to create its own, called JScript.

JScript was first released in 1996, alongside initial support for CSS and extensions to HTML. Each of these implementations was noticeably different from their counterparts in Navigator. These differences made it difficult for developers to make their websites work well in both browsers, leading to widespread use of "best viewed in Netscape" and "best viewed in Internet Explorer" logos for several years.

The rise of JScript
In November 1996, Netscape submitted JavaScript to Ecma International, as the starting point for a standard specification that all browser vendors could conform to. This led to the official release of the first ECMAScript language specification in June 1997.

The standards process continued for a few years, with the release of ECMA Script 2 in June 1998 and ECMA Script 3 in December 1999. Work on ECMAScript 4 began in 2000.

Meanwhile, Microsoft gained an increasingly dominant position in the browser market. By the early 2000s, Internet Explorer's market share reached 95%. This meant that JScript became the de facto standard for client-side scripting on the Web.

Microsoft initially participated in the standards process and implemented some proposals in its JScript language, but eventually it stopped collaborating on Ecma work. Thus ECMAScript 4 was mothballed.

(v) SQL:

SQL (Structured Query Language) is a domain-specific language used in programming and designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS). It is particularly useful in handling structured data, i.e. data incorporating relations among entities and variables. SQL offers two main advantages over older read–write APIs such as ISAM or VSAM. Firstly, it introduced the concept of accessing many records with one single command. Secondly, it eliminates the need to specify how to reach a record, e.g. with or without an index.

Originally based upon relational algebra and tuple relational calculus, SQL consists of many types of statements, which may be informally classed as sublanguages, commonly: a data query language (DQL),[a] a data definition language (DDL),[b] a data control language (DCL), and a data manipulation language (DML).[c][7] The scope of SQL includes data query, data

manipulation (insert, update and delete), data definition (schema creation and modification), and data access control. Although SQL is essentially a declarative language (4GL), it also includes procedural elements.

SQL was one of the first commercial languages to use Edgar F. Codd's relational model. The model was described in his influential 1970 paper, "A Relational Model of Data for Large Shared Data Banks". Despite not entirely adhering to the relational model as described by Codd, it became the most widely used database language.

SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987. Since then, the standard has been revised to include a larger set of features. Despite the existence of standards, most SQL code requires at least some changes before being ported to different database systems.

5.2 Problem with Existing System

Currently the most property managers manage property and tenants' details on papers. Once customers finds a vacant house, they can call or email manager of the houses indicating the size of the house they would like rented to them. The property manager can email them back giving them all the details about the house they are requesting. The details include; Rent per month Deposit paid Terms and conditions to follow acceptance. With the current system recording the details of various activities of user is completely manual and entails a lot of paper work. Each house has a file that contains the house: number, size, rent per month, expected deposit, occupant and status. Rent payment table contains tenants: first name, last name, Phone number, date of payment, amount and balance if any. The existing system only provides text-based interface which is not as user friendly as Graphical user interface. Since the system is implemented manually, the response is very slow. The transactions are not secure as papers may get lost or damaged. Hence, there is need of reformation of the system with more advantages and flexibility. The system eliminates most of the limitations of the existing system.

5.3 Proposed System

User initially want to sign up and create the account and user logs in the system automatically will show number of rented houses in particular places. In this information like owner name, house rent, address, and mobile number will the user to avoid the house broker, rent payment form, registration form. Each form has several command buttons like new, search, cancel, Back and exit. With the command buttons you can manipulate the database. If you want to add data to the database all you need to do is to click on new then input data in the textboxes provided then click save and the data will automatically be saved. If you want to view data in the database you just click Search button and the data will be displayed for you.. You may enter data then decide to cancel it, it is simple click on cancel and it will be canceled. further ,with this location also available. Picture of the places will be uploaded daily to the seller. The buyer can subscribe the needed location so he/she will receive the notification if any updation of homes occurred in the required International Journal of Pure and Applied Mathematics Special Issue 1680

5.4 Implementation:

Home Page:

```html
<!DOCTYPE html>
{% load static %}
<html lang="en">

<head>

  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
  <meta name="description" content="">
  <meta name="author" content="">

  <title>HomePage</title>

  <!-- Bootstrap core CSS -->
  <link href="{% static 'vendor/bootstrap/css/bootstrap.min.css' %}" rel="stylesheet">

  <!-- Custom styles for this template -->
  <link href="{% static 'css/shop-homepage.css' %}" rel="stylesheet">

</head>

<body>

  <!-- Navigation -->
  <nav class="navbar navbar-expand-lg navbar-dark bg-dark fixed-top">
    <div class="container">
      <a class="navbar-brand" href="/">Rental Management</a>
      <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarResponsive" aria-controls="navbarResponsive" aria-expanded="false" aria-label="Toggle navigation">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse " id="navbarResponsive">
        <ul class="navbar-nav ml-auto navbar-left">
          <li class="nav-item active">
            <a class="nav-link" href="/">Home
              <span class="sr-only">(current)</span>
            </a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="/about">About</a>
          </li>
          <li class="nav-item">
```

```html
            <a class="nav-link" href="/services">Services</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="/contact">Contact</a>
          </li>
          {% if user.is_authenticated %}
          <a href='users/dashboard'><li class="nav-item nav-
link">{{user.user_name}}</li></a>
          <li class="nav-item"><a class="nav-link" href="{% url 'logout'
%}">Logout<i class="fas fa-user-plus"></i></a></li>
          {% else %}
          <li class="nav-item"><a class="nav-link" href="{% url 'register'
%}">Sign Up <i class="fas fa-user-plus"></i></a></li>
          <li class="nav-item"><a class="nav-link" href="{% url 'login' %}">Login
<i class="fas fa-sign-in-alt"></i></a></li>
          {%endif%}
        </ul>
      </div>
    </div>
  </nav>

  <!-- Page Content -->
  <div class="container">
    {% if messages %}
    <ul class="messages pos">
      {% for message in messages %}
        <li class="pos mes {{ message.tags }} alert alert-success">{{ message
}}</li>
      {% endfor %}
    </ul>
  {% endif %}
    <div class="row">

      <div class="col-lg-3">

        <h3 class="my-4">Filters</h2>
        <div class="list-group">
          <form class="form-inline my-2 my-lg-0" method="GET">
            <input class="form-control mr-sm-2" type="search" placeholder="City"
aria-label="Search" name="city" >
            <hr>
            <input class="form-control mr-sm-2" type="search" placeholder="Maximum
price" aria-label="Search" name="price" >
            <hr>
            <button class="btn btn-outline-success my-2 my-sm-0"
type="submit">Search</button>
          </form>
        </div>
```

```html
        </div>
        <!-- /.col-lg-3 -->

        <div class="col-lg-9">

          <div id="carouselExampleIndicators" class="carousel slide my-4" data-
ride="carousel">
            <ol class="carousel-indicators">
              <li data-target="#carouselExampleIndicators" data-slide-to="0"
class="active"></li>
                <li data-target="#carouselExampleIndicators" data-slide-to="1"></li>
                <li data-target="#carouselExampleIndicators" data-slide-to="2"></li>
            </ol>
            <div class="carousel-inner" role="listbox">
              <div class="carousel-item active">
                <img class="d-block img-fluid"
src="https://www.concepthome.com/images/737/001/cost-to-build-less-than-100-
000_house_plan_CH468.jpg" alt="First slide">
              </div>
              <div class="carousel-item">
                <img class="d-block img-fluid"
src="https://www.toledofoodbank.org/wp-content/uploads/2016/09/house-900x350.jpg"
alt="Second slide">
              </div>
              <div class="carousel-item">
                <img class="d-block img-fluid" src="https://worldticket.com/wp-
content/uploads/2019/08/sweden-wordpress-1-900x350.jpg" alt="Third slide">
              </div>
            </div>
            <a class="carousel-control-prev" href="#carouselExampleIndicators"
role="button" data-slide="prev">
              <span class="carousel-control-prev-icon" aria-hidden="true"></span>
              <span class="sr-only">Previous</span>
            </a>
            <a class="carousel-control-next" href="#carouselExampleIndicators"
role="button" data-slide="next">
              <span class="carousel-control-next-icon" aria-hidden="true"></span>
              <span class="sr-only">Next</span>
            </a>
          </div>
          <script>
          var i;
          for (i = 0; i < 5; i++)
          {

          }
        </script>

          <div class="row">
```

```
{% for house in houses %}
    <div class="col-lg-4 col-md-6 mb-4">
        <div class="card h-100">
        {% for th in thumbnails %}
            {% if th.0 == house.pk%}
                <a href="#"><img class="card-img-top" src="/media/{{th.1}}"
alt=""></a>

            {%endif%}
        {% endfor %}
        <div class="card-body">
            <h4 class="card-title">
            <a href="/houses/{{house.house_id}}">{{house.house_id}}</a>
            </h4>
            <h5>Rs.{{house.rent}}</h5>
            <p class="card-text">{{house.description}}</p>
        </div>
        <div class="card-footer">
            <small class="text-muted">Open the house page to view reviews
and ratings</small>
        </div>
        </div>
    </div>
{% endfor %}

</div>
<!-- /.row -->

    </div>
    <!-- /.col-lg-9 -->

</div>
<!-- /.row -->

</div>
<!-- /.container -->

<!-- Footer -->
<footer class="py-5 bg-dark">
  <div class="container">
    <p class="m-0 text-center text-white">Copyright &copy; Your Website 2020</p>
  </div>
  <!-- /.container -->
</footer>

<!-- Bootstrap core JavaScript -->
<script src="{% static 'vendor/jquery/jquery.min.js' %}"></script>
<script src="{% static 'vendor/bootstrap/js/bootstrap.bundle.min.js'
%}"></script>
```

```
</body>

</html>
```

Add House:

```html
<!DOCTYPE html>
{% load static %}
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Add House</title>

    <!-- Bootstrap core CSS -->
    <!-- <link href="{% static 'vendor/bootstrap/css/bootstrap.min.css' %}"
rel="stylesheet"> -->
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/css/bootstrap.min.css">
    <!-- <link href="{% static 'vendor/bootstrap/css/bootstrap.min.css' %}"
rel="stylesheet"> -->

    <!-- Custom styles for this template -->
    <link href="{% static 'css/add_house.css' %}" rel="stylesheet">
</head>
<body>

    <nav class="navbar navbar-default navbar-dark">
        <div class="conainer-fluid">
            <div class="navbar-header">
                <a class="navbar-brand" href="/">Rental Management</a>
            </div>
            <div class="collapse navbar-collapse">
                <ul class="nav navbar-nav navbar-right">

                        <li><a>Signed in as {{user.username}}</a></li>

                        <li><a href='/dashboard'>Signed in as
{{user.user_name}}</a></li>

                        <li><a href="/logout">Logout</a></li>

                </ul>
            </div>
        </div>
```

```html
        </nav>

    <div class="container">
        <div class="row">
            <h1 style="text-align:center";>Add new house</h1>
            <div style="width:30%; margin: 30px auto;" >
            <form method="POST" enctype="multipart/form-data">
                {% csrf_token %}
                <div><label for="city">City</label></div>
                <div class="form-group">
                    <input   class="form-control" type="text" name="city"
placeholder="City">
                </div>
                <div><label for="State">State</label></div>
                <div class="form-group">
                    <input class="form-control" type="text" name="state"
placeholder="State">
                </div>
                <div><label for="address">Address</label></div>
                <div class="form-group">
                    <input class="form-control" type="textarea" name="address"
placeholder="Address">
                </div>
                <div><label for="description">Description</label></div>
                <div class="form-group">
                    <input class="form-control" type="textarea" name="description"
placeholder="Description">
                </div>
                <div><label for="rent">Rent</label></div>
                <div class="form-group">
                    <input class="form-control" type="number" name="rent"
placeholder="Rent(per month)">
                </div>
                <div><label for="image">Image</label></div>
                <div class="form-group">
                    <input class="form-control" type="file" name="image"
placeholder="Image" multiple>
                </div>
                <div class="form-group">
                    <button class="btn btn-lg btn-primary btn-block" type="submit"
name="">Submit</button>
                </div>
            </form>
        </div>
    </div>
</body>
</html>
```

Chapter 6
Conclusion and Future Scope

6.1 Conclusion

Over the years, rental housing of total has fallen from 54% in 1961 to 28% in 2011 in urban India. Without a vibrant rental housing management system labor markets cannot function efficiently. Argues that the recent financial crisis demonstrated that not everyone wants to or can afford to purchase a home, yet bias still remains against rental housing. By taking a systematic approach to rental housing and ensure a balanced approach to support future growth. Thus, the main focus of the paper is to bring to highlight a proper online rental management system to offer services to the people and with one idea i.e., a safe home for all. With the increasing population this rental management system serves a basis for millions across the country and also will serve in the economic development of the country.

6.2 Future Scope

In future our project is meant to satisfy the needs of rental house owners. Several user-friendly interfaces have also been adopted. This package shall prove to be a powerful in satisfying all the requirements of the users. It is with utmost faith that I present this software to you hoping that it will solve your problems and encourage you to continue appreciating technology because it is meant to change and ease all our work that seems to be very difficult. I don't mean that my project is the best or that I have used the best technology available it just a simple and a humble venture that is easy to understand. In extent we can add GPS system in build and can give live chat online option to users. This project can also be extended to IOS Platform and several state Database can be included. Could also allow local business to push deals/coupons within a certain geographic area.

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