Development Of Online Rental Mobile Application

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Abstract: In today's fast-paced world, managing time for everyday demands can be challenging. Consequently, there is an urgent need for technological advancements and the recognition of the power they hold. Particularly in the realm of housing, The House rental issue is one of the elemental parts of society. Nowadays, it is extremely hard to find the best suitable accommodation in city areas if people search for it physically. On the other hand, the landowner also needs to rent the house. It can be difficult to find tenants just to hang a lease sign on a building, and as a result, they lose money. An online common platform can play a vital role in this case. The purpose of the study is to develop a common online-based Rental mobile application for both tenants and house owners so that both tenants and landowners will mutually benefit from the system. This paper presents the development of online-based rental mobile applications developed both for tenants and house owners. This mobile application is very user-friendly and efficient and it has many unique features that are not offered by other currently available house rental applications or websites in India. Tenants can register using their phone number, store information about their identity, search for available houses, send messages to house owners, and choose a suitable house using a developed application. House owners can also register for the system, which will manually verify and authenticate the knowledge provided by the house owner can view a tenant's information and history whenever a tenant makes contact through tests and supply house-related information accordingly. Once the user logs in the system automatically shows three forms: the houses form, the rent payment form and the tenants" registration form. Each form has several command buttons; new, save, cancel, delete, next, previous and exit. With the command buttons, you can manipulate the database of the application. 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 next or previous and the data will be displayed for you. When you click delete, you will be able to delete a record that you desire. You may enter data and then decide to cancel it, it is simple to click on cancel and it will be cancelled. The proposed application has been tested and validated. It works very efficiently with many available features. The application gives fast and best opportunities to get houses, as well as ensuring the availability of houses for rent in the greatest number of areas. The system will help to spread trustworthy services nationwide and supply users with the chance to speak and improve the house rent in India. Because it has many features, this developed online-based rental mobile application will make it very easy for house owners can easily rent out their properties and tenants to find houses to rent.

INTRODUCTION

Development of Rental Mobile Applications has become an important factor in our society hence the need to have a rental house management system. This Chapter will provide a brief understanding of the background of the study, definition of the project problem statement, its objectives, scopes, project justification, Project deliverables and project budget and schedule. Housing is important to qualify for life with considerable economic, social, cultural and personal significance. Though a country's national prosperity is usually measured in economic terms, increasing wealth is of diminished value unless all can share its benefits and if the growing wealth is not used to redress growing social deficiencies, one of which is housing.

Housing can also facilitate Laboure mobility within an economy and help economies adjust to adverse shocks. In short, a well-functioning housing sector is critical to the overall health of the economy and as economies develop, we expect a corresponding deepening and growth of housing markets.

Housing as a basic human right demands that urban dwellers should have access to decent housing, defined as one that provides a foundation for rather than being a barrier to good physical and mental health, personal development and fulfilment of life objectives The focus of this research project is managing housing and giving solutions to low-income, medium and high-income households or what is commonly known as affordable housing. 'Affordable' is a term used to describe individuals' capability to pay for certain products or services because their income is enough to do so. Although the term 'affordable housing' is often applied to rental housing, that is within the financial means of those in the lower income ranges of geographical areas, the concept applies to both middle and high-income individuals. Many families choose to rent houses based on their income and family situations, unfortunately, there may not be enough good quality rental housing for their families Certainly, the availability of affordable and good-quality rental housing is a critical concern for many families. Let's explore some aspects related to this issue:

1. Urban Migration and Housing Challenges:

According to the last few years, approximately 45 crore people have migrated to different parts of India in search of employment opportunities. Urban migrants, including workers in manufacturing industries, domestic/commercial establishments, health sectors, and other service providers, play a vital role in the urban economy.

These migrants often compromise on living conditions to send remittances back to their families in rural areas and villages. they frequently reside in slums, informal/unauthorized colonies, or peri-urban areas to save on rental expenses. Unfortunately, this compromises their well-being, rest, and hygiene.

The COVID-19 Pandemic exacerbated the situation, leading to a massive reverse migration of workers and urban poor from cities, highlighting the need for acknowledgement and redressal.

2. Affordable Rental Housing Complexes (ARHCs):

Recognizing the importance of rental housing, the Indian government has introduced the concept of Affordable Rental Housing Complexes (ARHCs).

ARHCs aim to provide Livable housing options to urban migrants and the poor at reasonable rents. These complexes can help prevent future unplanned growth of slums.

Entities such as industrial, trade associations, educational institutions, and development

However, local planning and development control regulations (DCR) often pose restrictions on utilizing such land for housing facilities.

3. Benefits of Promoting Rental Housing:

Promoting rental housing can lead to inclusive urban development by providing safer and affordable accommodation closer to workplaces.

Entities with unused land can contribute to this cause by constructing ARHCs, thus utilizing their potential for social impact.

Property owners are allowed to post their properties to the portal and manage the properties, agreements, and their allocated tenants with on/off reminders that facilities for the agreement expiry/due date. The technologies that will be used in the Flutter framework, are clean architecture, blocs, and state. These technologies allow for making the Application responsive. It means that the Application will operate easily on both Operating Systems IOS and Android. There is no requirement for a particular display of fixed size. The technologies that will be used in the back end are the Firebase cloud store. These allow for making the application dynamic. They allow the creation of forms that will collect particular information from the user and store it in the database.

LITERATURE REVIEW.

Various websites, research papers, and policies regarding rental houses and in housing sector we reviewed, and some of them are listed here:

3.1 CURRENT SCENARIO OF RENTAL HOUSING IN INDIA

Rental housing comprises 30.4 per of all housing in urban India as per the National Sample Survey Organization's (NSSO's) 65th Round of data of 2008-09 (NSSO, 2010) (See Table 1). There is a marginal increase in renting from 28.1 per cent in the 48th Round (1993) to 29.0 per cent in the 58th Round (2002). This means that in the last 20 years, which coincide with the two decades of reforms, there has not been any significant change in renting in urban India. In comparison, the proportion of households owning dwellings has increased from 57.3 per cent in 1993 to 61.6 per cent in 2008-09. The shift to ownership has taken place from employer housing as well as other types of housing and not rental housing. Industrialization shifting to the private sector has resulted in the share of employer housing declining over time.

Table 1: Tenure Status of Dwelling Units in Urban India over Time

	Tenure status	49th Round	58th round	65th round
1	No dwelling	0.3	0.1	0.0
2	Own dwelling	57.3	59.9	61.6
3	Employer's quarters	7.7	5.8	4.7
4	Rented	28.1	29.0	30.4
5	Others	6.6	5.3	3.3
	Total	100.0	100.0	100.0

Source: NSSO (2010: 35) Others include all other types of possession of the dwelling unit such as encroached ones. Here State-wise comparison in Table 2 on tenure types puts Andhra Pradesh (47 per cent), Tamil Nadu (46.7 per cent), and Karnataka (44.2 per cent) as the top three states in terms of rental households. Other than these, Delhi (36.4 percent) and Himachal Pradesh (31.6 per cent) are the other two states which have rental housing above the national average, which is around 30 percent. On the contrary, Bihar, Jammu &Kashmir, Uttar Pradesh (UP), and Madhya Pradesh (MP) have the least occurrence of rental housing, all below 20 percent. Except for Gujarat and Maharashtra, other states with higher than the national average of urbanization have a large proportion of rental housing. In some special states such as Himachal Pradesh, Orissa, Chhattisgarh, Jharkhand, and Chandigarh, employers' housing is quite significant in proportion, all this housing is likely to be government housing.

Table 2: Tenure Status of Dwelling Units in Urban India by States

States/U. T/all-India	Owned	Employer's quarter	Rented	Others	All
Andhra Pradesh	40.9	3.0	47.0	9.1	100.0
Assam	64.1	10.4	23.2	2.2	100.0
Bihar	78.5	3.4	13.0	5.1	100.0
Chhattisgarh	53.9	13.0	27.6	5.4	100.0
Delhi	51.7	6.5	36.4	5.3	100.0
Gujrat	69.1	3.4	23.5	4.0	100.0
Haryana	73.7	4.6	20.7	1.1	100.0
Himachal Pradesh	39.9	24.9	31.6	3.5	100.0
Jammu & Kashmir	79.1	4.8	14.4	1.8	100.0
Jharkhand	58.0	13.2	23.8	4.9	100.0
Karnataka	51.6	2.8	44.2	1.3	100.0
Kerala	74.8	5.6	16.9	2.6	100.0
Madhya Pradesh	71.3	7.2	18.9	2.6	100.0
Maharashtra	65.3	3.4	28.5	2.8	100.0
Orissa	60.7	14.1	23.0	2.2	100.0
Panjab	62.9	6.5	29.1	1.6	100.0
Rajasthan	72.9	2.8	21.2	3.1	100.0
Tamil Nadu	48.2	3.6	46.7	1.4	100.0
Uttarakhand	66.9	8.0	23.3	1.9	100.0
Uttar Pradesh	75.3	3.6	18.8	2.4	100.0
West Bengal	65.2	5.5	26.7	2.6	100.0
Chandigarh	42.7	15.7	30.0	11.6	100.0
All-India	61.5	4.7	31.4	3.3	100.0

Source: NSSO (2010: 58) The tenure status by the Monthly Per Capita Expenditure (MPCE) (Table 3) shows that rent increases with an increase in MPCE. In other words, the lower MPCE classes tend to live in self-owned housing as they cannot afford to even pay rent and would instead prefer to squat. While only 18.3 per cent of households lived in rented housing in the lowest quintile, in the highest quintile, the proportion was nearly 38 per cent. Rental housing is not feasible for the urban poor, as it does not allow them to save and spend on other aspects of their well-being such as health and education

3.2 INDIAN ASPECT OF AFFORDABLE HOUSING FOR RENT

A house in India is considered affordable for a LIG (lower income group) household when the monthly instalment or rent does not exceed 30 per cent of the house.

The 'Confederation of Real Estate Developers' Associations of India (CREDAI), provides a much broader definition for affordable housing: Affordable housing is provided for usually three sections of society: the economically weaker, lower-income, and middle-income segment. household's gross monthly income.

EWS can afford homes of an area of 30 square meters with income less than INR 3,00,000 per year 3,00,001-6,00,000-year income people fall in LIG. They can afford dwellings up to 60 square meters.

6,00,001- 12,00,000 rupees per year income people fall in the MIG-1 band, with affordable apartments up to 90 square meters.

INR 12, 00001, 18,00000 per year people fall into the MIG-II band and can get accommodations of carpet area up to 110 square meters.

The other parameter used to define affordable housing in India is the possibility of getting a home. To buy a home, all the 3 above-mentioned bands shouldn't spend more than thirty to forty per cent of their income as EMI. In addition, the affordable housing definition is not limited to the above-entered three bands; instead, it applies to people across the country.

RESEARCH METHODOLOGY

The development of the House Rental Management System (HRMS) follows a systematic and iterative approach, integrating principles from software engineering and real estate management. The methodology encompasses the following key stages:

1. Research and Analysis:

Conduct in-depth interviews with property owners, tenants, and property managers to understand their specific needs and pain points in the rental process. Identifying features and functionality for effective Rental applications shows how data will be collected and the tools for collecting data, the system methodology, the proposed system input and output, users and systems development tools. System development is a technique that is used to show how the proposed system will be developed. In this case, the methodology used will be a waterfall model. It is included in the stages that the developer will use when developing the system. Also analyzing the existing application and website for the rental management system.

2. System Design:

Designing a Rental application involves several crucial components like.

User Authentication and Profiles:

Users (both tenants and property owners) should be able to create accounts, log in, and manage their profiles.

Implement secure authentication mechanisms (e.g., OAuth, JWT) to protect user data.

Property Listings and Search:

Property owners can list their available properties with details such as location, rent, amenities, and photos.

Tenants can search for properties based on filters (e.g., location, budget, property type).

Booking and Reservations:

Tenants can express interest in a property and request a viewing.

Property owners can approve or decline viewing requests.

Once approved, tenants can book the property for a specified duration.

Payment Integration:

Implement payment gateways for rent payments, security deposits, and service fees.

Ensure secure handling of financial transactions.

Messaging and Notifications:

Enable communication between tenants and property owners.

Send notifications for booking requests, approvals, and reminders.

Property Details and Reviews:

Display comprehensive property details, including photos, floor plans, and amenities.

Allow tenants to leave reviews and ratings for properties they've rented.

Admin Dashboard:

Admins can manage user accounts, and listings, and resolve disputes.

Monitor system health and handle reported issues.

Geolocation Services:

Integrate maps to display property locations accurately.

Enable users to search properties based on proximity to specific areas.

Security and Privacy:

Protect user data with encryption and secure APIs.

Implement role-based access control (RBAC) to restrict unauthorized actions.

Scalability and Performance:

Design the system to handle a large number of users and property listings.

Optimize database queries and use caching where necessary.

ADVANTAGES

Development of an online-based Rental Application has been developed in this paper. The system can provide a framework that allows managers to conduct reasonable transactions within a limited time frame. This system is meant to satisfy the needs of rental house owners. Several user-friendly interfaces have also been adopted. The real-time chat system will bring fluidity to the usage and connection between owner and tenants. Also, the location tracing system will be a major advantage for users as it will be easy to find the location of the house on a map. In addition, for the concern of security, this system has optimized secure and private data storage and verification systems. This package will prove to be very powerful in satisfying all the requirements of the users

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