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Connect: Rent Hub Android Based Application

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Abstract: In today's modern economy, where costs are increasingly prohibitive, the focus has shifted towards acquiring essentials rather than long-term commitments. This has led to a growing trend of leasing instead of purchasing outright. An innovative Android application facilitates this transition by allowing consumers to easily lease products online. Embodying the philosophy of "Rent what you need and Rent out what you don't," the app ensures that whenever someone lists a product for rent, it becomes visible to all users. This platform connects product owners with potential renters, enabling owners to post their items for lease and customers to browse and rent them. Logged-in users can conveniently manage their orders and transactions. The app categorizes rental products into various sections such as Hardware, Electronics, and Sporting Goods, allowing users to search and explore listings effortlessly. Listings are sorted based on the user's current location, displaying items closest to them first. To list an item, users simply click on "Post ad," categorize their item from predefined categories, upload photos, and provide detailed descriptions. Once posted, the item becomes available for rent to other users. The app also features a chat function and secure payment options to facilitate smooth transactions between users. This initiative aims to foster a a space for people to engage online, rent items from one another for a specified period, and effectively reduce expenses on necessary products.

KEYWORDS: Android Studio, Firebase Fire store, Real-time Database, Android SDK, Tapping, and Cloud Service

I. INTRODUCTION

In today's digital era, mobile apps have emerged indispensable, making people increasingly reliant on them. However, there isn't a perfect app for renting essential items. Introducing "Connect: Your Rent Hub," an app designed to facilitate easy connections between individuals looking to rent out their products and those in need of them. The app simplifies the rental process by using OTP-based authentication, making it accessible For all individuals, even those who might find other verification methods complicated. Leveraging a location-based algorithm, the app prioritizes listings based on proximity, enhancing the chances of nearby users finding ideal matches. "Connect" addresses the common challenges of renting, such as the time-consuming traditional process and the difficulty of managing products and payments. It offers a user-friendly solution, enabling direct communication between product owners and renters, eliminating platform intervention, and streamlining the entire rental process. This groundbreaking method not only makes renting easy and cost-effective but also provides an opportunity for users to earn extra income by renting out their products, thereby enhancing the app's scalability and adaptability to evolving user needs.

II. LITERATURE SURVEY

1. Literature Survey

A review of existing literature on Android-based rental applications highlights the growing need for user-friendly solutions that connect individuals looking to rent items with those offering them. Traditional rental methods are often cumbersome, time-consuming, and risky, making modern, technology-driven solutions increasingly popular.

This app leverages OTP-based authentication for simplicity and inclusivity, ensuring it is accessible to a broad audience. Additionally, it utilizes a sophisticated algorithm to prioritize listings based on geographical proximity, enhancing the chances of users finding suitable rental matches nearby. By facilitating direct communication between product owners and renters, the app eliminates unnecessary platform intervention and streamlines the entire rental process.

This creative method not just simplifies the rental experience but also offers an opportunity for users to generate extra income, thereby increasing the app's scalability and adaptability to the evolving needs of its users

III. EXISTING SYSTEM

Rento Mojo

An app on a phone to rent a hand-selected couch, TV, or laptop—one was delivered in less than a week.

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This application includes a requirement that allows a consumer to rent an assortment of goods. Every product and its application partners' maintenance work. In addition, it offers location-based services, product tracking, and home delivery services.

Furlenco

Furlenco is a furniture rental service that lets customers rent fashionable and useful furniture for their homes. Furlanco offers a variety of bundles and specific items to suit a variety of tastes and requirements, including choices for maintenance and swapping.
For people who want to furnish their home comfortably but don't want to commit to buying furniture for a long time, this service offers an economical

OXL

OLX is a global Digital platform where individuals can buy and sell a wide variety of products, including electronics, furniture, cars, and real estate. By posting ads, sellers can reach a large audience, while buyers can search for and purchase items based on their location and specific requirements. The platform's broad reach and user-friendly interface make it a favored option for individuals seeking to buy or sell second-hand goods, promoting a circular economy and helping individuals find affordable options.

IV. PROPOSED SYSTEM

By providing contemporary mobile applications in straightforward formats for the safety of peer-to-peer product rental applications, This tool can benefit users come up with effective solutions. The applications that were found were mobile ones That enabled straightforward interaction between the consumer and the product owner and could process the lock rental reservation. People can rent the necessities very easily and affordably with this option, and it's also a terrific method to make money from product rentals.

V. BENEFIT OF PRAPOSED SYSTEM

Improved User Experience:

➢ Customers and product owners may navigate with ease thanks to intuitive design.

➢ Through On their smartphones, individuals might browse, list, and book products at any moment from any location.

VI. METHODOLOGY

This paper outlines the advancement and application of an Android application called CONNECT, designed to streamline the rental process for various items. The proposed system employs an OTP (One-Time Password) authentication method to verify users, ensuring that only legitimate users can create accounts and eliminating the risk of fraudulent activity. The application features multiple item categories, simplifying the process of posting and finding products within specific groups. Additionally, it includes a chat box for seamless communication between users. Items are displayed based on the user's current location, enhancing the relevance of search results.
By storing all user data and product listings in Google Cloud, the app ensures secure data management and prevents deceitful activities. Key components used in the app's development are discussed in detail.

1. Android Studio

Android Studio is the official Integrated Development Environment (IDE) for creating applications for Google's Android operating system. **Purpose-built for** Android development, **It is anchored in the** IntelliJ IDEA software, offering features like code autocomplete and a user-friendly interface. Android Studio can be downloaded for Windows, Linux, and Mac operating systems. Google introduced Android Studio during the I/O conference on May 16, 2013, and its initial version 1.0 was released in December 2014 after evolving from its beta form, starting with version 0.8 in June 2014. The latest stable version as of now is 2023.2.1. This latest version supports the development of Android Wear applications **and incorporates a** rich layout editor for drag-and-drop UI component design. It also offers an Android Virtual Device (emulator) for testing apps, a terminal for command-line interface use, and a version control system to manage projects with git.

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2.Firebase

Firebase is a powerful web and mobile app development platform now owned by Google. Originally established as an independent company in 2011, it became a flagship product for app developers after Google acquired it in 2014. Firebase offers two types of databases: Firebase Realtime Database and Firebase Firestore, both of which are extremely beneficial for app development. In our application, we utilize Firebase Firestore for general data storage, while the Realtime Database is used specifically for the chat module due to its owing to its automatic sorting capabilities.

i. Firebase realtime database

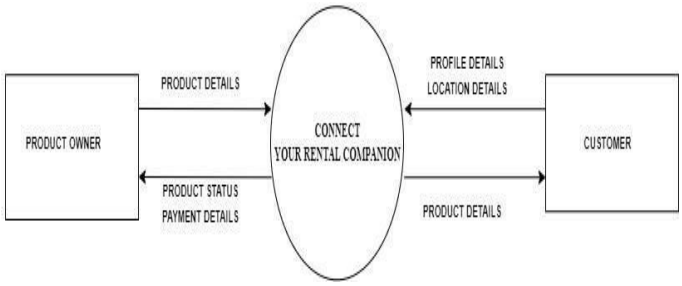
A real-time database is a key-value pair type of NoSQL database. Plus it store the data it is very user- friendly to work on it. Since we are dealing with key- value pairs, the value can be a key- value pair which can nest a key value pair. This is how the figures can be expanded and saved in the manner we want.

ii. Firebase firestore:

The fire store is also a NoSQL database that stores data in the form of collections and documents. Documents are like record having text files, there are actually key value pairs where data is stored. Collections : Collections are the drawers by which we can categories these documents similarly This provides the packaging feature If you required a separate document you have to shift to that drawer.

VII. CONTEXT DIAGRAM

The data flow from the users (Product Owner and Customer) to the rental application that facilitates a hassle-free rental process is shown in a context diagram. Customers and product owners are two examples of it. The person in charge of the app's rental versions of the products is the product owner. Customer: The person who utilizes the rental app to



determine

products and ask a rental company for them. The Android protection app Aranet "CONNECT YOUR RENTAL COMPANION" is located in the circle's center.

The Product Owner and a Client have a crucial communication path Pertaining to functionality of the program. The Product Owner provides information on the product, such as specs, availability for rental, and descriptions. They also provide us with crucial hints regarding the state of the products, such as whether they are reserved, available, or previously rented out. Payment Ratios: The applicable Payment Ratios are provided together with the payment options and transaction information in due course.

Conversely, With the aim of customize the encounter, the customer supplies the profile details, which could involve user data settings, and contact details. Furthermore, the location details, which include the address for delivery or receipt, are posted. The customer finally enters the specifics of their product, including what they want to rent, how long they want to rent it for, etc. The foundation of a seamless user experience across the application ecosystem is a strong information exchange between the customer and the product owner. Context diagrams show how a system interacts with other actors, or external things, that is intended to communicate with. An good tool for understanding the system in context is the system context diagram. Putting software into use or updating it Examining operational procedures Managing

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VIII. CONCLUSION

This provides the application with an extra benefit for renting in locations where a satellite in numerous categories is accessible. criticize the merchandise. Rental: The application's main Intention is to simplify the online rental process for you. Every application that is produced is meticulously inspected and tested to ensure that it is free of errors. Anyone who knows how to use an Android mobile phone can use this program because it is straightforward to register for and has an intuitive UI. If the app gains a large user base, society will find it incredibly helpful if more and more products start to show up in it. Therefore, we can conclude that renting might be simpler if you use the Connect Android app. Additional Enhancements This project will integrate machine learning models into the program, enhancing its interactive features. For example, an application may suggest other products to A user in relation to their search history. An in-app calling feature is planned: in order for the application to be independent of an Android mobile's default phone app. creation and design of a website that matches the app and has all of its features. a report post feature In order for the user to prevent posting of unrelated content. You can only view a certain amount of reports in an app, and after you cross that limit, you Find it impossible to view any more posts. A couple of the enhancements that could be made to the suggested application soon.

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