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# Property Rental Management System

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**Abstract—** A platform for administration via which an existing local firm can be transformed into an internet venture. Two components, one for the consumer application and one for the backend storage, make up the rental management system. A consumer portal called Cashing Flow is also available. This has been implemented to get around the recently enhanced rules pertaining to individual space concord. Regarding the technologies employed in this application, we made use of the most recent Google-introduced tools, the Flutter technology and the Dart language. Python and JS were used to create the front end and back end of the web software that is used in this application. Although there is a quick overview of the full project in the introduction, the specifications for which this ERP has been designed are listed. Information on the technology utilized to create this ERP model is provided after the same. According to the literature review, various papers were selected, and the details were then adjusted in accordance with this ERP advantage.

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### INTRODUCTION

Rent and tenant administration is being done online. Customers will be able to communicate directly with store owners and purchase groceries as a result. Customers will find it more convenient to shop for groceries with this app. The shopkeeper's portal can be customised so they can control their finances. Customers of this app will also have a delivery option. This programme serves as a platform where you can manage renters and rent your property with ease. It enables you to monitor the status of your tenant's payments and much more!

Register without any reservations and give it a shot. To manage your current tenants, you can add a hostel, a housing society, or any other type of property.

### PROBLEM STATEMENT

Over the years, landlords/property managers have struggled to maintain and manage their clients' and their own records. The following issues make it difficult to manage.

- Data Growth: Data is increasing day by day. Manually saving and maintaining all the data is very difficult.
- Data security is not guaranteed: Manually recording data on books or paper is fragile and can lead to data loss.
- We have no database to store information: Data stored in tangible files, the potential for data loss corruption is very high.
- Human Resources: Our current system is too manual to fill out forms, submit documents, and provide manifests. This increases the burden on workers but does not produce the desired results.
- A messy job: When changes need to be made to the current system, it becomes more manual and error prone.
- ERROR: The system is managed and maintained by workers and is therefore subject to errors.

### PROPOSED SYSTEM

In current systems, recording the details of a user's various activities is all manual and involves a lot of paperwork. Each house has a file containing the number of houses, size, rent per month, expected security deposit, occupants, and status. The rental payment table includes tenants: first name, last name, phone number, payment date, amount, and balance (if any). Existing systems only provide text-based interfaces and are not as user-friendly as graphical user interfaces. Since the system is manually implemented, the response is very slow. Transactions are not secure as documents can be lost or damaged. Therefore, we need to reform the system with more benefits and flexibility. This system eliminates most of the limitations of existing systems. Apart from the application, admins had a portal where they could control or change prices whenever they changed. However, only administrators are responsible for sales figures on portals that are directly connected to the application. User requirements documents were analysed to better understand system requirements. The possibilities of implementing these requirements were analysed. The physical modules of the system were designed and the operating environment in which they would operate was identified. This system was a basic visual system/application. An administrator updated the database each time. Add, remove, or delete data on your system Only administrators have access to the system and can view or modify it as required. The system is designed to allow administrators to view, edit, delete and add data in the database. User requirements documents were analysed to better understand system requirements. The possible implementation of these requirements was analysed. The physical modules of the system were designed and the operating environment in which they would operate was identified. This system was a basic visual system/application. The database was updated every time by the administrator. Add, remove, or delete data on your system. Only administrators have access to the system and can view or modify it as required. The system is designed to allow administrators to view, edit, delete and add data in the database. Each time a customer comes in, it is registered in the tenant registration table in the database along with other relevant information about the tenant. System design involved transforming software requirements into an architecture that describes the top-level structure, identifies software components, and creates a detailed design for each software component. For each requirement, a set of one or more design elements was produced. Conceptual design was the very first phase of design in which drawings or solid models were the dominant tools and products. The conceptual design phase provided a description of the proposed system in terms of a set of integrated ideas and concepts about what it was to do, behave and look like, that was understandable by the users in the manner intended.

### METHODOLOGY

To achieve the above-mentioned objectives some methodology has been followed and it is given below

- The Property Rental Management system is developed in Flutter on the Flask API.
- We used Python for backend development, Dart language in Flutter.
- For data storage purpose we have used Postgres SQL.
- We have also used pub.dev repository for flutter and dart to use some pre-defined packages.
- For testing purpose we have used Postman API tester.

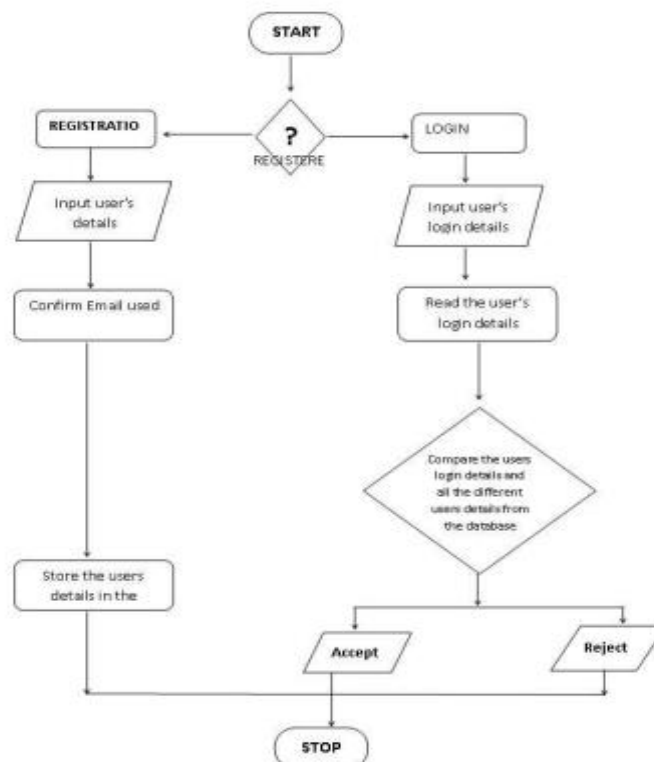


Fig. 1. Directive flow of the application

### ADVANTAGES

- i. Registered users can upload properties for rent.
- ii. This system has been designed and developed to attempt to overcome all the stated problems.
- iii. Since it is an online system, there is accurate information on the property, and you can view all material information from anywhere.

### CONCLUSION

In this work, a secured mobile house rental management system is designed. The system provides landlord/agent/tenant/prospective tenant with information on house records. These records can be share with other users like making an advertisement for an apartment that is available. It also provides a payment system and wallet engine which allows easy means of making transaction. For the mobile application, Flutter platform was used to develop the graphical user interface (GUI) while Flask was used for the back end which handles the SQL server used in hosting the database locally and later stored the encrypted summarized house record in the cloud. The system was designed to work in Android operating environments. In future, the system can be improved upon using an embedded system that is if the Tenant is not having a device to communicate with the landlord/agent, the landlord/agent can still communicate with the device integrated into the house door (Smart doors). The software will be connected to a smart door which will not allow the user/tenant to access his/her room unless he/she renews the house rent agreement. A new feature like count down to the time the house rent of the tenant will expire will be implemented.

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