RV College of Engineering®, Bengaluru – 59
Department of Computer Science and Engineering
Database Design Laboratory (18CS53)

Synopsis

TITLE	**INTEGRATED MANAGEMENT SYSTEM FOR RVCE HOSTEL**			
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1. Introduction

The modern world has witnessed a huge change in the quantity and quality of education sector. This has led to more people leaving the comforts of their home environment and residing at hostels run by the education institutions. A large proportion of educational institution run hostels still utilize the traditional procedures for record keeping and managing amenities. The aim of this project is to eliminate this cumbersome process by shifting to a user friendly college hostel management application that can lead to a pleasant and satisfying experience for both the students and the hostel authorities.

2. Existing System

The existing framework adopted in hostel administration is one wherein all the work is done manually. Student data is stored in huge files and room allocation is done on the basis of FCFS for first year students and CGPA for subsequent years through long, chaotic queues and physical filling up of application forms. In addition, mess and other amenities, grievances, attendance and fee payment processes lack a decent, organised and convenient system for handling, accessing and updating data.

3. Proposed System

The proposed system is intended to eliminate all the limitations of the existing system. The college hostel management system provides an easy to use interface to automate these tedious tasks while ensuring data security and eliminating data redundancy. The application provides relevant operations that run smoothly to retrieve data quickly and systematically. It also makes it simpler to integrate additional features and requirements to facilitate future needs.

4. Relational Database Structure

The relational database model is used to create, store and maintain several tables including student that includes the basic personal information details of students like name, USN, branch, grade and address which can then be utilised in the tables like room and block that includes the room allotment and hostel block details. Other tables for mess details, fee details, grievances and other amenities can be appropriately designed using RDBMS.

5. RDBMS AND NoSQL Integration

NoSQL databases follow the CAP theorem as opposed to ACID properties of SQL based databases. Data can be stored in many ways which means it can be document, graph, wide column or key-value stores. It also provides horizontal scalability. In the proposed system, Google Firebase shall be used as a NoSQL database for storing and maintaining user credentials for admin, warden and student users, working closely with the front-end login page designed using HTML and CSS. This is linked with the appropriate RDBMS tables to display necessary information to the concerned users as per their needs.

6. Societal Concern

In this era of digitalisation, accuracy and precision is everything. An important aspect covered under this project is minimal utilisation of both time and energy, of the administrators and students. Also, in the current pandemic situation, there is a crucial necessity of online processes and effective data management in every field to minimise the physical interactions. The proposed college hostel management system ensures the safety of students and hostel authorities, while providing a reliable, secure and user-friendly system that enhances accessibility and productivity.