Database Management System
(MC212)

Project Title: Database for hostel Management System

❖ Scope:

Hostels have many students living in and employees working there. Our job is to keep track of the information about all these students, employees, rooms, fees and visitors. Our management system will transfer old paper work into secure and easily accessible digital file, which will lessen the burden of hostel admin.

❖ Description/Requirements:

➢ Entities:

1. Hostel

2. Students

3. Rooms

4. Fees

5. Mess-Cleaning department

6. Employee

7. Visitors

8. Mess-Menu

9. Internet

10. Clubs

➢ Relationships:

1. Hostel has many buildings and warden for each. Each building is given particular unique number. Information about total number of rooms, students and staff for cleaning/food are recorded.

2. Keeping record for the information of students living in hostel is very important for any hostel. Each student's ID (key attribute), full name, batch, DOB, gender, contact, address and ID of the room allocated to him/her are recorded safely and can easily be accessed.

3. Every building has several rooms and each room has unique ID, capacity (2-3 students in each room), room type (AC/non AC) and monthly rent according to capacity. And each building has different cleaning staff working there. Canteens are also there in some of the building.

4. It is important to keep record for room status (occupied/vacant) and capacity to allocate room to the students.

5. One room is allocated to more than one students but one student is allocated only one room to stay and pay the rent for it. That is more than one student can have same room id in which they are living but one student can't have more than one room id.

6. Students are required to pay the rent and water/electricity bill at the end of the month within given time slot. Though students are given some extra time to pay the fees in particular conditions, each students' fees status (paid/not paid) with their name and are recorded for each month.

7. Hostel has mess staff to provide food facilities to the students living in hostel and also has cleaning staff to maintain hygiene.

8. For each department Information about total number of employees and the building number in which they are working is recorded.

9. Employees' ID (key attribute), name, gender, salary per month, contact, joining year and address are recorded. Both the departments (cleaning and cooking) can have more than one employee but every employee can work for either cleaning or cooking department (not for both).

10. Students' family/friends visit the hostel to meet them. Each visitor's name, name of the student to whom they want to meet, Relation between visitor and student, date of visit, check in- check out time etc. Informations are kept.

11. Providing food facility in hostel eases student's struggle to arrange food for themselves and also they will get hygienic, nutritious and affordable food at any time. Hostel may have more than one canteen according to the necessity and different mess staff for each canteen. Food schedule is designed for each day and can be changed accordingly.

12. Wi-Fi routers are putted in each building of the hostels to provide internet facility and students are given access to use it. Each router has unique IP address, password and building's number in which they are putted.

13. Since students live in hostel during their school/collage education period, free Wi-Fi facility helps them a lot and save their budgets too. They can easily access different types of e-books/e-library, can learn anything what they want.

14. Student can easily do any online registration/payment process using internet facility and communication (audio/video call, attending online sessions) also becomes easy.

15. Hostel also provides club facility to refresh student's mind and also for their personal development.

16. In clubs student can do different activities like dance/singing/drama, can play games like chess/table-tennis/badminton, can do yoga and exercise too for being healthy and fit.

17. employee of each department have access to database to see the details of the employees of the particular department only.

➢ **Queries:**

1. Retrieve the average annual expenses incurred behind individual mess and cleaning staff for each building.
2. Give total number of students of each batch who are left to pay the fees.
3. List down details of the students who are left to pay the fees of last month-year.
4. Give details of month-year for student having ID 20001001 in which he/she has paid the fees late.(here we assume that the date to pay the fees in each month is 5. So if any student pay the fees after date 5 then they are considered as late to pay the fees.)
5. Give details of month-year for student having ID 202001002 for which his/her fees are yet left to pay.
6. Show the details of students living in room(ID= 201).
7. Count total vacant rooms of each building with capacity more than 3 and with type non-AC.
8. List down names of all students who haven't joined any club.
9. Retrieve total number of employees having salary more than the average salary of the employees working in the same department in which he/she is working.
10. Name of visitors who came to visit student having ID 202001001 in Fabruary(03) 2019.
11. Retrieve the data of oldest employee(oldest according to joining year) of each department.
12. Details of the food available in canteen under prize 100 on Monday and Friday.
13. Find building number, room_id, and fee status of each month of year 2020 of student having ID as 202001008.

14. List down vacant rooms in building number 05 with their ID, capacity, rent and type (AC).
15. List down names of all students with age greater than 20, who are the part of "dance" club
16. Find the details of students who have joined all the clubs .
17. Retrieve the data of student who have joined only dance club.
18. Retrieve the data of student who have joined some club.
19. Find out half occupied rooms if any.
20. List down the password of all routers putted in each building.
21. Function to print fees detail of the particular student
22. Function to update address of an employee.