**An Example of Hotel Maintenance System built with SQL Database**

**Abstract**: This paper presents the design and implementation of an automated hotel maintenance system aimed at integrating the maintenance of hotel operations, from a request is sent, to an employee is assigned the task, till the job is accomplished and the log record is updated, all tasks are cascaded because the system utilizes a relational database ensuring timely repairs, and minimizing service disruptions. All work orders are streamlined, tracking asset conditions, and to schedule preventive maintenance — to keep maintaining data accuracy and accessibility.

## System Brief Structure

The hotel maintenance system built with an **SQL database** focuses on organizing data related to:

* Maintenance requests
* Staff assignments
* Rooms and facilities
* Equipment/assets
* Maintenance schedules

## Database Schema Components

Here is a simplified SQL schema that supports core maintenance functionalities:

### 1. ****Rooms Table****

sql

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CREATE TABLE Rooms (

RoomID INT PRIMARY KEY,

RoomNumber VARCHAR(10),

Floor INT,

RoomType VARCHAR(50)

);

### 2. ****MaintenanceRequests Table****

sql

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CREATE TABLE MaintenanceRequests (

RequestID INT PRIMARY KEY,

RoomID INT,

IssueDescription TEXT,

Status VARCHAR(20), -- e.g., 'Pending', 'In Progress', 'Completed'

RequestDate DATE,

CompletionDate DATE,

FOREIGN KEY (RoomID) REFERENCES Rooms(RoomID)

);

### 3. ****Staff Table****

sql

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CREATE TABLE Staff (

StaffID INT PRIMARY KEY,

Name VARCHAR(100),

Role VARCHAR(50)

);

### 4. ****Assignments Table****

sql

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CREATE TABLE Assignments (

AssignmentID INT PRIMARY KEY,

RequestID INT,

StaffID INT,

AssignedDate DATE,

FOREIGN KEY (RequestID) REFERENCES MaintenanceRequests(RequestID),

FOREIGN KEY (StaffID) REFERENCES Staff(StaffID)

);

## Benefits of SQL-Based Maintenance System

* **Efficient Tracking:** Keeps logs of issues and repairs.
* **Scheduling:** Enables preventive maintenance planning.
* **Accountability:** Links tasks to specific staff members.
* **Reporting:** Facilitates data-driven decisions with SQL queries.

## Sample Query: Open Requests Per Staff Member

sql

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SELECT s.Name, COUNT(\*) AS OpenRequests

FROM Staff s

JOIN Assignments a ON s.StaffID = a.StaffID

JOIN MaintenanceRequests r ON a.RequestID = r.RequestID

WHERE r.Status != 'Completed'

GROUP BY s.Name;

Reference

**Priyadharshini, S., & Joy, C. R. (2021).** Design and implementation of an automated hotel management system. International Journal of Engineering and Advanced Technology (IJEAT), Volumn 10, Issue 5, 256–259. https://doi.org/10.35940/ijeat.E2569.0610521