



In Business since 1995

Choice of Database Technology (MySQL):

The selection of MySQL as the database technology for the Hotel Website application is mostly based on the specific requirements and characteristics of the application. For this purpose, MySQL, a popular open-source relational database management system, has many benefits.

MySQL's support for ACID (Atomicity, Consistency, Isolation, and Durability) transactions is one of the many ways in which the database ensures the reliability and safety of its users' data. This is essential for ensuring the security of guest and reservation data in hotels.

MySQL's robust querying features make for easy retrieval and management of data. This is crucial for locating vacant accommodations, making reservations, and compiling statistical data.

Hotel Website Data Structures:

Rooms Table is where data about individual hotel rooms (such as their numbers, sizes, and availability) will be kept.

Guest names, arrival and departure dates, and room numbers are only some of the information that will be recorded in the reservations table.

In circumstances when guests' information is handled independently of reservations, a guests table may be used to keep track of information such as visitors' names, contact information, and preferred activities.

A transactions table can keep track of guest payments, invoices, and other financial dealings, making it useful for managing the business's finances.

This table can be used to hold data on hotels, such as their names, locations, contact details, and the facilities and services they provide.

The Functions of Data Structures:

The hotel room inventory and bookings will be handled via the Rooms and Reservations databases. When a customer makes a reservation, the Reservations table is updated with the guest information and a reference to the Rooms table. Check-in and check-out processes will be more efficient and accurate with this information.

When in use, the Guests table will keep track of each visitor details in order to streamline the check-in process, as well as for use in loyalty programs and individualized offerings.

The Transactions table will be used to keep tabs on money coming in and going out of the business. The software will be able to issue invoices and keep tabs on earnings thanks to the data it collects from guests' payments.

In order to help customers make educated selections regarding their stay, the hotel's website can present a table with key details about the property, which can be found in the "Hotel Information" section of the site.

Overall, the choice of MySQL and the established data structures correspond with the application's objectives to efficiently manage hotel room reservations, guest information, and financial transactions while assuring data integrity and consistency. The Hotel Website will be more stable and easier to use with the help of this database technology and data structure design.

Room / Reservation Document Structure

Room:

Purpose: The goal is to accurately portray the specifics of a hotel room, such as its number, type, and availability.

Implementation: The data is implemented as a table in a database.

Involvement: Connected with the processes of taking reservations, checking guests in and out, and allocating available rooms.

Reservation:

Purpose: The goal is to keep track of when guests are scheduled to arrive and depart.

Implementation: Reservations saved in a database with guest details and stay information.

Interaction: Linked to guest booking and room inventory control.

```
CREATE TABLE rooms (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    room_number INT NOT NULL,  
    room_type VARCHAR(255) NOT NULL  
);  
  
CREATE TABLE reservations (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    room_id INT NOT NULL,  
    guest_name VARCHAR(255) NOT NULL,  
    check_in_date DATE NOT NULL,  
    check_out_date DATE NOT NULL,  
    FOREIGN KEY (room_id) REFERENCES rooms(id)  
);
```

Customer Profile / Employee Profile Document Structure

Employee:

Purpose: The goal is to centralize all data pertaining to hotel employees, such as names, email addresses, and job descriptions.

Implementation Employee data is implemented as fields in a database.

Interaction: Integral part of human resource management, time and attendance records, and security monitoring.

Customer:

Purpose: The data is kept so that future guests can receive individualized service, make appointments.

Implementation: Guests information, including their preferences and past interactions, is stored in a database.

Interaction: Used for check-in/check-out and delivering customized services.

```
CREATE TABLE customer_profiles (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    first_name VARCHAR(255) NOT NULL,  
    last_name VARCHAR(255) NOT NULL,  
    email VARCHAR(255) NOT NULL,  
    phone_number VARCHAR(20),  
    address VARCHAR(255),  
    city VARCHAR(100),  
    state VARCHAR(100),  
    zip_code VARCHAR(10),  
    country VARCHAR(100),  
    notes TEXT  
);
```

```
CREATE TABLE employee_profiles (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    first_name VARCHAR(255) NOT NULL,  
    last_name VARCHAR(255) NOT NULL,  
    employee_id VARCHAR(20) NOT NULL,  
    email VARCHAR(255) NOT NULL,  
    phone_number VARCHAR(20),  
    job_title VARCHAR(100),  
    department VARCHAR(100),  
    hire_date DATE,  
    address VARCHAR(255),  
    city VARCHAR(100),  
    state VARCHAR(100),  
    zip_code VARCHAR(10),  
    country VARCHAR(100)
```

);

Restaurant Menu / Marketing Platform Document Structure

Restaurant Menu:

Purpose: The goal is to provide a comprehensive catalog of all available food and drink together with detailed descriptions, prices, and availability information.

Implementation: Details about menu items are saved in a database table.

Interaction: Used for taking orders from customers, keeping track of payments, and organizing the kitchen.

Marketing Platform:

Purpose: The goal is to make it easier to advertise to and interact with visitors via several mediums.

Implementation: Marketing and customer relationship applications may be used during implementation.

Interaction: Used for spreading the word, getting responses from visitors, and gauging the efficacy of advertising efforts.

```
CREATE TABLE restaurant_menu (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    item_name VARCHAR(255) NOT NULL,  
    description TEXT,  
    category VARCHAR(100),  
    price DECIMAL(10, 2) NOT NULL,  
    vegetarian BOOLEAN NOT NULL,  
    allergen_info TEXT,  
    availability BOOLEAN NOT NULL  
);
```

```

CREATE TABLE marketing_platforms (
    id INT PRIMARY KEY AUTO_INCREMENT,
    platform VARCHAR(50) NOT NULL,
    page_name VARCHAR(255) NOT NULL,
    username VARCHAR(100) NOT NULL,
    url VARCHAR(255) NOT NULL,
    followers INT,
    posts INT,
    last_updated TIMESTAMP
);

```

