CS 353 DATABASE SYSTEMS
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PROJECT PROPOSAL

Hotel Database
Management System

Group 37
Abdullah Ayberk Görgün - 21201986
Cemal Gündüz - 21703004
Veli Can Mert - 21602394
Hande Sena Yılmaz - 21703465

1. Introduction

In this project, we will design a management system for a hotel database named "Inn Manager". This system's primary goal is to provide a suitable place for guests and employees to carry out the hotel's functionalities.

This proposal starts with our project's description, in which the functionalities and properties of the hotel management database system are explained. It also includes answers to why we need a database system and how we will use it in the project.

The proposal continues with the requirements part in which functional and non-functional requirements of the project are explained.

After the requirements, we will provide the limitations and the E/R diagram, which will be used as a basis for our database system.

2. Description

The hotel management database system is the system for managing and observing the hotel's functionalities that guests and employees will use.

Employees can use this system as their related roles in the hotel, a housekeeper, a manager, or security. The hotel managers can use this system to see customers' food orders to their rooms and assign this job to a housekeeper. Also, managers can assign security staff to specific buildings for security walks. They can accept or reject the applications of training programs or leave request forms. They can create events for customers in the hotel in the location that they can choose from a list of locations. There are three events that a manager can conduct. These are guest activities, group tours, or training programs. The manager is the most authorized person among the employees who can use this system. Housekeepers can use this system to see their assigned jobs and carry food to the customer's rooms. They can also apply training program events via this system. Lastly, security staff can use this system to apply for training programs and fill a leave request form for requested days by checking their annual leave.

Guests can also use this system for a variety of functions. They can book a reservation that belongs to a specific room. Each room belongs to a specific building at specific locations. Also, they can use this system to comment on their reservations

and give a food order by selecting one of the listed restaurants and picking their food choices from that restaurant. Lastly, they can buy tickets for a guest activity or a group tour.

To sum up, it is a useful system for both employees and guests to manage the hotel's functionalities properly.

2.1 Why Do We Need a Database for a Hotel Management System?

The hotel management system contains information about different functionalities for different users. There are a vast amount of guests and employees in the hotel. We need to track each employee and guest in terms of their current works and information. In addition to this, there are vast amounts of rooms and different buildings. We need to keep track of which guest stays in which rooms at which building. We need to know if that room is occupied or not at that moment without going and checking the room.

Moreover, we need to keep track of the events that managers create. We need to observe how many employees are registered for training programs or how many guests bought tickets for guest activities or group tours. We need to know information about events to conduct that event. This means we need a database to store information about employees, guests, and rooms easily. Also, to regulate the functionalities of the hotel like ordering food or conduction events correctly.

2.2 How Do We Use the Database as a Part of the Project?

We will use the database system in order to reach the information about employees and guests. To see the entire list of the managers, housekeepers, and security staff with their information and see the guests' entire list with their information and rooms. We will update the database in the case of hiring new employees or new guests coming to the hotel by booking reservations. The database will provide us information about guests' past bookings if they are not new to the hotel. When guests order food from the restaurant database will be updated according to which restaurant the guest ordered the food from. When the manager

assigns a housekeeper for that order, the database will again be updated to keep track of which housekeeper did which job. When managers assign security staff to a building for a security walk database will be updated, and we will be able to see which security staff is working in which building at that moment. Finally, when the manager creates an event at a building, the database will be updated. By this, we can see the list of occupied buildings with the events and see the event's information about how many people will attend that event.

3. Requirements

3.1 Functional Requirements

Our hotel management database supports four main user types: Guests, Housekeepers, Security Staffs, and Managers. All of these user types have to authenticate themselves to use the provided functionalities.

3.1.1 Guest

- Guests should be able to book a reservation for an empty room.
- Guests should be able to comment on their reservations.
- Guests should be able to give a food order from different restaurants by choosing their foods.
- Guests should be able to buy a ticket for an activity group.
- Guests should be able to buy a ticket for a group tour.

3.1.2 Housekeepers

- Housekeepers should be able to view the food orders that they should do.
- Housekeepers should be able to apply for training programs.

3.1.3 Security Staff

- Security staff should be able to view their assigned buildings for security walks.
- Security staff should be able to apply for training programs.

- Security staff should be able to fill a leave request form for the requested days by checking their annual leave.

3.1.4 Managers

- Managers should be the most authorized person among employees.
- Managers should be able to view the list of housekeepers with their information.
- Managers should be able to view the list of security staff with their information.
- Managers should be able to assign food orders to housekeepers.
- Managers should be able to assign security staff to buildings to do security walks.
- Managers should be able to view the events' information.
- Managers should be able to accept or reject the application of training programs.
- Managers should be able to accept or reject the leave request forms.

3.1.5 System Requirements

- The system should be able to prevent booking for an already occupied room.
- The system should be able to update the room information when a guest books it.
- The system should be able to check the food information for the specific restaurant and update it when guest order a food (decrease the number of available food in that restaurant)
- The system should be able to prevent assigning more than one housekeeper for the same food order.

3.2 Non-Functional Requirements

3.2.1 Authentication & Security

- Permissions of the users can only be changed by the system administrator.
- Each type of user can access different functionalities of the hotel system. Limitations for actions should be specified.
- There should be password and password requirements such as length and numbers etc., for each user.

3.2.2 Reliability

- The system should not fail in any case. It should keep performing, and each user should be able to perform his specific actions. Otherwise, life in the hotel will get affected badly.

3.2.3 User-Friendliness

- Not all the guests or employees are at the same level in terms of understanding and logic; therefore, the system should be easy to use. New coming guests should be able to understand and use the system easily.

3.2.4 Capacity

- Since it is a database and many employees are working, guests staying, and rooms for guests in the hotel, we need to store a considerable amount of data.

4. Limitations

- Guests can't book the room that is booked by another guest until he checks out.
- Guests can't order food that is not available in a selected restaurant.
- Guests can only order food from a list of restaurants.
- Managers can't assign more than one housekeeper to the same food order.

- Managers can only create three events: a training program, a guest activity, or a group tour.
- Managers can create events only for the listed locations.
- Managers can't create events in the building that are busy with another event at the same time.
- Guests can't apply to the training programs.
- Housekeepers can't buy tickets for guest activities or group tours.
- Security staff can't buy tickets for guest activities or group tours.
- Security staff can't file a leave request form if he already used his annual leave in that year.

5. E/R Model
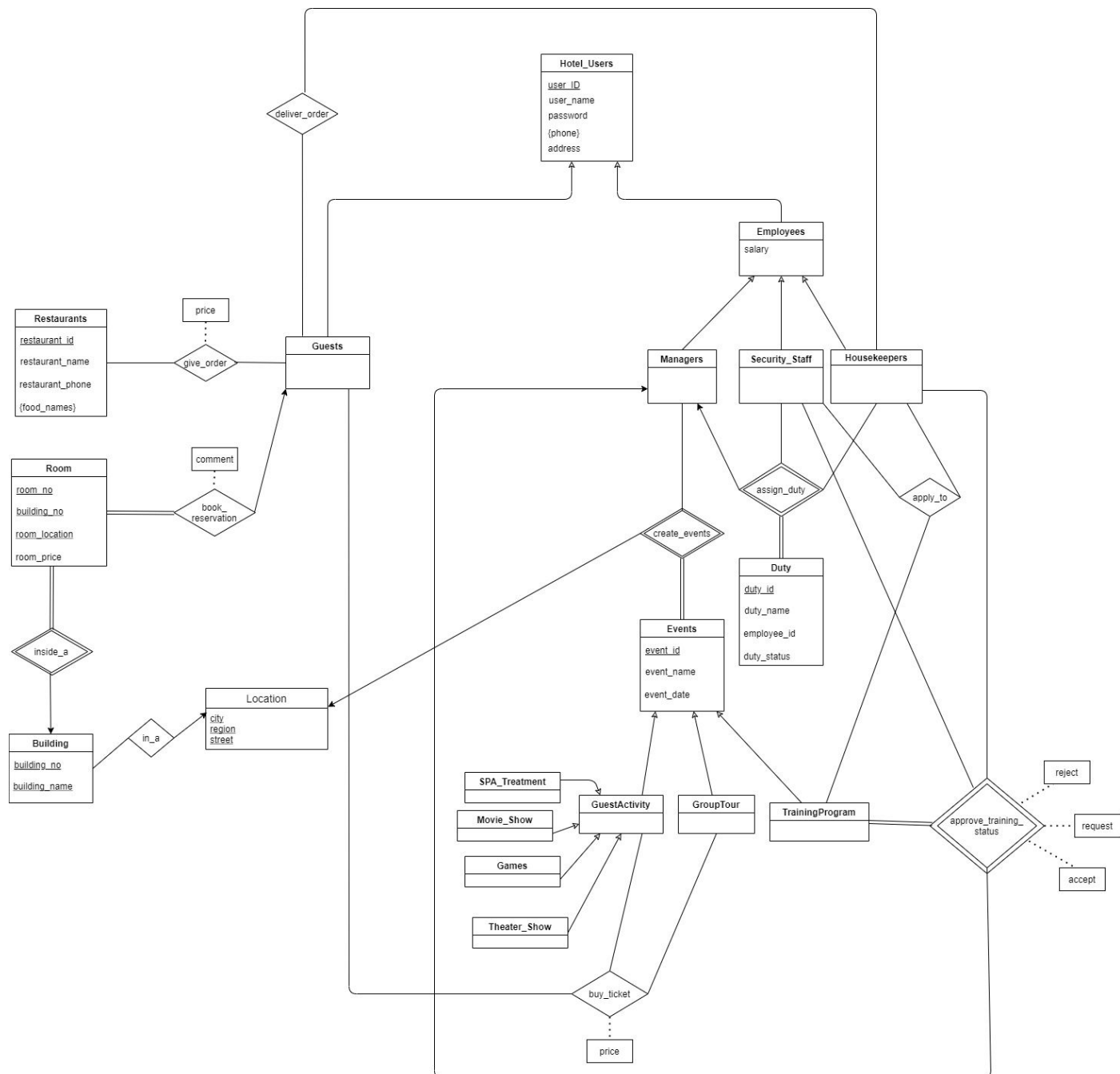
6. Conclusion

The project is going to be a management system that is designed specifically for the hotel's functionalities. The project is going to be developed so that it will provide people with a functional hotel management system. The project will be dependent on the database because of its dynamic behavior.

The project proposal is prepared to give information about the project, such as description, requirements, and limitations of the project. Requirements, limitations, and descriptions expressed in this document will be guided to develop a successful project.

7. Website

The status of the project can be checked at the attached GitHub repository link.

https://github.com/velicanmert/Inn-Manager

The project website will be updated when required.

https://handesey.github.io/Inn-Manager/