BLG317E Database Systems

Project Proposal

# Group Information

1. Furkan Ünüvar 150200334

2. Pınar Erçin 150210336

3. Furkan Öztürk 150200312

**Project Description:**

The objective of this project is to design and implement a hotel reservation system. This system will manage hotel operations, including customer bookings, room management, and services, via a comprehensive database and a RESTful API. Users will be able to handle reservations, check room availability and access various hotel services through this platform.

**Data Model and Complexity:**

The proposed system will be structured around 8 main tables, each designed to capture essential aspects of the hotel’s operations:

**Customers**: Tracks castomer details including ID, name, phone, and email.

**Rooms**: Details of rooms available such as room ID, type, pricing, and capacity.

**Reservations**: Information on reservations made including IDs of customers and rooms, check-in, and check-out dates.

**Payments**: Records of payment transactions linked to reservations.

**Employees**: Data on hotel staff including their ID, name, position, and contact information.

**Room Services:** Services offered per room, such as minibar and laundry services, including associated costs.

**Complaints:** Logs of customer complaints with details about the complaint and the involved customer.

**Events:** Information on hotel events including event ID, name, date, and participation fee.

**Operations and CRUD Requirements:**

The project will allow users to perform basic CRUD operations (Create, Read, Update, Delete) on the database. Example API endpoints are as follows:

*Data Insertion*: Add new customers, reservations, room details, employee information, and service offerings.

*Data Retrieval*: Retrieve information on room availability, customer reservations, and event schedules.

*Data Update*: Update existing records for rooms, services, and employee details.

*Data Deletion*: delete cancelled reservations.

**Why a Database is Necessary:**

A database is essential for the efficient management of a hotel reservation system due to the need to handle a large volume of diverse data types and the complexity of queries required to retrieve and manage this data effectively. A well-designed database will enable the hotel to provide timely and accurate information to both customers and staff, facilitate smooth operations, and maintain a high level of service quality.