Enhancing a Flask and PostgreSQL-based Hotel Booking System

Objective: To extend the existing Flask and PostgreSQL-based hotel booking system by adding essential features to both the front-end and back-end. By the end of this lab, students should be able to:

1. Create an admin interface to query bookings.
2. Implement a search function on the front-end to allow users to check booking status by entering a booking ID.

Assignment Tasks:

1. Back-End Enhancement

Task 1: Create an Admin Interface to Query Bookings

- **Goal:** Build a query interface in the admin backend to search for booking records.
- **Instructions:**
    1. Design an admin page with a search form that allows the admin to enter booking criteria such as Booking ID, Guest Name, or Date Range.
    2. Write a SQL query to retrieve booking information based on the input search criteria.
    3. Display the results in a table on the admin page with information such as Booking ID, Room Number, Customer Name, Contact Info., Check-in Date, and Check-out Date.
    4. Include a "Search" button that triggers the query and refreshes the results.

Example:

Booking ID	Room Number	Customer Name	Contact Info.	Check-in Date	Check-out Date

101	201	John Doe	john@example.com	2024-12-18	2024-12-20

Deliverable: Screenshot of the admin page displaying the query form and the search results.

2. Front-End Enhancement

Task 2: Implement Booking Status Check by Booking ID

- **Goal:** Allow users to enter a Booking ID on the front-end to check the status of their booking.
- **Instructions:**
  1. Add a search form on the homepage where users can enter a Booking ID.
  2. Write a Flask route to process the form data and query the database for booking status based on the entered Booking ID.
  3. If the Booking ID exists, display the booking details such as Room Number, Check-in Date, and Check-out Date.
  4. If the Booking ID does not exist, display a "Booking not found" message.

Example User Flow:

1. User enters "101" as the Booking ID.
2. The system queries the database for the booking with ID 101.
3. The page displays the booking details such as Room Number, Check-in Date, and Check-out Date.

Deliverable: Screenshot of the front-end showing the search form and an example of both "booking found" and "booking not found" messages.

Bonus Task (Optional):

- Allow users to view more booking details when clicking on a result.
- Add input validation to ensure only numeric Booking IDs are accepted.