

CS 166 Final Project

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This is a hotel management database system. There are many useful functions implemented in the program that can find the query needed like browsing hotels nearby, booking a room, viewing a room, (for managers only) updating room info, placing a room repair request, and etc.

In project/sql/src/load_data.sql changed path to:

```
FROM 'extra/eyim009/cs166_project/project/data/users.csv'
```

Implemented Major Functions: [who did what]

- Browse Hotels - viewHotels(esql) [Ellen]
 - Allows user to input latitude and longitude and gives a list of hotel ID and hotel names within 30 units distance of given input (using calculate_distance() function); selected columns are hotelID, hotelName for query result
- Browse/View Rooms: viewRooms(Hotel esql) [Paulian]
 - User inputs their desired hotel ID and a date they want to book a room on. Program then outputs a list of available rooms and unavailable rooms (if there are any). If there are no rooms available at all, the program should indicate this too.
- Book Room [Paulian]
 - User inputs their user ID, desired hotel ID, desired room number and a day they want to book that room on. Function then books the room if it is available on that day in that hotel.
- Update Room Information - updateRoomInfo(esql) [Ellen]
 - Checks manager ID, asks for hotelID and roomNumber, then asks if want to change the price of the room or remain the same, and also ask if wants to update the image; Rooms and RoomUpdateLog tables are updated and inserted into, respectfully
- Browse booking history: viewBookingHistoryofHotel(Hotel esql) [Paulian]
 - Is a function for just managers. Asks managers to input their user ID and let's them see all the booking information for the hotels they manage. They can see the following: bookingID, customerName, hotelID, roomNumber, roomPrice, and bookingDate. Managers also have an option to input a range of dates. System will show all bookings in that range of dates.
- View Recent Updates: viewRecentUpdates(Hotel esql) [Paulian]
 - Managers can see the 5 most recent updates they did to a room. The function returns the following info of the 5 most recent updates: when the room was updated, the hotelID, room number, price, and imageURL.
- Place Room Repair Request - placeRoomRepairRequests(esql) [Ellen]

- Checking to see if user is a manager by asking for managerID, asks user for hotelID, roomNumber, and companyID, then updates RoomRepairs and RoomRepairs request tables respectively
- View Room Repair History - viewRoomRepairHistory(esql) [Ellen]
 - Given manager id (to check if user is a manager), will ask for a hotel ID that they manage, and then returns list of repairs made for that room (companyID, hotelID, roomNumber, repairDate)
- View (5) Regular Customers - viewRegularCustomers(esql) [Ellen]
 - For Managers (enter manager ID), enter a hotel ID that manager is managing, top 5 customers who made most bookings for the given hotel will be listed
- View Recent bookings from Customer: viewRecentBookingsfromCustomer(Hotel esql) [Paulian]
 - Gives the 5 most recent bookings of a user. The user should be able to see the following information after inputting their userID (which is the same thing as customerID): hotelID, roomNumber, billingInfo, dateOfBooking. Note, that the customer can't see the information of the other customers

Minor Changes:

- executeQueryAndPrintResult(String query); [Ellen]
 - Modified function a little bit to make output query result easier to read (some functions like viewHotels() aligns as nicely)

Indexes:

- create_indexes.sql [Both]
 - Hotel_manager_index [Ellen]
 - Improves performance of queries finding hotels that a manager manages
 - Used in many functions that needs a hotelID input so it is helpful to improve the performance for the functions needing this
 - Repairs_repairID_index [Ellen]
 - Improves performance of queries when finding room repairs; used for placeRoomRepairRequests function
 - Bookings_bookingID_index [Ellen]
 - Improves performance of query when finding room bookings; used in viewBookingHistory
 - Hotel_id_index [Paulian]
 - Improves performance of query when finding what rooms belong to which hotel; used in many functions that coincide with rooms and hotels.
 - Room_number_index [Paulian]
 - Improves performance of referencing the identifying each room in a hotel.

Problems/Findings throughout the project:

- Ellen - writing the correct query because sometimes it was not outputting anything when there should have been an result query
- Paulian - had to figure out lots of errors regarding syntax and queries not printing anything.