

The background is a dark blue gradient with a complex, abstract pattern of white and light blue lines and dots, resembling a circuit board or data flow. The lines are of varying thickness and form a dense, interconnected network. Small circles and dots are scattered throughout, some in white and some in a light blue color, adding to the digital aesthetic.

LAST RESORT HOTELS

Database Design & Implementation

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AGENDA

01

Entity Relationship Diagram

Overview of our ERD and assumptions made

02

Querying the Database

How the database is structured, how sample data added

03

The Live Web App

Functions of the website and corresponding queries

04

Live Website Demo

Live demonstration

The background is a dark blue gradient. It features several abstract elements: thin, light blue lines that resemble circuit traces or data paths, some of which are slightly curved or stepped. Scattered throughout are small circles and dots in various shades of blue and cyan. A prominent white circle is centered in the upper half of the image, containing the number '01' in white.

01

ENTITY RELATIONSHIP DIAGRAM & ASSUMPTIONS

[illegible]

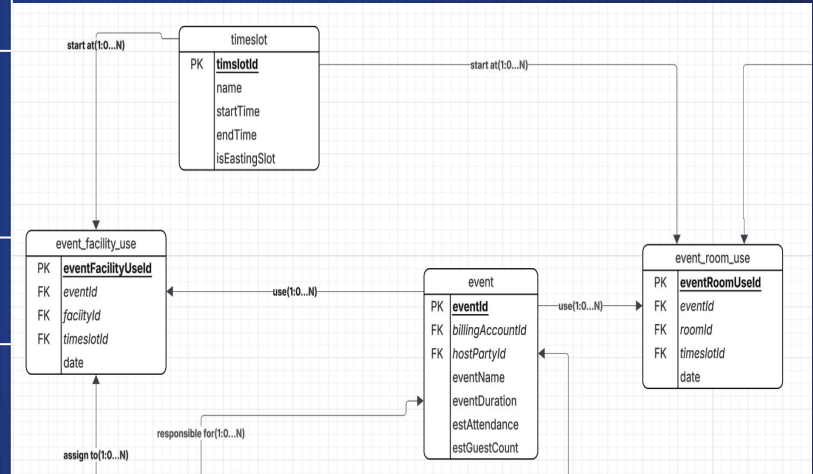
https://lucid.app/lucidchart/cbbf102e-99cb-4775-ab29-e671778adeb9/edit?invitationId=inv_abcd78d0-0b43-46ec-833b-d7597a16defe&page=krA0yKcaQt-9#

https://lucid.app/lucidchart/cbbf102e-99cb-4775-ab29-e671778adeb9/edit?invitationId=inv_abcd78d0-0b43-46ec-833b-d7597a16defe&page=krA0yKcaQt-9#

OUR ERD and Assumptions

ERD Example:

Entity	Key Attributes	Relationships
event	eventId , <i>billingAccountId</i> (FK), <i>hostPartyId</i> (FK), eventName, eventDuration, estAttendance, estGuestCount	1→N event_room_use, 1→N event_facility_use
event_room_use	eventRoomUseId , <i>eventId</i> (FK), <i>roomId</i> (FK), <i>timeslotId</i> (FK), date	resolves many-to-many between event and room
event_facility_use	eventFacilityUseId , <i>eventId</i> (FK), <i>facilityId</i> (FK), <i>timeslotId</i> (FK), date	resolves many-to-many between event and facility
timeslot	timeslotId , name, startTime, endTime, isEastingSlot	referenced by event usage tables to manage scheduling



OUR ERD and Assumptions

1. The **hostPartyId** in **event** refers to a record in the party, which may represent a guest or a billing party.
2. **event_room_use** and **event_facility_use** are bridging tables handling M:N relationships with time-based usage.
3. **timeslot** defines fixed scheduling blocks for meetings and events.
4. **billing_account** centralizes payment responsibility for reservations, services, and events.
5. **card_activity** and **access_card** connect personnel to real-time room access logs.

The background is a dark blue gradient. It is decorated with various abstract elements: thin white and teal lines, some of which are jagged or stepped, resembling circuit traces or data paths. There are also small circles and dots in white, teal, and light blue scattered across the frame. A large, thin white circle is centered in the upper half of the image, containing the number '02' in white.

02

THE SQL DATABASE

Sample Table

```
28 ● ○ CREATE TABLE room (  
29     room_id INT PRIMARY KEY,  
30     building_id INT NOT NULL,  
31     wing_id INT NOT NULL,  
32     bed_info_id INT,  
33     room_number VARCHAR(20) NOT NULL,  
34     room_type VARCHAR(50), -- e.g., 'Sleeping', 'Suite', 'Meeting'  
35     floor INT,  
36     is_smoking BIT DEFAULT 0,  
37     status VARCHAR(50), -- e.g., 'Available', 'Occupied', 'Cleaning', 'Renovation'  
38     base_rate DECIMAL(10, 2),  
39     capacity INT,  
40     FOREIGN KEY (building_id) REFERENCES building(building_id),  
41     FOREIGN KEY (wing_id) REFERENCES wing(wing_id),  
42     FOREIGN KEY (bed_info_id) REFERENCES bed_info(bed_info_id)  
43 );
```

```
● ○ CREATE TABLE service_usage (  
    service_usage_id INT PRIMARY KEY,  
    service_id INT NOT NULL,  
    customer_id INT, -- The specific person using the service  
    employee_id INT, -- Employee facilitating the service  
    billing_account_id INT, -- Account to be billed  
    usage_time DATETIME,  
    quantity INT DEFAULT 1,  
    total_amount DECIMAL(10, 2),  
    FOREIGN KEY (service_id) REFERENCES service_type(service_id),  
    FOREIGN KEY (customer_id) REFERENCES customer(customer_id),  
    FOREIGN KEY (employee_id) REFERENCES employee(employee_id),  
    FOREIGN KEY (billing_account_id) REFERENCES billing_account(billing_account_id)  
);
```



Sample Data

```
INSERT INTO service_usage (service_usage_id, service_id, customer_id, employee_id, billing_account_id, quantity, total_amount) VALUES
(1, 6, 4, NULL, 3, 2, 25.98), -- Smiths Movies
(2, 3, 6, 2, 4, 3, 45.00),    -- Consultant Dry Cleaning
(3, 2, 2, 3, 6, 1, 120.00);   -- Alice Spa (Split Scenario)
```

```
INSERT INTO room (room_id, building_id, wing_id, bed_info_id, room_number, room_type, floor, is_smoking, status, base_rate, capacity) VALUES
(1, 1, 1, 1, '101', 'Suite', 1, 0, 'Available', 350.00, 2), -- Suite with 350 base rate
(2, 1, 1, 2, '102', 'Double', 1, 0, 'Occupied', 200.00, 4), -- Room with two beds
(3, 1, 1, 4, '103', 'Standard', 1, 0, 'Occupied', 180.00, 2), -- Standard Room
(4, 1, 1, 4, '104', 'Standard', 1, 0, 'Occupied', 180.00, 2),
(5, 1, 2, 1, '201', 'Penthouse', 2, 1, 'Available', 600.00, 2),
(6, 1, 2, 1, '202', 'Suite', 2, 0, 'Cleaning', 350.00, 2),
(7, 1, 2, 2, '203', 'Double', 2, 0, 'Renovation', 200.00, 4),
(8, 1, 3, 1, '301', 'Standard', 3, 0, 'Available', 180.00, 2),
(9, 1, 3, 1, '302', 'Standard', 3, 0, 'Available', 180.00, 2),
(10, 2, 4, NULL, 'Conf A', 'Meeting', 1, 0, 'Available', 150.00, 50), -- Meeting room with no Bed
(11, 2, 4, NULL, 'Grand Ballrm', 'Banquet', 1, 0, 'Reserved', 1000.00, 300),
(12, 3, 5, 1, 'V-01', 'Villa', 1, 1, 'Occupied', 800.00, 6);
```

The background is a dark blue gradient. It is decorated with various abstract elements: thin white and teal lines, some of which are jagged like circuit traces; small white and teal circles; and larger teal dots. The overall aesthetic is modern and tech-oriented.

03

THE LIVE APP FUNCTIONS & QUERIES

Guest Access and Function

- Look up all *available* rooms (with building & wing info)
- See own confirmed reservations
- see own event
- See event details (limited information)
- Look up own billing_account
- see own charges

SQL Example:

```
SELECT r.room_id, r.room_number,  
       r.room_type, r.base_rate, r.capacity, r.floor,  
       r.is_smoking, w.wing_name, b.building_name
```

```
FROM room r  
JOIN wing w ON r.wing_id = w.wing_id  
JOIN building b ON r.building_id = b.building_id
```

```
WHERE r.status = 'Available';
```

Employee Access and Function

- Look up ALL rooms (with building & wing info)
- Sort rooms (price / status / capacity / room_type)
- Look up all pending requests
- see the room assigned
- Full event info (host, billing, counts)
- occupied rooms/facilities
- available rooms
- See all accounts + total charges
- List all charges

SQL Example:

```
SELECT c.*, ca.responsible_percent, ca.amount  
  
FROM charge c JOIN charge_allocation ca ON  
c.charge_id = ca.charge_id  
  
WHERE ca.billing_account_id = %s;
```



04

LIVE WEBSITE DEMONSTRATION

Website Demo

The background is a dark blue gradient with a futuristic, circuit-like pattern. White and light blue lines resembling circuit traces and nodes are scattered across the image, particularly concentrated along the left and right edges. Small, glowing blue and white dots are also visible, adding to the high-tech aesthetic.



THANKS!