

Hotel Reservation System: Project Report Summary

Dae-Sung Jin & Mhan Hein Khant

Brief Project Description

- CityScape Hotel is a luxury hotel based in Albany, NY with a user-friendly front desk check-in system, available both in-person and online.
- Enrollment requires personal details and payment information, assigning a unique 5-digit subscription ID.
- Check-in records include customer data, subscription status, and any noted incidents during the stay.
- A three-strike policy blacklists customers with repeated misconduct.
- Its 100-room capacity offers single, double, and 4-person suites with unique room details and rates.

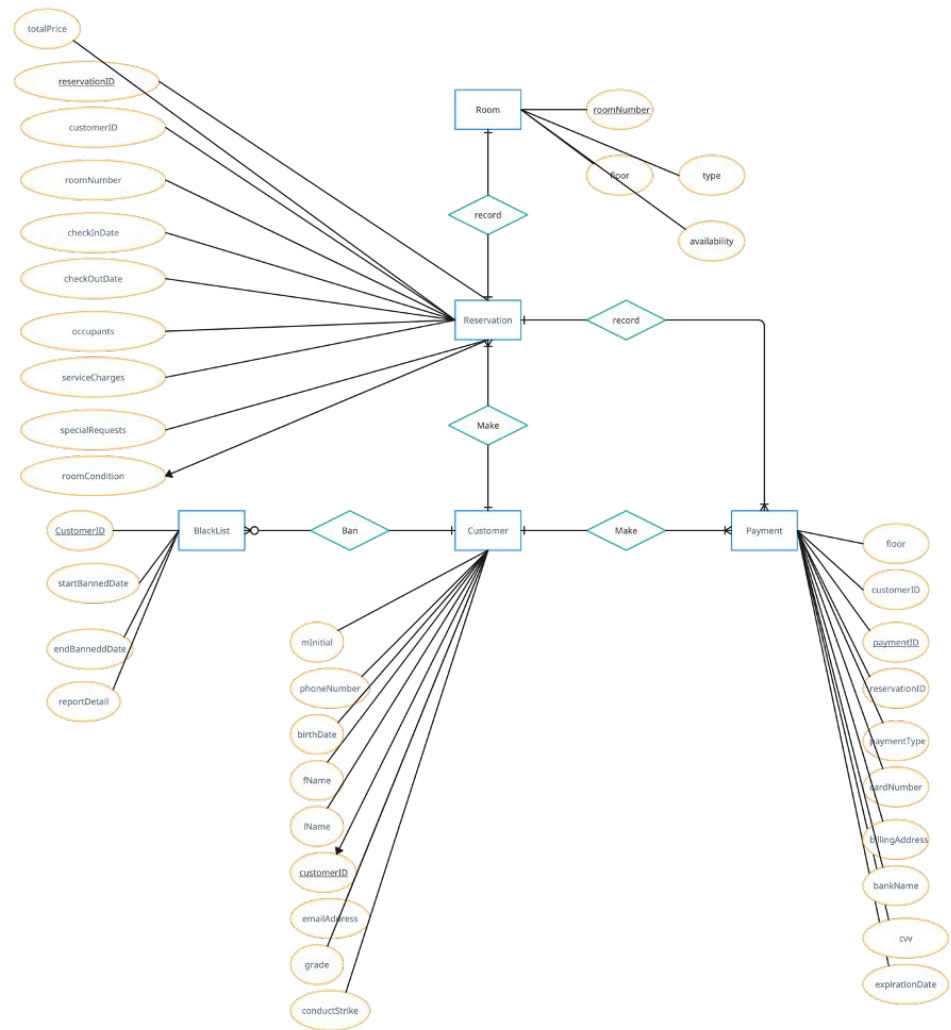
Project Accomplishments

1. Understood and came up with a concept of a business that needed a database management system. (CityScape Hotel)
2. Devised an ER Diagram to conceptualize the organization and schema of such a system.
3. Revised said ER diagram for optimization purposes and converted to a working Relational Model with clearly defined Primary, Secondary, and foreign keys, and revised it as well.
4. Put the revised Relational Model through the Normalization Process to reduce data redundancies, minimize the likelihood of anomalies, and to ensure data integrity.

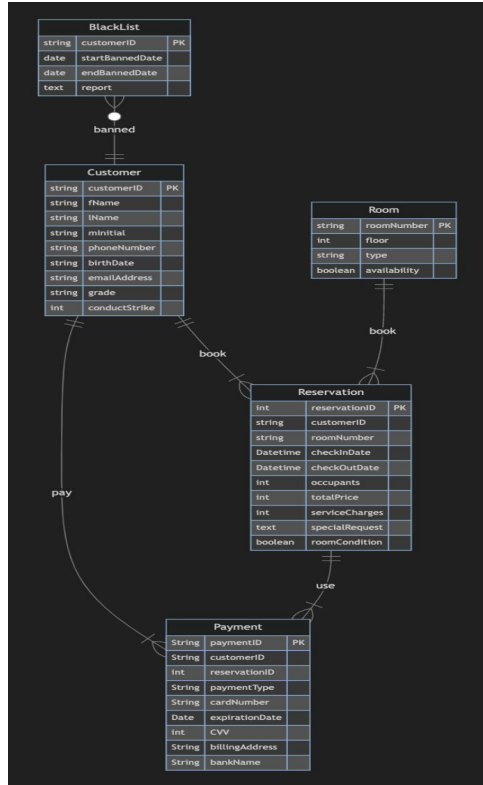
Relevant Diagram 1: ER Diagram (Revised)

Assumptions:

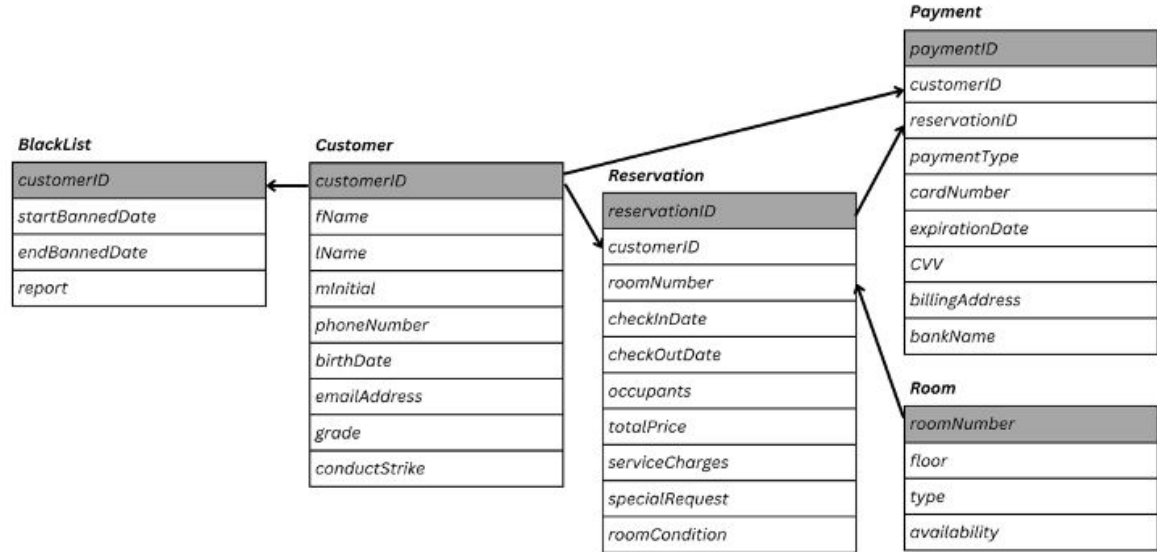
1. You need reservation to be a customer.
2. Customers can have 1 → n Reservations. (one-to-many)
3. Customers can have 1 → n Payments. (one to many)
4. Customer can be banned to the BlackList. (one-to-one)
5. Reservation has 1 → n Payments. (one-to-many)
6. Reservation can include 1 → n Rooms. (one-to-many)
7. Type → a. Single-room, b. Double-room, c. junior suite, d. suite room
8. Grade → a. Bronze, b. Silver, c. Gold
9. conductStrike is the number of times a customer destroys or trashes the room.
10. If the conductStrike reaches 3, the customer will be added to the BlackList and banned from CityScape Hotel for a set amount of time.
11. specialRequest is a multivalued attribute because a customer can make multiple requests over a single reservation.



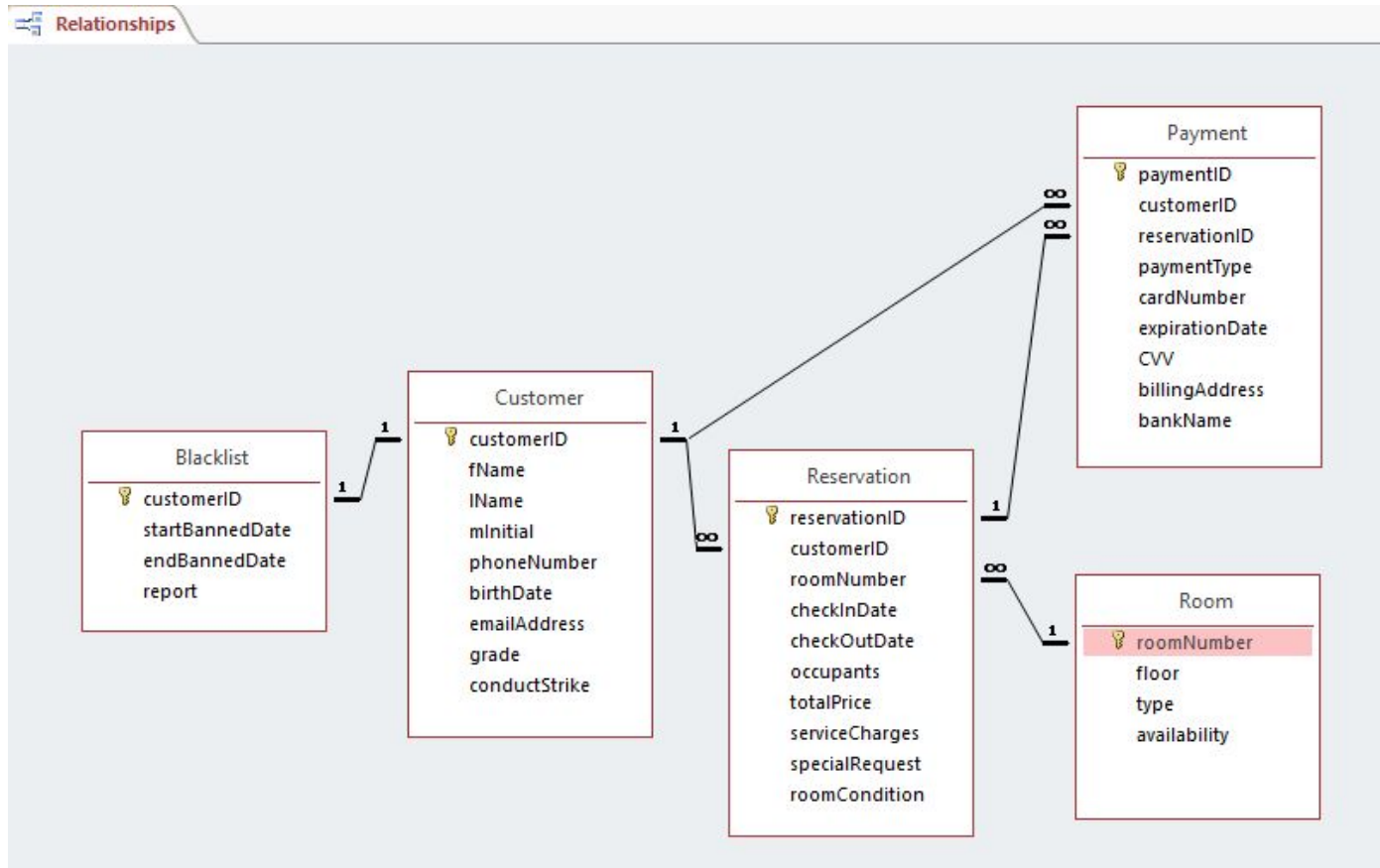
Relevant Diagram 2: Relational Model (Draft)



Relevant Diagram 3: Relational Model (Revised)



Relevant Diagram 4: Relationships



Query 1: Retrieve all reservations with customer details

Query1_Reservation_with_customer_details

```
SELECT Reservation.reservationID, Reservation.checkInDate,
Reservation.checkOutDate, Reservation.occupants,
Reservation.totalPrice, Reservation.serviceCharges,
Reservation.specialRequest, Reservation.roomCondition,
Customer.fName, Customer.lName, Customer.phoneNumber,
Customer.emailAddress
FROM Reservation, Customer
WHERE Reservation.customerID = Customer.customerID;
```

Query1_Reservation_with_customer_details

reservationID	checkInDate	checkOutDate	occupants	totalPrice	serviceCharges	specialRequest	roomCondition	fName	lName	phoneNumber	emailAddress
6	10/10/2023	10/15/2023	2	\$450.00	\$55.00	High floor, Mountain view	Well-kept	Ethan	Anderson	3157346721	ender@oswego.edu
7	11/25/2023	11/30/2023	3	\$700.00	\$80.00	Per-friendly, Kitchenette	Well-kept	Olivia	Williams	3157346722	ender1@oswego.edu
5	9/3/2023	9/8/2023	1	\$300.00	\$40.00	Early check-in, Queen bed	Well-kept	Liam	Johnson	3157346723	ender2@oswego.edu
4	10/20/2023	10/25/2023	2	\$500.00	\$60.00	Late check-out, Extra towels	Neat and Clear	Ava	Smith	3157346724	ender3@oswego.edu
10	12/22/2023	12/27/2023	1	\$280.00	\$35.00	Late check-in, Twin beds	Well-kept	Isabella	Jones	3157346726	ender5@oswego.edu
9	2/12/2024	2/15/2024	2	\$350.00	\$45.00	Special Anniversary Setup	Well-kept	Aiden	Brown	3157346727	ender6@oswego.edu
3	1/5/2024	1/10/2024	3	\$600.00	\$75.00	Connecting rooms for family	Neat and Clear	Sophia	Miller	3157346728	ender7@oswego.edu
2	11/15/2023	11/18/2023	1	\$250.00	\$30.00	Ocean view, Quiet Room	Well-maintained	Morris	Brown	3157346729	ender8@oswego.edu
1	12/1/2023	12/5/2023	2	\$400.00	\$50.00	Non-smoking, King Bed	Well-maintained	Sophia	Brown	3157346720	ender9@oswego.edu
8	7/18/2023	7/22/2023	1	\$200.00	\$25.00	Early check-out, Extra pillows	Well-kept	Sophia	Brown	3157346720	ender9@oswego.edu

Query 2: List all customers with their associated reservations

Query2_All_customer_info_and_their_reservations_or_lack_there...

```
SELECT Customer.customerID, Customer.fName, Customer.lName,  
Customer.phoneNumber, Customer.emailAddress,  
Reservation.reservationID, Reservation.checkInDate,  
Reservation.checkOutDate  
FROM Customer LEFT JOIN Reservation ON Customer.customerID =  
Reservation.customerID;  
|
```

Query2_All_customer_info_and_their_reservations_or_lack_thereof

customerID	fName	lName	phoneNumber	emailAddress	reservationID	checkInDate	checkOutDate
1	Ethan	Anderson	3157346721	ender@oswego.edu	6	10/10/2023	10/15/2023
2	Olivia	Williams	3157346722	ender1@oswego.edu	7	11/25/2023	11/30/2023
3	Liam	Johnson	3157346723	ender2@oswego.edu	5	9/3/2023	9/8/2023
4	Ava	Smith	3157346724	ender3@oswego.edu	4	10/20/2023	10/25/2023
5	Noah	Davis	3157346725	ender4@oswego.edu			
6	Isabella	Jones	3157346726	ender5@oswego.edu	10	12/22/2023	12/27/2023
7	Aiden	Brown	3157346727	ender6@oswego.edu	9	2/12/2024	2/15/2024
8	Sophia	Miller	3157346728	ender7@oswego.edu	3	1/5/2024	1/10/2024
9	Morris	Brown	3157346729	ender8@oswego.edu	2	11/15/2023	11/18/2023
10	Sophia	Brown	3157346720	ender9@oswego.edu	1	12/1/2023	12/5/2023
10	Sophia	Brown	3157346720	ender9@oswego.edu	8	7/18/2023	7/22/2023
*							

Query 3: Retrieve reservations within a specific date range:

Query3_Total_revenue

```
SELECT SUM(totalPrice + serviceCharges) AS TotalRevenue  
FROM Reservation;
```

Query3_Total_revenue

TotalRevenue			
\$4,525.00			

Query 4: List all reservations in 2023

Query4_All_reservations_in_2023

```
SELECT Reservation.reservationID, Reservation.checkInDate,
Reservation.checkOutDate, Reservation.occupants,
Reservation.totalPrice, Reservation.serviceCharges,
Reservation.specialRequest, Reservation.roomCondition,
Customer.fName, Customer.lName, Customer.phoneNumber,
Customer.emailAddress
FROM Reservation INNER JOIN Customer ON
Reservation.customerID = Customer.customerID
WHERE Reservation.checkInDate >= #01/01/2023# AND
Reservation.checkInDate <= #12/31/2023#;
```

Query4_All_reservations_in_2023

	reservationId	checkInDate	checkOutDa	occupants	totalPrice	serviceCharge	specialRequest	roomCondition	fName	lName	phoneNumber	emailAddress
	1	12/1/2023	12/5/2023	2	\$400.00	\$50.00	Non-smoking, King Bed	Well-maintained	Sophia	Brown	3157346720	ender9@oswego.edu
	2	11/15/2023	11/18/2023	1	\$250.00	\$30.00	Ocean view, Quiet Room	Well-maintained	Morris	Brown	3157346729	ender8@oswego.edu
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	5	9/3/2023	9/8/2023	1	\$300.00	\$40.00	Early check-in, Queen bed	Well-kept	Liam	Johnson	3157346723	ender2@oswego.edu
	6	10/10/2023	10/15/2023	2	\$450.00	\$55.00	High floor, Mountain view	Well-kept	Ethan	Anderson	3157346721	ender@oswego.edu
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*	10	12/22/2023	12/27/2023	1	\$280.00	\$35.00	Late check-in, Twin beds	Well-kept	Isabella	Jones	3157346726	ender5@oswego.edu

Division of Labor

Dae-Sung Jin

- Project Assignment 1
- Project Assignment 2: ER Diagram
- Project Assignment 3: ER Diagram (Revised)
- Normalization Project
- Project Report
- SQL Queries

Mhan Hein Khant

- Project Assignment 1
- Project Assignment 2: ER Diagram
- Relational Model
- Project Report Summary Powerpoint
- SQL Definition
- Implementation in MS Access