We are building a management system for a multi-building resort that covers rooms, beds, reservations, events, guests, billing & payments, and access control. Its primary objectives are to track room availability precisely, manage and monitor reservations and event scheduling, bill the correct parties accurately (including split billing), and maintain secure, auditable payment and transaction records.

Based on the important aspects of resort we havea few important functionalities

1.front desk: manage reservations and room assignments, keep real-time availability, and prevent double-bookings

(corresponds to our table of,

Reservation,ReservationRequirements,ReservationGuests,Room,RoomType,RoomBed,RoomFeatures,Floor,Wing,Building)

We are considering adding a ReservationAssignment table for tracking room assignment for reservations over time to avoid problems of double booking

2.Billing: generate charges for reservations and events, support split bills, invoices, and reconciliation.

(Corresponds to our table of,

ServiceType,Charge,BillingSplit,Payment,BilledParty,Guest)

We will probably replace the column of cardNum in the guests table to more specific details such as CardNum and last 4 digits, cvv and expiration date.

3.coordination of events: schedule events by expected attendance and pricing, allocate rooms and resources accordingly.

(Corresponds to our table of,

Event,EventRoomUsage,Room,RoomType)

4.access control:manage card readers and credentials, record access logs, and monitor area entry.

(Corresponds to our table of,

CardReader,AccessLog,Guest)

This is an important aspect of our system for credentials and log entries.

5.analytics and reporting: provide dashboards and reports for revenue, occupancy, event utilization, and outstanding balances

(Corresponds to our table of Reservation Assignment which I think will be created in the future,charge,payment,EventRoomUsage,AccessLog)

This is not only used as a timely report and but an overall long-term strategy for future benefits and revenue

6.guest portal: send reservation confirmations and let guests view charges, payments, and request changes.(for guests viewing)

(Corresponds to our table of,

Reservation,charge,payment,message)

Team Assignment:

Christopher Cao is in charge of ERD creation and modeling

Jerry Zhang and Megan Gong is in charge of analysing our ERD and provide accurate

information for data analysis report