Hotel Management System Database

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History Table

Milestone Version	Date
M2V1	11/02/21
M1V1	10/05/21

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Project Description

The aim of the project is to build a Hotel Management System Database similar to ones like the Hilton or Marriott, etc. The project will help the hotel better manage the guests that come to and leave the hotel such as what time a guest would need to check-in and out. This will help a hotel to track their availability to manage their guest intake to avoid overbooking and maintain customer satisfaction and maximize profit.

The project helps ensure that the hotel properly manages and organizes the responsibilities of its staff members in different departments. This enables the hotel to reallocate their staff to where more employees are needed and instead where they are not.

The Hotel Management System Database takes account of the expenses being made by the hotel. It will track products that are being used daily such as food, bedding, soap and bath product, toiletries, etc. It will take inventory of these items to know how much is being used and how much is left to determine when to restock a product and the expenditure. Other expense issues the hotel management system shall track are based on the payment required for employees based

on their wages. The hotel can determine payments based on the tracked amount of time worked multiplied by their hourly wage.

Main Use Cases

1.

Title	Create a booking for a room
Actors:	Customer, Room, Booking, Room class
Description	This use case begins when a customer accesses an online site to register a booking for a room at a hotel. The customer chooses the date they would like to begin their stay at the hotel and how many days & nights they would like to stay and the room class they prefer (2 beds,1 bed, etc). If the system finds available rooms that match the date for the booking and the room requirements then the customer is allowed to move to checkout. Otherwise, the customer is prompted with a message stating that the hotel has no availability matching their request for that time frame.
Motivation	The Hotel Management System Database is there to help a customer request a room at a hotel with ease. It will track the availability of the hotel and update it as new bookings are made or customers

	leave the hotel. This will improve the service for customers and allow them to easily and efficiently find a hotel room that meets their requirements.

2.

Title	Canceling a Booking
Actors:	Customer, Employee, Booking, Room
Description	This use case begins when a customer calls a hotel that they have a booking at to cancel their booking for a room. An employee picks up the phone and asks for basic information about the customer such as their name and email address to find the customer within their system. The employee finds the room associated with the customer and cancels their booking for them. The availability of the room becomes updated within their system as the booking is canceled.
Motivation	The Hotel Management System Database is there to help the hotel manage all requests about any booking. They can create, or delete a booking as needed. This helps improves a hotel's organization and efficiency.

3.

Title	Paying an employee
Actors:	Manager, Employee, Expenditures
Description	This use case begins when a manager checks the expenditures they have accumulated for the day and sees that it's time to pay their employee. The employee is due a set amount for their paycheck depending on the number of hours they worked times their hourly wage. The employee receives the right amount for their paycheck and the amount is added to

	the expenditures.
Motivation	The Hotel Management system is used to make record-keeping more efficient for the hotel. By keeping track of the expenditures can narrow down where all their costs are coming from. With the information, they can improve on these areas as necessary.

4.

Title	A customer makes a payment.
Actors:	Customer, Payment, Item, Invoice, Revenue, Supplier, Expense, Register, Hotel
Description	This use case begins when a supplier resupplies a hotel of items that they will sell to help pay off their expenses and generate revenue. A customer sees new items that the hotel has restocked on and finds one that they would like to purchase. The customer takes the item and the item is registered by a register to be tracked for when the customer checks out of the hotel. As the customer checks out, they make their payment that is collected by the register. Once the payment has finished processing the customer is given an invoice for their own record keeping.
Motivation	The Hotel Management System is used to more efficiently track all payments that the hotel owes or owed to the hotel. With this system, a hotel can ensure that there will be no forms of fraud by suppliers or their customers. While on the other hand, it allows for suppliers and customers to have an easier time tracking all payments made to them or by them. This provides

	them with the best customer satisfaction and allows them to avoid any complications.

5.

Title	Restaurant employee needs supervision in a department
Actors:	Restaurant Employee, Department, Manager, Food, Customer
Description	This use case begins when an employee begins working their shift in the restaurant department at the hotel. The employee clocks in and proceeds to ask the manager what their daily tasks are for the day. The manager assigns them the role of preparing food requested by a customer. The restaurant employee prepares the food and has it sent out.
Motivation	The Hotel Management System is used here to show that employees that will work under a department are supervised by a manager.

Database Requirements

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1. Customer
    - 1.1. A customer shall be able to create a booking.
    - 1.2. A customer shall be able to make a payment
    - 1.3. A customer shall be able to cancel a booking
    - 1.4. A customer shall be able to request an update for a booking
    - 1.5. A customer shall have at most one room
    - 1.6. A customer shall have one invoice
    - 1.7. A customer shall have at least one payment method

2. Employee
    - 2.1. An employee shall have only one manager which is also an employee
    - 2.2. An employee shall work in a department
    - 2.3. An employee shall have an hourly wage
    - 2.4. Employee shall work at one and only one hotel
    - 2.5. An employee that is a manager may manage a housekeeping employee
    - 2.6. An employee that is a manager may manage a front desk employee
    - 2.7. An employee that is a manager may manage a restaurant employee

3. Owner
    - 3.1. An owner shall own a hotel

4. Department
    - 4.1. A department shall have at least one employee

5. Housekeeping Employee
    - 5.1. A housekeeping employee shall be assigned zero or many rooms.

5.2. A housekeeping employee may be managed by an employee that is a manager

6. Front Desk Employee
   6.1. A front desk employee shall assign a room to a customer
   6.2. A front desk employee may be managed by an employee that is a manager

7. Restaurant Employee
   7.1. A restaurant employee shall prepare food
   7.2. A restaurant employee may be managed by an employee that is a manager

8. Booking
   8.1. A booking shall be made by a customer
   8.2. A booking shall be canceled by a customer
   8.3. A booking shall be updated by a customer

9. Room
   9.1. A room shall be reserved by one and only one customer
   9.2. A room shall be assigned to an employee to be worked on
   9.3. A room shall have a room class

10. Room Class
    10.1. A room class defines a room

11. Hotel
    11.1. A hotel shall have one and only one owner
    11.2. Hotel shall have at least one employee
    11.3. Hotel shall have at least one item
    11.4. A hotel shall have at least one expenditures
    11.5. A hotel shall have zero or many customers
    11.6. A hotel shall have many rooms
    11.7. Hotel shall have many addresses
    11.8. Hotel shall have a security alarm
    11.9. Hotel shall have a fire alarm
    11.10. Hotel shall have a power source
    11.11. Hotel shall have a pool

12. Expenditures
    12.1. Expenditures shall be tracked by hotels
    12.2. Expenditures shall be updated by a manager

13. Payment
    13.1. Payment shall be made by one customer
    13.2. Payment shall be collected by a register

14. Invoice
    14.1. An invoice shall be updated by a hotel
    14.2. An invoice shall be given to a customer

15. Item
    15.1. Item is a beverage or a food or a miscellaneous item
    15.2. An item shall be added to at least one invoice
    15.3. Item shall be purchased by many customers
    15.4. Item shall have at least one supplier
    15.5. Item shall be registered by a register

16. Beverage
    16.1. A beverage is a soda, or an alcoholic drink, or a water

17. Food
    17.1. Food is an entree or a snack

18. Miscellaneous Item
    18.1. A miscellaneous item is a souvenir or clothing

19. Supplier
    19.1. A supplier shall supply items

20. Register
    20.1. A register shall register an item
    20.2. A register shall collect a payment

21. Addresses
    21.1. Multiple addresses shall have multiple hotels

22. Security Alarm
    22.1. A security alarm shall be installed in a hotel

22.2. A security alarm shall alert a police station

23. Police Station
    23.1. A police station is alerted by a security alarm

24. Fire Alarm
    24.1. A fire alarm shall be installed in a hotel
    24.2. A fire alarm shall notify a fire department

25. Fire Department
    25.1. A fire department is notified by a fire alarm

26. Revenue
    26.1. Revenue shall be tracked by a hotel

27. Power Generator
    27.1. A power generator powers a hotel

28. Pool
    28.1. A pool is in a hotel

Main Entities, Attributes, and Keys

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1. **Customer (strong)**
    - customerId: key, numeric
    - name: composite, alphanumeric
    - email: multivalue, alphanumeric
    - phone: multivalue, numeric

2. **Employee (weak)**
    - employeeId: key, numeric
    - name: composite, alphanumeric
    - wage: composite, numeric
    - age: numeric
    - departmentId: weak key, numeric

3. **Manager (weak)**
    - managerId: key, numeric
    - employeeId: weak key, numeric
    - gender: alphanumeric

4. **Owner (strong)**
    - ownerId: key, numeric
    - name: composite, alphanumeric
    - age: numeric

5. **Department (weak)**
    - departmentId: key, numeric
    - type: alphanumeric
    - numEmployee: numeric

6. **Housekeeping Employee (weak)**
    - employeeId: weak key, numeric
    - roomId: weak key, numeric
    - managerId: weak key, numeric

7. **Front Desk Employee (weak)**
    - employeeId: weak key, numeric
    - roomId: weak key, numeric
    - managerId: weak key, numeric

8. **Restaurant Employee (weak)**
    - employeeId: weak key, numeric
    - foodId: weak key, numeric
    - managerId: weak key, numeric
    - kitchenId: weak key, numeric

9. **Room (weak)**
    - roomId: key, numeric
    - customerId: weak key, numeric
    - roomNumber: numeric
    - classType: weak key, numeric
    - availability: tinyInt

10. **Room Class (strong)**
    - classId: key, numeric
    - oneBed: tinyInt
    - twoBed: tinyInt
    - suite: tinyInt
    - pentHouse: tinyInt

11. **Booking (Strong)**
    - bookingId: key,
    - dateMade: date
    - bookingDate:date

12. **Hotel (strong)**
    - hotelId: key, numeric
    - name: alphanumeric
    - employeeid: weak key, numeric

13. **Expenditures (weak)**
    - expeditureId: key,numeric
    - total: numeric
    - date: Date

- hotelId: weak key, numeric

14. **Payment (strong)**
    - paymentId:
    - amount: numeric
    - date: Date
    - type: alphanumeric

15. **Invoice (weak)**
    - invoiceId: key, numeric
    - total: numeric
    - customerId: weak key, numeric

16. **Item (strong)**
    - itemId: key, numeric
    - date: Date
    - type: alphanumeric

17. **Beverage (weak)**
    - beverageId: key, numeric
    - itemId: weak key, numeric
    - beverageType: alphanumeric

18. **Food (weak)**
    - foodId: key, numeric
    - itemId: weak key, numeric
    - type: alphanumeric

19. **Miscellaneous Item (weak)**
    - miscId: key, numeric
    - itemId: weak key, numeric
    - type: alphanumeric

20. **Supplier (strong)**
    - supplierId: key, numeric
    - restockDate: Date
    - Cost: numeric

21. **Register (strong)**
    - registerId: key, numeric

- cost: numeric
- date: Date

22. **Address (strong)**
    - addressId:key, numeric
    - street: alphanumeric
    - zip: alphanumeric
    - city: alphanumeric
    - state: alphanumeric

23. **Security Alarm (strong)**
    - securityId: key, numeric
    - activated: tinyInt
    - type: alphanumeric

24. **Police Station (strong)**
    - policeId:key, numeric
    - email: alphanumeric
    - phone: multivalued, composite

25. **Fire Alarm (strong)**
    - fAlarmId: key, numeric
    - activated: tinyInt
    - type: alphanumeric

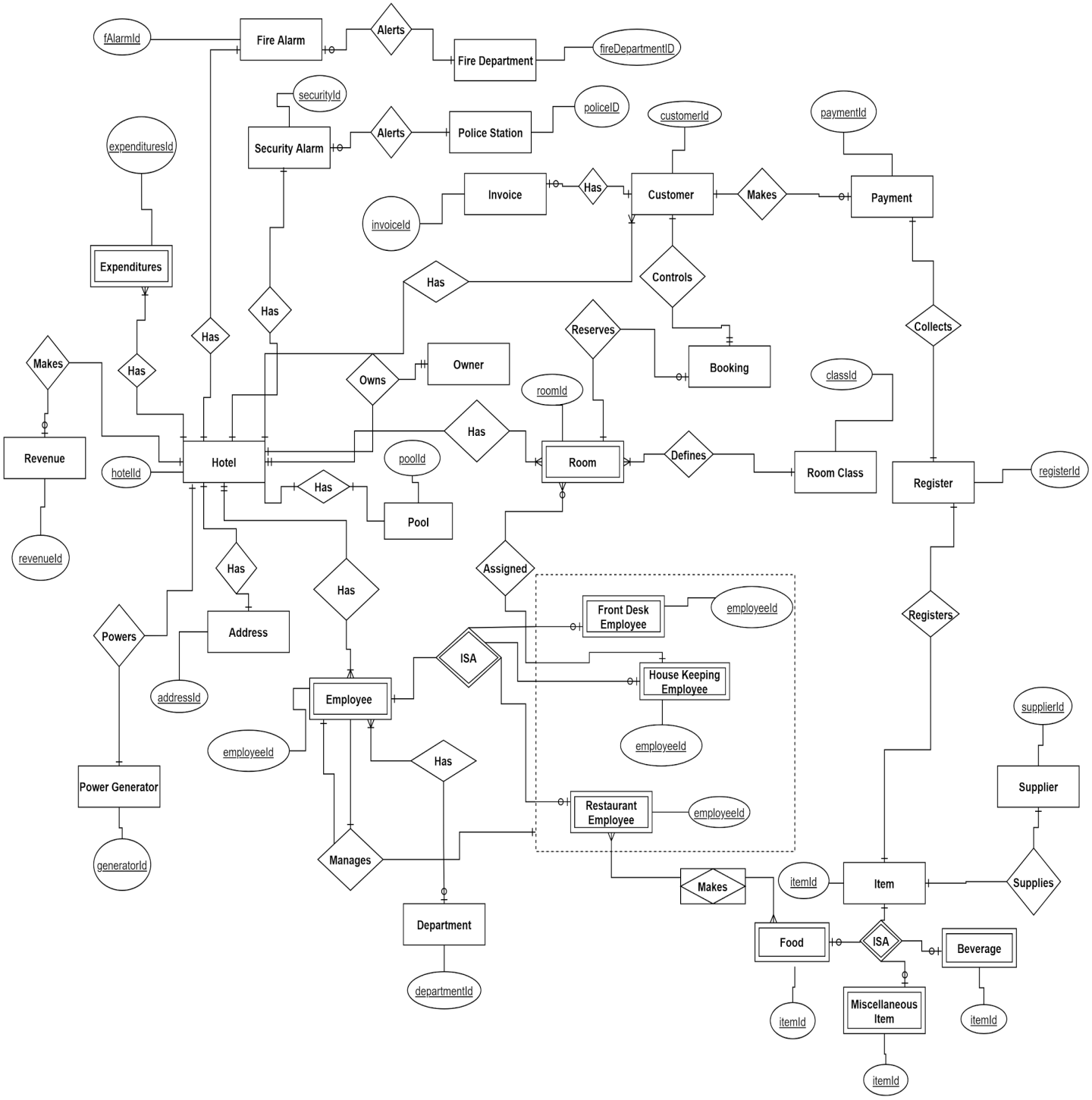
26. **Fire Department (strong)**
    - fireDeparmentId: key, numeric
    - email: alphanumeric
    - phone: alphanumeric

27. **Revenue (strong)**
    - revenueId: key, numeric
    - total: numeric
    - hotelId: weak key, numeric

28. **Power Generator (strong)**
    - generatorId: key, numeric
    - model: alphanumeric
    - type: alphanumeric

29. **Pool (strong)**
    - poolId: key, numeric
    - depth: numeric
    - isIndoor: tinyInt

ERD


fAlarmId
Fire Alarm
Alerts
Fire Department
fireDepartmentID
securityId
Security Alarm
Alerts
Police Station
policeID
customerId
paymentId
expendituresId
Invoice
Has
Customer
Makes
Payment
invoiceId
Expenditures
Has
Controls
Has
Has
Reserves
Collects
Makes
Has
Owns
Owner
Booking
classId
roomId
Has
Revenue
Hotel
poolId
Room
Defines
Room Class
Register
registerId
hotelId
Has
Pool
revenueId
Has
Has
Assigned
Front Desk Employee
employeeId
Registers
Powers
Address
ISA
House Keeping Employee
addressId
Employee
supplierId
employeeId
employeeId
Has
Power Generator
Restaurant Employee
employeeId
Supplier
generatorId
Manages
Makes
itemId
Item
Supplies
Department
Food
ISA
Beverage
departmentId
itemId
Miscellaneous Item
itemId
itemId

Testing Table

Rule	Entity A	Relation	Entity B	Cardinality	Pass/Fail	Description
1	Hotel	Has	Room	1:M	Pass	N/A
2	Hotel	Has	Employee	1:M	Pass	N/A
3	Employee	ISA	House Keeping Employee	M:1	Failed	An employee is a house keeping employee; 1:1
4	Employee	ISA	Front Desk Employee	M:1	Failed	An employee is a front desk employee; 1:1
5	Employee	ISA	Restaurant Employee	M:1	Failed	An employee is a restaurant employee; 1:1
6	Restaurant Employee	Makes	Food	M:N	Pass	N/A
7	Restaurant Employee	Works For	Department	M:1	Failed	Should have at least one employee working in the department.It Will still be m:1
8	Front Desk Employee	Works For	Department	M:1	Failed	Should have at least one employee working in the department. It will still be m:1

9	House Keeping Employee	Works For	Department	M:1	Failed	Should have at least one employee working in the department. It will still be m:1
10	Hotel	Has	Expenditures	1:M	Pass	None
11	Fire Alarm	Alerts	Fire Department	1:1	Pass	N/A
12	Security Alarm	Alerts	Police Station	1:1	Pass	N/A
13	Employee	ISA	Manager	M:1	Failed	Wrong crow's feet notation. Needs 0 or 1 for manager, and will be 1:1
14	Hotel	Has	Fire Alarm	1:1	Pass	N/A
15	Hotel	Has	Security Alarm	1:1	Pass	N/A
16	Hotel	Makes	Revenue	1:1	Pass	N/A
17	Hotel	Has	Address	1:1	Pass	N/A
18	Owner	Has	Hotel	1:1	Pass	N/A
19	Hotel	Has	Room	1:M	Pass	N/A
20	Room Class	Defines	Room	1:1	Pass	N/A
21	Booking	Reserves	Room	1:1	Pass	N/A
22	Customer	Controls	Booking	1:1	Pass	N/A
23	Customer	Has	Invoice	1:1	Pass	N/A
24	Owner	Hires	Employees	1:1	Failed	Owners

						should be able to hire many employees for 1:M
25	Customer	Makes	Payment	1:1	Pass	
26	Register	Collects	Payment	M:1	Failed	A register will collect a payment; 1:1
27	Power Source	Powers	Hotel	1:1	Pass	N/A
28	Register	Registers	Item	1:1	Pass	N/A
29	Item	ISA	Beverage	M:1	Failed	A item is a beverage; 1:1
30	Item	ISA	Food	M:1	Failed	A item is a food; 1:1
31	Item	ISA	Miscellaneous Item	M:1	Failed	A item is a miscellaneous item; 1:1
32	Food	ISA	Entree	M:1	Failed	A food is an entree; 1:1
33	Food	ISA	Appetizer	M:1	Failed	A food is an appetizer; 1:1
34	Miscellaneous Item	ISA	Souvenir	M:1	Failed	A misc. item is a souvenir; 1:1
35	Miscellaneous Item	ISA	Clothing	M:1	Failed	A misc. item is a clothing
36	Beverage	ISA	Water	M:1	Failed	A beverage is a water; 1:1
37	Beverage	ISA	Soda	M:1	Failed	A beverage is a soda; 1:1

38	Beverage	ISA	Alcoholic Drink	M:1	Failed	A beverage is an alcoholic drink; 1:1
39	Supplier	Supplies	Item	1:1	Pass	N/A
40	Restaurant Employee	Makes	Food	M:N	Pass	N/A
41	Employee	Manages	Employee	M:1 Recursive	Failed	An employee shall manage an employee; 1:1
42	Manager	Supervises	House Keeping Employee	1:M	Pass	N/A
43	Manager	Supervises	Front Desk Employee	1:M	Pass	N/A
44	Manager	Supervises	Restaurant Employee	1:M	Pass	N/A
45	Hotel	Has	Department	1:M	Pass	N/A
46	Front Desk Employee	Assigns	Room	1:1	Pass	N/A

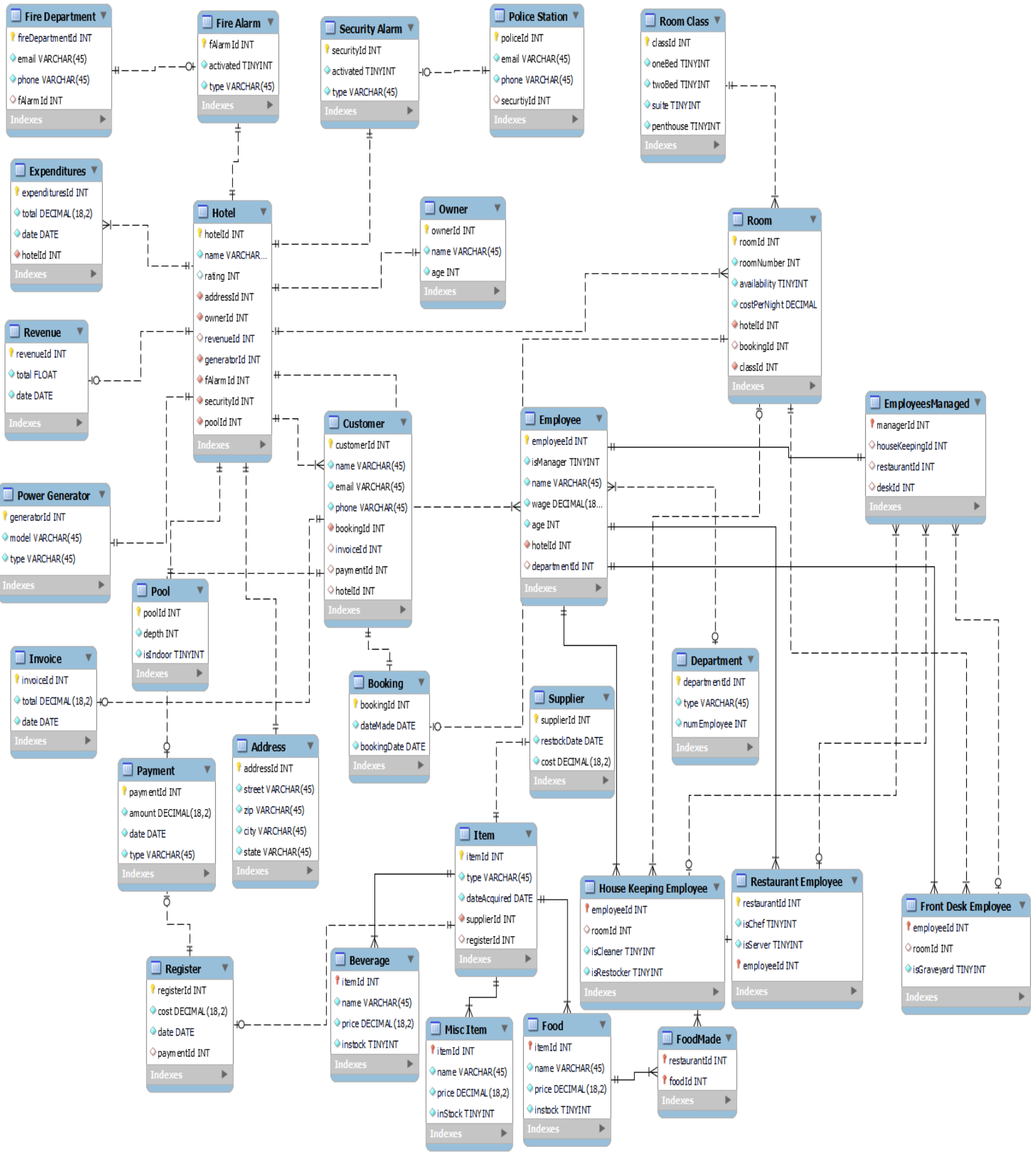
Database Model / EER

Table	FK	ON DELETE	ON UPDATE	DESCRIPTION
Beverage	item	ON CASCADE	ON CASCADE	If an item with t is deleted then beverage will be deleted
Customer	booking	ON CASCADE	ON CASCADE	If a booking is deleted or updated then a customer will be deleted
Customer	invoice	SET NULL	ON CASCADE	If an invoice is deleted then customer will have no invoice until a new one is provided
Customer	payment	SET NULL	ON CASCADE	If a payment is deleted then customer will have no payment until a new payment is made
Customer	hotel	SET NULL	ON CASCADE	If a hotel is deleted then customer will have a no hotel until a new hotel is added
Food	item	ON CASCADE	ON CASCADE	If item is deleted then food is deleted
Employee	hotel	ON CASCADE	ON CASCADE	If hotel is deleted then employee is deleted
Employee	department	SET NULL	ON CASCADE	If department is deleted then set

				employee to null
EmployeesManaged	manager	ON CASCADE	ON CASCADE	If manager is deleted then delete row
EmployeesManaged	house keeping employee	SET NULL	ON CASCADE	If house keeping employee is deleted then set field as null.
EmployeesManaged	front desk employee	SET NULL	ON CASCADE	If front desk employee is deleted then set field as null.
EmployeesManaged	restaurant employee	SET NULL	ON CASCADE	If restaurant employee is deleted then set field as null.
Expenditures	hotel	ON CASCADE	ON CASCADE	If hotel is deleted then delete expenditures
Fire Department	fire alarm	SET NULL	ON CASCADE	If fire alarm is deleted then set field as null
FoodMade	restaurant employee	ON CASCADE	ON CASCADE	If restaurant employee is deleted then delete foodmade
FoodMade	food	ON CASCADE	ON CASCADE	If food is deleted then delete foodmade
Front Desk Employee	employee	ON CASCADE	ON CASCADE	If employee is deleted then delete front desk employee
Front Desk Employee	room	SET NULL	ON CASCADE	If room is deleted then set field as null
Hotel	address	ON CASCADE	ON CASCADE	If address is deleted then

				delete hotel
Hotel	owner	ON CASCADE	ON CASCADE	If owner is deleted then delete hotel
Hotel	revenue	SET NULL	ON CASCADE	If revenue is deleted then set field as null
Hotel	power generator	ON CASCADE	ON CASCADE	If power generator is deleted then delete hotel
Hotel	fire alarm	ON CASCADE	ON CASCADE	If fire alarm is deleted then delete hotel
Hotel	security alarm	ON CASCADE	ON CASCADE	If security alarm is deleted then delete hotel
Hotel	pool	ON CASCADE	ON CASCADE	If pool is deleted then delete hotel
House Keeping Employee	employee	ON CASCADE	ON CASCADE	If employee is deleted then delete house keeping employee
House Keeping Employee	room	SET NULL	ON CASCADE	If room is deleted then set field as null
Item	supplier	ON CASCADE	ON CASCADE	If supplier is deleted then delete item
Item	register	SET NULL	ON CASCADE	If register is deleted then set field as null
Misc Item	item	ON CASCADE	ON CASCADE	If item is deleted then delete misc item
Police Station	security alarm	SET NULL	ON CASCADE	If security alarm is deleted then set field as null

Register	payment	SET NULL	ON CASCADE	If payment is deleted then set field as null
Restaurant Employee	employee	ON CASCADE	ON CASCADE	If employee is deleted then delete restaurant employee
Room	hotel	ON CASCADE	ON CASCADE	If hotel is deleted then delete room
Room	booking	SET NULL	ON CASCADE	If booking is deleted then set field as null
Room	room class	ON CASCADE	ON CASCADE	If room class is deleted then room is deleted


Fire Department
fireDepartmentId INT
email VARCHAR(45)
phone VARCHAR(45)
fAlarmId INT
Indexes
Fire Alarm
fAlarmId INT
activated TINYINT
type VARCHAR(45)
Indexes
Security Alarm
securityId INT
activated TINYINT
type VARCHAR(45)
Indexes
Police Station
policeId INT
email VARCHAR(45)
phone VARCHAR(45)
securtiyId INT
Indexes
Room Class
classId INT
oneBed TINYINT
twoBed TINYINT
suite TINYINT
penthouse TINYINT
Indexes
Expenditures
expendituresId INT
total DECIMAL(18,2)
date DATE
hotelId INT
Indexes
Hotel
hotelId INT
name VARCHAR...
rating INT
addressId INT
ownerId INT
revenueId INT
generatorId INT
fAlarmId INT
securityId INT
poolId INT
Indexes
Owner
ownerId INT
name VARCHAR(45)
age INT
Indexes
Room
roomId INT
roomNumber INT
availability TINYINT
costPerNight DECIMAL
hotelId INT
bookingId INT
classId INT
Indexes
Revenue
revenueId INT
total FLOAT
date DATE
Indexes
Customer
customerId INT
name VARCHAR(45)
email VARCHAR(45)
phone VARCHAR(45)
bookingId INT
invoiceId INT
paymentId INT
hotelId INT
Indexes
Employee
employeeId INT
isManager TINYINT
name VARCHAR(45)
wage DECIMAL(18...
age INT
hotelId INT
departmentId INT
Indexes
EmployeesManaged
managerId INT
houseKeepingId INT
restaurantId INT
deskId INT
Indexes
Power Generator
generatorId INT
model VARCHAR(45)
type VARCHAR(45)
Indexes
Pool
poolId INT
depth INT
isIndoor TINYINT
Indexes
Invoice
invoiceId INT
total DECIMAL(18,2)
date DATE
Indexes
Booking
bookingId INT
dateMade DATE
bookingDate DATE
Indexes
Supplier
supplierId INT
restockDate DATE
cost DECIMAL(18,2)
Indexes
Department
departmentId INT
type VARCHAR(45)
numEmployee INT
Indexes
Payment
paymentId INT
amount DECIMAL(18,2)
date DATE
type VARCHAR(45)
Indexes
Address
addressId INT
street VARCHAR(45)
zip VARCHAR(45)
city VARCHAR(45)
state VARCHAR(45)
Indexes
Item
itemId INT
type VARCHAR(45)
dateAcquired DATE
supplierId INT
registerId INT
Indexes
House Keeping Employee
employeeId INT
roomId INT
isCleaner TINYINT
isRestocker TINYINT
Indexes
Restaurant Employee
restaurantId INT
isChef TINYINT
isServer TINYINT
employeeId INT
Indexes
Front Desk Employee
employeeId INT
roomId INT
isGraveyard TINYINT
Indexes
Register
registerId INT
cost DECIMAL(18,2)
date DATE
paymentId INT
Indexes
Beverage
itemId INT
name VARCHAR(45)
price DECIMAL(18,2)
instock TINYINT
Indexes
Misc Item
itemId INT
name VARCHAR(45)
price DECIMAL(18,2)
inStock TINYINT
Indexes
Food
itemId INT
name VARCHAR(45)
price DECIMAL(18,2)
instock TINYINT
Indexes
FoodMade
restaurantId INT
foodId INT
Indexes

Testing Table

Entity	SQLQUERY	PASS/FAIL	ERROR DESCRIPTION	POSSIBLE SOLUTION
Address	DELETE	PASS	None	None
Address	UPDATE	PASS	None	None
Beverage	DELETE	PASS	None	None
Beverage	UPDATE	PASS	None	None
Customer	DELETE	PASS	None	None
Customer	UPDATE	PASS	None	None
Department	DELETE	PASS	None	None
Department	UPDATE	PASS	None	None
Employee	DELETE	PASS	None	None
Employee	UPDATE	PASS	None	None
Employeesmanaged	DELETE	PASS	None	None
Employeesmanaged	UPDATE	PASS	None	None
Expenditures	DELETE	PASS	None	None
Expenditures	UPDATE	PASS	None	None
Fire Alarm	DELETE	FAIL	Table not found	Add back ticks in front of fire and after alarm
Fire Alarm	UPDATE	PASS	None	None
Fire Department	DELETE	FAIL	Column not found	Mistyped column name
Fire Department	UPDATE	FAIL	Duplicate entry	Delete not deleting row as intended; adding an already existing key.

				Changed = null to is null in delete
Food	DELETE	PASS	None	None
Food	UPDATE	PASS	None	None
Foodmade	DELETE	PASS	None	None
Foodmade	UPDATE	PASS	None	None
Front Desk Employee	DELETE	PASS	None	None
Front Desk Employee	UPDATE	PASS	None	None
House Keeping Employee	DELETE	PASS	None	None
House Keeping Employee	UPDATE	PASS	None	None
Restaurant Employee	DELETE	PASS	None	None
Restaurant Employee	UPDATE	PASS	None	None
Hotel	DELETE	PASS	None	None
Hotel	UPDATE	PASS	None	None
Invoice	DELETE	PASS	None	None
Invoice	UPDATE	PASS	None	None
Item	DELETE	PASS	None	None
Item	UPDATE	PASS	None	None
Misc Item	DELETE	PASS	None	None
Misc Item	UPDATE	PASS	None	None
Owner	DELETE	PASS	None	None
Owner	UPDATE	PASS	None	None
Payment	DELETE	PASS	None	None

Payment	UPDATE	PASS	None	None
Security Alarm	DELETE	PASS	None	None
Security Alarm	UPDATE	PASS	None	None
Police Station	DELETE	PASS	None	None
Police Station	UPDATE	PASS	None	None
Pool	DELETE	PASS	None	None
Pool	UPDATE	PASS	None	None
Power Generator	DELETE	PASS	None	None
Power Generator	UPDATE	PASS	None	None
Register	DELETE	PASS	None	None
Register	UPDATE	PASS	None	None
Revenue	DELETE	PASS	None	None
Revenue	UPDATE	PASS	None	None
Room	DELETE	PASS	None	None
Room	UPDATE	PASS	None	None
Room Class	DELETE	PASS	None	None
Room Class	UPDATE	PASS	None	None
Supplier	DELETE	PASS	None	None
Supplier	UPDATE	PASS	None	None