Online Hotel Reservation System

Deliverable 1: ER Diagram

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The first task in the creation of the online hotel reservation system is to create a detailed ER diagram to show all entities, relations, and attributes which will be implemented in the creation of the database. Using the guidelines given, we must design the diagram to the specifications of it, along with adding our own analysis to provide any details which may not be present in the guidelines. Creating the diagram will aid us in the process of creating and implementing the database, allowing us to be sure all conditions have been met.

Our own analysis is based off of the assumption of details which are not present in the guidelines given. The assumptions made in creating the diagram are as follows:

- Only rooms are allowed to be discounted. This excludes the possibility of a discounted service type or breakfast type.
- Every hotel can have any number of each type of room, so long as the minimum amounts of rooms (10) are present.
- Every hotel has the choice to offer any amount of any type of breakfast (N), or offer no breakfast at all (0).
- Every hotel has the choice to provide any amount of any type of service (N), or provide no services at all (0).
- A customer's name must include their first and last name.
- A customer's address must include their street address, zip code, state, and country.
- While making a reservation, the customer must provide the first and last name when providing the name printed on the credit card being used.
- While making a reservation, the customer must provide the street address, zip code, state, and country when providing the address connected to the credit card being used.
- A reservation can include any amount of any type of breakfast (N), or include no breakfast at all (0) and vice versa (i.e. a service/breakfast may not be included in a room reservation) (Since max capacity cannot be represented in initial diagram, (0,N) is used instead).
- A reservation can include any amount of any type of service (N), or no service at all (0).
- A customer has the choice to write many reviews (N), or write no review at all (0).
- A type of service, room, or breakfast has no constraint on how many reviews are allowed (0,N).

The ER diagram also presents a wealth of constraints which apply to each relation that is made between two entities. All constraints are shown in the diagram. No additional keys were created in generating this diagram.

In creating the diagram, a few difficulties were inevitably faced. Most made their presence known while working on the minor details included (i.e. discounted prices, reviews). Others were faced while attempting to decide what relations should be made or how types the types of rooms, breakfast, and services should be represented.

RRoomRating
RRoomText
REVROOM
RRoomType
(1,N)
N REV-ROOM
M

Country
State
Street_Address
Location
Zipcode
Hotel_ID
PhoneNo.
HULTON 1 CHAINS N HOTEL_CHAINS
(0,N) (1,1)

Hotel_ID
REVIEW
ReivewID
ReivewType
(1,1)
N GETS 1
(0,N)
(0,N)
(10,N)
1 HOT-ROOM N
(0,N)

(1,1)

(1,1)
N WRITES 1
(0,N)

RServRating
RServText
REVSERVICE
RServType
(1,N)
N REV-SERV M
(0,N)

1 HOT-SERV N
(1,1)

RBreakText
RBreakRating
REVBREAKFAST
RBreakType
(1,N) N REV-BREAK M
(0,N)

1 HOT-BREAK N
(1,1)

BDesc
BType
BPricePS
BREAKFAST
Hotel_ID

RoomCap
RDesc
RPricePN
RType
Hotel_ID
ROOMS
RoomNum
FloorNum

PNumber
Email
CUSTOMER
CustID
FName
LName
Name
Address
SAddress
CCountry
CZipCode
CState
(1,N)

Hotel_ID
SERVICES
SType
SPrice
(0,N)

Hotel_ID

1 C-R N

DISCOUNT_ROOM
DiscPricePN
DiscStartDate
DiscEndDate
(1,1)

RPrice
BPrice
SPrice
Total
InvoiceNum
CHECKOUTDATE
CHECKINDATE
RESERVATION
(1,1)
(1,N)

N INCLUDES_SERV M
(0,N)

N INCLUDES_BREAK M
(0,N)

N RRES-ROOM 1
(1,N)

(1,1)

RoomNum
RType
ROOM_RES
CHECKOUTDATE
CHECKINDATE
SType
BType
NumOfStype
NumOfBtype
NumDays

(1,N) 1 INCLUDES_ROOM N (1,1)

N PAID_WITH 1
(1,1)
(1,N)

CardSecCode
CardType
CFName
CardName
CardExp
CLName
CardNum
CreditCard
CardAddr
CardSAddress
CardZipcode
CardState
CardCountry
InvoiceNum