

Database Homework 3
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1. ex 4.8

ForeignKey in Hotel: None
ForeignKey in Room: hotelNo, refer to PrimaryKey of Hotel
ForeignKey in Booking: hotelNo + roomNo, refer to PrimaryKey of Room
guestNo, refer to PrimaryKey of Guest
ForeignKey in Guest: None

For entity integrity, means the Primary Key: hotelNo to Hotel, roomNo + hotelNo to Room, hotelNo + guestNo + dateFrom to Booking to Booking, guestNo to Guest, should be non-NULL and unique in each tables;

For referential integrity, means the ForeignKey: hotelNo of Room, hotelNo + roomNo and guestNo of Booking must exist in each referred table: Hotel, Room and Guest.

2. ex 4.9

Hotel

hotelNo	hotelName	city
H001	Hotel California	L.A.
H002	Hotel Golden State	San Francisco

Room

roomNo	hotelNo	type	price
R001	H001	single room	100.00
R002	H001	separated room	150.00
R001	H002	single room	110.00
R002	H002	single room	110.00

Booking

hotelNo	guestNo	dateFrom	dateTo	roomNo
H001	G001	2015/10/01	2015/10/02	R001
H001	G002	2015/10/01	2015/10/03	R002
H002	G003	2015/10/2	2015/10/4	R001

Guest

guestNo	guestName	guestAddress
G001	Mike James	5100 Main St, L.A.
G002	Danis Curry	2636 Alder Dr, San Francisco
G003	Mike Brown	3700 Evergreen St, L.A.

3. ex 5.8

- Get the hotelNo of all hotels which have room's price higher than 50\$.
- Select all the staff from Hotel and Room table for all rooms.
- Get the hotelName of all hotels which have room's price higher than 50\$.
- List all the staff from Guest for all guests, and all staff from Booking for guests who booked room at least to 2007/1/1; For those who didn't, just set Booking fields to null.
- Get all the staff from Hotel for the hotels which have room's price higher than 50\$.
- Get all the guestNames for the guests who booked hotel in London.

4. ex 5.10

- list all the hotelNames for hotels of London in Hotel.
- list all the hotelNames for hotels which have room's price higher than 50\$.
- list all the hotelNames for hotels from which there's a guest named John Smith booked room.
- For those hotels which booked by a same guest at least two times(different date), list all the hotelNames, guestNames(who booked at least twice), two different booked dates.

5.

- 5.14. σ (Employee)
- 5.15. σ sex = 'female' (Employee)
- 5.16. π fName, lName, address (σ position = 'manager' (Employee))
- 5.17. π fName, lName, address (Employee \bowtie (σ deptName = 'IT' (Department)))
- 5.18. π fName, lName (Employee \bowtie (σ projName = 'SCCS' (Project)))
- 5.19. π lName (σ position = 'manager' ^ DOB <= thisYear - ageOfRetire (Employee))