CS240 IN-CLASS EXERCISE – 2019-02-13

Today you are analyzing the information needs of a hotel chain with 84 hotels across the United States. Working in groups, design a relational database using normalization theory that will efficiently allow management to run the hotels effectively. Identify all entities and their attributes. Show rectangles for every table, label the tables in all-caps, show the keys in upper-and-lower case bold, list the attributes (fields) and link the tables by keys to show relations.

The system you are designing must be able at minimum to meet the following requirements.

1. Clients must be able to reserve rooms in any of the hotels.
2. The accounting department must be able to charge customers for all services.
3. The hotels have snack bars and restaurants and must have up-to-date menus and supplies for all items, including room-service meals.
4. Every room must have an inventory of furniture and decorations.
5. Daily room staff must know exactly which supplies (e.g., towels, soaps, shampoo, etc.) to stock in every room.
6. The hotels must keep track of inventory for all reserves of furnishings and supplies, including re-order points (minimum stock required) and exactly where the furnishings are stored.
7. Inventory management must know which supplier to contact for replacements of supplies of all kinds as required.
8. The hotel chain has a rewards program for customers who book repeat reservations.
9. The personnel-management group must track all employees and all contractors who have access to locations in the hotels.
10. Human resources must keep records of salaried and hourly workers, their salaries or other pay scales, and the assignments (positions, projects, repairs…) for everyone involved.
11. The accounting department's payroll service has to pay people according to the work they do and their salaries or hourly rates; some staff are paid weekly, others biweekly or monthly. Contractors and supplies must be paid within the requirements of their contracts (e.g., some require payment within 30 days of the invoice, but others may stipulate payment at the end of every day of work).

Go for it!

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