COMP 3421 Database Organization & Mgmt I

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Assignment 2

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Step 2 of Your PDA (Personal Database Application)

Note1: this assignment is a slight modification of material developed by the Stanford Database Group

Note2: see Recording Your Session in the on-line Getting Started With mySQL document for a guide to preparing output to hand in with your assignment. It will be useful for this and subsequent PDA parts.

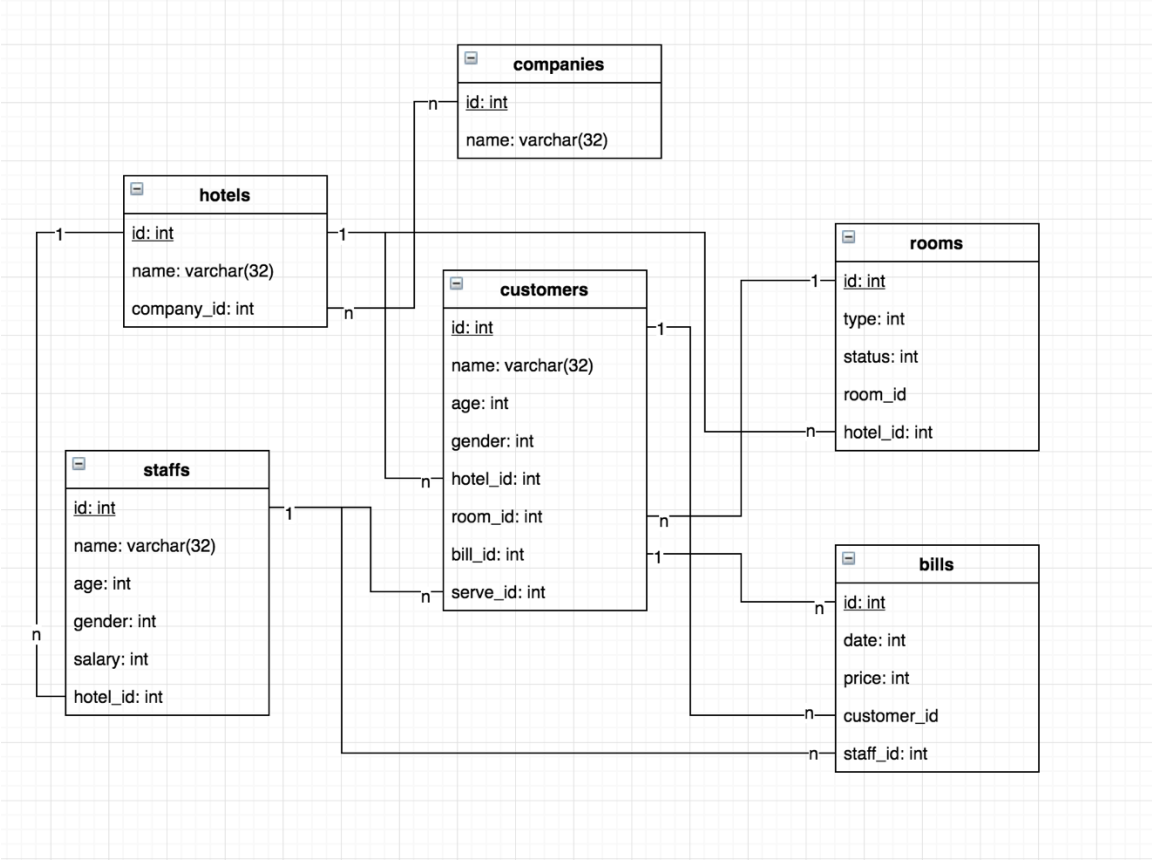
Note3: Make sure you backup your data and files for executing commands. It is your computer, you are responsible for your data, I suggest backing up frequently to an external device.

(a) (10 pts.) Consider the E/R schema you designed for your PDA in PDA Assignment #1. Please attach a copy of the schema. Use the method described in the text and in class for translating an ER schema to relations to produce a set of relations for your database design. Please specify your relational schema and underline key attributes.

Answer:

hotels:	id name company_id
companies:	id name
staffs:	id name age gender salary Hotel_id
customers:	id name age gender Hotel_id Room_id Bill_id Serve_id
rooms:	id room_id type status Hotel_id

bills:	id date price Customer_id Staff_id



(b) (20 pts.) Write an SQL database schema for your PDA, using the CREATE TABLE commands described in the handout Getting Started With mySQL. Pick suitable datatypes for each attribute. Hand in a printout of the commands you use to create your database schema (it is a good idea to keep this file for the balance of the course). Show the response of mysql to a request to describe each of your relation schemas. For example, to see the schema for relation Foo type:

Answer：

```
mysql> create table hotels(id int primary key, name varchar(32), company_id int )
    -> ;
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> create table companies (id int primary key, name varchar(32) );
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> create table staffs (id int primary key, name varchar(32), age int, gender int, salary int, hotels_id int );
Query OK, 0 rows affected (0.02 sec)

mysql> create table customers (id int primary key, name varchar(32), age int, gender int, salary int, hotels_id int, roo
Query OK, 0 rows affected (0.01 sec)

mysql> create table rooms (id int primary key, room_id, type int, status int, hotels_id int);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
mysql> create table rooms (id int primary key, room_id int, type int, status int, hotels_id int);
Query OK, 0 rows affected (0.02 sec)

mysql> create table bills (id int primary key, date int, price int, customers_id int, staff_id int);
Query OK, 0 rows affected (0.02 sec)
```

DESCRIBE Foo;

```
mysql> describe bills;
+--------------+---------+------+-----+---------+-------+
| Field        | Type    | Null | Key | Default | Extra |
+--------------+---------+------+-----+---------+-------+
| id           | int(11) | NO   | PRI | NULL    |       |
| date         | int(11) | YES  |     | NULL    |       |
| price        | int(11) | YES  |     | NULL    |       |
| customers_id | int(11) | YES  |     | NULL    |       |
| staff_id     | int(11) | YES  |     | NULL    |       |
+--------------+---------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

```
mysql> describe companies;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| id    | int(11)     | NO   | PRI | NULL    |       |
| name  | varchar(32) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

```
mysql> describe customers;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| id        | int(11)     | NO   | PRI | NULL    |       |
| name      | varchar(32) | YES  |     | NULL    |       |
| age       | int(11)     | YES  |     | NULL    |       |
| gender    | int(11)     | YES  |     | NULL    |       |
| salary    | int(11)     | YES  |     | NULL    |       |
| hotels_id | int(11)     | YES  |     | NULL    |       |
| room_id   | int(11)     | YES  |     | NULL    |       |
| bill_id   | int(11)     | YES  |     | NULL    |       |
| serve_id  | int(11)     | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
9 rows in set (0.00 sec)
```

```
mysql> describe hotels;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| id         | int(11)     | NO   | PRI | NULL    |       |
| name       | varchar(32) | YES  |     | NULL    |       |
| company_id | int(11)     | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

```
mysql> describe rooms;
+-----------+---------+------+-----+---------+-------+
| Field     | Type    | Null | Key | Default | Extra |
+-----------+---------+------+-----+---------+-------+
| id        | int(11) | NO   | PRI | NULL    |       |
| room_id   | int(11) | YES  |     | NULL    |       |
| type      | int(11) | YES  |     | NULL    |       |
| status    | int(11) | YES  |     | NULL    |       |
| hotels_id | int(11) | YES  |     | NULL    |       |
+-----------+---------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

```
mysql> describe staffs;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| id        | int(11)     | NO   | PRI | NULL    |       |
| name      | varchar(32) | YES  |     | NULL    |       |
| age       | int(11)     | YES  |     | NULL    |       |
| gender    | int(11)     | YES  |     | NULL    |       |
| salary    | int(11)     | YES  |     | NULL    |       |
| hotels_id | int(11)     | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

(c) (10 pts.) Execute about five INSERT commands to insert tuples into one of your relations. Show the response of mysql and the relation that results when you issue a SELECT * command. Again, the information on how to do this step is in Getting Started With mySQL.

```
mysql> insert into hotels values("2", "superB", "1");
Query OK, 1 row affected (0.00 sec)

mysql> insert into compaines values("1", "superCompany");
ERROR 1146 (42S02): Table 'test.compaines' doesn't exist
mysql> insert into companies values("1", "superCompany");
Query OK, 1 row affected (0.00 sec)

mysql> insert into staffs values("1", "Bob", "23", "1", "8000", "1");
Query OK, 1 row affected (0.00 sec)

mysql> insert into staffs values("2", "Jack", "22", "1", "7000", "1");
Query OK, 1 row affected (0.01 sec)

mysql> insert into staffs values("3", "Tony", "25", "1", "9000", "2");
Query OK, 1 row affected (0.01 sec)

mysql> insert into staffs values("4", "Tom", "24", "1", "8500", "2");
Query OK, 1 row affected (0.00 sec)

mysql> insert into staffs values("5", "Sarah", "23", "0", "9000", "1");
Query OK, 1 row affected (0.01 sec)

mysql> insert into staffs values("6", "Sunny", "22", "0", "9000", "2");
Query OK, 1 row affected (0.00 sec)

mysql> select * from staffs;
+----+-------+------+--------+--------+-----------+
| id | name  | age  | gender | salary | hotels_id |
+----+-------+------+--------+--------+-----------+
|  1 | Bob   |   23 |      1 |   8000 |         1 |
|  2 | Jack  |   22 |      1 |   7000 |         1 |
|  3 | Tony  |   25 |      1 |   9000 |         2 |
|  4 | Tom   |   24 |      1 |   8500 |         2 |
|  5 | Sarah |   23 |      0 |   9000 |         1 |
|  6 | Sunny |   22 |      0 |   9000 |         2 |
+----+-------+------+--------+--------+-----------+
6 rows in set (0.00 sec)
```

Don't forget to save a copy of your PDA for reference as you do Step 3 of the PDA.