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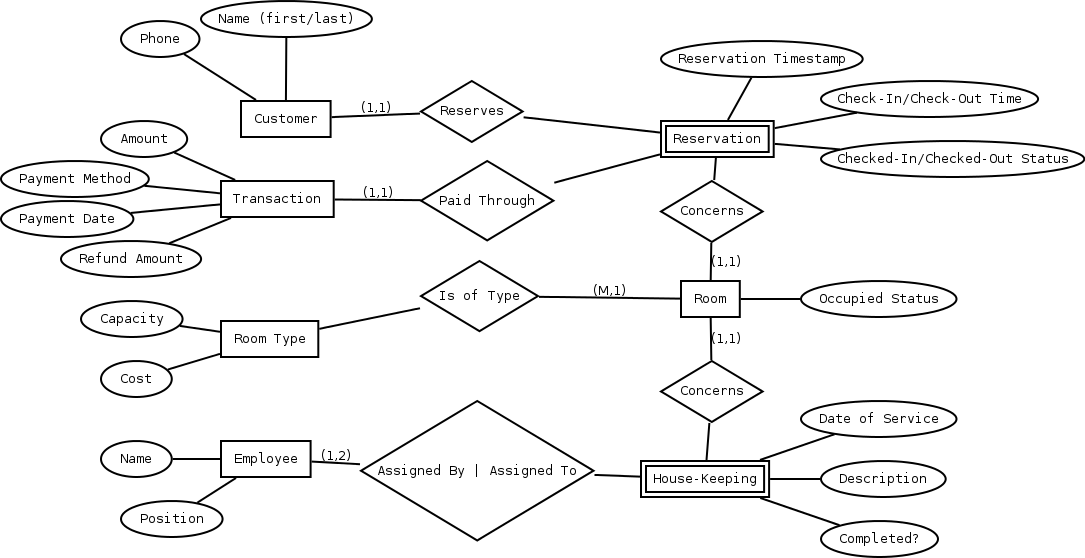
Group #2

Homework #6

CS:4400 Database Systems

Hotel Management System

**1. ER Diagram:**



**2. Relational Model:**

|  |  |  |  |
| --- | --- | --- | --- |
| Customer | | | |
| customer\_id | first\_name | last\_name | phone |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Transaction | | | | |
| transaction\_id | amount | payment\_method | payment\_date | refund\_amount |

|  |  |  |
| --- | --- | --- |
| Room | | |
| room\_id | room\_type | occupied\_status |

|  |  |  |
| --- | --- | --- |
| Room\_Type | | |
| room\_type | no\_people | cost |

|  |  |  |  |
| --- | --- | --- | --- |
| Employee | | | |
| employee\_id | first\_name | last\_name | position |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Housekeeping | | | | | |
| room\_id | date\_of\_service | assigned\_by\_id | assigned\_to\_id | description | completion\_status |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Reservation | | | | | | | |
| customer\_id | room\_id | check\_in\_date | check\_out\_date | checked\_in\_status | checkout\_out\_status | transaction\_id | reservation\_date |

List all anomalies

An insert anomaly assumes that every customer has a phone number. Even if they don’t we require a number to be entered to contact.

An employee quits (is deleted from the employee table) after they have been assigned to service a room, leaving an anomaly in the Housekeeping table.

List all functional dependencies for each relation

customer\_id 🡪 first\_name, last\_name, phone

room\_id 🡪 room\_type, no\_people, cost

room\_id, checked\_in\_date, checked\_out\_date 🡪 occupied\_status

reservation\_date, room\_id 🡪 customer\_id

**3. Test Plan**

Situations needed to cover:

- People checking out of a room the same day as people checking into the same room

- People checking out earlier than planned and generating a refund

-A person upgrading their room upon arrival

Errors that could occur

-Two people reserve the same room at the same time

-Someone reserves a room that another customer has just cancelled the reservation on before related tables get updated

-Two managers try to create a housekeeping assignment on the same room at the same time