

# Analysis of Entities and Relationships

Based on the ERM diagram provided, the main entities are Hotel, Room, Customer, Reservation, and Payment. Each has its own attributes, and there are relationships linking them, including primary and foreign keys that we'll use to establish connections between the tables.

## Relational Diagram

### 1. Hotel

#### Attributes:

- Hotel\_ID (Primary Key)
- Name
- Location
- Rating
- Number\_of\_Rooms

### 2. Room

#### Attributes:

- Room\_ID (Primary Key)
- Room\_Number
- Type (e.g., Single, Double, Suite)
- Price
- Hotel\_ID (Foreign Key referencing Hotel)
- Relationships:
- Each room is linked to a hotel via Hotel\_ID.

### 3. Customer

#### Attributes:

- Customer\_ID (Primary Key)
- First\_Name
- Last\_Name
- Email
- Phone\_Number

### 4. Reservation

#### Attributes:

- Reservation\_ID (Primary Key)
- Check\_In\_Date
- Check\_Out\_Date
- Total\_Amount
- Customer\_ID (Foreign Key referencing Customer)
- Room\_ID (Foreign Key referencing Room)

#### Relationships:

- Each reservation is linked to one customer via Customer\_ID.
- Each reservation is associated with a specific room via Room\_ID.

### 5. Payment

#### Attributes:

- Payment\_ID (Primary Key)
- Payment\_Date

- Amount
- Method (e.g., Credit Card, Cash)
- Reservation\_ID (Foreign Key referencing Reservation)

#### Relationships:

Each payment is linked to a specific reservation via Reservation\_ID.

Here is the relational structure for each table:

