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Assignment 2, Task 2

Fact entity and measures describing a fact entity

1. Fact Entity

Visit ← represents a single stay by a guest at a hotel.

2. Measures

- **TotalDays:** Captures the duration of the visit.
- **AmountPaid:** Records the payment amount for the visit.
- **FacilitiesUsed:** Indicates the number of facilities used.
- **MaintenanceCount:** Tracks the number of maintenance activities during the stay.
- **Profit:** A derived measure to track the profit made from each visit.
- **DiscountAmount:** Indicates any discounts applied during the stay.
- **EffectiveStayDays:** Allows tracking the adjusted duration if any discount applies or if the guest checks out early.

Dimensions

1. Time Dimension:

To analyse visits over various time periods, a time hierarchy is formed by the Year, Month, Day, and Time tables.

2. Location Dimension:

Tables for hotels, cities, and countries enable investigation at several geographic scales.

3. staff Dimension:

This helps with the analysis of check-ins and check-outs as well as maintenance tasks by recording staff information and positions (administration or maintenance).

4. Room Dimension:

Enables maintenance and occupancy analysis by room.

5. Guest Dimension:

Analysis based on guests and payments is made possible by the guest and credit card tables, which include guest demographics and payment information.

Hierarchy

1. Time Dimension:

Hierarchy: Year → Month → Day

2. Location Dimension:

Hierarchy: Country → City → Hotel

3. Employee Dimension:

Hierarchy: Administrator → Employee, Maintenance → Employee

4. Room Dimension:

Hierarchy: Hotel → Room

5. Guest Dimension:

Hierarchy: Credit Card → Guest

The descriptions (attributes) of all entity types.

1. Time Dimension:

Attributes: Year, Month, Day, Time

2. Location Dimension:

Attributes: CountryName, CityName

3. Employee Dimension:

○ Employee

Attributes: empID, EfirstName, ElastName, Edob, Role

○ Role

○ Administrator

Attributes: AdministratorID, CheckIn, CheckOut

○ Maintenance

Attributes: MaintenanceID, MaintenanceWork

4. Room Dimension:

Attributes: RoomID, RoomNum, FloorNum

5. Guest Dimension:

○ Guest

Attributes: DocumentNum, GfirstName, GlastName, Gdob, Nationality

○ Credit Card

Attributes: CreditCrdNum, BankName

Conceptual Schema

