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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**

A computer screen shot of a diagram

Description automatically generated