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/\* Assignment 2, Task 2 \*/

**Step 1: Identify the Fact Entity and Measures**

* **Fact Entity**: The primary fact entity in this context is the **Hotel Visit**. Each visit captures various metrics for analysis.
* **Measures** associated with **Hotel Visit**:
  + **Total Number of Days (Visit Length)**: Calculated as the difference between check-in and check-out dates.
  + **Amount Paid**: Sum of the charges for the stay.
  + **Number of Facilities Used**: Total count of facilities used per visit.
  + **Total Maintenance Events**: Count of maintenance activities during the stay.
  + **Profits**: Total revenue per hotel or city.
  + **Total visits**: Count of visit aggregated by credit card used
  + **Average Length of Stay**: Aggregated by year, month, or hotel.
  + **Average Discount Applied**: Aggregated by year, month, or hotel.

**Step 2: Define the Dimensions**

Based on the requirements, we’ll define dimensions that provide a context to the fact data.

* **Time**: Breakdown into Year, Month, and Day for periodic analysis of hotel visits.
* **Location**: Represents the hierarchical structure of **Country > City > Hotel** for tracking hotel activities by location.
* **Room**: Includes **Floor Number** and **Room Number** for identifying room-specific data.
* **Employee**: Differentiates staff by **Employee ID** and department (administration or maintenance).
* **Guest**: Based on **Guest ID** (or ID document), with attributes like nationality, date of birth, and payment method.
* **Payment**: Includes **Credit Card Number** and **Bank** as attributes for analyzing payments.

**Step 3: Define Hierarchies for Each Dimension**

* **Time Hierarchy**: Year > Month > Day
* **Location Hierarchy**: Country > City > Hotel
* **Room Hierarchy**: Hotel > Floor > Room

