Build a Data Mart in SQL (DLBDSPBDM01)

Conception Phase – Requirements Specification

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1 Introduction

This project designs a small Airbnb-style database with 22 tables. Two tables act as *triple links* that connect three different tables at once (`dispute_resolution` and `referral_rewards`). Another table, `admin_users`, points back to itself so we can store who manages whom (a *recursive* link). Together, these tables cover sign-up, property listings, bookings, payments, reviews, referral bonuses, and dispute handling.

2 Roles and User Groups

- **Guest**
  Saved first in `user_profiles` and then in `guests`. Can book homes, write reviews, and earn referral credit.

- **Host**
  Also starts in `user_profiles`, then `hosts`. Owns many `property_listings` plus calendars, prices, pictures, and rules.

- **Administrator**
  Lives in `admin_users`. May supervise other admins, approve referral payouts, and close support tickets.

3 Actions and Processes

1. **Guest Actions:**

   - Search homes by date, price, and amenity.
   - Book stays, pay, or cancel if needed.
   - Leave reviews for homes and hosts.
   - Share referral codes and get paid when friends join.

2. **Host Actions:**

   - Add or edit listings, photos, rules, and prices.
   - Mark available dates and nightly rates.
   - Chat with guests and reply to reviews.
   - Receive payouts for completed stays.

3. **Administrator Actions:**

- Check listings and user accounts; open or close support tickets.
- Approve refunds and referral rewards.
- Solve disputes that join a ticket, a booking, and the admin who handled it.
- Review the activity log for audits.

4 Data and Function Requirements

- **User Data:** One profile table and role tables for guests, hosts, and admins.

- **Property Data:** Listings with photos, amenities, rules, prices, and availability.

- **Booking Data:** Bookings, payments, messages, and cancellation rules.

- **Review Data:** Guest-to-home and guest-to-host feedback with ratings and text.

- **Referral & Dispute Data:** Referral events and payments, plus support tickets and their resolutions.

- **Audit Data:** A detailed activity log for every user action.

Key functions the system must support:

1. **Search and Filter** listings quickly by date, price, and features.

2. **Smooth Booking and Secure Pay** so payments match each booking exactly.

3. **Reliable Reviews** that allow one honest review per stay.

4. **Smart Pricing Tools** that keep past and future prices for hosts.

5. **Easy Messaging** between guests and hosts inside the platform.

6. **Accurate Calendars** that stop double bookings.