Assignment-1

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Airbnb System Data Requirements

General Summary of Functionality:

The Airbnb system needs to store information about users, rental listings, and experience listings. It should allow users to host a trip or experience, book a trip or experience, and rate/review their guests and hosts.

Detailed Data Requirements:

- Each *user* is identified by an **account id** and can store the following information: first name, last name, birthdate (month, day, year), personal email, work email, phone number, profile photo, description, address, and languages spoken.
- A *user* can be a *guest*. Each one can store the number of reviews written about the guest and the number of reviews written by the guest.
- A *user* can be a *host*. Each one can store the following information: whether the host is a superhost, number of reviews written about the host, number of reviews written by the host, response rate, and cancellation rate.
- A *user* must be a *guest* or a *host*. A *user* can be both a *guest* and a *host*.
- Each *guest* can have many *payment methods*. Each one is identified by a **payment method id** and can store the payment method details.
- Each *host* can have many *payout methods*. Each one is identified by a **payout method id** and can store the payout method details.
- A host can make multiple *listings*. Each one is identified by a **listing id** and can store the following information: address, number of guests, average rating, listing description, location description, accessibility features, health and safety features, booking type ({instant, manual}), cancellation policy ({flexible, moderate, firm, strict, long-term}), and pictures. Each *listing* is either a *rental listing* or an *experience listing*.
- A *rental listing* can store the following information: number of bedrooms, number of beds, number of bathrooms, price per night, cleaning fee, service fee, minimum length of stay, maximum length of stay, preparation time needed, house rules, house manual, and check-in instructions ({smart lock, keypad, lockbox, building staff, host greets you, other}).
- A *rental amenity* is identified by **amenity name** and can store the amenity category. A *rental listing* can have multiple *rental amenities*.

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- An ***experience listing*** can store the following information: modality ({in person, online}), language(s), theme(s), length of time, qualities (e.g., fun for couples, once-in-a-lifetime, super storytelling), what's included (e.g., equipment, food, drinks), price, guest requirements, and what to bring.
- A ***host*** may create multiple ***guidebook***s. Each one is identified by a **guidebook id**, which is only unique to the ***host*** (making it a weak entity). Each ***guidebook*** can be attached to multiple ***listings***, and each ***listing*** can have multiple ***guidebooks***.
- Each ***guidebook*** may contain multiple ***guidebook entries***. Each ***guidebook entry*** is identified by the **entry name**, which is only unique to the ***guidebook*** (making it a weak entity), and can store the following information: entry type ({place, neighborhood, city, advice}), description, and category.
- A ***guest*** can make a ***booking*** which reserves a ***listing***. Each ***booking*** is identified by **booking id** and can store the following information: start date, end date, date of booking, fees (listing price, cleaning fee, service fee), discounts which make up the booking price.
- For each ***booking***, exactly one ***guest review*** and ***host review*** can be made. Each one contains a rating and comment.
- Each ***booking*** is connected to a single ***payment method*** and ***payout method***.
- A ***guest*** can add any number of ***rentals*** or ***experiences*** to their ***wishlist***. Each person has one ***wishlist***.