



Model Assumptions

- A user can register as a GUEST account or a HOST account.
- A user can have multiple phone numbers.
- A HOST can have zero or many LISTINGS, and a LISTING can have zero or many co-HOSTs. A LISTING can have zero HOST because it can be directly provided by Airbnb.
- A LISTING can have zero or many AMENITYs, and an AMENITY can be installed in zero or many LISTINGS.
- A GUEST can book zero or many LISTINGS, and a LISTING can be booked by zero or many GUESTs. However, bookings cannot overlap, therefore a booking activity must have and only have one BOOKINGDETAILS.
- Airbnb provides aircover service, which is a non-mandatory insurance program. The insurance can be provided to both listings and bookings.
- For a LISTING, there can be no or one LISTINGAIRCOVER.
- For a BOOKINGDETAILS, there can be no or one BOOKINGAIRCOVER.
- For a BOOKINGDETAILS, there can be no or one REVIEW. One REVIEW contains several comments and ratings attributes, because the GUEST and the LISTING can mutually rate.
- For a BOOKINGDETAILS, there must be at least one PAYMENT, because a PAYMENT must be made in order to make a booking. And there can be many PAYMENTs, for additional services or fines.
- A GUESTCONCERNREPORT can be posted by one and only one GUEST. A GUEST can post zero or many GUESTCONCERNREPORTs.
- A HOSTCONCERNREPORT can be posted by one and only one HOST. A HOST can post zero or many HOSTCONCERNREPORTs.
- ATTRACTION sites are separately stored in Airbnb to advertise for LISTINGS, so an ATTRACTION can be near to zero or many LISTINGS, and a LISTING can be near to zero or many ATTRACTIONs.

Relational Model

GUEST (guestID, firstName, lastName, email, year, month, day, currentAvgRating)

GUEST_PHONE (guestID, phoneNumber)

- Foreign Key (guestID) references GUEST

HOST (hostID, firstName, lastName, introduction, email, year, month, day)

HOST_PHONE (hostID, phoneNumber)

- Foreign Key (hostID) references HOST

LISTING (listingID, currentAvgRating, longitude, latitude, country, state, city, streetName, zipCode)

AMENITY (amenityID, amenityCategory, amenityName)

ATTRACTION (attractionID, attractionName, country, state, city, streetName, zipCode)

BOOKING_DETAILS ((bookingID, totalPrice, checkinYear, checkinMonth, checkinDay, checkinHour, checkoutYear, checkoutMonth, checkoutDay, checkoutHour)

- Foreign Key (bookingID) references BOOKING

GUEST_CONCERN_REPORT (guestID, reportID, reportReason, country, state, city, streetName, zipCode, year, month, day, hour, minute)

- Foreign Key (guestID) references GUEST

HOST_CONCERN_REPORT (hostID, reportID, reportReason, country, state, city, streetName, zipCode, year, month, day, hour, minute)

- Foreign Key (hostID) references HOST

BOOKING_AIRCOVER (bookingID, policyNumber, policyStartYear, policyStartMonth, policyStartDay, policyEndYear, policyEndMonth, policyEndDay)

- Foreign Key (bookingID) references BOOKINGDETAILS

LISTING_AIRCOVER (listingID, policyNumber, policyStartYear, policyStartMonth, policyStartDay, policyEndYear, policyEndMonth, policyEndDay)

- Foreign Key (listingID) references LISTING

REVIEW (bookingID, forGuestComment, forGuestRating, forListingComment, forListingRating)

- Foreign Key (bookingID) references BOOKINGDETAILS

PAYMENT (bookingID, paymentID, totalPayment, paymentMethod, year, month, day, hour, minute)

- Foreign Key (bookingID) references BOOKINGDETAILS

HOST_HAS_LISTING (hostID, listingID)

- Foreign Key (hostID) references HOST
- Foreign Key (listingID) references LISTING

LISTING_HAS_AMENITY (listingID, amenityID)

- Foreign Key (listingID) references LISTING
- Foreign Key (amenityID) references AMENITY

LISTING_IS_NEAR_TO_ATTRACTION (listingID, attractionID)

- Foreign Key (listingID) references LISTING
- Foreign Key (attractionID) references ATTRACTION

BOOKING (guestID, listingID, bookingID)

- Foreign Key (guestID) references GUEST
- Foreign Key (listingID) references LISTING
- Foreign Key (bookingID) references BOOKINGDETAILS