

AIRBNB DATABASE

REQUIREMENTS SPECIFICATIONS

Summary

The problem we are trying to solve here is that users need a platform where they can see and book different properties, based on their search criteria. However, while there are many such platforms out there, there isn't yet one that works with privately owned homes (houses, apartments, shared rooms) that would allow hosts and guests to connect and agree on the offerings.

The platform would give the users interested the opportunity to search for different available properties in their location of interest, filter by amenities that they are looking for and also have transparent and honest feedback from other guests who stayed at the property.

To start the whole solution implementation, I began with the DB design and that will be the first milestone to be achieved, the initial details of the concept are made available below, including the ER Diagram supposed to also highlight the relationships between tables and data.

Concept DB model

- Listed properties have a name, address, property type, bedroom count, bathroom count, price per night, maximum number of guests allowed, cleaning fee, available booking slots that show the dates when the property is available, check-in time, check-out time, an average rating and the total number of ratings for the property
 - Properties are divided into categories (like cosy, entire house, apartment, etc.) and each can have more than one and can have multiple bedrooms with each bedroom having the bed count and type of bed in each bedroom listed.
 - Each property can have multiple house rules (like no-smoking, no pets allowed, etc.) and multiple amenities (like Wi-Fi, air conditioning, etc.)
 - Property listings can and should have as many photos as possible, and have a cancellation policy which lists whether the stay at the property is refundable if cancelled, the percentage of the price refunded and the time period within which it is refundable
 - Users are split into 2 main categories:
 - Host (who hosts the stay at a property) and which in some conditions can receive a SuperHost status
 - Guest (who stays at a property)
 - Each user account has an optional profile picture, about section, the user's first name, last name, date of birth, address, gender, phone number, email address, password and details of emergency contact
 - A guest account also has a rating and the total number of ratings for the guest
 - A guest can create different wishlists depending on their needs. Each wishlist has a name, a privacy setting and a list of properties in it (if any).

- Every booking of a stay made by a guest has a unique booking ID, booking date (when the booking was made), check-in date (the guest's arrival date), check-out date (the date when the guest leaves), the number of guests for the stay, the date the booking was last modified (if modified).
- Every booking shows the total price for the stay, the tax paid, the total cost with taxes (and cleaning fee), the amount of the total price with taxes that has been paid in advance, the remaining amount due, promo code and discount amount (if any promo was applied)
- Every booking also lists whether the booking has been cancelled, the cancellation date, the refund amount and the refund amount paid.
- Each guest must have a credit card to pay for the stay. Each credit card must be unique per customer and have the following properties:
 - | A unique card number | Cardholder Name | Expiration month and year | CVV code | Card issuer | Billing address
- Each host must have a bank account where the amount for a stay hosted by the host will be deposited. Each bank account must contain a unique IBAN, BIC and the name of the bank and must belong to a single host.
- Guests can write property reviews and each review should have the following details:
 - | Multiple photos of the property (if any) | A comment | A cleanliness rating | A communication rating | A check-in rating | An accuracy rating | A location rating | A value rating | An overall rating | The date when the review was created | The date when the review was modified (if modified)
- Guests can write reviews of the hosts and the other way around and the contents need to be reflected as:
 - | The comment for the guest by the host | The rating given by the host to the guest | The date when the review for the guest was created by the host | The date when the review for the guest was modified by the host (if it was modified) | The comment for the host by the guest | The rating given by the guest to the host | The date when the review for the host was created by the guest | The date when the review for the host was modified by the guest (if it was modified)

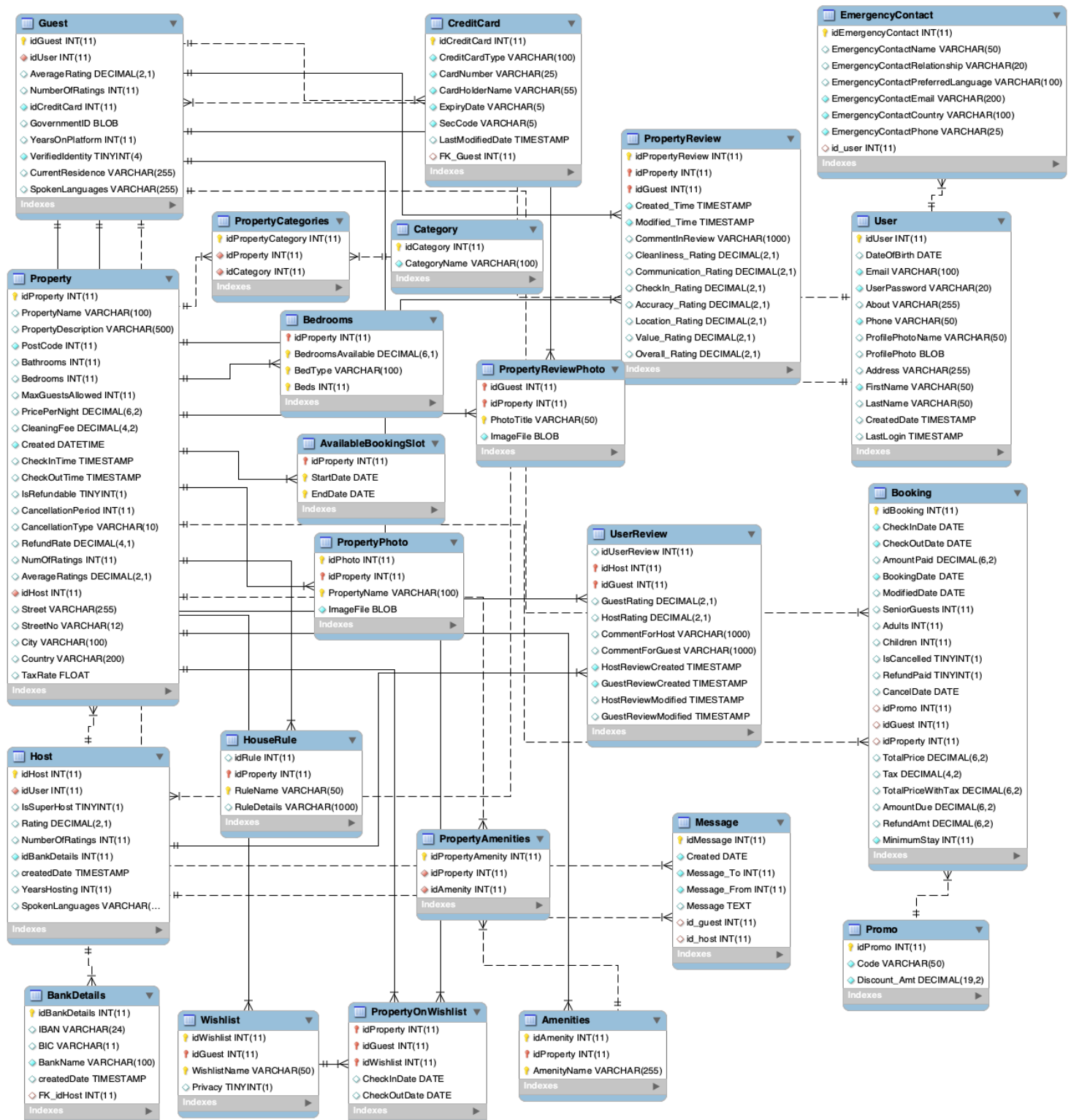
The following relationships were noted between the different components of the system:

- Each booking should have precisely one property listed, but a property can be in 0 or more bookings
- Each booking is made by exactly one guest but a guest can make 0 or more bookings
- A host can review 0 or more guests and a guest can review 0 or more hosts
- A guest can review 0 or more properties and the property can contain 0 or more reviews from guests.
- A host can send 0 or more messages to a guest and vice-versa, and each message should list who created it, whom it was sent to, the date of creation and the message body itself.
- A guest can have 0 or more wishlists
- A property listing can be included in 0 or more wishlists, and a wishlist can have 0 or

| Check-in date (the date when the guest wishes to stay at the property)
| Check-out date (the date when the guest wishes to leave the property)

- One-to-one: Host Owns BankAccount, Guest Owns CreditCard
- One-to-many: Guest Has Booking, Property Has Booking
- Many-to-many: Guest Review Property, Host Message Guest

EER DIAGRAM



DDL Statements:

[DDL for Airbnb DB](#)

DB DUMP:

[Full DB Dump to serve for importing the whole database with data.](#)

TABLES DEFINITION AND SQL CHECKS:

[SLIDE PRESENTATION OF THE DEVELOPMENT PHASE](#)

DATA DICTIONARY

Table: Amenities

Name	Data Type	Not Null	PK	FK	Default
idAmenity	INT(11)	Yes	Yes	No	
idProperty	INT(11)	Yes	Yes	Yes	
AmenityName	VARCHAR(255)	Yes	Yes	No	

Table: AvailableBookingSlot

Name	Data Type	Not Null	PK	FK	Default
idProperty	INT(11)	Yes	Yes	Yes	
StartDate	DATE	Yes	Yes	No	
EndDate	DATE	Yes	Yes	No	

Table: BankDetails

Name	Data Type	Not Null	PK	FK	Default
idBankDetails	INT(11)	Yes	Yes	No	
IBAN	VARCHAR(24)	No	No	No	NULL
BIC	VARCHAR(11)	No	No	No	NULL
BankName	VARCHAR(100)	Yes	No	No	
createdDate	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP()

FK_idHost	INT(11)	No	No	Yes	NULL
Table: Bedrooms					
Name	Data Type	Not Null	PK	FK	Default
idProperty	INT(11)	Yes	Yes	Yes	
BedroomsAvailable	DECIMAL(6,1)	Yes	Yes	No	
BedType	VARCHAR(100)	Yes	Yes	No	
Beds	INT(11)	Yes	Yes	No	
Table: Booking					
Name	Data Type	Not Null	PK	FK	Default
idBooking	INT(11)	Yes	Yes	No	
CheckInDate	DATE	Yes	No	No	
CheckOutDate	DATE	Yes	No	No	
AmountPaid	DECIMAL(6,2)	No	No	No	NULL
BookingDate	DATE	Yes	No	No	
ModifiedDate	DATE	No	No	No	NULL
SeniorGuests	INT(11)	No	No	No	0
Adults	INT(11)	No	No	No	0
Children	INT(11)	No	No	No	0
IsCancelled	TINYINT(1)	No	No	No	NULL
RefundPaid	TINYINT(1)	No	No	No	NULL
CancelDate	DATE	No	No	No	NULL
idPromo	INT(11)	No	No	Yes	NULL
idGuest	INT(11)	No	No	Yes	NULL
idProperty	INT(11)	No	No	Yes	NULL
TotalPrice	DECIMAL(6,2)	No	No	No	NULL
Tax	DECIMAL(4,2)	No	No	No	NULL
TotalPriceWithTax	DECIMAL(6,2)	No	No	No	NULL
AmountDue	DECIMAL(6,2)	No	No	No	NULL
RefundAmt	DECIMAL(6,2)	No	No	No	NULL
MinimumStay	INT(11)	Yes	No	No	1
Table: Category					
Name	Data Type	Not Null	PK	FK	Default
idCategory	INT(11)	Yes	Yes	No	

CategoryName	VARCHAR(100)	Yes	No	No	
Table: CreditCard					
Name	Data Type	Not Null	PK	FK	Default
idCreditCard	INT(11)	Yes	Yes	No	
CreditCardType	VARCHAR(100)	Yes	No	No	
CardNumber	VARCHAR(25)	Yes	No	No	
CardHolderName	VARCHAR(55)	Yes	No	No	
ExpiryDate	VARCHAR(5)	Yes	No	No	
SecCode	VARCHAR(5)	Yes	No	No	
LastModifiedDate	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP()
FK_Guest	INT(11)	No	No	Yes	NULL
Table: EmergencyContact					
Name	Data Type	Not Null	PK	FK	Default
idEmergencyContact	INT(11)	Yes	Yes	No	
EmergencyContactName	VARCHAR(50)	No	No	No	NULL
EmergencyContactRelationship	VARCHAR(20)	No	No	No	NULL
EmergencyContactPreferredLanguage	VARCHAR(100)	No	No	No	NULL
EmergencyContactEmail	VARCHAR(200)	Yes	No	No	
EmergencyContactCountry	VARCHAR(100)	Yes	No	No	
EmergencyContactPhone	VARCHAR(25)	Yes	No	No	
id_user	INT(11)	No	No	Yes	NULL
Table: Guest					
Name	Data Type	Not Null	PK	FK	Default
idGuest	INT(11)	Yes	Yes	No	
idUser	INT(11)	Yes	No	Yes	
AverageRating	DECIMAL(2,1)	No	No	No	NULL
NumberOfRatings	INT(11)	No	No	No	0
idCreditCard	INT(11)	Yes	No	No	
GovernmentID	BLOB	No	No	No	NULL
YearsOnPlatform	INT(11)	No	No	No	NULL

VerifiedIdentity	TINYINT(4)	Yes	No	No	
CurrentResidence	VARCHAR(255)	No	No	No	NULL
SpokenLanguages	VARCHAR(255)	No	No	No	NULL
Table: Host					
Name	Data Type	Not Null	PK	FK	Default
idHost	INT(11)	Yes	Yes	No	
idUser	INT(11)	Yes	No	Yes	
IsSuperHost	TINYINT(1)	No	No	No	NULL
Rating	DECIMAL(2,1)	No	No	No	NULL
NumberOfRatings	INT(11)	No	No	No	NULL
idBankDetails	INT(11)	Yes	No	No	
createdDate	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP()
YearsHosting	INT(11)	No	No	No	NULL
SpokenLanguages	VARCHAR(300)	No	No	No	NULL
Table: HouseRule					
Name	Data Type	Not Null	PK	FK	Default
idRule	INT(11)	No	No	No	NULL
idProperty	INT(11)	Yes	Yes	Yes	
RuleName	VARCHAR(50)	Yes	Yes	No	
RuleDetails	VARCHAR(1000)	No	No	No	NULL
Table: Message					
Name	Data Type	Not Null	PK	FK	Default
idMessage	INT(11)	Yes	Yes	No	
Created	DATE	Yes	No	No	CURRENT_TIMESTAMP()
Message_To	INT(11)	Yes	No	No	
Message_From	INT(11)	Yes	No	No	
Message	TEXT	No	No	No	NULL
id_guest	INT(11)	No	No	Yes	NULL
id_host	INT(11)	No	No	Yes	NULL
Table: Promo					

Name	Data Type	Not Null	PK	FK	Default
idPromo	INT(11)	Yes	Yes	No	
Code	VARCHAR(50)	Yes	No	No	
Discount_Amt	DECIMAL(19,2)	Yes	No	No	
Table: Property					
Name	Data Type	Not Null	PK	FK	Default
idProperty	INT(11)	Yes	Yes	No	
PropertyName	VARCHAR(100)	No	No	No	NULL
PropertyDescription	VARCHAR(500)	No	No	No	NULL
PostCode	INT(11)	Yes	No	No	
Bathrooms	INT(11)	No	No	No	NULL
Bedrooms	INT(11)	No	No	No	0
MaxGuestsAllowed	INT(11)	No	No	No	NULL
PricePerNight	DECIMAL(6,2)	No	No	No	NULL
CleaningFee	DECIMAL(4,2)	No	No	No	NULL
Created	DATETIME	Yes	No	No	CURRENT_TIMESTAMP()
CheckInTime	TIMESTAMP	No	No	No	NULL
CheckOutTime	TIMESTAMP	No	No	No	NULL
IsRefundable	TINYINT(1)	No	No	No	NULL
CancellationPeriod	INT(11)	No	No	No	NULL
CancellationType	VARCHAR(10)	No	No	No	NULL
RefundRate	DECIMAL(4,1)	No	No	No	NULL
NumOfRatings	INT(11)	No	No	No	0
AverageRatings	DECIMAL(2,1)	No	No	No	0.0
idHost	INT(11)	Yes	No	Yes	
Street	VARCHAR(255)	No	No	No	NULL
StreetNo	VARCHAR(12)	No	No	No	NULL
City	VARCHAR(100)	No	No	No	NULL
Country	VARCHAR(200)	No	No	No	NULL
TaxRate	FLOAT	No	No	No	NULL
Table: PropertyAmenities					

Name	Data Type	Not Null	PK	FK	Default
idPropertyAmenity	INT(11)	Yes	Yes	No	
idProperty	INT(11)	Yes	No	Yes	
idAmenity	INT(11)	Yes	No	Yes	
Table: PropertyCategories					
Name	Data Type	Not Null	PK	FK	Default
idPropertyCategory	INT(11)	Yes	Yes	No	
idProperty	INT(11)	Yes	No	Yes	
idCategory	INT(11)	Yes	No	Yes	
Table: PropertyOnWishlist					
Name	Data Type	Not Null	PK	FK	Default
idProperty	INT(11)	Yes	Yes	Yes	
idGuest	INT(11)	Yes	Yes	Yes	
idWishlist	INT(11)	Yes	Yes	Yes	
CheckInDate	DATE	No	No	No	NULL
CheckOutDate	DATE	No	No	No	NULL
Table: PropertyPhoto					
Name	Data Type	Not Null	PK	FK	Default
idPhoto	INT(11)	Yes	Yes	No	
idProperty	INT(11)	Yes	Yes	Yes	
PropertyName	VARCHAR(100)	Yes	Yes	No	
ImageFile	BLOB	Yes	No	No	
Table: PropertyReview					
Name	Data Type	Not Null	PK	FK	Default
idPropertyReview	INT(11)	Yes	Yes	No	
idProperty	INT(11)	Yes	Yes	Yes	

idGuest	INT(11)	Yes	Yes	Yes	
Created_Time	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP()
Modified_Time	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP() ON UPDATE CURRENT_TIMESTAMP()
CommentInReview	VARCHAR(1000)	No	No	No	NULL
Cleanliness_Rating	DECIMAL(2,1)	No	No	No	NULL
Communication_Rating	DECIMAL(2,1)	No	No	No	NULL
CheckIn_Rating	DECIMAL(2,1)	No	No	No	NULL
Accuracy_Rating	DECIMAL(2,1)	No	No	No	NULL
Location_Rating	DECIMAL(2,1)	No	No	No	NULL
Value_Rating	DECIMAL(2,1)	No	No	No	NULL
Overall_Rating	DECIMAL(2,1)	No	No	No	NULL

Table: PropertyReviewPhoto

Name	Data Type	Not Null	PK	FK	Default
idGuest	INT(11)	Yes	Yes	Yes	
idProperty	INT(11)	Yes	Yes	Yes	
PhotoTitle	VARCHAR(50)	Yes	Yes	No	
ImageFile	BLOB	Yes	No	No	

Table: User

Name	Data Type	Not Null	PK	FK	Default
idUser	INT(11)	Yes	Yes	No	
DateOfBirth	DATE	No	No	No	NULL
Email	VARCHAR(100)	Yes	No	No	
UserPassword	VARCHAR(20)	Yes	No	No	
About	VARCHAR(255)	No	No	No	NULL
Phone	VARCHAR(50)	Yes	No	No	
ProfilePhotoName	VARCHAR(50)	No	No	No	NULL
ProfilePhoto	BLOB	No	No	No	NULL
Address	VARCHAR(255)	No	No	No	NULL
FirstName	VARCHAR(50)	Yes	No	No	

LastName	VARCHAR(50)	No	No	No	NULL
CreatedDate	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP()
LastLogin	TIMESTAMP	No	No	No	ON UPDATE CURRENT_TIMESTAMP()

Table: UserReview

Name	Data Type	Not Null	PK	FK	Default
idUserReview	INT(11)	No	No	No	NULL
idHost	INT(11)	Yes	Yes	Yes	
idGuest	INT(11)	Yes	Yes	Yes	
GuestRating	DECIMAL(2,1)	No	No	No	NULL
HostRating	DECIMAL(2,1)	No	No	No	NULL
CommentForHost	VARCHAR(1000)	No	No	No	NULL
CommentForGuest	VARCHAR(1000)	No	No	No	NULL
HostReviewCreated	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP()
GuestReviewCreated	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP()
HostReviewModified	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP() ON UPDATE CURRENT_TIMESTAMP()
GuestReviewModified	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP() ON UPDATE CURRENT_TIMESTAMP()

Table: Wishlist

Name	Data Type	Not Null	PK	FK	Default
idWishlist	INT(11)	Yes	Yes	No	
idGuest	INT(11)	Yes	Yes	Yes	
WishlistName	VARCHAR(50)	Yes	Yes	No	
Privacy	TINYINT(1)	No	No	No	NULL