Oskar Wolf

Project: Build Data Mart in SQL

Requirements Specification

Introduction:

This document aims to define the essential requirements for the development of the Airbnb project. It entails a comprehensive analysis of the system's roles, actions, and necessary data and functions.

Roles:

The system involves two primary roles: **Hosts and Guests**.

- **Hosts:**

a) Providing accommodations for rent.
b) Creating and managing property listings.
c) Modifying availability, pricing, and property information.
d) Communicating with guests and managing bookings.

- **Guests:**

a) Searching and booking suitable accommodations.
b) Refining search based on location, dates, and preferences.
c) Accessing comprehensive property details.
d) Making bookings and secure payments.
e) Providing feedback through reviews and communicating with hosts.

Actions:

- **Hosts:**

a) Creating and managing property listings to showcase their accommodations.
b) Updating availability, pricing, and property details regularly to provide accurate information.
c) Communicating efficiently with guests, addressing inquiries, and sharing essential information.
d) Managing bookings, including confirming reservations and coordinating check-ins and check-outs.
e) Handling financial transactions by receiving payments for bookings through secure payment methods.

- **Guests:**

a) Conducting targeted searches for accommodations based on location, dates, and personal preferences.
b) Accessing detailed information about properties, including amenities and rules, to make informed decisions.
c) Making secure bookings and payments for their chosen accommodations.
d) Communicating effectively with hosts to ask questions, make special requests, and gather additional information.
e) Sharing their experiences through reviews and ratings, contributing valuable feedback for future guests and hosts.

Required Data and Functions:

- **User Management:**

a) Registration and login features for both hosts and guests.
b) Comprehensive user profile management, allowing users to update personal information, contact details, and profile pictures.

- **Accommodation Management:**

a) User-friendly tools for hosts to create and manage property listings, simplifying the process of showcasing and handling accommodations.
b) Convenient features for hosts to easily manage availability dates and pricing, enabling them to effortlessly update and customize availability and pricing information.
c) Flexible options for hosts to specify amenities and rules for accommodations, ensuring effective communication of unique features and guidelines.

- **Booking and Payment Management:**

a) User-friendly search and booking features for guests, simplifying the process of finding and reserving accommodations effortlessly.
b) Secure credit card payment processing, guaranteeing the safety and trustworthiness of financial transactions.
c) Instant confirmation notifications for successful bookings, offering guests peace of mind and crucial booking information.
d) Transparent cancellation and refund policies, ensuring guests are well-informed about the procedures and conditions for modifying or canceling their bookings.

- **Communication:**

a) Enabling easy communication between hosts and guests, the platform provides messaging features for discussing bookings, inquiries, and special requests.
b) A reliable notification system ensures timely updates and important messages, promoting effective and prompt communication.

- **Review and Rating System:**

a) Guests can share their feedback and ratings for accommodations, contributing to the review system.
b) The platform displays average ratings and reviews for each property and host, helping guests make informed decisions.

Conception Phase Summary
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During this phase of my database development project, I focused on resolving the existing challenge of organizing and managing data in an Airbnb-like platform. The goal was to create a database system that is efficient and scalable, capable of handling a wide range of information related to accommodations, users, bookings, reviews, and more.

To address this challenge, I utilized the DbSchema software to design and implement a relational database model. Each table within the model was carefully structured to capture specific data attributes and establish relationships with other tables, enabling comprehensive data management and analysis. Detailed descriptions of each table, along with the data types for each attribute, can be found in the exported PDF file.

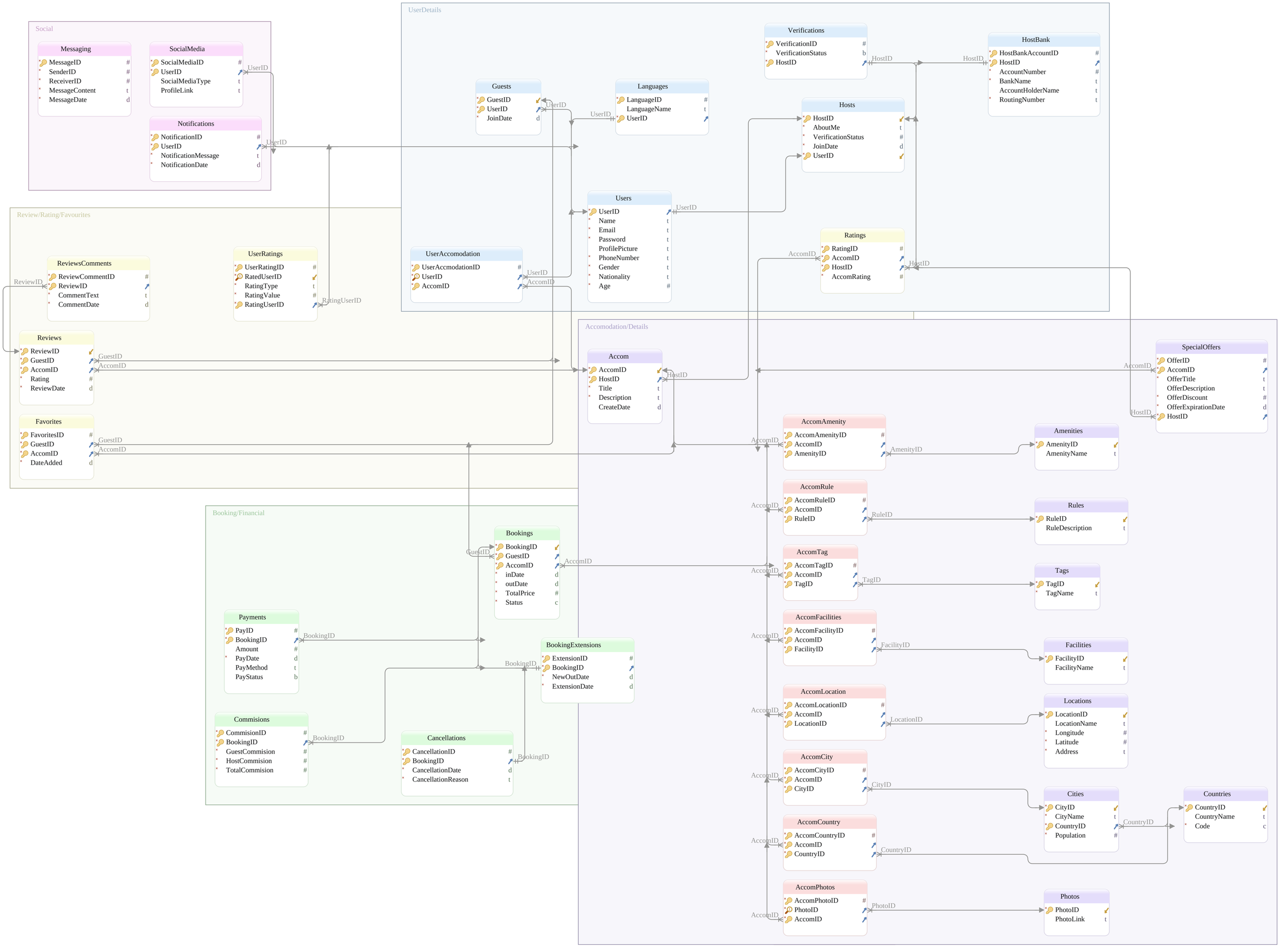
Using Martin (Crowfoot) notation, I specified cardinality to indicate the relationships between tables, providing a clear understanding of the associations and dependencies.

Key tables such as Accommodations, Users, Bookings, Reviews, Photos, Tags, and Facilities were created to serve as the foundation for storing and organizing essential information. These tables allowed me to capture important details about accommodations, user profiles, booking information, feedback, visual representations, and various amenities.

To ensure data integrity and optimize performance, I incorporated primary keys, foreign keys, and indexing mechanisms. These techniques played a vital role in establishing relationships between tables and improving the efficiency of querying and retrieving data.

In addition to the database structure, I implemented features such as user verification, notifications, messaging, and ratings to enhance the user experience and foster trust and reliability within the Airbnb community.

Looking ahead, my plan for the next phase is to incorporate the feedback received and make any necessary adjustments while developing the physical model. I intend to utilize DBeaver to create a mySQL database based on the updated schema, further refining and implementing the database system to meet the project requirements.


Social
Messaging
MessageID #
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MessageDate d
SocialMedia
SocialMediaID #
UserID #
SocialMediaType t
ProfileLink t
Notifications
NotificationID #
UserID #
NotificationMessage t
NotificationDate d
UserID
UserDetails
Verifications
VerificationID #
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HostID #
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HostBank
HostBankAccountID #
HostID #
AccountNumber #
BankName t
AccountHolderName t
RoutingNumber t
Guests
GuestID #
UserID #
JoinDate d
Languages
LanguageID #
LanguageName t
UserID #
Hosts
HostID #
AboutMe t
VerificationStatus #
JoinDate d
UserID #
Users
UserID #
Name t
Email t
Password t
ProfilePicture t
PhoneNumber t
Gender t
Nationality t
Age #
UserAccomodation
UserAccmodationID #
UserID #
AccomID #
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Reviews
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Rating #
ReviewDate d
Favorites
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GuestID #
AccomID #
DateAdded d
Accomodation/Details
Accom
AccomID #
HostID #
Title t
Description t
CreateDate d
SpecialOffers
OfferID #
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OfferDescription t
OfferDiscount #
OfferExpirationDate d
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Rules
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AccomID #
LocationID #
Locations
LocationID #
LocationName t
Longitude #
Latitude #
Address t
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AccomCityID #
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CityID #
Cities
CityID #
CityName t
CountryID #
Population #
Countries
CountryID #
CountryName t
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AccomCountry
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Booking/Financial
Bookings
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outDate d
TotalPrice #
Status c
Payments
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NewOutDate d
ExtensionDate d
Commisions
CommisionID #
BookingID #
GuestCommision #
HostCommision #
TotalCommision #
Cancellations
CancellationID #
BookingID #
CancellationDate d
CancellationReason t
UserID
AccomID
HostID
RatingUserID
ReviewID
GuestID
BookingID
RuleID
TagID
FacilityID
LocationID
CityID
CountryID
PhotoID

Logical_Design

Entity Accom

The "Accommodations" table stores information about the available accommodations. It includes attributes such as accommodation title, description, location, amenities, and rules. The table is linked to the "Hosts" table through a foreign key relationship, indicating which host is responsible for the accommodation. It also has relationships with other entities such as bookings, reviews, photos, tags, and facilities, allowing for comprehensive management of the accommodation listings.

* Pk	AccomID	INT	
* Pk	HostID	INT	Foreign Key to Hosts.Host_ID
*	Title	VARCHAR(500)	
*	Description	TEXT	
	CreateDate	DATETIME	

Indexes

Pk	pk_Accomodations	AccomID, HostID
Unq	unq_Accomodation_ID	AccomID

Relationships

fk_Accomodations_Hosts (HostID) ref Hosts (HostID)

Entity AccomAmenity

This table serves as a link table to establish the relationship between accommodations and amenities. It allows for a many-to-many relationship, as an accommodation can have multiple amenities, and an amenity can be associated with multiple accommodations.

* Pk	AccomAmenityID	INT
* Pk	AccomID	INT
* Pk	AmenityID	INT

Indexes

Pk	pk_AccomodationAmenity	AccomAmenityID, AccomID, AmenityID

Relationships

fk_AccomodationAmenity_Accomodations (AccomID) ref Accom (AccomID)

fk_AccomodationAmenity_Amenities (AmenityID) ref Amenities (AmenityID)

Entity AccomCity

The AccomCity table stores the relationship between accommodations and cities, enabling easy categorization and search based on specific cities.

* Pk	AccomCityID	INT
* Pk	AccomID	INT
* Pk	CityID	INT

Indexes

Pk	pk_AccomodationCity	AccomCityID, AccomID, CityID

Relationships

fk_AccomodationCity_Accomodations (AccomID) ref Accom (AccomID)

fk_AccomodationCity_Cities (CityID) ref Cities (CityID)

Entity AccomCountry

The AccomCountry table establishes the connection between accommodations and countries, allowing for efficient categorization and search based on specific countries.

* Pk	AccomCountryID	INT
* Pk	AccomID	INT
* Pk	CountryID	INT

Indexes

Entity AccomCountry

Pk	pk_AccomodationCity_0	AccomCountryID, AccomID, CountryID

Relationships

fk_AccomodationCountry_Accomodations (AccomID) ref Accom (AccomID)

fk_AccomodationCountry_Countries (CountryID) ref Countries (CountryID)

Entity AccomFacilities

The AccomFacilities table serves as a link table to establish the relationship between accommodations and facilities. It enables a many-to-many relationship, where an accommodation can have multiple facilities, and a facility can be associated with multiple accommodations.

* Pk	AccomFacilityID	INT
* Pk	AccomID	INT
* Pk	FacilityID	INT

Indexes

Pk	pk_AccomodationFacilities	AccomFacilityID, AccomID, FacilityID

Relationships

fk_AccomodationFacilities_Accomodations (AccomID) ref Accom (AccomID)

fk_AccomodationFacilities_Facilities (FacilityID) ref Facilities (FacilityID)

Entity AccomLocation

The AccomLocation table links accommodations with their respective locations, allowing for efficient search and filtering based on geographical proximity.

* Pk	AccomLocationID	INT
* Pk	AccomID	INT
* Pk	LocationID	INT

Indexes

Pk	pk_AccomodationLocation	AccomLocationID, AccomID, LocationID

Relationships

fk_AccomodationLocation_Accomodations (AccomID) ref Accom (AccomID)

fk_AccomodationLocation_Locations (LocationID) ref Locations (LocationID)

Entity AccomPhotos

The AccomPhotos table links accommodations with their respective photos, allowing for a many-to-many relationship. It facilitates efficient storage and retrieval of photos, enhancing the visual representation of accommodations.

* Pk	AccomPhotoID	INT
* Unq	PhotoID	INT
* Pk	AccomID	INT

Indexes

Pk	pk_AccomPhotos	AccomPhotoID, AccomID
Unq	unq_PhotoID	PhotoID

Relationships

fk_AccomPhotos_Accom (AccomID) ref Accom (AccomID)

fk_AccomPhotos_Photos (PhotoID) ref Photos (PhotoID)

Entity AccomRule

This table is used to link specific rules to each accommodation, indicating which rules are applicable to a particular accommodation. The AccommodationRule table helps in organizing and managing the rules associated with each accommodation.

Entity AccomRule

* Pk	AccomRuleID	INT	
* Pk	AccomID	INT	
* Pk	RuleID	INT	

Indexes

Pk	pk_AccomodationRule	AccomRuleID, AccomID, RuleID

Relationships

fk_AccomodationRule_Accomodations (AccomID) ref Accom (AccomID)

fk_AccomodationRule_Rules (RuleID) ref Rules (RuleID)

Entity AccomTag

The AccommodationTag table links accommodations and tags in a many-to-many relationship. It categorizes accommodations based on relevant tags, aiding in organization and classification.labels.

* Pk	AccomTagID	INT	
* Pk	AccomID	INT	
* Pk	TagID	INT	

Indexes

Pk	pk_AccomodationTag	AccomTagID, AccomID, TagID

Relationships

fk_AccomodationTag_Accomodations (AccomID) ref Accom (AccomID)

fk_AccomodationTag_Tags (TagID) ref Tags (TagID)

Entity Amenities

The Amenities table contains a list of amenities that are offered in accommodations. Each amenity is identified by a unique AmenityID and is described by an AmenityName. This table helps users to easily find accommodations that provide specific amenities, such as Wi-Fi, parking, pool, or gym facilities.

* Pk	AmenityID	INT	
	AmenityName	VARCHAR(100)	

Indexes

Pk	pk_Amenities	AmenityID

Entity BookingExtensions

The Booking Extensions table tracks extension requests for Airbnb bookings. It includes attributes such as ExtensionID, BookingID, ExtensionDate, and NewOutDate. This table enables guests to request extensions, helps hosts manage extended stays, and facilitates communication between guests and hosts regarding changes to booking duration. It works in conjunction with the Payments and Cancellations tables to ensure smooth payment processing and handle booking modifications, enhancing the overall booking experience on Airbnb.

* Pk	ExtensionID	INT	
* Pk	BookingID	INT	Foreign Key to Bookings.Booking_ID
*	NewOutDate	DATETIME	
*	ExtensionDate	DATETIME	

Indexes

Pk	pk_Booking_Extensions	ExtensionID, BookingID

Relationships

fk_Booking_Extensions_Bookings (BookingID) ref Bookings (BookingID)

Entity Bookings

The Bookings table in Airbnb stores important information about guest bookings, including attributes like BookingID, GuestID, AccomID, inDate, outDate, TotalPrice, and Status. It helps manage reservations, track booking details, and facilitate seamless interactions between guests and hosts.

By maintaining the Bookings table, Airbnb ensures accurate billing, payment processing, and availability management. It serves as a central repository for essential booking information, allowing hosts to view and manage their reservations effectively. The table also supports revenue calculation, invoice generation, and analysis of booking patterns.

In summary, the Bookings table is crucial for Airbnb's booking management system, enhancing the guest experience, facilitating communication, and ensuring smooth interactions between guests and hosts throughout the booking process.

* Pk	BookingID	INT	
* Pk	GuestID	INT	Foreign Key to Guests.Guest_ID
* Pk	AccomID	INT	Foreign Key to Accommodations.Accommodation_ID
*	inDate	DATETIME	
*	outDate	DATETIME	
*	TotalPrice	MONEY	
*	Status	CHAR(1)	
Indexes			
Pk	pk_Bookings	BookingID, GuestID, AccomID	
Unq	unq_Booking_ID	BookingID	
Relationships			
	fk_Bookings_Guests (GuestID) ref Guests (GuestID)		
	fk_Bookings_Accomodations (AccomID) ref Accom (AccomID)		

Entity Cancellations

The Cancellations table in the Airbnb database tracks booking cancellations, including details such as CancellationID, BookingID, CancellationDate, CancellationReason. It helps Airbnb analyze cancellation trends and handle refund processes, ensuring transparency and accountability.

* Pk	CancellationID	INT	
* Pk	BookingID	INT	Foreign Key to Bookings.Booking_ID
*	CancellationDate	DATETIME	
*	CancellationReason	VARCHAR(500)	
Indexes			
Pk	pk_Cancellations	CancellationID, BookingID	
Relationships			
	fk_Cancellations_Bookings (BookingID) ref Bookings (BookingID)		

Entity Cities

The Cities table stores city information, including CityID, CityName, CountryID, and Population. It allows Airbnb to categorize accommodations by city, enabling location-based search and filtering. The table supports analytics on popular cities and user preferences. Separating locations, countries, and cities into separate tables ensures efficient organization and management of geographic data on the platform.

* Pk	CityID	INT	
*	CityName	VARCHAR(100)	
* Pk	CountryID	INT	Foreign Key to Countries.Country_ID
*	Population	INT	
Indexes			
Pk	pk_Cities	CityID, CountryID	
Unq	unq_City_ID	CityID	
Relationships			
	fk_Cities_Countries (CountryID) ref Countries (CountryID)		

Entity Commisions

The Commissions table in the Airbnb database stores information about commissions earned by the platform. It includes attributes such as CommissionID, BookingID, GuestCommission, HostCommission, and TotalCommission. This table enables accurate commission calculations, financial reporting, and payout processes. It supports Airbnb's financial management system and contributes to revenue tracking and commission processes.

* Pk	CommisionID	INT	
* Pk	BookingID	INT	Foreign Key to Bookings.Booking_ID
*	GuestCommision	MONEY	
*	HostCommision	MONEY	
*	TotalCommision	MONEY	

Indexes

Pk	pk_Commisions	CommisionID, BookingID

Relationships

fk_Commisions_Bookings (BookingID) ref Bookings (BookingID)

Entity Countries

The Countries table stores country information, including CountryID, CountryName, and CountryCode. It provides Airbnb with a list of countries for various operations, such as filtering accommodations or presenting localized information.

* Pk	CountryID	INT
	CountryName	VARCHAR(100)
*	Code	CHAR(3)

Indexes

Pk	pk_Countries	CountryID

Entity Facilities

The Facilities table stores unique facilities available in accommodations, identified by FacilityID and described by FacilityIName. It helps users identify accommodations with desired amenities, enhancing their selection process.requirements.

* Pk	FacilityID	INT
	FacilityName	VARCHAR(100)

Indexes

Pk	pk_Facilities	FacilityID

Entity Favorites

The Favorites table records users' favorite accommodations on Airbnb. It includes attributes like FavouriteID, GuestID, AccomID, and DateAdded. This table allows users to keep track of accommodations they are interested in for future bookings, providing a convenient and organized way to access and compare their preferred options.

* Pk	FavoritesID	INT	
* Pk	GuestID	INT	Foreign Key to Guests.Guest_ID
* Pk	AccomID	INT	Foreign Key to Accommodations.Accommodation_ID
*	DateAdded	DATETIME	

Indexes

Pk	pk_Favourites	FavoritesID, GuestID, AccomID

Relationships

fk_Favorites_Guests (GuestID) ref Guests (GuestID)

fk_Favorites_Accomodations (AccomID) ref Accom (AccomID)

Entity Guests

The "Guests" table stores information specific to guests, including attributes such as age, gender, nationality, and preferred language. It is linked to the "Users" table through a foreign key relationship, allowing guests to have a user account with additional guest-specific details.

* Pk	GuestID	INT	Foreign Key to Users.User_ID
* Pk	UserID	INT	
*	JoinDate	DATETIME	

Entity Guests

Indexes

Pk	pk_Guests	GuestID, UserID
Unq	unq_User_ID	UserID
Unq	unq_Guest_ID	GuestID

Relationships

fk_Guests_Users (UserID) ref Users (UserID)

Entity HostBank

The Host Bank Accounts table is used by Airbnb to store information related to the bank accounts of hosts. It includes details about the financial accounts that hosts have linked to their Airbnb profiles for receiving payments.

The table typically contains fields such as Host_ID (a unique identifier for each host), Bank_Name (the name of the bank associated with the account), Account_Number (the account number provided by the host), Account_Type (specifying whether it is a savings or checking account), Routing_Number (the routing number for the bank), and Account_Holder_Name (the name of the account holder).

Host Bank Accounts allow hosts to receive payments for the bookings they have hosted through Airbnb. By linking their bank accounts, hosts can conveniently receive their earnings directly into their preferred financial institution. The table securely stores the necessary banking information to facilitate smooth and timely payments.

Maintaining a Host Bank Accounts table enables Airbnb to accurately transfer funds to hosts' designated accounts. It streamlines the payment process, reduces the risk of errors or delays, and provides a transparent record of financial transactions between Airbnb and hosts.

The Host Bank Accounts table is an essential component of Airbnb's financial infrastructure. It ensures that hosts receive their earnings promptly and reliably, enhancing their trust and satisfaction with the platform. Additionally, it allows Airbnb to maintain the necessary information for financial reporting and compliance purposes.

* Pk	HostBankAccountID	INT	
* Pk	HostID	INT	Foreign Key to Hosts.Host_ID
*	AccountNumber	INT	
*	BankName	VARCHAR(100)	
	AccountHolderName	VARCHAR(100)	
*	RoutingNumber	VARCHAR(500)	

Indexes

Pk	pk_Host_Bank_Accounts	HostBankAccountID, HostID

Relationships

fk_Host_Bank_Accounts_Hosts (HostID) ref Hosts (HostID)

Entity Hosts

The "Hosts" table stores information about the hosts registered on the platform, including their profile details, verification status, and joining date.

* Pk	HostID	INT	Foreign Key to Users.User_ID
*	AboutMe	TEXT	
*	VerificationStatus	INT	
*	JoinDate	DATETIME	
* Pk	UserID	INT	

Indexes

Unq	unq_Host_ID	HostID
Pk	pk_Hosts	HostID, UserID
Unq	unq_User_ID	UserID

Entity Languages

The Languages table stores preferred languages of guests, including LanguageID and LanguageName. It provides a standardized list of languages for guests to choose from, ensuring consistency and facilitating language-based features within the platform. The table enables efficient language filtering and matching for accommodations, enhancing the user experience.

* Pk	LanguageID	INT
	LanguageName	VARCHAR(100)
* Pk	UserID	INT

Indexes

Entity Languages

Pk	pk_Languages	LanguageID, UserID

Relationships

fk_Languages_Users (UserID) ref Users (UserID)

Entity Locations

The Locations table stores unique locations of accommodations, identified by Location_ID. It includes attributes such as Address, and Latitude/Longitude. This table facilitates accurate search and location-based recommendations for users on Airbnb.

* Pk	LocationID	INT	
	LocationName	VARCHAR(100)	
*	Longitude	DECIMAL(4,8)	
*	Latitude	DECIMAL(3,8)	
*	Address	VARCHAR(100)	

Indexes

Pk	pk_Entity	LocationID

Entity Messaging

The Messaging table stores conversations and messages between users, including fields like MessageID, SenderID, RecipientID, MessageContent, and MessageDate. It enables real-time communication, private conversations, and enhances user experience by facilitating seamless interactions and preserving message history.

* Pk	MessageID	INT	
*	SenderID	INT	Foreign Key to Users.User_ID
*	ReceiverID	INT	Foreign Key to Users.User_ID
*	MessageContent	TEXT	
*	MessageDate	DATETIME	

Indexes

Pk	pk_Messaging	MessageID

Entity Notifications

The Notifications table stores information about notifications sent to users, including NotificationID, UserID, NotificationMessage, and NotificationDate. It enables the platform to deliver important messages and updates to users. The table allows users to view their notification history and provides a basis for implementing notification preferences and settings. Overall, it enhances communication, user engagement, and the overall user experience on the platform.

* Pk	NotificationID	INT	
* Pk	UserID	INT	Foreign Key to Users.User_ID
*	NotificationMessage	TEXT	
*	NotificationDate	DATETIME	

Indexes

Pk	pk_Notifications	NotificationID, UserID

Relationships

fk_Notifications_Users (UserID) ref Users (UserID)

Entity Payments

The Payments table stores crucial payment information for bookings on Airbnb, including attributes like PayID, BookingID, PayMethod, Amount, PayDate, PayMethod, and PayStatus. It ensures secure and reliable payment processing, financial reporting, and refund management.

By maintaining the Payments table, Airbnb can track and manage payment transactions effectively. It enables the generation of payment receipts, ensuring transparency and accountability. The table also facilitates financial reporting, providing insights into revenue generation and payment trends. Additionally, it supports refund processing, ensuring timely and accurate reimbursements when needed.

Overall, the Payments table plays a vital role in Airbnb's payment management system, ensuring smooth and secure financial transactions between guests and hosts.

* Pk	PayID	INT	
* Pk	BookingID	INT	Foreign Key to Bookings.Booking_ID
	Amount	MONEY	

Entity Payments

*	PayDate	DATETIME	
	PayMethod	VARCHAR(50)	
	PayStatus	BOOLEAN	
Indexes			
Pk	pk_Payments	PayID, BookingID	
Relationships			
	fk_Payments_Bookings (BookingID) ref Bookings (BookingID)		

Entity Photos

The Photos table in Airbnb stores accommodation photos with attributes like PhotoID, andPhotoLink. It enables hosts to showcase property visuals, aiding guests in assessing and selecting accommodations.

* Pk	PhotoID	INT	
	PhotoLink	VARCHAR(500)	
Indexes			
Pk	pk_Photos	PhotoID	

Entity Ratings

In the Ratings table Each rating is associated with a unique RatingID, AccomID, AccomRating and HostID . The table allows users to provide detailed evaluations, helps calculate average ratings, and enables personalized recommendations based on specific criteria.

* Pk	RatingID	INT	
* Pk	AccomID	INT	Foreign Key to Accommodations.Accommodation_ID
* Pk	HostID	INT	Foreign Key to Hosts.Host_ID
*	AccomRating	DECIMAL(2,2)	
Indexes			
Pk	pk_Ratings	RatingID, AccomID, HostID	
Relationships			
	fk_Ratings_Accomodations (AccomID) ref Accom (AccomID)		
	fk_Ratings_Hosts (HostID) ref Hosts (HostID)		

Entity Reviews

The Reviews table stores user reviews for accommodations on Airbnb, including attributes like ReviewID, AccomID, GuestID, Rating, and ReviewDate. It facilitates informed decision-making, sorting, filtering, and customer satisfaction analytics. By capturing user feedback, it helps calculate overall ratings and enhances the platform by providing valuable information for users during the booking process.

* Pk	ReviewID	INT	
* Pk	GuestID	INT	Foreign Key to Guests.Guest_ID
* Pk	AccomID	INT	Foreign Key to Accommodations.Accommodation_ID
*	Rating	DECIMAL(2,2)	
*	ReviewDate	DATETIME	
Indexes			
Pk	pk_Reviews	ReviewID, GuestID, AccomID	
Unq	unq_Review_ID	ReviewID	
Relationships			
	fk_Reviews_Guests (GuestID) ref Guests (GuestID)		
	fk_Reviews_Accomodations (AccomID) ref Accom (AccomID)		

Entity ReviewsComments

The ReviewComments table stores user comments within reviews. It includes attributes like ReviewCommentID, CommentText, ReviewID, and CommentDate. This table enhances review data, supports sentiment analysis, and enables search and filtering functionalities. By separating review-related information into distinct tables, Airbnb can efficiently organize and manage user feedback, leading to improved analysis of accommodation quality and user reputation, ultimately enhancing the platform's user experience.

* Pk	ReviewCommentID	INT	

Entity ReviewsComments

* Pk	ReviewID	INT	Foreign Key to Reviews.Review_ID
*	CommentText	TEXT	
*	CommentDate	DATETIME	

Indexes

Pk	pk_Reviews_Comments	ReviewCommentID, ReviewID

Relationships

fk_Reviews_Comments_Reviews (ReviewID) ref Reviews (ReviewID)

Entity Rules

The Rules table stores accommodation rules, identified by a unique RuleID and described by a RuleDescription. It helps hosts communicate expectations and ensures a pleasant stay for guests by outlining policies and regulations.

* Pk	RuleID	INT	
	RuleDescription	TEXT	

Indexes

Pk	pk_Rules	RuleID

Entity SocialMedia

The SocialMedia table stores information about social media profiles linked to user profiles, including SocialMediaID, UserID, SocialMediaType, and ProfileLink. It enables users to connect and showcase their social media presence within the platform, fostering social connectivity and community engagement.

* Pk	SocialMediaID	INT	
* Pk	UserID	INT	Foreign Key to Users.User_ID
	SocialMediaType	VARCHAR(500)	
	ProfileLink	VARCHAR(500)	

Indexes

Pk	pk_Social_Media	SocialMediaID, UserID

Relationships

fk_Social_Media_Users (UserID) ref Users (UserID)

Entity SpecialOffers

The Special Offers table is used by Airbnb to manage and track special deals, discounts, or promotional offers provided to guests for accommodations. It stores information about the specific offers available and the associated accommodations.

The table typically includes fields such as Offer_ID (a unique identifier for each special offer), Accommodation_ID (a foreign key referencing the accommodation to which the offer applies), Start_Date (the start date of the offer), End_Date (the end date of the offer), Discount_Percentage (the percentage of discount offered), and Terms (any terms and conditions associated with the offer).

Special Offers allow hosts to attract guests by providing discounted rates or additional benefits for specific periods or circumstances. The table helps Airbnb keep track of active offers, their validity periods, and the accommodations eligible for those offers. It facilitates the process of applying and managing discounts for guests during the booking process.

By maintaining a Special Offers table, Airbnb can easily manage and update promotional campaigns, monitor the performance of different offers, and analyze the impact of discounts on booking rates and revenue. It provides a structured approach to offering incentives to guests and helps in driving bookings and customer satisfaction.

The Special Offers table plays a crucial role in Airbnb's marketing and sales strategies by allowing hosts to create attractive deals and promotions. It enhances the overall booking experience for guests and encourages them to choose accommodations that provide added value or cost savings.

* Pk	OfferID	INT	
* Pk	AccomID	INT	Foreign Key to Accommodations.Accommodation_ID
*	OfferTitle	VARCHAR(500)	
	OfferDescription	VARCHAR(500)	
*	OfferDiscount	DECIMAL	
*	OfferExpirationDate	DATETIME	
* Pk	HostID	INT	

Indexes

Entity SpecialOffers

Pk	pk_Special_Offers	OfferID, AccomID, HostID

Relationships

fk_Special_Offers_Accomodations (AccomID) ref Accom (AccomID)

fk_Special_Offers_Hosts (HostID) ref Hosts (HostID)

Entity Tags

The Tags table stores unique tags associated with accommodations. It helps categorize and identify accommodations based on attributes, making search and filtering easier for users.

* Pk	TagID	INT
*	TagName	VARCHAR(100)

Indexes

Pk	pk_Tags	TagID

Entity UserAccomodation

This table represents the relationship between users and accommodations, indicating which users have a connection to specific accommodations. The UserAccommodation table allows for a many-to-many relationship between users and accommodations, as a user can be associated with multiple accommodations, and an accommodation can be associated with multiple users.

* Pk	UserAccmodationID	INT
* Unq	UserID	INT
* Pk	AccomID	INT

Indexes

Pk	pk_UserAccomodation	UserAccmodationID, AccomID
Unq	unq_User_ID	UserID

Relationships

fk_UserAccomodation_Users (UserID) ref Users (UserID)

fk_UserAccomodation_Accomodations (AccomID) ref Accom (AccomID)

Entity UserRatings

The UserRatings table stores information about ratings given by users to other users, including attributes like UserRatingID, RatedUserID, RatingUserID, Rating Value, and RatingType. It enables users to evaluate and provide feedback on their interactions with other users, fostering trust and accountability within the Airbnb community.

* Pk	UserRatingID	INT	
* Unq	RatedUserID	INT	Foreign Key to Users.User_ID
*	RatingType	VARCHAR(5)	Host or Guest
*	RatingValue	DECIMAL(2,2)	
* Pk	RatingUserID	INT	

Indexes

Pk	pk_User_Ratings	UserRatingID, RatingUserID
Unq	unq_Rated_User_ID	RatedUserID

Relationships

fk_User_Ratings_Users (RatingUserID) ref Users (UserID)

Entity Users

The "Users" table stores information about registered users, including their basic profile information such as name, email, password, and contact information. It also includes an optional field for a profile picture and the option to link their profile to social media accounts.

* Pk	UserID	INT
*	Name	VARCHAR(100)
*	Email	VARCHAR(500)
*	Password	VARCHAR(500)

Entity Users

	ProfilePicture	VARCHAR(500)
*	PhoneNumber	VARCHAR(500)
*	Gender	VARCHAR(50)
*	Nationality	VARCHAR(50)
*	Age	INT

Indexes

Pk	pk_Users	UserID

Relationships

fk_Users_Hosts (UserID) ref Hosts (UserID)
fk_Users_Guests (UserID) ref Guests (UserID)
fk_Users_User_Ratings (UserID) ref UserRatings (RatedUserID)

Entity Verifications

The Verifications table stores host verification statuses, including VerificationID and VerificationStatus. It ensures host credibility and trustworthiness by verifying their identity or relevant information through methods such as email, phone, ID, or social media verification. The table enables displaying verified badges on host profiles and implementing security measures to enhance user trust.

* Pk	VerificationID	INT
*	VerificationStatus	BOOLEAN
* Pk	HostID	INT

Indexes

Pk	pk_Verifications	VerificationID, HostID

Relationships

fk_Verifications_Hosts (HostID) ref Hosts (HostID)