

Requirements specification/requirements analysis

What roles are there?

User (which can act as both host and/or guest)

What actions do these roles perform?

Always: create profile, provide email/phone number, name, bio.

As Host: provide bank account details, provide property information (address, amenities, size, price, photos, etc), rate guests, answer to user requests, calculate projected income.

As Guest: search and compare houses, book houses, rate the experience, request information from hosts, pay for booking.

Which data and functions are required?

What entities will contain which data?

users (stores basic user data required for registration on the platform): primary key: userID (int); others: email (varchar), firstname and lastname (varchar) and phonenummer (varchar)

hosts (stores additional information required for hosts): primary + foreign key: userID; others: bankaccount (varchar)

guests (stores additional information required for guests): primary + foreign key: userID; others: creditcard (varchar)

profiles (stores the publicly accessible profile data): primary key: profileID (int); foreign keys: userID; others: bio (text)

profile images (stores the images which can be used for user profiles): primary key: profileimageID (int); foreign keys: profileID; others: image (BLOB)

languages (a collection of languages): primary key: languageID (int); others: name (varchar)

profile x languages (relational table that links user profiles to languages they speak and can be contacted in): foreign keys: languageID, profile ID

properties (stores all information regarding a listed property): primary key: propertyID (int); foreign keys: amenitiesID, addressID, propertyTypeID, roomsID, vacationTypeID, accessibilityID, priceID, userID; others: name (varchar), description (text), size (float)

available rooms (stores data regarding rooms available in a property): primary key: roomsID (int); others: bedrooms (int), bathrooms (int), single beds (int), double beds (int)

address (stores the exact address of a property): primary key: addressID (int); foreign keys: countryID, cityID; others: postalcode (varchar), streetname (varchar), housenumber (varchar)

cities (collection of cities in which the company operates): primary key: cityID (int); others: name (varchar)

countries (collection of countries in which the company operates): primary key: countryID (int); others: name (varchar)

accessibility (stores information regarding how fast the property is accessible with different public transport methods): primary key: accessibilityID (int); others: airport (int), train (int), bus (int)

vacation type (a tag hosts can attach to their property to give additional information regarding the surroundings/type of their property): primary key: vacationtypeID (int); others: beachhouse (boolean), city (boolean), mountaincabin (boolean), designerhouse (boolean), island (boolean), mansion (boolean)

amenities (stores any kind of 'extra' that is included in the property): primary key: amenitiesID (int); others: pool (boolean), wifi (boolean), AC (boolean), kitchen (boolean)

property type (stores the building type of the property: house, room, etc): primary key: propertytypeID (int); others: house (boolean), flat (boolean), room (boolean), hotel (boolean)

property images (stores all images hosts upload to show their property): primary key: propertyimageID (int); foreign keys: propertyID; others: image (BLOB)

price (stores the price per night for each month individually): primary key: priceID (int); others: January (float), february (float), march (float), April (float), may (float), June (float), July (float), august (float), September (float), October (float), November (float), December (float)

bookings (stores the propertyID along with the guests userID and the time of the stay): primary key: bookingID (int); foreign keys: propertyID, userID; others: startdate (date), enddate (date)

payment (records the time of payment for a specific booking and the time of releasing the money): primary key: paymentID (int); foreign keys: bookingID; others: received (datetime), forwarded (datetime)

guest reviews (stores all reviews that have been made regarding guests): primary key: guestreviewID (int); foreign keys: bookingID; others: rating (int), comment (text)

property reviews (stores all reviews for properties): primary key: propertyreviewID (int); foreign keys: bookingID; others: rating (int), comment (text)

messages (stores all messages between guests and hosts): primary key: messageID (int); foreign keys: userID, userID; others: sent (datetime), messagebody (text)

Functions:

I will need functions to create and insert data to fill the above-mentioned tables with the described attributes. In addition to filling the DB with dummy data, for it to work daily I need:

- a function that lets a new user join the platform (sign-up) and stores their information.
- and a function that allows editing of user information
- a function that lets users add their property and make it available for booking.
- and a function that allows editing of property/listing information
- a function that lets users search for listed properties (with all kinds of potential filters)
- a function that stores the booking data once a user books a property.
- two functions that stores data according to user review of 1.the property and 2.the guest.
- a function that calculates projected income for hosts.
- a function that stores messages.

ERM Modell:

