**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 (and what data will they contain)?

**Users**: stores basic user data required for registration on the platform.

**HostDetails:** stores additional information required for hosts.

**GuestDetails:** stores additional information required for guests.

**Profiles:** stores the publicly accessible profile data.

**ProfileImages:** stores the image paths which can be used for user profiles.

**Languages:** a collection of languages.

**Properties**: stores all information regarding a listed property.

**Rooms**: stores data regarding rooms available in a property.

**Address**: stores the exact address of a property.

**Cities**: collection of cities in which the company operates.

**Countries:** collection of countries in which the company operates.

**Accessibility** stores information regarding how accessible the property is with different public transport methods.

**VacationType**: a tag hosts can attach to their property to give additional information regarding the vacation type of their property.

**Amenities**: stores any kind of ‘extra’ that is included in the property.

**BuildingType**: stores the building type of the property: house, room, etc.

**PropertyImages**: stores all image paths hosts upload to show their property.

**Price**: stores the price per night for each month individually and any deviations for specific months.

**Bookings**: stores the two parties userIDs and the dates of the booking.

**Payment:** records the time of payment for a specific booking and the time of releasing the money to the hosts bank account.

**GuestReviews:** stores all reviews that have been made regarding guests.

**PropertyReviews**: stores all reviews for properties.

**MessageRequests**: stores all messages from guests to hosts requesting additional information.

**MessageReplies**: stores all messages from hosts replying to their guests.

**PofileAndLanguages**: relational table that links user profiles to languages they speak and can be contacted in.

**VacationTypeAndProperties:** relational table that links the type of vacation expected in the property to the propertyID

**AmenitiesAndProperties:** relational table that links the property with the amenities provided.

**BuildingTypeAndProperties:** relational table that links the type of housing with the property.

**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:**

Data dictionary:

|  |  |  |  |
| --- | --- | --- | --- |
| **Data attribute** | **Data types** | **Description** | **Example** |
| userID, hostID, guestID, profileID, profileimageID, languageID, propertyID, roomsID, addressID, cityID, countryID, accessibilityID, vacationtypeID, amenitiesID, buildingtypeID, propertyimageID, priceID, bookingsID, paymentID, guestreviewsID, propertyreviewsID, messagereplyID, messagerequestID | INT | artificial primary key the respective entities | 1, 2, 3, etc |
| firstname | varchar(100) | the first name of the user | Matt, thomas |
| lastname | varchar(100) | the last name of the user | Smith, van happel |
| email | varchar(100) | the email address of the user | [maxmustermann123@gmail.com](mailto:maxmustermann123@gmail.com), [hiheinrich@web.de](mailto:hiheinrich@web.de) |
| bankaccount | varchar(100) | the bank details to receive the money | DE12 3456 7890 1234 5678 90, AT00 1122 3344 5566 7788 99 |
| creditcard | INT | credit card details for payment confirmation | 5555 5555 5555 4444 |
| cvv | INT | security number of registered credit card | 333 |
| bio | text | a (short) description of the user by themselves to connect with other people | Hi everyone! I enjoy hiking and swimming in my own pool after a stressful day to relax. I love hosting so feel free to come by and book my room! |
| profileimage | varchar(100) | the path of the profile image | image1.jpg, main/image2.jpg |
| languagename | varchar(100) | the name of a language | English, German, Dutch |
| propertyname | varchar(100) | the title of the property | cosy 2 bedroom guesthouse in Versailles, luxurious designer mansion off the grid |
| propertydescription | text | a description of the property | This beautiful beachhouse is equipped with everything a traveller could ask for. Wake up in your king size bed to the sound of waves, relax next to the ocean and shower off that salt in the open walk-in shower. A fully stocked mini bar is included. |
| propertysize | INT | the size of the property in m² | 77, 16, 250 |
| bedrooms | INT | number of bedrooms | 1, 2, 3, etc |
| bathrooms | INT | number of bathrooms | 1, 2, 3, etc |
| singlebeds | INT | number of single beds | 1, 2, 3, etc |
| doublebeds | INT | number of double beds | 1, 2, 3, etc |
| postalcode | varchar(10) | the postcode of the property | SW7 2PA, 60431 |
| streetname | varchar(100) | the name of the street the property is on | Main Street, Hügelstraße |
| housenumber | varchar(10) | the housenumber of the property | 1, 2a, 495 |
| cityname | varchar(100) | name of the city the property is in | Frankfurt, Aachen, London, Barcelona |
| countryname | varchar(100) | name of the country the property is in | Germany, England, Spain |
| airport | INT | time to reach the closest airport in minutes | 2, 17 |
| train | INT | time to reach the closest train station in minutes | 2, 17 |
| bus | INT | time to reach the closest bus station in minutes | 2, 17 |
| vacationtypename | varchar(100) | what kind of property and vacation can guests expect? | beachhouse, cabin, island retreat, treehouse, city |
| amenityname | varchar(100) | what kind of amenities can guests expect at the property? | AC, pool, kitchen |
| buildingtypename | varchar(100) | the building type of the property | single house, hotel room, flat |
| propertyimage | varchar(100) | the path of the property image | image1.jpg, main/image2.jpg |
| basicprice | INT | the basic price per person for a night in the property in euros | 99, 120, 15 |
| January, February, March, April, May, June, July, August, September, October, November, December | INT | any addition or subtraction from the basic price for this months’ price per night | 10, -25 |
| startdate | date | the first date of the booking | 2023-05-17, 1990-01-01 |
| enddate | date | the last date of the booking | 2023-05-17, 1990-01-01 |
| received | datetime | the date and time when the payment from the guest came in | 2023-05-17 10:34:23.55 |
| forwarded | datetime | the date and time when the payment was forwarded to the hosts bank account | 2023-05-17 10:34:23.55 |
| propertyrating | INT | the number of stars (1-5) the property received after the visit | 2, 5, 3 |
| propertycomment | text | a field for the guest to explain the rating in more detail | The city was as beautiful as promised but unfortunately the flat hadn’t been cleaned in probably 2 months. There was dust everywhere! |
| guestrating | INT | the number of stars (1-5) the guest received after their stay | 2, 5, 3 |
| guestcomment | text | a field for the host to explain the rating in more detail | The guest was friendly, arrived timely and left everything in great condition! |
| replysent, requestsent | datetime | the time a particular message was sent | 2023-05-17 10:34:23.55 |
| replytext, requesttext | text | the content of the message sent | Hi there, just a quick question. Would it be possible to check in 30 minutes later than requested on the website? |