**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.

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

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

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

**profileimages:** stores the images which can be used for user profiles.

**languages:** a collection of languages.

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

**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.

**vacation type**: 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 images 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.

**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:**

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, messageID | INT | artificial primary key the respective entities | 1, 2, 3, etc |
| firstname | varchar | the first name of the user | Matt, thomas |
| lastname | varchar | the last name of the user | Smith, van happel |
| email | varchar | the email address of the user | [maxmustermann123@gmail.com](mailto:maxmustermann123@gmail.com), [hiheinrich@web.de](mailto:hiheinrich@web.de) |
| bankaccount | varchar | the bank details to receive the money | DE12 3456 7890 1234 5678 90, AT00 1122 3344 5566 7788 99 |
| creditcard | varchar | credit card details for payment confirmation | 5555 5555 5555 4444 |
| cvv | varchar | 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 | varbinary | the data of the profile image | 0xFFD8FFE000….. |
| languagename | varchar | the name of a language | English, German, Dutch |
| propertyname | varchar | the title of the property | cosy 2 bedroom guesthouse in Versailles, luxurious designer mansion off the grid |
| description | 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. |
| size | varchar | the size of the property | 77m², 2400 sq.ft. |
| 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 | the postcode of the property | SW7 2PA, 60431 |
| streetname | varchar | the name of the street the property is on | Main Street, Hügelstraße |
| housenumber | varchar | the housenumber of the property | 1, 2a, 495 |
| cityname | varchar | name of the city the property is in | Frankfurt, Aachen, London, Barcelona |
| countryname | varchar | name of the country the property is in | Germany, England, Spain |
| airport | varchar | time to reach the closest airport | 2hours, 1:30h, 20 minutes |
| train | varchar | time to reach the closest train station | 25min, 1h |
| bus | varchar | time to reach the closest bus station | 2min, 1/4hour |
| vacationtypename | varchar | what kind of property and vacation can guests expect? | beachhouse, cabin, island retreat, treehouse, city |
| amenityname | varchar | what kind of amenities can guests expect at the property? | AC, pool, kitchen |
| buildingtypename | varchar | the building type of the property | single house, hotel room, flat |
| propertyimage | varbinary | the data of the property image | 0xFFD8FFE000….. |
| 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! |
| sent | datetime | the time a particular message was sent | 2023-05-17 10:34:23.55 |
| messagebody | 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? |