
Airbnb Data Mart

Manual

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1 Introduction

1.1 Overview

The Airbnb Data Mart is a self contained installation of a database structure and the corresponding stored procedures for the use case of temporal renting of lodgings. Much like the well-known platform Airbnb. The application and additional data for testing are integrated into a single SQL file. Only a server environment that supports MariaDB and PhpMyAdmin is necessary.

1.2 Installation

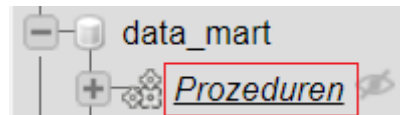
For using the data mart, you need a server environment which supports MariaDB and PhpMyAdmin. For a local installation the XAMPP package can be used.

1. Download XAMPP from **Apache Friends** and the **data_mart.sql** file
2. Install XAMPP and start the XAMPP Control Panel
3. Start the Apache and MySQL module and open a webbrowser
4. Type localhost into the searchbar and press enter on the keyboard
5. In the dashboard click the PhpMyAdmin button in the upper right corner
6. In PhpMyAdmin click the Database button
7. Add a new database with the name **data_mart**
8. Click on the new **data_mart** database in the left sidebar
9. Then click on the Import button in the upper bar
10. Choose the **data_mart.sql** file
11. Uncheck the **Enable foreign key checks** option and click **OK**

2 General Application Control

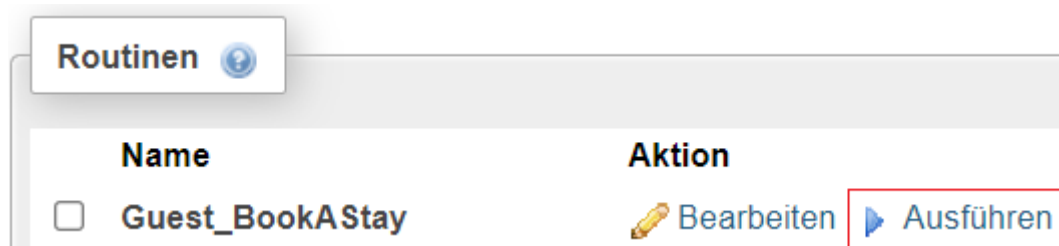
After installation you can now start to explore the functionality of the data mart by executing the stored procedures of the application. Here you can either test the application with the included test data or define your own users, lodgings and other entities. The data mart operates with two fundamental types of users, the Host or Guest. Hosts create and manage lodgings, whereas guests make reservations. These actions are all controlled by the stored procedures which are pre-defined for the data mart.

To call a stored procedure in PhpMyAdmin you must switch to the procedures overview by first clicking on **data_mart** and then on **Prozeduren** in the left side bar.



Now you should see an overview of all the available procedures. All procedures have a prefix which is either Host, Guest or User. The prefix Host and Guest are self-explanatory and are intended to be used by the respective type of user. The procedures with the prefix User can be called for both user categories. It is important to note that a Host is also able to call all procedures of a guest, for example to make a reservation.

To actually call a procedure you must click on **Execute** and enter the required parameters.



The individual procedures are explained in detail in the following chapters.

3 Detailed Application Control

3.1 Basic User Administration

The **data mart** supports commands for creation and deletion of users. The creation of a new user is also the starting point for using the application with your own data.

3.1.1 Creating a New User

For the creation of a new user execute the **CreateUser** procedure. The procedure takes the following parameters as input:

- username - This is the unique user-name for the new user
- firstname - The first name of the user
- lastname - The last name of the user
- email - The email address of the user
- phone - The phone number of the user
- currency - The currency for displaying prices and bills
- about - An optional about text for the user

When everything worked correctly a success message **New User Created** should be displayed.

It is important to note that a new created user always starts as a guest user. A guest is always converted to a host if a lodging is created. Although the type of user is changed from guest to host, the host user is still capable of searching for a lodging or making reservations.

3.1.2 Deleting a User

If a user should be removed from the database, the **DeleteAccount** procedure can be used. The procedure takes only the user-name as input parameter. If everything worked correctly a success message **Account Deleted** should be displayed.

When a host user is deleted all created lodgings and related data is also removed from the data mart.

3.2 Lodging Management for Hosts

3.2.1 Creating a New Lodging

For the creation of a new lodging call the **CreateALodging** procedure. The input parameters are:

- username - The user-name of the host
- description - The name of the new lodging
- category - The type of lodging, for example Hotel or Apartment
- about - An about text which can contain various information
- capacity - The maximum number of allowed guests during a stay
- price - The price per night
- longitude - The longitude of the location in decimal coordinates
- latitude - The latitude of the location in decimal coordinates
- street - The street name with the house number / floor / suite / etc.
- city - The city in which the lodging is located
- state - The state/province in which the lodging is located
- country - The country in which the lodging is located
- continet - The continent in which the lodging is located

If everything was entered correctly you should see **Loging Created** displayed. If the newly created lodging is the first lodging of the respective user, the user is now considered a host.

3.2.2 Deleting a Lodging

To delete a lodging call the **DeleteLodging** procedure. The procedure takes the user-name of the host and the lodging which should be deleted as parameters. If everything is entered correctly and all open transaction related to the lodging are settled, you should see a success message **Lodging Deleted**. If the deleted lodging was the last lodging of the host, the host becomes a guest user.

3.2.3 Structure a Lodging

For adding and removing furniture, rooms, house rules and policies you can use the **ManageFurniture**, **ManageRooms**, **ManageRule**, **ManagePolicies** procedures.

The input parameters are:

- username - The user-name of the host
- lodging - The full description of the lodging
- furniture/rooms/rules/policies - The respective items written in a comma-separated list
- amount - This input is only used for adding rooms and takes a comma-separated list of the amount of a specific room
- action - Takes either **Add** or **Remove** as argument

For looking up possible items for a lodging, refer to the room, rule, policy or furnishing tables. The tables can be found in the left sidebar in PhpMyAdmin. Important to note is, that the **ManagePolicy** procedure takes the policies ID as parameter and not the description like the other procedures.

3.3 Search Functionality for Guests

3.3.1 Grid Search

For searching in a specific location, for example in a certain country, choose the **SearchGeographically** procedure.

Input parameters are either:

- city
- state
- country
- continent

It is important that only one parameter at a time is used when calling the procedure, so for example only a city is entered as parameter and all other parameters are left empty.

3.3.2 Search via Attributes

To find a lodging by attributes like capacity or category use the **SearchALodging** procedure.

The procedure has the following inputs:

- category - The lodging's category
- capacity - The maximum allowed number of guests
- city - The city in which the lodging is located

For correct execution of the procedure it is important to issue all three parameters.

3.3.3 Search Nearby Locations

To search for location in a certain distance, use the **SearchNearbyLocations** procedure.

Input parameters are:

- lodging - The starting point for the search
- distance - The maximum allowed radius in kilometres from the lodging

The maximum distance for the search is always within the boundaries of the city in which the lodging is located.

3.3.4 Show Detailed Information for a Lodging

When a suitable lodging has been found via the search, detailed information like rooms, furniture, reviews, etc. can be displayed with the **ShowLodgingDetails** procedure. The procedure takes the guest's user-name and the name of the lodging as input.

3.4 Bookings and Payments

3.4.1 Making a Reservation

To make a reservation use the **BookAStay** procedure.

The input parameters are:

- username - The user-name of the guest
- lodging - The description of the lodging for which a reservation should be made

- arrival - The date of arrival
- departure - The date of departure
- payment_option - The option for payment, for example PayPal or Wire Transfer

To get an overview of all payment options refer to the **paymentoption** table in the left sidebar.

3.4.2 Displaying Open Transactions

The **ShowOpenTransactions** procedure can be used to display non-paid stays for guests and unclaimed money for hosts. The only necessary input parameter is the user-name of the respective guest or host. It is important to note that unclaimed/unsettled transactions for hosts are only displayed if they have been already paid by the guest.

3.4.3 Paying Open Bills for Guests

For closing an open transaction of a guest use the **CloseOpenTransaction** procedure.

Parameters are:

- username - The user-name of the guest
- amount - The amount of the open bill
- transaction_id - The ID of the transaction, which is displayed by the **ShowOpenTransactions** procedure

3.4.4 Claiming Money for Hosts

To settle transactions for hosts the **SettleOpenTransactions** procedure is used. The procedure takes only the user-name of the host as input parameter.