

Database for storing and processing information regarding the Airbnb use case

Finalization phase

DLBDSPBDM01 - Project: Build a Data Mart in SQL

B.Sc. Data science

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1. Methodology

My project included developing a reservation system with the functionality a company like Airbnb would require. 22 tables are included in this database schema, each of which corresponds to a specific operation. In phase one, I developed an entity-relationship model for storing the data needed for the system as well as linking tables together. The system can be broken down into four different sectors in order to better understand the requirements. The four sections are user management, geolocations, property details, and interactions. When creating a database model, it is necessary to understand basic concepts, such as relationships, cardinalities, data types, etc.

Utilizing the MySQL Workbench application, I implemented the conceptual model based on my database system knowledge during the development phase. Dummy data was generated to test the database's capabilities. In order to accomplish this, it is necessary to learn more advanced MySQL topics, such as queries, statements, and views.

At the end of the project, I ensured that the database worked adequately before submitting it. In my opinion, this course was challenging and allowed me to learn and expand my DBMS and SQL knowledge. Working with different databases is a crucial skill for any data scientist in the future, and I found this project to be a promising step toward learning how to do that.

2. Schema details

In the following picture, the details of the schema have been shown. Using the "SHOW TABLE STATUS FROM db" query, I extract the schema information in a .csv file which is available in the finalization directory.

No.	Name	Rows	Avg_row_length	Data_length	Index_length
1	accessibility	13	1260	16384	16384
2	address	40	409	16384	81920
3	amenity	24	682	16384	16384
4	booking	40	409	16384	49152
5	city	40	409	16384	16384
6	country	40	409	16384	16384
7	host	20	819	16384	0
8	host_language	50	327	16384	49152
9	image	40	409	16384	49152
10	language	40	409	16384	16384
11	place_type	3	5461	16384	16384
12	promo	40	409	16384	16384
13	property	40	409	16384	81920
14	property_accessibility	100	163	16384	49152
15	property_amenities	100	163	16384	32768
16	property_type	4	4096	16384	16384
17	region	8	2048	16384	0
18	review	40	2048	81920	65536
19	state	20	819	16384	16384
20	transaction	40	409	16384	65536
21	user	40	409	16384	16384
22	user_type	2	8192	16384	16384

3. Installation

It is first necessary to install MySQL on your system. Afterward, the data mart can be used with any MySQL database system. I suggest the MySQL Workbench community version, a free DBMS that can also open the model file, which is a .mwb file located in the development directory.

MySQL can be installed from [here](#).

MySQL Workbench can be installed from [here](#).

After creating a database connection and a schema, using the data import tool in the server tab, you can import the **dump.sql** file, which is located in the finalization directory.

Project GitHub repository: <https://github.com/mohamadsolouki/airbnb-datamart>