A USE-CASE OF BOOKING A HOTEL ROOM: AIRBNB

Database Installation Manual

STEPANIAN ANRI
9214438

This document serves as the installation manual and comprehensive overview for the **Airbnb Database**. It outlines the database system designed to support data storage, processing, and analysis for key Airbnb operations. This includes bookings, income calculations, and user interactions, ensuring a structured and efficient way to handle platform data.

Database Schema Overview

The Airbnb database comprises a total of 25 tables: *admin, amenities, booking, booking_check, create_house_rules, guest, guests_rev, host, host_languages, hosts_rev, house_rules, income, languages, listing, listing_amenity, location, payment_method, privileges, profile_picture, role, role_privilege, user, user_check, user_role, verification*

Each table stores specific information related to users, places, reservations, payments, and other functionalities of the platform.

The **Airbnb Database** is designed to centralize and streamline critical Airbnb data. All users and bookings are being verified by Airbnb admins. Guests can explore available listings and make reservations, with each booking linked to specific properties and users. The system also calculates revenue generation for the platform. In addition, it manages user feedback by recording reviews and processing complaints. By organizing these operations, the data mart provides insights and supports informed decision-making.

Prerequisites:

MySQL Server, MySQL Workbench, and MySQL Shell

MySQL Installer Method

The simplest and recommended method is to download MySQL Installer (for Windows) and let it install and configure a specific version of MySQL Server as follows:

1. Download MySQL Installer from https://dev.mysql.com/downloads/installer/ and execute it.

Note Unlike the standard MySQL Installer, the smaller web-community version does not bundle any MySQL applications, but downloads only the MySQL products you choose to install.

2. Determine the setup type to use for the initial installation of MySQL products. For example:
   - **Developer Default:** Provides a setup type that includes the selected version of MySQL Server and other MySQL tools related to MySQL development, such as MySQL Workbench.
   - **Server Only:** Provides a setup for the selected version of MySQL Server without other products.
   - **Custom:** Enables you to select any version of MySQL Server and other MySQL products.

3. Install the server instance (and products) and then begin the server configuration by following the onscreen instructions. For more information about each individual step, see MySQL Server Configuration with MySQL Installer.

MySQL is now installed. If you configured MySQL as a service, then Windows automatically starts the MySQL server every time you restart the system. Also, this process installs the MySQL Installer application on the local host, which you can use later to upgrade or reconfigure MySQL server.

Note If you installed MySQL Workbench on your system, consider using it to check your new MySQL server connection. By default, the program automatically starts after installing MySQL.

MySQL Workbench

MySQL Workbench provides a graphical tool for working with MySQL servers and databases. MySQL Workbench fully supports MySQL versions 5.5 and higher.

The following discussion briefly describes MySQL Workbench capabilities. For more information, see the MySQL Workbench manual, available at https://dev.mysql.com/doc/workbench/en/.

MySQL Workbench provides five main areas of functionality:

• **SQL Development:** Enables you to create and manage connections to database servers. As well as enabling you to configure connection parameters, MySQL Workbench provides the capability to execute SQL queries on the database connections using the built-in SQL Editor. This functionality replaces that previously provided by the Query Browser standalone application.

• **Data Modeling:** Enables you to create models of your database schema graphically, reverse and forward engineer between a schema and a live database and edit all aspects of your database using the comprehensive Table Editor. The Table Editor provides easy-to-use facilities for editing Tables, Columns, Indexes, Triggers, Partitioning, Options, Inserts and Privileges, Routines and Views.

• **Server Administration:** Enables you to create and administer server instances.

• **Data Migration:** Allows you to migrate from Microsoft SQL Server, Sybase ASE, SQLite, SQL Anywhere, PostreSQL, and other RDBMS tables, objects and data to MySQL. Migration also supports migrating from earlier versions of MySQL to the latest releases.

• **MySQL Enterprise Support:** Support for Enterprise products such as MySQL Enterprise Backup and MySQL Audit.

Connecting to and Disconnecting from the Server

To connect to the server, you usually need to provide a MySQL user name when you invoke mysql and, most likely, a password. If the server runs on a machine other than the one where you log in, you must

also specify a host name. Contact your administrator to find out what connection parameters you should use to connect (that is, what host, user name, and password to use). Once you know the proper parameters, you should be able to connect like this:

```
$> mysql -h host -u user -p
Enter password: ********
```

host and user represent the host name where your MySQL server is running and the user name of your MySQL account. Substitute appropriate values for your setup. The ******** represents your password; enter it when mysql displays the Enter password: prompt.

If that works, you should see some introductory information followed by a mysql> prompt:

```
$> mysql -h host -u user -p
Enter password: ********
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 25338 to server version: 8.0.40-standard

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql>
```

The mysql> prompt tells you that mysql is ready for you to enter SQL statements.

If you are logging in on the same machine that MySQL is running on, you can omit the host, and simply use the following:

```
$> mysql -u user -p
```

Some MySQL installations permit users to connect as the anonymous (unnamed) user to the server running on the local host. If this is the case on your machine, you should be able to connect to that server by invoking mysql without any options:

```
$> mysql
```

After you have connected successfully, you can disconnect any time by typing QUIT (or \q) at the mysql> prompt:

```
mysql> QUIT
Bye
```

On Unix, you can also disconnect by pressing Control+D.

Most examples in the following sections assume that you are connected to the server. They indicate this by the mysql> prompt.

Instructions:

1. Open MySQL Workbench and set up a new connection.
2. Connect to the server you created in the previous step from MySQL Workbench.

3. Open the Data Import Screen: You can do this in two ways: Either click on the Administration tab on the left, then click Data Import/Restore, or click on the Server menu at the top and click on Data Import.
4. Select the 'Import from Self-Contained File' option.
5. Next, select the file: Click on the small button with the two dots on the far right to browse for the SQL file.
6. Browse to the location where is the 'airbnb_database' SQL file, select it, and click Open.
7. Create a new scheme at the 'Default Target Schema' part.
8. Make sure 'Dump Structure and Data' is selected.
9. Click the 'Start Import' button on the bottom right.
10. You should see here 'It has finished, and the data is now imported'.
11. Go to the 'Schemas' tab and refresh.
12. You should see the newly created schema and all the new tables created.
13. If you want to test the schema, you can execute the SQL file named 'test_cases' after opening it from the 'Open a SQL script file in a new query tab' tab.
14. Additionally, you can execute statements in the SQL file named 'metadata' to access the information schema.

Conclusion

With the **Airbnb Database** successfully installed, you now have a powerful tool to manage key aspects of the Airbnb platform, from bookings and creating house rules to user feedback and revenue tracking. This system not only ensures better organization of data but also offers valuable insights to enhance platform performance. Dive into the database scheme for a detailed understanding of how each component works together to create a seamless user experience. Whether you're analyzing booking trends or tracking financial metrics, this data mart empowers you to make data-driven decisions with confidence.