

MySQL Employee Database

Installation Guide for Beginners

A Step-by-Step Guide to Download and Install
the Employee Sample Database in MySQL Workbench

Perfect for Learning SQL!

Table of Contents

1. What is the Employee Database?	3
2. Prerequisites	3
3. Step 1: Download the Database from GitHub	4
4. Step 2: Extract the Downloaded Files	5
5. Step 3: Install the Database in MySQL Workbench	5
6. Step 4: Verify the Installation	7
7. Understanding the Database Structure	8
8. Simple Practice Queries	9
9. Troubleshooting	10

1. What is the Employee Database?

The Employee Database is a sample MySQL database that contains realistic employee data from a fictional company. It's one of the most popular practice databases for learning SQL because it contains multiple related tables and realistic data patterns.

Key Features:

Feature	Details
Number of Tables	6 tables (employees, departments, salaries, titles, dept_emp, dept_manager)
Total Records	Approximately 300,000 employees with 2.8 million salary entries
Database Size	167 MB of data
Complexity Level	Beginner to Intermediate
Best For	Learning JOINs, aggregate functions, and complex queries

2. Prerequisites

Before you begin, make sure you have the following installed on your computer:

- **MySQL Server** - The database server (version 5.0 or higher)
- **MySQL Workbench** - The graphical interface for MySQL
- **Internet Connection** - To download the database files from GitHub
- **At least 500 MB** of free disk space

Note: If you haven't installed MySQL Workbench yet, you can download it for free from:
<https://dev.mysql.com/downloads/workbench/>

3. Step 1: Download the Database from GitHub

The Employee Database is hosted on GitHub. Don't worry if you've never used GitHub before - we'll walk through it step by step!

Method 1: Direct Download (Easiest for Beginners)

1. Open your web browser (Chrome, Firefox, Edge, etc.)
2. Go to this website: https://github.com/datacharmer/test_db
3. Look for a green button that says "**Code**" (usually near the top right of the page)
4. Click on the "**Code**" button
5. In the dropdown menu that appears, click "**Download ZIP**"
6. Your browser will download a file called "**test_db-master.zip**"
7. Save this file to a location you can easily find (like your Downloads folder or Desktop)

■ **Time Required:** About 1-2 minutes (depending on your internet speed)

4. Step 2: Extract the Downloaded Files

The file you downloaded is a compressed ZIP file. You need to extract (unzip) it before you can use it.

For Windows Users:

1. Find the downloaded file "**test_db-master.zip**" (usually in your Downloads folder)
2. Right-click on the file
3. Select "**Extract All...**" from the menu
4. Choose where you want to extract the files (Desktop is recommended for easy access)
5. Click "**Extract**"
6. A new folder called "**test_db-master**" will be created

For Mac Users:

1. Find the downloaded file "**test_db-master.zip**"
2. Double-click the ZIP file - it will automatically extract
3. A new folder called "**test_db-master**" will appear in the same location

✓ **What's Inside:** The extracted folder contains several SQL files. The most important one is "**employees.sql**" - this is the main installation file we'll use.

5. Step 3: Install the Database in MySQL Workbench

Now we'll import the database into MySQL using MySQL Workbench. Follow these steps carefully:

Step 3.1: Open MySQL Workbench and Connect

1. Launch **MySQL Workbench** on your computer
2. You'll see a home screen with your database connections
3. Click on your local MySQL connection (usually called "Local instance MySQL" or similar)
4. Enter your MySQL password when prompted
5. You should now see the main Workbench interface

Step 3.2: Run the Installation Script

1. In MySQL Workbench, click on "**File**" in the top menu
2. Select "**Open SQL Script...**"
3. Navigate to the folder where you extracted the files (test_db-master folder)
4. Select the file called "**employees.sql**"
5. Click "**Open**"
6. The SQL script will open in a new tab in MySQL Workbench
7. Look for a lightning bolt icon (■) in the toolbar - this is the "Execute" button
8. Click the lightning bolt to run the script

■ Be Patient: The installation will take several minutes (typically 5-10 minutes) because it's loading over 300,000 employee records! You'll see various messages in the output panel at the bottom showing the progress. This is normal - just wait until it finishes.

Step 3.3: Refresh Your Databases

1. Look at the left sidebar in MySQL Workbench (called the "Navigator" panel)
2. Find the "Schemas" section
3. Right-click in the Schemas area
4. Select "**Refresh All**"
5. You should now see a new database called "**employees**" in the list

6. Click the small triangle next to "employees" to expand it
7. You'll see 6 tables: departments, dept_emp, dept_manager, employees, salaries, and titles

6. Step 4: Verify the Installation

Let's make sure everything was installed correctly by running a test query:

1. In MySQL Workbench, click on "File" → "Open SQL Script..."
2. Navigate to the test_db-master folder again
3. Select the file called "**test_employees_md5.sql**"
4. Click "**Open**"
5. Click the lightning bolt (■) to execute the script
6. Wait a few seconds for the results

What to Look For:

You should see three tables in the results showing:

- **Expected records and checksums** for each table
- **Found records and checksums** (what's actually in your database)
- **Match status** - all should say "OK" and "ok"

Table Name	Expected Records
employees	300,024
departments	9
dept_manager	24
dept_emp	331,603
titles	443,308
salaries	2,844,047

✓ Success! If all the rows show "OK" and "ok", congratulations! You've successfully installed the Employee database and it's ready to use!

7. Understanding the Database Structure

The Employee database has 6 interconnected tables. Here's what each one contains:

Table Name	Description
employees	Basic employee information like name, birth date, hire date, and gender
departments	List of all company departments
dept_emp	Links employees to departments (shows which employees work in which departments)
dept_manager	Shows which employees are managers of which departments
salaries	Historical salary information for each employee
titles	Job titles held by employees over time

■ **Tip:** The tables are connected through the employee number (emp_no) and department number (dept_no). This is perfect for practicing SQL JOIN operations!

8. Simple Practice Queries

Now that you have the database installed, here are some simple queries to get you started. Copy these into MySQL Workbench and try them out!

Query 1: View the first 10 employees

```
SELECT * FROM employees.employees LIMIT 10;
```

Query 2: Count how many employees are in the database

```
SELECT COUNT(*) AS total_employees FROM employees.employees;
```

Query 3: List all department names

```
SELECT dept_name FROM employees.departments;
```

Query 4: Find employees hired in the year 1990

```
SELECT first_name, last_name, hire_date  
FROM employees.employees  
WHERE YEAR(hire_date) = 1990  
LIMIT 20;
```

Query 5: Show current salaries above \$70,000

```
SELECT emp_no, salary  
FROM employees.salaries  
WHERE salary > 70000 AND to_date = '9999-01-01'  
ORDER BY salary DESC  
LIMIT 20;
```

■ **Note:** The date '9999-01-01' in the to_date field indicates that the record is current (still active). This is a common convention in temporal databases.

9. Troubleshooting Common Issues

Problem: Installation takes a very long time

Solution: This is normal! The database contains millions of records. Installation typically takes 5-15 minutes. Be patient and don't interrupt the process.

Problem: Error "Access denied"

Solution: Make sure you're logged in to MySQL with a user that has proper privileges. The root user typically has all necessary permissions.

Problem: Can't find the employees database after installation

Solution: Right-click in the Schemas panel in MySQL Workbench and select "Refresh All". The database should appear.

Problem: Verification test shows mismatches

Solution: Try reinstalling the database. First, drop the existing database by running:

```
DROP DATABASE employees;
```

Then repeat the installation process from Step 3.

Additional Resources

- **Official Documentation:** <https://dev.mysql.com/doc/employee/en/>
- **GitHub Repository:** https://github.com/datacharmer/test_db
- **MySQL Workbench Manual:** <https://dev.mysql.com/doc/workbench/en/>
- **MySQL Tutorial:** <https://www.mysqltutorial.org/>

Congratulations!

You've successfully installed the MySQL Employee Database! This database is an excellent resource for learning and practicing SQL. Start with the simple queries provided in this guide, then gradually work your way up to more complex queries involving JOINs, subqueries, and aggregations. Happy learning!