

Installation Guide

This guide explains how to set up the **Caterpillar Emissions Tracker** database locally using Microsoft SQL Server.

No server connections, passwords, or IP addresses are included—everything runs on your local machine.

1. Prerequisites

Before starting, ensure you have:

- **Microsoft SQL Server** (Developer or Express edition) installed
[Download SQL Server](#)
 - **SQL Server Management Studio (SSMS)** installed
[Download SSMS](#)
 - **Disk space:** At least 500 MB free
 - **User permissions:** Ability to create databases locally
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2. Repository Structure

The key files you'll use for setup:

sql/

├─ schema/

| └─ CREATE_TABLE_queries.sql # Creates all tables

| └─ INSERT_STATEMENTS.sql # Populates tables with sample data

└─ reports/

├─ REPORT_QUERY_1.sql # Report example

├─ REPORT_QUERY_2.sql

├─ REPORT_QUERY_3.sql

├─ REPORT_QUERY_4.sql

├─ REPORT_QUERY_5.sql

├─ REPORT_QUERY_6.sql

└─ REPORT_QUERY_7.sql

3. Step-by-Step Setup

Step 1 — Open SSMS

1. Launch **SQL Server Management Studio**.
2. Connect to your **local SQL Server instance** (usually localhost or .\SQLEXPRESS).

Step 2 — Create a New Database

1. Right-click on **Databases** → **New Database**.
2. Name it CaterpillarEmissionsDB (or any name you prefer).
3. Click **OK**.

Step 3 — Create Tables

1. Open the file:

sql/schema/CREATE_TABLE_queries.sql

2. Copy the contents and paste into a **New Query** window in SSMS.
3. Execute the script (F5 or click **Execute**).

Step 4 — Insert Sample Data

1. Open the file:

sql/schema/INSERT_STATEMENTS.sql

2. Run the script to populate tables with example data.

Step 5 — Verify Data

You can check that data was inserted by running:

```
SELECT * FROM CETUSER;
```

```
SELECT * FROM CUSTOMER;
```

```
SELECT * FROM MACHINE;
```

4. Running Reports

Each report query is stored in:

sql/reports/

Example:

1. Open **REPORT_QUERY_1.sql** in SSMS.
 2. Execute it to see the generated report.
 3. Repeat for other report files.
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5. Documentation & Screenshots

You can view:

- **docs/Database_ERD.pdf** for the database diagram.
 - **docs/screenshots/** for table structures and example report outputs.
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6. Notes

- You can modify the data or queries as needed for testing.
- If any table already exists, drop it first:

DROP TABLE IF EXISTS TableName;

- The sample data is fictional and for demonstration purposes only.