**Workflow Documentation: Processing Database Query and Script Execution**

**Purpose and Scope**

**Purpose:**  
Document the process for executing a MariaDB query and a Linux script (requiring root privileges) to generate a final result.json file.

**Scope:**  
This workflow details the steps from downloading a ZIP package containing two files (query\_file.sql and script\_file.sh), processing the database output, and creating a final JSON result.

**Tools and Resources**

* **MariaDB client (CLI or GUI)**
* **Bash (Linux shell)**
* **Unzip utility**
* **(Optional)** GUI SQL client (e.g., **MySQL Workbench**, **DBeaver**, **HeidiSQL**)

**Roles and Responsibilities**

* **User:** Executes all steps, ensures required privileges and tools are available.
* **System Administrator:** Provides database access and root permissions if needed.

**Workflow Steps**

**1. Obtain the Package**

* **Task:** Download the ZIP archive containing query\_file.sql and script\_file.sh.
* **Privileges:** User (normal)
* **Command:** Download from source (e.g., web, email, file share).

**2. Extract Files**

* **Task:** Extract the ZIP archive into your working directory.
* **Privileges:** User
* **Command:**

unzip package.zip

* **Verification:** Confirm that query\_file.sql and script\_file.sh are present.

**3. Execute MariaDB Query**

**A. CLI Method (Default)**

* **Task:** Run the .sql file on your MariaDB database.
* **Privileges:** User (with database access)
* **Command:**  
  Replace [username], [password], and [database] with your credentials:

mysql -u [username] -p[password] [database] < query\_file.sql > output.json

* **Important:**  
  Ensure the query output is in **JSON format** (you may need to adjust your query or MariaDB client settings for JSON output).

**B. GUI Method (Optional)**

* **Task:** Run the .sql file using a graphical SQL client (e.g., MySQL Workbench, DBeaver, HeidiSQL).
* **Privileges:** User (with database access)
* **Steps:**
  + **Open** the SQL client and connect to your MariaDB database.
  + **File → Open SQL Script** and select query\_file.sql.
  + **Execute** the script.
  + **Export Results** to a file as JSON (check your client’s export options; not all clients natively support JSON, so you might need manual conversion).
* **Verification:**  
  Make sure the exported file is named output.json and is in the correct location for the next step.

**4. Run the Script with Root Privileges**

* **Task:** Execute script\_file.sh using the output JSON as input.
* **Privileges:** Root privileges required.
* **Command:**

sudo bash script\_file.sh output.json

* **Verification:**  
  Ensure that this step produces result.json in the expected directory.

**5. Validate Output**

* **Task:** Confirm that result.json exists and contains the expected output.
* **Privileges:** User
* **Verification:**

ls result.json  
cat result.json

**Sequence Diagram**

graph TD  
 A[Download ZIP File] --> B[Extract Files]  
 B --> C[Run query\_file.sql (CLI or GUI)]  
 C --> D[Generate output.json]  
 D --> E[Run script\_file.sh (as root)]  
 E --> F[Create result.json]  
 F --> G[Verify result.json]

**Special Notes**

* **Root Privileges:** The shell script (script\_file.sh) **must** be executed as root.
* **JSON Format:** The database query must output in JSON format for the script to function correctly.
* **GUI Alternative:**  
  While the CLI method is fastest and most scriptable, you can use a GUI SQL client to run your .sql file—but ensure the output format is correct for the next step.
* **Sensitive Data:**  
  Be cautious with credentials and file permissions when working with sensitive database outputs.

**Outcome**

* **Successful Completion:**  
  Results in the creation of result.json, containing processed data from your database query and script.