# Certura Internship Program(Database Handling)

## Task No: 01

**Submitted by :**

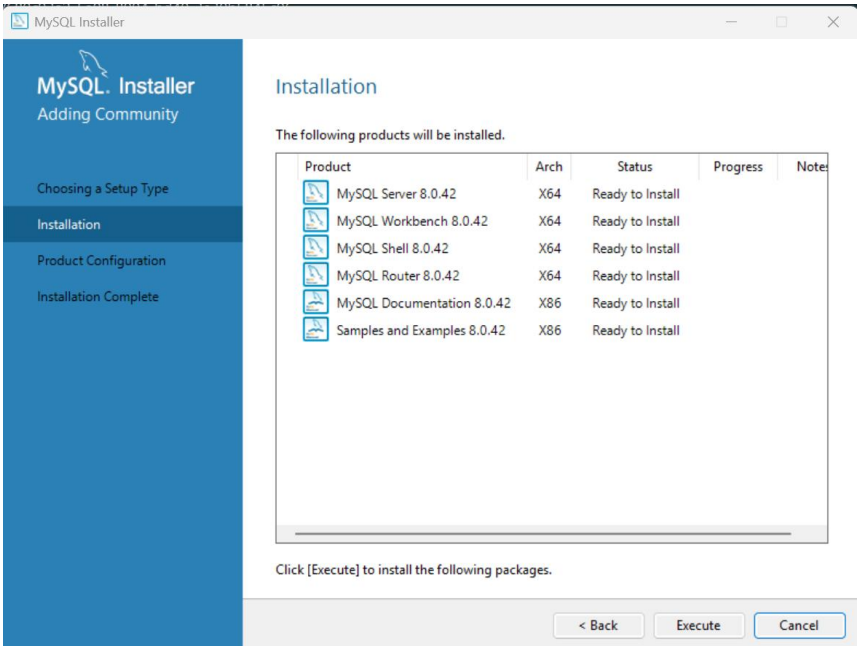
Huzaifa Waqar.

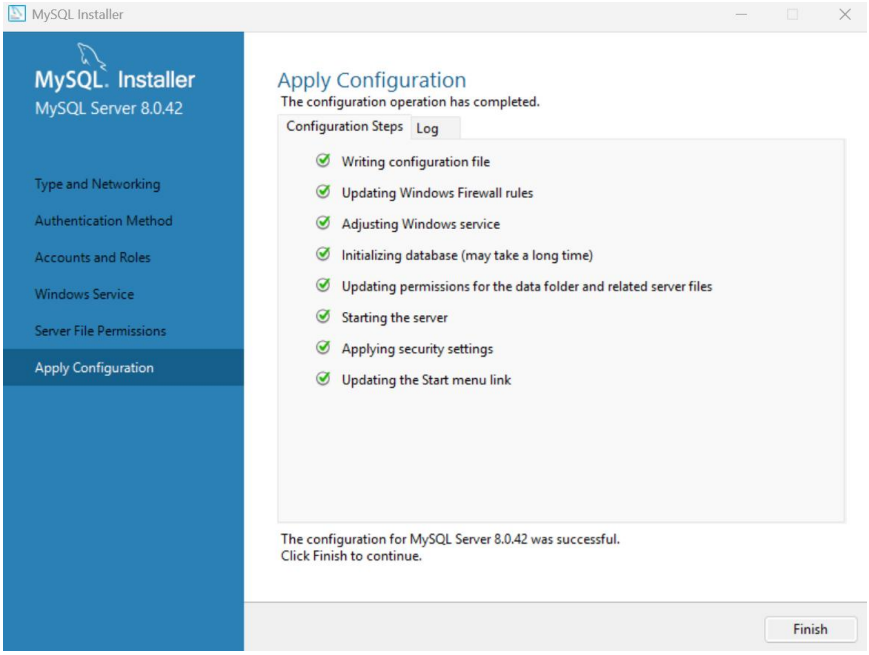
**Submitted to:**

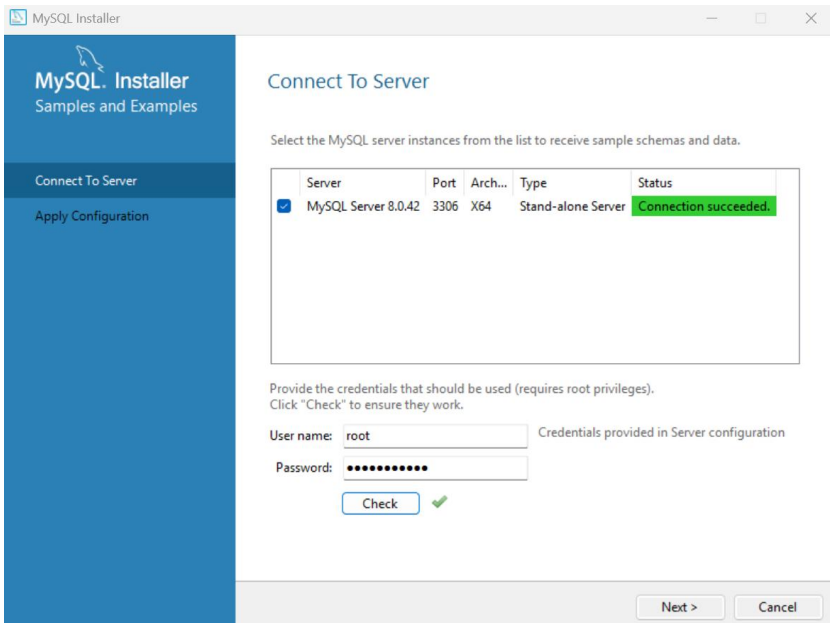
Certura.

## ✅ TOOLS USED

1. **MySQL Server**
   - This is the database engine.
2. **MySQL Workbench**
   - This is the GUI tool where you write queries and manage your database.



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## □ TASK: 1

Got it — you've installed MySQL and set up the connection, great! Now you're asking for **detailed steps** on how to **solve the e-commerce database task using MySQL Workbench**, right?
I'll guide you in a very detailed way step-by-step as if you're doing it practically. Let's go:

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## 🔑 How to Solve the Task (Detailed Steps)

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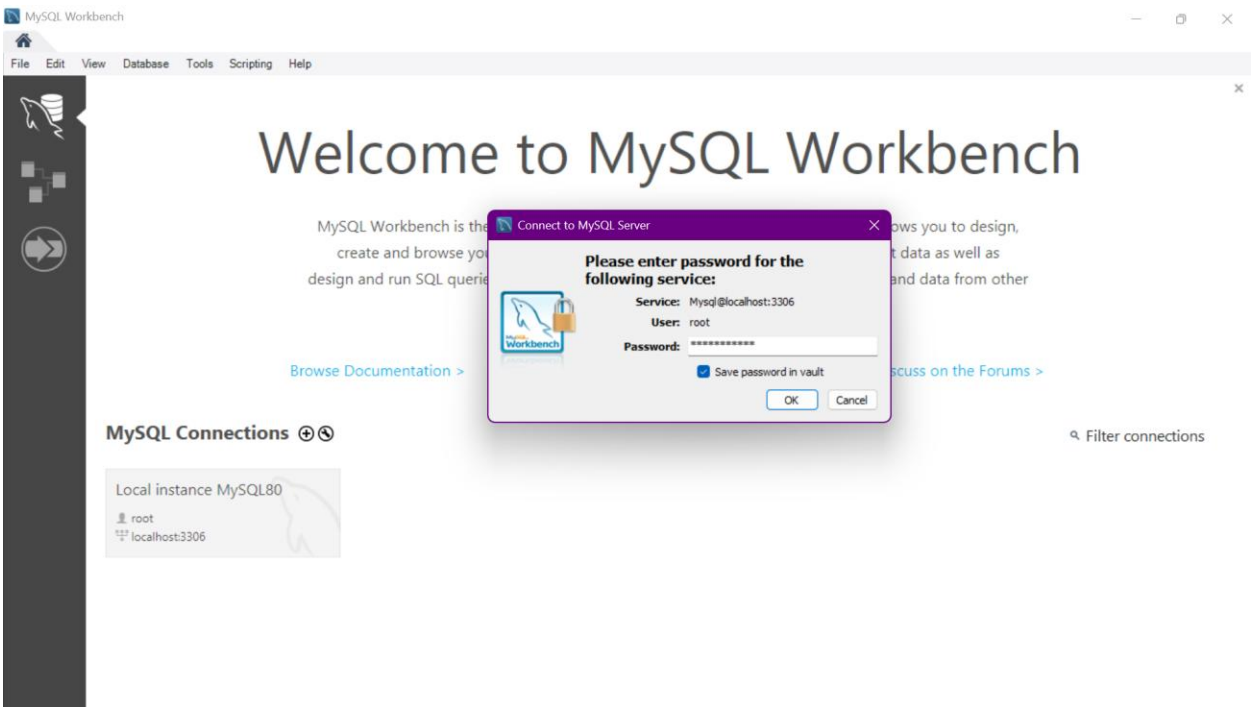
### Step 1: Open MySQL Workbench and Connect

- Open **MySQL Workbench**.
- Click on your **saved connection** (e.g., `Local instance MySQL80` or whatever name you gave).
- You'll enter the **SQL Editor** window.

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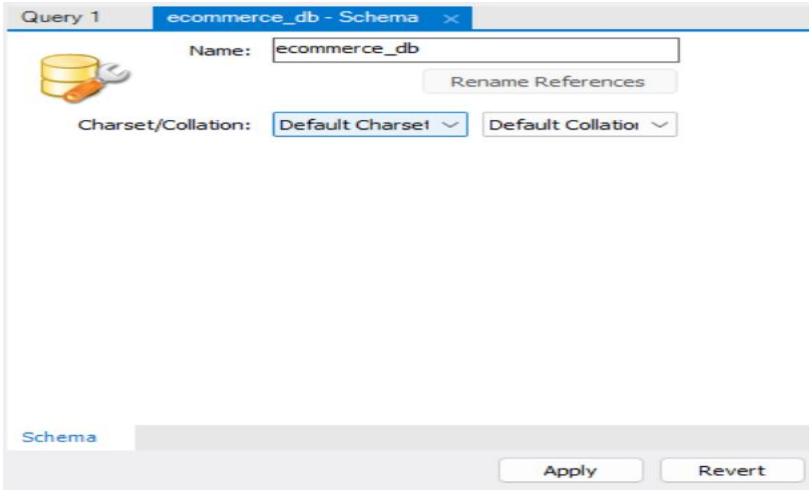
## Step 2: Create a New Schema (Database)

### In Workbench:

- Click the **"Schemas" tab** on the left side.
- Right-click and choose **"Create Schema"**.
- Name it something like: `ecommerce_db`.
- Click **Apply → Apply → Finish**.

✅ Your database (`ecommerce_db`) is created.



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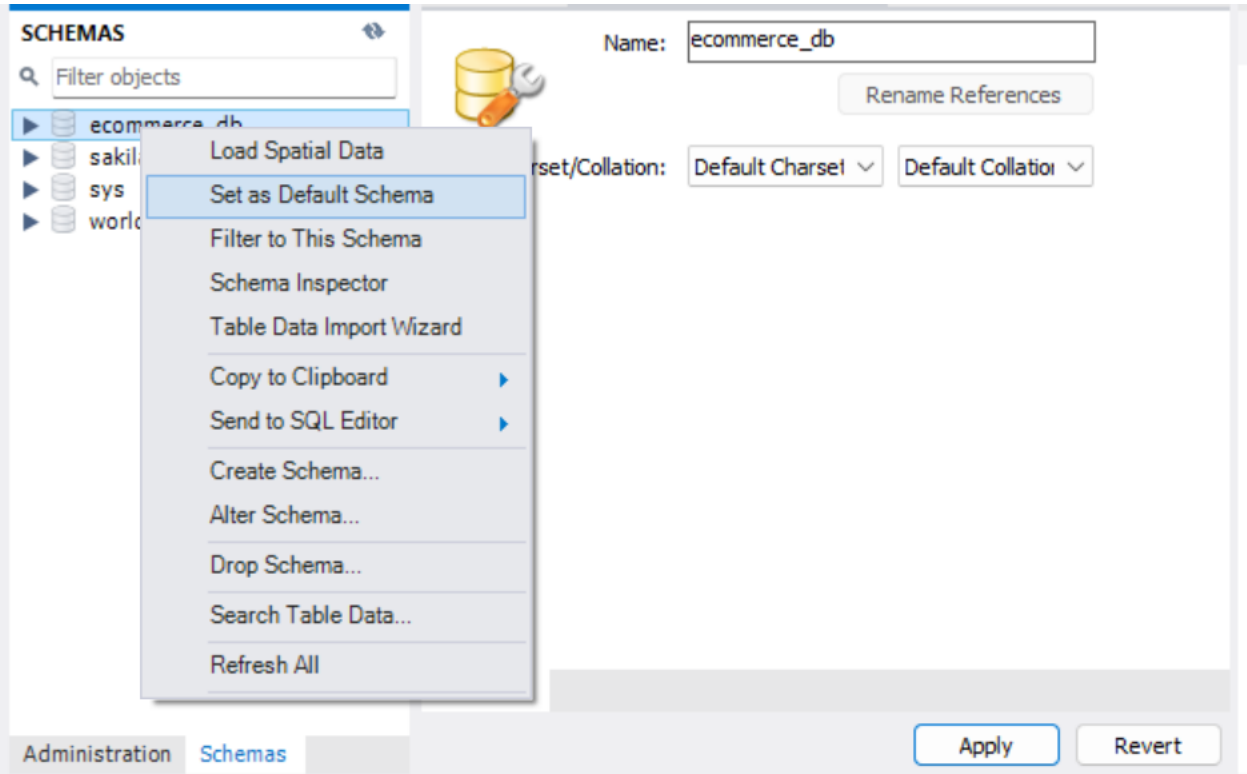
## Step 3: Write SQL Commands to Create Tables

☞ Now in the query editor, **choose your schema** (`ecommerce_db`) by right-clicking it and choosing "**Set as Default Schema**".

Now design the tables:

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## Step 4: Identify Tables

From the task, basic tables you need:

1. **Users**
2. **Products**
3. **Orders**
4. **Order_Details** (optional but better — because one order can have multiple products)

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## Step 5: Create Tables with Relationships

Here's the SQL for each:

```
-- USERS table
CREATE TABLE users (
    user_id INT AUTO_INCREMENT PRIMARY KEY,
    username VARCHAR(50) NOT NULL,
    email VARCHAR(100) UNIQUE NOT NULL,
    password VARCHAR(100) NOT NULL
);

-- PRODUCTS table
CREATE TABLE products (
    product_id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(100) NOT NULL,
    price DECIMAL(10,2) NOT NULL,
    stock_quantity INT NOT NULL
);

-- ORDERS table
CREATE TABLE orders (
    order_id INT AUTO_INCREMENT PRIMARY KEY,
    user_id INT,
    order_date DATETIME DEFAULT CURRENT_TIMESTAMP,
    FOREIGN KEY (user_id) REFERENCES users(user_id)
);

-- ORDER_DETAILS table (for many-to-many relationship)
CREATE TABLE order_details (
    order_detail_id INT AUTO_INCREMENT PRIMARY KEY,
    order_id INT,
    product_id INT,
    quantity INT,
    price_at_purchase DECIMAL(10,2),
    FOREIGN KEY (order_id) REFERENCES orders(order_id),
    FOREIGN KEY (product_id) REFERENCES products(product_id)
);
```

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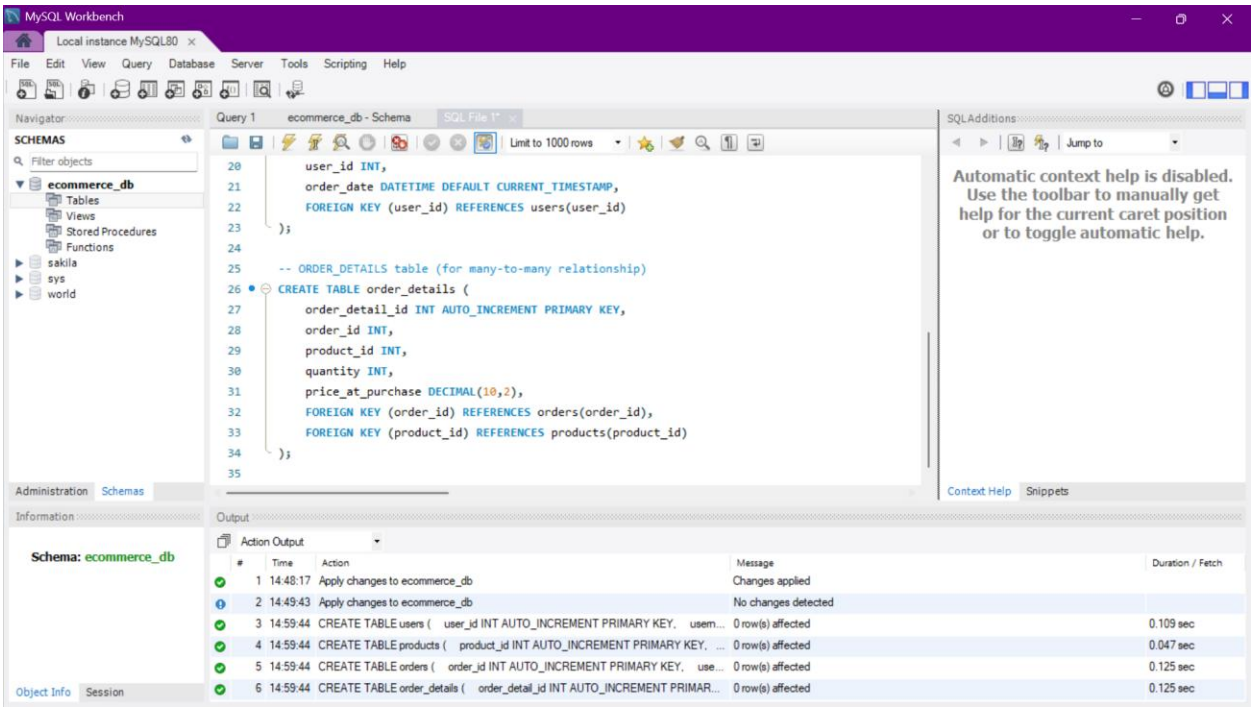
## Step 6: Execute the SQL

- Paste the above code into the **SQL Query window**.
- Click the ⚡ **Execute (lightning bolt)** button to run.

✅ Tables and relationships will be created!

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## Step 7: Insert Some Sample Data

To **test integrity**, insert a few sample rows:

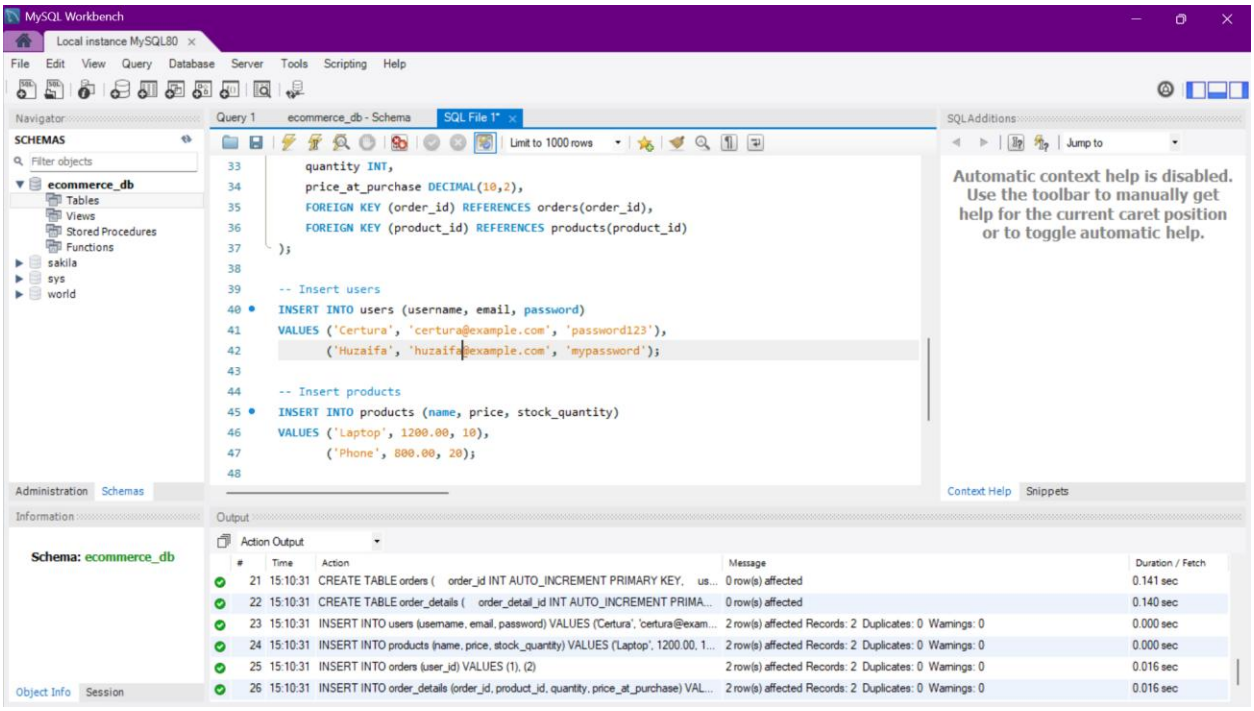
```
-- Insert users
INSERT INTO users (username, email, password)
VALUES ('certura', 'certura@example.com', 'password123'),
       ('huzaifa', 'huzaifa@example.com', 'password123');

-- Insert products
INSERT INTO products (name, price, stock_quantity)
VALUES ('Laptop', 1200.00, 10),
       ('Phone', 800.00, 20);

-- Insert orders
INSERT INTO orders (user_id)
VALUES (1), (2);

-- Insert order details
INSERT INTO order_details (order_id, product_id, quantity, price_at_purchase)
VALUES (1, 1, 1, 1200.00),
       (2, 2, 2, 800.00);
```

⚡ Execute this too.

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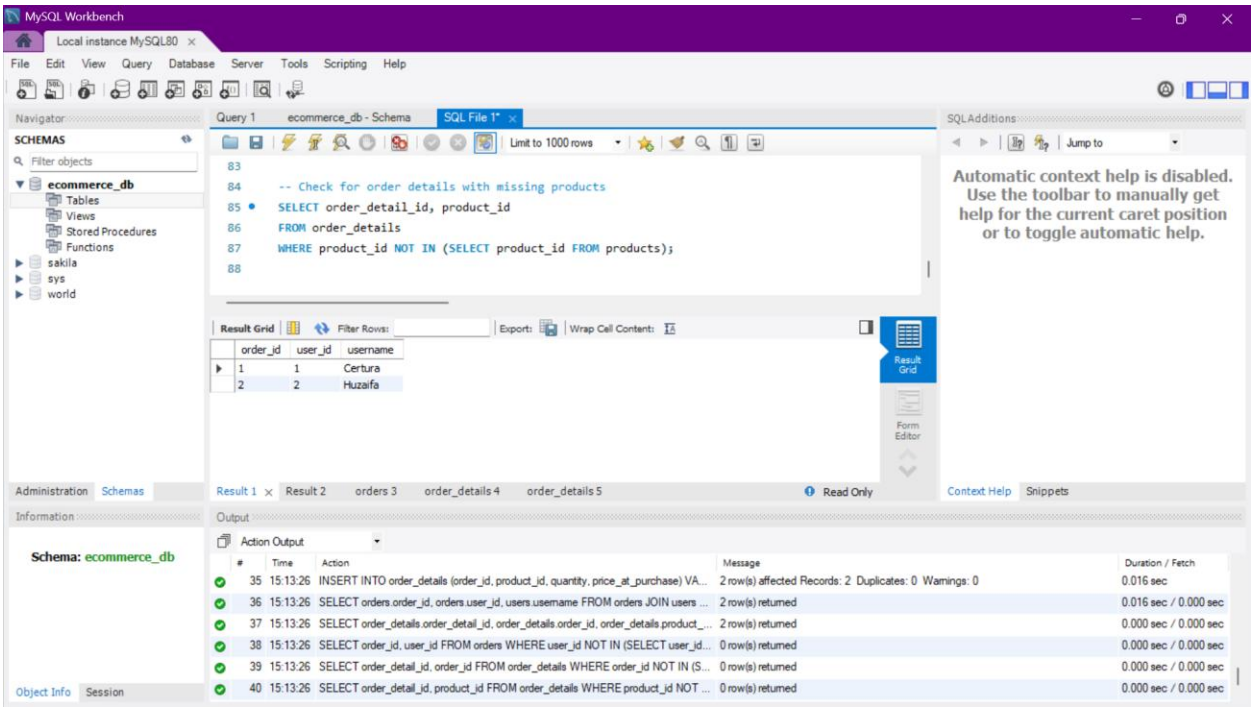
## Step 8: Test the Data

Use **SELECT queries** to check:

```
SELECT * FROM users;
SELECT * FROM products;
SELECT * FROM orders;
SELECT * FROM order_details;
```

✅ Confirm that:

- Orders are linked to users.
- Order details correctly link orders and products.
- Data integrity is maintained (no missing foreign keys).


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
ecommerce_db
Tables
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Stored Procedures
Functions
sakila
sys
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Query 1
ecommerce_db - Schema
SQL File 1*
Limit to 1000 rows
83
84 -- Check for order details with missing products
85 SELECT order_detail_id, product_id
86 FROM order_details
87 WHERE product_id NOT IN (SELECT product_id FROM products);
88
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
order_id user_id username
1 1 Certura
2 2 Huzaifa
Result Grid
Form Editor
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Result 1
Result 2
orders 3
order_details 4
order_details 5
Read Only
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Context Help
Snippets
Information
Schema: ecommerce_db
Object Info
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Output
Action Output
# Time Action Message Duration / Fetch
35 15:13:26 INSERT INTO order_details (order_id, product_id, quantity, price_at_purchase) VA... 2 row(s) affected Records: 2 Duplicates: 0 Warnings: 0 0.016 sec
36 15:13:26 SELECT orders.order_id, orders.user_id, users.username FROM orders JOIN users ... 2 row(s) returned 0.016 sec / 0.000 sec
37 15:13:26 SELECT order_details.order_detail_id, order_details.order_id, order_details.product_... 2 row(s) returned 0.000 sec / 0.000 sec
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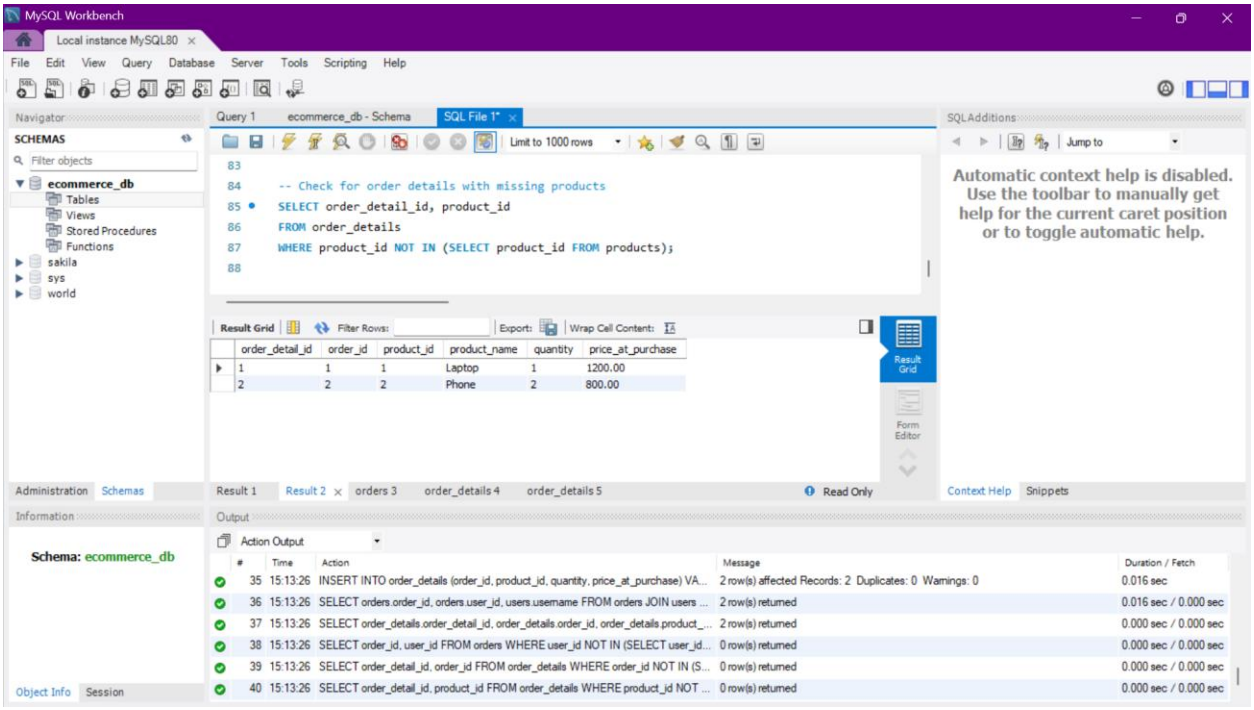
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## Final Summary (In Short)

| Step | Task |
|---|---|
| 1 | Open Workbench and connect |
| 2 | Create a schema |
| 3 | Identify tables |
| 4 | Write SQL to create tables with FOREIGN KEYS |
| 5 | Insert sample data |
| 6 | Test using SELECT queries |

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