Company Name: Euphoric Clay & Pots

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Live URL: https://euphoricclayandpots.shop/

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1) Business Context & Problem

Euphoric Clay & Pots is a leading pottery company currently using manual spreadsheets to track product inventory, customer details, and sales. This process is inefficient and error-prone, often leading to overselling out-of-stock items and providing no clear insight into which products are popular. We will launch a tiny internal web app to manage our two core entities: **Products** (inventory) and **Customers**. This will also produce two critical reports: a **Low Inventory** report (Operational) and the **Top 5 Products (This Month)** report.

2) Objectives & Success Metrics

I. Staff can successfully create, read, update, and delete Products and Customers without errors.
II. The Low Inventory report correctly displays all products with a stock quantity < 10.
III. The Top 5 Products (This Month) report correctly identifies the 5 best-selling items by quantity from all sales in the current month.

3) Users & Top Scenarios

- **Studio Manager (e.g., Sarah Brown)**
    - **Task:** Add a new product (e.g., "B-Mix Clay (25lb)") to the Products table.
    - **Task:** View the Low Inventory report to find out what to reorder from suppliers.
- **Sales Associate (e.g., Mike Watanabe)**
    - **Task:** Register a new Customer (e.g., "Alice Johnson") on the Customers table.
    - **Task:** View the Top 5 Products report to advise customers on popular items.

4) Scope — In / Out

In Scope:

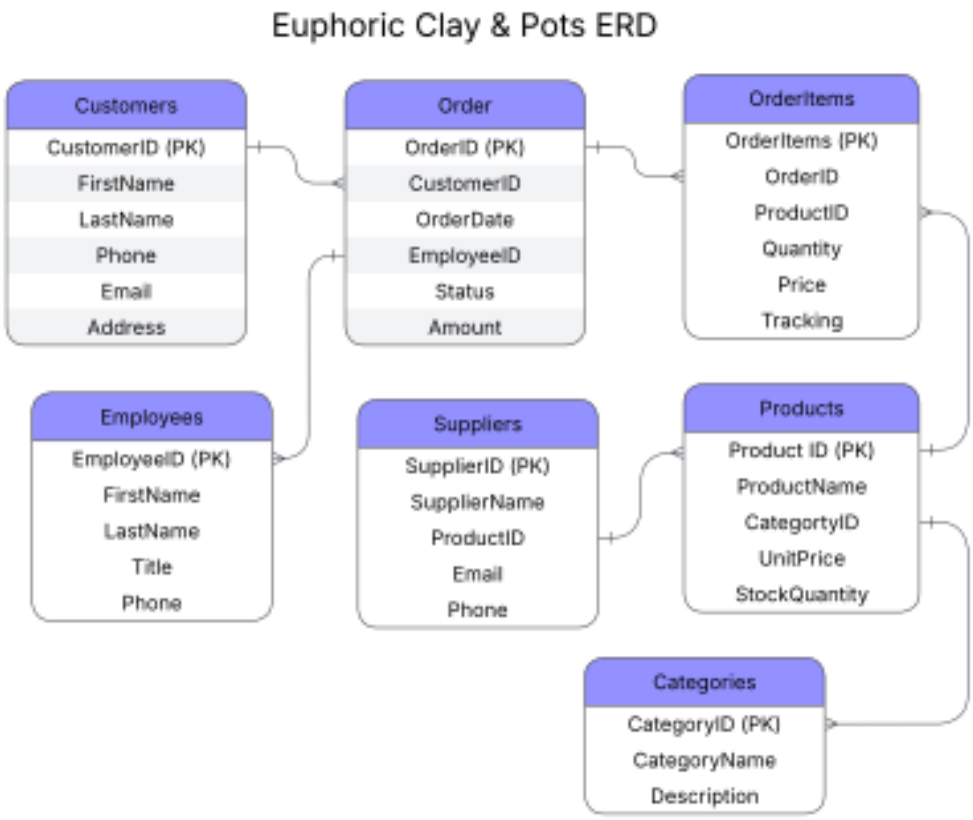
- **CRUD:** Full Create, Read, Update, Delete functionality for **Products** and **Customers**.
- **Reports:** A "Low Inventory" report and a "Top 5 Products (This Month)" report.
- **Database:** A 7-table MySQL database (Categories, Suppliers, Customers, Employees, Products, Orders, OrderItems) populated with seed data.

- **Tech:** PHP (using PDO), prepared statements for all SQL queries.
- **Validation:** Server-side PHP validation for required fields (e.g., ProductName, Email) and numeric fields (UnitPrice, StockQuantity).

Out of Scope (for v1.0):

- User logins, roles, or authentication.
- CRUD for Employees, Suppliers, or Categories (the tables exist, but the app won't manage them).
- A public-facing e-commerce store or payment processing.
- Email notifications.

5) Data Model Snapshot



Key Data Rules:

1. A Customer can have many Orders (One-to-Many).

2. An Order can contain many Products (linked via the OrderItems bridge table).
3. A Product has exactly one Category and one Supplier (Many-to-One).
4. The Customers.Email field must be UNIQUE.
5. The Products.StockQuantity field has a CHECK constraint to ensure it is >= 0.

6) Functional Requirements

- **As a Studio Manager, I can create a new Product** so that we can track its inventory and sales.
    - **Accept:** The form validates that ProductName is not empty and UnitPrice / StockQuantity are valid numbers.
- **As a Sales Associate, I can create a new Customer** so that we can save their details for future orders.
    - **Accept:** The form validates that Email is not empty and is not already in the Customers table.
- **As a Studio Manager, I can update the StockQuantity of a Product** so that our inventory levels are accurate.
    - **Accept:** The new quantity is saved to the database and reflected on the main product list page.
- **As a Studio Manager, I can view the Low Inventory report** so that I know what to reorder.
    - **Accept:** The report page queries the Products table and lists all items where StockQuantity <= 10.
- **As a Studio Manager, I can view the Top 5 Products (This Month) report** so that I can identify popular items.
    - **Accept:** The report page joins Products, OrderItems, and Orders. It correctly SUMs the OrderItems.Quantity, GROUPs by Products.ProductName, filters Orders.OrderDate for the current month/year, and LIMITs the result to 5.

7) Report Specs

Report A: Low Inventory (Operational)	
Question	What items are running low (stock is 10 or less)?
Columns	ProductName, StockQuantity, UnitPrice
Filters	Products.StockQuantity <= 10
Sort	StockQuantity ASC (shows lowest stock first)
Tables	Products

Report B: Top 5 Products (This Month) (Summary)	
Question	What are our 5 best-selling products by quantity this month?
Columns	ProductName, TotalQuantitySold
Filters	MONTH(Orders.OrderDate) = MONTH(CURDATE()) AND YEAR(Orders.OrderDate) = YEAR(CURDATE())
Sort	TotalQuantitySold DESC, LIMIT 5
Tables	Products

	JOIN OrderItems ON Products.ProductID = OrderItems.ProductID JOIN Orders ON OrderItems.OrderID = Orders.OrderID

8) Non-Functional

- **Security:** All SQL queries will use **PDO + prepared statements** to prevent SQL injection. Database credentials will be isolated in a config.php file.
- **Validation:** All user input will be validated on the server-side in PHP (checking for empty fields, valid numbers, etc.).
- **Performance:** Reports are expected to load in < 3 seconds. Indexes have been added to key foreign keys (OrderID in OrderItems, CustomerID in Orders) to speed up queries.
- **Errors:** The application will show human-friendly error messages (e.g., "Email already in use") and will not display technical database errors (stack traces) to the end-user.

9) Test Plan Mini-Matrix

Feature	Test Data	Expected Result
Create Product	Name="Test Clay", Price=20, Stock=50	Product saved; success message shown.
Create Product (Validation)	Name="Test Clay", Price="abc", Stock=50	Error message: "Price must be a valid number."

Create Customer (Duplicate)	Email="alice.j@email.com" (from seed data)	Error message: "Email already exists."
Low Inventory Report	(Using seed data from run_this_script_v2.sql)	Report shows **3 rows**: "Studio Starter Kiln" (3), "Clear Glaze (Gallon)" (5), "Terracotta Clay (10lb)" (8).
Top 5 Report (Nov 2025)	(Using all seed data as of add_20_more_orders.sql)	Report shows **Top 5 products** sold in November. (e.g., Basic Rib Tool, White Stoneware (25lb), etc.)
Top 5 Report (Dec 2025)	(Run report)	Report shows **0 rows** (or a friendly "No sales data for this month") because the current date is Nov 12, 2025. This proves the date filter works.

10) Implementation Notes & GenAI Use

- Used GenAI to scaffold the initial CREATE TABLE script by translating a 7-table Oracle SQL script to MySQL.
- **Prompt:** "Convert this Oracle SQL script to MySQL and map the entities to a pottery business (Owners -> Customers, Medication -> Products, etc.)."
- **Changes:** We manually corrected the foreign key logic (e.g., adding SupplierID to Products), converted Oracle data types (NUMBER, VARCHAR2) to MySQL (INT, DECIMAL, VARCHAR), and updated the auto-increment syntax (GENERATED...IDENTITY to AUTO_INCREMENT).
- Will use GenAI to scaffold the products.php and customers.php CRUD pages.

11) Risks & Assumptions

- **Risk:** Our shared hosting (Hostinger) environment may have strict PHP/MySQL configurations.
    - **Mitigation:** Test the database connection with a simple `config.php` file immediately after setup.
- **Assumption:** The app is for internal use by a single admin-level user. No logins, user roles, or permissions are required for this version.
- **Assumption:** The "This Month" report is based on the server's current date (`CURDATE()`), not a user-selected date range.