**SQL Project for Students**

**Objective:**

Students will design a database, create tables with the specified schemas, and perform various SQL operations based on provided questions.

**1. Database Setup**

* **Database Name:** InventoryManagement

**2. Table Creation**

Students need to create the following tables with the specified columns, data types, and constraints:

**A. Products Table**

* **Table Name:** Products
* **Columns:**
  + product\_id INT PRIMARY KEY
  + product\_name VARCHAR(100) NOT NULL
  + category\_id INT NOT NULL
  + price DECIMAL(10, 2) NOT NULL
  + stock\_quantity INT NOT NULL
  + reorder\_level INT NOT NULL
  + **Constraints:**
    - FOREIGN KEY (category\_id) REFERENCES Categories(category\_id)

**B. Categories Table**

* **Table Name:** Categories
* **Columns:**
  + category\_id INT PRIMARY KEY AUTO\_INCREMENT
  + category\_name VARCHAR(100) UNIQUE NOT NULL
  + description TEXT

**C. Suppliers Table**

* **Table Name:** Suppliers
* **Columns:**
  + supplier\_id INT PRIMARY KEY AUTO\_INCREMENT
  + supplier\_name VARCHAR(100) NOT NULL
  + contact\_name VARCHAR(50)
  + address TEXT
  + phone\_number VARCHAR(15) UNIQUE

**D. Orders Table**

* **Table Name:** Orders
* **Columns:**
  + order\_id INT PRIMARY KEY AUTO\_INCREMENT
  + order\_date DATE NOT NULL
  + supplier\_id INT NOT NULL
  + total\_amount DECIMAL(10, 2) NOT NULL
  + **Constraints:**
    - FOREIGN KEY (supplier\_id) REFERENCES Suppliers(supplier\_id)

**E. OrderDetails Table**

* **Table Name:** OrderDetails
* **Columns:**
  + order\_detail\_id INT PRIMARY KEY AUTO\_INCREMENT
  + order\_id INT NOT NULL
  + product\_id INT NOT NULL
  + quantity INT NOT NULL
  + unit\_price DECIMAL(10, 2) NOT NULL
  + **Constraints:**
    - FOREIGN KEY (order\_id) REFERENCES Orders(order\_id)
    - FOREIGN KEY (product\_id) REFERENCES Products(product\_id)

**3. SQL Queries**

After creating the tables, students should answer the following questions using SQL queries:

1. Retrieve the names and prices of all products that are currently out of stock.
2. List the total number of products in each category.
3. Find all suppliers who have supplied products worth more than $10,000.
4. Get the details of products with a stock quantity less than their reorder level.
5. Retrieve the order IDs and total amounts for orders placed in the last 30 days.
6. List all products along with their categories, ordered by product name.
7. Get the names of suppliers who have not supplied any products in the last 6 months.
8. Find the total amount spent on orders for each supplier.
9. Retrieve the product names and total quantities ordered for each product in the last year.
10. Get a list of products that belong to the Electronics category and have a price greater than $500.