**Products Table**

**The Products table contains details about products, including their names, categories, and unit prices. It provides reference data for linking product information to sales transactions.**

**Query:**

**-- Create Products table  
  
CREATE TABLE Products (  
 product\_id INT PRIMARY KEY,  
 product\_name VARCHAR(100),  
 category VARCHAR(50),  
 unit\_price DECIMAL(10, 2)  
);  
  
-- Insert sample data into Products table  
  
INSERT INTO Products (product\_id, product\_name, category, unit\_price) VALUES  
(101, 'Laptop', 'Electronics', 500.00),  
(102, 'Smartphone', 'Electronics', 300.00),  
(103, 'Headphones', 'Electronics', 30.00),  
(104, 'Keyboard', 'Electronics', 20.00),  
(105, 'Mouse', 'Electronics', 15.00);**

**1. Retrieve all columns from the product table.**

**mysql> select \* from products;**

**+------------+--------------+-------------+------------+**

**| product\_id | product\_name | category | unit\_price |**

**+------------+--------------+-------------+------------+**

**| 101 | Laptop | Electronics | 500.00 |**

**| 102 | Smartphone | Electronics | 300.00 |**

**| 103 | Headphones | Electronics | 30.00 |**

**| 104 | Keyboard | Electronics | 20.00 |**

**| 105 | Mouse | Electronics | 15.00 |**

+------------+--------------+-------------+------------+

**2. Retrieve the product\_name and unit\_price from the Products table.**

**mysql> SELECT product\_name, unit\_price FROM Products;**

**+--------------+------------+**

**| product\_name | unit\_price |**

**+--------------+------------+**

**| Laptop | 500.00 |**

**| Smartphone | 300.00 |**

**| Headphones | 30.00 |**

**| Keyboard | 20.00 |**

**| Mouse | 15.00 |**

**3. Filter the Products table to show only products in the 'Electronics' category.**

**mysql> select \* from products where category ='electronics';**

**+------------+--------------+-------------+------------+**

**| product\_id | product\_name | category | unit\_price |**

**+------------+--------------+-------------+------------+**

**| 101 | Laptop | Electronics | 500.00 |**

**| 102 | Smartphone | Electronics | 300.00 |**

**| 103 | Headphones | Electronics | 30.00 |**

**| 104 | Keyboard | Electronics | 20.00 |**

**| 105 | Mouse | Electronics | 15.00 |**

**+------------+--------------+-------------+------------+**

**4. Retrieve the product\_id and product\_name from the Products table for products with a unit\_price greater than $100.**

**mysql> SELECT product\_id, product\_name**

**-> FROM Products**

**-> WHERE unit\_price > 100;**

**+------------+--------------+**

**| product\_id | product\_name |**

**+------------+--------------+**

**| 101 | Laptop |**

**| 102 | Smartphone |**

**+------------+--------------+**

5. **Calculate the average unit\_price of products in the Products table.**

**mysql> select avg(unit\_price)from products;**

**+-----------------+**

**| avg(unit\_price) |**

**+-----------------+**

**| 173.000000 |**

**+-----------------+**

6. **Retrieve product\_name and unit\_price from the Products table with the Highest Unit Price**

**mysql> select product\_name,unit\_price from products where unit\_price>=500.00;**

**+--------------+------------+**

**| product\_name | unit\_price |**

**+--------------+------------+**

**| Laptop | 500.00 |**

**+--------------+------------+**

7. **Retrieve the product\_name and unit\_price from the Products table, ordering the results by unit\_price in descending order.**

**mysql> select product\_name,unit\_price from products order by unit\_price desc;**

**+--------------+------------+**

**| product\_name | unit\_price |**

**+--------------+------------+**

**| Laptop | 500.00 |**

**| Smartphone | 300.00 |**

**| Headphones | 30.00 |**

**| Keyboard | 20.00 |**

**| Mouse | 15.00 |**

**+--------------+------------+**

8. **Retrieve the product\_name and unit\_price from the Products table, filtering the unit\_price to show only values between $20 and $600.**

**mysql> select product\_name,unit\_price from products where unit\_price >20.00 and 600.00;**

**+--------------+------------+**

**| product\_name | unit\_price |**

**+--------------+------------+**

**| Laptop | 500.00 |**

**| Smartphone | 300.00 |**

**| Headphones | 30.00 |**

**+--------------+------------+**

9. **Retrieve the product\_name and category from the Products table, ordering the results by category in ascending order.**

**mysql> select product\_name,category from products order by category asc;**

**+--------------+-------------+**

**| product\_name | category |**

**+--------------+-------------+**

**| Laptop | Electronics |**

**| Smartphone | Electronics |**

**| Headphones | Electronics |**

**| Keyboard | Electronics |**

**| Mouse | Electronics |**

**+--------------+-------------+**

**Sales Table**

**The Sales table records information about product sales, including the quantity sold, sale date, and total price for each sale. It serves as a transactional data source for analyzing sales trends.**

**Query:**

**-- Create Sales table  
  
CREATE TABLE Sales (  
 sale\_id INT PRIMARY KEY,  
 product\_id INT,  
 quantity\_sold INT,  
 sale\_date DATE,  
 total\_price DECIMAL(10, 2)  
 FOREIGN KEY (product\_id) REFERENCES Products(product\_id)  
);  
  
-- Insert sample data into Sales table  
  
INSERT INTO Sales (sale\_id, product\_id, quantity\_sold, sale\_date, total\_price) VALUES  
(1, 101, 5, '2024-01-01', 2500.00),  
(2, 102, 3, '2024-01-02', 900.00),  
(3, 103, 2, '2024-01-02', 60.00),  
(4, 104, 4, '2024-01-03', 80.00),  
(5, 105, 6, '2024-01-03', 90.00);**

1. **Retrieve all columns from the Sales table.**

**mysql> select \* from sales;**

**+---------+------------+---------------+------------+-------------+**

**| sale\_id | product\_id | quantity\_sold | sale\_date | total\_price |**

**+---------+------------+---------------+------------+-------------+**

**| 1 | 101 | 5 | 2024-01-01 | 2500.00 |**

**| 2 | 102 | 3 | 2024-01-02 | 900.00 |**

**| 3 | 103 | 2 | 2024-01-02 | 60.00 |**

**| 4 | 104 | 4 | 2024-01-03 | 80.00 |**

**| 5 | 105 | 6 | 2024-01-03 | 90.00 |**

**+---------+------------+---------------+------------+-------------+**

1. **Retrieve the sale\_id and sale\_date from the Sales table.**

**mysql> select sale\_id,sale\_date from sales;**

**+---------+------------+**

**| sale\_id | sale\_date |**

**+---------+------------+**

**| 1 | 2024-01-01 |**

**| 2 | 2024-01-02 |**

**| 3 | 2024-01-02 |**

**| 4 | 2024-01-03 |**

**| 5 | 2024-01-03 |**

**+---------+------------+**

1. **Filter the Sales table to show only sales with a total\_price greater than $100.**

**mysql> select \* from sales where total\_price>100;**

**+---------+------------+---------------+------------+-------------+**

**| sale\_id | product\_id | quantity\_sold | sale\_date | total\_price |**

**+---------+------------+---------------+------------+-------------+**

**| 1 | 101 | 5 | 2024-01-01 | 2500.00 |**

**| 2 | 102 | 3 | 2024-01-02 | 900.00 |**

**+---------+------------+---------------+------------+-------------+**

1. **Retrieve the sale\_id and total\_price from the Sales table for sales made on January 3, 2024.**

**mysql> select sale\_id,total\_price from sales where sale\_date="2024-01-03";**

**+---------+-------------+**

**| sale\_id | total\_price |**

**+---------+-------------+**

**| 4 | 80.00 |**

**| 5 | 90.00 |**

**+---------+-------------+**

1. **Calculate the total revenue generated from all sales in the Sales table.**

**mysql> select sum(total\_price)from sales;**

**+------------------+**

**| sum(total\_price) |**

**+------------------+**

**| 3630.00 |**

**+------------------+**

1. **Calculate the total quantity\_sold from the Sales table.**

**mysql> select count(\*)from sales;**

**+----------+**

**| count(\*) |**

**+----------+**

**| 5 |**

**+----------+**

1. **Retrieve the sale\_id, product\_id, and total\_price from the Sales table for sales with a quantity\_sold greater than 4.**

**mysql> select sale\_id,product\_id,total\_price from sales where quantity\_sold>4;**

**+---------+------------+-------------+**

**| sale\_id | product\_id | total\_price |**

**+---------+------------+-------------+**

**| 1 | 101 | 2500.00 |**

**| 5 | 105 | 90.00 |**

1. **Calculate the average total\_price of sales in the Sales table.**

**mysql> select avg(total\_price)from sales;**

**+------------------+**

**| avg(total\_price) |**

**+------------------+**

**| 726.000000 |**

**+------------------+**