**Queries and Results**

**1. Queries**

***-- 1.Query the customers who purchased the most and the total number of purchases:***

 SELECT c.customerId, c.fName, c.sName, SUM(od.quantity) AS totalQuantity

 FROM customer c

 JOIN `order` o ON c.customerId = o.Order\_CustomerId

 JOIN orderdetail od ON o.orderId = od.OrderDetail\_OrderId

 GROUP BY c.customerId, c.fName, c.sName

 ORDER BY totalQuantity DESC

 LIMIT 1;

***-- 2.Query all products that customers have purchased and still have in stock:***

 SELECT DISTINCT p.productId, p.productName

 FROM product p

 JOIN orderdetail od ON p.productId = od.OrderDetail\_ProductId

 WHERE p.stockQuantity > 0;

***-- 3.Query the total discount for all customers and their coupons***

 SELECT c.customerId, c.fName, c.sName, SUM(cou.discount) AS totalDiscount

 FROM customer c

 LEFT JOIN owned\_coupon oc ON c.customerId = oc.Owned\_Coupon\_customerId

 LEFT JOIN coupon cou ON oc.Owned\_Coupon\_couponId = cou.couponId

 GROUP BY c.customerId, c.fName, c.sName;

***-- 4.Query the date of each customer's last purchase***

 SELECT c.customerId, c.fName, c.sName, MAX(o.orderDate) AS lastPurchaseDate

 FROM customer c

 JOIN `Order` o ON c.customerId = o.Order\_CustomerId

 GROUP BY c.customerId, c.fName, c.sName;

***-- 5.Query customers who placed orders within a certain date range*** ***(within 2024) and list the names and quantities of the products they*** ***purchased***

 SELECT MIN(o.orderDate) AS earliestOrderDate, c.customerId, c.fName, c.sName, p.productName, SUM(od.quantity) AS quantityPurchased

 FROM customer c

 JOIN `order` o ON c.customerId = o.Order\_CustomerId

 JOIN orderdetail od ON o.orderId = od.OrderDetail\_OrderId

 JOIN product p ON od.OrderDetail\_ProductId = p.productId

 WHERE o.orderDate BETWEEN '2024-01-01 00:00:00' AND '2024-12-31 00:00:00'

 GROUP BY c.customerId, c.fName, c.sName, p.productName;

***-- 6.Query the average price per customer***

 SELECT c.customerId, c.fName, c.sName, AVG(od.priceAtPurchase) AS averagePrice

 FROM customer c

 JOIN `order` o ON c.customerId = o.Order\_CustomerId

 JOIN orderdetail od ON o.orderId = od.OrderDetail\_OrderId

 GROUP BY c.customerId, c.fName, c.sName;

***-- 7.Query the total price of the items in each customer's cart***

 SELECT sc.cartId, c.customerId, c.fName, c.sName, SUM(p.price) AS totalCartPrice

 FROM shoppingcart sc

 JOIN customer c ON sc.ShoppingCart\_CustomerId = c.customerId

 JOIN product\_in\_shoppingcart pisc ON sc.cartId = pisc.Product\_in\_ShoppingCart\_cartId

 JOIN product p ON pisc.Product\_in\_ShoppingCart\_productId = p.productId

 GROUP BY sc.cartId, c.customerId, c.fName, c.sName;

***-- 8.Check each customer's shopping cart to see if there is an item*** ***corresponding to an expiring coupon:***

 SELECT DISTINCT c.customerId, c.fName, c.sName

 FROM customer c

 JOIN shoppingcart sc ON c.customerId = sc.ShoppingCart\_CustomerId

 JOIN product\_in\_shoppingcart pisc ON sc.cartId = pisc.Product\_in\_ShoppingCart\_cartId

 JOIN product p ON pisc.Product\_in\_ShoppingCart\_productId = p.productId

 JOIN owned\_coupon oc ON c.customerId = oc.Owned\_Coupon\_customerId

 JOIN coupon cou ON oc.Owned\_Coupon\_couponId = cou.couponId

 WHERE cou.endDate BETWEEN CURTIME() AND DATE\_ADD(CURDATE(), INTERVAL 7 DAY)

 AND p.productId = cou.Coupon\_ProductId;

**2. Results**











