

SQL Practice - CTE (Common Table Expression) Challenges

1. Basic CTE - Add Order Value

```
WITH order_cte AS (  
    SELECT  
        order_id,  
        customer_id,  
        product_id,  
        quantity * unit_price AS order_value  
    FROM orders  
)  
SELECT *  
FROM order_cte;
```

2. CTE + Filter Order Value > 500

```
WITH order_cte AS (  
    SELECT  
        order_id,  
        customer_id,  
        product_id,  
        quantity * unit_price AS order_value  
    FROM orders  
)  
SELECT *  
FROM order_cte  
WHERE order_value > 500;
```

3. CTE + GROUP BY - Total Spend per Customer

```
WITH order_cte AS (  
    SELECT  
        customer_id,  
        SUM(quantity * unit_price) AS total_spend  
    FROM orders  
    GROUP BY customer_id  
)  
SELECT *  
FROM order_cte  
WHERE total_spend > 1500;
```

4. CTE + JOIN - Attach Customer Name and Region

```
WITH customer_spend AS (  
    SELECT  
        customer_id,  
        SUM(quantity * unit_price) AS total_spend  
    FROM orders  
    GROUP BY customer_id  
)  
SELECT  
    c.customer_name,  
    c.region,  
    cs.total_spend  
FROM customer_spend cs  
INNER JOIN customers c ON cs.customer_id = c.customer_id;
```

5. CTE + JOIN + Filter by Region and Spend

```
WITH customer_spend AS (  
    SELECT  
        customer_id,  
        SUM(quantity * unit_price) AS total_spend  
    FROM orders  
    GROUP BY customer_id  
)  
SELECT  
    c.customer_name,  
    c.region,  
    cs.total_spend  
FROM customer_spend cs  
INNER JOIN customers c ON cs.customer_id = c.customer_id  
WHERE c.region = 'North'  
    AND cs.total_spend > 1000;
```