Variation 1 - Instructor Set

Answer

```
-- Comprehensive Query Task

-- 1. JOIN the necessary tables to relate customers, their policies, and claims.
-- 2. Filter the claims to include only those made in the last year.
-- 3. Group the results by customer and policy type.
-- 4. Calculate the necessary aggregates:
--    - Total number of claims per customer and policy type.
--    - Total claim amount per customer and policy type.
--    - Average premium per customer and policy type.
-- 5. Classify customers into age groups: under 30, 30-60, and over 60.
-- 6. Include only customers who have made more than 2 claims in the last year.

SELECT
    c.name,
    p.policy_type,
    COUNT(cl.claim_id) AS total_claims,
    SUM(cl.claim_amount) AS total_claim_amount,
    AVG(p.premium) AS average_premium,
  CASE
    WHEN  '2024-05-31' - c.date_of_birth < 30 THEN 'Under 30'
    WHEN '2024-05-31' - c.date_of_birth BETWEEN 30 AND 60 THEN '30-60'
    ELSE 'Over 60'
  END AS age_group
FROM
    Customers c
LEFT JOIN
    Policies p ON c.customer_id = p.customer_id
LEFT JOIN
    Claims cl ON p.policy_id = cl.policy_id
WHERE
    cl.claim_date >= DATE_SUB(CURDATE(), INTERVAL 1 YEAR)
GROUP BY
    c.customer_id, p.policy_type
HAVING
    COUNT(cl.claim_id) > 2;
```

Follow up question

Task 1: Retrieve Customer Information with Active Policies

Write a query to retrieve the names and addresses of customers who have at least one active policy (a policy where the current date is between the start_date and end_date).

```
SELECT
    c.name,
    c.address
```

```
FROM
    Customers c
JOIN
    Policies p ON c.customer_id = p.customer_id
WHERE
    CURDATE() BETWEEN p.start_date AND p.end_date;
```

Task 2: List Customers and Their Claims

Write a query to list the customer names, policy types, and claim amounts for all claims made in the last year.

```
SELECT
    c.name,
    p.policy_type,
    cl.claim_amount
FROM
    Customers c
JOIN
    Policies p ON c.customer_id = p.customer_id
JOIN
    Claims cl ON p.policy_id = cl.policy_id
WHERE
    cl.claim_date >= DATE_SUB(CURDATE(), INTERVAL 1 YEAR);
```

Task 3: Count Claims per Policy Type

Write a query to count the number of claims made for each policy type and only include policy types with more than 5 claims.

```
SELECT
    p.policy_type,
    COUNT(cl.claim_id) AS claim_count
FROM
    Policies p
JOIN
    Claims cl ON p.policy_id = cl.policy_id
GROUP BY
    p.policy_type
HAVING
    COUNT(cl.claim_id) > 5;
```

Task 4: Average Premiums by Customer Age Group'

Write a query to calculate the average premium amount for each age group of customers (under 30, between 30 and 60, and over 60). Assume the age is calculated based on the current date.

```
SELECT
    CASE
        WHEN TIMESTAMPDIFF(YEAR, c.date_of_birth, CURDATE()) < 30 THEN 'Under 30'
        WHEN TIMESTAMPDIFF(YEAR, c.date_of_birth, CURDATE()) BETWEEN 30 AND 60 THEN
'30-60'
```

```
        ELSE 'Over 60'
    END AS age_group,
    AVG(p.premium) AS average_premium
FROM
    Customers c
JOIN
    Policies p ON c.customer_id = p.customer_id
GROUP BY
    age_group;
```

Task 5: Claims Summary by Status Write a query to retrieve the total number of claims and the total claim amount for each claim status.

```
SELECT
    cl.status,
    COUNT(cl.claim_id) AS total_claims,
    SUM(cl.claim_amount) AS total_claim_amount
FROM
    Claims cl
GROUP BY
    cl.status;
```

These tasks cover various SQL concepts including LEFT JOIN, WHERE to check a date, GROUP BY, and HAVING. They should provide a comprehensive test of understanding in SQL within the context of the insurance industry.