Warm up questions:

A. Find the average the number of events that occur each day.

```
SELECT channel,
       ROUND(avg(no_of_events),2) avg_events
FROM
    (
      SELECT date_trunc('day', occurred_at) date,
             channel,
             COUNT(*) no_of_events
      FROM web_events
      GROUP BY 1, 2
    ) x
GROUP BY 1
ORDER BY 2 DESC
```

B. Find only the orders that took place in the same month and year as the first order, and then pull the average for each type of paper qty in this month

```
SELECT DATE_TRUNC('month',occurred_at) month_order,
       AVG(standard_qty) standard,
       AVG(gloss_qty) gloss,
       AVG(poster_qty) poster
FROM orders
WHERE DATE_TRUNC('month',occurred_at) = (
                                          SELECT
DATE_TRUNC('month', occurred_at)
                                           FROM orders
                                           ORDER BY 1
                                           LIMIT 1
                                         )
GROUP BY 1
```

```
-- SUBQUERRY QUIZZES
```

1. Provide the name of the sales_rep in each region with the largest amount of total_amt_usd sales.

```
SELECT z.total_usd,
       z.region,
       x.rep
```

```
FROM (
       SELECT SUM(o.total_amt_usd) total_usd,
              s.name rep
       FROM orders o
       JOIN accounts a ON a.id = o.account_id
       JOIN sales_reps s ON s.id = a.sales_rep_id
       GROUP BY 2
     ) x
JOIN (
       SELECT MAX(total_usd) total_usd,
              region
       FROM (
              SELECT SUM(total_amt_usd) total_usd,
                     r.name region,
                     s.name rep
              FROM orders o
              JOIN accounts a ON a.id = o.account_id
              JOIN sales_reps s ON s.id = a.sales_rep_id
              JOIN region r ON r.id = s.region_id
              GROUP BY 2,3
            ) y
        GROUP BY 2
     ) z
ON x.total_usd = z.total_usd
ORDER BY 1 DESC
```

2. For the region with the largest (sum) of sales total_amt_usd, how many total (count) orders were placed?

```
SELECT COUNT(*) num_of_orders,
       r.name region
FROM orders o
JOIN accounts a ON a.id = o.account_id
JOIN sales_reps s ON a.sales_rep_id = s.id
JOIN region r ON r.id = s.region_id
WHERE r.name = (
                SELECT region
                 FROM (
                       SELECT SUM(total_amt_usd)
total_usd,

                              r.name region
```

```
                        FROM orders o
                        JOIN accounts a ON a.id =
o.account_id
                        JOIN sales_reps s ON s.id =
a.sales_rep_id
                        JOIN region r ON r.id = s.region_id
                        GROUP BY 2
                        ORDER BY 1 DESC
                        LIMIT 1
                      ) x
              )
GROUP BY 2
```

3. How many accounts had more total purchases than the account name which has bought the most standard_qty paper throughout their lifetime as a customer?

```
SELECT COUNT(*)
FROM (
       SELECT a.name account_name,
              SUM(o.total) total_purch
       FROM accounts a
       JOIN orders o ON a.id = o.account_id
       GROUP BY 1
       HAVING sum(o.total) > (
                               SELECT total_purch
                                FROM (
                                      SELECT a.name
account_name,

SUM(o.standard_qty) standard_qty,
                                             SUM(total)
total_purch
                                       FROM accounts a
                                       JOIN orders o ON
o.account_id = a.id
                                       GROUP BY 1
                                       ORDER BY 2 DESC
                                       LIMIT 1
                                     ) x
                             )
     ) y
```

4. For the customer that spent the most (in total over their lifetime as a customer) total_amt_usd, how many web_events did they have for each channel?

```
SELECT a.name account_name,
       w.channel channel,
       COUNT(*) num_of_times
FROM web_events w
JOIN accounts a ON w.account_id = a.id
WHERE a.name = (
                SELECT account_name
                 FROM (
                       SELECT a.name account_name,
                              SUM(o.total_amt_usd)
total_usd
                        FROM accounts a
                        JOIN orders o ON a.id =
o.account_id
                        GROUP BY 1
                        ORDER BY 2 DESC
                        LIMIT 1
                      ) x
              )
GROUP BY 1,2
ORDER BY 3 DESC
```

5. What is the lifetime average amount spent in terms of total_amt_usd for the top 10 total spending accounts?

```
SELECT AVG(total_usd) avg_total_usd
FROM (
       SELECT a.name accounts,
              sum(o.total_amt_usd) total_usd
       FROM accounts a
       JOIN orders o ON a.id = o.account_id
       GROUP BY 1
       ORDER BY 2 DESC
       LIMIT 10
     ) x
```

6. What is the lifetime average amount spent in terms of total_amt_usd, including only the companies that spent more per order, on average, than the average of all orders.

```
SELECT AVG(avg_total_usd)
FROM (
       SELECT a.name account_name,
              AVG(total_amt_usd) avg_total_usd
       FROM accounts a
       JOIN orders o ON a.id = o.account_id
       GROUP BY 1
HAVING avg(total_amt_usd) > (
                              SELECT AVG(total_amt_usd)
                              FROM orders
                            )
) x
```

-- WITH STATEMENTS

1. Provide the name of the sales_rep in each region with the largest amount of total_amt_usd sales.

```
WITH ttl_rep_rgn AS (
                      SELECT MAX(total_usd) total_usd,
                             region
                      FROM (
                             SELECT r.name region,
                                    s.name rep,
                                    sum(o.total_amt_usd)
total_usd
                              FROM accounts a
                              JOIN orders o ON a.id =
o.account_id
                              JOIN sales_reps s ON
a.sales_rep_id = s.id
                              JOIN region r ON s.region_id =
r.id
                              GROUP BY 1,2
                           ) x
                      GROUP BY 2
```

```
                    ),
       rep_total AS (
                      SELECT s.name rep,
                             SUM(o.total_amt_usd) total_usd
                       FROM orders o
                       JOIN accounts a ON a.id =
o.account_id
                       JOIN sales_reps s ON s.id =
a.sales_rep_id
                       GROUP BY 1
                    )
SELECT trr.region,
       rt.rep,
       trr.total_usd
FROM ttl_rep_rgn trr
JOIN rep_total rt ON rt.total_usd = trr.total_usd
ORDER BY 3 DESC
```

2. For the region with the largest sales total_amt_usd, how many total orders were placed?

```
WITH rgn_ttl AS (
                  SELECT MAX(total_usd) total_usd,
                         region
                  FROM (
                        SELECT r.name region,
                               SUM(o.total_amt_usd)
total_usd
                         FROM orders o
                         JOIN accounts a ON a.id =
o.account_id
                         JOIN sales_reps s ON
a.sales_rep_id = s.id
                         JOIN region r ON r.id =
s.region_id
                         GROUP BY 1
                       ) x
                  GROUP BY 2
                  ORDER BY 1 DESC
                  LIMIT 1
                ),
     max_rgn AS (
                  SELECT region
```

```
                  FROM rgn_ttl
                )
SELECT count(*)
FROM orders o
JOIN accounts a ON a.id = o.account_id
JOIN sales_reps s ON a.sales_rep_id = s.id
JOIN region r ON r.id = s.region_id
WHERE r.name = (
                  SELECT region
                   FROM max_rgn
                )
```

3. How many accounts had more total purchases than the account name which has bought the most standard_qty paper throughout their lifetime as a customer?

```
WITH max_std_qty AS (
                      SELECT a.name account,
                             SUM(o.standard_qty) std_qty,
                             SUM(total) total_purch
                       FROM orders o
                       JOIN accounts a ON a.id =
o.account_id
                       GROUP BY 1
                       ORDER BY 2 DESC
                       LIMIT 1
                     ),
     acct_total AS (
                      SELECT a.name account,
                             SUM(o.total) total
                       FROM orders o
                       JOIN accounts a ON a.id =
o.account_id
                       GROUP BY 1
                    )
SELECT count(*)
FROM (
       SELECT *
       FROM acct_total
       WHERE total > (
                        SELECT total_purch
                         FROM max_std_qty
                      )
) x
```

4. For the customer that spent the most (in total over their lifetime as a customer) total_amt_usd, how many web_events did they have for each channel?

```
WITH max_acct_spend AS (
                         SELECT account
                          FROM (
                                SELECT a.name account,
                                       SUM(total_amt_usd)
total_amt
                                 FROM orders o
                                 JOIN accounts a ON a.id =
o.account_id
                                 GROUP BY 1
                                 ORDER BY 2 DESC
                                 LIMIT 1
                               ) x
                       )
SELECT a.name account,
       channel,
       COUNT(*) num_of_times
FROM web_events w
JOIN accounts a ON a.id = w.account_id
WHERE a.name = (
                SELECT *
                 FROM max_acct_spend
              )
GROUP BY 1,2
ORDER BY 3 DESC
```

5. What is the lifetime average amount spent in terms of total_amt_usd for the top 10 total spending accounts?

```
WITH avg_spent_top10 AS (
                          SELECT a.name account,
                                 SUM(o.total_amt_usd)
total_usd
                           FROM orders o
                           JOIN accounts a ON a.id =
o.account_id
                           GROUP BY 1
```

```
                          ORDER BY 2 DESC
                          LIMIT 10
                        )
SELECT ROUND(AVG(total_usd),2) avg_top10
FROM avg_spent_top10
```

6. What is the lifetime average amount spent in terms of total_amt_usd, including only the companies that spent more per order, on average, than the average of all orders.

```
WITH avg_all AS (
                  SELECT a.name account,
                         AVG(total_amt_usd) avg_usd
                   FROM orders o
                   JOIN accounts a ON a.id = o.account_id
                   GROUP BY 1
                   ORDER BY 2 DESC
                 )

SELECT AVG(avg_usd)
FROM (
       SELECT account,
              avg_usd
       FROM avg_all
       WHERE avg_usd > (
                         SELECT avg(total_amt_usd)
                         FROM orders
                       )
     ) x
```