* **What are the top 5 brands by receipts scanned for the most recent month?**

WITH RankedBrands AS

(

    SELECT b.name AS brand\_name, COUNT(r.\_id) AS receipts\_count,     DENSE\_RANK() OVER (ORDER BY COUNT(r.\_id) DESC) AS brand\_rank

    FROM Brand b

    JOIN RewardsReceiptItemList r ON b.barcode = r.barcode

    WHERE DATE\_TRUNC('month', r.dateScanned) = DATE\_TRUNC('month', CURRENT\_DATE)

GROUP BY b.name

)

SELECT brand\_name,  receipts\_count

 FROM RankedBrands

WHERE brand\_rank <= 5;

* **How does the ranking of the top 5 brands by receipts scanned for the recent month compare to the ranking for the previous month?**

WITH RankedBrands AS

(

    SELECT b.name AS brand\_name, COUNT(r.\_id) AS receipts\_count,

        DATE\_TRUNC('month', r.dateScanned) AS scan\_month,

        DENSE\_RANK() OVER (PARTITION BY DATE\_TRUNC('month', r.dateScanned) ORDER BY COUNT(r.\_id) DESC) AS brand\_rank

    FROM Brand b

    JOIN RewardsReceiptItemList r ON b.barcode = r.barcode

    WHERE

        DATE\_TRUNC('month', r.dateScanned) IN (DATE\_TRUNC('month', CURRENT\_DATE), DATE\_TRUNC('month', CURRENT\_DATE - INTERVAL '1' MONTH))

    GROUP BY b.name, scan\_month

)

SELECT brand\_name,

    MAX(CASE WHEN scan\_month = DATE\_TRUNC('month', CURRENT\_DATE) THEN brand\_rank END) AS current\_month\_rank,

    MAX(CASE WHEN scan\_month = DATE\_TRUNC('month', CURRENT\_DATE - INTERVAL '1' MONTH) THEN brand\_rank END) AS previous\_month\_rank

FROM RankedBrands

WHERE brand\_rank <= 5

GROUP BY Brand\_name;

* **When considering *average spend* from receipts with 'rewardsReceiptStatus’ of ‘Accepted’ or ‘Rejected’, which is greater?**

SELECT

    CASE

        WHEN rewardsReceiptStatus = 'Accepted' THEN 'Accepted'

        WHEN rewardsReceiptStatus = 'Rejected' THEN 'Rejected'

    END AS status,

    AVG(totalSpent) AS average\_spend

FROM Receipts

WHERE rewardsReceiptStatus IN ('Accepted', 'Rejected')

GROUP BY rewardsReceiptStatus;

**If you want a single result indicating which status has a greater average spend, you can further modify the query:**

SELECT

    MAX(status) AS greater\_status,

    MAX(average\_spend) AS greater\_average\_spend

FROM

(

    SELECT

        CASE

            WHEN rewardsReceiptStatus = 'Accepted' THEN 'Accepted'

            WHEN rewardsReceiptStatus = 'Rejected' THEN 'Rejected'

        END AS status,

        AVG(totalSpent) AS average\_spend

    FROM Receipts

    WHERE rewardsReceiptStatus IN ('Accepted', 'Rejected')

    GROUP BY rewardsReceiptStatus

) AS subquery;

* **When considering *total number of items purchased* from receipts with 'rewardsReceiptStatus’ of ‘Accepted’ or ‘Rejected’, which is greater?**

SELECT

    CASE

        WHEN rewardsReceiptStatus = 'Accepted' THEN 'Accepted'

        WHEN rewardsReceiptStatus = 'Rejected' THEN 'Rejected'

    END AS status,

    SUM(purchasedItemCount) AS total\_items\_purchased

FROM Receipts

WHERE rewardsReceiptStatus IN ('Accepted', 'Rejected')

GROUP BY rewardsReceiptStatus;

**If you want a single result indicating which status has a greater total number of items purchased, you can further modify the query:**

SELECT

    MAX(status) AS greater\_status,

    MAX(total\_items\_purchased) AS greater\_total\_items\_purchased

FROM

(

    SELECT

        CASE

            WHEN rewardsReceiptStatus = 'Accepted' THEN 'Accepted'

            WHEN rewardsReceiptStatus = 'Rejected' THEN 'Rejected'

        END AS status,

        SUM(purchasedItemCount) AS total\_items\_purchased

    FROM Receipts

    WHERE rewardsReceiptStatus IN ('Accepted', 'Rejected')

    GROUP BY rewardsReceiptStatus

) AS subquery;

* **Which brand has the most *spend* among users who were created within the past 6 months?**

WITH RecentUsers AS

(

    SELECT  \_id AS user\_id, createdDate

    FROM Users

    WHERE createdDate >= CURRENT\_DATE - INTERVAL '6' MONTH

),

UserBrandSpend AS

(

    SELECT u.user\_id, r.totalSpent, b.name AS brand\_name

    FROM RecentUsers u

    JOIN Receipts r ON u.user\_id = r.userId

    JOIN RewardsReceiptItemList ri ON r.\_id = ri.rewardsReceiptId

    JOIN Brand b ON ri.barcode = b.barcode

)

SELECT brand\_name, SUM(totalSpent) AS total\_spend

FROM UserBrandSpend

GROUP BY brand\_name

ORDER BY total\_spend DESC

LIMIT 1;

* **Which brand has the most *transactions* among users who were created within the past 6 months?**

WITH RecentUsers AS

(

    SELECT  \_id AS user\_id, createdDate

    FROM Users

    WHERE createdDate >= CURRENT\_DATE - INTERVAL '6' MONTH

),

UserBrandTransactions AS

(

    SELECT u.user\_id, r.\_id AS receipt\_id, b.name AS brand\_name

    FROM RecentUsers u

    JOIN Receipts r ON u.user\_id = r.userId

    JOIN RewardsReceiptItemList ri ON r.\_id = ri.rewardsReceiptId

    JOIN Brand b ON ri.barcode = b.barcode

)

SELECT brand\_name, COUNT(DISTINCT receipt\_id) AS transaction\_count

FROM UserBrandTransactions

GROUP BY brand\_name

ORDER BY  transaction\_count DESC

LIMIT 1;