

### 1. What are the top 5 brands by receipts scanned for most recent month?

# Assuming recent month means in last 6 months

```
WITH brand_rnk_recent AS(
    SELECT b.name, RANK() OVER(ORDER BY COUNT(*) desc) AS rnk
    FROM ReceiptsItem i
    RIGHT JOIN Receipts r
    USING(Receipts_id)
    JOIN Brand b
    ON i.brand_id = b.brand_id
    AND i.barcode = b.barcode
    WHERE DATEDIFF(CURRENT_DATE(), r.dateScanned ) < 180
    GROUP BY 1
)
```

```
SELECT name
FROM brand_rnk_recent
WHERE rnk <= 5
ORDER BY rnk
```

# This query will return the top 5 brand's name for most recent month.

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

#According to (1) we get the top 5 brands by receipts scanned for the recent month. As a result, we only need to create the top 5 brands by receipts scanned for the previous month.

```
WITH brand_rnk_previous_month AS(
    SELECT b.name, RANK() OVER(ORDER BY COUNT(*) desc) AS rnk
    FROM ReceiptsItem i
    RIGHT JOIN Receipts r
    USING(Receipts_id)
    JOIN Brand b
    ON i.brand_id = b.brand_id
    AND i.barcode = b.barcode
    WHERE DATEDIFF(CURRENT_DATE(), r.dateScanned ) < 30
    GROUP BY 1
)
```

```
SELECT name
FROM brand_rnk_previous_month
WHERE rnk <= 5
ORDER BY rnk
```

#Compare brand\_rnk\_recent and brand\_rnk\_previous\_month to see which one is greater.

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

```
# Calculate the average spend from receipts with 'rewardsReceiptStatus' of 'Accepted'
SELECT avg(totalspent) AS avg_spent_accepted
FROM Receipts
WHERE 'rewardsReceiptStatus' == 'Accepted';
```

```
# Calculate the average spend from receipts with 'rewardsReceiptStatus' of 'Rejected'
SELECT avg(totalspent) AS avg_spent_rejected
FROM Receipts
WHERE 'rewardsReceiptStatus' == 'Rejected';
```

#Compare avg\_spent\_accepted and avg\_spent\_rejected to see which one is greater.

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

```
# Calculate the total number of items purchased from receipts with 'rewardsReceiptStatus' of 'Accepted'
SELECT SUM(purchaseItemCount) AS total_item_count_accepted
FROM Receipts
WHERE 'rewardsReceiptStatus' == 'Accepted';
```

```
# Calculate the total number of items purchased from receipts with 'rewardsReceiptStatus' of 'Rejected'
SELECT SUM(purchaseItemCount) AS total_item_count_rejected
FROM Receipts
WHERE 'rewardsReceiptStatus' == 'Rejected';
```

#Compare total\_item\_count\_accepted and total\_item\_count\_rejected to see which one is greater.

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

#First join the full table with cte and sum up the total spent.

```
WITH full_table AS(
    SELECT b.name, r.total_spent, u.createDate
    FROM Brand b
    JOIN ReceiptItem i
    ON i.brand_id = b.brand_id
    AND i.barcode = b.barcode
    JOIN Receipts r
    USING(receipts_id)
    JOIN User u
    USING(user_id)
)

SELECT b.name, SUM(total_spent) AS total_spent_by_brand
FROM full_table
WHERE DATEDIFF(CURRENT_DATE(), createDate ) < 180
GROUP BY 1
ORDER BY 2 desc
LIMIT 1
```

# The query will return the brand that has the most spend among users who were created within the past 6 months.