**Second: provide SQL queries**

**Answer three of the following questions with at least one question coming from the closed-ended and one from the open-ended question set. Each question should be answered using one query. Closed-ended questions:**

**What are the top 5 brands by receipts scanned among users 21 and over?**   
I have assumed that:

Users’ ages are calculated based on birth\_date.

TIMESTAMPDIFF(YEAR, u.birth\_date, CURDATE()) gets the current age.

receipt\_id represents a scanned receipt.

Brands are linked via the barcode in the Products table.  
**Query:**

SELECT

p.brand,

COUNT(t.receipt\_id) AS total\_receipts

FROM Transactions t

JOIN Users u ON t.user\_id = u.id

JOIN Products p ON t.barcode = p.barcode

WHERE TIMESTAMPDIFF(YEAR, u.birth\_date, CURDATE()) >= 21

GROUP BY p.brand

ORDER BY total\_receipts DESC

LIMIT 5;

**What is the percentage of sales in the Health & Wellness category by generation**?  
I have assumed that:

category\_1 contains high-level product categories, and "Health & Wellness" is one of them.

Generations are inferred from birth\_date.

Total sales percentage is calculated within the subquery.

**Query:**

SELECT

u.birth\_date,

(SUM(t.sale) \* 100.0) /

(SELECT SUM(sale) FROM Transactions t JOIN Products p ON t.barcode = p.barcode WHERE p.category\_1 = 'Health & Wellness')

AS sales\_percentage

FROM Users u

JOIN Transactions t ON u.id = t.user\_id

JOIN Products p ON t.barcode = p.barcode

WHERE p.category\_1 = 'Health & Wellness'

GROUP BY u.birth\_date;

**Open-ended questions: for these, make assumptions and clearly state them when answering the question.**

**Who are Fetch’s power users?**

I have assumed that :

Power users are those who **frequently scan receipts (≥50 times)** and **have high total spending (≥$1,000).**

Spending is recorded in the sale column of the Transactions table.

**Query:**

SELECT

u.id AS user\_id,

COUNT(t.receipt\_id) AS total\_receipts,

SUM(t.sale) AS total\_spent

FROM Users u

JOIN Transactions t ON u.id = t.user\_id

GROUP BY u.id

HAVING COUNT(t.receipt\_id) >= 50 AND SUM(t.sale) >= 1000

ORDER BY total\_receipts DESC, total\_spent DESC;