

Query

```
SELECT
  query_name,
  ROUND(AVG(rating / position), 2) AS quality,
  ROUND(AVG(IF(rating < 3, 1, 0) * 100), 2) AS poor_query_percentage
FROM Queries
GROUP BY query_name;
```

Objective

For each query_name, calculate:

1. The **quality score** as the average of rating / position.
 2. The **percentage of poor queries** (where rating < 3).
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Detailed Explanation

1. FROM Queries

- The data is coming from the Queries table, which likely includes columns:
 - query_name – name or identifier of the query.
 - rating – some score (e.g., 1 to 5) for query quality.
 - position – perhaps the rank or order in which the result appears.
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2. ROUND(AVG(rating / position), 2) AS quality

- This calculates the **quality score** for each query_name.
 - rating / position implies that higher ratings and earlier positions (lower numbers) are better.
 - Taking the **average** across all rows gives an overall quality metric.
 - ROUND(..., 2) makes the output readable by rounding to 2 decimal places.
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3. ROUND(AVG(IF(rating < 3, 1, 0) * 100), 2) AS poor_query_percentage

- This calculates the **percentage of poor queries** for each query_name.

Breaking it down:

- IF(rating < 3, 1, 0) → converts each row into:
 - 1 if the query is **poor** (rating < 3),
 - 0 otherwise.

- AVG(...) gives the **proportion** of poor queries.
 - Multiplying by 100 converts this to a percentage.
 - ROUND(..., 2) formats it to 2 decimal places.
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Key SQL Concepts You Learned Here

Concept	Description
AVG(rating / position)	You can take averages of expressions, not just raw column values.
IF(condition, then, else)	Conditional logic in SQL. Used to transform rows based on a condition.
AVG(IF(...))	This pattern is common in computing percentages or ratios in SQL.
ROUND(value, decimals)	Used to control output format—important for reporting.
GROUP BY	Groups data by query_name to perform per-query aggregations.

Example Output

query_name	quality	poor_query_percentage
search	1.85	40.00
product	2.11	12.50

Summary for Revision

Element	Purpose
rating / position	Quality measure—higher is better.
IF(rating < 3, 1, 0)	Flags poor-rated queries.
AVG(IF(...))	Calculates the proportion of flagged queries.
* 100	Converts fraction to a percentage.
ROUND(..., 2)	Rounds numbers to two decimal places.

Real-World Analogy

This type of analysis is typical in **search engine analytics**, **recommendation systems**, or **customer feedback reporting**, where you assess both the quality and failure rate of a service feature.