
SQL Subqueries

SQL Subqueries with IN Nested Inside WHERE

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SQL Subqueries with IN Nested Inside WHERE

subqueries

queries embedded in a query

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SQL Subqueries with IN Nested Inside WHERE

- subqueries

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SQL Subqueries with IN Nested Inside WHERE

subqueries = inner queries

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- they are part of *another* query, called an **outer query**

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SQL Subqueries with IN Nested Inside WHERE

subqueries = inner queries = nested queries = inner select

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subqueries = inner queries = nested queries = inner select

queries embedded in a query

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  = outer select

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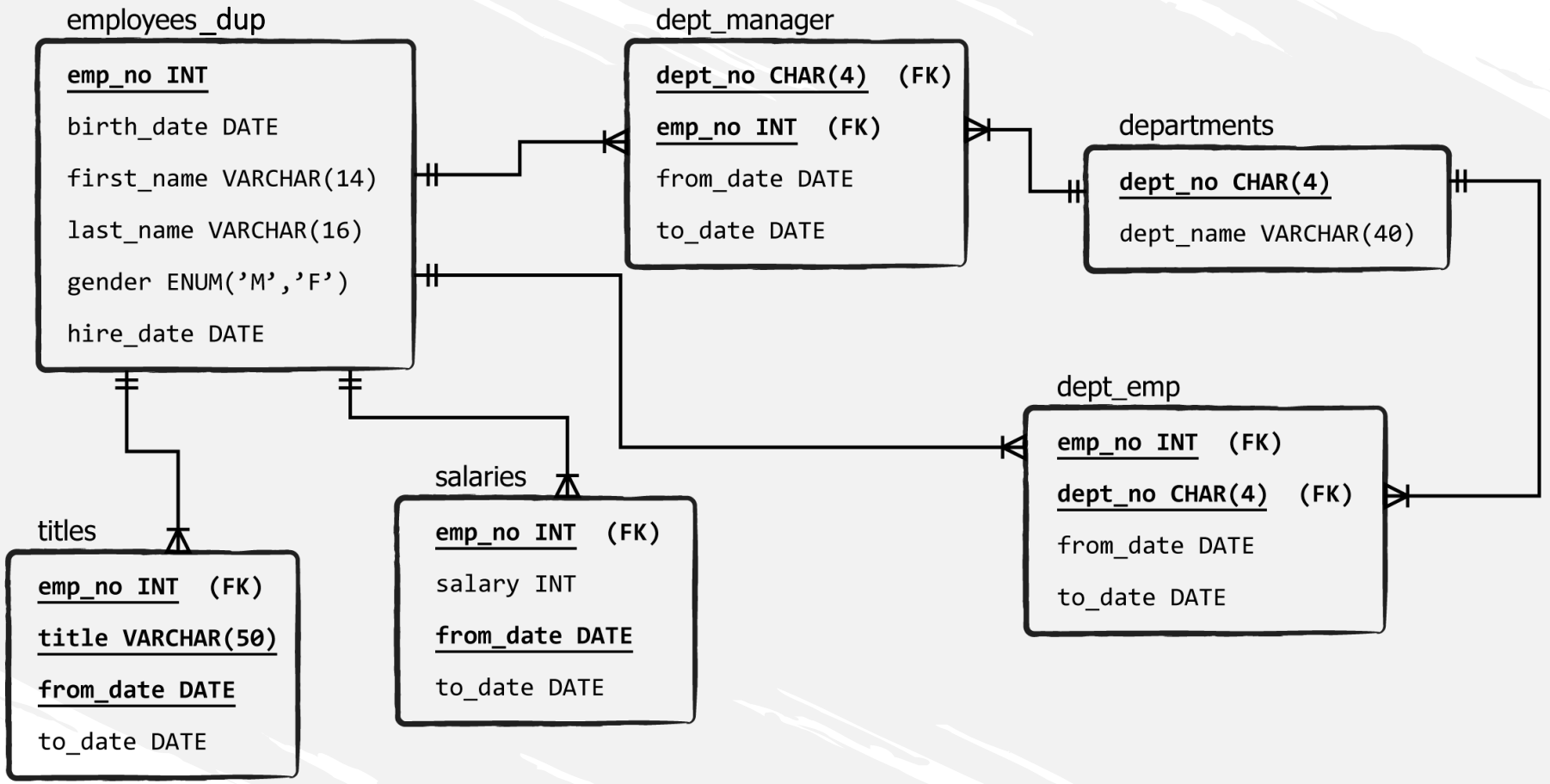
SQL Subqueries with IN Nested Inside WHERE



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SQL Subqueries with IN Nested Inside WHERE

- subqueries

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SQL Subqueries with IN Nested Inside WHERE

subqueries

- a subquery should *always* be placed within parentheses

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SQL Subqueries with IN Nested Inside WHERE

1) the SQL engine starts by running the *inner query*

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SQL Subqueries with IN Nested Inside WHERE

- 1) the SQL engine starts by running the *inner query*
- 2) then it uses its returned output, which is intermediate, to execute the *outer query*

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SQL Subqueries with IN Nested Inside WHERE

- a subquery may return *a single value (a scalar)*, *a single row*, *a single column*, or *an entire table*

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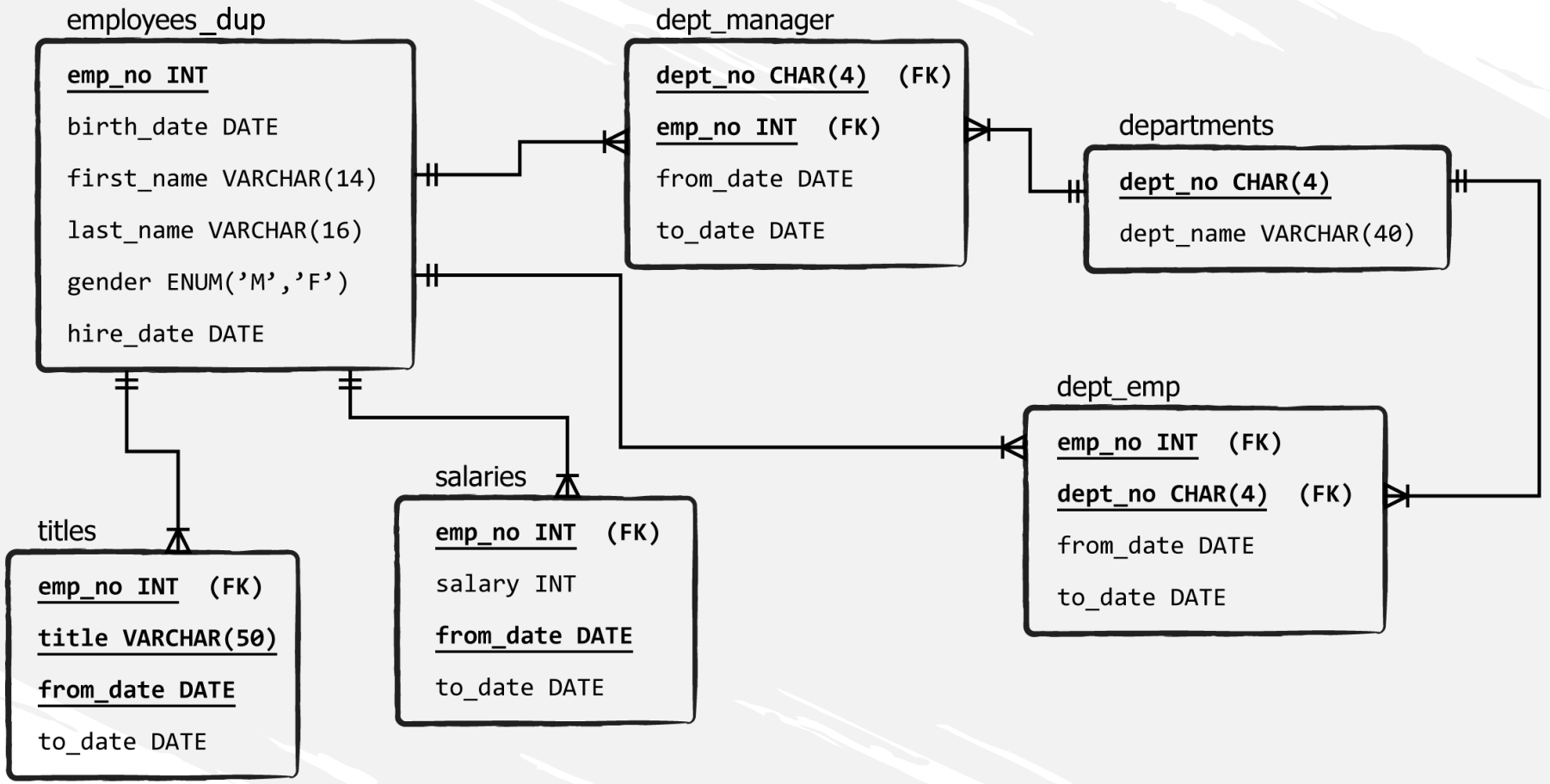

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- a subquery may return *a single value (a scalar)*, *a single row*, *a single column*, or *an entire table*

  - you can have a lot more than one subquery in your outer query

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SQL Subqueries with IN Nested Inside WHERE

- a subquery may return *a single value (a scalar), a single row, a single column*, or *an entire table*

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  - it is possible to nest *inner queries within other inner queries*

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    in that case, the SQL engine would execute the *innermost query first*

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    in that case, the SQL engine would execute the *innermost query first*, and then *each subsequent query*, until it runs the *outermost query last*

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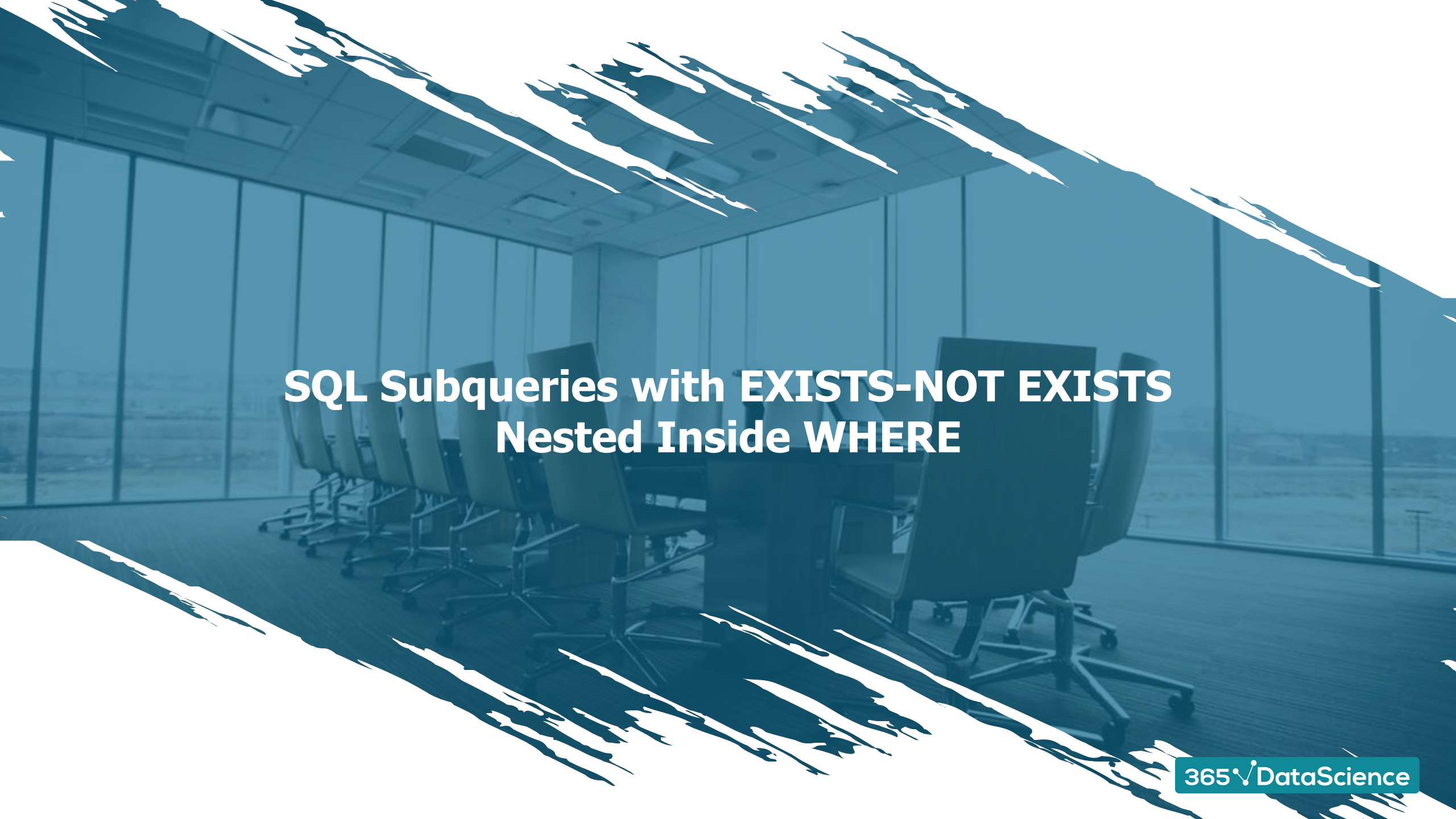

SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

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checks whether certain row values are found within a subquery

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- this check is conducted *row by row*

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if a row value of a subquery **exists**

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if a row value of a subquery **exists** → **TRUE**

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if a row value of a subquery **exists** → **TRUE** → *the corresponding record* of the outer query is extracted

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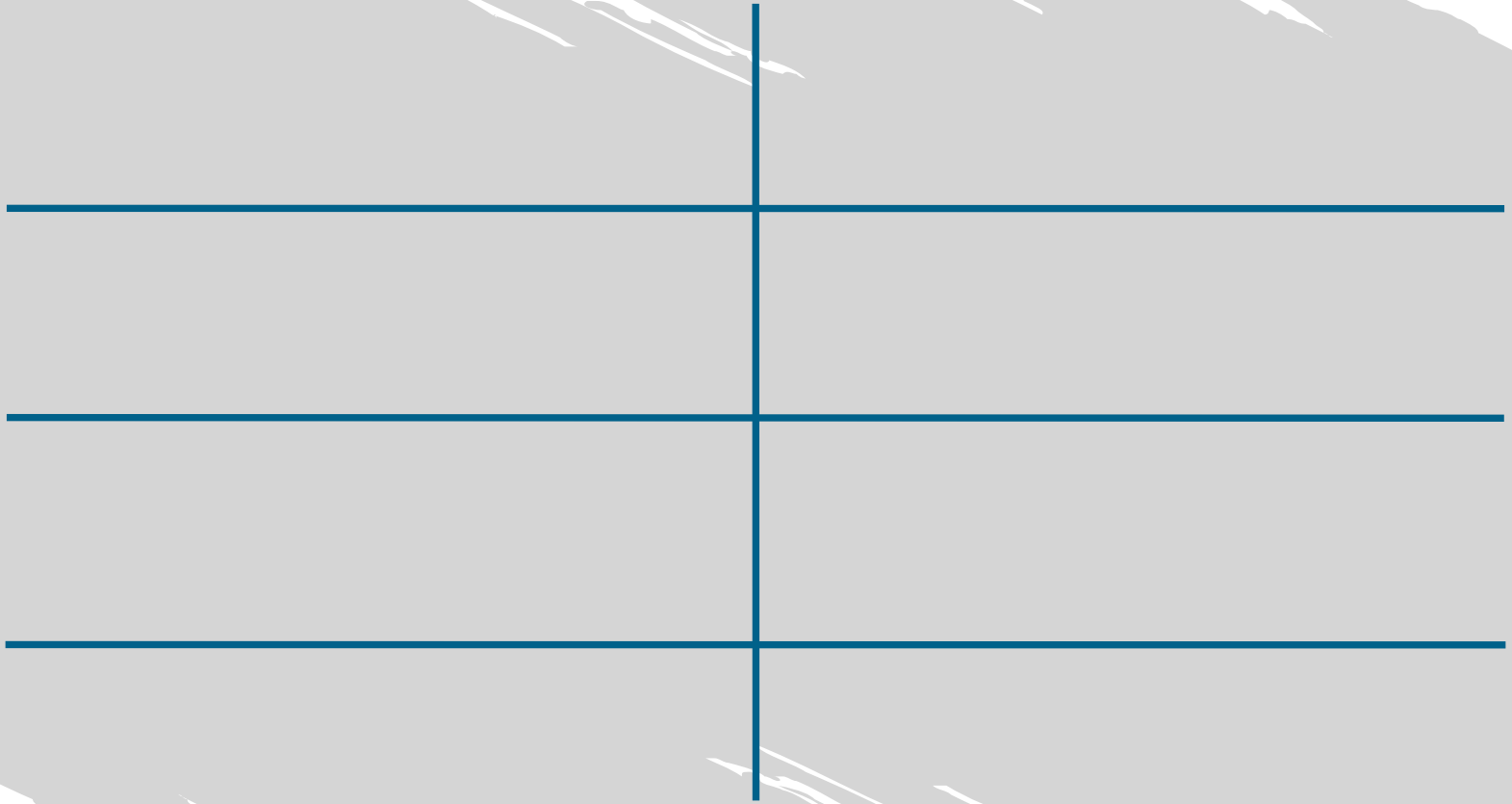

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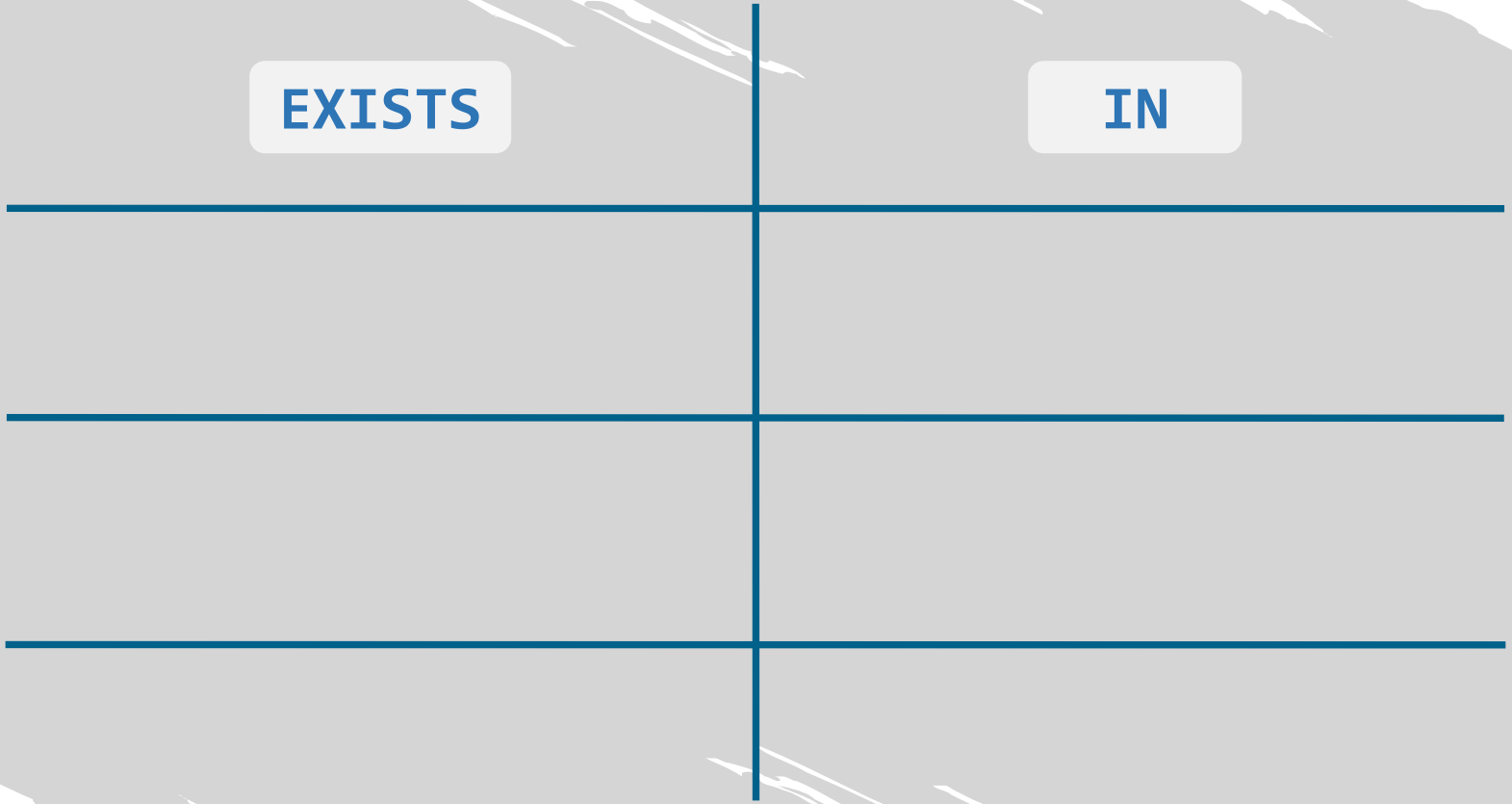

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

EXISTS	IN
tests row values for existence	

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

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tests row values for existence	searches among values

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quicker in retrieving large amounts of data	

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

EXISTS	IN
tests row values for existence	searches among values
quicker in retrieving large amounts of data	faster with smaller datasets

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

- ORDER BY (nested queries)

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  it is more professional to apply ORDER BY in the outer query

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

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  it is more professional to apply ORDER BY in the outer query

  - it is more acceptable logically to sort the *final* version of your dataset

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

- some, though not all, nested queries can be rewritten using joins, which are more efficient in general

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

- some, though not all, nested queries can be rewritten using joins, which are more efficient in general
- this is true particularly for inner queries using the WHERE clause

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

- subqueries:

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

subqueries:

- allow for better *structuring* of the outer query

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  - thus, each inner query can be thought of in isolation

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  - *hence the name of SQL – Structured Query Language!*

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subqueries:

- allow for better *structuring* of the outer query
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- in some situations, the use of subqueries is much *more intuitive* compared to the use of complex joins and unions

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SQL Subqueries with EXISTS-NOT EXISTS Nested Inside WHERE

subqueries:

- allow for better *structuring* of the outer query
  - thus, each inner query can be thought of in isolation
  - *hence the name of SQL – Structured Query Language!*

- in some situations, the use of subqueries is much *more intuitive* compared to the use of complex joins and unions

- many users prefer subqueries simply because they offer *enhanced code readability*

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SQL Subqueries Nested in SELECT and FROM

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You have advanced with SQL *a lot* at this point!

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SQL Subqueries Nested in SELECT and FROM

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SQL Subqueries Nested in SELECT and FROM

In this lecture:

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SQL Subqueries Nested in SELECT and FROM

In this lecture:

challenging task

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SQL Subqueries Nested in SELECT and FROM

In this lecture:

+

challenging task

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SQL Subqueries Nested in SELECT and FROM

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exercise

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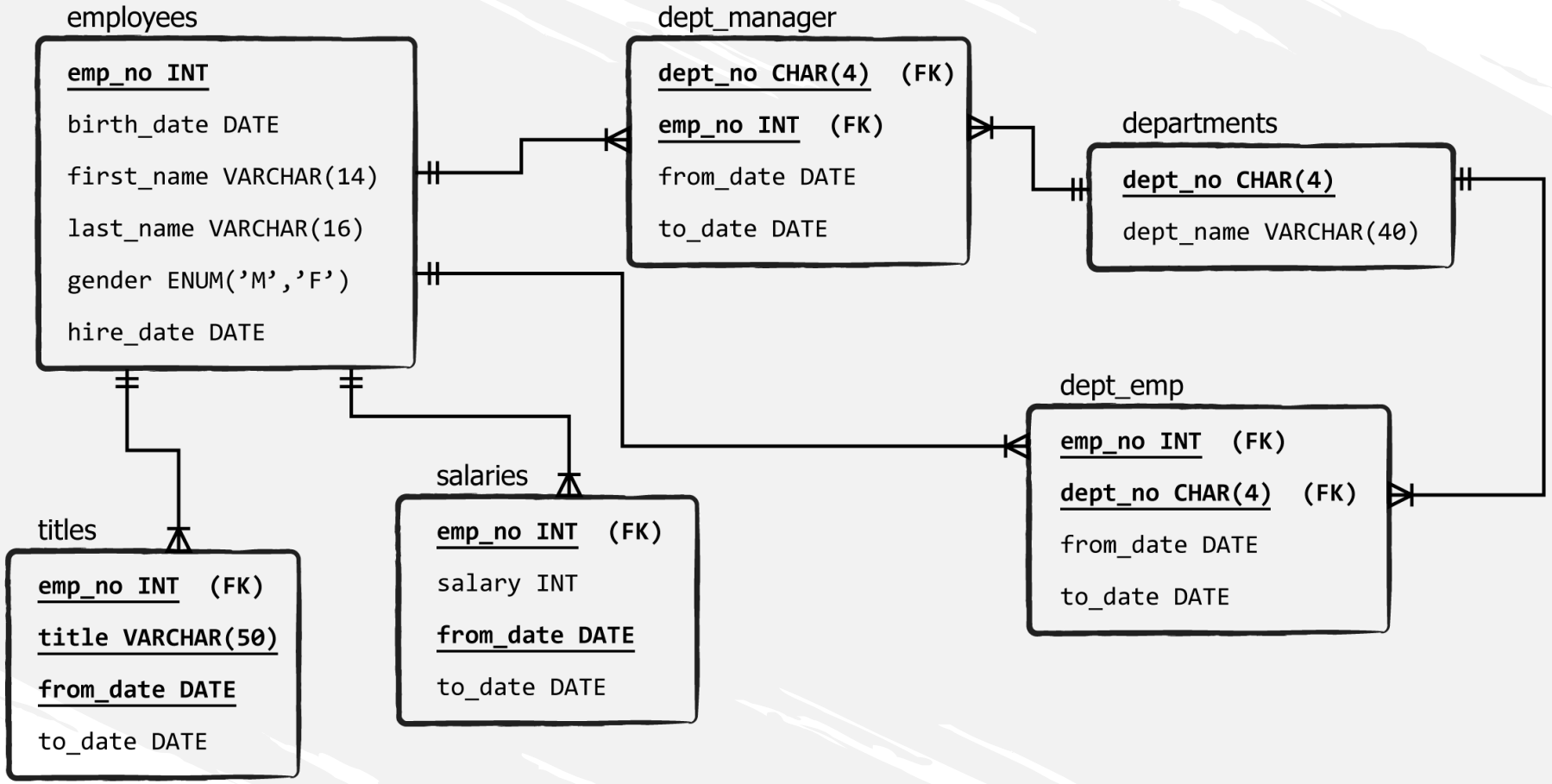
SQL Subqueries Nested in SELECT and FROM



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