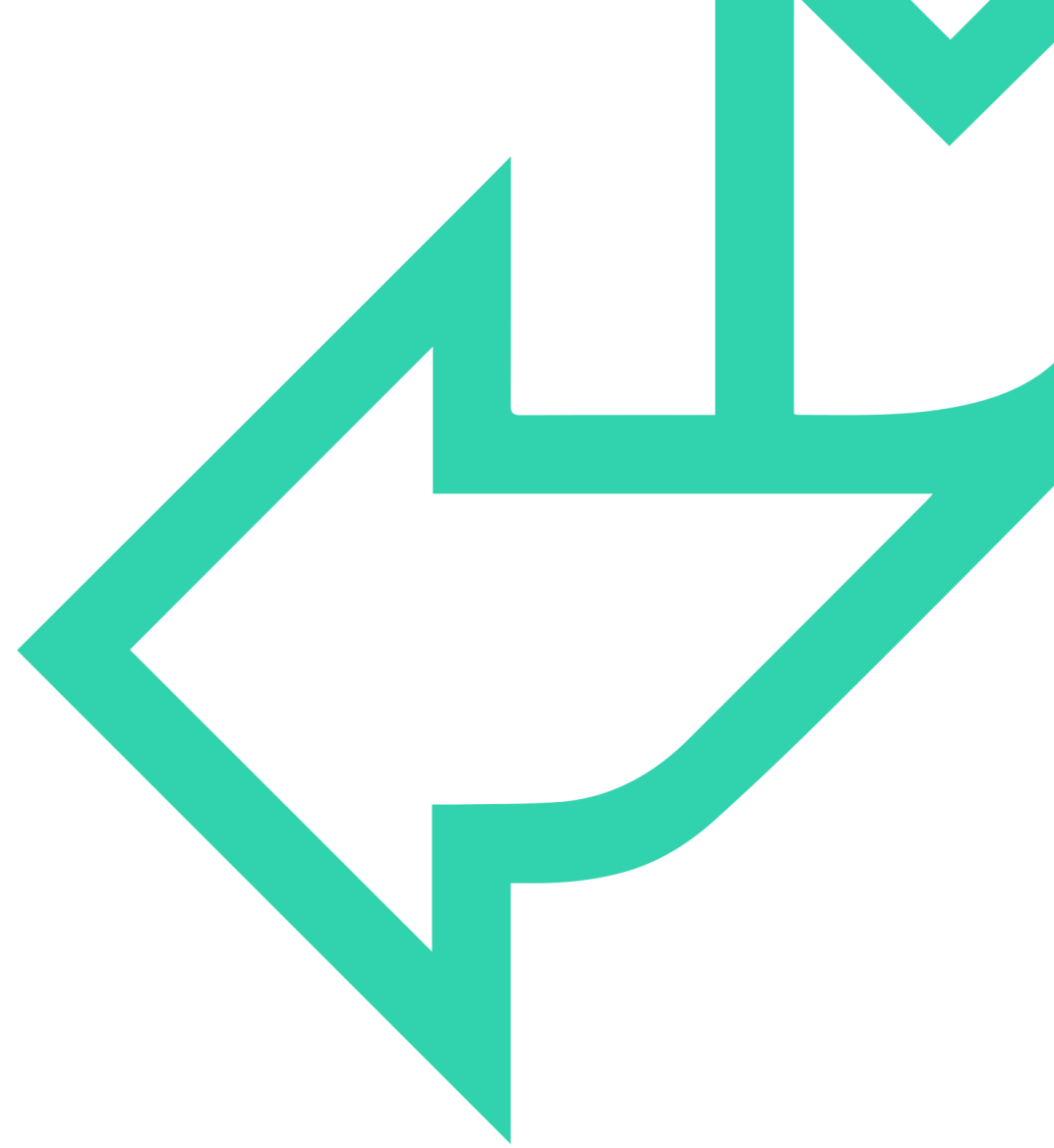




SQL: **Retrieve Data**

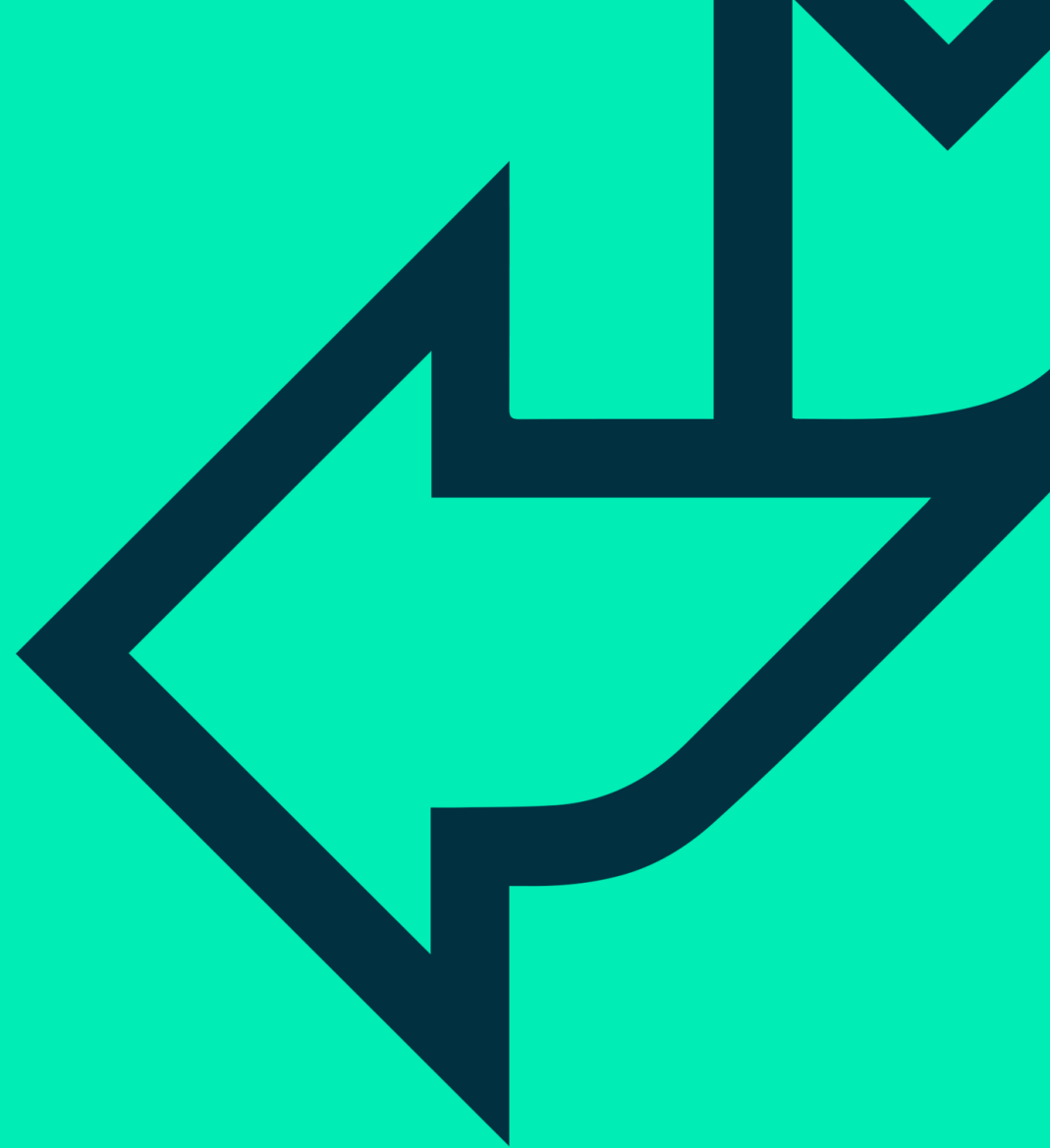




SQL

Lesson Objectives and Contents

- Filtering columns
- Calculated columns
- Aliases



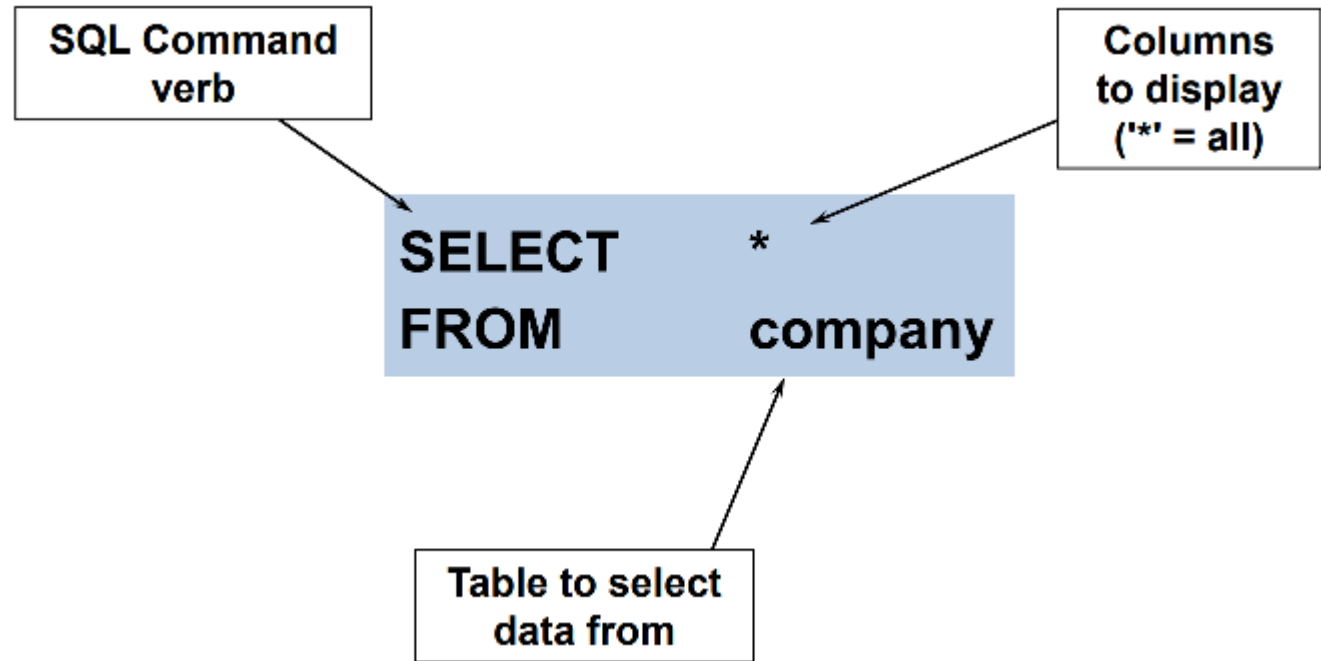


SELECT STATEMENT

SELECT <<field(s)>>
FROM <<table(s)>>
WHERE <<condition(s)>>
GROUP BY <<field(s)>>
HAVING <<condition(s)>>
ORDER BY <<field(s)>>



SELECT STATEMENT





SELECT STATEMENT FORMAT

```
SELECT      *      -- all columns
FROM        salesperson
```

Comment

A diagram showing a rectangular box labeled 'Comment' with an arrow pointing to the comment '-- all columns' in the SQL code snippet.

- Use new lines, tab keys and indentation to make code readable.
- White space is ignored by the parser.
- Make use of comments, ignored by runtime engine.
- Case insensitive.



SPECIFYING COLUMNS

Columns to display

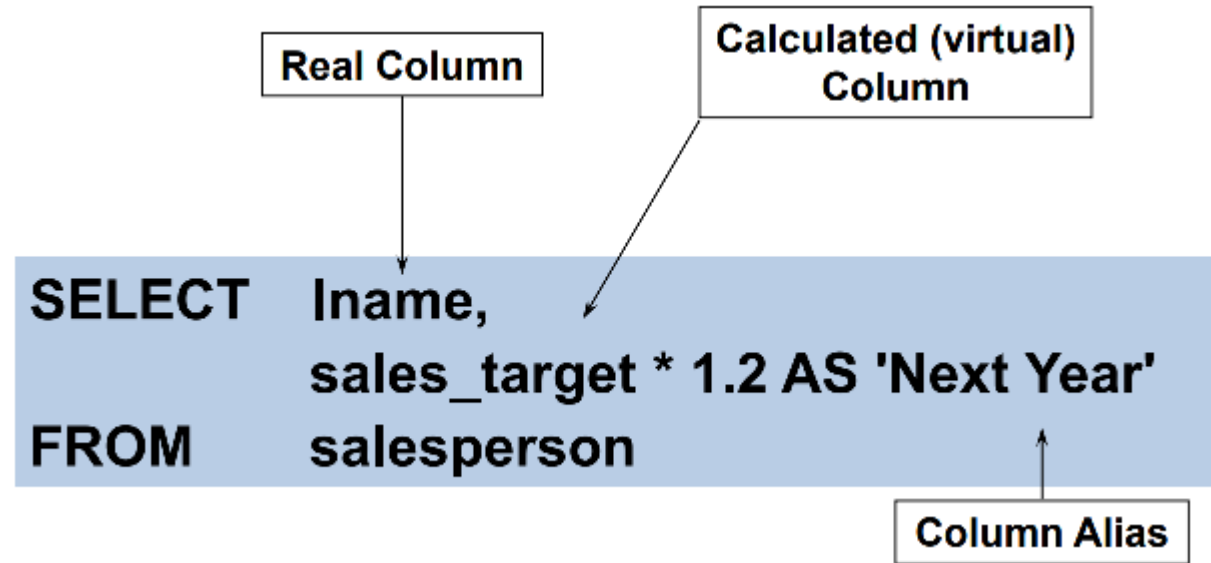
```
SELECT company_no, name, county  
FROM company
```

You have two choices:

- An '*', or else list the columns comma-separated.
- Columns may be listed in any order, but that is the order they are displayed left-to-right.



CALCULATED COLUMNS AND ALIASES



- **The 'AS' word can be omitted.**
 - ❖ Beware the risk of errors – if the comma between two column names is omitted, only the first will be displayed, and it will be named after the second (considered an alias).
- **The quotes can be omitted if there are no spaces in the alias name.**



OPERATIONS PRECEDENCE

When creating calculated columns, remember the BODMAS rules in mathematics. They are followed by SQL too.

B – Brackets first

O – Orders (powers, square roots, etc.)

DM – Division and Multiplication (left to right)

AS – Addition and Subtraction (left to right)

→ Division and multiplication rank equally.

→ Addition and subtraction rank equally.



SELECT DISTINCT

SELECT DISTINCT outputs only unique rows to the result set:

emp_no	dept_no	sales_target
10	1	23000
20	3	34500
30	2	12000
40	3	36900
50	1	12780
60	3	12650

salesperson

```
SELECT DISTINCT dept_no
FROM salesperson
```

result

dept_no
1
2
3



SELECT STATEMENT EXAMPLES

First create database Northwind from the provided script.

```
USE Northwind
```

```
-- SELECT * FROM TableName
```

```
SELECT * FROM Categories
```

```
-- SELECT col1, ..., colN FROM TableName
```

```
SELECT CategoryName, Description  
FROM Categories
```

```
-- SELECT col1, ..., coln, expr1, ..., exprM FROM TableName
```

```
SELECT ProductID, ProductName,  
(UnitsInStock+UnitsOnOrder)*UnitPrice AS Revenue  
FROM Products
```

alias

```
-- SELECT DISTINCT col1, ..., colN FROM TableName
```

```
SELECT DISTINCT City, Country  
FROM Customers
```