



# SQL BASICS

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- ▶ SQL = „Structured Query Language“
- ▶ Sprache zum Umgang mit Datenbanken

books

id	title	author	pages	genre	release_year
1	Clean Code	1	464	1	2008
2	Clean Coder	1	242	1	2011
3	Die 13 1/2 Leben des Käpt'n Blaubär	2	720	2	2019
4	1984	3	384	3	1949
5	Die Stadt der Träumenden Bücher	2	464	2	2004

authors

id	first name	second name
1	Robert C.	Martin
2	Walter	Moers
3	George	Orwell

genres

id	name
1	nonfiction
2	fantasy
3	distopian

EINFACHSTE ABFRAGEN - SELECT FROM

Allgemeiner Aufbau:

SELECT <Columns>

FROM <Table>;

SELECT \*

FROM books;

id	title	author	pages	genre	release_year
1	Clean Code	1	464	1	2008
2	Clean Coder	1	242	1	2011
3	Die 13 1/2 Leben des Käpt'n Blaubär	2	720	2	2019
4	1984	3	384	3	1949
5	Die Stadt der Träumenden Bücher	2	464	2	2004

SELECT title, pages, release\_year

FROM books;

title	pages	release_year
Clean Code	464	2008
Clean Coder	242	2011
Die 13 1/2 Leben des Käpt'n Blaubär	720	2019
1984	384	1949
Die Stadt der Träumenden Bücher	464	2004

FILTERN - WHERE

Allgemeiner Aufbau:

```
SELECT <Columns>
FROM <Table>
WHERE <Condition>;
```

id	title	author	pages	genre	release_year
1	Clean Code	1	464	1	2008
2	Clean Coder	1	242	1	2011
3	Die 13 1/2 Leben des Käpt'n Blaubär	2	720	2	2019
4	1984	3	384	3	1949
5	Die Stadt der Träumenden Bücher	2	464	2	2004

```
SELECT *
FROM books
WHERE release_year > 2004
AND title LIKE "%r";
```

id	title	author	pages	genre	release_year
2	Clean Coder	1	242	1	2011
3	Die 13 1/2 Leben des Käpt'n Blaubär	2	720	2	2019

## FILTERN - CONDITIONS

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- ▶ Mehrere Conditions verknüpfbar durch AND / OR (und Klammern):  
... WHERE (release\_year > 2004 AND title LIKE "%r") OR pages = 123;
- ▶ Conditions mit weiteren Operatoren:
  - ▶ NOT release\_year = 2004  
release\_year <> 2004
  - ▶ pages BETWEEN 10 AND 200
  - ▶ id IN (1, 2, 3)  
title NOT IN ('1984', 'Clean Code')
  - ▶ title LIKE "a\_\_%" (Wildcards)
  - ▶ pages IS NULL  
pages IS NOT NULL

SORTIEREN - ORDER BY

Allgemeiner Aufbau:

SELECT <Columns>

FROM <Table>

ORDER BY <Column> ASC|DESC;

id	title	author	pages	genre	release_year
1	Clean Code	1	464	1	2008
2	Clean Coder	1	242	1	2011
3	Die 13 1/2 Leben des Käpt'n Blaubär	2	720	2	2019
4	1984	3	384	3	1949
5	Die Stadt der Träumenden Bücher	2	464	2	2004

SELECT title, pages, genre

FROM books

ORDER BY genre DESC, pages;

title	pages	genre
1984	384	3
Die Stadt der Träumenden Bücher	464	2
Die 13 1/2 Leben des Käpt'n Blaubär	720	2
Clean Coder	242	1
Clean Code	464	1

TABELLEN VERBINDEN - JOIN

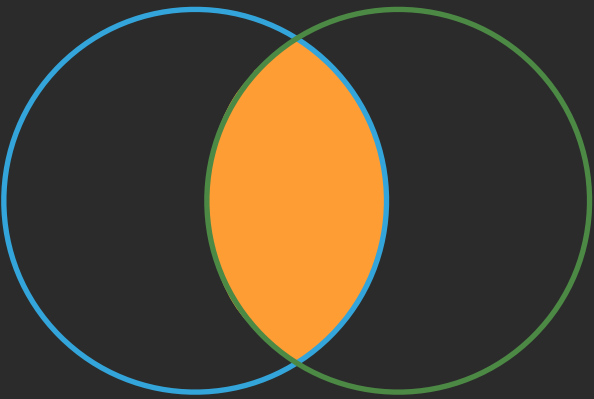
persons

name	fav_dish
Max	3
Gundula	1
Horst	2
Gertrude	6

dishes

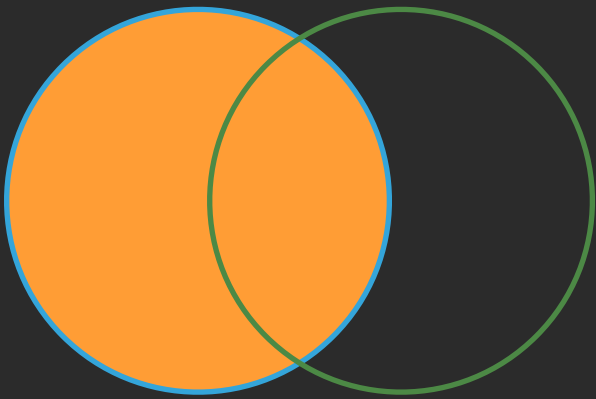
id	name
1	Pasta
2	Döner
3	Pizza
4	Pommes

SELECT \* FROM persons  
INNER JOIN dishes  
ON persons.fav\_dish = dishes.id



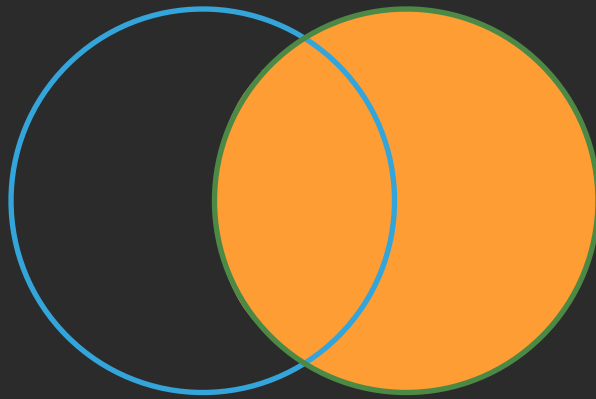
name	fav_dish	id	name
Max	3	3	Pizza
Gundula	1	1	Pasta
Horst	2	2	Döner

SELECT \* FROM persons  
LEFT JOIN dishes  
ON persons.fav\_dish = dishes.id



name	fav_dish	id	name
Max	3	3	Pizza
Gundula	1	1	Pasta
Horst	2	2	Döner
Gertrude	6		

SELECT \* FROM persons  
RIGHT JOIN dishes  
ON persons.fav\_dish = dishes.id



name	fav_dish	id	name
Max	3	3	Pizza
Gundula	1	1	Pasta
Horst	2	2	Döner
		4	Pommes

