Arbeitsblatt JOINS

Natural Join (Equijoin)

select emp.ENAME,dept.DNAME from emp, dept where emp.deptno=dept.DEPTNO;

oder

select d.deptno,e.ENAME,d.DNAME from emp e, dept d where e.deptno=d.DEPTNO;

oder

select emp.ENAME,dept.DNAME from emp NATURAL Join dept;

Bsp:

Ausgabe von playerno, name und amount?

select playerno, name, amount

from players natural join penalties;

oder

select players.playerno, name, amount from

players, penalties where players.playerno=

penalties.PLAYERNO;

Ing.Mag. Tumfart Johannes

Arbeitsblatt JOINS

Ausgabe von playerno, name und amount, wobei gleiche Spieler zusammengefasst werden sollen.

select playerno, name, sum(amount) amount from players natural join penalties group by name,playerno;

Cross JOIN (karthesisches Produkt)

select * from dept,emp;   oder

select * from emp cross join dept;

USING:

select emp.ENAME,dept.DNAME from emp Join dept using (deptno);

oder

select emp.ENAME,dept.DNAME from emp

Join dept using (deptno,deptno);

on:

select emp.ENAME,dept.DNAME from emp

Join dept on (dept.deptno=emp.deptno);

oder

select emp.ENAME,dept.DNAME from emp, dept

Arbeitsblatt JOINS

where emp.deptno=dept.DEPTNO;

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	17.12.80	800	(null)	20
2	7499	ALLEN	SALESMAN	7698	20.02.81	1600	300	30
3	7521	WARD	SALESMAN	7698	22.02.81	1250	500	30
4	7566	JONES	MANAGER	7839	02.04.81	2975	(null)	20
5	7654	MARTIN	SALESMAN	7698	28.09.81	1250	1400	30
6	7698	BLAKE	MANAGER	7839	01.05.81	2850	(null)	30
7	7782	CLARK	MANAGER	7839	09.06.81	2450	(null)	10
8	7788	SCOTT	ANALYST	7566	09.12.82	3000	(null)	20
9	7839	KING	PRESIDENT	(null)	17.11.81	5000	(null)	10
10	7844	TURNER	SALESMAN	7698	08.08.81	1500	0	30
11	7876	ADAMS	CLERK	7788	12.01.83	1100	(null)	20
12	7900	JAMES	CLERK	7698	03.12.81	950	(null)	30
13	7902	FORD	ANALYST	7566	03.12.81	3000	(null)	20
14	7934	MILLER	CLERK	7782	23.01.82	1300	(null)	10
15	8888	Tumfart	BIG BOSS	(null)	12.12.90	10000	1000	(null)

	DEPTNO	DNAME	LOC
1	10	ACCOUNTING	NEW YORK
2	20	RESEARCH	DALLAS
3	30	SALES	CHICAGO
4	40	OPERATIONS	BOSTON
5	50	EDUCATION	LEONDING

Arbeitsblatt JOINS
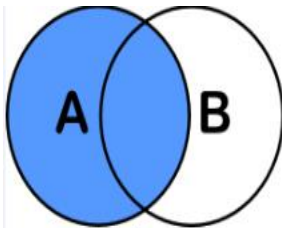

```
SELECT <auswahl>
FROM tabelleA A
LEFT JOIN tabelleB B
ON A.key = B.key
```
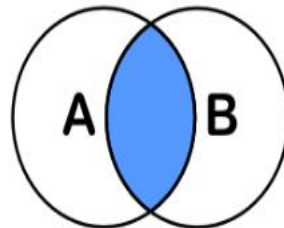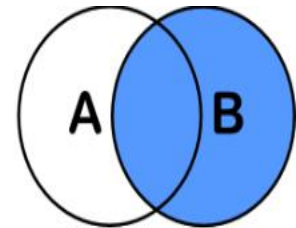
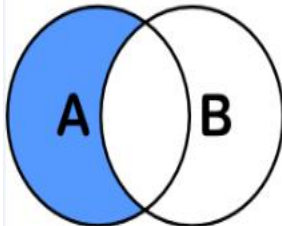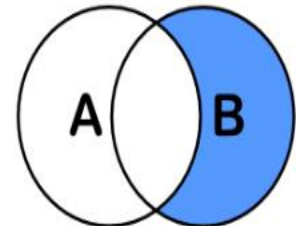CHEATSHEET
SQL JOINS


```
SELECT <auswahl>
FROM tabelleA A
INNER JOIN tabelleB B
ON A.key = B.key
```
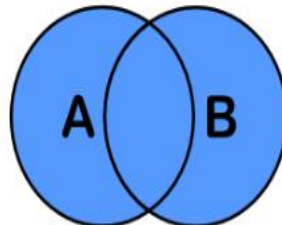


```
SELECT <auswahl>
FROM tabelleA A
RIGHT JOIN tabelleB B
ON A.key = B.key
```
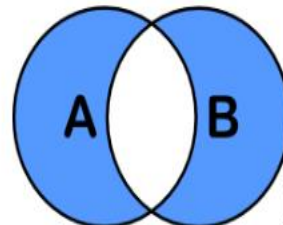


```
SELECT <auswahl>
FROM tabelleA A
LEFT JOIN tabelleB B
ON A.key = B.key
WHERE B.key IS NULL
```
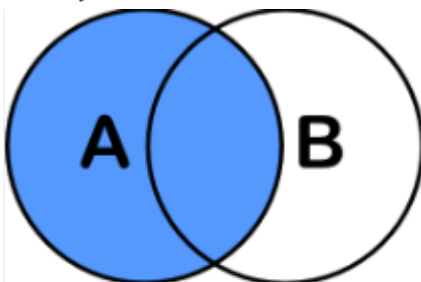


```
SELECT <auswahl>
FROM tabelleA A
FULL OUTER JOIN tabelleB B
ON A.key = B.key
```



```
SELECT <auswahl>
FROM tabelleA A
FULL OUTER JOIN tabelleB B
ON A.key = B.key
WHERE A.key IS NULL
OR B.key IS NULL
```



```
SELECT <auswahl>
FROM tabelleA A
RIGHT JOIN tabelleB B
ON A.key = B.key
WHERE A.key IS NULL
```
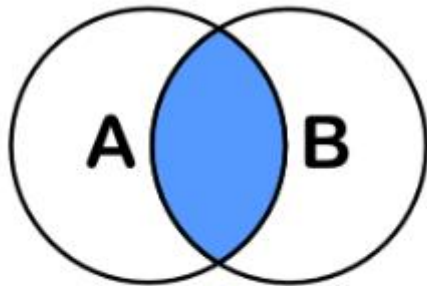
Left Join:


```
SELECT <auswahl>
FROM tabelleA A
LEFT JOIN tabelleB B
ON A.key = B.key
```

15 Zeilen

Select * from
emp e left join dept d
on e.deptno=d.deptno;
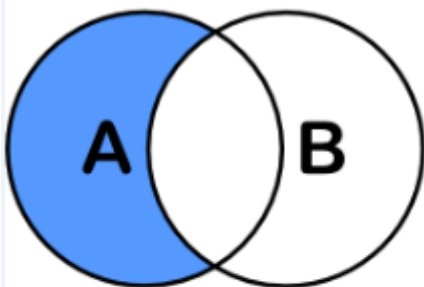
Arbeitsblatt JOINS

Inner Join:

A B

```
SELECT <auswahl>
FROM tabelleA A
INNER JOIN tabelleB B
ON A.key = B.key
```

14 Zeilen

Select * from
emp e inner join dept d
on e.deptno=d.deptno;

Left Join + NULL:

A B

```
SELECT <auswahl>
FROM tabelleA A
LEFT JOIN tabelleB B
ON A.key = B.key
WHERE B.key IS NULL
```
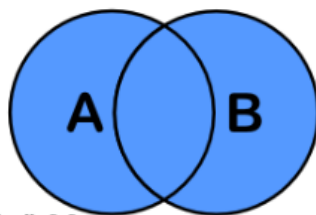
1 Zeile

Select * from
emp e left join dept d
on e.deptno=d.deptno
where d.deptno is null;

Full Outer Join:

A B

```
SELECT <auswahl>
FROM tabelleA A
FULL OUTER JOIN tabelleB B
ON A.key = B.key
```

17 Zeile

Select * from emp e f
ull outer join dept d
on e.deptno=d.deptno;

Ing.Mag. Tumfart Johannes

Arbeitsblatt JOINS

Full Outer Join + NULL:
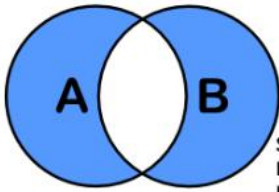

```
SELECT <auswahl>
FROM tabelleA A
FULL OUTER JOIN tabelleB B
ON A.key = B.key
WHERE A.key IS NULL
OR B.key IS NULL
```

3 Zeile

Select * from emp e full outer join dept d on e.deptno=d.deptno where d.deptno is null or e.deptno is null;

Arbeitsblatt JOINS

Right Join + NULL:
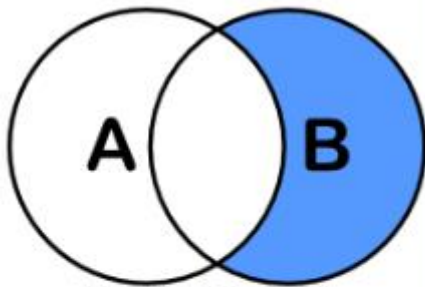
SELECT <auswahl>
FROM tabelleA A
RIGHT JOIN tabelleB B
ON A.key = B.key
WHERE A.key IS NULL

2 Zeilen

Select * from
emp e right join dept d
on e.deptno=d.deptno
where d.deptno is null;

Right Join:

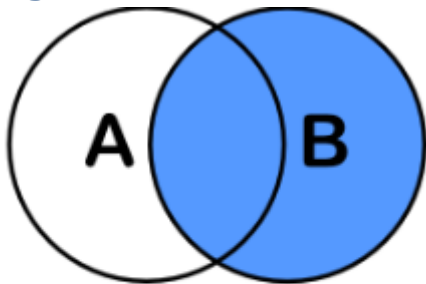SELECT <auswahl>
FROM tabelleA A
RIGHT JOIN tabelleB B
ON A.key = B.key

16 Zeile

Select * from
emp e right join dept d
on e.deptno=d.deptno;

Ing.Mag. Tumfart Johannes

Arbeitsblatt JOINS

Bsp:

Ausgabe von Playerno, Name und Amount aller Spieler, auch die, die keine Strafen erhalten haben. (sortiert nach Name)

	PLAYERNO	NAME	AMOUNT
1	112	Bailey	(null)
2	44	Baker	75
3	44	Baker	30
4	44	Baker	25
5	39	Bishop	(null)
6	57	Brown	(null)
7	28	Collins	(null)
8	27	Collins	100
9	27	Collins	75
10	2	Everett	(null)
11	83	Hope	(null)
12	95	Miller	(null)
13	104	Moorman	50
14	8	Newcastle	25
15	100	Parmenter	(null)
16	6	Parmenter	100
17	7	Wise	(null)

SELECT pl.playerno, pl.name,pe.amount FROM players pl, penalties pe where

pl.PLAYERNO=pe.PLAYERNO(+) order by pl.name;

oder

Select pl.playerno, pl.name,pe.amount from players pl

full outer join penalties pe on pl.PLAYERNO=pe.PLAYERNO;

(Ausgabe 17 Zeilen)

Out-join Operator: (+) -> auch die Seite ist entscheidend!

VORSICHT:

SELECT pl.playerno, pl.name,pe.amount FROM players pl, penalties pe where

pl.PLAYERNO(+)=pe.PLAYERNO order by pl.name;

(Ausgabe 8 Zeilen)

Ing.Mag. Tumfart Johannes

Arbeitsblatt JOINS

Ausgabe von Playerno, name und Amount aller Spieler , auch odie keine Strafen erhalten haben, wobei kein Spieler mehrfach vorkommen darf.

	PLAYERNO	NAME	SUM(PE.AMOUNT)
1	95	Miller	(null)
2	39	Bishop	(null)
3	2	Everett	(null)
4	6	Parmenter	100
5	104	Moorman	50
6	44	Baker	130
7	100	Parmenter	(null)
8	8	Newcastle	25
9	112	Bailey	(null)
10	27	Collins	175
11	28	Collins	(null)
12	57	Brown	(null)
13	7	Wise	(null)
14	83	Hope	(null)

Select pl.playerno, pl.name,sum (pe.amount) from players pl

left join penalties pe on pl.PLAYERNO=pe.PLAYERNO group by pl.playerno, pl.name;

Bsp.: Ausgabe von Name, Sal und Grade. Beachte die richtige Grade zum Sal.

	ENAME	SAL	GRADE
1	SMITH	800	1
2	JAMES	950	1
3	ADAMS	1100	1
4	WARD	1250	2
5	MARTIN	1250	2
6	MILLER	1300	2
7	TURNER	1500	3
8	ALLEN	1600	3
9	CLARK	2450	4
10	BLAKE	2850	4
11	JONES	2975	4
12	FORD	3000	4
13	SCOTT	3000	4
14	KING	5000	5

Arbeitsblatt JOINS

select e.ename, e.sal, s.grade from emp e

left join salgrade s on e.sal between losal and hisal;

select e.ename, e.sal, s.grade from emp e

full outer join salgrade s on e.sal between losal and hisal;


```
SELECT 1,pl.playerno,pl.name, pl.initials, Null
FROM players pl, penalties pe
WHERE pl.playerno = pe.playerno
group by pl.playerno,pl.name, pl.initials
UNION
SELECT 2,pl.playerno,NULL, NULL, pe.amount FROM
players pl, penalties pe
WHERE pl.playerno = pe.playerno
order by 2,1;
```