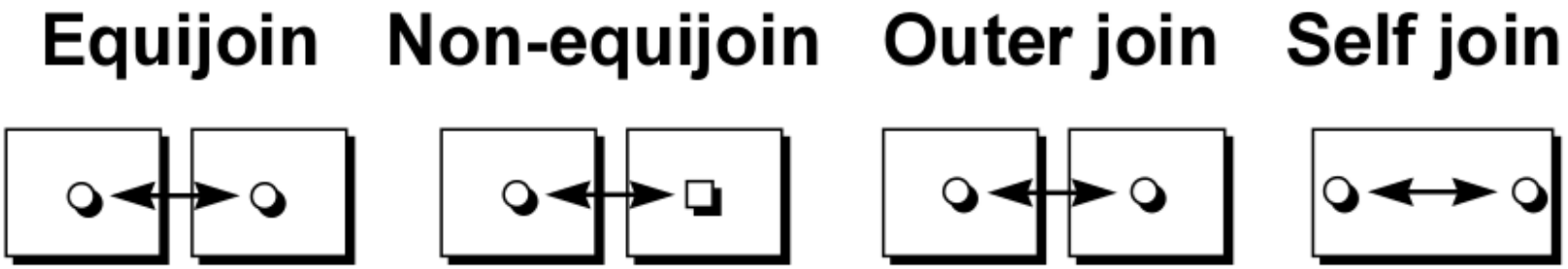
Database

Join



Join

Employee

Emp_Name	Emp_ID	Dep_No
Ahmad	1111	1
Ali	2222	1
Dana	3333	2
Belal	4444	3

Department

Dep_No	Dep_Name
1	Analyst
2	HR
3	Manager

Cartesian Product

Employee

Emp_Name	Emp_ID	Dep_No
Ahmad	1111	1
Ali	2222	1
Dana	3333	2
Belal	4444	3

Department

Dep_No	Dep_Name
1	Analyst
2	HR
3	Manager

Select Emp_Name, Dep_Name from Employee, Department

Result

Emp_Name	Dep_Name
Ahmad	Analyst
Ahmad	HR
Ahmad	Manager
Ali	Analyst
Ali	HR
Ali	Manager
Dana	Analyst
Dana	HR
Dana	Manager
Belal	Analyst
Belal	HR
Belal	Manager

Join

Employee

Emp_Name	Emp_ID	Dep_No
Ahmad	1111	1
Ali	2222	1
Dana	3333	2
Belal	4444	3

Department

Dep_No	Dep_Name
1	Analyst
2	HR
3	Manager

Result

Emp_Name	Dep_Name
Ahmad	Analyst
Ali	Analyst
Dana	HR
Belal	Manager

Join

Employee

Emp_Name	Emp_ID	Dep_No
Ahmad	1111	1
Ali	2222	1
Dana	3333	2
Belal	4444	3

Department

Dep_No	Dep_Name
1	Analyst
2	HR
3	Manager

Result

Emp_Name	Dep_Name
Ahmad	Analyst
Ali	Analyst
Dana	HR
Belal	Manager

Select Emp_Name, Dep_Name from Employee, Department where Employee.Dep_No = Department.Dep_No

Equijoin

Employee

EMPNO	ENAME	JOB	MGR	DEPTNO
111	Ramesh	Analyst	444	10
222	Khilan	Clerk	333	20
333	Kaushik	Manager	111	10
444	Chaitali	engineer	222	40

Department

DEPTNO	DNAME	LOC
10	INVENTORY	HYDERABAD
20	FINANCE	BANGALORE
30	HR	MUMBAI

Example 1

```
SQL> SELECT empno, ename, emp.deptno, loc
  2  FROM   emp, dept
  3  WHERE  emp.deptno = dept.deptno
  4  AND    INITCAP(ename) = 'King';

     EMPNO ENAME          DEPTNO LOC
---------- ---------- ---------- -------------
      7839 KING               10 NEW YORK
```

Example2:
List Customer name, OrderID, OrderDate

Order

OrderID	CustomerID	OrderDate
10308	2	1996-09-18
10309	37	1996-09-19
10310	77	1996-09-20

Customer

CustomerID	CustomerName	ContactName	Country
1	Alfreds Futterkiste	Maria Anders	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mexico

Select CustomerName, OderID, OrderDate from customer, order where customer.customerID = order.customerID

Example 2:
List Customer name, OrderID, OrderDate

OrderID	CustomerName	OrderDate
10248	Wilman Kala	1996-07-04
10249	Tradição Hipermercados	1996-07-05
10250	Hanari Carnes	1996-07-08
10251	Victuailles en stock	1996-07-08
10252	Suprêmes délices	1996-07-09
10253	Hanari Carnes	1996-07-10
10254	Chop-suey Chinese	1996-07-11
10255	Richter Supermarkt	1996-07-12

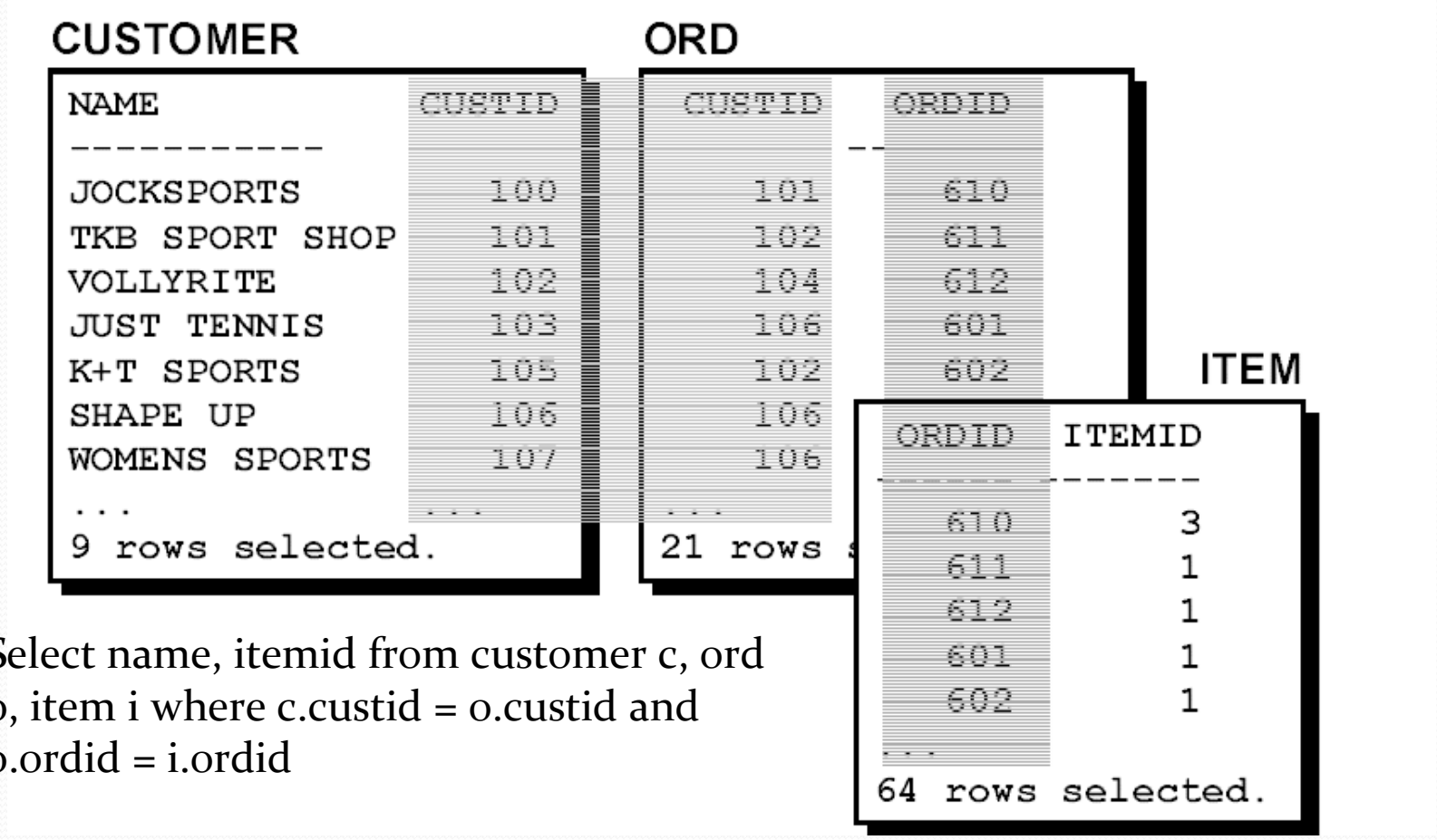
Example 3

- Customer name start with a

OrderID	OrderDate
10308	1996-09-18
10355	1996-11-15
10365	1996-11-27
10383	1996-12-16

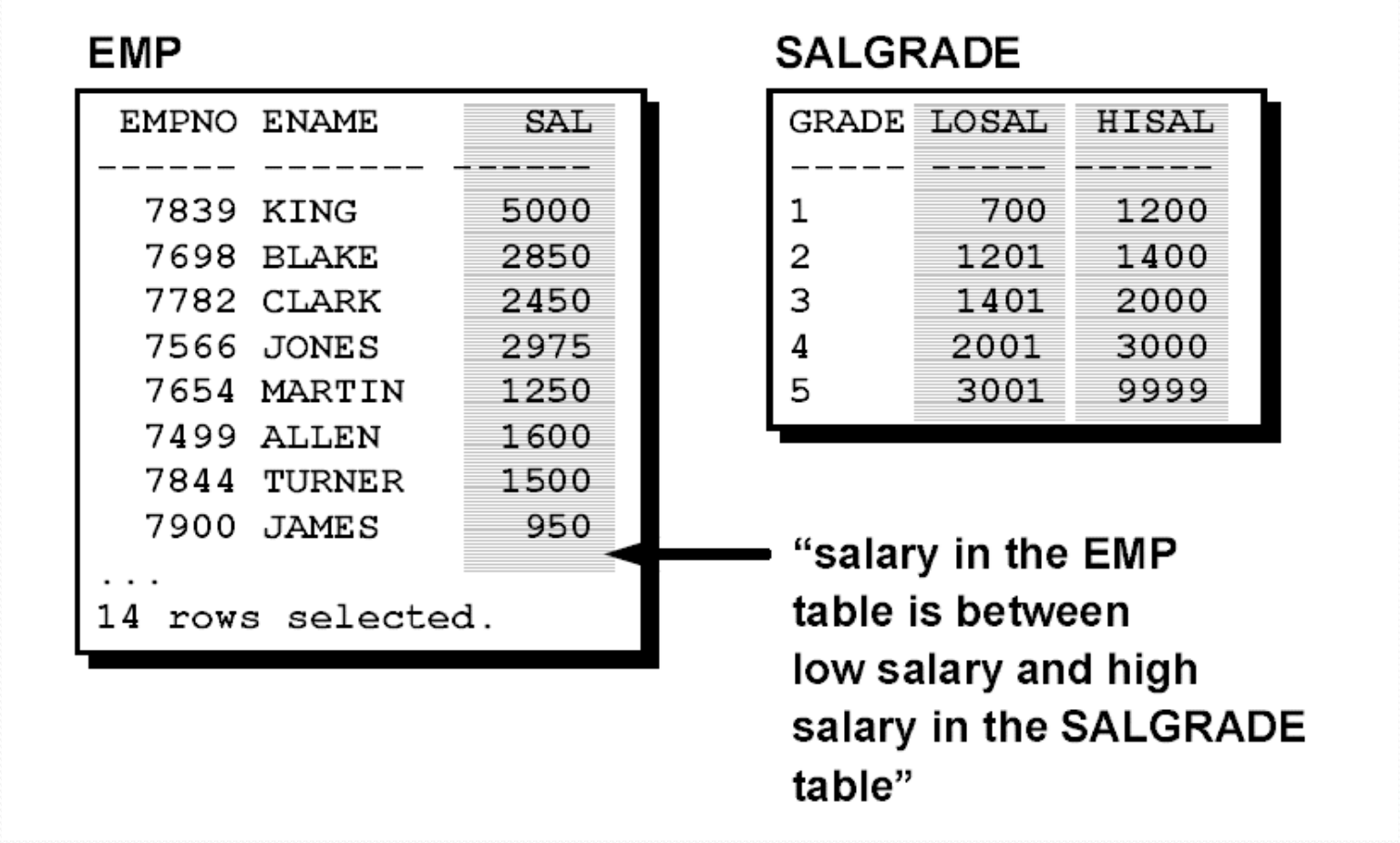
Select OderID, OrderDate from customer, order where customer.customerID = order.customerID and lower(customerName) like ‘a%’

Joining more than two tables



Select name, itemid from customer c, ord o, item i where c.custid = o.custid and o.ordid = i.ordid

Non-equijoin

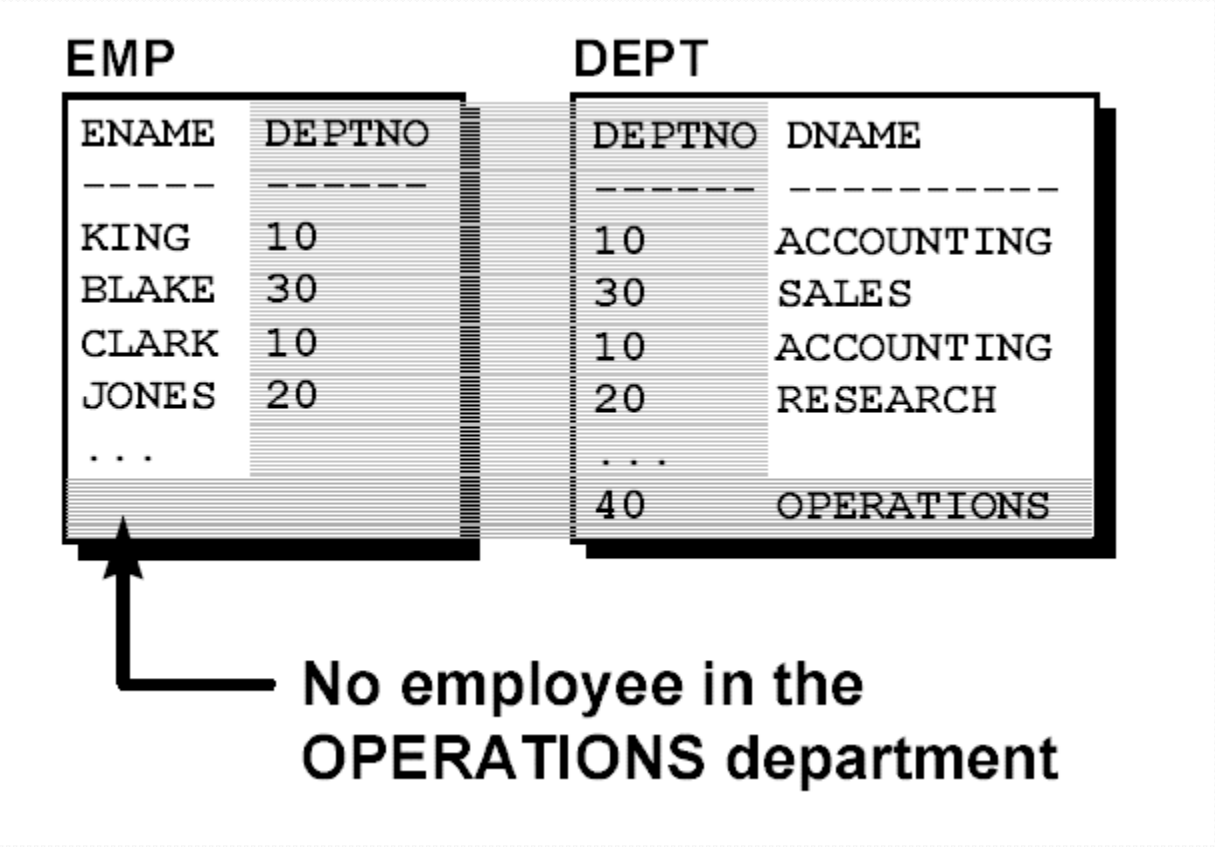


Example

```
SQL>   SELECT    e.ename, e.sal, s.grade
  2    FROM      emp e,    salgrade s
  3    WHERE     e.sal
  4    BETWEEN   s.losal AND s.hisal;
```

```
ENAME           SAL      GRADE
---------- ---------- ----------
JAMES           950          1
SMITH           800          1
ADAMS          1100          1
...
14 rows selected.
```

Outer Join

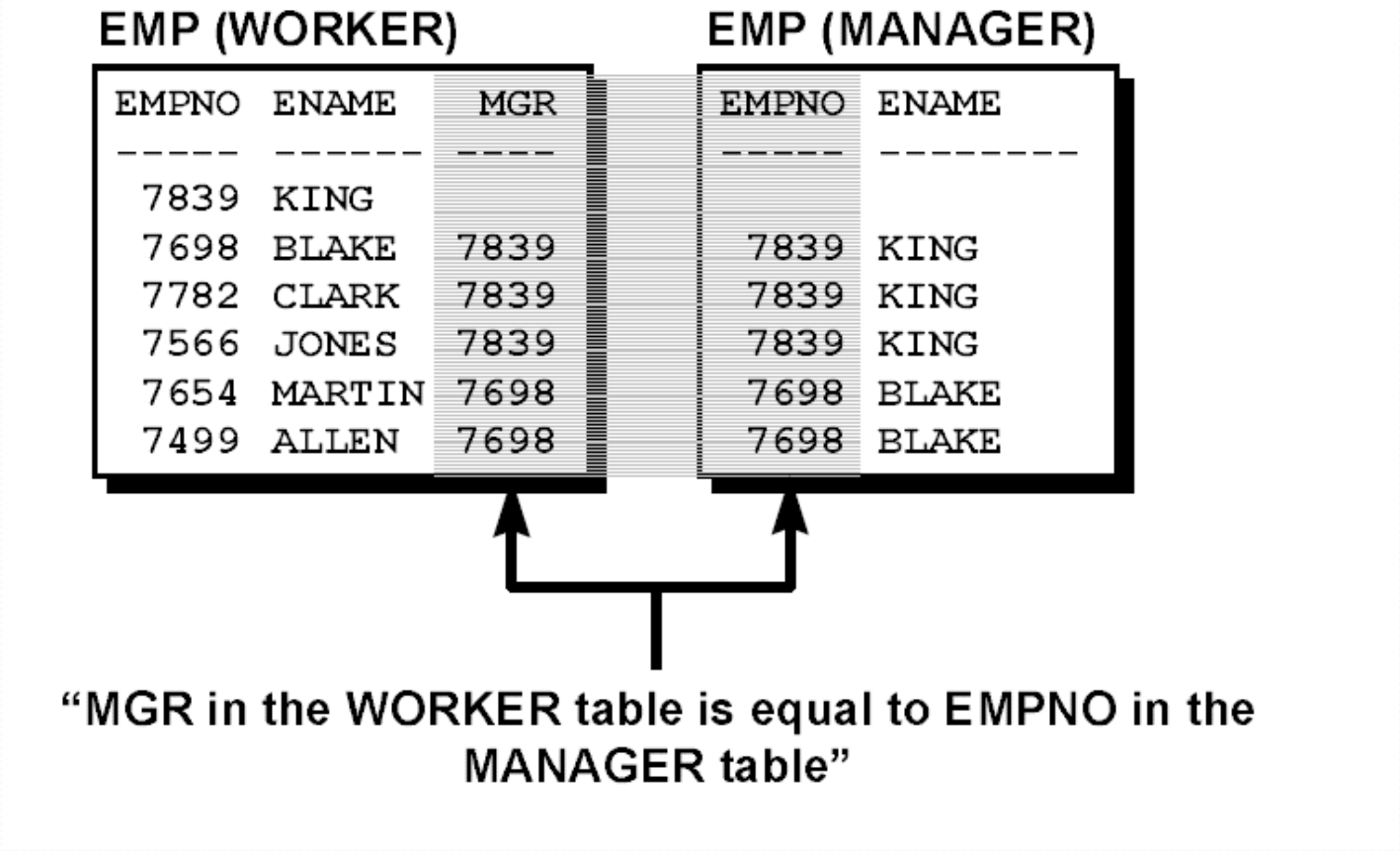

EMP
ENAME DEPTNO
KING 10
BLAKE 30
CLARK 10
JONES 20
...
DEPT
DEPTNO DNAME
10 ACCOUNTING
30 SALES
10 ACCOUNTING
20 RESEARCH
...
40 OPERATIONS
No employee in the
OPERATIONS department

Example

```
SQL> SELECT   e.ename, d.deptno, d.dname
  2  FROM     emp e,   dept d
  3  WHERE    e.deptno(+) = d.deptno
  4  ORDER BY e.deptno;
```

```
ENAME          DEPTNO DNAME
---------- --------- -------------
KING               10 ACCOUNTING
CLARK              10 ACCOUNTING
...
                   40 OPERATIONS
15 rows selected.
```

Self Join


EMP (WORKER)
EMP (MANAGER)
EMPNO ENAME MGR
7839 KING
7698 BLAKE 7839
7782 CLARK 7839
7566 JONES 7839
7654 MARTIN 7698
7499 ALLEN 7698
EMPNO ENAME
7839 KING
7839 KING
7839 KING
7698 BLAKE
7698 BLAKE
"MGR in the WORKER table is equal to EMPNO in the MANAGER table"

Example

```
SQL> SELECT worker.ename||' works for '||manager.ename
  2  FROM   emp worker, emp manager
  3  WHERE  worker.mgr = manager.empno;
```

```
WORKER.ENAME||'WORKSFOR'||MANAG
------------------------------
BLAKE works for KING
CLARK works for KING
JONES works for KING
MARTIN works for BLAKE
...
13 rows selected.
```

Summary

```
SELECT    table1.column, table2.column
FROM      table1, table2
WHERE     table1.column1 = table2.column2;
```

Equijoin **Non-equijoin** **Outer join** **Self join**