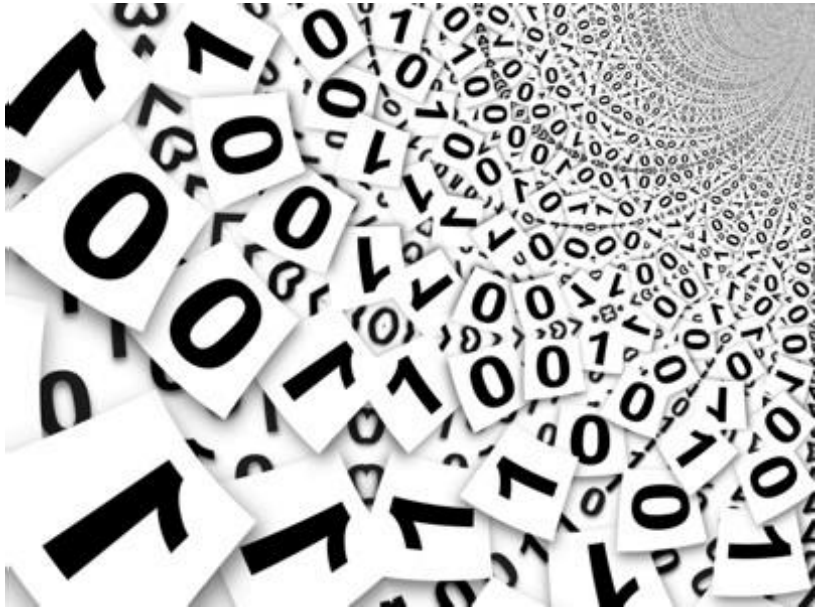
Geo-Databases

Q & A



Institute for Geodesy and Geoinformation Science
Technische Universität Berlin

QUESTIONS

1. What is the difference between LEFT JOIN and LEFT OUTTER JOIN?
   --- > Check Page 6 from the SQL JOIN exercise!!

2. Self Join … why and what? What means t1 and t2 ?

3. Natural join results with less data?

ANSWERS

SELF JOIN

We have the following table STAFF with three columns LASTNAME, FIRSTNAME and CITY

STAFF

lastname character(30)	firstname character(30)	city character(30)
Karott	Adela	Brisbane
Wirsing	Leona	Krakau
Biernat	Robert	New York
Kaminski	Kamil	Brisbane
Vogt	Sarah	Madrid
Hayman	Angelina	Brisbane
Lordi	Brendon	Boston

Now, we want to know which staff member are from the same city as Adela Karott.

ANSWERS

We can do that in different ways:

1. With a simple query:

```
SELECT   firstname, lastname
FROM      staff
WHERE    city='Brisbane';
```

--- > But as we want to know how the SELF JOIN is working this makes absolute no sense!

2. With a nested query (a query with another query):

```
SELECT   firstname, lastname
FROM     staff
WHERE    city in     (SELECT   city
                     FROM      staff
                     WHERE     firstname ='Adela');
```

--- > Still this is not a SELF JOIN and it is a lot to write!

ANSWERS

3. Now, let's answer the question!

In a self join we are joining the same table to itself by essentially creating two copies of that table.
But, how do we distinguish between the two different copies of the table – because there is only one table name after all? Well, when we do a self join, the table names absolutely must use aliases (nicknames) otherwise the column names would be ambiguous.

We will just use the aliases t1 and t2 for the staff table when we do a self join:

```
SELECT   t1.firstname, t1.city
FROM     staff t1, staff t2
WHERE    t1.city = t2.city
AND      t2.firstname = 'Adela';
```

This was just a simple example… I am sure you will find out yourself why we used a self join instead of the other two possibilities.

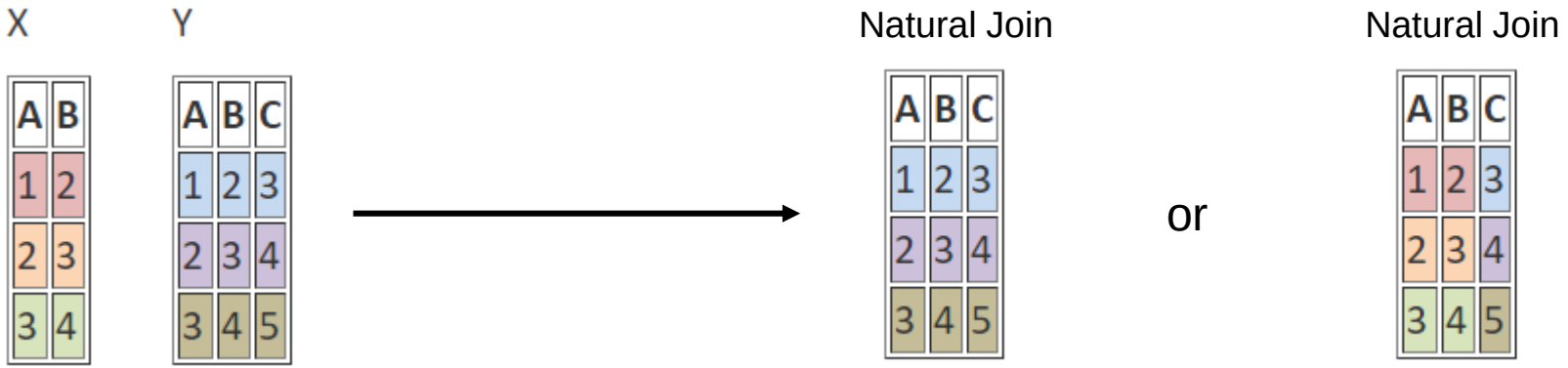
Source: http://www.programmerinterview.com/index.php/database-sql/what-is-a-self-join/

ANSWERS

NATURAL JOIN

How is a natural join working?

- The associated tables have one or more pairs of identically named columns.
- The columns must be the same data type.



ANSWERS

Example

FIRST

lastname character(30)	firstname character(30)	city character(30)
Karott	Adela	Brisbane
Wirsing	Leona	Krakau
Biernat	Robert	New York
Kaminski	Kamil	Brisbane

SECOND

age integer	firstname character(30)	country character(30)
20	Adela	Australia
33	Leona	Poland
30	Robert	USA
26	Kamil	Australia
29	Sarah	Spain
43	Angelina	Australia
32	Brendon	USA

SELECT * FROM first NATURAL JOIN second;

firstname character(30)	lastname character(30)	city character(30)	age integer	country character(30)
Adela	Karott	Brisbane	20	Australia
Leona	Wirsing	Krakau	33	Poland
Robert	Biernat	New York	30	USA
Kamil	Kaminski	Brisbane	26	Australia

SELECT * FROM second NATURAL JOIN first;

firstname character(30)	age integer	country character(30)	lastname character(30)	city character(30)
Adela	20	Australia	Karott	Brisbane
Leona	33	Poland	Wirsing	Krakau
Robert	30	USA	Biernat	New York
Kamil	26	Australia	Kaminski	Brisbane