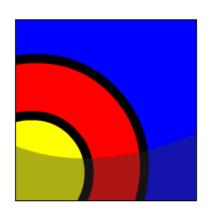


Cross Joins and Natural Joins

What Will I Learn?

In this lesson, you will learn to:

- Compose and execute a natural join using ANSI-99 SQL join syntax
- Create a cross join using ANSI-99 SQL join syntax
- Define the relationship between a cross join and a Cartesian product
- Define the relationship between a natural join and an equijoin
- Explain why it is important to have a standard for SQL as defined by ANSI





Why Learn It?

The join statements you learned in the last few lessons have a corresponding statement when using ANSI/ISO SQL: 1999 syntax.

Being able to use both kinds of joins effectively is the responsibility of any person using SQL.

You may join a project someday when a programmer before you used only ANSI/ISO SQL: 1999. What would you do if you knew only the Oracle proprietary methods? How would you debug their code?





ANSI

ANSI stands for American National Standards Institute. Founded in 1918, ANSI is a private, non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system.

The Institute's mission is to enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity.

Reference: http://www.ansi.org/default.aspx



SQL

Structured Query Language (SQL) is the information-processing industry-standard language of relational database management systems (RDBMS).

The language was originally designed by IBM in the mid 1970s, came into widespread use in the early 1980s, and became an industry standard in 1986, when it was adopted by ANSI.

So far there have been three ANSI standardizations of SQL, each one building on the previous one. They are named after the year in which they were first proposed, and are widely known by their short names: ANSI-86, ANSI-92 and ANSI-99.



NATURAL JOIN

Recall the equijoin from a previous lesson. An equijoin returns all rows whose values match in both tables.

The ANSI/ISO SQL: 1999 join that accomplishes the same result is called a natural join.

A natural join is based on all columns in the two tables that have the same name and selects rows from the two tables that have equal values in all matched columns.

Equijoin
=

ANSI/ISO SQL: 1999

Natural

Join



NATURAL JOIN

As shown in the sample code, when using a natural join, it is possible to join the tables without having to explicitly specify the columns in the corresponding table. However, the names and data types in both columns must be the same.





SELECT event_id, song_id, cd_number FROM d_play_list_items NATURAL JOIN d_track_listings WHERE event_id = 105;

The WHERE clause was added to apply an additional restriction to one of the tables, to limit the rows of output.



NATURAL JOIN

Here is another example:

SELECT first_name, last_name, event_date, description
FROM d clients NATURAL JOIN d events;

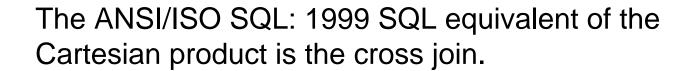
Which column or columns will be used to natural join these two tables?

Notice that the natural join column does not have to appear in the output.



CROSS JOIN

Recall the Cartesian Product from a previous lesson. A Cartesian Product joins every row in one table to every row in the other table.



The results returned from both types of joins are the same. The results set represents all possible combinations of columns from both tables.







Cross Join Example:

SELECT name, event_date, loc_type, rental_fee FROM d_events CROSS JOIN d_venues;

NAME	EVENT_DATE	LOC_TYPE	RENTAL_FEE
Peters Graduation	14-MAY-04	Private Home	0
Peters Graduation	14-MAY-04	Private Home	0
Peters Graduation	14-MAY-04	Private Home	0
Peters Graduation	14-MAY-04	School Hall	75/hour
Peters Graduation	14-MAY-04	National Park	400/flat fee
Peters Graduation	14-MAY-04	Hotel	300/per person
Vigil Wedding	28-APR-04	Private Home	0
Vigil Wedding	28-APR-04	Private Home	0
Vigil Wedding	28-APR-04	Private Home	0
Vigil Wedding	28-APR-04	School Hall	75/hour
Vigil Wedding	28-APR-04	National Park	400/flat fee
Vigil Wedding	28-APR-04	Hotel	300/per person

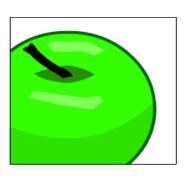




Terminology

Key terms used in this lesson include:

Cross Join Natural Join



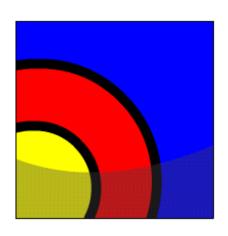




Summary

In this lesson you have learned to:

- Compose and execute a natural join using ANSI-99 SQL join syntax
- Create a cross join using ANSI-99 SQL join syntax
- Define the relationship between a cross join and a Cartesian product
- Define the relationship between a natural join and an equijoin
- Explain why it is important to have a standard for SQL as defined by ANSI





Practice Guide

The link for the lesson practice guide can be found in the course resources in Section 0.

