

SQL Survival Guide

Joins

Office of Quality and Patient Safety

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Outline

- 1 What Is A Join Clause?
- 2 Types of SQL Joins
- 3 Examples
- 4 Questions?

What Is A Join Clause?

What Is A Join Clause?

- Combines records from two or more tables.
- Returns a set of records which can be saved as a table or used as is.
- Joins are probably the hardest core SQL skill to master.

Why Do We Have To Do This?

- Normalization:
 - Eliminates duplication of data.
 - Makes it easier to maintain data integrity, at the cost of speed.
- DOH DataMart is NOT consistently normalized:
 - Normalization deserves its own presentation.
 - Combines OLTP with Transactional Structures.
 - Sometimes easier. Sometimes Harder
 - Denormalized data == Mistakes.
 - Use normalized data structure unless data is COMPLETELY static.

Types of Joins

There are 5 ANSI joins, plus one special case that deserves additional discussion:

- ① Inner Join
- ② Left Outer Join
- ③ Right Outer Join
- ④ Full Outer Join
- ⑤ Cross
- ⑥ Self Join

- We need example data.
- The following two slides gives us two tables to use.
 - Yes, you can join more than two tables at a time.
- Keep track of these two table slides or you will get very lost.
- ALL SQL needed to produce the results in this presentation can be found in the data and sql folders, respectively.

DEPT_ID	DEPARTMENT_NAME	FLOOR
31	Sales	1
33	Engineering	3
34	Clerical	2
35	Marketing	3

Employees

EID	DEPT_ID	LAST_NAME	FIRST_NAME	GENDER
1	31	Rafferty	Gerry	M
3	33	Jones	Jon	M
5	33	Heisenberg	Werner	M
7	34	Robinson	Elizabeth	F
9	34	Smith	Jefferson	M
11	NULL	Williams	Serena	F

Inner Join - Discussion

Inner Join - Example

Left Outer Join - Discussion

Left Outer Join - Example

Right Outer Join - Discussion

Right Outer Join - Example

Full Outer Join - Discussion

Full Outer Join - Example

Cross Join - Discussion

Cross Join - Example

Self Join - Discussion

Self Join - Example

Additional Information

- [https://en.wikipedia.org/wiki/Join_\(SQL\)](https://en.wikipedia.org/wiki/Join_(SQL))

Questions?