Lecture-12
DC

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Join

- Cross
- Inner
- Outer

Table:

Loan

Branch_name	loan_no	amount
Downtown	L-170	3000
Redwood	L-230	4000
Perryridge	L-260	1700

Borrower

cust_name	loan no
Jones	L-170
Smith	L-230
Hayes	L-155

Join - To work with multiple tables as though they are single entity, we use joins. Tables are joint on columns that have the same data type and data width.

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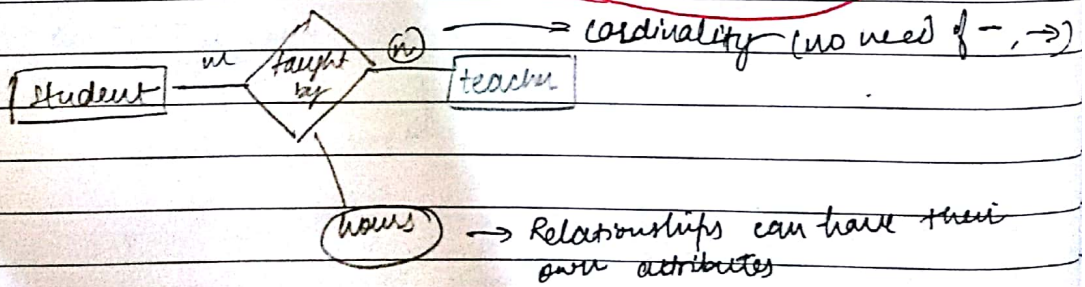
Entity - Noun
Relationship - Verb
E-R - Sentence
ERD - Story

Left → Right Top ↓ Bottom



→ cardinality (no need of -, →)

→ Relationships can have their own attributes + primary key of the joining entities.

Inner Join

These are also known as equi-join since the where statement generally compares two columns from two tables with the equivalence operator "=". It can be used in situations where selecting only those rows that have values in common in the columns specified. Inner join returns all rows from both tables

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where there is a match.

Annotations: if checking; also data type & data width should be same; cannot put; here if loan-no is not primary / foreign key.

SQL> select * from loan inner join borrower; on loan.loan_no = borrower.loan_no

Output

Downtown	L-170	3000	Jones	L-170
Redwood	L-230	4000	Smith	L-230

can remove this repeating data by using natural join

SQL> select * from loan, borrower where loan.loan_no = borrower.loan_no;

↳ same as natural join

Output

Downtown	L-170	3000	Jones
Redwood	L-230	4000	Smith

⇒ Cross join → no condition checking.
All combinations are output (like matrix multiplicⁿ)

all other joins are subset of cross join.

SQL> select * from loan, borrower;

Output

Downtown	L-170	3000	Jones	L-170
Downtown	L-170	3000	Smith	L-230

⇒ Theta-join : A sort of inner join but θ is an operator which can be anything (not only =)