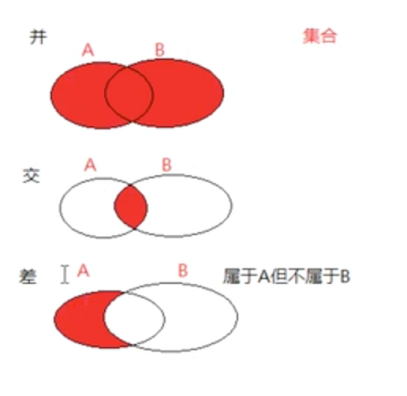
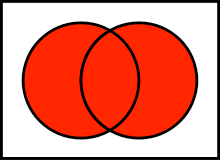
Relational Algebra



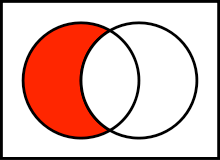
ch2関係代数 kankei daisuu かんけいだいすう

# Union, difference, Cartesian product

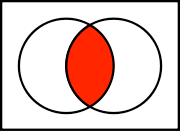


union, ∪, add, boolean or ||, venn diagram

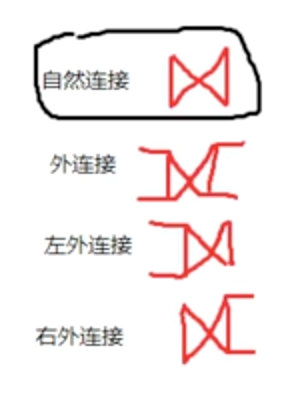




difference, - , /, subtract(minus),



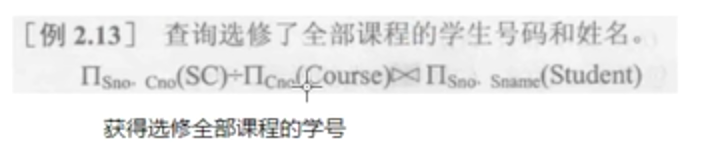
intersection, ∩, bool and &&



# Selection, projection

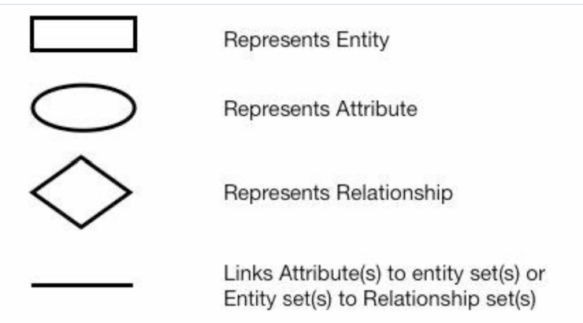
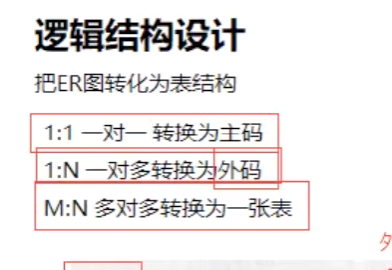
selection, sigma, σ, select rows(tuples)

σP(r)

select\_row condition(predicate)(schema\_r)

projection, upper pi, Π, attributes(columns)

ΠA(r)

select\_col set\_A (schema\_r)

# Relational Model

1) Entity Relationship Diagram ERD

an entity drawn as a rectangle. entity = rectangle = table

relationship sets are represented by a diamond.

attributes are drawn as ovals.

>> attributes = column = field = degree(the number of columns)

-------------------------------------------------------------------------

>>row = tuple = cardinality(the number of rows)

2) schema an instance

relational schema:

AUTHOR(Author\_ID: char, lastname: varchar, firstname: varchar, email: varchar, city: varchar, country: char)

relation instance: a table with data

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fin​​

relational algebra

https://en.wikipedia.org/wiki/Relational\_algebra#Selection\_(%CF%83)

wikipedia, set of methematics

https://en.wikipedia.org/wiki/Set\_(mathematics)#Basic\_operations

wikipedia, venn diagram

https://en.wikipedia.org/wiki/Venn\_diagram

arizona didb week3

https://www.coursera.org/learn/data-in-database/lecture/qh5my/relational-algebra-query-language

Data in Database, Arizona State University

<https://www.coursera.org/learn/data-in-database>

relational algebra quiz

<http://cws.cengage.co.uk/rcc_databases/students/mcqs/Chapter4.htm>