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Infological Modelling Techniques and Tools

Relational Databases Basics

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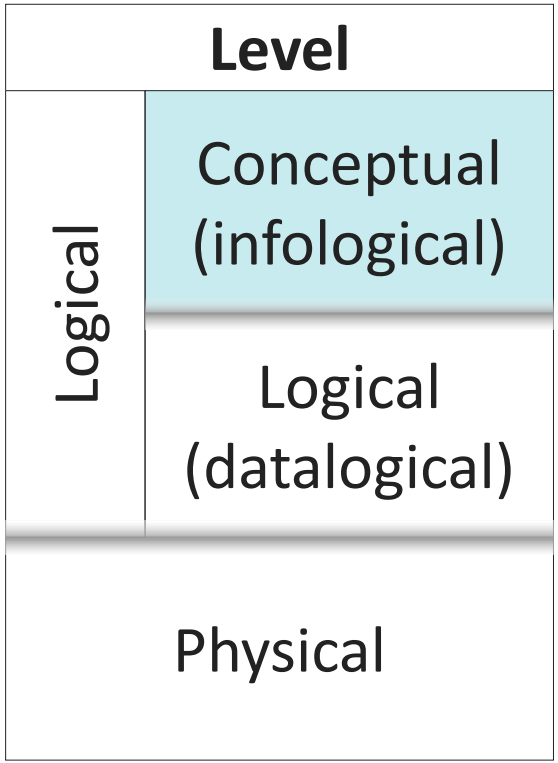
Infological level: representation types



Text (lists)

File:
- id;
- owner;
- size;
- name;
- date.

Text (tables)

id	owner	size	name	date
integer	integer	integer	string	date

Graphical representation (schemas)

We shall review it in a minute…

How to use text (lists)

1. Employee
    a. Surname
    b. Given name
    c. Middle name
    d. Birth date (with “day” precision)
    e. Passport number
    f. Passport series
    g. …
2. Department
    a. Name (unique)
    b. Head (one of the employees)
    c. Head office (use offices list)
    d. …
3. Position
    a. Name (unique)
    b. Description (long text)
    c. Instructions (string, path to the file)
    d. Is higher education needed (“yes”, “no”)
    e. …

Why use text (lists)?

- Everyone has the proper software
- Creation and modification are quick and easy
- Comments are clearly visible and easy to maintain
- Easy to print
- …

Text (lists) limitations

Hard to represent relationships (literally in comments only)

Redundant space usage (a lot of pages instead of one image)

Lack of technical information (thus, risk to forget it)

Attempts to avoid these limitations complicate lists too much

And yet – lists are the most common technique for the first iterations of database modelling.

Graphical techniques

Entity-relation (ER) diagram

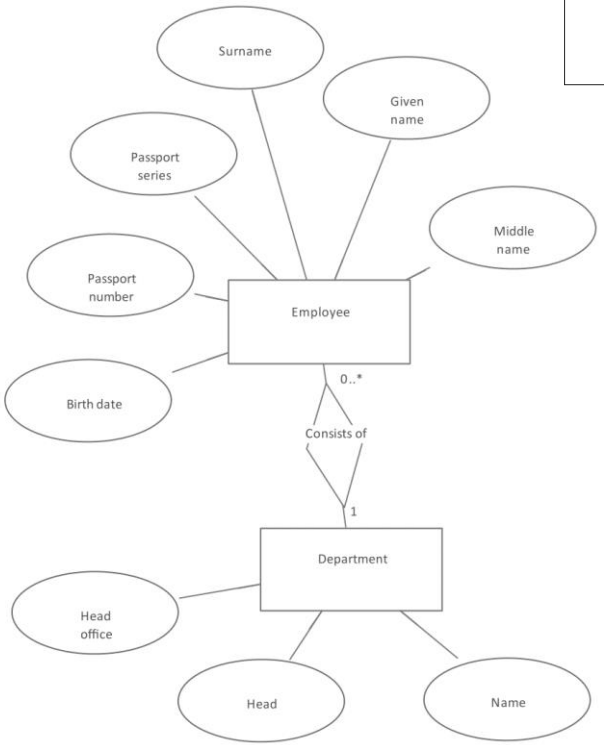
UML schema

Semantic schema

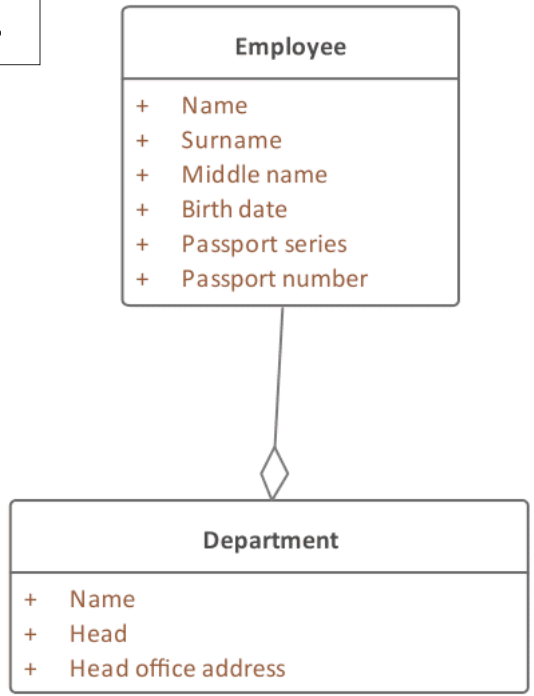
Graph schema

Graphical techniques: ER diagram & UML schema

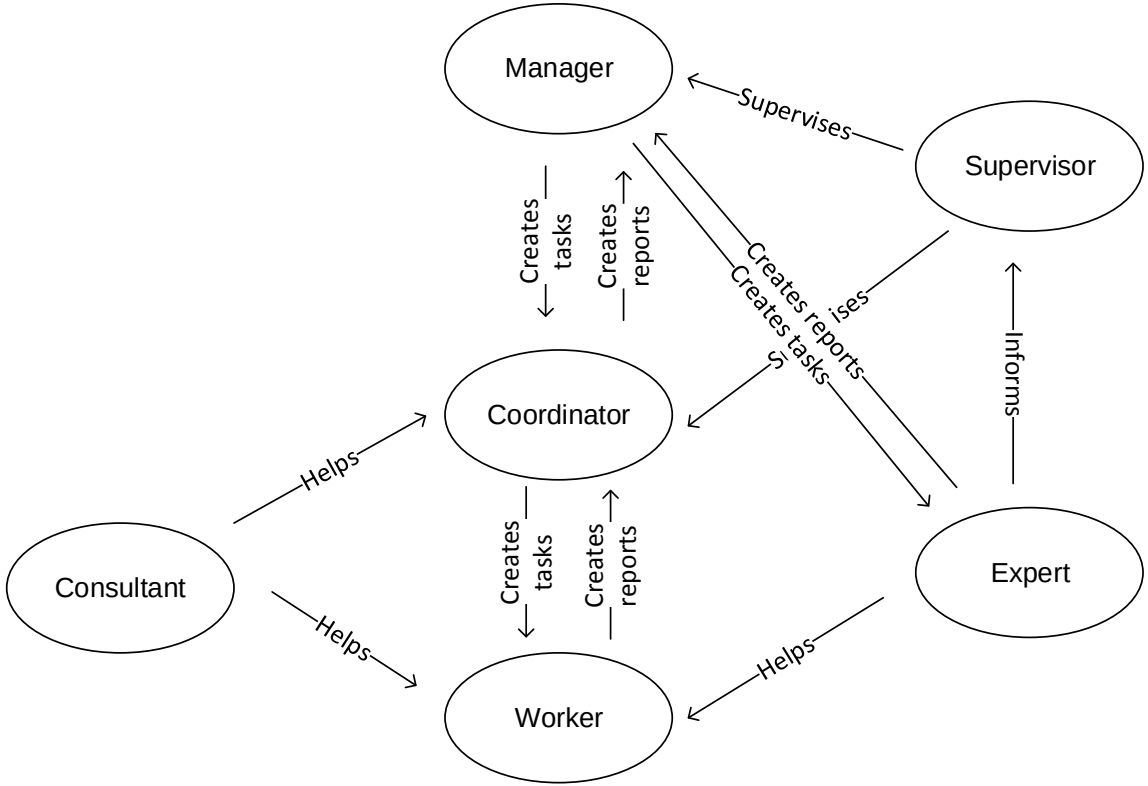
ER



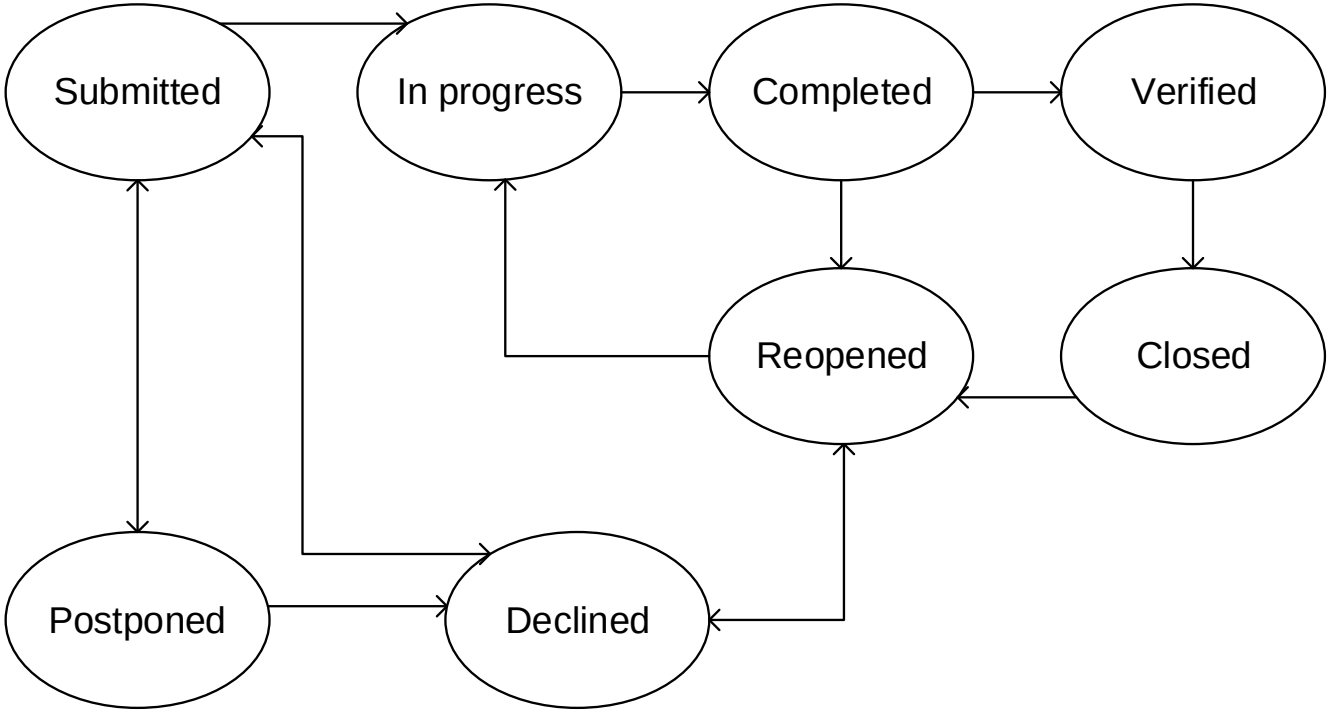
UML



Graphical techniques: semantic schema



Graphical techniques: graph schema



Tools

Any text editor

Any online editor for semantic, graph, UML schemas

Any specialized tool you like

https://sparxsystems.com

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