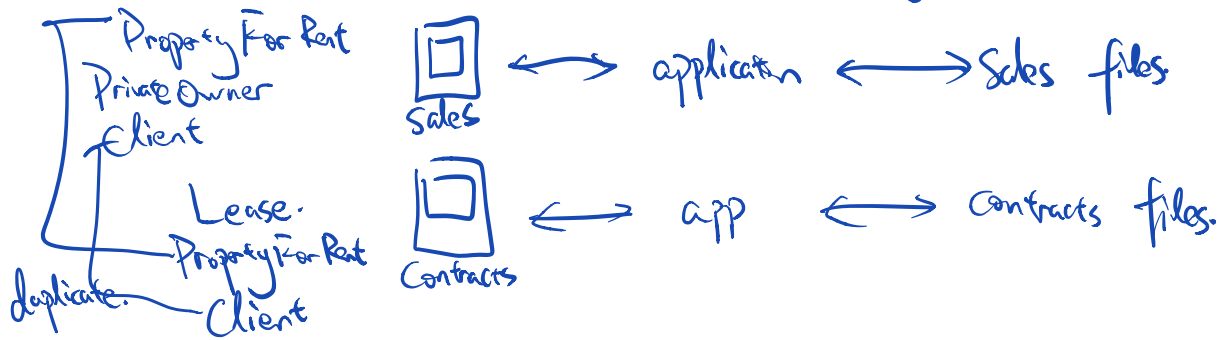


Concept.

file-based systems: ! systems that store data are not db systems
 application perform services for users
 each defines and manages own data.



Limitations

- Separation of data.
 (usage of data held by other dept.).
- duplication of data.
 - Same data held twice.
 - potential collisions / different formats.
- data dependence. (on program)
 - file structure defined by program. code.

causing ↓

- Incompatible file formats
- fixed queries. (new query → new program)

Database Approach.

Definition. - a shared collection of logically related data.
 - a self-describing collection of integrated records.

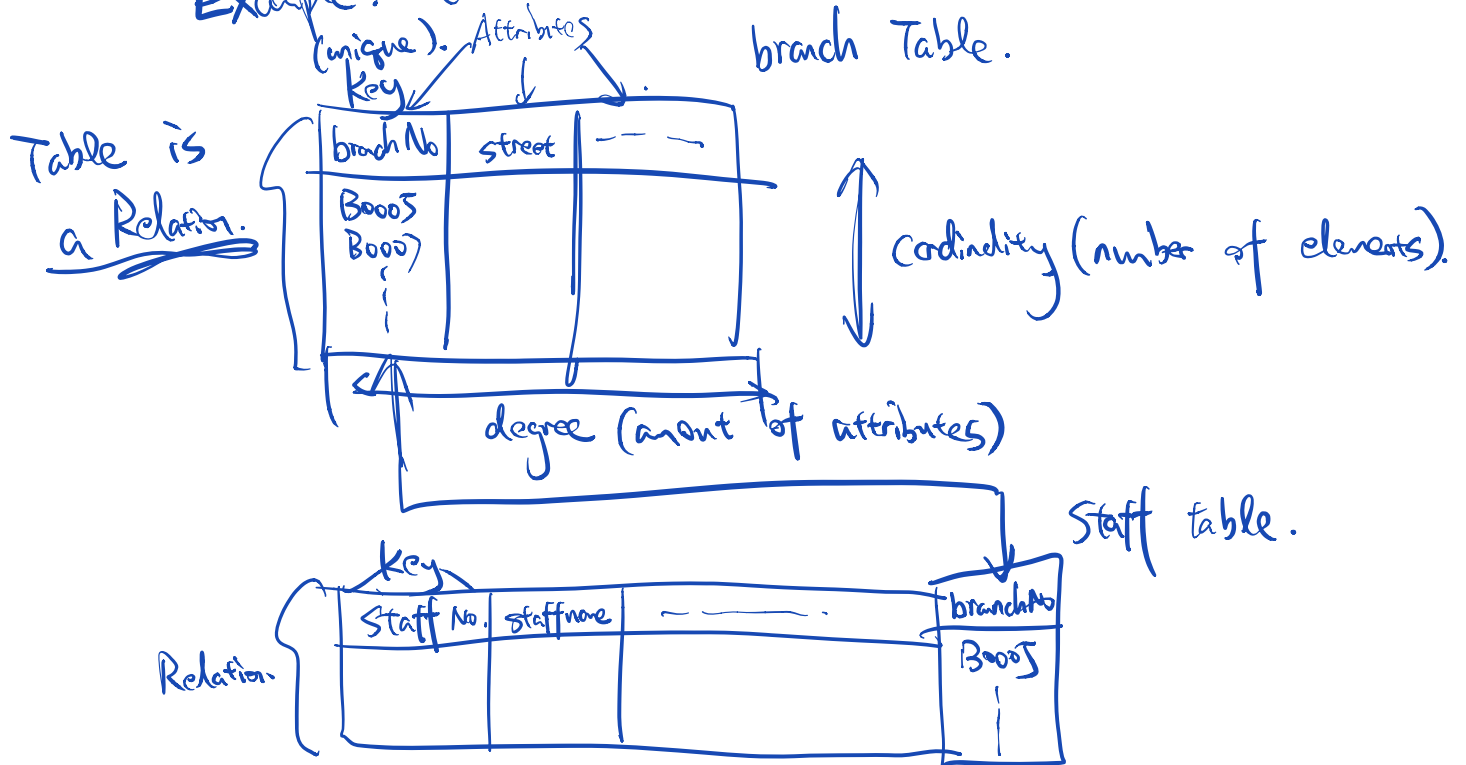
Data - entities
 attributes (describe entity)
 relationships.

(relational data model.)

data catalogue — description. data

Example. (relational data model)

branch Table.



rows in table are unique defined by key

History.

first - gen
hierarchical & network.

second - gen
relational DB 1970s.

third - gen.
object relational
object-oriented

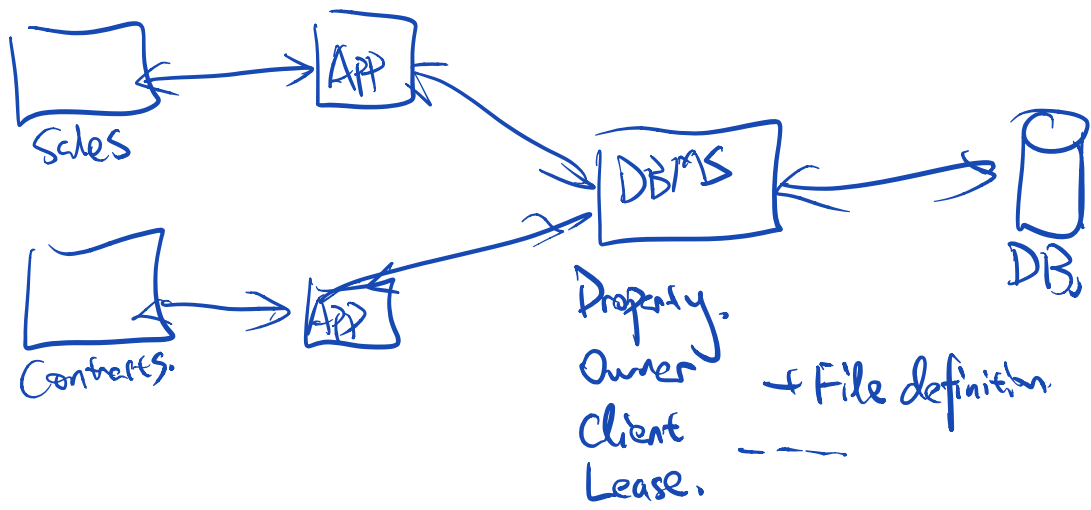
DBMS (Management System)

Definition.

system enables users
to define create maintain
a DB and provides
controlled access.

thru a lang. SQL.

provides services around DB,
integrity system.



Primary function.