Database
— collection of related data.

DBMS

client.

S/W Pgm

Persistent
Memory.

Structured.

└→ Hierarcharchical

└→ Network.

└→ Object Oriented.

└→ Relational. ·——→ Oracle
     (RDBMS)   ├→ Informix
         ↑   ├→ postgresql
        SQL   ├→ Teradata
                     ├→ Mysql
                     ├→ Access
                     └→ MydB

`Animal -`

`'IS-A'`

`Mamals`

`Non Mamals`

`Cat`   `Dog`
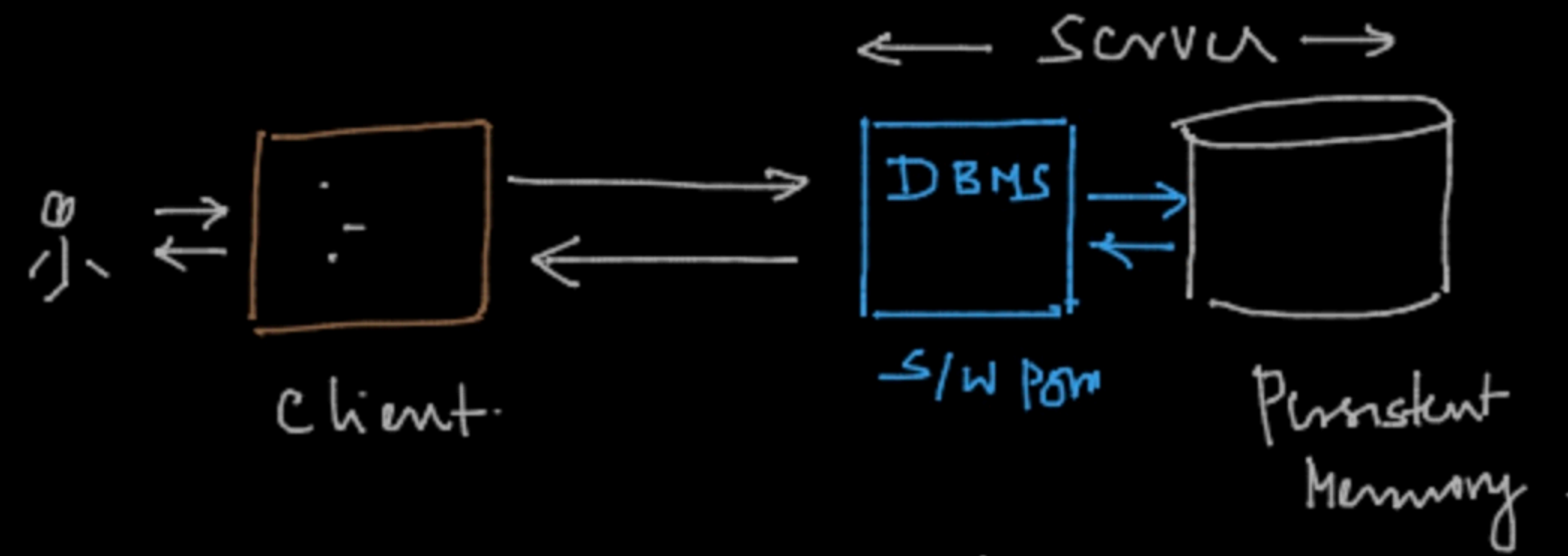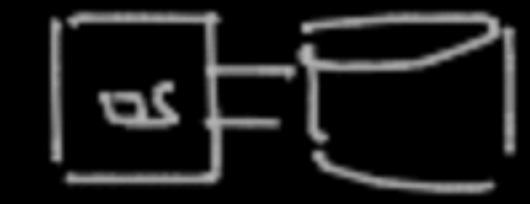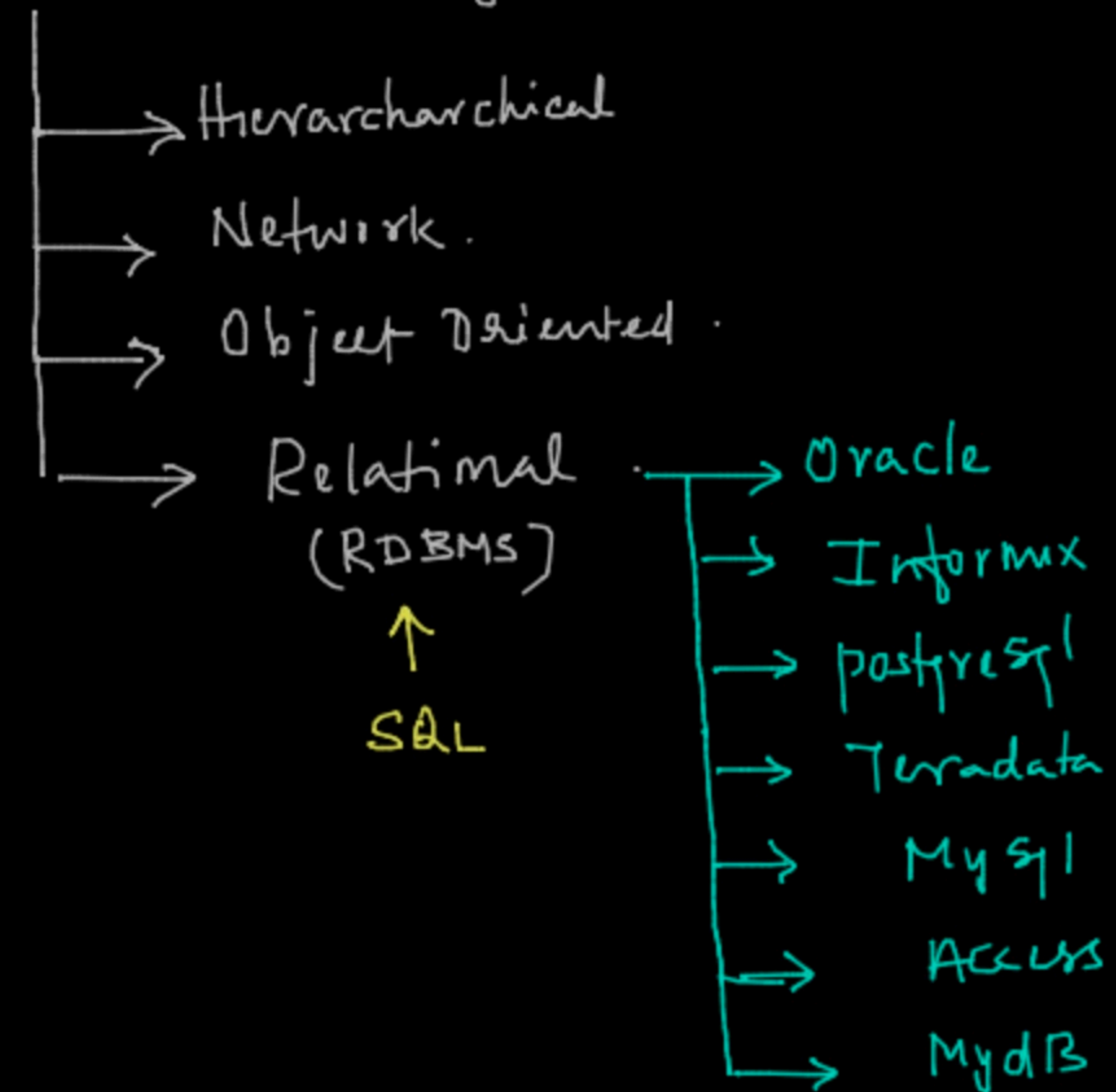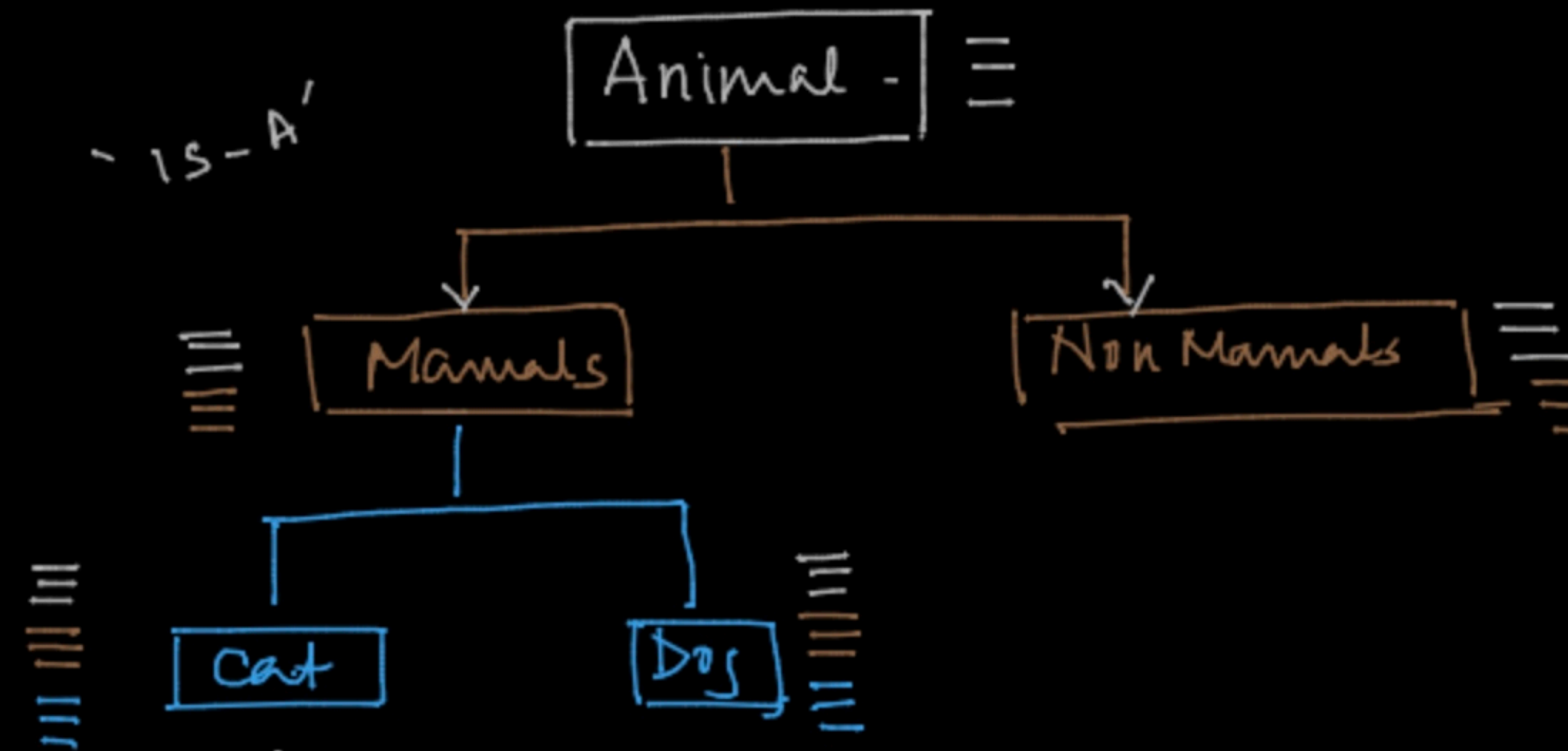
Relational DB → Tabular

Student
                    Table
        N-T   Char   ~Add   Du   Columns (attribute / Fields.

Sid	SName	Age	Course
1	Thomas	25	Mysy
2	Mary	20	Anlyb
–	–	–	–

→ properties

→ Rows / Records / Tuple

Courses → department → Faculty

Facebook

PstId   userId time content likes   Comments1   Comment 2
1   .   .   .   └→ Replies.
2   .   .   .

Dynamic Storage → NoSql Databases

text
img.

S1: { Name: Thomas.
       Age : 25
       Course : MySql }

PostId : 1
userId : xyz
content: Txt / mp3 / mp4
likes: { u1: —   .
         u2: —
         u3: ✓
         u4: ✓
       }

Comment: { Cint: —

Replies: { Reply: —
           Rep 2 .
         }
       }

DBMS

        ┌── Key-Value — Redis
        ├── Document — MongoDB
        │
        ├── Graph — Neo4j,
        └── Wide Column — Cassandra, HBase

customer

S2: { Name: Mary
      Age : 20
      Course : DS
      Marks : 55
      Address .   . }

Structured   unstructured

| DBMS |

Hierarchical   Key-Value — Redis
Object Oriented   Document — MongoDB
Network   graph — Neo4j
Relational   Wide Column — Cassandra, HBase
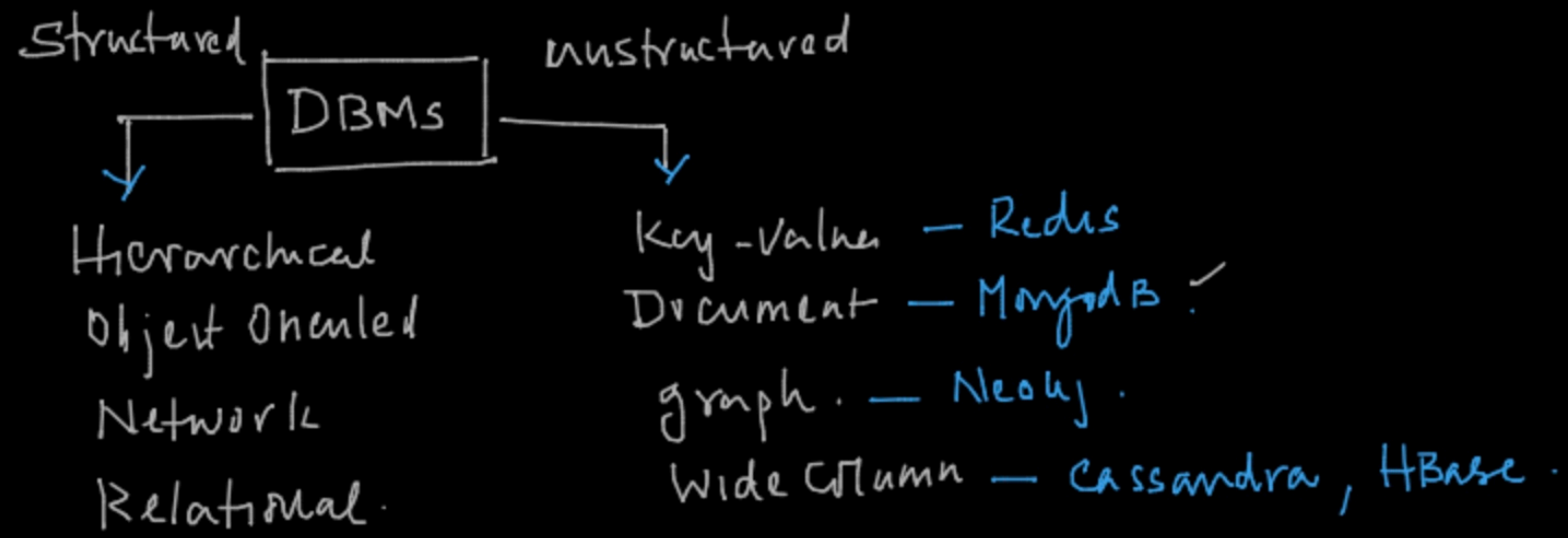
↳ Oracle
→ Informix
→ postgreSql   SQL
→ MySql   Structured Query
→ Teradata   Language
→ DB2
→ Sql Server

| Android | — Samsung — → galaxy → EM
  DBMS   S20 → Pro
              ↓   ↓
              Oracle

                                              phone
                                          iPhone 12
ios → Apple — ┌   13
 ↓   Oracle
RDBMS