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(3)

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What is RDBMS ? → relational DBMS
→ SQL, mySQL, MS SQL, IBM DB2

Works → Data is represented in terms of tuples (rows)
→ It contains no. of tables and each table has its own primary key.

Tables → Collection of related data entries (rows & colums), Simplest data storage

Field → Smaller Entity of table contains specific information about each record in table.

Rows = Records

* Data Integrity
  - → (1) Entity Integrity (No duplicate rows in a table)
  - → (2) Domain Integrity (Enforce valid entries for a given column by restricting the type format and range of value)
  - → (3) Referential Integrity (rows cannot be deleted if used by other records)
  - → (4) User-defined Integrity (Enforces some specific business rules that are defined by user.)

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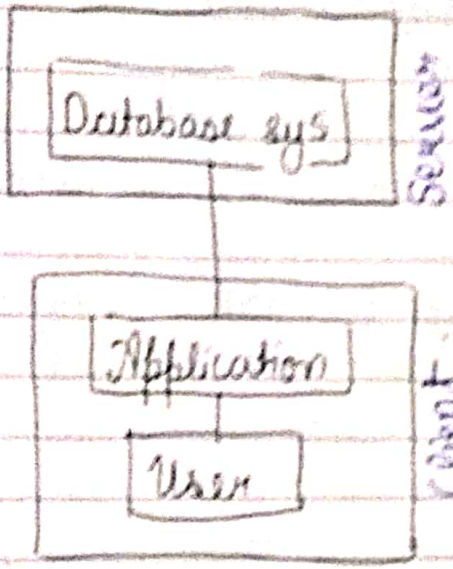
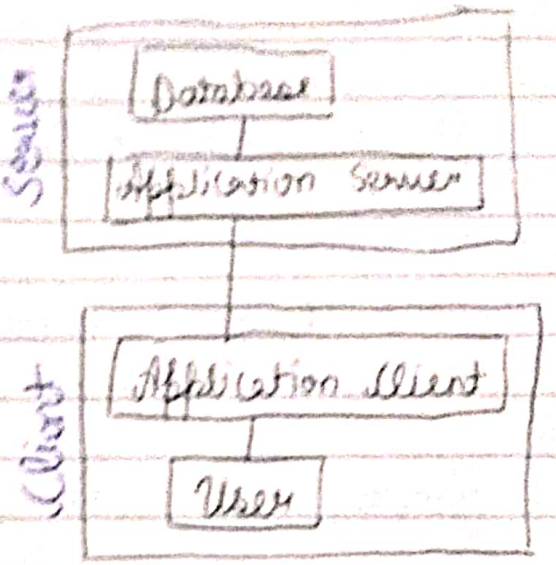
DBMS Architecture
- 1-tier (Database directly available to user)
- 2-tier
- 3-tier

2-tier



3-tier



Design of Database is called Schema

Schema contains table, foreign key, primary key, views, clusters, data types, stored procedure etc.

The data at a particular moment of time is called Instance of database.

Data Independence → Being able to modify the schema at one level of DB syst without altering the schema at next higher level.

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ACID properties (to maintain integrity of the data if any change is done in it.)

Atomicity	Consistency	Isolation	Durability
Either — Complete the operation or don't start it in the first place.	If we change anything in the database that should be saved in the database.	No data should affect the other one and may occur concurrently.	Ensures the permanency of something. ∴ Storage backup data.

★ ER model → Entity Relationship.

eg)

ER Model

- Entity (Rectangle)
  - Weak Entity (Is Depends on other entity) (Double-rectangle)
- Attributes (property)
  - Key Attribute (Ellipse) (main attribute)
  - Composite Attribute (Composed with many other attribute) (Double Ellipse)
  - Multivalued (Double Ellipse) Attribute.
  - Derived (Dashed Ellipse) Attribute. (Birth Date) (Use we can find age)
- Relation (Diamond)
  - One to One
  - 1 : N
  - N : 1
  - N : N

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Notation of ER Diagram