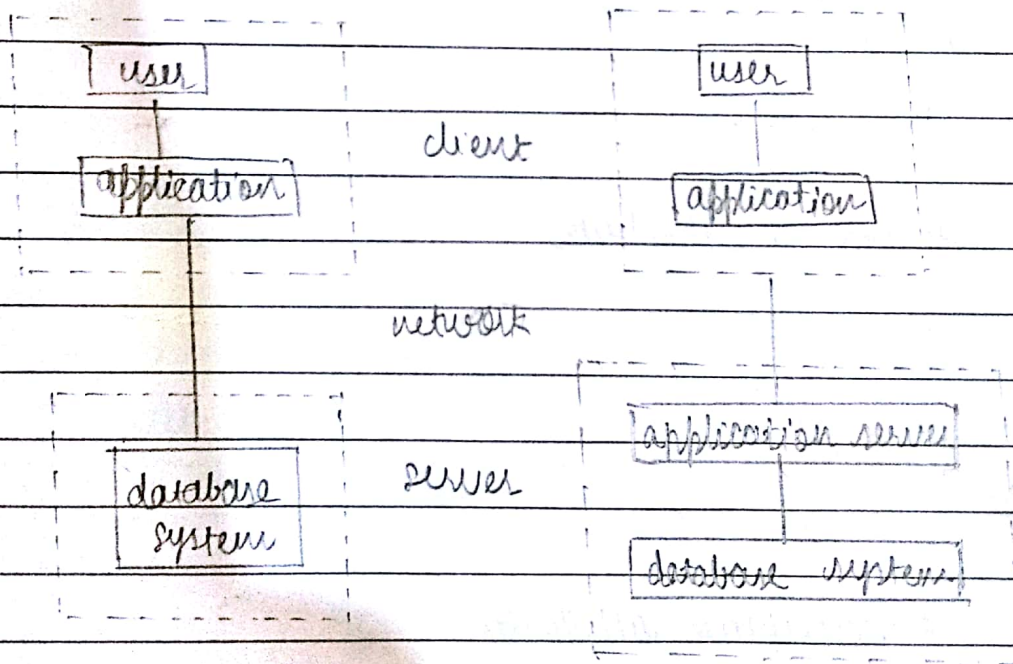# Database architecture (in terms of accessibility)
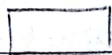- Two-tier
- Three-tier

2-tier architecture
↓
for intranet
(C2/2b)

3-tier architecture
↓
for internet
(web/2b)

E-R model (graphical representation)

- Entity [▭] → something real, like a person
- Relationship ◇
- Attributes ◯

Entity set – Collection of entities of similar types.
e.g. – customers of a bank.

[customer] —— ◇borrower◇ —— [loan]

Attributes

1. **Simple and composite attributes**

   fixed values like fast name

   collection of simple attributes like full name
   /|\
   first middle surname
   name name

2. **Single and multi-valued attributes**
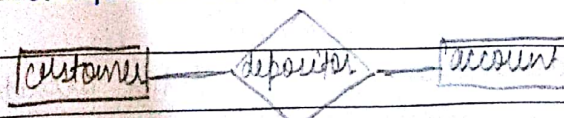
   like name

   like phone number

3. **Derived attributes**

   derived from some existing attributes, like age derived from date of birth, tenure from hire date.

4. **Descriptive Attributes**

   [customer] —— ◇depositor◇ —— [account]

   last date of deposit /access

(left margin notes: "collection of entity set", "From relationship")

Constraints

Mapping cardinalities — relationship b/w entities of two entity sets.

1) One to one
2) One to many
3) Many to one
4) Many to many

Lecture-8
DC   SQL
1/02/2018

| St orename. | Sales | Date |