1. Key differences between Instance and schema:

i) A schema is the design representation of a database whereas instance is the snapshot of a database at a particular moment.

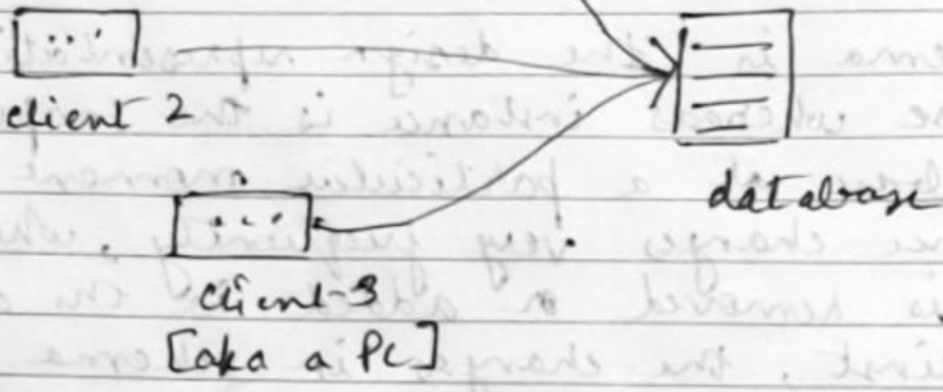
ii) Instance changes very frequently, whenever data is removed or added in the database. As against, the changes in schema occurs regularly.

2. Data modelling is the process of developing data model for the data to be stored in a Database. Data Models ensure consistency in naming convention, default values, semantics, security while ensuring quality of the data. Data model structure helps to define the relational models, primary and foreign keys while ensuring quality of data and stored procedures. The 3 types are: conceptual, logical and physical.

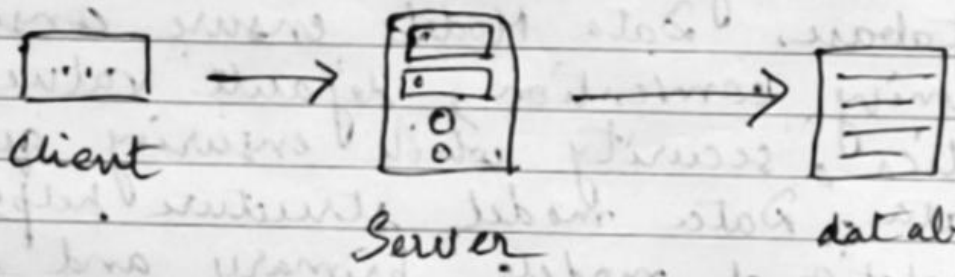
3.

Key	DDL	DML
Full form	Data Definition lang.	Data Manipulation lang.
Usage	to create database, schema, constraint, etc	to insert, update or delete records.
Commands	CREATE, DROP, RENAME. ALTER	INSERT, UPDATE & DELETE

Notes :



3 - Tier architecture



5. A data dictionary is a collection of names definitions and attributes about data elements that are being used or captured in a database, information system, or part of a research project. It describes the meaning and purposes of data elements.

Notes:

Metadata: describes about data. It is 'data about data' i.e. it gives detailed info. about the data elements of data dictionary.

iii) Specialised data handling
iv) Database backup and recovery
v) Security
vi) Authentication
vii) Capacity planning
viii) Performance monitoring
ix) Database tuning
x) Troubleshooting

7. Entity set is a collection or a group of 'entities' sharing exactly the 'same set attributes'. All entities can be distinctly identified in an empty set.
The collection of entity sets and their co relational sets together forms a database.

8.

Strong entity set	Weak entity set
i) It always has primary key.	i) While it has part discrimination key
ii) Not dependent	ii) Dependent on the entity
iii) Represented by single rectangle	iii) Represented by d rectangle
iv) They have either total participation or not	iv) Weak entity alwa have total parti

Notes

in database

ii) Not possible to determine value of stored attribute	ii) Possible to its value us attributes.
iii) It will be final	iii) It will be . In nature
iv) Represented by an oval	iv) Represented oval
v) It saves data access time	v) Data acces is longer.

10.

Total Participation	Partial Parti
i) Specifies that each entity in the entity set must compulsorily participate in at least one relationship	i) Specifies th in the entity or may not p in relationsh
ii) Mandatory participation	ii) Optional par
iii) Uses a double line representation	iii) uses a sin representati

Notes :

record in table.

ii) Can't accept null values.

iii) We can only have one primary key in a table

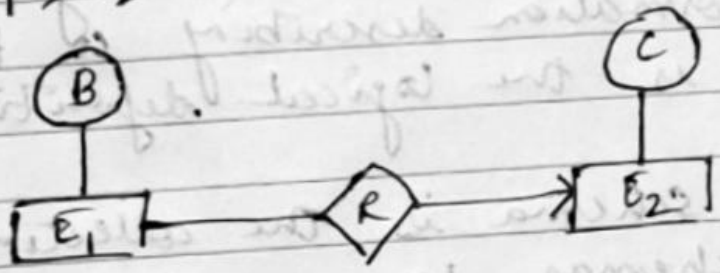
that is primary key in another table.

ii) Can accept multiple null values.

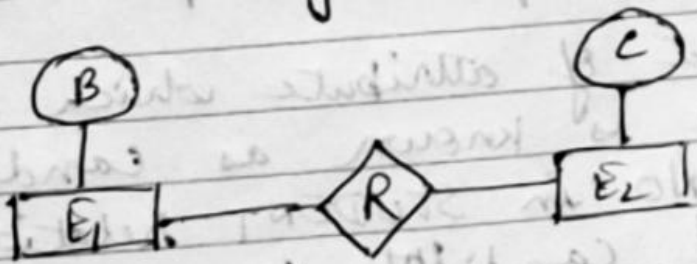
iii) We can have more than one key in a table.

12. Many to one mapping:

E_1, E_2: entities



Many to many mapping:



Notes:

as output. It uses various operations to perform this action. SQL Relational algebra query operations are performed recursively on a relation. The output of these operations is a new relation, which might be formed from one or more input rela

14. Relational schema is also known as table schema. A set of attributes is called a relation schema. It can be thought of as the basic information describing a table or relation. It is the logical definition of a table.
A database schema is the collection of relational schemas for a whole database. It describes the structure and constraints of data representing in a particular doma

15. The minimal set of attribute which can uniqu identify a tuple is known as candidate key for eg. STUD_NO in STUDENT relation.

Notes: The values of candidate key is unique and non-null for every tuple.
There can be more than one candidate key in a relation.