Schema and Instances :-

- Collection of information stored in the database at a particular time (moment) is called database instance.
- The overall design of the database is called database schema.

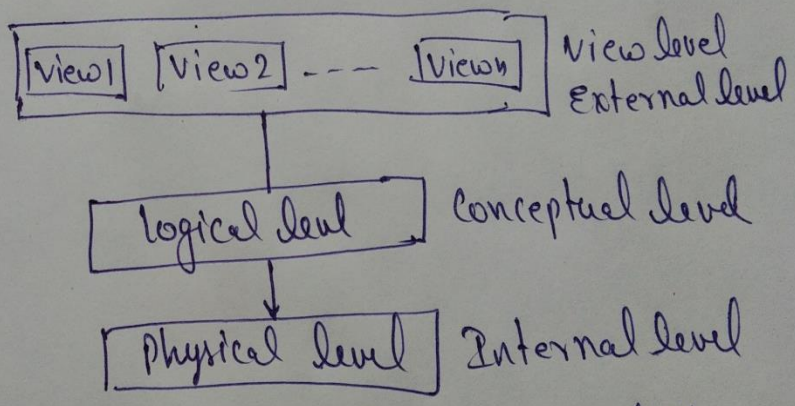
There are three types of schema

1. Physical schema
2. Conceptual schema
3. External schema

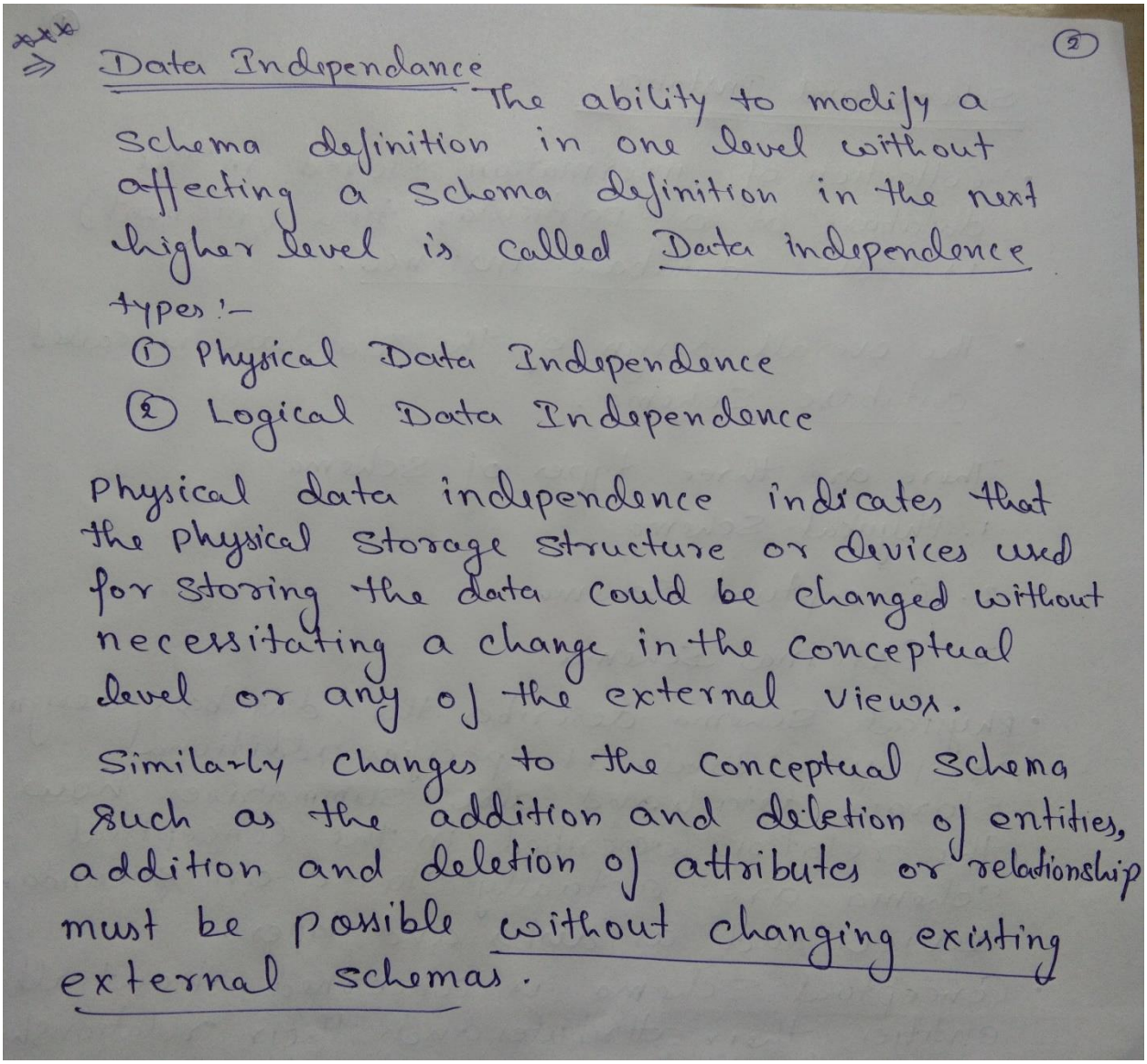
- Physical schema describes the database design at physical level. It specifies additional storage details and also summarises how the relations described in the conceptual schema are actually stored on secondary devices such as disks and tapes.
- Conceptual schema is concerned about all entities, their attributes and their relationship. i.e it describes the stored data in terms of data model of DBMS.
- external schema describes each external view. It is users view of database.

* Database System Concepts and Architecture

Data Abstraction



1. Physical level :- Lowest level of abstraction and it describes how the data are actually stored.
   The Physical level describes complex low-level data structures in details.
2. logical level :- It describes what data are stored in the database, and what relationship exist among those data.
3. View level :- This is the highest level of abstraction describes only part of the entire database.
   It simplify the interaction with the system. The system may provide many views for the same database.



⇒ Data Independance

The ability to modify a schema definition in one level without affecting a schema definition in the next higher level is called Data independence

types :-

① Physical Data Independence

② Logical Data Independence

Physical data independence indicates that the physical storage structure or devices used for storing the data could be changed without necessitating a change in the conceptual level or any of the external views.

Similarly changes to the conceptual schema such as the addition and deletion of entities, addition and deletion of attributes or relationship must be possible without changing existing external schemas.

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