Summary

-**Data Base**: is a collection of related data.

- Stores as comma-separated value.

-**DML:** Store and retrieve data from data base , it can be: Procedural(Rational Algebra) and Declarative(Relational Calculus).

- Relational Algebra (Operations):

  - **select.**
  - **projection.**
  - **union.**
  - **intersection.**
  - **Difference.**
  - **Product.**

❖ About data base design :

- **Relation**: connection between data.
- **Entity**: store data about what?
- **Attribute**: what we store (Type, value).
- **DBMS**: allows to query different operations.
- **RDBMS**: special kind to be used in relational DB.
- **SQL**: language to communicate with DB:
  - **DDL**: Define DB structure.
  - **DML**: Manipulate Data.

➢ **What is database design?**

It is building schematics to make best DB.

➢ **What Is integrity?**

Your data is connected, up to date and no disconnected data, so a good database prevent data integrity issues.

➢ **Steps:**

Conceptual, Logical, physical.

➢ **Data integrity:**

Entity integrity, Referential integrity, Domain integrity.

➢ Database Terms:

There are a lot of terms, I will mention some of them.

- Null: No value.
- Anomalies: errors within our data integrity.
- Tuple= row = entry = record
- Columns = attributes = field
- File = table
- Schema: structure.
- Normalization: steps to get best DB design
- Keys: To make uniqueness.

➢ Database Relationships:

- One to one.
- One to many.
- Many to many.

➢ CRUD (create- Read – Update-Delete).

"Thanks"