**Day1:**

**Servers :** We can see with our eyes, e.g. = AWS, GCP, Azure

**Database**: it is just a place where we are going to store the data in a systematically organized way

**Semi structured database**: where we have some structured and unstructured data like JSON files where we understand some sort of data and some not.

**Types of Databases**:

* **Relational database**
* **NoSQL**
* **Time Series:** Like weather forecasting, all kind of weathering is time series
* **Graph**

In MySQL we perform CRUD operations which is Create Read Update Delete.

**DBMS :** it is just a software where we can manage the data

E.F. Codd. created 4 rules:

* In Every cell only one data we have to store in RDBMS.
* In the cells we can store big sized maximum size = 4GB data in a single cell
* We can store the data into multiple tables but we just need a connection
* Validation is necessary in this type of data

**Relational Database :**

Normalization: is used to save the storage and removing the duplicates

ACID properties : Atomicity Consistency Isolation Durability

* Atomicity = there are only two possibilities in atomicity in it either it perform the transaction or it goes fail
* Consistency = The data must be accurate in the database
* Isolation = Multiple transaction can be performed
* Durability = once the transaction is complete it will store the database permanently

E.R Diagram : Blueprint of the table and databases.

**Keys, Constraints:**

SQL : DDL, DML, DCL, TCL, DQL

DDL : Data definition language ( Create , Alter, Drop, Terminate)

DML : Data manipulation language (Insert, Update, Delete )

DCL : Data Control language( Grant, Revoke)

TCL : Transaction control language (Begin, commit, Savepoint, End, Rollback)

DQL : Data Query Language (Select, Selection , Join, Projection) DQL is only used for the retrieving the data.

**Terminate :** It entirely remove the row

**Delete :** it only remove the data but the row will be there

**Day2:**

**Basics of SQL :**

**Char :** it will store only 2000 character (char)

**VarChar :** it will store only 2000 chars and it only store the balance memory.

**VarChar2 :** it will store only 4000 chars and it only store the balance memory.

**Number(P, [S]) :**

Precision:99980.03 how many total digits are there in it

Scale: in the scale we have to add point after that specific number and it is optional

**Date ‘yyyy-mm-dd’ or ‘dd-mm-yyyy’:** this is the format of how we store the date in the sql

**Large Object:** In large object we have 2 types of large objects.

1. CLOB – Character large object :

2. BLOB – Binary large object:

**Constraints:** means conditions like if or if else conditions

1. Constraint is **Unique**: some columns do not need multiple same number so unique value will be comes there.

2. **Not null:** where we don’t need to accept the null values

3. **Check:** checks help us to check the conditions and make decisions

4. **Primary key:** whenever we want to retrieve some data from the specific key.

5. **Foreign key:** it connects two or more tables

6. **Referential key:**

**SELECT \* FROM EMPLOYEES**  it is the first code which we use to start or activate our compiler

And it selects everything from the employee table which is

stored in the database

**WE CAN USE EXPRESSION IN \* expression => result**  expression will be a thing which produces

the result

**LITERALS :**

**ALIAS :** alias is a temporary name in the sql

SELECT SALARY\*12 AS ‘ANNUAL’ AS is the alias and here we are assigning alias as a temporary variable.

1. we have to create the table

2. we have to create the database