**Different between database and spreadsheet :-**

**- Spreadsheet are used when you have a small company and there I no security as if you ask to**

**access the spreadsheet you can do it and anyone can do this .**

**- In database there are user and administrator can only view anything and if don’t want a person to get all of the hidden information that stored within database you can do that .**

**Basically relation is the connection between data, relation in relational database Comes From this mathematical Concept but rather than combining Sets of numbers, we're combining attributes of real world. things**

**First you need to know two terms:**

**1-entity**

**2- attribute**

**\* an entity is anything we store data about\***

**\* an attribute or things that we Store \***

**So if an entity is a person then an attribute would be their Password, their hair color, their address… etc.**

**→ entity type and attribute type basically the type means it's a category of entity that we're storing**

**→ So entity type might be a user and all the entities within it should be a user same as attribute types**

**when we actually give these specific values, they no longer become types**

**-attributes are Columns entities are individual rows**

**- Query just sort of like searching our data doing some. giving us result some thing**

**DBMS is what allows us to easily run a query**

**A Relational DBMS is just a subcategory of a DBMS and a specific kind that designed to work with relational databases-**

**examples of RDBMS or just DBMS is My SQL, it allows us to build and run a database**

**we have DB and RDBMS:-**

**-DB stores information**

**- RDMS allows us to manipulate that Data**

**\*when we have something such as My SQL we don't really have a difference between these two\***

**if we have hard drive disk and Some of data is going to be stored in different places in it and RDBMS is going to be able to take all of these data from different places and put these in the appropriate location to make it presentable**

**As well as we have server side Scripting languages such as PHP a that is going to hide our database**

Introduction to SQL :-

**→ SQL is a programming language used to communicate to a data base**

**→ SQL is kind of like the mediator between Computer database and human English.**

**So SQL is used to define the database structure and it manipulate the data within. So basically we can Kind of SQL as two categories**

**• manipulate means we insert data and then we can search or delete or update it**

**-Define (DDL)**

**-Manipulate (DML)**

**-Define Columns of the table (DDL) Insert a new value (DML)**

**CREATE is used to create tables or create a database**

**update → if we're updating the actual values within columns**

**-create is a definition Language**

**-update is a data manipulation Language**

**naming Convention :-**

**naming convention is just a pattern that people do or that you do to keep things consistent**

**Database design:-**

**→Data integrity is basically. where all of you data is correct up to date and no disconnected data.**

**Database designs :-**

**(1) Conceptual**

**(2)logical schema**

**(3) physical schema**

**\*logical and physical are going → how we to program our data base ( more specific)**

**\*Conceptual is more general what kind of relational database management system going to use How data is related**

**So database design is a method to separate information over multiple tables rather than have one huge table,**

**The three main types of data Integrity**

**- Entity integrity**

**-Referential integrity**

**-Domain integrity.**

**Database terms:-**

**-Data Database**

**-Relational Database**

**-DBMS (which Control our database)**

**-RDBMS (which control our tables and the values within our tables of a relational database) -Null : no data in that specific**

**-Anomalies are basically. errors within our data in our data integrity**

**-Integrity : we implement database field**

**Integrity to protect against anomalies.**

**• Record is another name For a row and a field is another term For a Column**

**File is another name of table.**

**Entry is just another name for a row. schema just a drawn out structure of our DB.**

**Normalization is basically just a bunch of steps that we're going to Follow to help us get the best DB design and the process of building the best DB.**

**• naming Convention is just a consistency used to make things Consistent, anything done**

**repeatedly to create consistency.**

**•key is something, to make everything unique within a table, and this is how tables we make Connections among**

**-The Frontend is what the user sees**

**-The backend is what's behind the scene going on the scene**

**Frontend: doesn't allow us directly type in our own SQL it only allows us to use what the Front end gives us which is then communicated to the database**

**atomic value basically just means that the value stores one thing we Should break it down into we can treat it as one thing.**

**Relationships type:-**

**1)one to one**

**2)one to many**

**3)many to many**

**one to one → means that one entity has a connection with one other entity**