WEEK 6 - SQL

**DataBase:**

* Database: Store and Organises data.
* Allows links to be created between two databases.

**Tables:**

* Columns: Individual columns corresponding to attributes of the object
* Rows: Consist of one set of attributes corresponding to one instance that a table describes. Known as data entry, record or Tuples
* DBMS: A allows a computer to perform database functions of storing, retrieving adding deleting and modifying data.
* Table: A table is a predefined format of rows and columns that define an entity also known as a file.

**Relationships of Database: (Displayed with ERD -> Entity Relation Diagram)**

* One to One: Each row in Table A related to exactly one row in Table B - student may have one row in contact\_info
* One to Many: Each row in the table can be related to many rows in the relating table.
* Many to Many: One or more rows in Table A can be relation to 0,1 or more rows in Table B.

**Primary Key:**

* The primary key uniquely identifies each record in the table.
* Each table can have more than one column which is part of its primary key ( OrderNo + Order Line No)- Known as composite key.

**1st Normal Form:**

Make everything atomic: Data must be presented as small as it can

No repeating groups

**2nd Normal Form:**

It is in 1NF

All non-key attribute are fully functional dependent on the primary key.

**3rd Normal Form:**

It is in 2NF

There is not transitive functionality: When a non – key column is functionally dependent on another non-key column which is functionally dependent on the primary key of the table.

**JOINS:**

Inner Joins (Simple Join):

-The most frequently used, it returns all rows when there is at least one match in BOTH tables.

LEFT JOIN or LEFT OUTER JOIN:

-Returns all rows from the left table and the matched rows from the right table regardless of any matching entry in the right table

RIGHT JOIN OR RIGHT OUTER JOIN – CONVERSE OF LEFT

FULL JOIN:

Returns everything for all of them irrespective of whether it matches or not. Where no match exist, this missing side will contain NULL.