Key

- **Key :** It is a single attribute or combination of one or more attributes of an entity set. i.e. used to identify

   Different Types of Keys:

- **Primary Key :** It is defined as that key used to uniquely identify a record.
    - Not Null & Unique
    - Primary key must contain unique values.
    - A primary key column cannot have NULL values.
    - A table can have only one primary key which may consist of single fields.
    - Primary key may contain multiple fields are used as a primary key, they are called a composite key.
    - Not Null & Unique
    - e.g. : Order_no, Product_no, Customer_no
- **Foreign key :** Null and Not uniquely

   The relationship between two tables matches the Primary Key in one of the tables with a Foreign Key in the second table.

   A FOREIGN KEY in one table points to a PRIMARY KEY in another table.

- **Candidate key :** The two or more attributes or combination of attributes that uniquely identify an instance of an entity set.
- These attributes or combinations of attributes are called "Candidate key".
- One of them must be designated the primary key. The remaining candidate keys is called "Alternate Key".

   Example :

   Employee (
   Employee ID,
   FullName,
   SSN,
   DeptID
)

1. Candidate Key: are individual columns in a table that qualifies for uniqueness of all the rows. Here in Employee table **EmployeeID** & **SSN** are Candidate keys.

2. Primary Key: is the columns you choose to maintain uniqueness in a table. Here in Employee table you can choose either **EmployeeID** or **SSN** columns,**EmployeeID** is preferable choice, as SSN is a secure value.

- **3. Alternate Key:** Candidate column other the Primary column, like if EmployeeID is PK then **SSN** would be the Alternate key.

4. Super Key: If you add any other column/attribute to a Primary Key then it become a super key, like **EmployeeID + FullName** is a Super Key.

5. Composite Key: If a table do have a single columns that qualifies for a Candidate key, then you have to select 2 or more columns to make a row unique. Like if there is no **EmployeeID** or **SSN** columns, then you can make**FullName + DateOfBirth** as Composite primary Key. But still there can be a narrow chance of duplicate row.