- In a database, **a key is a field or combination of fields that uniquely identifies each record or row in a table**. There are several types of keys in a database, including :
  - ➢ Primary Key: A primary key is a field or set of fields in a table that uniquely identifies each record in the table. A primary key must be unique, non-null, and immutable, meaning that it cannot be changed after it is assigned. Each table can have only one primary key.
  - ➢ Foreign Key: A foreign key is a field in one table that refers to the primary key of another table. It is used to establish a relationship between two tables. A foreign key can be null, meaning that it can have no value, and it does not have to be unique.
  - ➢ Candidate Key: A candidate key is a field or set of fields in a table that can be used as a primary key. It must be unique and non-null, but it can be changed after it is assigned.
  - ➢ Super Key: A super key is a field or set of fields in a table that uniquely identifies each record, but it may also contain additional fields that are not necessary for uniqueness.
  - ➢ Unique Key: A unique key is a field or combination of fields in a table that must be unique but can contain null values. It is similar to a candidate key, but it is not necessarily the primary key.
  - ➢ Composite Key: A composite key is a primary key that consists of two or more fields. It is used when no single field can uniquely identify a record.
  - ➢ Alternate Key: An alternate key is a candidate key that is not selected as the primary key. It can be used to uniquely identify records, but it is not the primary means of identifying records in the table.
  - ➢ Surrogate Key: A surrogate key is a unique identifier assigned by the system, rather than a natural identifier such as a person's name or social security number. It is often used as the primary key in a table.
  - ➢ Natural Key: A natural key is a key that uses a unique identifier that already exists in the real world, such as a social security number or an employee ID. Natural keys are often used as the primary key in a table, but they can also be used as alternate keys or part of a composite key.
  - ➢ Clustered Key: A clustered key is a key that determines the physical order of data in a table. In a clustered table, data is stored in a specific order based on the values of the clustered key. This can improve performance for certain types of queries.
  - ➢ Non-clustered Key: A non-clustered key is a key that does not affect the physical order of data in a table. Instead, it creates a separate index that can be used to quickly search for specific values in the table.
  - ➢ Inherited Key: An inherited key is a key that is inherited from a parent table in a relational database. It is used in tables that are part of an inheritance hierarchy, where each table inherits properties from its parent table.
- **Understanding** the different types of keys in a database **is important** for designing an efficient and effective database schema. Each **key** has its own **advantages** and **disadvantages**, and the choice of which key to use depends on the specific requirements and constraints of the database application.