KEYS

Keys are very important part of Relational database model. They are used to establish and identify relationships between tables and also to uniquely identify any record or row of data inside a table. A Key can be a single attribute or a group of attributes, where the combination may act as a key.

TYPES OF KEYS

SUPER KEY

A superkey is a set of attributes within a table whose values can be used to uniquely identify a tuple. A candidate key is a minimal set of attributes necessary to identify a tuple; this is also called a minimal superkey. ... employeeID is a candidate key.

FOREIGN KEY

A FOREIGN KEY is a key used to link two tables together. A FOREIGN KEY is a field (or collection of fields) in one table that refers to the PRIMARY KEY in another table.

Examples:

Table CUSTOMER

Column Name	Characteristic
SID	Primary Key
Last_Name	
First_Name	

Table ORDERS

Column Name	Characteristic
Order_ID	Primary Key
Order_Date	
Customer_SID	Foreign Key
Amount	

In the above example, the Customer_SID column in the ORDERS table is a foreign key pointing to the SID column in the CUSTOMER table.

PRIMARY KEY

A primary key is either an existing table column or a column that is specifically generated by the database according to a defined sequence.

For example, students are routinely assigned unique identification (ID) numbers, and all adults receive government-assigned and uniquely-identifiable Social Security numbers.

CANDIDATE KEY

The minimal set of attribute which can uniquely identify a tuple is known as candidate key.

For Example, STUD_NO in STUDENT relation. The value of Candidate Key is unique and non-null for every tuple. ... For Example, {STUD_NO, COURSE_NO} is a composite candidate key for relation STUDENT_COURSE.

ALTERNATE KEY

ALTERNATE KEYS is a column or group of columns in a table that uniquely identify every row in that table. A table can have multiple choices for a primary key but only one can be set as the primary key. All the keys which are not primary key are called an Alternate Key.

COMPOSITE KEY

composed of two or more attributes, but it must be minimal

RELATIONSHIP SET

A relationship set is a set of relationships of the same type. Formally it is a mathematical relation on (possibly non-distinct) sets.

TYPES OF RELATIONSHIP

Three types of relationship in database:

*Unary Relationship

*Binary Relationship
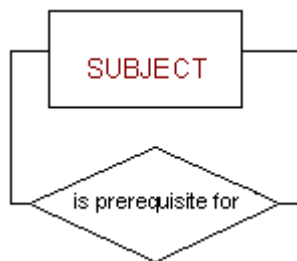
*Ternary Relationship

UNARY RELATIONSHIP

A unary relationship, also called recursive, is one in which a relationship exists between occurrences of the same entity set. In this relationship, the primary and foreign keys are the same, but they represent two entities with different roles.

For some entities in a unary relationship, a separate column can be created that refers to the primary key of the same entity set.

For Example:

Subjects may be prerequisites for other subjects.
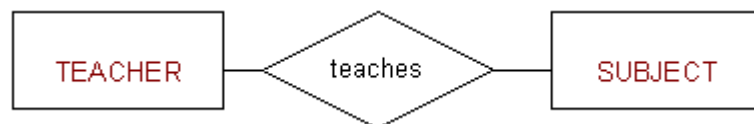

BINARY RELATIONSHIP

A Binary Relationship is the relationship between two different Entities , it is a relationship of role group of one entity with the role group of another entity.

A binary relationship is when two entities participate, and is the most common relationship degree.
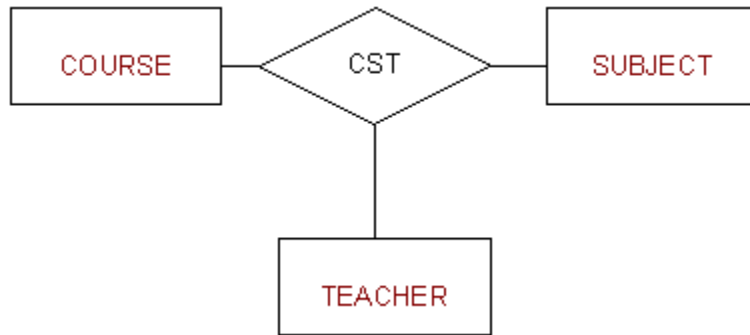
For Example:

TERNARY RELATIONSHIP

A ternary relationship is when three entities participate in the relationship.

For Example:

The University might need to record which teachers taught which subjects in which courses.
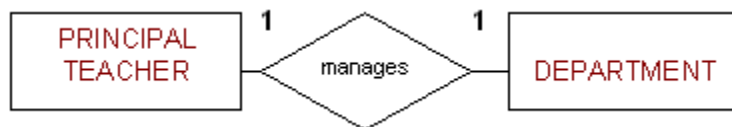
TYPES OF BINARY RELATIONSHIP

ONE TO ONE:

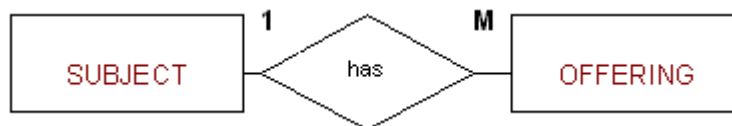A Principal Teacher manages one Department

Each Department is managed by one Principal Teacher

ONE TO MANY:

A Subject can be offered many times

Each Offering belongs to one Subject

MANY TO MANY

A Teacher can teach many different Subjects

Each Subject can be taught by many Teachers