Lecture - 3

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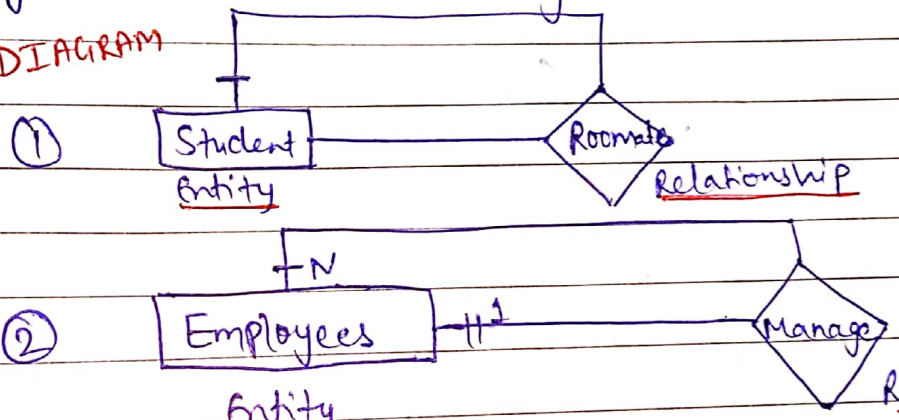
Degree of Relationship

The number of Entities participating in a Relationship is known as degree of Relationship.
There can be:

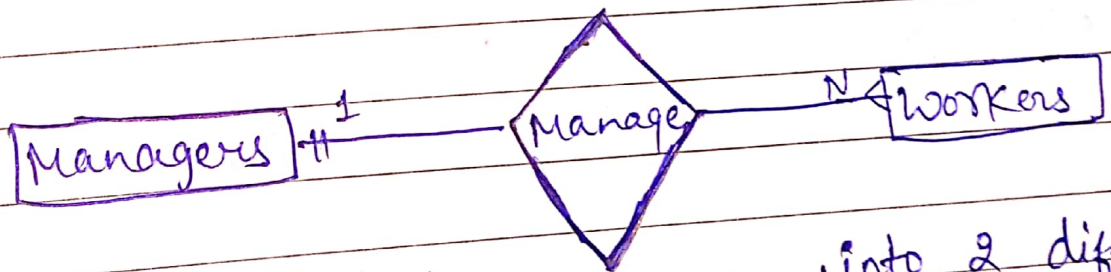
1) **Unary Relationship** : is a type of Relationship that is established b/w the instance of same entity type.
A type of Relationship that involves only one entity type is called unary Relationship.

ER DIAGRAM



↳ this shows the manager & all other employee as one single entity & there ~~Rship~~ Relationship.

2) **Binary Relationship** : Binary Relationship is a relationship between 2 entities.



Here, we divided the Employees into 2 different entity "Managers" & "Workers", the relationship between them will be binary Relationship

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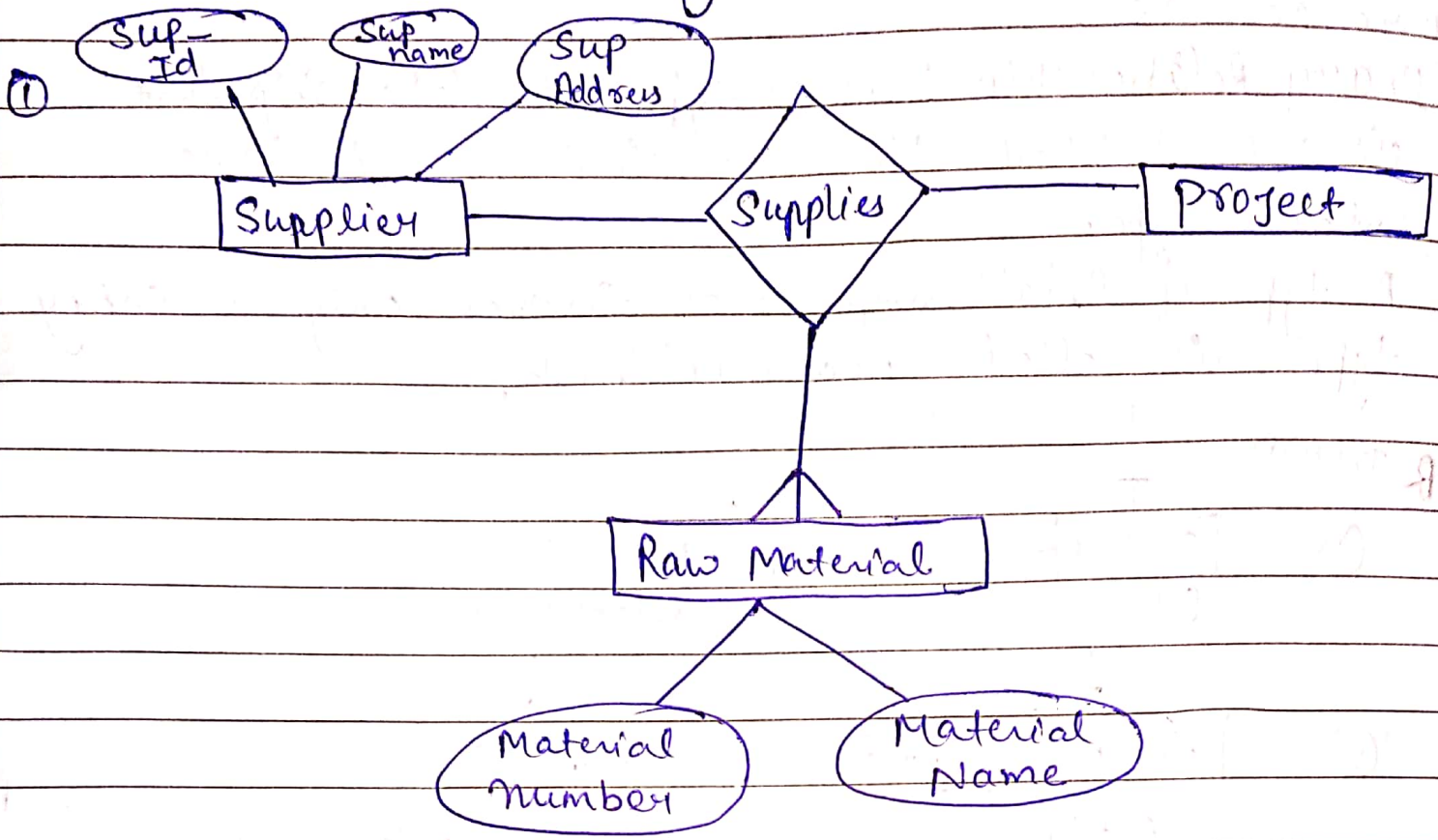
③ Ternary Relationship

When 3 entities participate in a Relationship there exists ternary Relationship.



A Supplier Can Supplies many Raw Material in a particular project.

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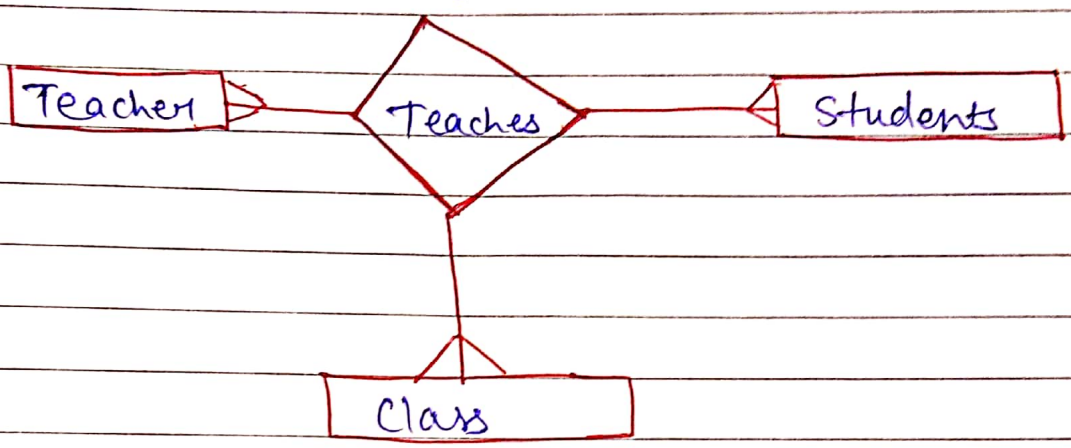
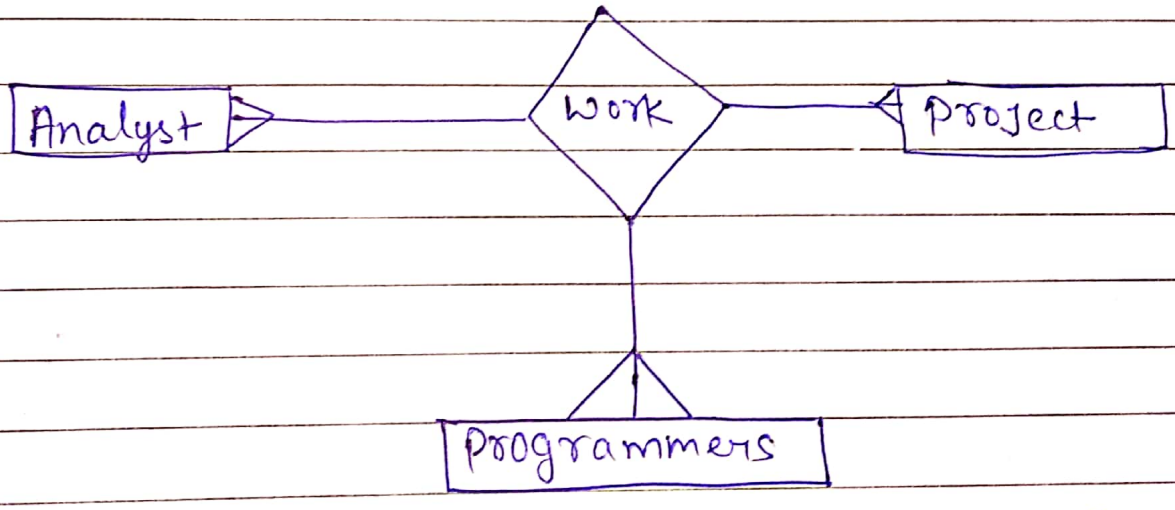
② Ternary Relationship "Teaches" can be read as "Many teachers may teach many classes with many students.



③



Here, we means that one or more Analyst with one or more projects, works with one or more programmers.

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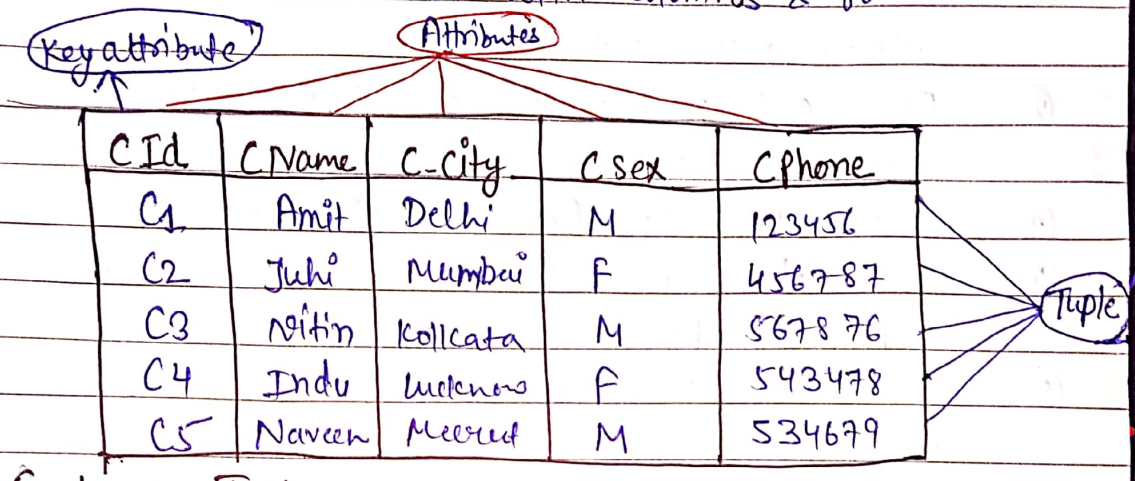
Relational Data Model.

The Relational data Model was developed by Edgar f. Codd, a researcher in IBM.

In this model, a database Consist of a series of unordered two dimensional Tables. The tables are known as relations.

A Relation is table with Columns & rows



Customer Table

Informal Terms	formal term in Relational Data Model
Table	Relation
Each Column head/field	Attributes
All possible Column values	Domain (Exam CusId – (a to z)(A to Z)(1 to 9) or any Combination of it)
Each Row	Tuple
Table definition	Schema

All relations (table) in a Relational database Model have 3 components.

1. Name; — Name represents title of the entity. In above exam, name is "Customer".
2. Degree; Degree represents the no of columns or attributes in relation (Table). total 5 Attributes are there.

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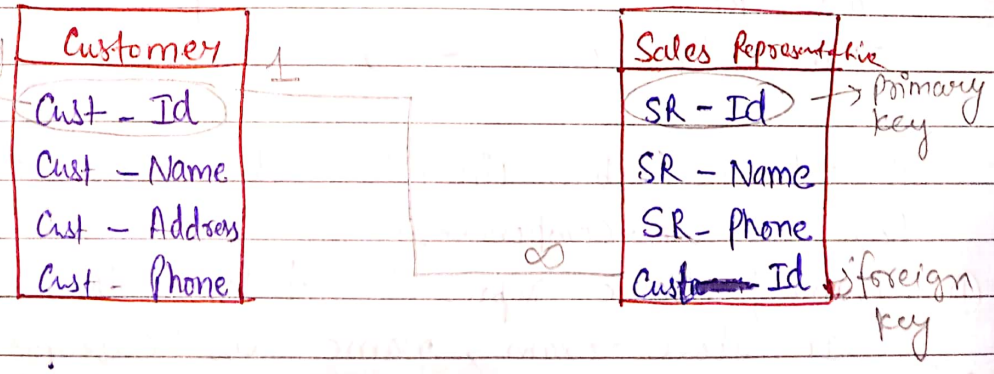
③ Cardinality; Cardinality represents the no of rows in a relation. Total 5 rows are there in above example. or (no of tuples in table)

Properties of Relation:

① Each table has unique name or can say title. [means 2 table can't have same name].
② Each cell of the Relation should contain exactly one value.
③ Each Attribute has distinct name.
④ Each tuple is distinct, there are no duplicate tuples.
⑤ The order of Attribute (columns) and rows in Relational Table is insignificant.

Creating Relationship between Tables:

Assume a database having 2 tables "Customer" & "Sales Representative" in database. The detail of customer will be recorded in the table "Customer" and the detail of sale representative will be in "Sales Repres-ensentative".



Note: Relationship among table created among 2 table, using a common attribute with in the table, that is Cust-ID, in both.

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Both the tables need to be connected so that data duplicacy can be controlled & interaction b/w sales representative & customer can be shown.
This can be done through creating relationship among both table.
A relationship is a manner in which one Table is linked with another table in the Database.

Concept of keys.

(1) Super key: Set of one or more attribute of a relation, that allows identifying an entity uniquely.
Exam: {Std_id, std_name}
like 001 Sumit
002 Aman
003 Sumit
in this case name of student may same but have distinct from each other.

(2) Candidate key; It is minimal set of superkey which can uniquely identify a entity.
{Std_Id} – C.K [Super key for which has no subset is a superkey].

(3) Primary key – Primary key is an attribute or group of attributes which uniquely Identify tuple.
for Exam [Emp_Id].

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④ Secondary key; A secondary key is an attribute or a combination of attributes which classify the entity set on particular characteristics.
for exam: In Employee table, an employees can be classified on the basis of the departments in which they work.

Employee Table

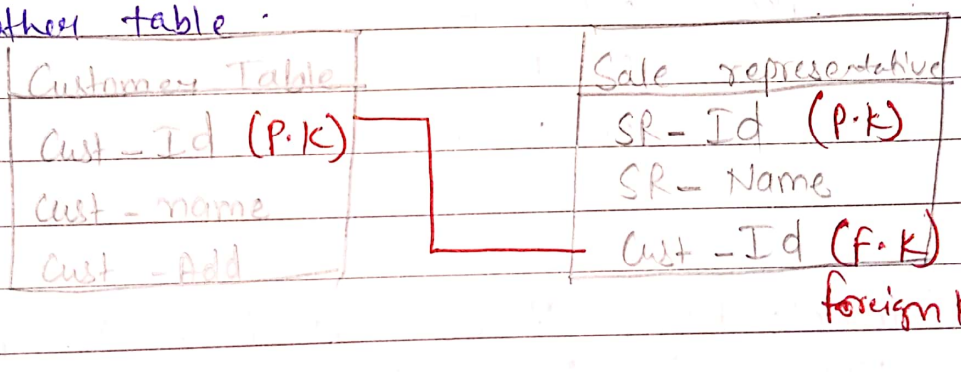
Primary key → Emp Id

Secondary key → dept name

Emp Id	Emp name	dept name

It is used for data retrieval.

⑤ foreign key;
foreign key is a key, that attribute whose value match the primary key in the related another table.



⑥ Composite key; It is a combination of 2 or more columns in table, which uniquely identify a tuple.
* we use a composite key when one attribute solely cannot uniquely identify a record.