Lecture 6

relational Model – 3 phase.

- inside this we have relations, of tables. = table
- With rows and columns.

We need to convert ER to relational Model.

- Conceptual Model (ER) → Logical Model (relational model)

Relation Consist,
- Relation Schema (table name + Attribute / columns)
- Relation instance (table - tuples - records)
- Domain - data type

(Relation = table)

Relation Schema has,
- name of the relation = table
- Attributes, (tuples / rows) - actual data,

Relation instance
- called as Tuples (data / records)

Domain
- represent the data type

nam : string , ssn : string

Schema Name

Students (

field name → sid : string,
name : string,
age : integer
gpa : real)

Domain

degree = 4

Degree of a relation

- no of attributes are equal to degree of relation.

ID, Name, age, Phone,

↑

degree = 4.

- you cant have same name for multiple relations
- attribute should not be multip valued or Composit-

formaliz key fields

Pk - Minimal set the identify row.

Fk - that serve reference to another table.

PK FK

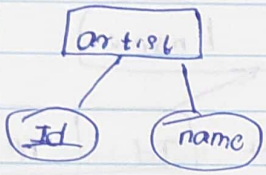
referencing Enrolled (cid, grade, Studid)

referenced Students (Sid, name, login, age, gpa)

Studid, Sid → Should be same domain (data type)

ER to relational Model.

ER



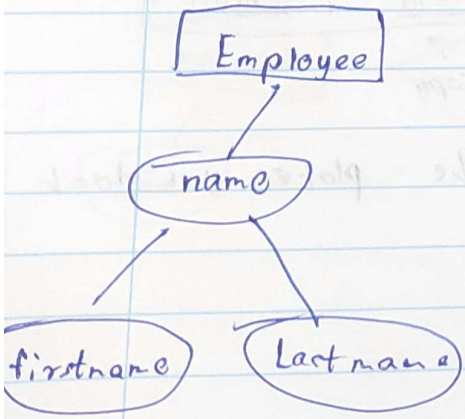
relational model

Artist | Id | name

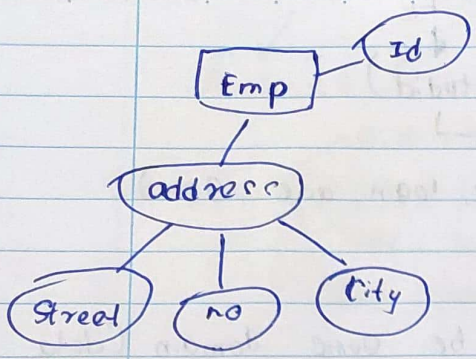
relational Model.

Table name | attribute1 | | |

Composite attribute

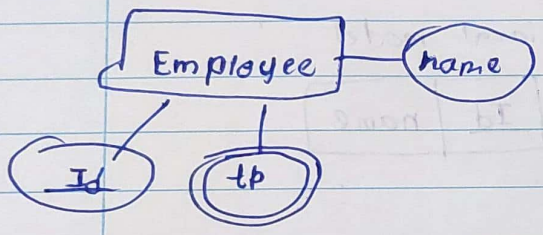


Employee | firstname | Last name



→ Emp | Id | street | no | city

Multivalue attribute - should be removed from main table and create special table

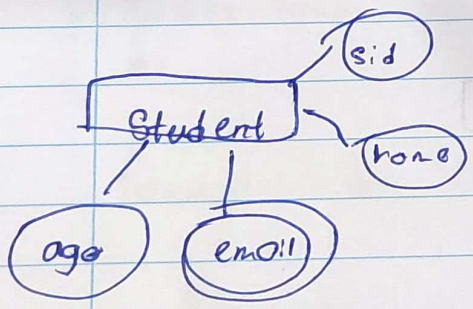


→ Employee | Id | name

→ Employee_contact | Id | TP |

copy

both should be Pk



→ Student | sid | name | age |

→ Student_Email | sid | Email |

copy

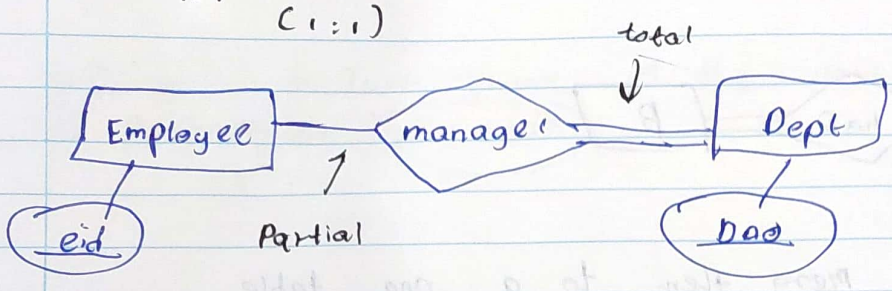
you have to store the place you took from pk.

→ Student | sid | name | age |

→ Student_Email | sid | Email |

& partial

Total participation to relational model
(1:1)



→ Employee | eid

→ Dept | dno | empNo

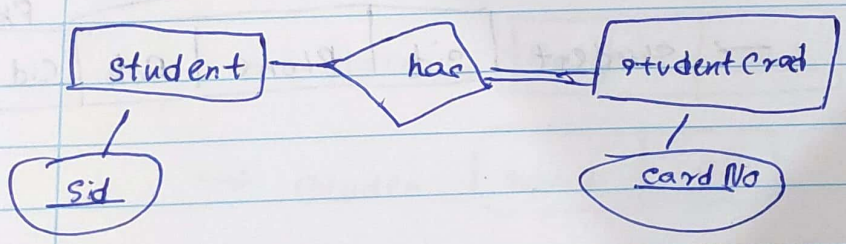
FK

have to show the original by arrow.

Copy of partial side pk should be included in total participating side.

empNo → doesn't need to be the same name. can be anything unique.

→ Partial side pk add it to total side (summery

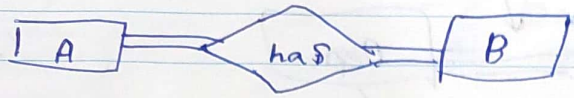


→ Student | sid

→ student card | card No | stdid

FK

1 : 1 total participation on both side



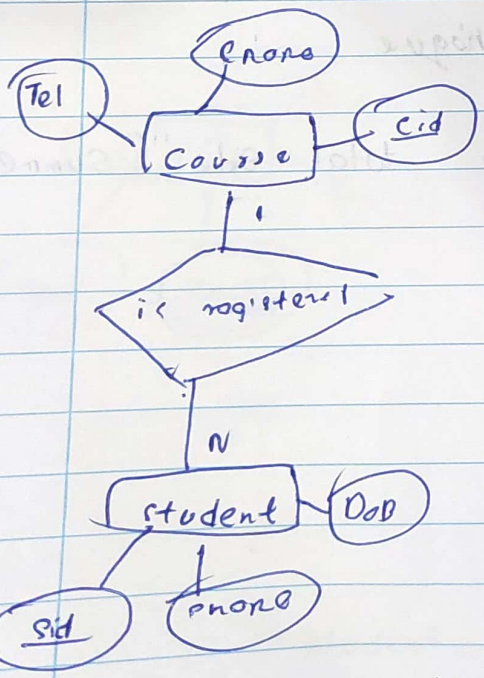
Merg them to a one table.

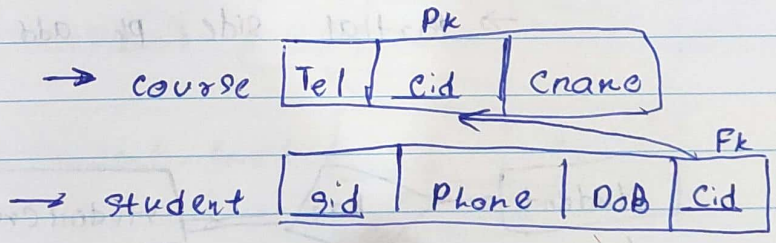
→ AB 

pick one attribute as a Pk.

1 : N conversation.

1 side Pk goes to the many side as a Fk. and show the copy arrow

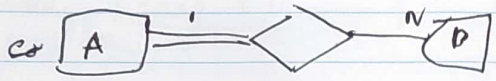




1 side Pk goes to N side.

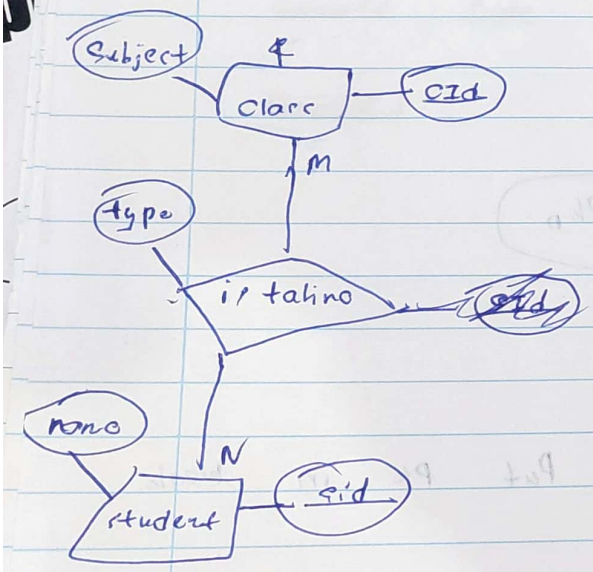
if 1 : N and total participation in one side.

Just ignore it the participation and give priority to ~~N~~ side.



Priority → B

M : N Convertion.



Create a new table using only Pk's of both table

That table name should be the relation name

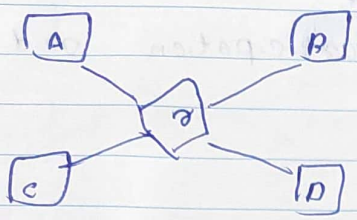
if ther decoriptive att take it too

→ class | Subject | CId |

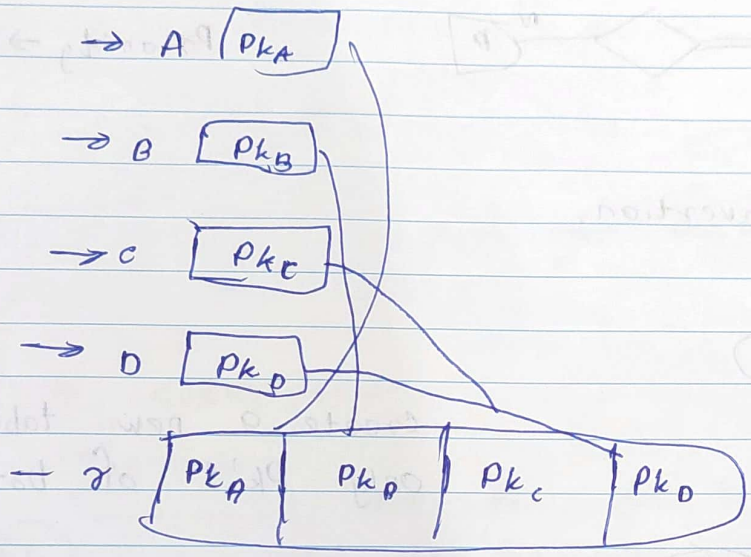
→ Studen | name | Sid |

New table → is taking | cid | Sid | type |

Many Entity c.

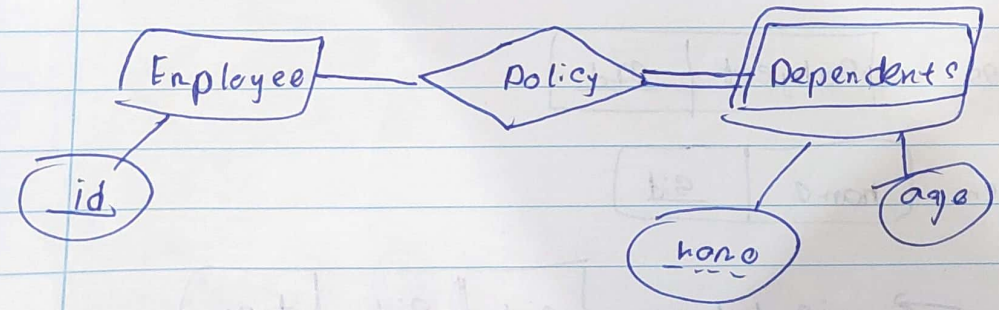


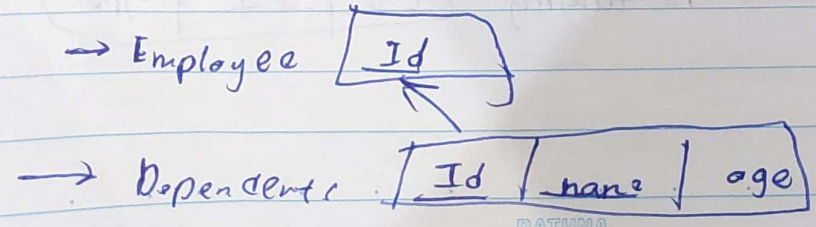
Separatly note down all entity c separaty and new table will all Pk's



Mapping Weak Entity

Some ar 1 : M Put Pk in Weak Entity side (N)

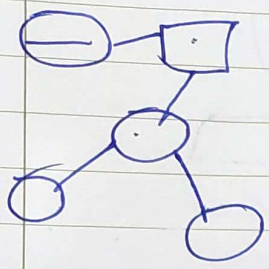




RATHNA

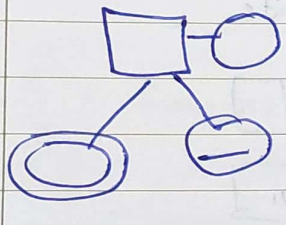
DATE NO

Composit.



Student | ID | fname | Lname

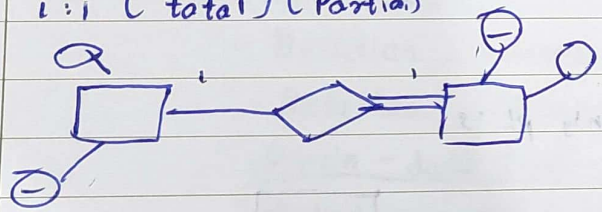
Multivalue



Student | ID | name

tp_no | ID | tp

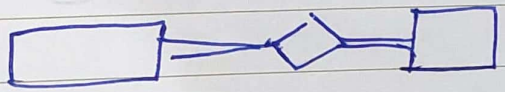
1 : 1 (total) (Partial)



Student | ID | name

course | ID | ID1

1 : 1 (total)



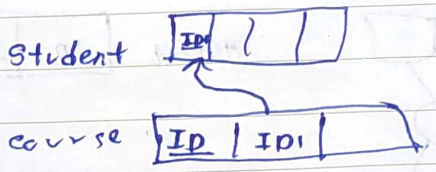
→ make one table with 1 pk

Student_course | ID | name | type

DATE NO

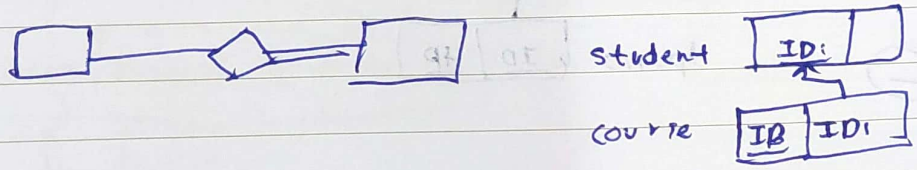
1 : N

1 side Pk to N



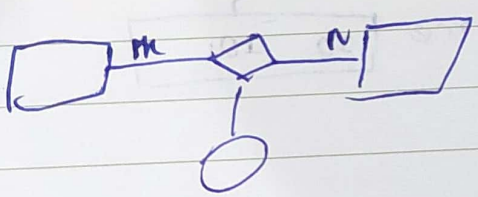
1 : N (total) (Partial)

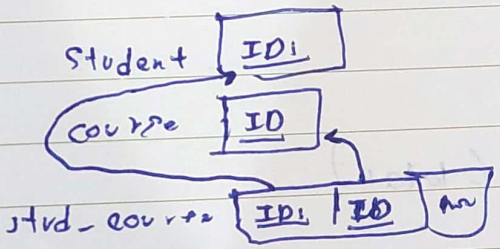
- ignor total/partial give priority N side.



M : N

- Create new table with only pk's





Weak Entity

Pk Pk in weak side