Converting ER –model into Relational Model

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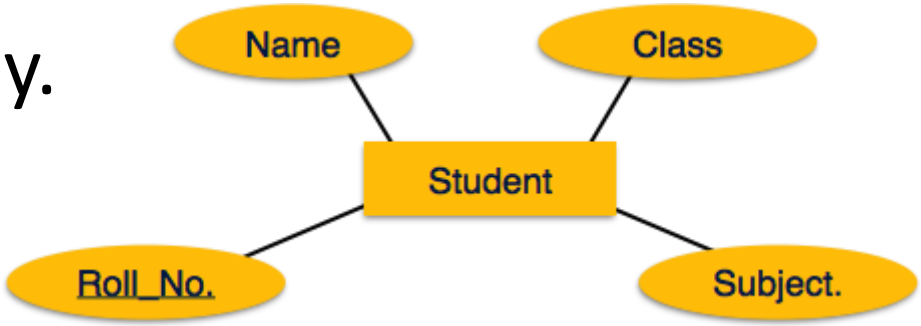
Mapping Entity

- Create table for each entity.
- Entity's attributes should become fields of tables with their respective data types.
- Declare primary key.



Primary key

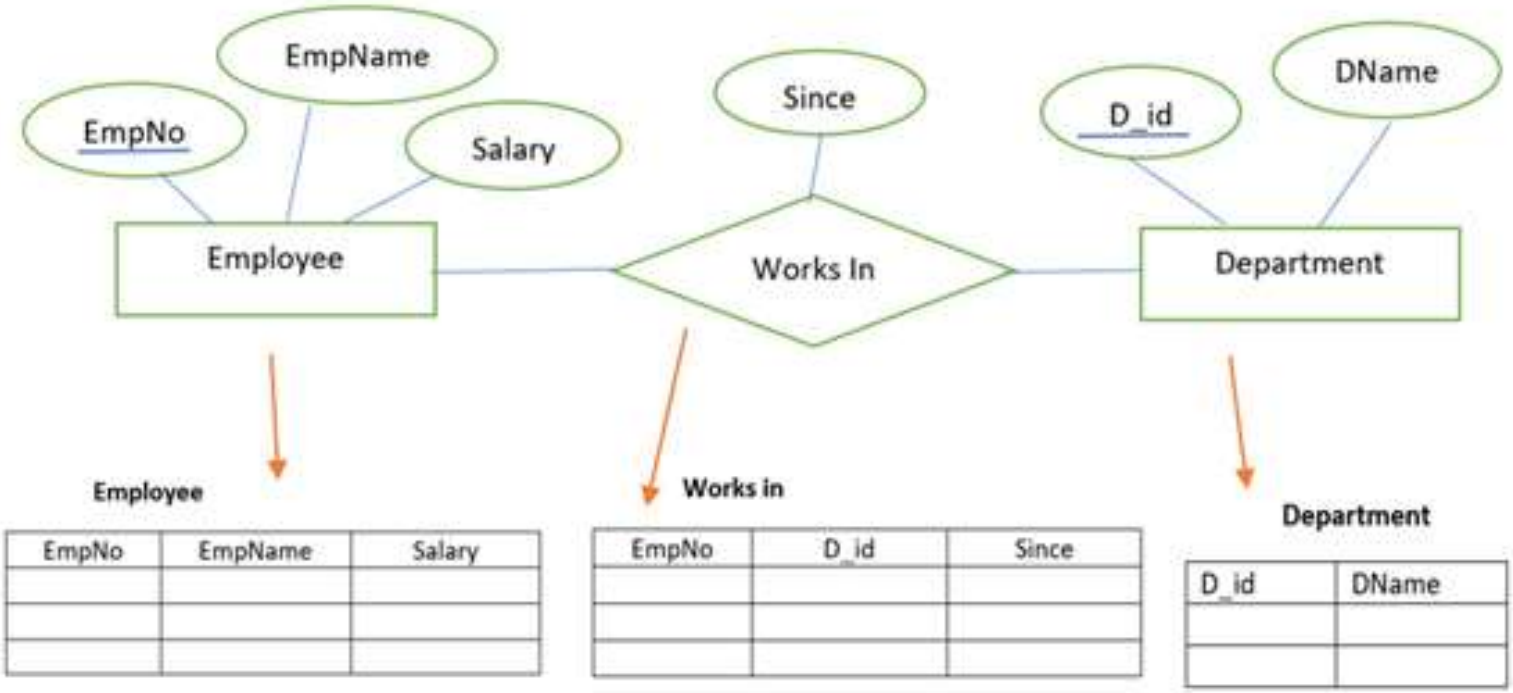
Roll no	Name	Class	subject

Student(Roll_no Primary key, Name, class, subject)

Mapping Relationship

- Create table for a relationship.
- Add the primary keys of all participating Entities as fields of table with their respective data types.
- If relationship has any attribute, add each attribute as field of table.
- Declare a primary key composing all the primary keys of participating entities.
- Declare all foreign key constraints.

Example1


EmpName
EmpNo
Salary
Since
D_id
DName
Employee
Works In
Department
Employee
EmpNo
EmpName
Salary
Works in
EmpNo
D_id
Since
Department
D_id
DName

Example 2

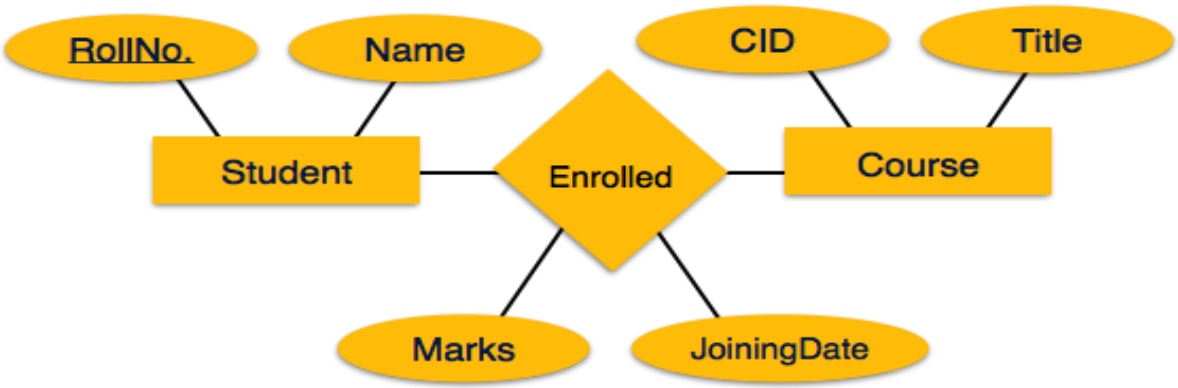
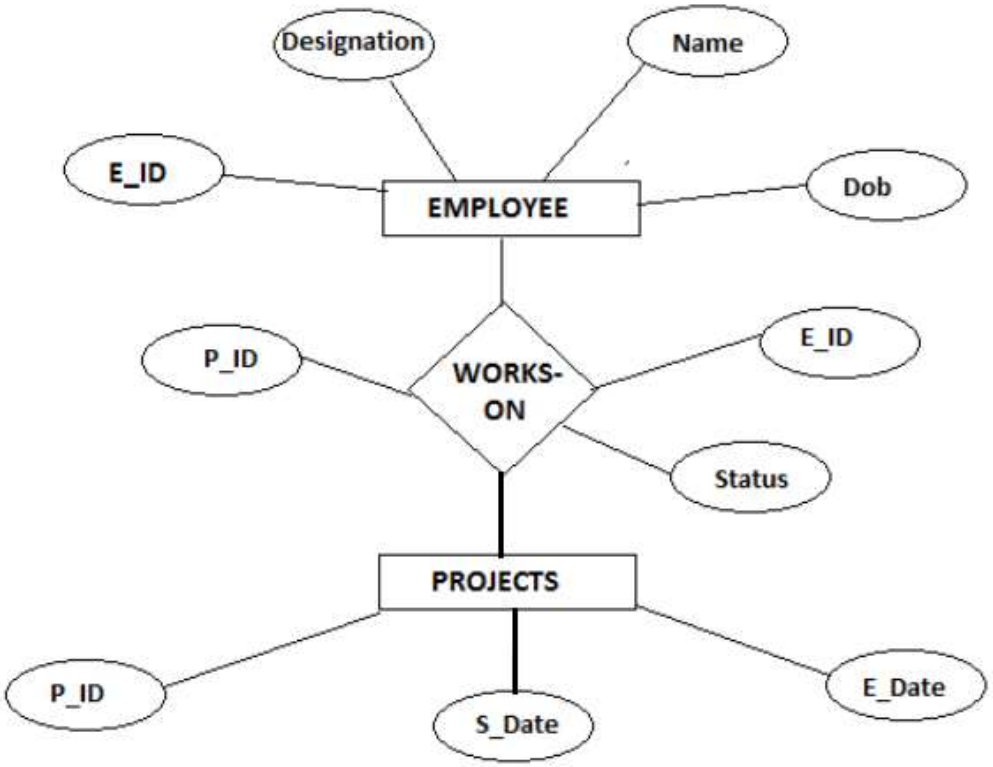


Table 1: Student (Roll_no. Primary key, name)
Table2: Course(CID Primary Key, Title)
Table3: Enrolled(Roll_no, CID, Marks, joining_date)

Example 3


Designation
Name
E_ID
EMPLOYEE
Dob
P_ID
WORKS-
ON
E_ID
Status
PROJECTS
P_ID
S_Date
E_Date

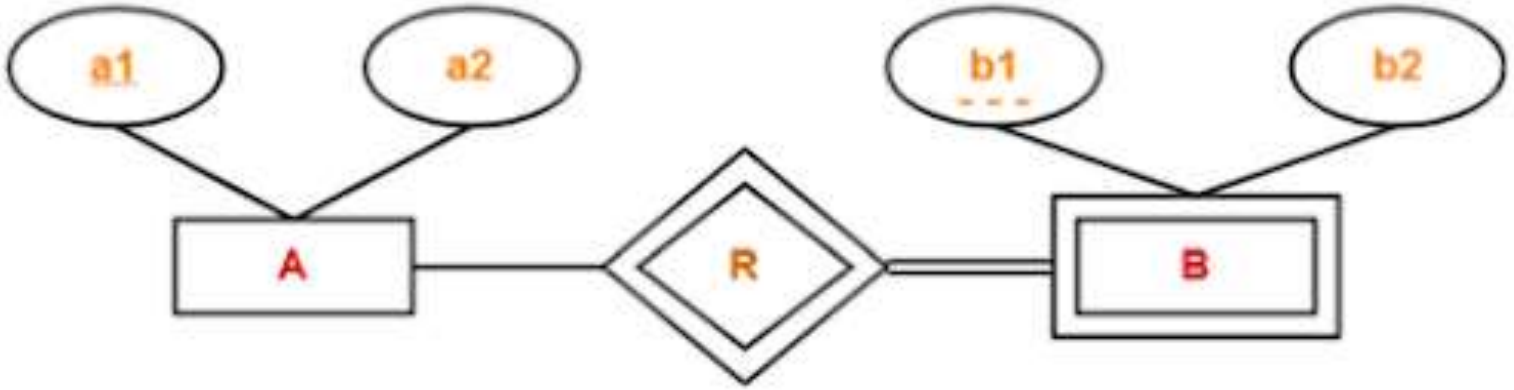
- There will be three tables
- Employee
- Works_On
- Projects

- Employee will have E_ID, Name, Designation and Dob.
- Works_On will have E_ID, Status and P_ID.
- Projects will have P_ID, S_Date and E_Date.

Mapping Weak Entity Sets

- Create table for weak entity set.
- Add all its attributes to table as field.
- Add the primary key of identifying entity set.
- Declare all foreign key constraints.

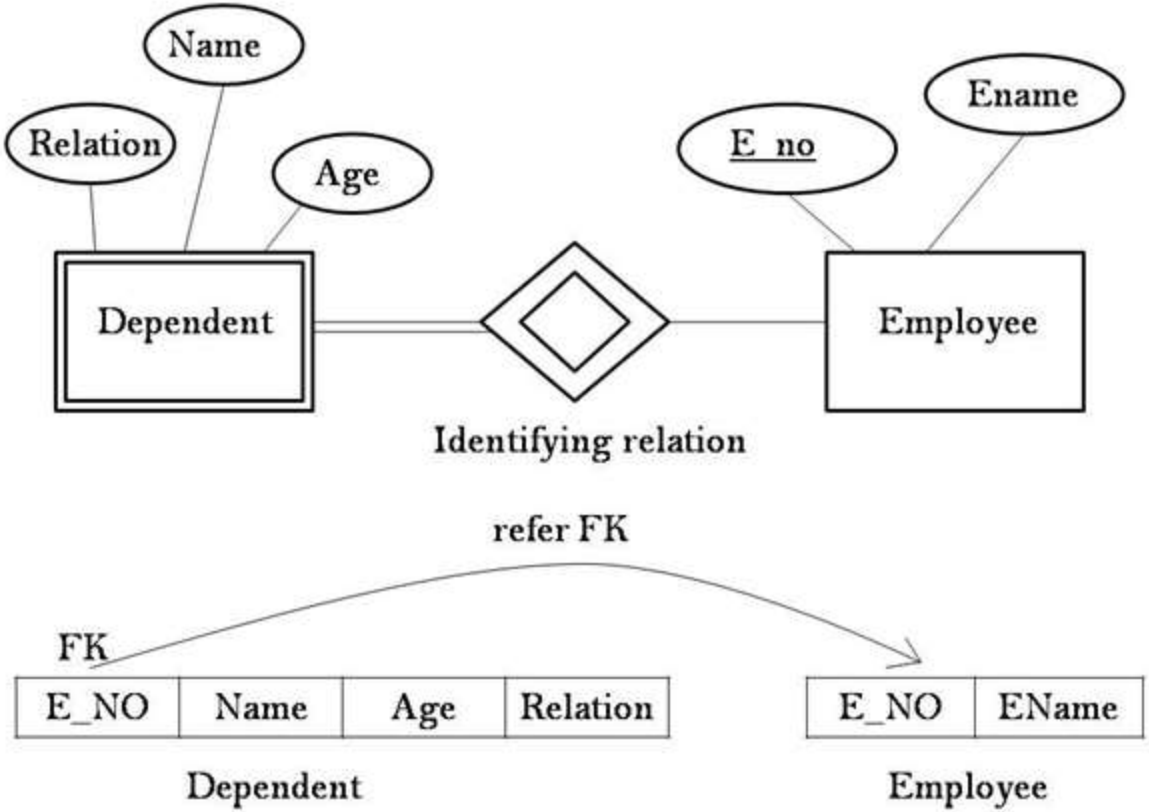
Weak Entity Sets



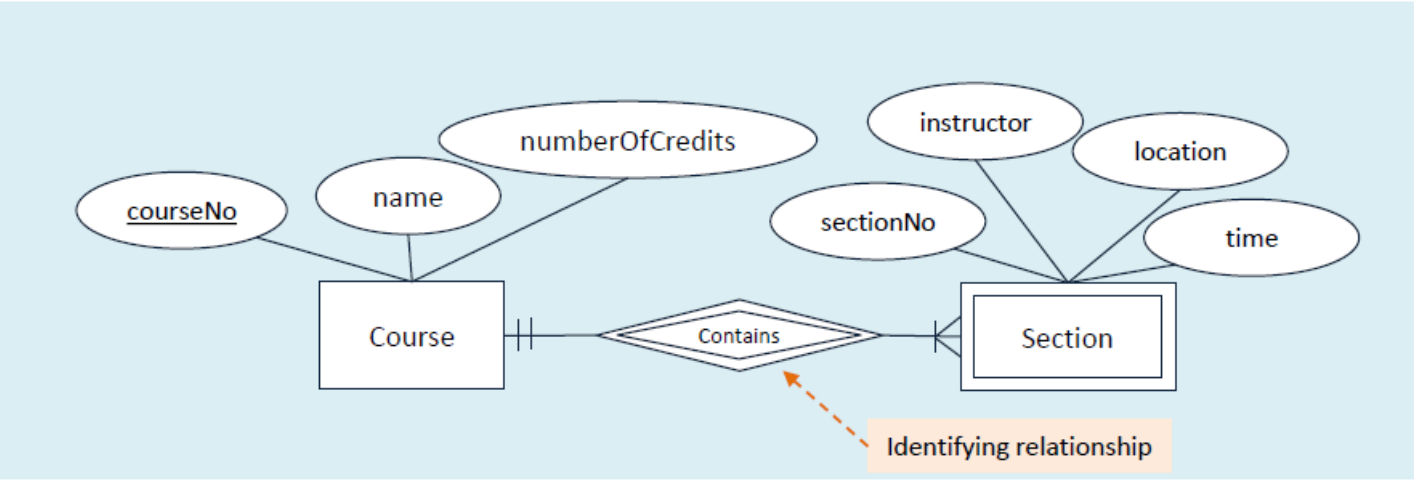
Here, two tables will be required

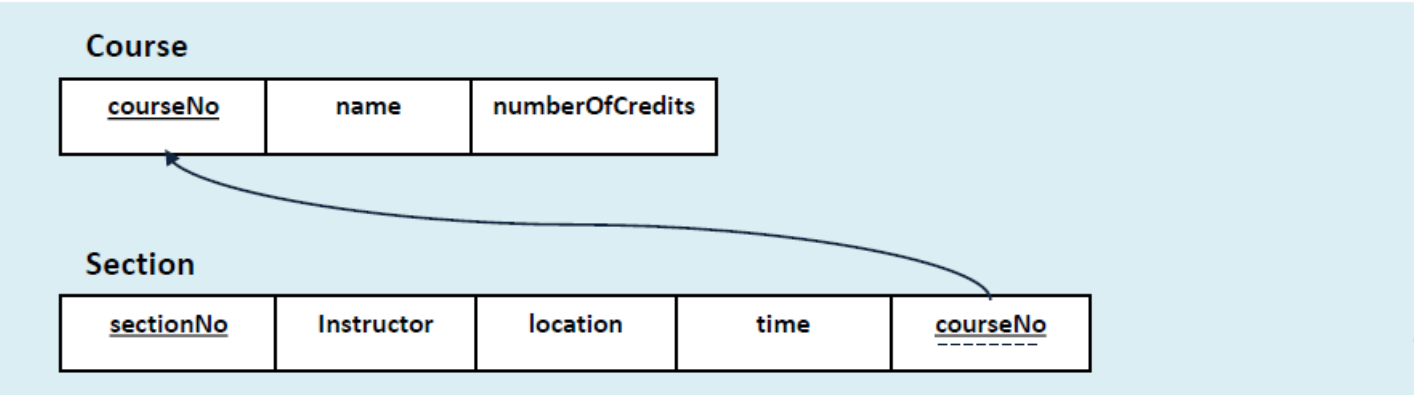
1. A (a1 , a2)
2. BR (a1 , b1 , b2).

Weak Entity Set



Example –Weak Entity set





Mapping Hierarchical Entities

- Create tables for all higher-level entities.
- Create tables for lower-level entities.
- Add primary keys of higher-level entities in the table of lower-level entities.
- In lower-level tables, add all other attributes of lower-level entities.
- Declare primary key of higher-level table and the primary key for lower-level table.
- Declare foreign key constraints.

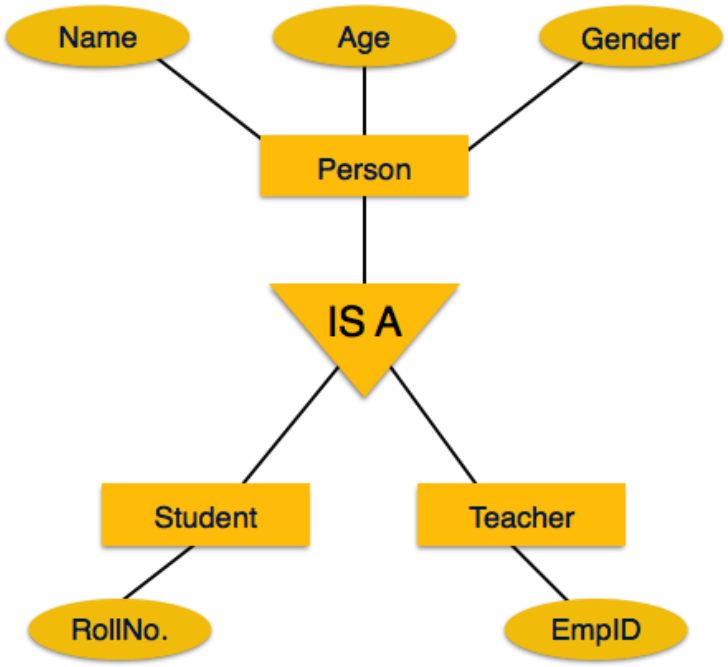


Table1

Person(name primary key, age, gender)

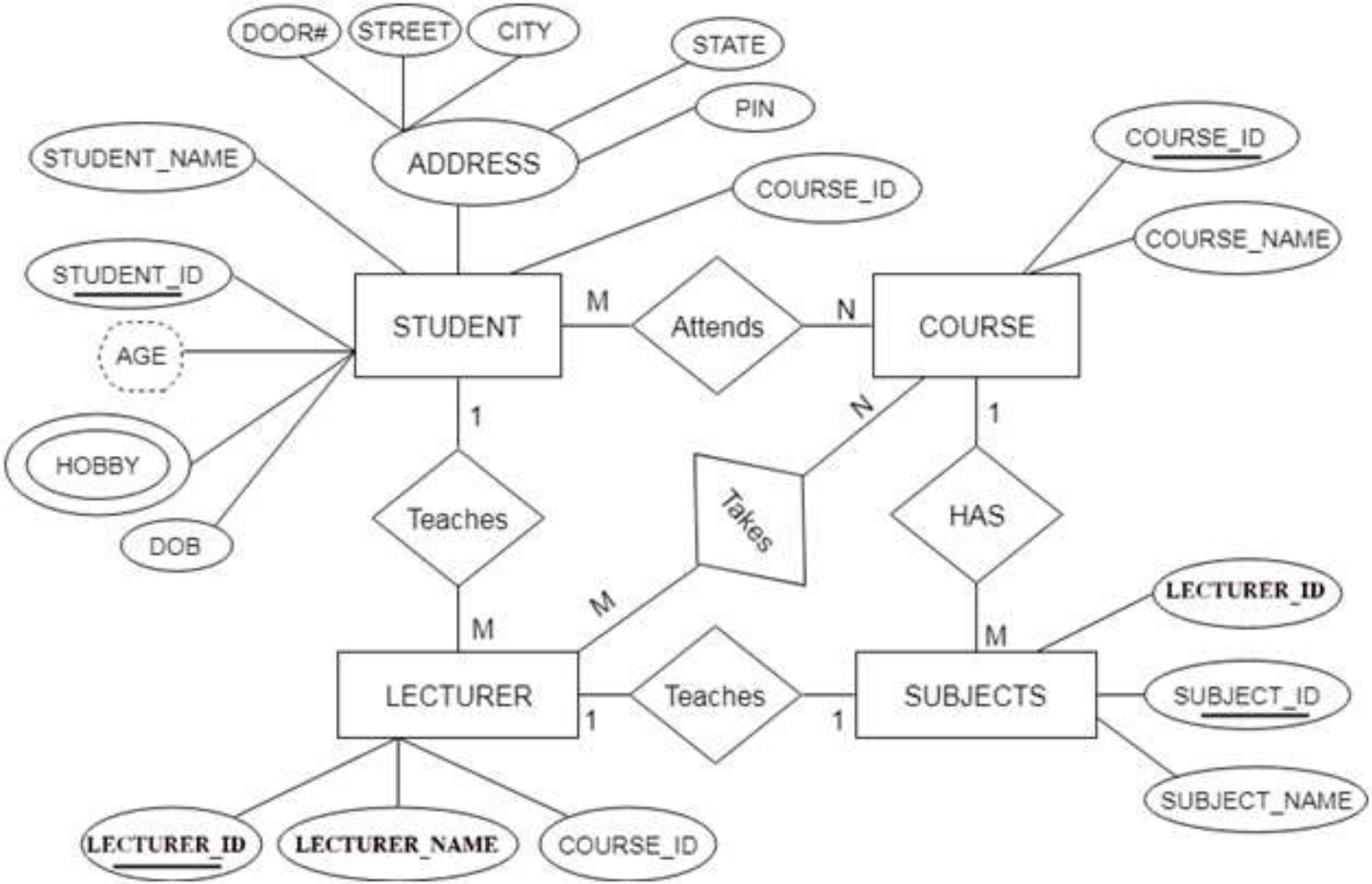
Table 2

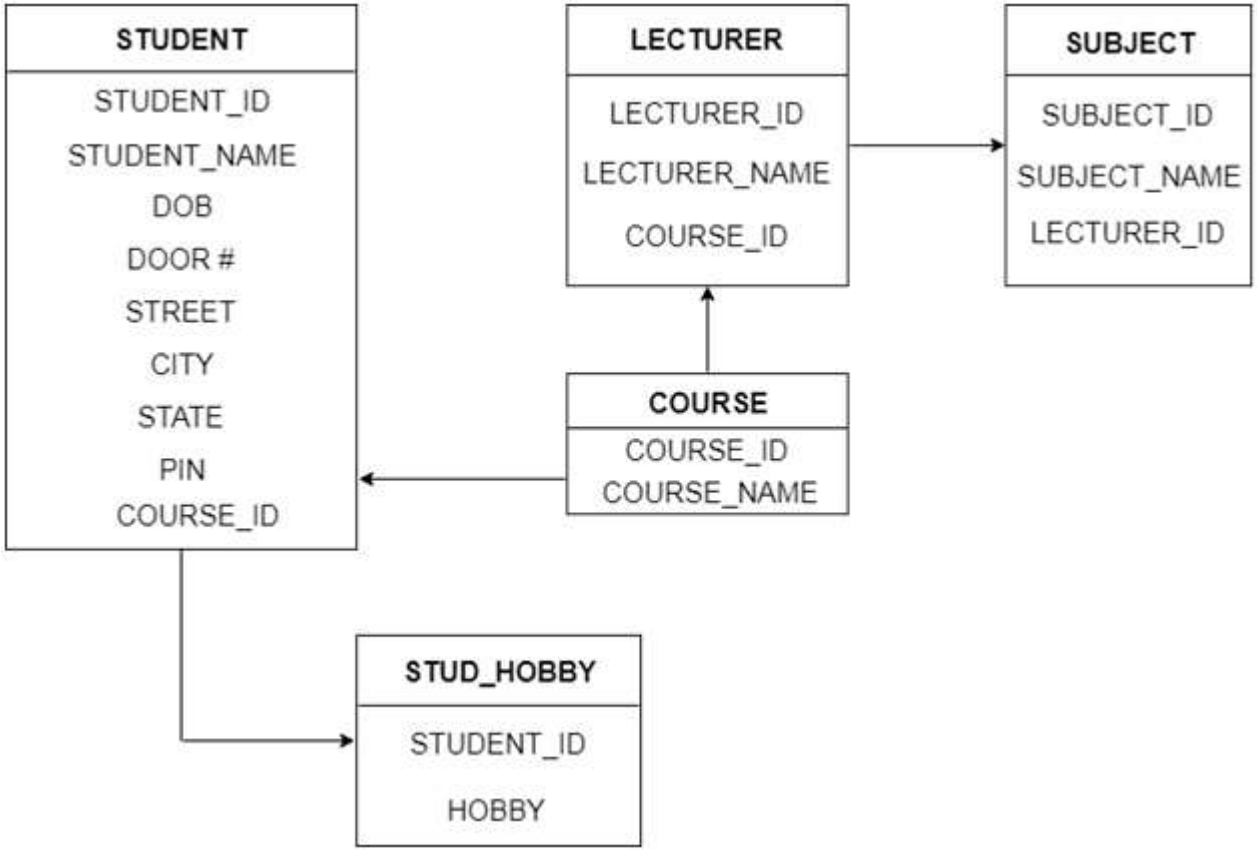
Student({name, Roll no} primary key)

Table 3

Teacher({name, EmpId} primary key)

Example


DOOR#
STREET
CITY
STATE
PIN
ADDRESS
STUDENT_NAME
COURSE_ID
COURSE_ID
COURSE_NAME
STUDENT_ID
AGE
HOBBY
DOB
STUDENT
M
Attends
N
COURSE
1
N
1
Teaches
Takes
HAS
M
M
M
LECTURER
Teaches
1
1
SUBJECTS
LECTURER_ID
SUBJECT_ID
SUBJECT_NAME
LECTURER_ID
LECTURER_NAME
COURSE_ID



•Hobby, The multivalued attribute is represented by a separate table.

•student address is a composite attribute. It contains CITY, PIN, DOOR#, STREET, and STATE. In the STUDENT table, these attributes can merge as an individual column.