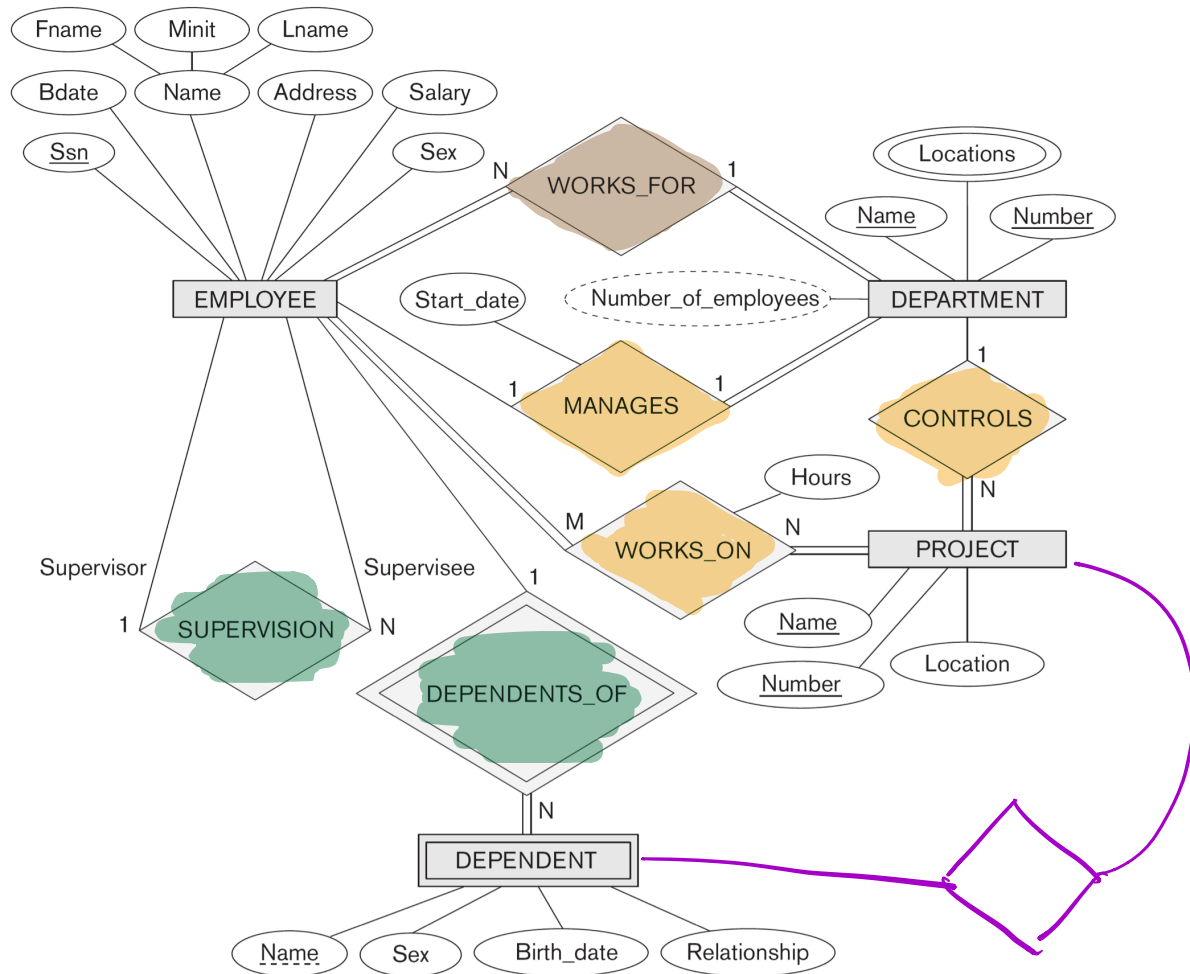
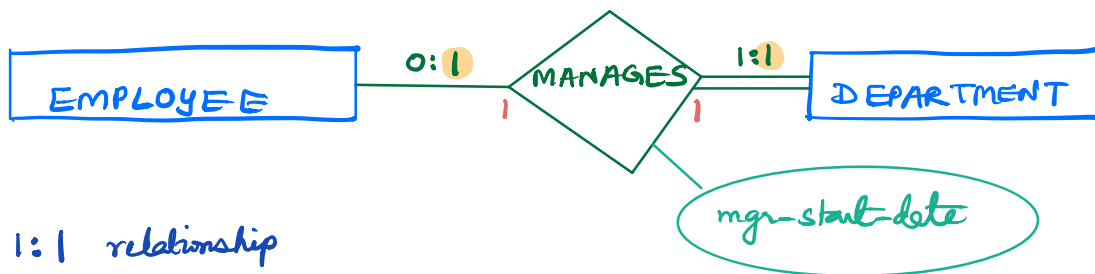


Example: COMPANY DB – ER Diagram

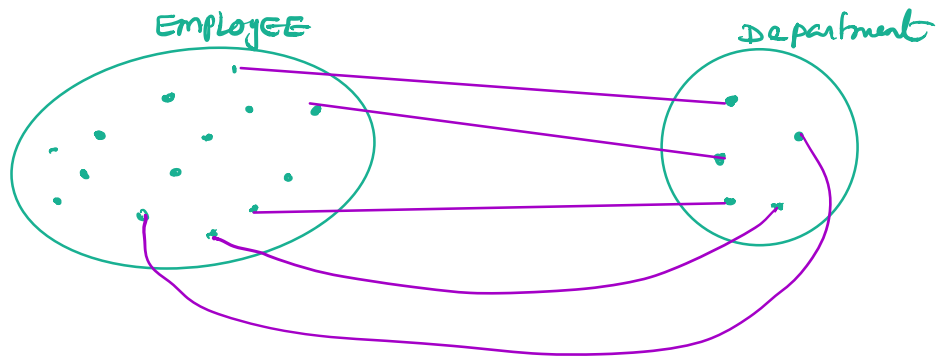


Constraints :

- 1) Some employees are managers.
- 2) A manager can manage at most one department
- 3) Every department must have one and only one manager.

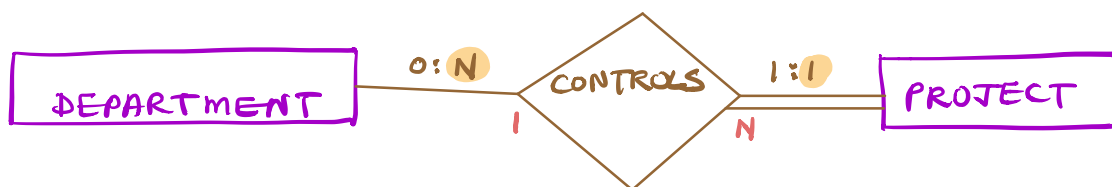


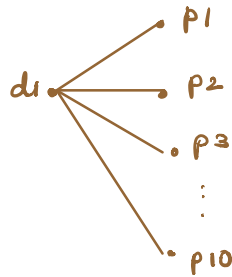
1:1 relationship



Constraints :

- 1) A department may control 0 or more projects.
- 2) Every project must have a single controlling department.

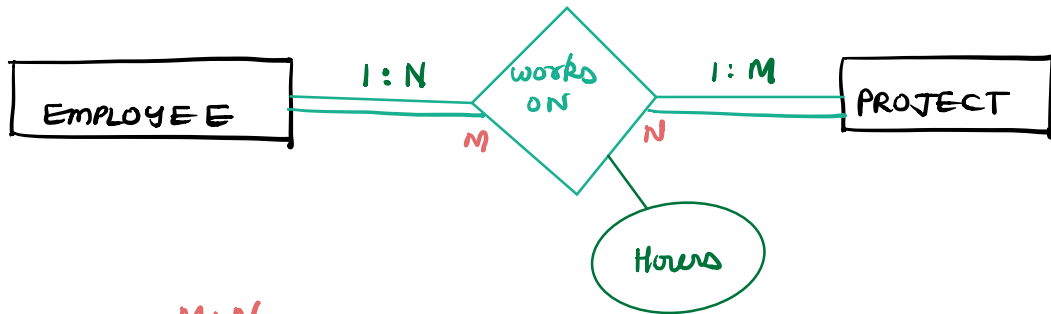




1: N relationship

Constraints

- 1) An emp works on one or more projects.
- 2) Every project has one or more employees.

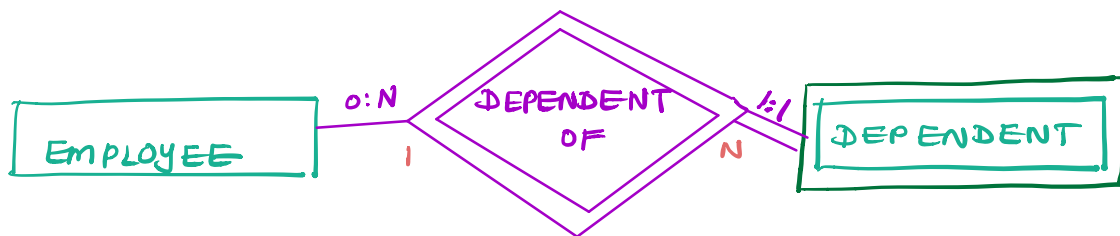


M: N

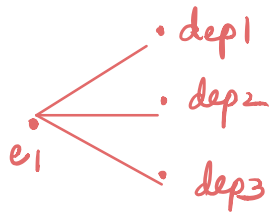
many-to-many relationship

Constraints :

- 1) An emp may have ≥ 0 dependents
- 2) Every dependent must have a single employee link.



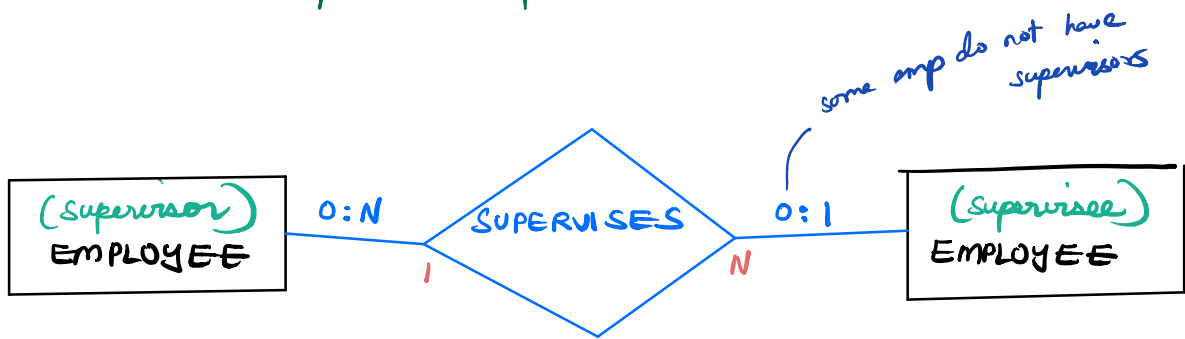
1: N relationship



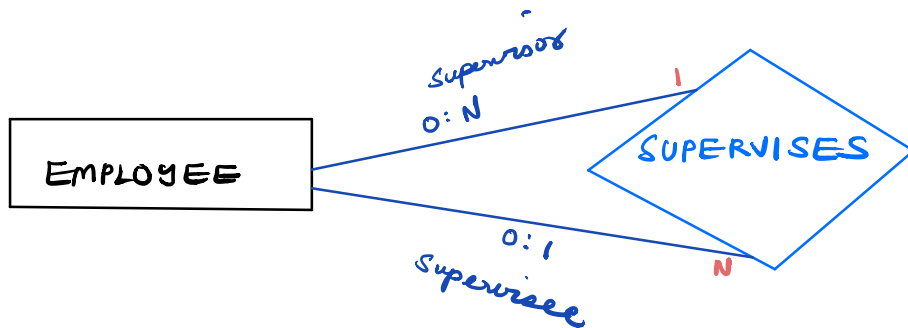
Recursive relationship

Constraints :


- 1) An emp may have at most 1 supervisor
- 2) Not all emp are supervisors.



1:N relationship



Relationships

- * 1-1
- * 1-N (N-1)
- * M-N
- * total participation ==
- * recursive
- * 

ER Diagrams to Tables chapter 9.1 (Old & New editions)

Step 1: Strong Entity Rule

- a) table consisting of simple attributes
- b) composite - convert to simple attribute
- c) choose one candidate key as primary key.

EMPLOYEE : SSN, Bdate, address, Salary,
Frame, Minit, Lname, Sex

DEPARTMENT : Dnumber, Dname

PROJECT : Pnumber, Pname, Plocation