Database Management System – 12 (Relationship Types, Relationship Sets, Roles)
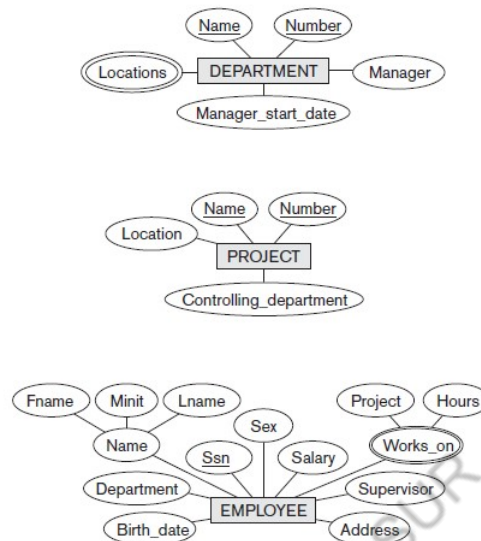
Ajay James

Asst. Prof in CSE

Government Engineering College Thrissur

Outline

- Relationship
- Relationship Type
- Relationship Set
- Role names
- Recursive Relationships

Relationships
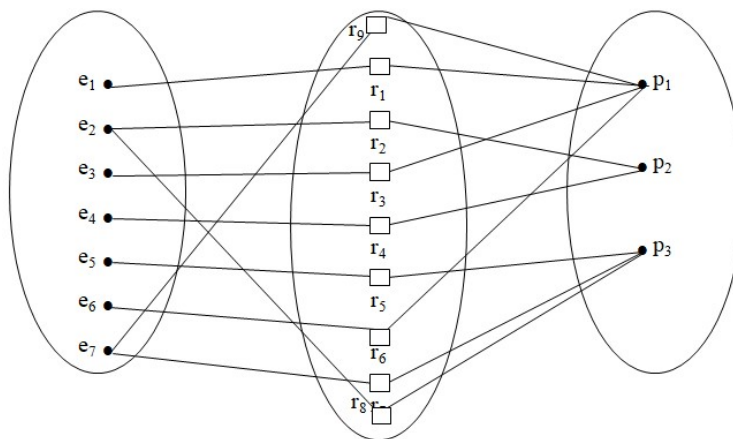

Relationship Types

- A ***relationship*** relates two or more distinct entities with a specific meaning
  - Example, EMPLOYEE John Smith works on the ProductX PROJECT
  - EMPLOYEE Franklin Wong manages the Research DEPARTMENT
- Relationships of the same type are grouped into a ***relationship type***
- A ***relationship type*** R among n entity types E_1, E_2, . . . , E_n defines a set of associations—or a ***relationship set***—among entities from these entity types

Relationship type – *WORKS_FOR*
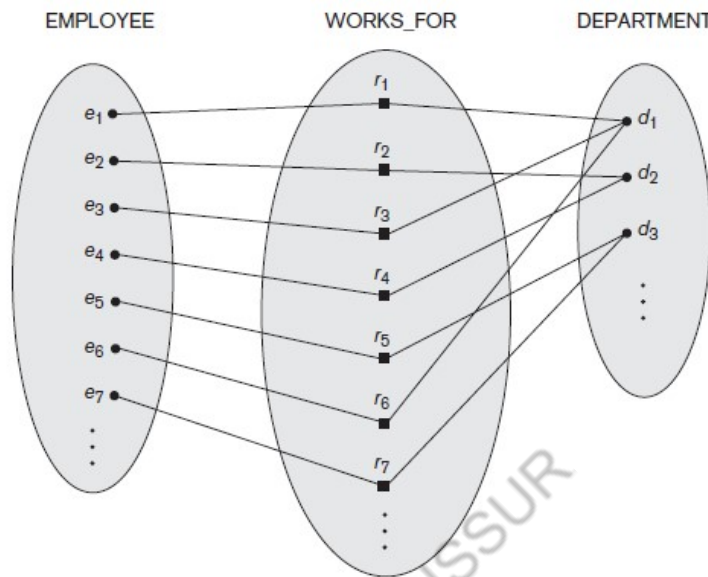
WORKS_ON Relationship type

- EMPLOYEE   WORKS_ON   PROJECT

Relationship type

- More than one relationship type can exist with the same participating entity types
- Example
  - MANAGES and WORKS_FOR are distinct relationships between EMPLOYEE and DEPARTMENT
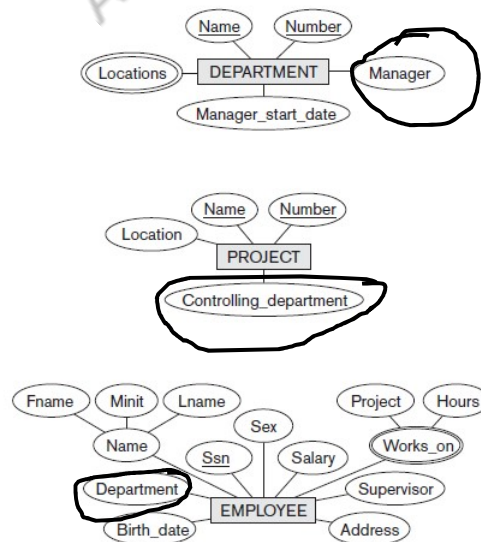 - with different meanings and different relationship instances

Relationship Degree

- *Degree* of a relationship type is the *number of participating entity types*
  - WORKS_FOR relationship is of degree two
- Relationship type of degree two is called *binary*
- Degree three - *ternary*

# Ternary Relationship example
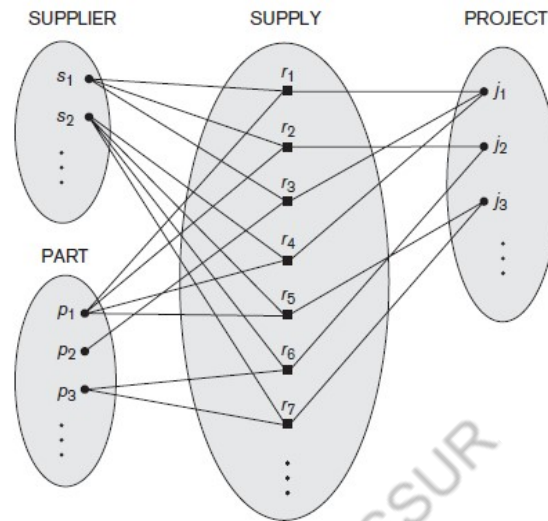
Relationships as Attributes

Role Names

- Role name signifies the *role that a participating entity* from the entity type plays in each relationship instance
- Helps to explain what the relationship means
- Example
  - WORKS_FOR relationship type, EMPLOYEE plays the role of employee or worker and DEPARTMENT plays the role of department or employer

Recursive Relationships

- Both participations are same entity type in different roles
- Example
  - SUPERVISION relationships between EMPLOYEE (in role of supervisor or boss) and (another) EMPLOYEE (in role of subordinate or worker)

Recursive Relationships

- 1 – Supervisor
- 2 - Subordinate
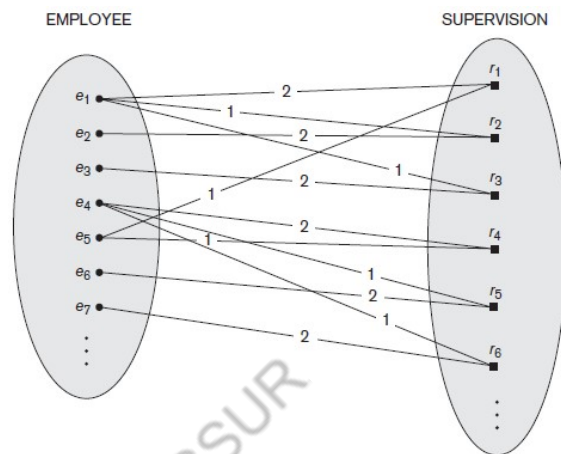
Reference

- Elmasri R. and S. Navathe, Database Systems: Models, Languages, Design and Application Programming, Pearson Education 6th edition and 7th edition

Thank you