

Course code : **CSE2007**
Course title : **Database Management System**
Module : **2**
Topic : **3**

ER-to-Relational Mapping

Objectives

This session will give the knowledge about

- ER-to-Relational Mapping

Introduction

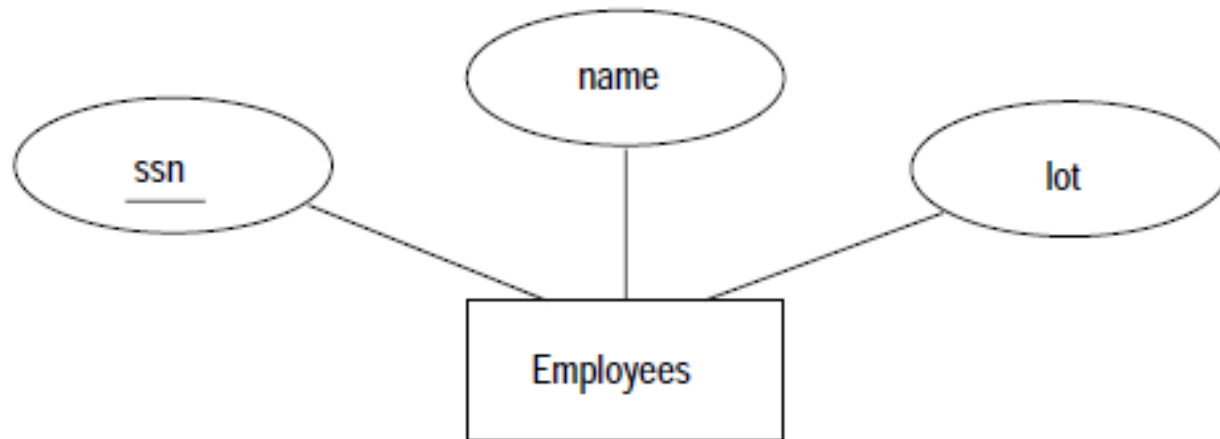
The ER Model is convenient for representing an initial high-level database design.

But it **does not have details about logical design** with all its associated constraints.

Relational model **describes design of high-level databased with in-depth logical design with its constrains.**

Hence translation of ER Model to Relationship model is necessary

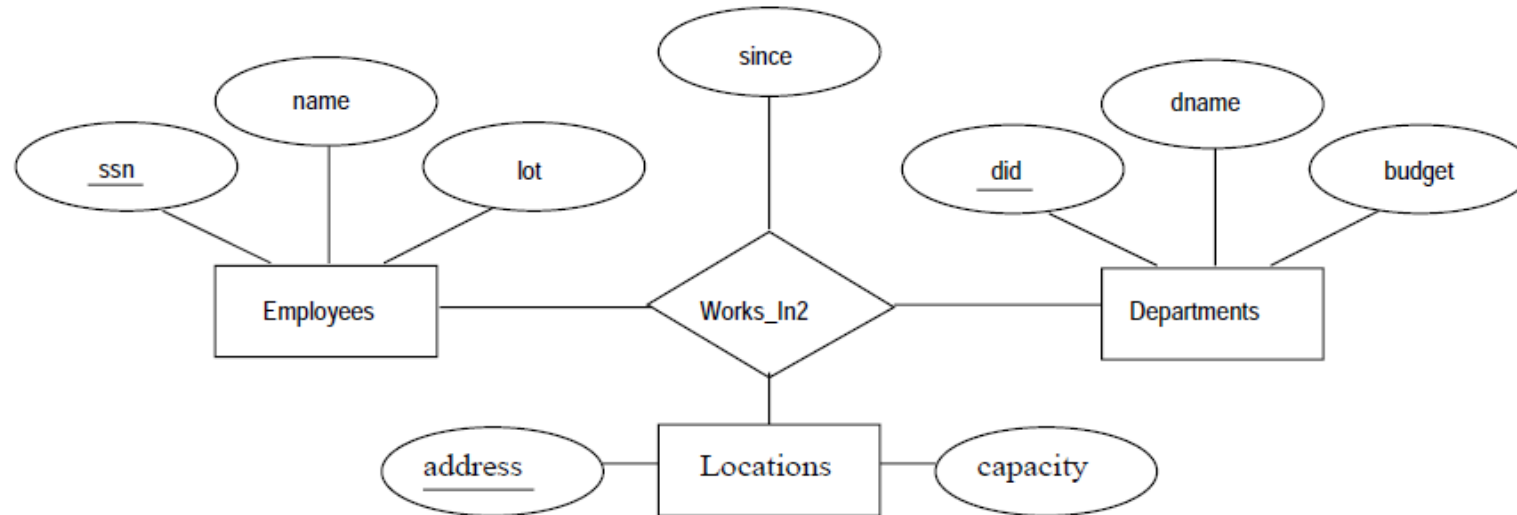
Entity Sets to Tables



<i>ssn</i>	<i>name</i>	<i>lot</i>
123-22-3666	Attishoo	48
231-31-5368	Smiley	22
131-24-3650	Smethurst	35

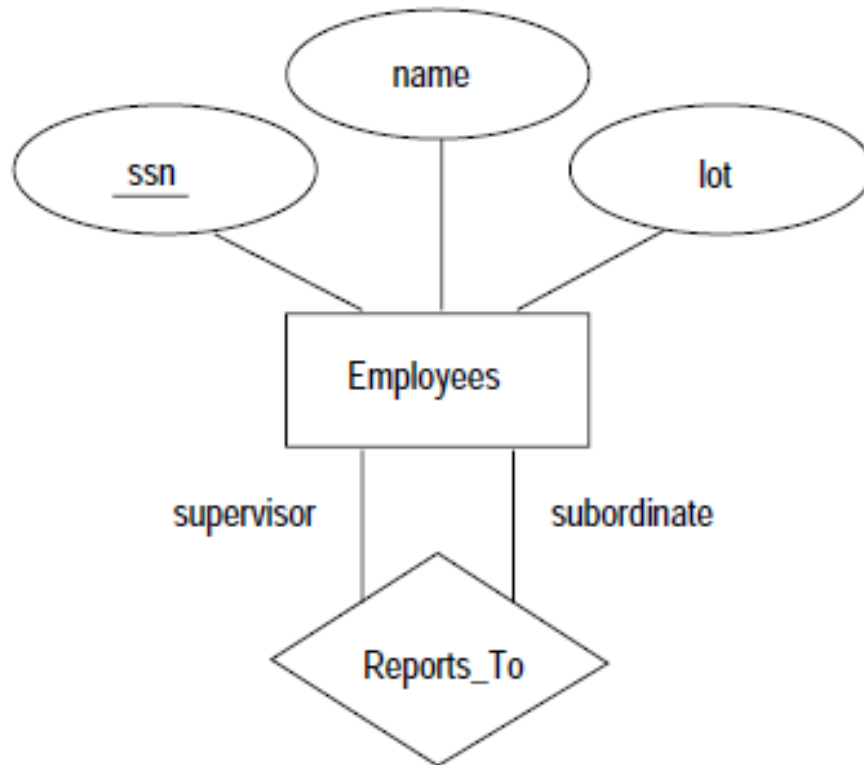
CREATE TABLE Employees (*ssn* **CHAR(11)**,
name **CHAR(30)**,
lot **NUMBER(3)**,
PRIMARY KEY (*ssn*))

Relationship Sets (without Constraints) to Tables



CREATE TABLE Works_In2 (ssn **CHAR(11)**, did **NUMBER**, address **CHAR(20)**, since **DATE**,
PRIMARY KEY (ssn, did, address),
FOREIGN KEY (ssn) **REFERENCES** Employees,
FOREIGN KEY (address) **REFERENCES** Locations,
FOREIGN KEY (did) **REFERENCES** Departments)

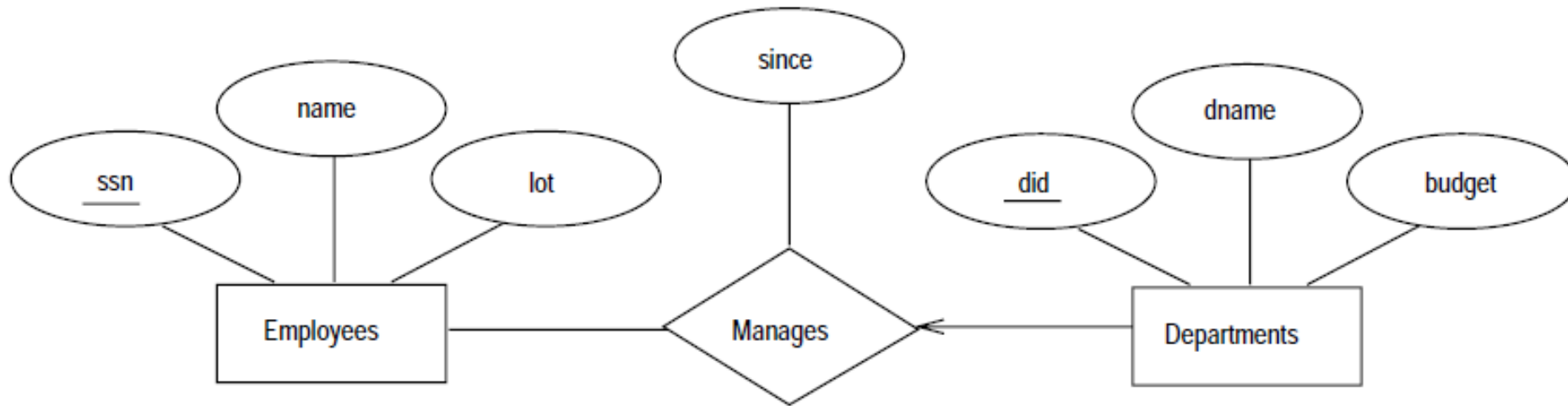
Relationship Sets (without Constraints) to Tables



```

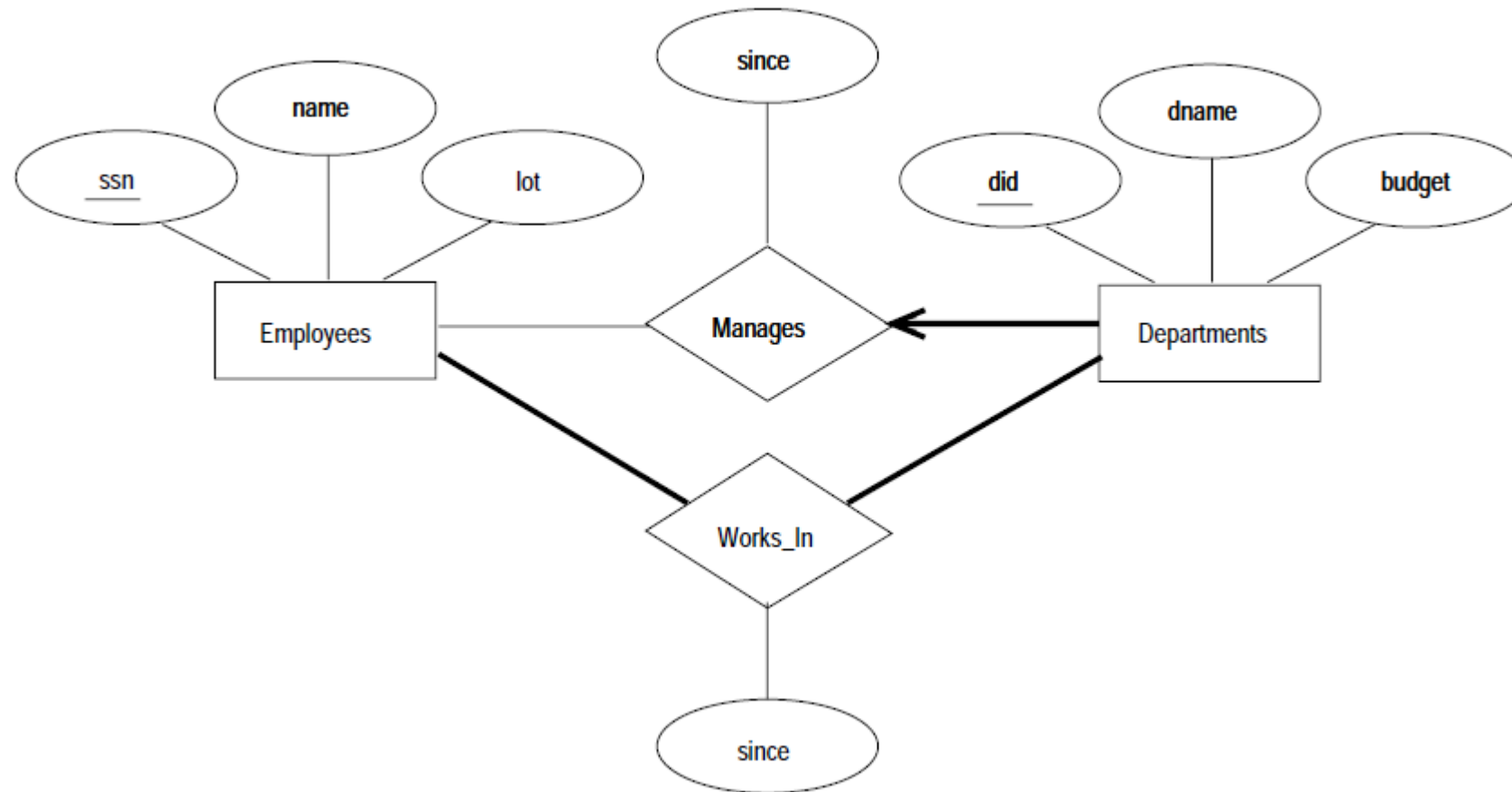
CREATE TABLE Reports_To (
    Supervisor_ssn CHAR(11),
    Subordinate_ssn CHAR(11),
    PRIMARY KEY (supervisor_ssn, subordinate_ssn),
    FOREIGN KEY (supervisor_ssn) REFERENCES
    Employees(ssn),
    FOREIGN KEY (subordinate_ssn) REFERENCES
    Employees(ssn) )
    
```

Translating Relationship Sets with Key Constraints



CREATE TABLE Manages (ssn **CHAR(11)**, did **INTEGER**, since **DATE**,
PRIMARY KEY (did),
FOREIGN KEY (ssn) **REFERENCES** Employees,
FOREIGN KEY (did) **REFERENCES** Departments)

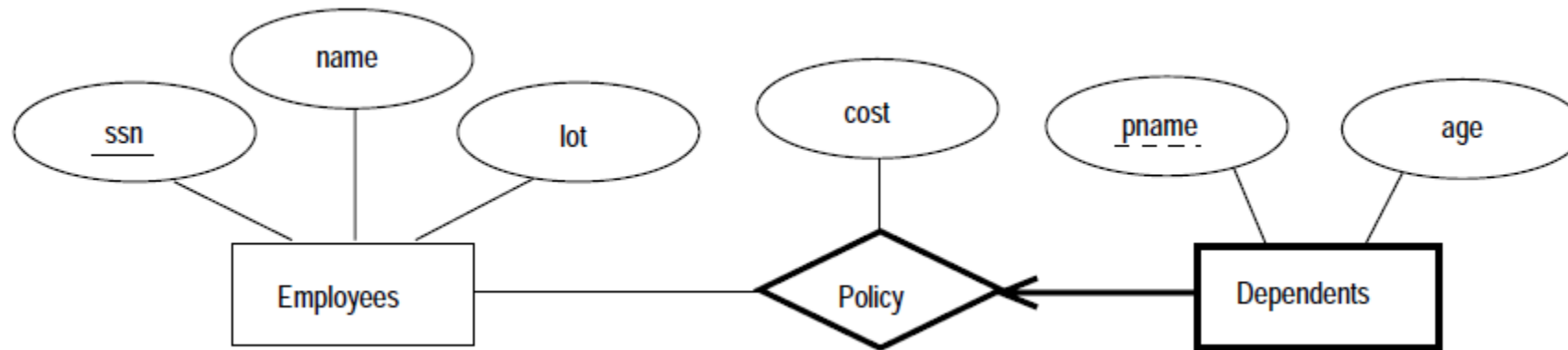
Translating Relationship Sets with Participation Constraints



Translating Relationship Sets with Participation Constraints

```
CREATE TABLE Dept Mgr ( did NUMBER,  
                           dname VARCHAR2(20),  
                           budget NUMBER(5,2),  
                           ssn VARCHAR2(11) NOT NULL,  
                           since DATE,  
                           PRIMARY KEY (did),  
                           FOREIGN KEY (ssn) REFERENCES Employees  
                           ON DELETE NO ACTION )
```

Translating Weak Entity Sets



```
CREATE TABLE Dep Policy ( pname VARCHAR2(20), age NUMBER, cost NUMBER(5,2),
                           ssn CHAR(11),
                           PRIMARY KEY (pname, ssn),
                           FOREIGN KEY (ssn) REFERENCES Employees
                           ON DELETE CASCADE )
```

Summary

This session will give the knowledge about

- ER-to-Relational Mapping