

Course Name: **A Level (1st Sem)**
Topic: **ERD – Example (Part 4)**

Subject : **Introduction to DBMS**
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ERD -Example

Que. Consider the following relational schema

Department (dept_name, dept_no, dept_location, dept_manager)

Project (proj_name, proj_no, proj_location)

Employee (ssn, emp_name, emp_address, emp_salary, emp_gender, emp_birthdate)

Dependent(depen_name, depen_gender, depen_birthdate, depen_relationship)

Construct ER diagram for the above schema. Specify keys, and relationship among entities.

Solution: In the above, there are following:

Entities:

1. Strong Entity: Department, Project, Employee
2. Weak Entity: Dependent – because it depends on Employee entity and cannot identified by its attribute alone.

Attributes:

1. dept_name, dept_no, dept_location, dept_manager -- (for department entity)
2. proj_name, proj_no, proj_location -- (for Project entity)
3. ssn, emp_name, emp_address, emp_salary, emp_gender, emp_birthdate -- (for Employee entity)
4. depen_name, depen_gender, depen_birthdate, depen_relationship -- (for Dependent entity)

Relationships:

1. **One to Many relationship between Department and Employee**
(One Department can have many Employee but a Employee is associated with single Department)
2. **Many to Many relationship between Employee and Project**
(One Employee can have many Project but a Project is associated with many Employee)
3. **One to Many relationship between Employee and Dependent**
(It is weak relationship, One Employee can have many Dependents but a Dependent is associated with single Employee)
4. **One to Many relationship between Department and Project**

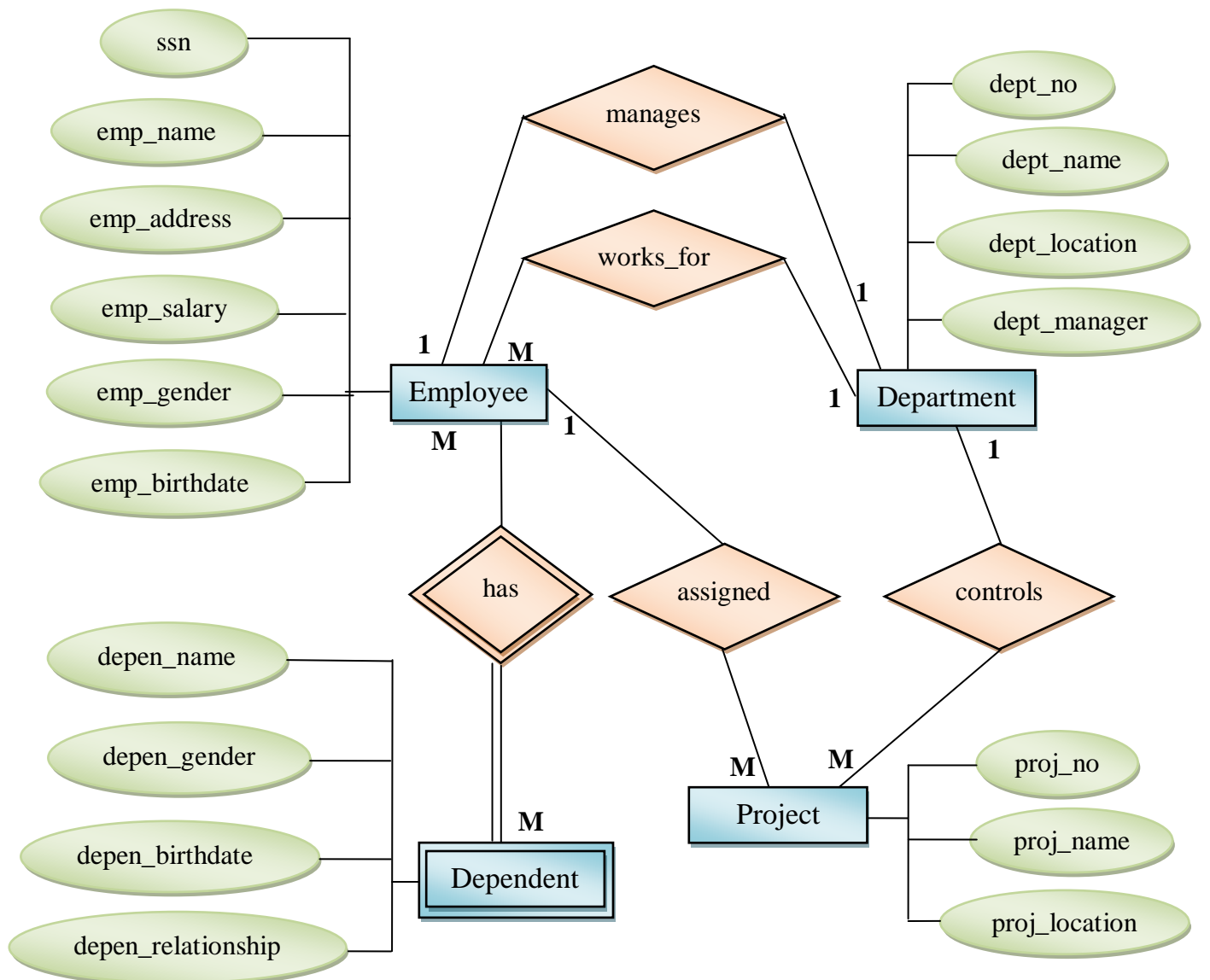
(One Department can control many Projects but a Project is controlled by single Department.)

5. **One department has one manager.**

Primary keys :

1. **dept_no** in Department table
2. **proj_no** in Project table
3. **ssn** in Employee table

ER Diagram for above question



Exercise:

Information about a bank is about customers and their account. Customer has name, address which consists of house number, area and city and one or more mobile phones. Account has number, type and balance. We need to record customers who own an account. An Account can be held individually or jointly. An account cannot exist without a customer.

Arrive at an ER diagram; clearly indicate entities, attributes, keys and the relationships among entities.

