

# Database Design and Programming

Tahaluf Training Center 2021



## Day 10

### 1 Overview of Entity Relationship modelling

### 2 Database design process

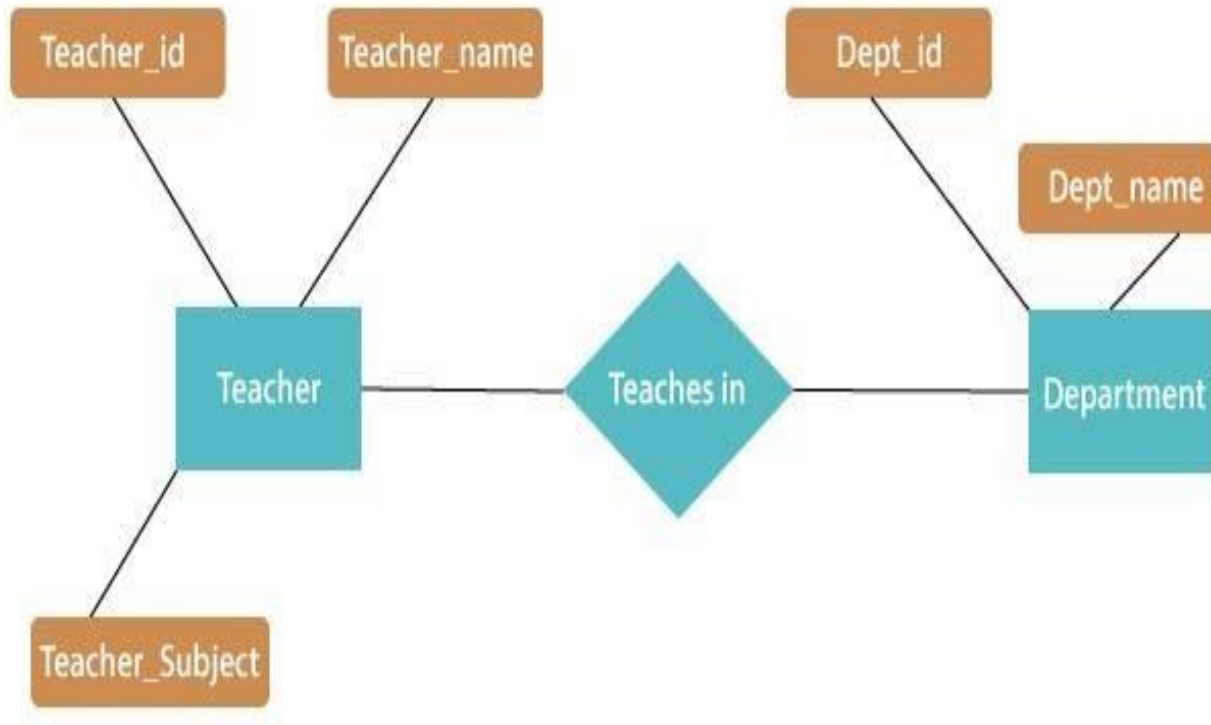


# What is Entity Relationship Modelling?

Def: Entity Relationship Model (ER Model) present the database structure using diagram called Entity Relationship Diagram (ER Diagram).



## ER Diagram example



## Day 10

1 Overview of Entity Relationship modelling

2 Database design process.



## main steps in designing a database :

- Requirements Analysis.
- Conceptual Design.
- Logical Design.
- Schema Design.
- Physical Design.
- Application & Security Design.



# Requirements Analysis

Requirements Analysis is the process of determining what the database is to be used for.



# Entity Relationship Diagram

An entity is a table in database.

An ER diagram describes the relationship between entity sets.





## Schema Diagram

A schema diagram is a diagram which contains entities and the attributes that will define that schema. A schema diagram only shows us the database design.



# Class Diagram

The UML Class diagram is a graphical notation used to construct and visualize object oriented systems.



## Task1

Extract the requirement from following scenario:

In a company an employee has a different projects. We store each employee name, id, salary, birthdate and address. We keep each project id, name and budget.



## Task 1 Solution

Company is a database name.

employee has a different projects.

We store each employee name, id, salary, birthdate and address.

We keep each project id, name and budget.

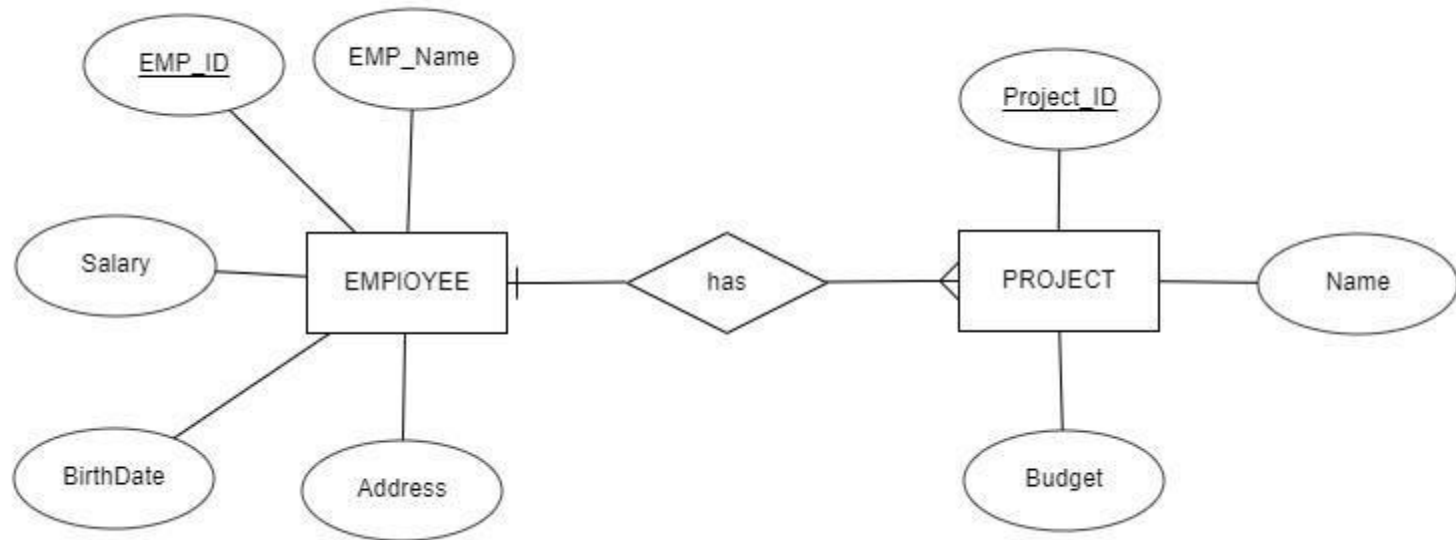


## Task 2

### Design ER Diagram for Task 1



## Task 2 Solution



## Task 3

Read the following scenario, then determine all requirement:

The company is organized into departments. Each department has a unique name, a unique number, and a particular employee who manages the department. We keep track of the start date when that employee began managing the department.



## Task 3

A department may have several locations. A department controls a number of projects, each of which has a unique name, a unique number, and a single location. We store each employee's name, social security number, address, salary, gender and birthdate.





## Day Ten Task

On the E-Learning Portal

