

---

### **Problem 1.**

A company, XYZ, Inc., has analyzed the data attributes that they want to track in their database.

They used the data attributes below to answer to develop an ER diagram...

Data attributes for the XYZ Inc.

---

Department name

Job Title

Social security numbers (SSN) for their employees

Employee name, address and phone number

Employee department number and job code

Salary for employee

Job Description for employee

Here is a simple Entity-Relationship diagram that models this data...

DEPARTMENT ---< Employee >--- Job

QUESTION:

Describe the relationship shown between the Department and Employee.

Describe the relationship shown between the Employee and Job.

**(Use words, there is no SQL needed)**

YOUR ANSWER HERE:

The relationship between the Department and the Employee is a one to many relationship. Each employee is part of one department, but each department can have many employees.

The relationship between the Employee and the Job is a many to one relationship. Each employee has only one job. But each job can have more than one employee working at it.

-----

## **Problem 2.**

A company, XYZ, Inc., has analyzed the data attributes that they want to track in their database.

They used the data attributes below and applied the Normalization Guidelines to develop a data model using Relational Notation format.

Data attributes for the XYZ Inc.

-----

Department name

Job Title

Social security numbers (SSN) for their employees

Employee name, address and phone number

Employee department number and job code

Salary for employee

Job Description for employee

Here is a simple Relational Notation diagram that models this data...

EMPLOYEE(emp\_id-PK, firstname, lastname, address,  
city, state, zip, phone, salary, deptnum-FK, jobcode-FK)

DEPARTMENT(deptnum-PK, name)

JOB(jobcode-PK, title, description)

QUESTION:

What is the purpose of the "deptnum- FK" (Foreign Key) in the EMPLOYEE table? What relationship between entities does it enforce?

**(Use words, there is no SQL needed)**

YOUR ANSWER HERE:

The foreign key in the Employee table contains the same information as the primary key in the Department table. The foreign key is a way to relate the information in the Employee table to the Department table. This way, the attributes of both tables can be compared. The foreign key of the Employee table enforces a many-to-one relationship between the Employee table and Department table. One department can have many employees, but each employee is part of one department only.

---