Databases with MySQL

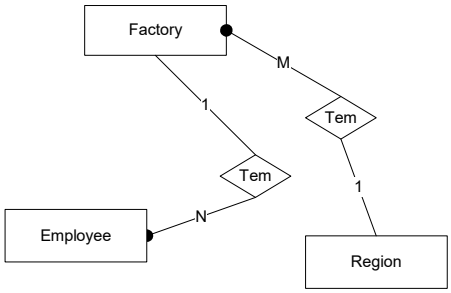
Exercises
Entity-Relationship Conversions

(Solutions)

By Cristina Rodrigues

Use the following Entity-Relationship Diagrams from the previous exercise (2) to create the relational model. Follow the rules in Lesson 4 to design all the necessary tables.

1. The KwikTite Company operates several factories. Each factory is located in a region. There can be several factories in each region. Each factory has several employees, but each employee only works in one factory.

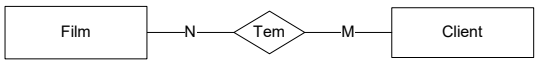


Factory (id_factory, name_factory, id_region FK)

Region (id_region, name_region)

Employee (id_employee, name_employee, id_factory FK)

2. In the Big Video video club, a customer can rent movies for a period of time. Each movie can be rented by multiple customers over a period of time.

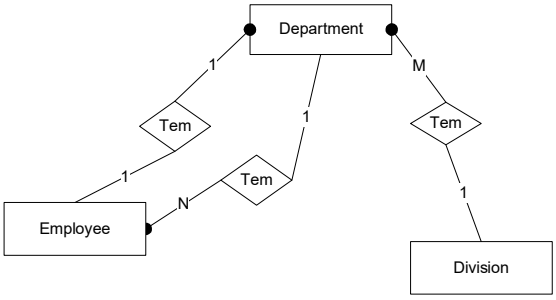


Film (id_film, name_film)

Cliente (id_cliente, name_cliente)

Lease (id_film FK, id_cliente FK, date_lease, date_devolução)

3. Each division of MegaCo Corporation is made up of many departments. Each department has many employees, but each employee only works in one department. Each department is managed by an employee manager and each manager can only manage one department at a time.

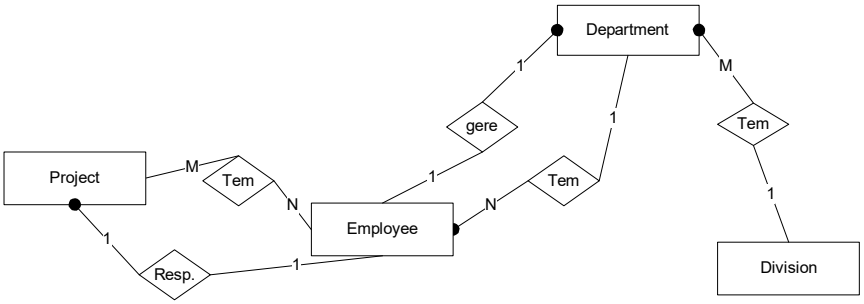


Divisão (<u>id_division</u>, name_division)

Department (<u>id_department</u>, name_department, id_division FK, Id_employee_gerente FK)

Employee (<u>id_employee</u>, name_employee, id_department FK)

4. A large bank operates several divisions. Information Technology (IT) is one of the divisions of this bank. Within the IT division there are many departments that are managed by a manager and all the employees of the IT division belong to one of the departments. Each employee is assigned one or more bank projects. A project may be planned and no employees have been assigned for a few months. A responsible employee will be assigned to each project.



Division (id_division, name_division)

Department (id_department, name_department, id_division FK, Id_employee_gerente FK)

Employee (id_employee, name_employee, id_department FK)

Projecto (id_projecto,name_projecto, id_employee_responsableFK)

Employee_Projecto (id_employee FK, id_projecto FK)

5. The Flor do Ribatejo bakery has a long tradition in the manufacture of cakes and sweets, and it is common knowledge that its heritage of recipes amounts to more than a thousand. Therefore, and also to be able to manage the stock of ingredients more easily, the pastry shop Flor do Ribatejo decided to acquire a database. Propose a schema for this database.

Note: All students are assumed to be armed with rudiments in culinary arts

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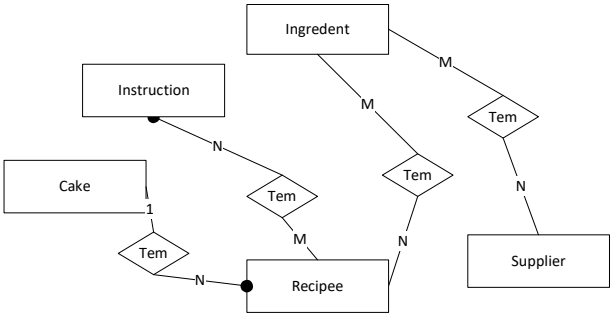

Cake (<u>id_cake</u>, name, description, preço)

Recipee (<u>id_recipee</u>, description, foto, origem, name, id_cake FK)

Ingrediente (<u>id_ingrediente</u>, name_ingrediente, qt_stock, unidade)

Recipee_ingrediente (<u>id_recipee FK+id_ingrediente FK</u>, quant, medida)

Intruções (<u>id_instrução</u>, acção)

Supplier (<u>id_supplier</u>, name_supplier ...)

Recipee_Instrução(<u>id_recipee FK+id_instrução FK, num_ordem)</u>

Supplier_Ingrediente (<u>id_supplier+id_ingrediente</u>, preço)