

Management Information Systems

Relational Model : Exercises and case studies



Case Study n°1 : Students planning

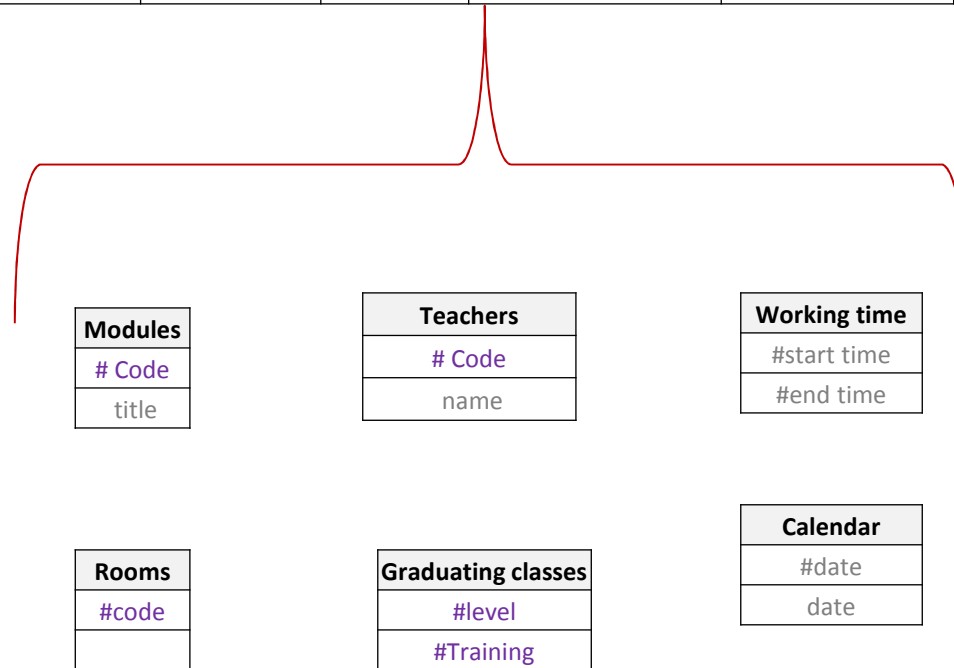
Case Study n°1 : Students planning

- Example of Planning of 2nd level – Management

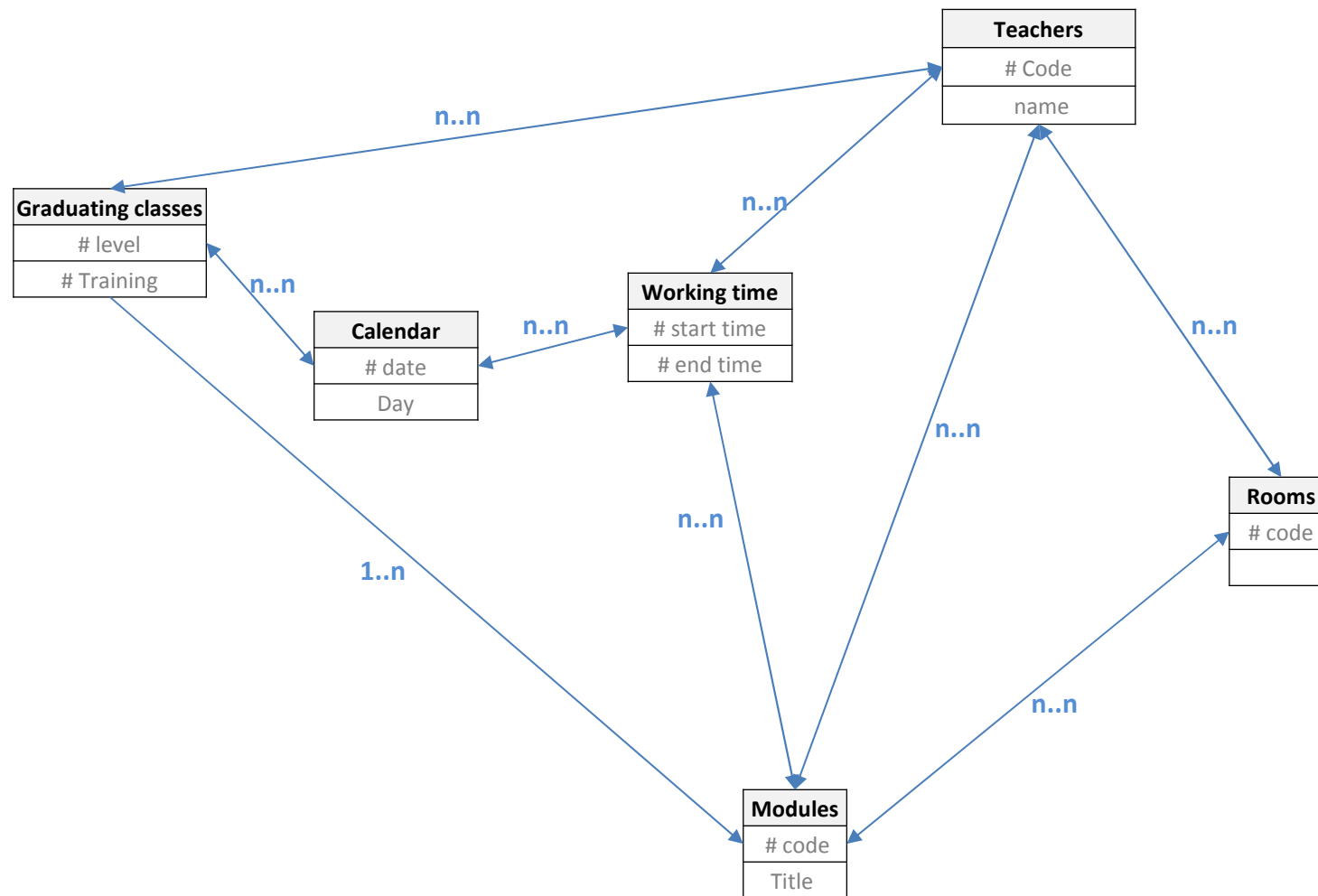
		18-sept	19-sept	20-sept	20-sept	21-sept	24-sept	
MARDI	8:30/10:00	Techiques de vente / Class 101 / prof. RD	Techiques de vente / Class 101 / prof. RD	Techiques de vente / Class 201 / prof. RD	Techiques de vente / Class 201 / prof. RD	Techiques de vente / Class 201 / prof. RD	Techiques de vente / Class 201 / prof. RD	
	10:30/12:00		Analyse des données / Class 201 / prof. SG	Système infos / Class 201 / prof. SG	Analyse des données / Class 112 / prof. SG	Management / Class 112 / prof. MS	Anglais / Class 201 / prof. BG	
	13:00/14:30	Système infos / Class 112 / prof. TR	Innovation et Entreprenariat / Class 201 / prof. TR	Innovation et Entreprenariat / Class 101 / prof. TR			Innovation et Entreprenariat / Class 201 / prof. TR	
	15:00/16:30							
Jeudi	17:00/18:30	contrôle Audit Finance / Class 201 / prof. TR	Système infos / Class 201 / prof. MS	Innovation et Entreprenariat / Class 101 / prof. MS		contrôle Audit Finance / Class 122 / prof. TR	Innovation et Entreprenariat / Class 122 / prof. TR	
		Innovation et Entreprenariat / Class 201 / prof. MS			Système infos / Class 112 / prof. TR		Innovation et Entreprenariat / Class 122 / prof. MS	
	18:45/20:15		contrôle Audit Finance / Class 311 / prof. TR				contrôle Audit Finance / Class 122 / prof. SS	
			contrôle Audit Finance / Class 311 / prof. TR			contrôle Audit Finance / Class 311 / prof. SS		

Case Study n°1 : Students planning

Graduating classes (level)	Graduating classes (training)	Calendar (date)	Calendar (day)	working time (start time)	working time (end time)	Modules (Title)	Rooms (number)	Teachers (name)
2nd	Management	18/09/2012	Mardi	08h:30	10h:00	Techniques de vente	101	RD



Case Study n°1 : Students planning



Case Study n°2: Store management

Case Study n°2 : Store management

We want to manage a store :

- A customer (civility, first name, last name, Address, zip code, city, comment) make an order (N° of customer, date, order paid ?) of one or many items of products.
- A supplier (civility, first name, last name, address, zip code, city, phone number, Fax number, comment) supply products.
- A stock contains items of products (n° of product, description, name, price per unit, VAT rate, level).
- Questions :
 - Give subjects of the relational model
 - Define primary keys (simple or compound ones), and justify.
 - Give the graphical representation of the relational model
 - Define secondary keys, and justify
 - In a structural method, explain : how you can manage buying and selling operations in your store (by using you RM) ?

Case Study n°3: Library management

Case Study n°3 : Library management

We want to realize the computerization of a library

- Books are marked by a unique way by their ISBN code. We want to store their authors, publication dates, titles, publishers as well as key words and summaries. The key words list can be adapted or supplemented by the manager. Some books can be identified by using several key words (for example XIX° and Asia). We want to store the replacement value of each book and its status (bad, fair, good). This value can be changed by the manager continuously as the use of the book.
- Concerning borrowers, we want to store their civilities, first names, last names, current addresses, phone numbers, emails as well as their assigned serial number in their first registration. Also, we want to remember their registration date.
- Finally, we want to store the loans. For each loan, we want to store, the borrower, the borrowed book, the borrowing date and the return date. When the book is returned, the effective date of return is then filled. If the book is lost or destroyed, the replacement value will be requested to the borrower.
- **Questions :**
 - Achieve the RLM in the 2 representations :
 - Subjects
 - keys
 - Relationships

Case Study n°4: Club management

Case Study n°4 : Club management

In the Excel spreadsheet file (Club_and_members.xlsx), try to achieve the RLM in a graphical representation :

- Subjects
- Keys
- Relationships
- In a structural manner, explain the process of creating a new member (club) and deleting an existing member (club)...compare ?

Case Study n°5 : Students in university

Case Study n°5 : Students in university

We want to create a DBMS to manage Students data base.

1. Import text files from CLAROLINE (Speciality.txt, Student.txt, University.txt)
2. Create relationships as bellow :

N° Universit	Name	Address	Description	fees	Click to Add																																																																								
1	Lyon 1	Villeurbanne	Université des scie	50,00 €																																																																									
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Case Study n°5 : Students in university

3. Create queries to give answers to subsequent requests :

- What is the most expensive university ?
- How many universities we have in our DB ?
- What is the list of students who are in the process of repeating the year ?
- What is the name of the student who has the lowest scholarship ?
- Do we have the speciality « Hydraulique » in Lyon ?
- How many specialities we have in Lyon ?
- How many students are registered in the university Lyon 1 ?
- What is the number of students in each speciality ?
- The INSA of Lyon has doubled its fees, what is the amount ?