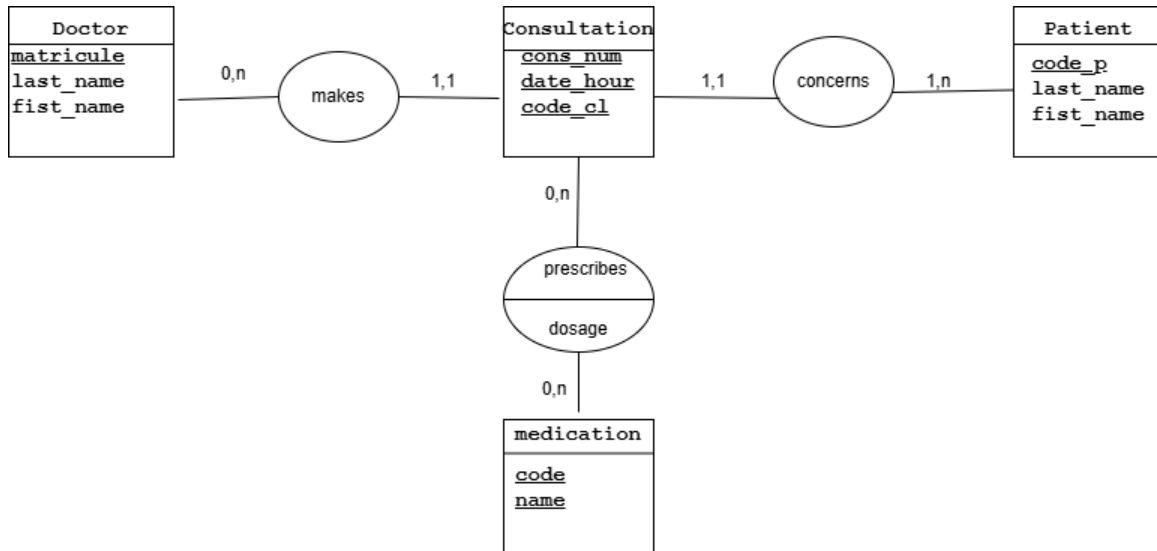


Directed Work N° 05

EXERCISE 1

The following CDM is considered representing visits to a doctor's office.
 Answer by true or false to the proposals below:



1. Can a doctor perform several consultations?
2. A doctor can receive several patients in the same consultation.
3. Can we prescribe several medications in the same consultation?
4. Can two different doctors prescribe the same medication?
5. Can two different patients have the same first and last name?

EXERCISE 2

A driving school includes instructors and vehicles. It prepares students to take a permit of a given type. The instructors give lessons to the students; a lesson has a duration (lesdur).

The management rules are as follows:

- A lesson is given only by one instructor
- A student passes only one type of permit
- A lesson is given only for one student
- A student learns to drive only on one vehicle

- **Establish the conceptual model of the data (CDM).**

EXERCISE 3

The process of acquiring a new product for a company consists of finding a supplier who will take care of delivering this product. The choice of such a supplier amounts to studying the offers proposed by the different suppliers.

After the study of the existing and in order to design an IS for the acquisition of new products, we have drawn the following management rules:

1. A product is characterized by: Product N°, product name and unit price,
2. An offer is characterized by: Offer number, Offer date, Offer closing date, Quantity,
3. A supplier is characterized by: Number, Name, Address, Postal Code, City,
4. A supplier has the right to provide several offers of the same product,
5. An offer concerns one and only one product, on the other hand a product can be the subject of several offers,
6. The suppliers chosen to supply such a product are invited to sign a contract whose characteristics are as follows: Contract number, Contract Date, Negotiated quantity,

7. A given contract concerns one and only one product and signed by one and only one supplier,
8. A product can be at most have a contract.

- **Establish the conceptual model of the data (CMD).**
- **Establish the associated relational logic model (LDM).**

EXERCISE 4

A lending library has a certain number of books, classified by specialties (Literature, History, Geography, etc.). Each book is written by one or more authors, and must also be referenced according to a certain number of keywords.

Each adherent can borrow up to 5 books at the same time, and has a certain deadline after which he must receive reminders and then penalties.

The library has only one copy of each book. It only records current borrowings (there is no history of past borrowings).

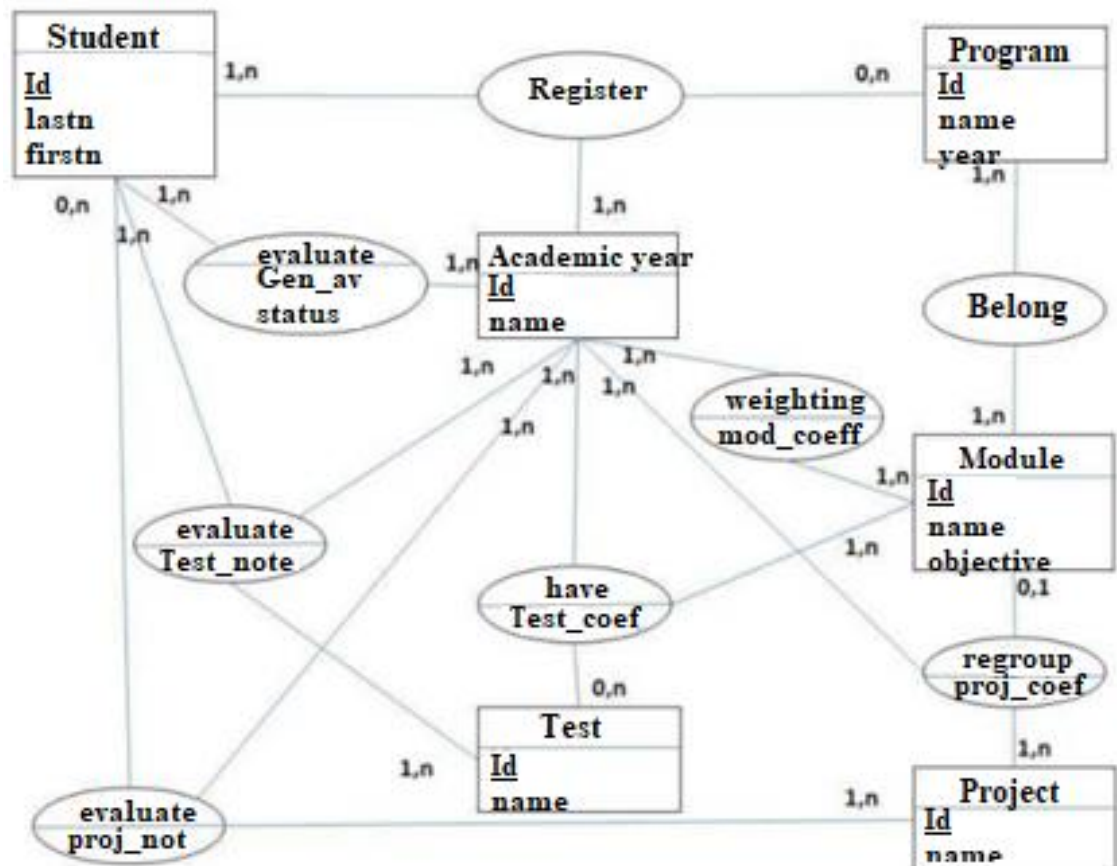
Several management rules can be cited:

1. A book is characterized by a code and a title;
2. An author is described by a code, a last name and a first name;
3. An adherent is characterized by a code, a last name, a first name, an address.

Questions:

1. **Establish the corresponding the graph of functional dependencies (FDG),**
2. **Establish the conceptual data model,**
3. **Transform the CDM obtained into a relational LDM by respecting all the rules of the CDM to LDM transition.**

EXERCISE5



Establish the relational logic model Corresponding to this CMD.

Good luck

Module team: H.Belouaar, A.Hamida, O.Houhou