University of Larbi Ben Mhidi Oum El Bouaghi
Faculty of Exact Sciences and Life and Natural Sciences
Department of Mathematics and Computer Science

Study stream : Computer Science
Level: 2nd Year Bachelor's Degree
Module: Information Systems
Instructor: Dr. Bouneb M.
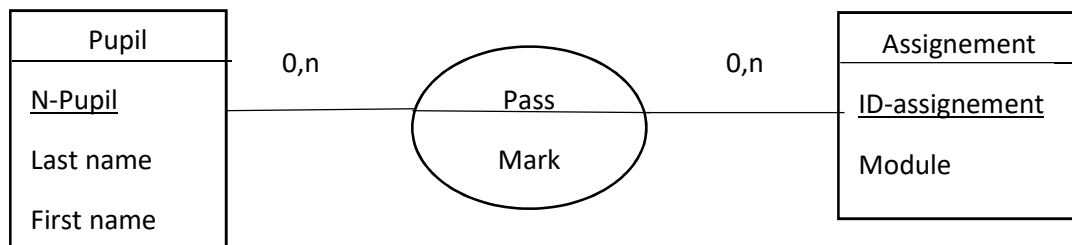
Practical work N°05

Objectives:

☞ *Automatic generation of a logical data model.*

☞ *Automatic generation of a physical data model.*

Exercise N°1:
Let the following conceptual data model be:

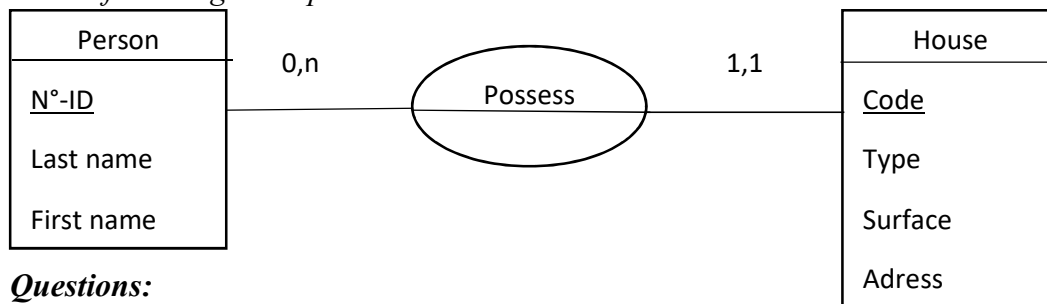| Pupil		Assignement
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Questions:

1. *Draw this conceptual data model (CDM) using Power Designer.*
2. *Save the CDM.*
3. *Automatically generate the corresponding logical data model (LDM).*
4. *Save the LDM.*
5. *Automatically generate the corresponding physical data model (PDM).*
6. *Save the PDM.*

Exercise N°2:
Let the following conceptual data model be:

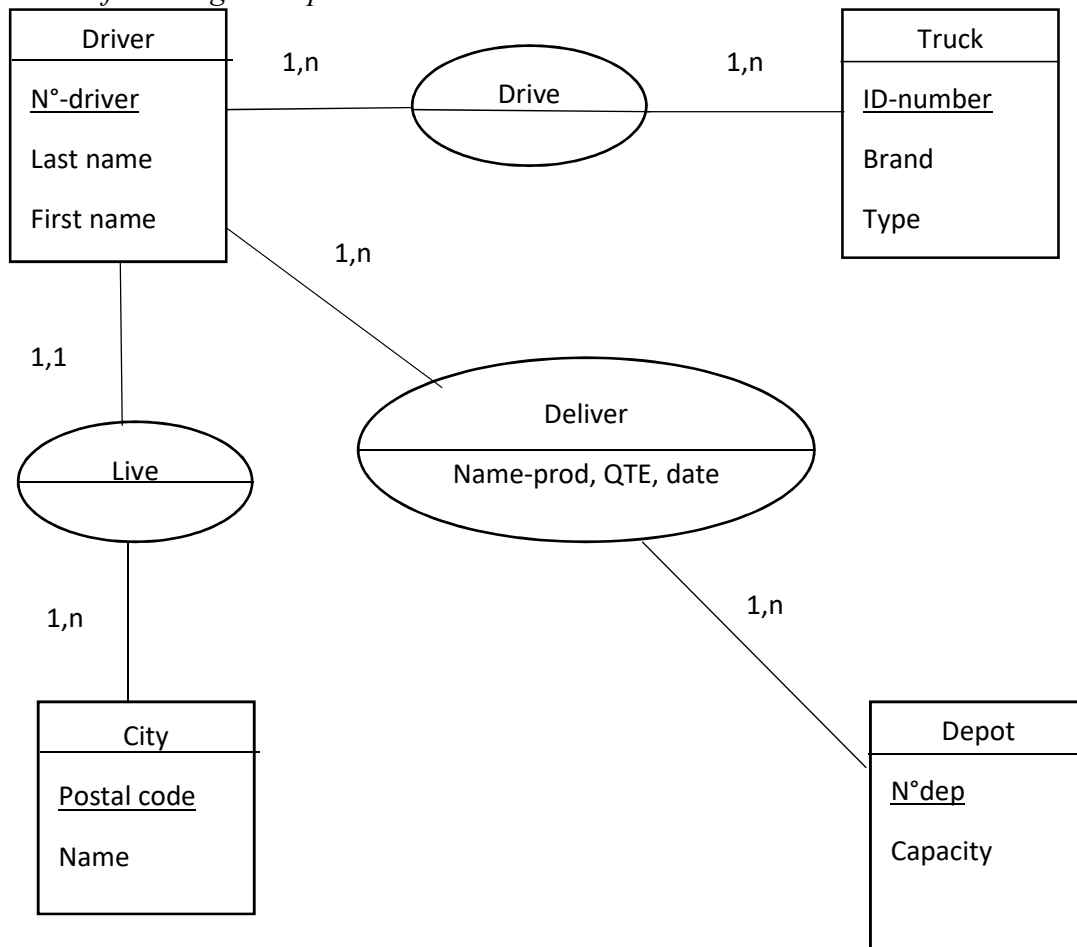| Person		House
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Questions:

1. *Draw this conceptual data model (CDM) using Power Designer.*
2. *Save the CDM.*
3. *Automatically generate the corresponding logical data model (LDM).*
4. *Save the LDM.*
5. *Automatically generate the corresponding physical data model (PDM).*
6. *Save the PDM.*

Exercise N°3:

Let the following conceptual data model be:

Questions:

1. Draw this conceptual data model (CDM) using Power Designer.
2. Save the CDM.
3. Automatically generate the corresponding logical data model (LDM).
4. Save the LDM.
5. Automatically generate the corresponding physical data model (PDM).
6. Save the PDM.

Exercise N°4:

We need to design a management system for a company that organizes events such as conferences, seminars, and workshops.

The event has event_ID, title, date, time, location, Description, capacity.

The participant has participant_ID, last name, first name, email, phone, company.

The Speaker has speaker_ID, last name, first name, biography, specialty.

The registration has registration_ID, registration date.

A participant can register for multiple Events

An event can have multiple participants through the registration.

An event can have multiple speakers.

A speaker can participate in multiple events.

Questions:

1. Draw this conceptual data model (CDM) using Power Designer.
2. Save the CDM.
3. Automatically generate the corresponding logical data model (LDM).
4. Save the LDM.
5. Automatically generate the corresponding physical data model (PDM).
6. Save the PDM.

Exercise N°5:

You need to design a management system for the human resources department of a company. The system must manage employees, departments, positions, and training.

Each employee has employee_ID, last name, first name, date of birth, address, phone, hire_Date, salary. The employee work in a department. Each Department has department_ID, department name, budget. The employee holds position. Each positionis defined by position_ID, title, description, salary. An employee can attend a training. The training is defining by training_ID, training title, start date, end date, cost

An Employee is assigned to one Department. A Department can have multiple Employees and an Employee holds a Position. A Position can be held by multiple Employees. An Employee can attend multiple Trainings and multiple Employees can attend a Training.

Questions:

1. Draw this conceptual data model (CDM) using Power Designer.
2. Save the CDM.
3. Automatically generate the corresponding logical data model (LDM).
4. Save the LDM.
5. Automatically generate the corresponding physical data model (PDM).
6. Save the PDM.

Exercise N°6:

We need to design a management system for a company that manages its stock of products. The system must track information about client, products, suppliers, product categories, and stock movements. The responsible of the stock command product from suppliers to provide it to the client, which means that the stock is always in movements.

Each product has product_ID, product name, description, unit price, category_ID. A product belongs to one category

Each supplier has supplier_ID, supplier name, address, phone, email.

The category is defining by category_ID, category name, and description.

The movement of the stock keep track about the movement date, movement type (entry or exit) and the quantity.

Questions:

1. Draw this conceptual data model (CDM) using Power Designer.
2. Save the CDM.
3. Automatically generate the corresponding logical data model (LDM).
4. Save the LDM.
5. Automatically generate the corresponding physical data model (PDM).
6. Save the PDM.