

PRACTICE 02 (12/10/2019)

Entity-Relationship and Relational Models

Service Station

The service station owner in our neighbourhood has decided to computerize his business. We met with him and he gave us the following specifications:

Specifications:

In the service station there are five workers (the staff), a store and five fuel pumps. A worker can be or a **clerk** who are working in the store or a **petrol worker** (person who fuel cars). There are 2 people working as clerks and 3 people as petrol worker. There are also 2 supervisors that are not considered staff.

Every worker has in common the following attributes:

DNI (PK), Name, Surname, Date of Birth, Phone numbers (It is possible to have more than one), **Address** (Include: *Type of road, Name, Number, Floor, Letter*), **Age, Salary, email**.

Clerks have also the following specific attributes: **Number of Sales, Amount of Money**.

Petrol workers have also the following specific attributes: **Number of Services, Litres of fuel**.

Supervisor have also the following specific attributes: **Incentive**.

A fuel pump has the following attributes: **IdPump (PK), Type of petrol, Total Capacity, Price, Present volume of petrol, sold petrol**.

It is also important to register customers to whom we give a card to buy with it. Customers have the attributes: **IdCustomer (PK), Name** (composed by *First Name, Surname*), **Town, Phones** (1 or more), **Email, Monthly Expenditure, Total Expenditure**.

Cards given to customers are necessary to be controlled. Cards exist because customers exist. The attributes we need to include are: **IdCard** (Discriminator), **Balance, Credit**.

There are the following relations:

1 Fuel pump is managed by 0 or more petrol worker.

1 Petrol worker can use 1 or more fuel pumps.

1 Customer can buy gas from 0 or more fuel pumps

1 fuel pump is used by 0 or more customers

1 Clerk can sell to 0 or more customers

1 Customer could be attended just by 1 clerk

1 Supervisor supervises 1 or more member of the staff

1 Member of the staff is supervised by 1 and just 1 supervisor

1 Customer can have 0 or 1 card

1 Card belongs just, to 1 customer

According to the specifications, you as technicians, must build an Entity/Relationship extended diagram and after that you must create the Relational diagram.

Each diagram in a different file with **dia** extension.

Name of files Example:

For Entity/Relationship diagram: **MartaLopez_Prac02_ER.dia**

For Relational diagram: **MartaLopez_Prac02_RELA.dia**