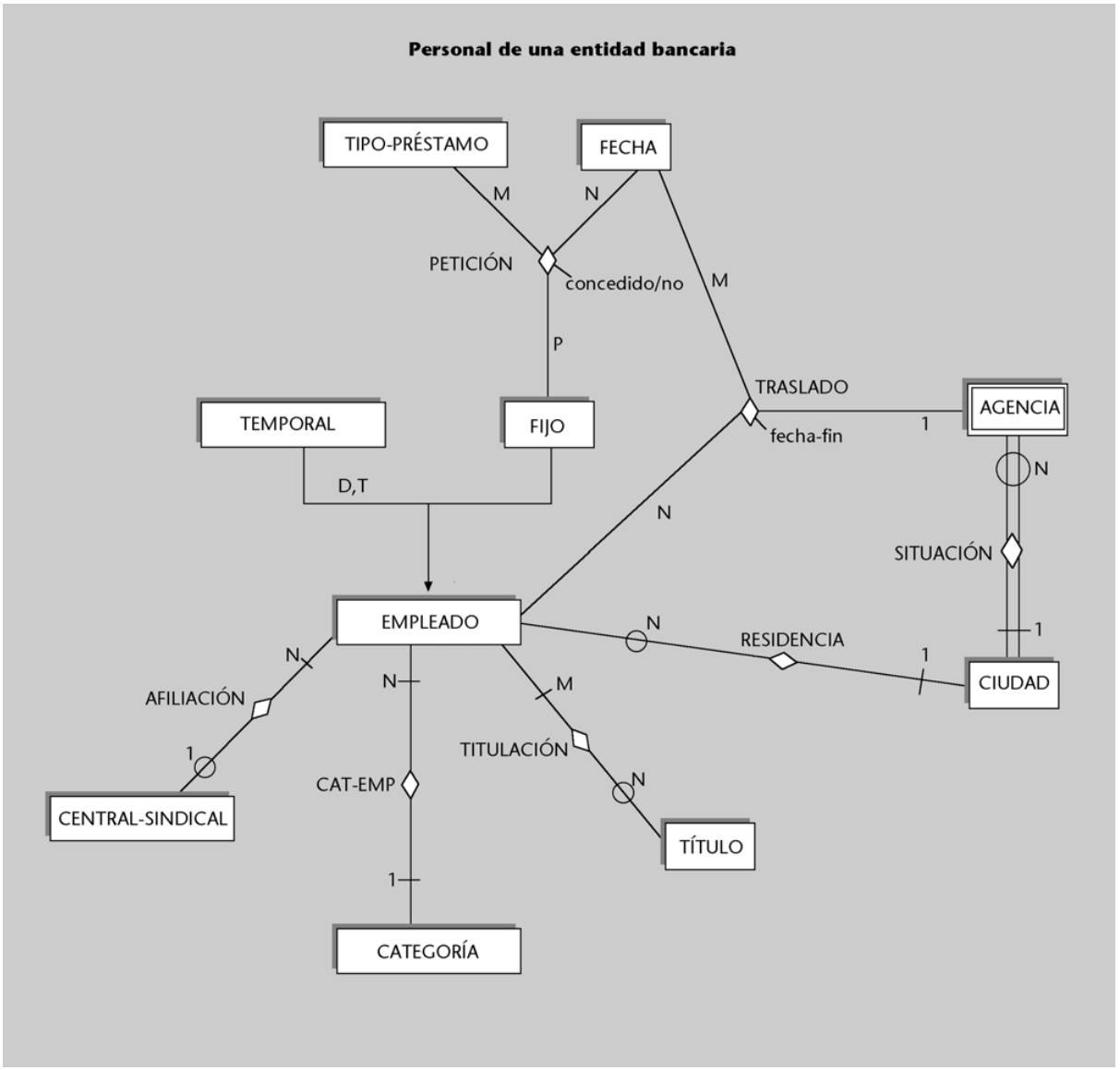
The following figure shows an ER diagram of the personnel database that satisfies the above requirements:



The attributes of the entities shown in the personnel database diagram are as follows (primary keys are underlined):

EMPLEADO
código-emplado, dni, nss, nombre, apellido
FIJO (entidad subclase de empleado)
código-empleado, antigüedad
TEMPORAL (entidad subclase de empleado)
código-empleado, fecha-inicio-cont, fecha-final-cont
CIUDAD
nombre-ciudad, número-hab

AGENCIA (entidad débil: nombre-agencia la identifica parcialmente,
se identifica completamente con la ciudad de situación)
nombre-agencia, dirección, teléfono
TÍTULO
nombre-título
CATEGORÍA
nombre-categ, sueldo-base, hora-extra
CENTRAL-SINDICAL
central, cuota
TIPO-PRÉSTAMO
código-préstamo, tipo-interés, período-vigencia
FECHA
fecha

In the following, we will comment on the aspects that may be more complex in this ER model of a personnel database:

1) The agency entity has been considered a weak entity because its name-agency attribute only allows us to distinguish agencies located in the same city, but in order to fully identify an agency, it is necessary to know in which city it is located. Thus, the situation interrelation is the one that allows us to complete the identification of the agency entity.

2) The interrelation request is ternary and associates permanent employees who make loan requests, types of loans requested by employees and dates on which these requests are made.

3) The date side of the entity date is connected to "many" because the same employee can request the same type of loan several times on different dates. The fixed entity is connected to "many" because a given loan type can be requested on the same date by several employees. Also the loan-type entity is connected to "many" because it is possible that an employee on a given date requests more than one loan of a different type.

4) The granted/not granted attribute indicates whether the loan has been granted or not. It is an attribute of the interrelation because its value depends at the same time on the fixed employee making the request, the type of loan requested and the date of request.

5) The transfer interrelationship is also a ternary interrelationship that allows recording the passage of employees through the different agencies. A specific transfer associates an employee, an agency where he/she will work and an initial date on which he/she starts working in the agency. The date-fin inter-relationship attribute indicates on which date his assignment to the agency ends (date-fin will have the value null when an employee works in an agency at the current time and it is not known when he will be transferred). Note that end-date must be an attribute of the interrelationship. If it were placed in one of the three interrelated entities, it could not be a univalued attribute.

It should be noted that this interrelationship does not record each and every date on which an employee is assigned to an agency, but only the start date and the end date of the assignment. It is very common that, for information that is true for a whole period of time, only the start and end of the period is recorded in the database.

Note that the agency entity has been connected to "one" in the transfer interrelationship, because it cannot happen that, on a given date, a given employee is transferred to more than one agency.

6) Finally, we will comment on the generalisation/specialisation of the entity employee. Employees can be of two types; you want to record different properties for each of the types, and you also need some properties common to all employees. For this reason, it is appropriate to use a generalisation/specialisation.