

1. Develop a conceptual data model reflecting the following requirements:

a. Identify the main entity types.

Main Entity Types: Clinic, Staff, Owner, Pet, Examination

b. Identify the main relationship types between the entity types identified in "a".

Main Relationship Types:

Clinic employs Staff

Staff manages Clinic

Owner owns Pet

Pet registered at Clinic

Staff conducts Examination on Pet

c. Determine the multiplicity constraints for each relationship identified in "b".

Multiplicity Constraints:

One Clinic employs many Staff

One Staff manages one Clinic

One Owner owns many Pets

One Pet is registered at one Clinic

One Staff conducts many Examinations

One Pet has many Examinations

d. Identify attributes and associate them with entity or relationship types.

1. **Clinic** entity with attributes: clinicNo (primary key), name, address, telephone number.

2. **Staff** entity with attributes: staffNo (primary key), name, address, telephone number, DOB, position, salary.

3. **Owner** entity with attributes: ownerNo (primary key), name, address, telephone number.

4. **Pet** entity with attributes: petNo (primary key), name, DOB, animal species, breed, color.

5. **Examination** entity with attributes: examNo (primary key), chief complaint, description, date seen, actions taken.

e. Determine candidate and primary key attributes for each (strong) entity type.

Primary Keys:

Clinic: clinicNo

Staff: staffNo

Owner: ownerNo

Pet: petNo

Examination: examNo

Entity 1	M ₁	Relationship	M ₂	E ₂	Type of Relationship
Clinic	1..1	employs	1..M	Staff	1:M
Staff	1..1	manages	0..1	Clinic	1:1
Clinic	1..1	registers	0..M	Pet	1:M
PetOwner	1..1	owns	1..M	Pet	1:M

Pet	1..1	undergoes	0..M	Examination	1:M
Staff	1..1	performs	0..M	Examination	1:M

f. Generate the E-R diagram for the conceptual level (no FKs as attributes).

