

1. Develop a conceptual data model reflecting the following requirements: (11/01/22)

a. Identify the main entity types.

- Staff
- Clinic
- Pet owner
- Pet
- Examination

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

- Staff → Clinic: manages
- Clinic → staff: employs
- Pet owner → Pet: owns
- Clinic → Pet: registers
- Pet → Examination: undergoes
- Staff → Examination: performs

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

- Staff → Clinic: many to one
- Clinic → staff: one to many
- Pet owner → Pet: one to many
- Clinic → pet: one to many
- Pet → examination: one to zero
- Staff → Examination: one to zero

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

- Staff
  - **staffNo**
  - Staff name
  - Address
  - Telephone number
  - DOB
  - Position
  - salary
- Clinic
  - **clinicNo**
  - Name
  - Address
  - Telephone number
- Pet owner
  - **ownerNo**
  - name
  - address
  - Telephone number
- Pet

- **petNo**
- Name
- DOB
- Animal species
- Breed
- color
- Examination
  - **examinationNo**
  - Chief complaint
  - Description
  - Date seen
  - Actions taken

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

Primary keys: **Bolded**

Candidate keys: underlined

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

