Develop a conceptual data model reflecting the following requirements Part 1: (11/05/24) Olga Escoto Balas

a. Identify the main entity types.

Based on the case study, the main types are:

- Clinic
- Staff
- Owner
- Pet
- Examination

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

- Clinic (clinicNo) associated to:
  - Member of Staff: each clinic has a member of staff
  - Staff: each clinic has staffs
  - Owner: each clinic has owners
  - Pet: each clinic has pets
- Owner:
  - Pet: each owner is associated to a pet
- Staff:
  - Examination: An examination is conducted by a member of the staff, so one examination is associated to staff.
- Pet:
  - Examination: Each examination is associated with a pet.

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

- Clinic:
  - Staff: One-to-One-or-One-To-Many (A clinic has one manager; a staff member manages at most one clinic & staff to complete exams).
  - Owner: One-to-Many (Each clinic can register multiple owners).
  - Pet: One-to-Many (Each pet is registered at only one clinic).
- Owner - Pet: One-to-Many (Each owner can have multiple pets).
- Staff - Examination: Many-to-One (Each examination is conducted by one staff member, but staff can perform many exams).
- Pet - Examination: One-to-Many (Each pet can have multiple examinations).

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

- Clinic:
  - Attributes: clinicNo (unique identifier), name, address, telephone
- Staff:
  - Attributes: staffNo (unique identifier), name, address, telephone, DOB, position, salary
- Owner:
  - Attributes: ownerNo (unique identifier), name, address, telephone, pet
- Pet:
  - Attributes: petNo (unique identifier), name, DOB, animal species, breed, color
- Examination:
  - Attributes: examNo (unique identifier), notes, description, date seen, actions taken

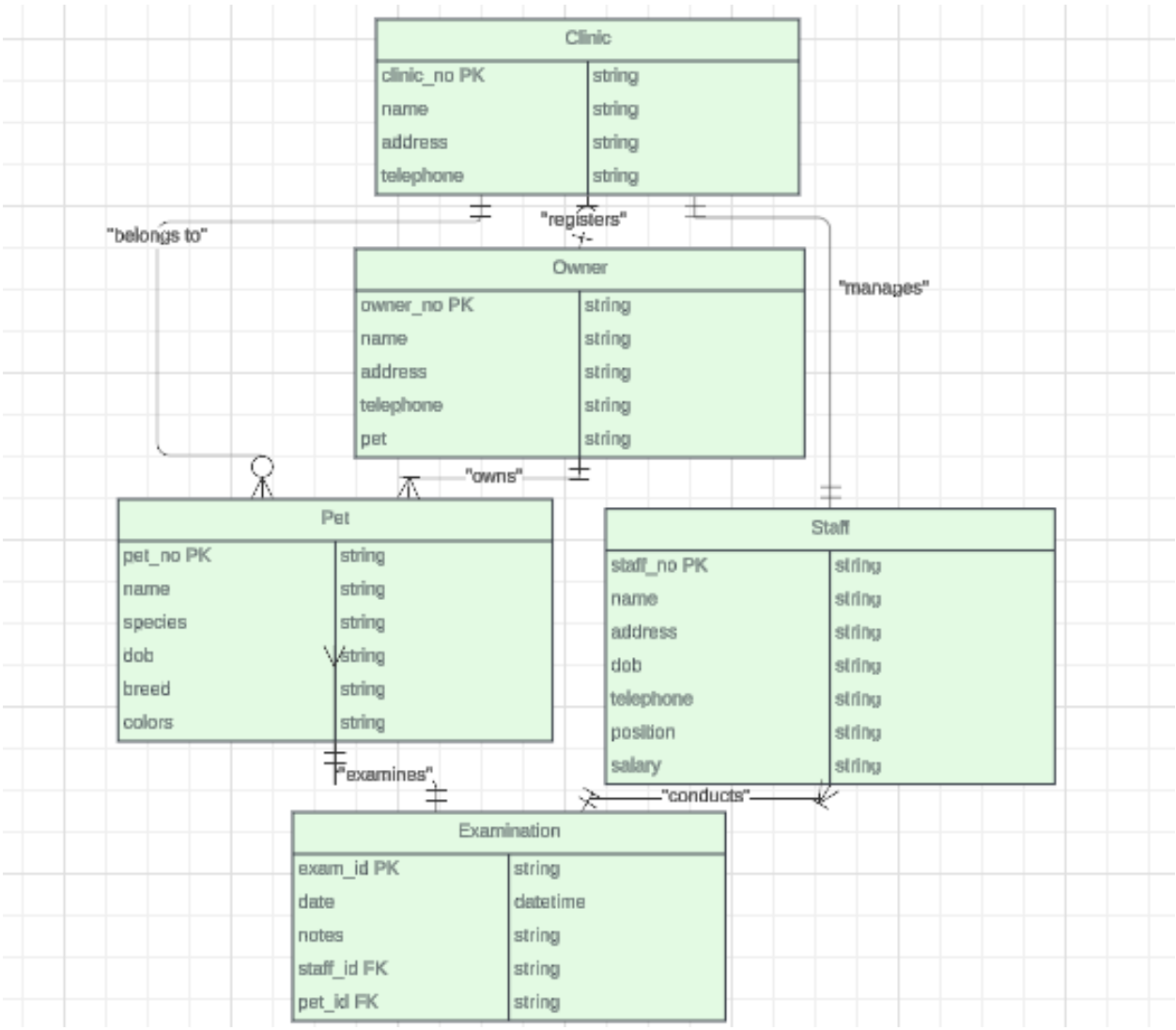
e. Determine candidate and primary key attributes for each (strong) entity type.

Suggested primary key:

- Clinic: clinicNo
- Staff: staffNo
- Owner: ownerNo
- Pet: petNo
- Examination: examNo

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

LucidChart was used to create this, screenshot below:


Clinic
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name
string
address
string
telephone
string
"registers"
"belongs to"
"manages"
Owner
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name
string
address
string
telephone
string
pet
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"owns"
Pet
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name
string
species
string
dob
string
breed
string
colors
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Staff
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position
string
salary
string
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"conducts"
Examination
exam_id PK
string
date
datetime
notes
string
staff_id FK
string
pet_id FK
string