

DSC 623 Project: Part 2

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a. Relationships from conceptual module:

Clinic:

- Attributes: clinicNo (PK), name, address, phoneNumber, managerStaffNo (FK)
- Relationships: Managed by 1 staff member, related to pets based on clinicNo.

Staff:

- Attributes: staffNo (PK), name, address, phoneNumber, DOB, position, salary, clinicNo (FK)
- Relationships: Linked to clinics and examinations.

Owner:

- Attributes: ownerNo (PK), name, address, phoneNumber
- Relationships: Linked to pets.

Pet:

- Attributes: petNo (PK), name, DOB, species, breed, color, ownerNo (FK), clinicNo (FK)
- Relationships: Linked to owners, clinics, and examinations.

Examination:

- Attributes: examNo (PK), chiefComplaint, description, dateSeen, actionsTaken, petNo (FK), staffNo (FK)
- Relationships: Linked to pets and staff.

b. Validating using normalization to 3NF

1NF: Each table has atomic values, unique rows

2NF: No partial dependencies

3NF: No transitive dependencies

- Clinic: No repeating groups, all of the attributes depend on clinicNo.
- Staff: All attributes depend on staffNo.
- Owner: All attributes depend on ownerNo.
- Pet: All attributes depend on petNo.

- Examination: All attributes depend on examNo.

c. Validate against 5 user transactions:

- Register a new pet for an existing owner

Insert into Pet: petNo, name, DOB, species, breed, color, ownerNo, and clinicNo

- Assign a staff member to manage a clinic.

Update Clinic.managerStaffNo for the given clinicNo

- Update pet details for an existing pet

Update Pet: petNo, name, DOB, species, breed, color

- Retrieve all examinations for a specific pet

Query Examination with a condition on petNo

- List all pets owned by a specific owner

Query Pet with a condition on ownerNo

d. Define integrity restraints:

- **Primary Key Constraints:**

Clinic: clinicNo

Staff: staffNo

Owner: ownerNo

Pet: petNo

Examination: examNo

- **FK Restraints**

Clinic: managerStaffNo (FK), Staff.staffNo (reference)

Staff: clinicNo (FK), Clinic.clinicNo (reference)

Pet: ownerNo (FK), Owner.ownerNo (reference)

Pet: clinicNo (FK) , Clinic.clinicNo (reference)

Examination: petNo (FK), Pet.petNo (reference)

Examination: staffNo (FK), Staff.staffNo (reference)

- **Alternate Key Restraints:**

Clinic: name (if unique)

The others don't require an alternate key

- **Required Data:**

All PK and FK must not be null

- **Attribute Domain Restraints:**

clinicNo: int, unique

name: string

address: string

phoneNumber: int, length of 10 (including zip code)

DOB: date type

position: String, must be from a list of possible positions (vet, receptionist, manager, etc.)

salary: float, positive number

- **General Constraints:**

Pets DOB and Owners DOB must be higher than current date

e. ER Diagram:



