

DSC 623 Project Part #1  
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a. Clinic, Staff, Owner, Pet, Examination

b. Relationship types

- i. Clinic employs Staff (one-to-many)
- ii. Staff manages Clinic (one-to-one)
- iii. Owner registers Pet (one-to-many)
- iv. Clinic registers Pet (one-to-many)
- v. Pet undergoes Examination (one-to-many)
- vi. Staff performs Examination (one-to-many)

c. Determine the multiplicity constraints for each relationship:

Clinic employs Staff: Each Clinic can employ multiple Staff members, but each Staff member works at only one Clinic. So, multiplicity is a One-to-many relationship. A Clinic is related to many Staff members, while a Staff member belongs to only one Clinic.

Staff manages Clinic: A Staff person can manage at most one Clinic, and each Clinic is managed by one Staff member at most. Multiplicity: Zero-to-one relationship. A Staff member may or may not manage a Clinic, and a Clinic is managed by one Staff member.

Owner registers Pet: An Owner can have multiple Pets, but each Pet belongs to only one Owner. Multiplicity: One-to-many relationship. An Owner can have many Pets, while each Pet belongs to one Owner.

Clinic registers Pet: A Clinic can register many Pets, but each Pet is registered with only one Clinic. Multiplicity: One-to-many relationship. A Clinic can register many Pets, while each Pet is associated with one Clinic.

Pet undergoes Examination: A Pet can undergo multiple Examinations, but each Examination is for one Pet. Multiplicity: One-to-many relationship. A Pet can have many Examinations, while each Examination relates to one Pet.

Staff performs Examination: A Staff member can perform many Examinations, but each Examination is conducted by only one Staff member. Multiplicity: One-to-many relationship. A Staff member can perform many Examinations, while each Examination is conducted by one Staff member.

- d. Identify attributes and associate them with entity or relationship types:
  - i. Clinic: clinicNo (PK), name, address, telephone
  - ii. Staff: staffNo (PK), name, address, telephone, DOB, position, salary
  - iii. Owner: ownerNo (PK), name, address, telephone
  - iv. Pet: petNo (PK), name, DOB, species, breed, color
  - v. Examination: examNo (PK), chiefComplaint, description, dateSeen, actionsTaken
  
- e. Determine candidate and primary key attributes for each (strong) entity type:
  - i. Clinic: Primary Key: clinicNo
  - ii. Staff: Primary Key: staffNo
  - iii. Owner: Primary Key: ownerNo
  - iv. Pet: Primary Key: petNo
  - v. Examination: Primary Key: examNo
  
- f. ER Diagram attached separately as a PDF.