DBMS Project 1 Report 1

Instructions:

1. Develop a conceptual data model reflecting the following requirements: (11/05/24)

    a. Identify the main entity types.

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

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

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

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

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

a. Main Entities: Clinic, Staff, Owner, Pet, Examination

b/c/d.

Entity1	**M1**	**Relationship**	**M2**	**Entity2**	**Relationship Type**
Clinic	1	Employs	1...*	Staff	1:*
Staff	1	Manages	0...1	Clinic	1:1
Owner	1	Owns	1...*	Pets	1:*
Clinic	1	Registers	1..*	Pet	1:*
Pet	1	Undergo	1...*	Examination	1:*
Staff	1	Performs	1	Examination	1:1

Entity	**Attributes**
Clinic	clinicNo,cName,cAddress,cTelephoneNo
Staff	staffNo,sName,sAddress,sTelephoneNo,sDOB,sPosition,sSalary
Owner	ownerNo,oName,oAddress,oTelephoneNo
Pet	petNo,pName,pDOB,pSpecies,pBreed,pColor
Examination	examNo,complaint,description,dateSeen,action

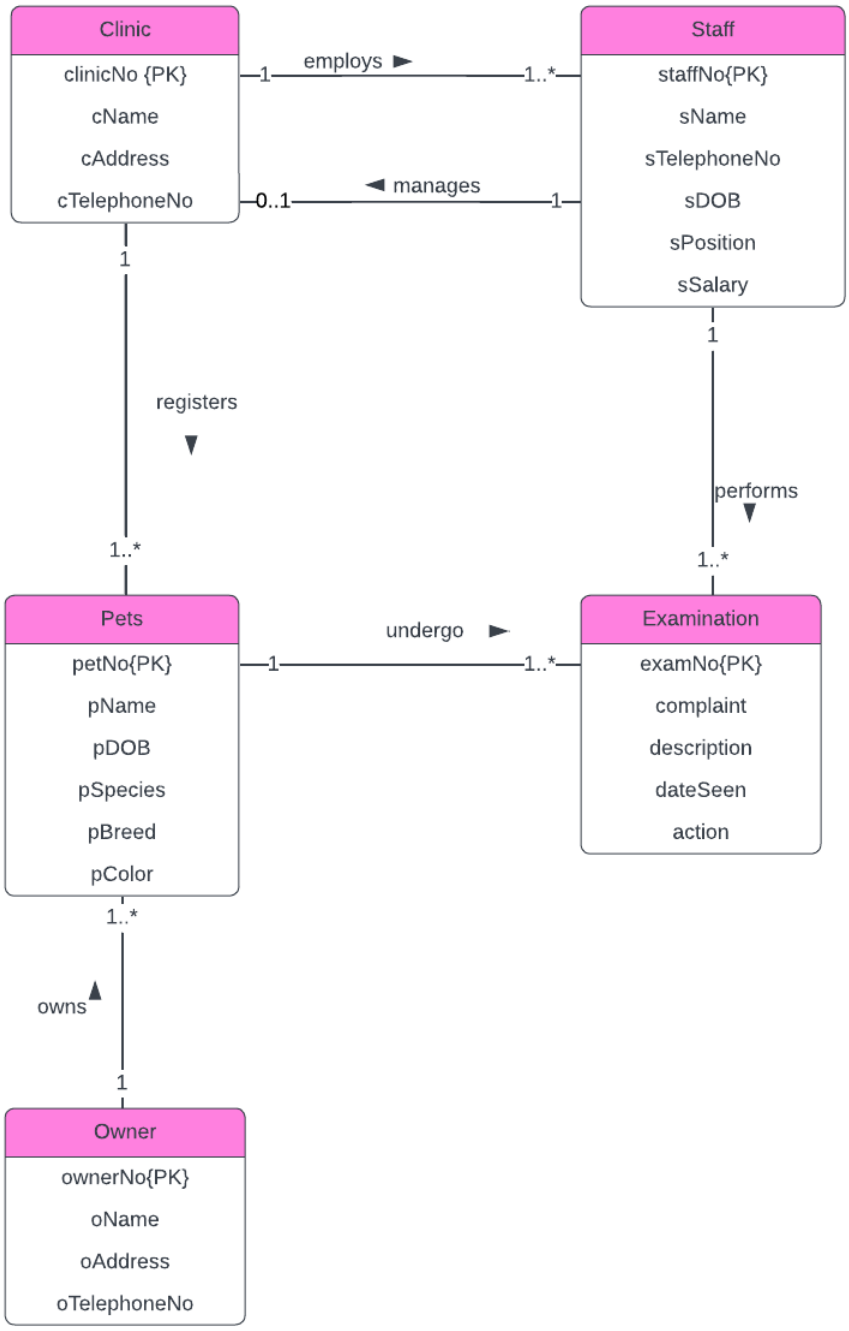
e.

Entity	**Candidate Keys**	**Primary key**
Clinic	clinicNo, cTelephoneNo	clinicNo
Staff	staffNo, sTelephoneNo	staffNo
Owner	ownerNo, oTelephoneNo	ownerNo
Pet	petNo	petNo
Examination	examNo	examNo

Assumptions:

- Assume each member of staff can only work at one clinic.
- A pet can have multiple examinations.
- For someone to be an owner they must have a pet, so there can never be a situation where there is an owner with no pet, or a pet with no owner. In the system.
- Clinic,Staff,and Owners all have unique telephone numbers.

f. ER Diagram


Clinic
clinicNo {PK}
cName
cAddress
cTelephoneNo
employs
1
1..*
Staff
staffNo{PK}
sName
sTelephoneNo
sDOB
sPosition
sSalary
manages
0..1
1
1
registers
1..*
1
performs
1..*
Pets
petNo{PK}
pName
pDOB
pSpecies
pBreed
pColor
undergo
1
1..*
Examination
examNo{PK}
complaint
description
dateSeen
action
1..*
owns
1
Owner
ownerNo{PK}
oName
oAddress
oTelephoneNo