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).

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

b/c/d.

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| --- | --- | --- | --- | --- | --- |
| **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

A diagram of a company

Description automatically generated