Database Management System

Semester-III (Batch-2024)

Pet Adoption Centre Management System

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Pet Adoption Centre Management System

Introduction

The Pet Adoption Centre Management System is designed to make pet adoption simple, transparent, and efficient by digitizing the entire process. Traditionally, adoption centers maintain all pet and adopter details manually, which is not only time-consuming but also error-prone. As the data grows, this becomes even more difficult to manage.

This project aims to solve these issues by creating a centralized, user-friendly, and automated platform for managing pets, adopters, and adoption records.

Key features of the system include:

- Maintaining detailed records of pets, such as breed, age, health status, and vaccination history.
- Managing adopter profiles, applications, approvals, and adoption history.
- Allowing adopters to browse available pets, apply online, and track their application status.

By automating these tasks, the system reduces paperwork, saves time, and improves accuracy. It also makes the adoption process more transparent and accessible, ensuring that more pets find loving homes.

Problem Overview

Many traditional pet adoption centers still depend on manual record-keeping and paperwork to manage pets, adopters, and the entire adoption process. This approach is slow, prone to mistakes, and becomes unmanageable as the number of pets and adoption requests grows.

Some common challenges faced by adoption centers include:

- Difficulty in keeping pet and adopter records accurate and updated.
- No centralized platform to handle adoption applications and approvals.
- Poor tracking of vaccinations and overall pet health.
- Limited ways for potential adopters to view available pets easily.
- Higher chances of delays, duplicate data, and human errors.

To overcome these challenges, a digital and automated system is essential. It will simplify daily operations, improve accuracy, and create a better adoption experience for both the center and the adopters.

Objectives of the Project

The primary goal of this system is to digitalize and simplify the pet adoption process through a centralized platform that manages all essential data and processes.

Specific Objectives

1. Create and maintain a complete digital database of pets, including breed, age, health, and vaccination details.
2. Manage adopter information and maintain their adoption history.
3. Simplify the adoption process with easy registration, application submission, and approval tracking.
4. Enable search and filter options to help adopters find pets that suit their preferences.
5. Reduce errors and paperwork through automation and digital record-keeping.
6. Improve transparency and efficiency in the adoption process.

Scope of the Project

The system focuses on automating and streamlining the adoption process within an adoption center. It ensures that all operations—from pet registration to adoption tracking—are handled efficiently through a single platform.

Key Features

- Digital database of all pets with complete details (species, breed, health, vaccination status).
- Adopter registration and profile management.
- Search and filter options for finding pets quickly.
- Adoption application submission, processing, and status tracking.
- Reporting and analytics for the center's performance.

Inclusions

- Pet registration and profile updates.
- Adopter registration and verification.
- Search and filtering options for pets.
- Adoption application management.
- Basic reporting and record analysis.

Exclusions

- Integration with online payment gateways.
- Transportation or delivery services for adopted pets.

Expected Outcomes

- Faster and more accurate record management.
- Increased rate of successful adoptions.
- Minimal paperwork and reduced errors.
- Better experience for both adopters and center staff.

Significance of the Project

This system provides value to adoption centers, adopters, and most importantly, pets:

For Adoption Centers

- Saves time and reduces manual work.
- Keeps data accurate, secure, and well-organized.
- Simplifies tracking of vaccination and health records.

For Adopters

- Easy access to detailed pet profiles anytime.
- Simple, hassle-free application process.
- Real-time updates on application status.

For Pets

- Higher chances of finding a safe and loving home.
- Proper medical and vaccination tracking for better health care.

In short, the Pet Adoption Centre Management System makes the entire process faster, easier, and more transparent—helping adoption centers operate smoothly and giving every pet a better chance at a happy life.

Main Entities and Attributes: -

Donor Attributes:

- Donation ID (PK)
- Donor_name
- Donation_type
- Date
- Contact
- Sponsored_pet_ID

Employee Attributes:

- Employee_ID (PK)
- Full name
- DOB
- Gender
- Phone
- Hire details
- Email
- Salary
- Role
- Shift

Volunteer Attributes:

- Volunteer_ID (PK)
- Assigned_employee_id
- Name
- Start_date
- Email

- Gender
- Phone
- Avail days
- Working_days
- Skills

Expense Attributes:

- Expense_ID (PK)
- Expense_type
- Amount

Supplies Attributes:

- Supply_ID (PK)
- Supply_name

Kennel Attributes:

- Kennel_ID (PK)
- Size
- Location

Training Attributes:

- Training_ID (PK)
- Training_type
- Pet_ID (FK)
- Train_id
- Progress

Pet Attributes:

- Pet_ID (PK)
- Species

- Gender
- Age
- Kennel_id
- Health_status

Adoption History Attributes:

- Adoption_ID (PK)
- Pet details
- Pet_ID (FK)
- Adopter_ID (FK)
- History_id
- Adoption_date

Adopter Attributes:

- Adopter_ID (PK)
- Pet_id

Adoption Application Attributes:

- Application_ID (PK)
- Application date
- Pet_ID (FK)
- Processed by
- Status

Vet Attributes:

- Vet_ID (PK)
- Name
- Specialization

- Clinic
- Phone

Appointment Attributes:

- Visitor_type
- Appointment_ID (PK)
- Visitor_name
- Pet_ID (FK)
- Employee_id
- Purpose
- Time
- Date

Treatment Record Attributes:

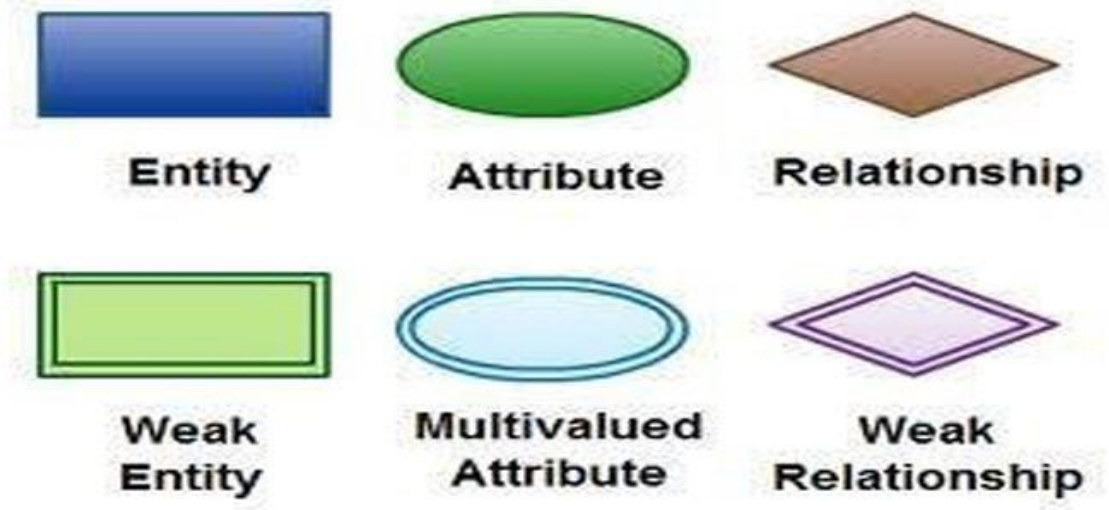
- Record_ID (PK)
- Pet_ID (FK)
- Vet_ID (FK)
- Treatment
- Date_of_record
- Pet_condition

Relationships: -

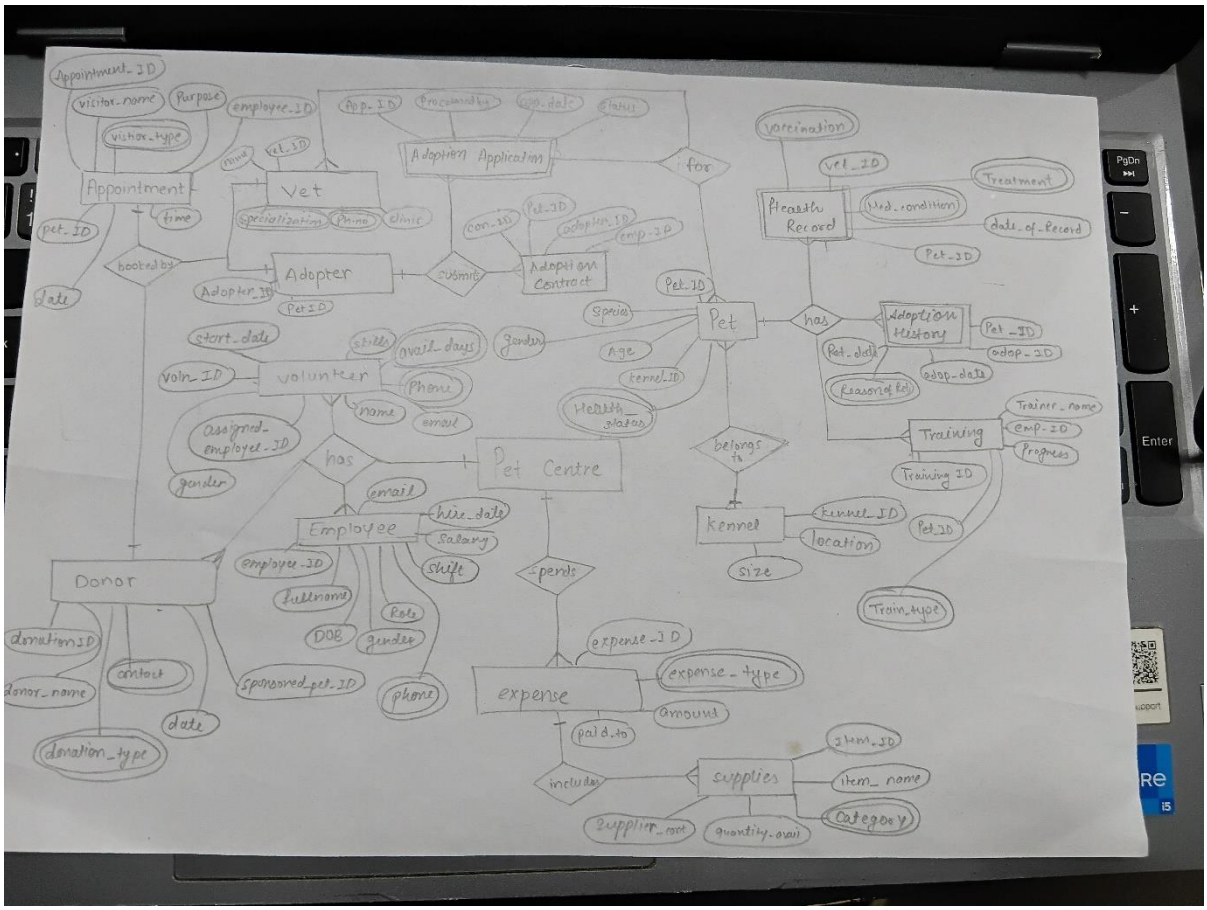
Employee → Pet Centre M: 1
Volunteer → Pet Centre M: 1
Expense → Supplies 1: M
Pet → Vet M: M (via Appointment & Treatment Record)
Pet → Adoption History 1: M
Pet → Adoption Application 1: M

Adopter → Adoption Application 1: M
Pet ->Heath Record 1: M
Pet ->Training 1: M
Pet-> Kennel M: 1

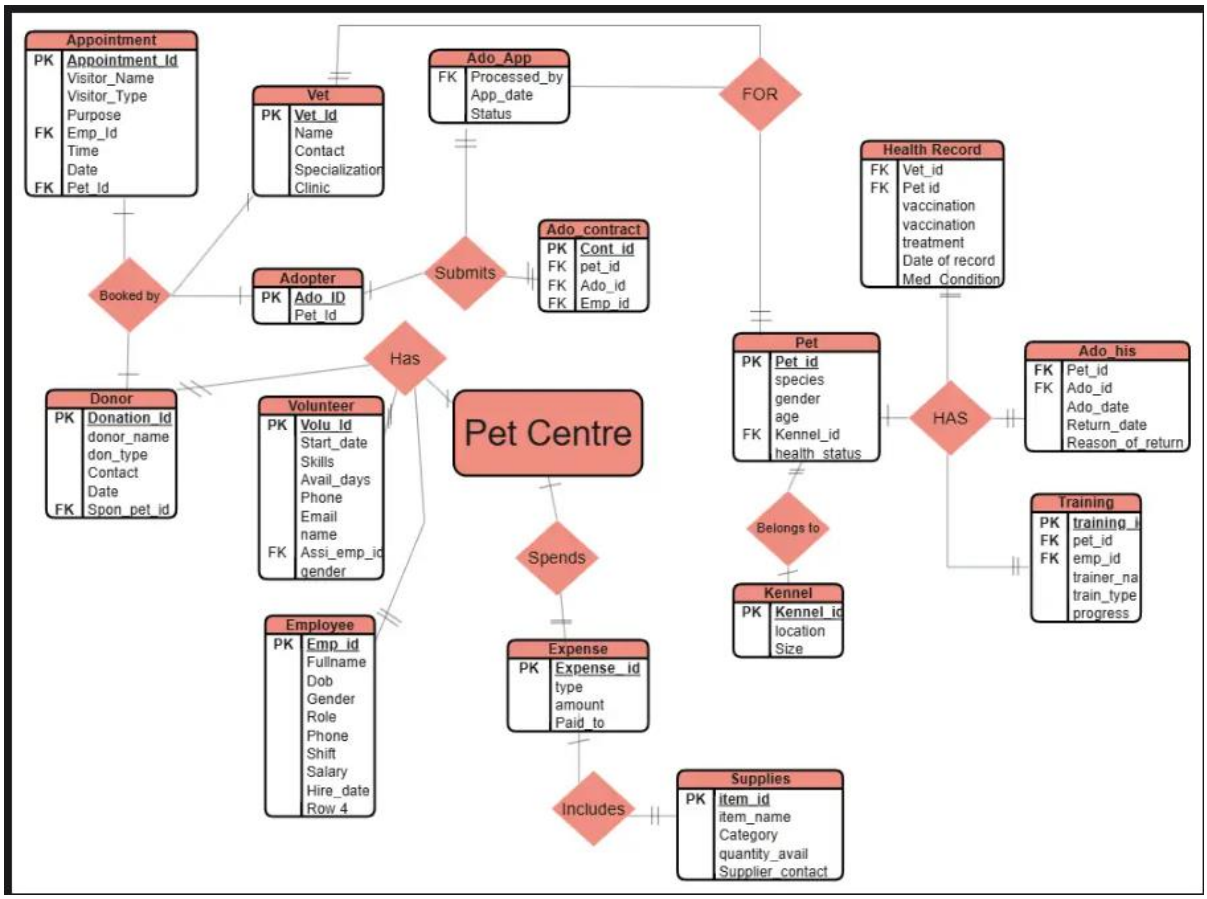
Symbols Used In Entity Relationship Diagram:-



ER Diagram: -



ER Diagram: -



ER to Relational Model (Schema): -

Employee (EmpID PK, Name, DOB, Salary, Phone)

Volunteer (VolID PK, Name, DOB, Phone)

Donor (DonorID PK, Name, DonationType, Amount, Contact, Date)

Pet (PetID PK, Name, Breed, Gender, Age)

HealthRecord (RecordID PK, Details, Date, PetID FK)

Vaccination (VaccID PK, DateGiven, NextDue, PetID FK)

Training (TrainingID PK, TrainingType, Date, PetID FK)

Kennel (KennelID PK, Location, Size, PetID FK)

Adopter (AdopterID PK, Name, Address, Phone)

AdoptionApplication (AppID PK, Date, Status, AdopterID FK, PetID FK)

Appointment (ApptID PK, Date, Time, Purpose, AdopterID FK, VetID FK)

Vet (VetID PK, Name, Qualification, Phone)

Expense (ExpID PK, Type, Amount, Date)

Supplies (SupplyID PK, Name, Category, Quantity, ExpID FK)

Relational Algebra (RA): -

1. Find all pets of breed “Labrador”
σ(Breed = "Labrador”) (Pet)

2. Find female pets only
σ (Gender = "F”) (Pet)

3. Find donors who donated food
σ (Donation_type = "Food”) (Donor)

4. Find adopters from Delhi
σ(Location = "Delhi”) (Adopter)

5. Find vets specialized in surgery
σ(Specialization = "Surgery”) (Vet)

6. List all pet names and breeds
π(Name, Breed) (Pet)

7. List all adopter names and contacts
π(Name, Contact) (Adopter)

8. Show donor names and donation types
π(Donor_name, Donation_type) (Donor)

9. Show all vet names
π(Name)(Vet)

10. List all kennel sizes
π(Size)(Kennel)

11. Show pets and their kennel locations
πPet_Name, Location (PET ⋈PET.Kennel_ID=KENNEL.Kennel_ID KENNEL)

12. Show pets and their training progress
πPet_Name, Progress (PET ⋈PET.Pet_ID=TRAINING.Pet_ID TRAINING)

13. Show adopter names with their application status

πName, Status (ADOPTER ⋈ADOPTER.Adopter_ID=ADOPTER APPLICATION.Adopter_ID ADOPTER APPLICATION)

14. Find pets that are applied for but not yet adopted

π(Pet_ID)(Adoption_Application) − π(Pet_ID)(Adoption_History)

15. Find adopters who applied but haven't adopted yet

π(Adopter_ID)(Adoption_Application) − π(Adopter_ID)(Adoption_History)

16. Find donors who are also adopters

π(Contact)(Donor) ∩ π(Contact)(Adopter)

17. Find all IDs from donor and adopter tables

π(Donor_ID)(Donor) ∪ π(Adopter_ID) (Adopter)

18.Show all pets and their health records
Pet ⋈ (Pet.Pet_ID = HealthRecord.Pet_ID) HealthRecord

19.Show all health records and their pets
Pet ⋈ (Pet.Pet_ID = HealthRecord.Pet_ID) HealthRecord

20. Find all vets and appointments (include vets with no appointments & appointments with no vet assigned):
Vet ⋈ (Vet.Vet_ID = Appointment.Vet_ID) Appointment

21.Find all pets that are adopted
πPet_ID(Pet) ∩ πPet_ID(Adoption)

22. Find all Vaccination details for PetID = 10
σPetID=10(Vaccination)

23. Show all Applications with Status = 'Approved'
σStatus='Approved'(AdoptionApplication)

24. Retrieve all Pets older than 5 years.
σAge>5(Pet)

25. Retrieve all Donors who donated more than ₹5000
σAmount>5000(Donor)