Furry Friends Pet Shelter Database

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Description

Furry Friends Shelter for Cats and Dogs is a no-kill shelter based in Seattle, WA. Furry Friends Shelter's goal is to provide a safe and comfortable transition space, as well as rehabilitation, for cats and dogs that have been abandoned or voluntarily surrendered until they get adopted by their forever families.

For Furry Friends Shelter, the most important factor is ensuring every animal is receiving adequate treatment and providing them with forever homes. The goal of our project is to develop a database to provide an organized and timely information system for shelter employees, streamlining the adoption process. It will also allow them to easily keep track of the health of every animal and provide them with extra care when necessary.

The initial entities that have been discovered are:

EMPLOYEE	The person working at the shelter
ADOPTER	The person adopting an animal
ANIMAL	The animal in the shelter
VACCINATION	The vaccination information of the animal
MEDICAL PROCEDURE	A medical procedure undergone by the animal, such as exams and surgeries
MEDICATION	The medication being administered to an animal
HEALTH MONITORING	Tracking the eating, drinking, urine, and stool status of each animal

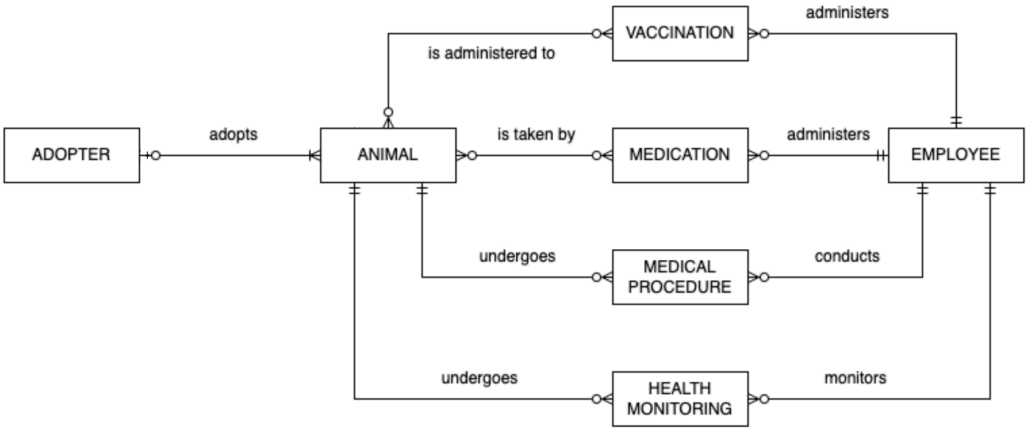
Business Rules

- Each employee can take care of multiple animals, or not take care of any animals at all.
- Each animal has one employee as their primary caretaker. Employees can be the primary caretaker of multiple animals.
- Each animal can only be adopted by one person at a time, while adopters can adopt multiple animals.
- Every animal can have multiple vaccinations, and a vaccination can be given to multiple animals. These vaccinations are administered by an employee.

- Every animal can be on multiple medications, and a medication can be taken by multiple animals. These medications are administered by an employee.
- Every animal can undergo multiple medical procedures, and the same medical procedure can be conducted on multiple animals. One employee conducts the procedure.
- The health of every animal is monitored and recorded by an employee. This includes monitoring the eating, drinking, urine, and stool of the animal.

Relationships

ADOPTER to ANIMAL: one-to-many
ANIMAL to VACCINATION: many-to-many
ANIMAL to MEDICAL PROCEDURE: many-to-many
ANIMAL to MEDICATION: many-to-many
ANIMAL to HEALTH MONITORING: many-to-many
EMPLOYEE to ANIMAL: one-to-many
EMPLOYEE to VACCINATION: one-to-many
EMPLOYEE to MEDICAL PROCEDURE: one-to-many
EMPLOYEE to MEDICATION: one-to-many
EMPLOYEE to HEALTH MONITORING: one-to-many


VACCINATION
administers
is administered to
ADOPTER
adopts
ANIMAL
is taken by
MEDICATION
administers
EMPLOYEE
undergoes
MEDICAL PROCEDURE
conducts
undergoes
HEALTH MONITORING
monitors

Relational Schema

Adopter (AdopterID INT, AdopterFName VARCHAR(50), AdopterLName VARCHAR(50), AdopterStreet VARCHAR(100), AdopterCity VARCHAR(50), AdopterState VARCHAR(2), AdopterZipCode VARCHAR(5), AdopterPhoneNo VARCHAR(12), HouseholdSize INT, HousingType VARCHAR(50), Children BIT)

Employee (EmployeeID INT, EmployeeFName VARCHAR(50), EmployeeLName VARCHAR(50), EmployeeStreet VARCHAR(100), EmployeeCity VARCHAR(50), EmployeeState VARCHAR(2), EmployeeZipCode VARCHAR(5), EmployeeDOB DATE, EmployeePhoneNo VARCHAR(12), EmployeeEmail VARCHAR(100))

Animal (MicrochipID INT, AdopterID INT, EmployeeID INT, AnimalName VARCHAR(50), AnimalType VARCHAR(3), Breed VARCHAR(50), AnimalDOB DATE, AnimalWeight FLOAT, AnimalSex VARCHAR(1), IsAdoptable BIT, HouseTrained BIT, LeashTrained BIT)

Vaccination (VaccinationID INT, VaccinationName VARCHAR(100), VaccinationType VARCHAR(50), CoverageLength VARCHAR(50), Dose VARCHAR(5))

Medication (MedicationID INT, MedicationType VARCHAR(50), MedicationDose VARCHAR(50), MedicationFrequency VARCHAR(50), AdministrationRoute VARCHAR(50))

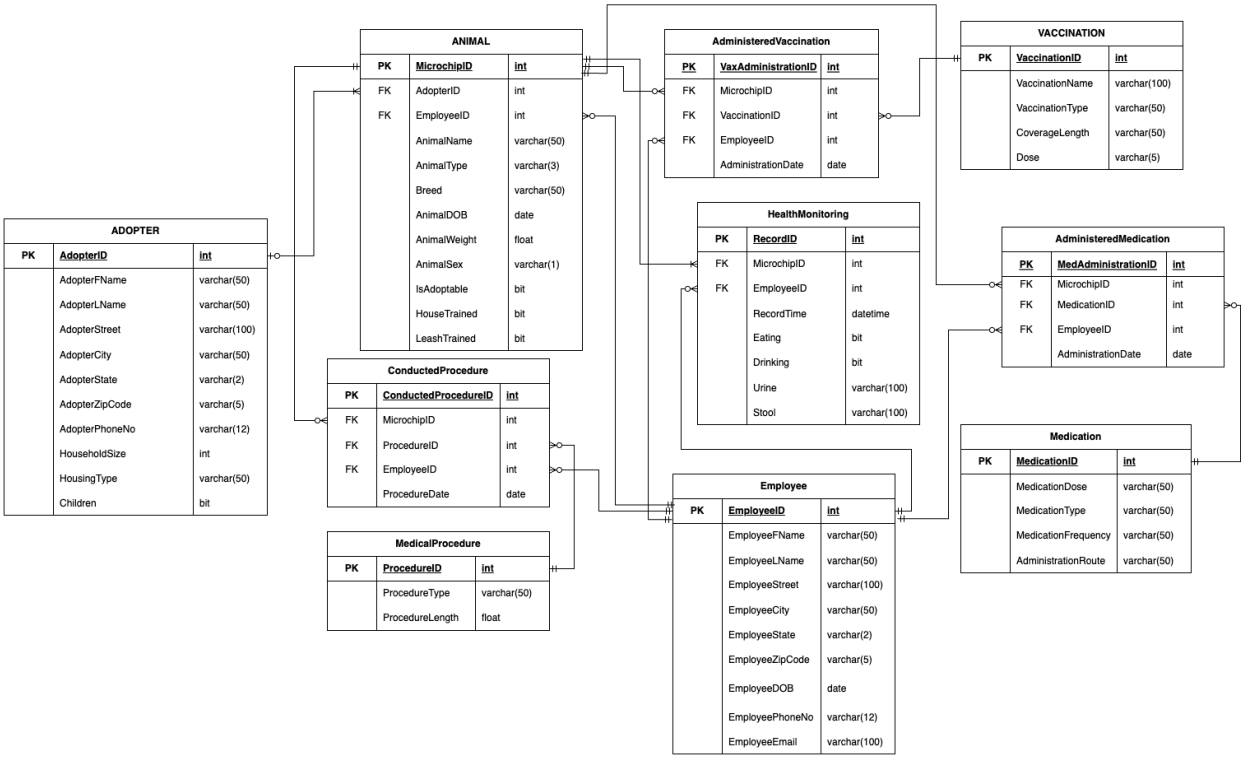
MedicalProcedure (ProcedureID INT, ProcedureType VARCHAR(50), ProcedureLength FLOAT)

AdministeredVaccination (VaxAdministrationID INT, MicrochipID INT, VaccinationID INT, EmployeeID INT, AdministrationDate DATE)

AdministeredMedication (MedAdministrationID INT, MicrochipID INT, MedicationID INT, EmployeeID INT, AdministrationDate DATE)

ConductedProcedure (ConductedProcedureID INT, MicrochipID INT, ProcedureID INT, EmployeeID INT, ProcedureDate DATE)

HealthMonitoring (RecordID INT, MicrochipID INT, EmployeeID INT, RecordTime DATETIME, Eating BIT, Drinking BIT, Urine VARCHAR(100), Stool VARCHAR(100))



Query #1

The purpose of this query is to keep track of the individuals who have adopted from the shelter. This allows the employees of the shelter to keep detailed records of where the animals from the shelter went, and also allows them to contact the adopters in case of emergencies or to check in about their adopted pets.

```
-- 1: Return the names of the individuals who adopted animals from the
shelter.

SELECT ap.AdopterFName, ap.AdopterLName, ap.AdopterPhoneNo, a.AnimalName,
a.AnimalType
From Animal a
JOIN Adopter ap ON a.AdopterID = ap.AdopterID
GROUP BY ap.AdopterFName, ap.AdopterLName, a.AnimalName, a.AnimalType
```

	AdopterFName	AdopterLName	AdopterPhoneNo	AnimalName	AnimalType
1	Abagail	Hatherell	248-674-5920	Kerrie	Dog
2	Amelina	Newick	240-318-8908	Briant	Cat
3	Archaimbaud	MacRirie	212-544-3052	Alisander	Dog
4	Archaimbaud	MacRirie	212-544-3052	Gwenny	Dog
5	Art	Jewkes	410-423-9953	Michelina	Dog

Query #2

The purpose of this query is to keep track of cats who have already been reserved by adopters but are not yet ready for them. This allows employees to keep track of the cats they have to focus on preparing for their new owner. The results show both the MicrochipID of the cat, and its name.

```
-- 2: Return the name and Microchip ID of all cats that are not adoptable
yet but have been already reserved by an adopter.

SELECT an.MicrochipID, an.AnimalName
FROM Animal an
JOIN Adopter ad ON an.AdopterID = ad.AdopterID
WHERE an.AnimalType = 'Cat' AND an.IsAdoptable = 1;
```

	MicrochipID	AnimalName
1	8	Fredra
2	20	Rafi
3	55	Anthia
4	57	Gennie
5	81	Lev

Query #3

This query keeps track of the animals that have been administered medication, as well as the employee that administered the medication. It also returns important medication information, such as the name and frequency. This allows employees to keep track of the medications that each animal is taking, and it could be used to decide future medication plans for the animals, such as a change in frequency or type.

```
-- 3: Return the animals that have been given medication, as well as the
employees who administered the medication. Also returns medication
information.

SELECT am.EmployeeID, am.MicrochipID, m.MedicationType,
```

```
m.MedicationFrequency, am.MicrochipID, a.AnimalType, a.AnimalName
FROM AdministeredMedication am
JOIN Medication m ON am.MedicationID = m.MedicationID
LEFT JOIN Animal a ON am.MicrochipID = a.MicrochipID
LEFT JOIN Employee e ON am.EmployeeID = e.EmployeeID
GROUP BY am.EmployeeID, am.MicrochipID, m.MedicationType,
m.MedicationFrequency, am.MicrochipID, a.AnimalType, a.AnimalName;
```

	EmployeeID	MicrochipID	MedicationType	MedicationFrequency	AnimalType	AnimalName
1	1	27	Deramaxx	Twice Weekly	Dog	My
2	1	42	Vectra	Twice Weekly	Dog	Lincoln
3	1	85	Metronidazole	Once daily	Cat	Beckie
4	1	115	Activyl	Monthly	Cat	Page
5	1	120	Seresto	Once Weekly	Cat	Marlin

Query #4

This query returns information on each animal that is currently above the average weight for their breed. The shelter could use this information to determine which animals need to be put on a weight loss plan. The results are also sorted in descending order based on the difference between the animal's weight and their breed's weight to determine which animals are high-priority.

```
-- 4: Return the average weight of each animal breed, and the microchip ID,
name, animal type, and breed of all animals that are above the average.

WITH AverageWeights AS
      (SELECT AVG(AnimalWeight) AS AvgBreedWeight, AnimalType, Breed
      FROM Animal
      GROUP BY AnimalType, Breed)

SELECT an.MicrochipID, an.AnimalName, an.AnimalType, an.Breed,
an.AnimalWeight, aw.AvgBreedWeight
FROM Animal an
JOIN AverageWeights aw ON an.AnimalType = aw.AnimalType AND an.Breed =
aw.Breed
GROUP BY an.MicrochipID, an.AnimalName, an.AnimalType, an.Breed,
an.AnimalWeight, aw.AvgBreedWeight
HAVING an.AnimalWeight > aw.AvgBreedWeight
ORDER BY (an.AnimalWeight - aw.AvgBreedWeight) DESC;
```

	MicrochipID	AnimalName	AnimalType	Breed	AnimalWeight	AvgBreedWeight
1	92	Nesta	Cat	Labrador Retriever	29.32	9.416
2	79	Joelly	Cat	Yorkshire Terrier	28.65	12
3	95	Hatty	Cat	Shorthair	27.43	11.47
4	184	Kenneth	Dog	Calico	26.53	11.502
5	109	Janelle	Dog	Poodle	27.53	12.78

Query #5

This query returns the adopter information of individuals who have adopted more than one animal from the shelter, as well as the details of the animal that was adopted. This information can help the employees understand which individuals have repeatedly come back to the shelter and are content with the services of the shelter.

```
-- 5: Return the adopter ID and name of individuals who have adopted more
than 1 animal from the shelter, as well as the animal details.

WITH AdopterStats AS (
    SELECT AdopterID, COUNT (MicrochipID) AS NumAdoptions
    FROM Animal
    GROUP BY AdopterID
    HAVING COUNT (MicrochipID) > 1
)
SELECT a.AdopterID, a.AdopterFName, a.AdopterLName, ads.NumAdoptions
FROM Adopter a
JOIN AdopterStats ads ON a.AdopterID = ads.AdopterID
JOIN (SELECT AdopterID, MicrochipID, AnimalName, AnimalType
FROM ANIMAL) AS AnimalDetails ON a.AdopterID = AnimalDetails.AdopterID
ORDER BY ads.NumAdoptions DESC;
```

	AdopterID	AdopterFName	AdopterLName	NumAdoptions	MicrochipID	AnimalName	AnimalType
1	77	Evelin	Force	2	3	Hyacinth	Dog
2	178	Lucio	Ferronet	3	11	Leanna	Dog
3	64	Wells	Savery	3	16	Reynard	Cat
4	122	Marni	Essery	2	37	Leonhard	Dog
5	77	Evelin	Force	2	42	Lincoln	Dog

Query #6

This query returns the full names of employees who are performing above expectations, especially in medical procedures. The shelter could use this to decide which employees to give a raise to.

```
-- Return the names of all employees with above average performance in
conducting medical procedures. This means that they are the caretaker of at
least 3 animals or have carried out at least 10 procedures on 10 distinct
animals.

SELECT e.EmployeeID, e.EmployeeFName, e.EmployeeLName
FROM Employee e
WHERE e.EmployeeID IN (SELECT e.EmployeeID
                       FROM Employee e JOIN Animal a
                       ON e.EmployeeID = a.EmployeeID
                       GROUP BY e.EmployeeID
                       HAVING COUNT(a.MicrochipID) >= 3)
  AND e.EmployeeID IN (SELECT e.EmployeeID
                       FROM Employee e JOIN ConductedProcedure cp
                       ON e.EmployeeID = cp.EmployeeID
                       GROUP BY e.EmployeeID
                       HAVING COUNT(DISTINCT cp.MicrochipID) >=10);
```

	EmployeeID	EmployeeFName	EmployeeLName
1	2	Gabie	Henden
2	29	Cathee	Burberry
3	35	Rakel	Smolan
4	38	Gaspard	Parkins
5	47	Vivyanne	Corstorphine

Query #7

This query returns the microchip ID and name of all cats who are above their breed's average weight who are adoptable, have owners, but have not received the rabies vaccine. The rabies vaccine is essential for all animals, but some aren't able to receive it potentially due to illnesses or weight related problems. The shelter can use this query to single out those cats and determine the best way to streamline their adoption process.

```
-- Return all the names and microchip ID of cats who are above the average
weight for their breed and have not yet received the rabies vaccination,
but are adoptable and have been reserved.
```

```
WITH CatBreedWeightAvg AS
      (SELECT AVG(AnimalWeight) AS AvgBreedWeight, Breed
      FROM Animal
      WHERE AnimalType = 'Cat'
      GROUP BY Breed)

SELECT an.MicrochipID, an.AnimalName, an.AnimalWeight
FROM Animal an
JOIN Adopter ad ON an.AdopterID = ad.AdopterID
JOIN CatBreedWeightAvg cb ON an.Breed = cb.Breed
LEFT JOIN (SELECT av.MicrochipID, v.VaccinationName
                  FROM AdministeredVaccination av
                  JOIN Vaccination v ON av.VaccinationID = v.VaccinationID
                  WHERE v.VaccinationName = 'Rabies') AS RabiesVax ON
an.MicrochipID = RabiesVax.MicrochipID
WHERE an.AnimalType = 'Cat' AND an.AnimalWeight > cb.AvgBreedWeight AND
RabiesVax.MicrochipID IS NULL AND an.IsAdoptable = 1;
```

	MicrochipID	AnimalName	AnimalWeight
1	190	Rudie	19.58
2	94	Vonni	24.92
3	139	Lazarus	17.65
4	81	Lev	16.8
5	154	Margarette	24.65

Query #8

This query returns the procedure information for all animals and sorts the results by longest to shortest procedure. This information helps the shelter know which animals may require special medical attention, since longer medical procedures may indicate more serious health problems.

```
-- 8: Return the procedure information for all animals, sorted by longest
to shortest procedure

SELECT a.MicrochipID, a.AnimalName, a.AnimalType, cp.ProcedureID,
cp.ProcedureDate, mp.ProcedureLength
FROM Animal a
JOIN ConductedProcedure cp ON a.MicrochipID = cp.MicrochipID
JOIN MedicalProcedure mp ON cp.ProcedureID = mp.ProcedureID
ORDER BY mp.ProcedureLength DESC;
```

	MicrochipID	AnimalName	AnimalType	ProcedureID	ProcedureDate	ProcedureLength
1	61	Karel	Dog	31	2012-12-24	4.8
2	76	Gwenni	Dog	31	2021-01-02	4.8
3	9	Mayne	Dog	31	2009-08-13	4.8
4	163	Randell	Dog	31	2009-10-06	4.8
5	29	Antonio	Dog	31	2002-02-19	4.8

Query #9

This query returns the microchip ID and name of animals who have not been administered flea medication, are under the average weight for their breed, and have been recorded with having a low appetite. When animals have fleas, they have a tendency to lose weight and their appetite. The shelter can use this query to single out those animals and examine them to ensure they aren't suffering from fleas.

```
-- Return the name and microchip ID of all animals who are below the
average weight for their breed, have been monitored as not eating at least
3 times, and have not been administered Frontline flea medication as of
yet.

WITH AverageWeights AS
      (SELECT AVG(AnimalWeight) AS AvgBreedWeight, AnimalType, Breed
      FROM Animal
      GROUP BY AnimalType, Breed),
      LowAppetite AS
      (SELECT a1.MicrochipID, COUNT(CASE WHEN hm.Eating = 0 THEN 1 END) AS
NoEatingRecord
      FROM Animal a1
      JOIN HealthMonitoring hm ON a1.MicrochipID = hm.MicrochipID
      GROUP BY a1.MicrochipID
      HAVING COUNT(CASE WHEN hm.Eating = 0 THEN 1 END) >= 3)

SELECT a2.MicrochipID, a2.AnimalName
FROM Animal a2
JOIN AverageWeights aw ON a2.AnimalType = aw.AnimalType AND a2.Breed =
aw.Breed
JOIN LowAppetite la ON a2.MicrochipID = la.MicrochipID
LEFT JOIN (SELECT am.MicrochipID, m.MedicationType
                  FROM AdministeredMedication am
                  JOIN Medication m ON am.MedicationID = m.MedicationID
                  WHERE m.MedicationType = 'Frontline') AS medication ON
a2.MicrochipID = medication.MicrochipID
WHERE medication.MicrochipID IS NULL AND a2.AnimalWeight <
```

```
aw.AvgBreedWeight;
```

	MicrochipID	AnimalName
1	80	Danell
2	69	Verina
3	156	Mitchael
4	21	Rolfe
5	158	Dona

Query #10

This query returns how many times the caretaker of each animal has monitored, vaccinated, and medicated the animal. This information is useful for the employees to keep track of the animals they take care of and to ensure that animals are getting adequate amounts of medical care. This also encourages employee accountability to ensure that their responsibilities are being completed appropriately.

```
-- Return each animal, their caretaker, and how many times the caretaker
has monitored, vaccinated, and medicated the animal.

SELECT e.EmployeeID, e.EmployeeFName, e.EmployeeLName, a.MicrochipID,
a.AnimalName,
COUNT (hm.RecordID) AS NumMonitorings,
COUNT (av.VaxAdministrationID) AS NumVaccinations,
COUNT (am.MedAdministrationID) AS NumMedications
FROM Animal A
JOIN Employee e ON a.EmployeeID = e.EmployeeID
LEFT JOIN HealthMonitoring hm ON a.MicrochipID = hm.MicrochipID
LEFT JOIN AdministeredVaccination av ON a.MicrochipID = av.MicrochipID
LEFT JOIN AdministeredMedication am ON a.MicrochipID = am.MicrochipID
GROUP BY e.EmployeeID, e.EmployeeFName, e.EmployeeLName, a.MicrochipID,
a.AnimalType, a.AnimalName
```

	EmployeeID	EmployeeFName	EmployeeLName	MicrochipID	AnimalName	NumMonitorings	NumVaccinations	NumMedications
1	39	Fernanda	Jiles	6	Lucilia	10	10	10
2	32	Vaclav	Bartlomieczak	111	Rafi	2	2	0
3	22	Gwendolen	Chambers	160	Gregorius	18	18	18
4	36	Fulvia	Lunt	173	Kristel	12	12	12
5	48	Gail	Mahaffey	97	Prescott	6	6	0