Project Deliverable: Foster Cats and Kittens Database

Alison Reikher

12/19/2021

IST 659

A cat lying on a chair

Description automatically generatedA couple of cats sleeping on a blanket

Description automatically generated with low confidence

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# Part One

## Summary

During the pandemic, a friend of mine decided to start fostering pregnant cats with her family. My friend would receive these cats from a fostering organization, assist with the cat’s birth, take care of the kittens, and find homes for all the cats and kittens. The purpose of this database is to help keep track of how many cats and kittens there are since there are often multiple in the house at once. It also can be used to help keep track of all their relevant medical information.

## Stakeholders

* My friend
  + She helps take care of the pregnant mom cats and kittens
* My friend’s family
  + They help take care of the cats and kittens as well and to keep track of them when my friend is away

## Business Rules

* The organization provides pregnant foster cats. The organization can provide one or more cats. Each organization has a name, an address, an email address, a phone number, and a drop off date and time.
* We define cats to be felines over the age of 12 months. The cats have a name, pregnancy status, and vaccine status. The pregnancy status helps keep track of if the mom cat has delivered her babies or not. The vaccine status tells us whether the cat has received all its vaccines yet. This could affect the cat’s adoptability.
* A litter is all the kittens that have been birthed from a mom cat. The litter tells us the number of kittens within that litter, and which cat the litter belongs to. There can be multiple kittens in a litter, but every kitten belongs to one litter.
* We define a kitten to be a feline under the age of 12 months. Like the cats table, the kittens also have a vaccine status to keep track if the kittens have been vaccinated. All kittens have names as well.
* Cats and kittens can have a variety of characteristics. They are characterized by their age, weight, color, and bread. Only age and weight are required characteristics to list.
* A person can adopt zero or more cats and zero or more kittens. Each adopter has a name, an address, an email address, a phone number, and a pickup date and time.

## Data Questions

* How many cats are there in total?
* How many kittens are there in total?
* How many cats come unvaccinated?
* How many kittens need to be vaccinated?
* Which cats have been adopted?
* Which kittens have been adopted?
* How many of each type of breed are there?
* Which cats are available for adoption?
* Which kittens are available for adoption?

Conceptual Model:

Diagram

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Normalized Model:

Diagram

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# Part Two

## Physical Database Design

Tables[[1]](#footnote-2):

DROP TABLE IF EXISTS prg\_cat

DROP TABLE IF EXISTS prg\_litter

DROP TABLE IF EXISTS prg\_kitten

DROP TABLE IF EXISTS prg\_characteristic

DROP TABLE IF EXISTS prg\_adopter

DROP TABLE IF EXISTS prg\_organization

CREATE TABLE prg\_organization (

organization\_id int identity,

address  varchar(50) NOT NULL,

email\_addresss varchar(30) unique NOT NULL,

phone\_number int NOT NULL,

drop\_off\_date\_time  datetime NOT NULL,

CONSTRAINT PK\_prg\_Organization PRIMARY KEY (organization\_id),

)

CREATE TABLE prg\_adopter (

adopter\_id int identity,

name varchar(30) NOT NULL,

address varchar(50) NOT NULL,

phone\_number int NOT NULL,

email\_addresss varchar(30) unique NOT NULL,

pick\_up\_date\_time datetime NOT NULL,

CONSTRAINT PK\_prg\_adopter PRIMARY KEY (adopter\_id)

)

Views:

--Counts the total number of cats

CREATE OR ALTER VIEW CatCount AS

SELECT COUNT(cat\_id) as NumberOfCats from prg\_cat

GO

SELECT \* FROM CatCount

A picture containing rectangle

Description automatically generated

--Counts the total number of kittens

CREATE OR ALTER VIEW KittenCount AS

SELECT COUNT(kitten\_id) as NumberOfKittens from prg\_kitten

GO

SELECT \* FROM KittenCount

A picture containing diagram

Description automatically generated

--Counts the number of vaccinated cats

CREATE OR ALTER VIEW CatVaccine AS

SELECT COUNT(vaccine\_status) AS NumberVacinate from prg\_cat

WHERE vaccine\_status = 'TRUE'

GO

SELECT \* FROM CatVaccine

Table

Description automatically generated

--Counts the number of vaccinated kittens

CREATE OR ALTER VIEW KittenVaccine AS

SELECT COUNT(vaccine\_status) AS NumberVacinate from prg\_kitten

WHERE vaccine\_status = 'TRUE'

GO

SELECT \* FROM KittenVaccine

Table

Description automatically generated with low confidence

--Lists available cats

CREATE OR ALTER VIEW AvaliableCats AS

SELECT name FROM prg\_cat

WHERE prg\_cat.adopter\_id IS NULL

GO

SELECT \* FROM AvaliableCats

Graphical user interface, text, application

Description automatically generated

--Lists available kittens

CREATE OR ALTER VIEW AvaliableKittens AS

SELECT name FROM prg\_kitten

WHERE prg\_kitten.adopter\_id IS NULL

GO

SELECT \* FROM AvaliableKittens

Table

Description automatically generated

## Data Creation

Insert Statements[[2]](#footnote-3):

prg\_organization

INSERT INTO prg\_organization (address, email\_addresss, phone\_number, drop\_off\_date, drop\_off\_time)

VALUES (‘58 Meadow Ridge Parkway’, ‘mchristensen0@ucoz.ru’, 7819387, ‘3/2/2021 15:43’)

INSERT INTO prg\_organization (address, email\_addresss, phone\_number, drop\_off\_date\_time)

VALUES (‘7 Hagan Terrace’, ‘lbrookes1@ox.ac.uk’, 5223860, ‘3/16/2021 17:22’)

'67 Karstens Street'

INSERT INTO prg\_organization (address, email\_addresss, phone\_number, drop\_off\_date\_time)

VALUES ('67 Karstens Street', 'ldyment2@rediff.com’, 1273322, ‘5/10/2021 13:43’)

INSERT INTO prg\_organization (address, email\_addresss, phone\_number, drop\_off\_date\_time)

VALUES ('67 Karstens Street', 'ldyment2@rediff.com', 1273322, '5/10/2021 13:43')

INSERT INTO prg\_organization (address, email\_addresss, phone\_number, drop\_off\_date, drop\_off\_time)

VALUES ('595 Claremont Parkway’, ‘ndullingham3@nba.com’, 8812147, 5/4/2021, 6:34 PM)

INSERT INTO prg\_organization (address, email\_addresss, phone\_number, drop\_off\_date, drop\_off\_time)

VALUES (‘67 Atwood Trail’, ‘tservis4@alexa.com’, 4257917, 3/1/2021, 1:37 PM)

prg\_adopter

INSERT INTO prg\_adopter (name, address, email\_addresss, phone\_number, pick\_up\_date, pick\_up\_time)

VALUES (‘Jacquetta Deverose’, ‘8561 Meadow Valley Street’, ‘jdeverose0@java.com’, 3184836, 7/1/2021, 3:01 PM)

INSERT INTO prg\_adopter (name, address, email\_addresss, phone\_number, pick\_up\_date, pick\_up\_time)

VALUES (‘Sidoney Blakiston’, ‘3127 Myrtle Plaza’, ‘sblakiston1@g.co’, 4580578, 7/28/2021, 2:42 PM)

INSERT INTO prg\_adopter (name, address, email\_addresss, phone\_number, pick\_up\_date, pick\_up\_time)

VALUES (‘Archer Plumer’, ‘7 Lien Drive’, ‘aplumer2@flickr.com’, 4794685, 7/9/2021, 7:51 PM)

INSERT INTO prg\_adopter (name, address, email\_addresss, phone\_number, pick\_up\_date, pick\_up\_time)

VALUES ('Royall Dummett', '24660 Bluestem Way', 'rdummett3@sphinn.com', 8190845, 10/19/2021, 5:06 PM)

SELECT \* FROM prg\_organization

Graphical user interface

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SELECT \* FROM prg\_adopter

Graphical user interface, text

Description automatically generated with medium confidence

SELECT \* FROM prg\_characteristic (1 could not fit into the table)

Table

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SELECT \* FROM prg\_kitten

Table

Description automatically generated

SELECT \* FROM prg\_litter

Table

Description automatically generated

SELECT \* FROM prg\_cat

Graphical user interface, application, table

Description automatically generated

## Data Manipulation

We update Anatola vaccinate status to TRUE:

UPDATE prg\_kitten SET vaccine\_status = 'TRUE' WHERE name = 'Anatola'

Check kitten vaccine status number after update on Anatola:

SELECT \* FROM KittenVaccine

Before:

Table

Description automatically generated with low confidence

After:

Table

Description automatically generated

\*\*\*

Insert new adopter:

INSERT INTO prg\_adopter (name, address, email\_addresss, phone\_number, pick\_up\_date\_time)

VALUES ('Huberto Reardon', '2682 Bartelt Way', 'hreardon0@xrea.com', 1603245, '11/16/2021 15:58')

Update Maynord adoption ID:

UPDATE prg\_kitten SET adopter\_id = 13 WHERE name = 'Maynord'

Check available kittens after Maynord adopted:

SELECT \* FROM AvaliableKittens

Before:

Table

Description automatically generated

After:

Table

Description automatically generated

\*\*\*

Update Maybelle vaccine status to TRUE

UPDATE prg\_cat SET vaccine\_status = 'TRUE' WHERE name = 'Maybelle'

Check cat vaccine status after Maybelle vaccinated

SELECT \* FROM CatVaccine

Before:

Table

Description automatically generated

After:

Table

Description automatically generated

\*\*\*

Insert new adopter

Martelle Ostler, 91 Loftsgordon Point, mostler0@mozilla.com, 561-701-4644, 11/2/2021, 6:45 PM

INSERT INTO prg\_adopter (name, address, email\_addresss, phone\_number, pick\_up\_date\_time)

VALUES ('Martelle Ostler', '91 Loftsgordon Point', 'mostler0@mozilla.com', 7014644, '11/2/2021 18:45')

--adopters after adding Martelle Ostler

Graphical user interface

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Delete adopter because they changed their mind

DELETE prg\_adopter WHERE name = 'Martelle Ostler'

--adopters after deleting Martelle Ostler

Graphical user interface

Description automatically generated with medium confidence

## Answering Data Questions

How many cats are there in total?

We answer this question with a SELECT and VIEW statement. I chose to make it a VIEW so that you could simply call the command rather than write out the full statement. Here, we are simply counting the number of cats regardless of adoption status. We call the COUNT function to do this.

--Counts the total number of cats

CREATE OR ALTER VIEW CatCount AS

SELECT COUNT(cat\_id) as NumberOfCats from prg\_cat

GO

SELECT \* FROM CatCount

A picture containing rectangle

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We can see there are 5 cats in total that have stayed at the foster home presently or previously.

How many kittens are there in total?

I used a similar strategy as the cat total to answer this question. I created another SELECT and VIEW statement to select the total number of cats and for this to easily be referenceable.

--Counts the total number of kittens

CREATE OR ALTER VIEW KittenCount AS

SELECT COUNT(kitten\_id) as NumberOfKittens from prg\_kitten

GO

SELECT \* FROM KittenCount

A picture containing diagram

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Again, utilizing the COUNT function, we count that there are 16 kittens that have been birthed in total.

Which cats come unvaccinated?

For this question, I used a SELECT statement to print off the names of the cats that have a vaccine status of ‘FALSE’.

--names of unvaccinated cats

SELECT

name

FROM prg\_cat

WHERE vaccine\_status = 'FALSE'

Graphical user interface, application, table

Description automatically generated

As we can see, only Leshia needs to be vaccinated of all the cats.

Which kittens need to be vaccinated?

Like the unvaccinated cats, I used a SELECT statement to select the names of all the kittens where their vaccine status was marked as ‘FALSE”.

--names of unvaccinated kittens

SELECT

name

FROM prg\_kitten

WHERE vaccine\_status = 'FALSE'

Graphical user interface, table

Description automatically generated

From this query, we learn that Cris, Nickolas, and Cindy all need to be vaccinated.

Which cats have been adopted?

When looking at the adopted cats, it is often helpful to know who they were adopted by. For this, I selected the names of the cats and their respective adopters. I then used a JOIN clause to join the cats to their adopters.

--cat names with owner name

SELECT

prg\_cat.name as CatName,

prg\_adopter.name as OwnerName

FROM prg\_adopter

RIGHT JOIN prg\_cat ON prg\_adopter.adopter\_id = prg\_cat.adopter\_id

WHERE prg\_cat.adopter\_id IS NOT NULL

Graphical user interface, text, application, table

Description automatically generated

As we can see, Cristabel, Leshia, Maybelle, and Millie have all been adopted.

Which kittens have been adopted?

Like the cats, I selected the kitten names with their respective adopters. I again used the JOIN clause to join the adopter with the kitten. It is important to keep in mind that multiple kittens can be adopted by the same person.

--kitten names with owner name

SELECT

prg\_kitten.name as KittenName,

prg\_adopter.name as OwnerName

FROM prg\_adopter

RIGHT JOIN prg\_kitten ON prg\_adopter.adopter\_id = prg\_kitten.adopter\_id

WHERE prg\_kitten.adopter\_id IS NOT NULL

Table

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As we can see, Conn, Chantal, Zorine, Cris, Stearn, Lyndsie, Nickolas, Anatola, Ryley, Arabella, Cindy, and Martainn have all been adopted.

How many of each type of breed are there?

For this question, I thought it would be relevant information if an adopter is looking for a specific breed. I used the DISTINCT clause to include all the unique breeds in the characteristic table. I used the COUNT function to count the number of each distinct breed. I also needed to use the GROUP BY clause to group the individual breeds together.

--Lists the names of the breeds with the number of cats per breed

SELECT

DISTINCT breed as Breeds,

COUNT(breed) as NumBreeds

FROM prg\_characteristic

GROUP BY breed

Table

Description automatically generated

From this table, we can see there are 6 British Shorthairs, 1 Calico cat, 1 Ragdoll cat, 6 Siamese cats and 7 Tabby cats.

Which cats are available for adoption?

It is important to keep track of your available cats when looking for potential adopters. For this one, it is like the adopted cats except we are calling on the cats with NULL for their adopter. I also create this in a VIEW, so it is easier to reference.

--Lists available cats

CREATE OR ALTER VIEW AvaliableCats AS

SELECT name FROM prg\_cat

WHERE prg\_cat.adopter\_id IS NULL

GO

SELECT \* FROM AvaliableCats

Graphical user interface, text, application

Description automatically generated

As we can see from the output, the only available cat is Belicia.

Which kittens are available for adoption?

Like with the cats, I created a VIEW of all the kittens with a NULL entry for their adopter to easily reference it later.

--Lists available kittens

CREATE OR ALTER VIEW AvaliableKittens AS

SELECT name FROM prg\_kitten

WHERE prg\_kitten.adopter\_id IS NULL

GO

SELECT \* FROM AvaliableKittens

Table

Description automatically generated

As we can see, the only available kittens are Maynord, Shalom, Ranna, and Clotilda.

## Implementation

Cat form that lists the cat and the adopter’s name:

Graphical user interface, application

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Kitten form that lists the kittens and the adopter’s name:

Graphical user interface, application

Description automatically generated

Form that lists all available cats:

Graphical user interface, application, Word

Description automatically generated

Form that lists all available kittens:

Graphical user interface, application

Description automatically generated

Cat medical report:

Table

Description automatically generated

Kitten medical report:

**Table

Description automatically generated**

Cat and adopter’s name report:

Graphical user interface, text, application

Description automatically generated

Kitten and adopter’s name report:

Table

Description automatically generated

## Reflection

Throughout this project, I learned to adapt what I want to do with what works for my model. While working on this project, I had to think a lot about how my data and model would fit logically. The first obstacle I ran into was determining proper data types. There were certain data within my model where at first, I wasn’t sure what data type to use. For example, with my date and time data, I originally set my date as an int and my time as time. When I went in to write my code, I ran into some issues. I couldn’t make sense of how to enter the date or time data correctly. I adapted by referencing the DateTime data type we used in the labs. I converted all my time inputs to military time and formatted the data to fit the DateTime type. Ultimately, this made my life much easier to work with the data like this instead of trying to figure out something I was completely unfamiliar with. Additionally, I had to adjust my phone number data once I started entering my code into SQL. Since I put my data type as an int, I realized that the size of the integer was too large to include the full phone number. To fix this problem, I omitted the area code from the data. Since this is all just dummy data, it didn’t matter. If I were to need this database for the future, I would probably change it to a varchar(10) data type rather than an int.

One of the big issues I had when starting my work on the SQL code was figuring out how to appropriately add my tables into SQL that were dependent on each other. This required a lot of thought and prior planning beforehand to know the correct order. The issue was that cats have litters, litters belong to a cat and contain the kittens, and the kittens belong to one litter and one mom cat. When there is an almost circular dependency, it gets tricky which one goes first into SQL. After some discussion and thought, I decided to go with kittens, litters, and then cats. The kittens are born then assigned to a litter and that litter is assigned to a mom cat. For this assignment, this was enough. If I were to further develop this database in the future, I would want to play around with ways to link the kittens more to their respective mom. I might even circumvent the litter table altogether. It would all depend on what worked and what didn’t.

For the future, this project has helped me understand how to think through the various steps of creating a database. From data types to data entry, every step must be done correctly for the database to run correctly.

## Summary

The goal of this database was to help answer my data questions. With the way I structured my database and data, I often had to utilize the COUNT function to get the exact number of certain elements. I tried to put certain SELECT statements into VIEWs if I knew there was potential for them to be used a lot.

The user interface I chose was MS Access. It was the easiest to use this platform both for me and my friend. In MS Access, I created 4 forms. Two involve available cats and kittens and two involve adopted cats and kittens. The forms for the available cats and kittens simply display the animal’s name. In the future, as more cats come into the home and become available, the user could just input the name into the form, and they would be added to the list of available animals. For the forms of the adopted cats and kittens, it lists the cat id, cat name, adopter id, and adopter name. Adoption is a more complicated process, so it is important to have that information on hand. As the cats and kittens get adopted, the user could input the information directly into the form. Along with the forms, I also created 4 reports. Two reports contained the relevant medical information and two reports summarized which cat and kitten will be adopted by which adopter. The medical report simply checks off if the cat or kitten has been vaccinated. For the cats, it also checks if the cat is pregnant or not. Since there are checkmarks, it is easier to interpret and understand universally. For the adopter report, it simply lists the cat or kitten’s name next to the adopter’s name. This is to have an easy access running list of the adopters with their adoptees.

In summation, the goal of this project was to find a way to conveniently organize information related to foster cats and kittens. It is important to make sure this information is straight. Far too often, animals end up not getting the care they need or going to homes that don’t fit. It is important to help these animals by providing them with the resources they need to be well. By fostering pregnant cats and their kittens, my friend and her family are doing just that. I hope they find this database to be helpful and support them on their mission.

1. Full table code can be found in the full SQL code document submitted in 2SU [↑](#footnote-ref-2)
2. All insert statements in full code document in 2SU [↑](#footnote-ref-3)