

Business Problems:

How do key characteristics such as age, previous owner and breed correlate to an increase or decrease in adoption likelihood?

1. What is the average age of pets in the shelter? - Jimena

a. Input:

```
SELECT p.PetType,
       ROUND(AVG(ph.AgeMonths/ 12.0), 2) AS AvgAgeYears,
       ROUND(AVG(a.TimeInShelterDays),2) AS AvgDaysInShelter
FROM Pet p
JOIN PetHealth ph ON p.PetID = ph.PetID
JOIN Adoption a ON p.PetID = a.PetID
GROUP BY p.PetType
ORDER BY AvgAgeYears DESC;
```

b. Output:

	A-Z PetType	0-9 avgAgeYears	0-9 avgDaysInShelter
1	Rabbit	7.88	45.42
2	Dog	7.75	44.22
3	Cat	7.61	42.93
4	Bird	7.52	43.33

c. Business Interpretation:

From the results, the shelter can determine the average age of pets is about 7 to 8 years old. The results table shows rabbits average out at an age of 7.88 years with birds closely behind at 7.52 years. The results demonstrate the majority of the animals in the shelter are of older age.

2. What type(s) of pet(s) spent the longest time in a shelter? - Steffi

a. Input:

```
SELECT p.PetType,
       COUNT(p.PetType) AS animal_number,
       ROUND(AVG(a2.TimeInShelterDays),2) AS AVG_TimeInShelterDays
FROM Adoption a2
JOIN Pet p ON a2.PetID = p.PetID
GROUP BY p.PetType
ORDER BY AVG_TimeInShelterDays DESC;
```

b. Output:

	A-Z PetType	123 animal_number	123 AVG_TimeInShelterDays
1	Rabbit	493	45.42
2	Dog	522	44.22
3	Bird	487	43.33
4	Cat	505	42.93

c. Business Interpretation:

The data result reveals how rabbits have the highest number of average time in shelter, while cats have the lowest. This may mean that not as many people adopt rabbits, compared to the other animals.

3. Do pets with a previous owner have a higher or lower adoption fee? - Karn

a. Input:

```
SELECT p.PetType, p.PreviousOwner, ROUND(AVG(a.AdoptionFee),2) AS AvgAdoptionFee
FROM Pet p
JOIN Adoption a ON a.PetID = p.PetID
GROUP BY p.PreviousOwner, p.PetType
ORDER BY p.PetType, a.AdoptionFee DESC;
```

b. Output:

	A-Z PetType ▼	123 PreviousOwner ▼	123 AvgAdoptionFee ▼
1	Bird	1	266.81
2	Bird	0	259.63
3	Cat	1	249.22
4	Cat	0	246.32
5	Dog	0	248.22
6	Dog	1	245.8
7	Rabbit	0	238.95
8	Rabbit	1	243.46

c. Business Interpretation:

From the data result, we can see that birds and cats with previous owners typically have a higher adoption fee. Meanwhile, dogs and rabbits with previous owners typically have a lower adoption fee. We initially expected that pets with previous owners would be priced higher due to potential training or prior care. However, the data suggests this trend may not apply to dogs and rabbits.

4. Which pet(s) have the highest and lowest adoption fee? - Mikayla

a. Input:

```
SELECT PetType, Breed, COUNT(*) AS PetTotal,
ROUND(AVG(a.AdoptionFee),2) AS AVG_AdoptionFee
FROM Pet p
JOIN Adoption a ON a.PetID = p.PetID
GROUP BY PetType, Breed
ORDER BY AVG_AdoptionFee DESC;
```

b. Output:

	A-Z PetType	A-Z Breed	0-9 PetTotal	0-9 AVG_AdoptionFee
1	Bird	Parakeet	487	261.8
2	Dog	Golden Retriever	162	249.83
3	Dog	Labrador	193	248.58
4	Cat	Persian	252	247.31
5	Cat	Siamese	253	247.22
6	Dog	Poodle	167	244.08
7	Rabbit	Rabbit	493	240.28

c. Business Interpretation:

While the average adoption fee for all breeds range from \$240.28-\$261.80, parakeets have the highest average of adoption fees at \$261.80, while rabbits have the lowest average adoption fee at \$240.28. Golden retrievers came in second at \$249.83 which is still a \$11.97 difference from parakeets - despite being a stereotypically more commonly owned pet.

5. What characteristics make an animal most likely to be adopted?- David

a. Input:

```

SELECT
    ph.Vaccinated,
    ph.HealthCondition,
    p.PreviousOwner,
ROUND(AVG (a.AdoptionLikelihood),2) AS adoption_rate,
COUNT(*) AS sample_size
FROM PetHealth ph
JOIN Pet p ON ph.PetID = p.PetID
JOIN Adoption a ON ph.PetID = a.PetID
GROUP BY
    ph.Vaccinated,
    ph.HealthCondition,
    p.PreviousOwner
ORDER BY adoption_rate DESC;

```

b. Output:

	0-9 Vaccinated	0-9 HealthCondition	0-9 PreviousOwner	0-9 adoption_rate
1	1	0	0	0.5
2	1	0	1	0.49
3	0	0	0	0.14
4	1	1	0	0.12
5	1	1	1	0.1
6	0	0	1	0.09
7	0	1	1	0.08
8	0	1	0	0.04

c. Business Interpretation:

The data shows that being vaccinated is the most important condition for a pet to be adopted. However, if the pet is only healthy, but not vaccinated, then it lowers the pet's chances of adoption.

Business Recommendations:

1. To increase the adoption rate, we should ensure that every animal is vaccinated.
2. To increase the chances for adoption the shelter could educate potential owners on the care for animals.
3. Based on the older age of the pets, shelters can create age-specific health care plans offering a discount on adoption fees for older animals as well as market these animals.