

Optimizing Animal Adoption Rates:

SQL- Based Data Analysis for Strategic Business Solutions

BUS2 195B: Data Visualization

Group 7

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Project Objectives

To compare adoptable pet characteristics
to adoption likelihood rating



Business Questions



1. What is the average age of pets in the shelter?
2. What type of pet spent the longest time in a shelter?
3. Do pets with a previous owner have a higher or lower adoption fee?
4. Which pets have the highest adoption fee & Why?
5. What characteristics make an animal most likely to be adopted?



Q1: What is the average age of animals in the shelter?



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;
```

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

Interpretation:

The shelter can determine the average age of pets is about 7 close to 8 years old.

Q2: What type of pet spent the longest time in a shelter?



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;
```

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

Interpretation:

It reveals how rabbits have the highest average time in the shelter, while cats have the lowest.

Q3: Do pets with a previous owner have a higher or lower adoption fee?



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;
```

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

Interpretation:

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.



Q4: Which pets have the highest adoption fee?



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;
```

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

Interpretation:

While the average adoption fee for all breeds range from \$240.28-\$261.80. Parakeets have the highest average adoption fee at \$261.80, while rabbits have the lowest average adoption fee at \$240.28.

Q5: What characteristics make an animal most likely to be adopted?



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;
```

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

Interpretation:

It shows that being **vaccinated** is the most important factor for adoption. However, its chances of being adopted decrease if a pet is healthy but not vaccinated.

Business Recommendations



1. Require every animal is vaccinated to increase adoption rate.
2. Educate potential owners on the care for animals to increase adoption rate.
3. Create age-specific health care plans to offer a discount on adoption fees for older animals.

