Name: _Mesafnt Kalu_

The shelter is particularly interested in these queries from the database.

1. List of pets with their medical services in date order, most recent services first.

$$r(\text{PET\_MED\_SERV}) \leftarrow \pi_{(\text{P.Name,S.Procedures,S.DateofService})} (\text{PETS} \bowtie_{\text{P.Petid=S.Petsid}} \text{SERVICES})$$

2. An annual summary of pet services performed in the past 2 years and the total costs by service for each year.

$$r(\text{SERVICE\_COST\_YEAR})_{(\text{S.Procedures,count(Procedures),sum(Amount) AND year(DateofService=2021 AND 2022))}} \leftarrow \text{S. Procedures}\mathfrak{F}_{(\text{count(Procedures),sum(Amount))}}(\text{SERVICES})$$

3. A summary of pets who are not adopted and the length of time they have been at the shelter.

$$r(\text{UNADOPTED\_PETS}) \quad {\scriptstyle (\text{P.Name,P.BirthDate, A.PetsStatus, (CONCAT (FLOOR((TIMESTAMPDIFF(DAY ,P.BirthDate, CURRENT\_DATE())/12)), 'Days ') " DurationofTime") AND A.PetsStatus = "unadopted")}}$$

$$\leftarrow (\text{P.Name,P.BirthDate, A.PetsStatus})\ \mathfrak{F}_{(\text{CONCAT (FLOOR((TIMESTAMPDIFF(DAY ,P.BirthDate, CURRENT\_DATE())/12)), 'Days ') " DurationofTime"})}(\text{PETS} \bowtie_{\text{P.Petid=A.P\_id}} \text{ADOPTION})$$

4. A list of pets adopted in each year matched with their new owners.
a. If a pet was adopted and returned, there should be an indicator on the screen for that pet.

b. And if another person adopted them subsequently, there should be a second owner name and date of adoption.

$$r(\text{ADOPTED\_PETS}) \leftarrow \sigma_{(\text{P.PetsName,PO.Fname,PO.Lname,A.DateofAdoption,A.PetsStatus AND A.PetsStatus = "adopted" OR A.PetsStatus = "returned")}} (\text{PETS} \bowtie_{\text{P.Petid=PO.Pid}} \text{PETS\_OWNER} \bowtie_{\text{P.Petid=A.P\_id}} \text{ADOPTION}$$

5. Birthdate and Age of a pet, condition of a pet for every pet that was adopted ordered by pet type in age descending order.

$$r(\text{PETS\_PROFILE}) \quad {\scriptstyle (\text{P.Name,P.BirthDate, P.Catagory, A.PetsStatus, CONCAT (FLOOR((TIMESTAMPDIFF(MONTH ,P.BirthDate, CURRENT\_DATE())/12)), 'Year ', MOD(TIMESTAMPDIFF(MONTH ,P.BirthDate, CURRENT\_DATE()), 12), 'Month') " Age" AND A.PetsStatus = "adopted")}}$$

$$\leftarrow \text{P.Name,P.BirthDate, P.Catagory, A.PetsStatus}\mathfrak{F}_{\text{CONCAT (FLOOR((TIMESTAMPDIFF(MONTH ,P.BirthDate, CURRENT\_DATE())/12)), 'Year ', MOD(TIMESTAMPDIFF(MONTH ,P.BirthDate, CURRENT\_DATE()), 12), 'Month') " Age"}} (\text{PETS} \bowtie_{\text{P.Petid=A.P\_id}} \text{ADOPTION})$$

6. Preferred pet matched to a potential owner's preferences. Query only uses unadopted pets to match an owner who has not done an adoption already. (Don't go wild with the preference.....keep it simple, like pet type, size, age....3 would be enough.)

$$r(\text{OWNERS\_PERFORMANCE}) \leftarrow \sigma_{(\text{PO.Fname,PO.Lname,P.PetsName,PO.Sizes,PO.Breed, PO.Species,A.OwnerStatus,A.PetsStatus AND A.PetsStatus = "unadopted" AND A.OwnersStatus = pendingor A.OwnersStatus = "denied")}} (\text{PETS\_OWNER} \bowtie_{\text{PO.Pid=P.Petid}} \text{PETS} \bowtie_{\text{P.Petid=A.P\_id}} \text{ADOPTION})$$

7. What breed of pet has the highest adoption rate since opening?

$$r(\text{ADOPTION\_RATE})_{(\text{PO.Breed,ROUND(COUNT(A.AdoptionNum} * 100.0 \text{))/ (count(A.AdoptionNum)))}} \leftarrow \text{PO. Breed}\Im_{(\text{ROUND(COUNT(A.AdoptionNum} * 100.0 \text{))/ (count(A.AdoptionNum)))}} (\text{PETS\_OWNER} \bowtie_{\text{P.Petid=A.P\_id}} \text{ADOPTION})$$

Note: - 1. I have implemented the queries in the database below are the SQL queries.

1. CREATE VIEW PET_MED_SERV AS SELECT Name, Procedures, DateofService FROM PETS JOIN SERVICES ON PETS.Petid=SERVICES.Petsid ORDER BY DateofService ASC;

2. CREATE VIEW SERVICE_COST_YEAR AS SELECT SERVICES.Procedures, count(Procedures), sum(Amount) FROM SERVICES GROUP BY SERVICES.Procedures ORDER BY SERVICES.Procedures;

3. CREATE VIEW UNADOPTED_PETS AS (SELECT PETS.Name,PETS.BirthDate, ADOPTION.PetsStatus, CONCAT (FLOOR((TIMESTAMPDIFF(DAY ,PETS.BirthDate, CURRENT_DATE())/12)), 'Days ') AS DurationofTime FROM PETS join ADOPTION ON PETS.Petid=ADOPTION.P_id WHERE ADOPTION.PetsStatus = "unadopted");

4. CREATE VIEW ADOPTED_PETS AS (SELECT PETS.Name "PetsName" ,PETS_OWNER.Fname,PETS_OWNER.Lname,ADOPTION.DateofAdoption,ADOPTION.PetsStatus FROM PETS JOIN PETS_OWNER ON PETS.Petid=PETS_OWNER.Pid JOIN ADOPTION ON PETS.Petid=ADOPTION.P_id WHERE ADOPTION.PetsStatus = "adopted" OR ADOPTION.PetsStatus = "returned");

5. CREATE VIEW PETS_PROFILE AS (SELECT PETS.Name,PETS.BirthDate, PETS.Catagory, ADOPTION.PetsStatus, CONCAT (FLOOR((TIMESTAMPDIFF(MONTH ,PETS.BirthDate, CURRENT_DATE())/12)), 'Year ',MOD(TIMESTAMPDIFF(MONTH ,PETS.BirthDate, CURRENT_DATE()), 12), 'Month') AS Age FROM PETS join ADOPTION ON PETS.Petid=ADOPTION.P_id WHERE ADOPTION.PetsStatus = "adopted");

6. CREATE VIEW OWNERS_PERFORMANCE AS (SELECT PETS_OWNER.Fname,PETS_OWNER.Lname,PETS.Name "PetsName",PETS_OWNER.Sizes,PETS_OWNER.Breed, PETS_OWNER.Species, ADOPTION.OwnersStatus,ADOPTION.PetsStatus FROM PETS_OWNER JOIN PETS ON PETS_OWNER.Pid=PETS.Petid JOIN ADOPTION ON PETS.Petid=ADOPTION.P_id WHERE

ADOPTION.PetsStatus = "unadopted" AND ADOPTION.OwnersStatus = "pending" or ADOPTION.OwnersStatus = "denied");

7. CREATE VIEW ADOPTION_RATE AS (SELECT PETS_OWNER.Breed,ROUND(COUNT(AdoptionNum * 100.0)/ (Select count(AdoptionNum) from ADOPTION), 2) as rate_of_adoption from PETS_OWNER, ADOPTION GROUP BY PETS_OWNER.Breed ORDER BY rate_of_adoption);