Coding Challenges - PetPals, The Pet Adoption Platform

Instructions

- Coding Challenge submissions should be done through the partcipants' Github repository, and the link should be shared with trainers and Hexavarsity.

Problem Statement:

Create SQL Schema from the pet and user class, use the class attributes for table column names.

SQL Schema:

Table: Pets
Attributes:

- PetID (Primary Key, int): Unique identifier for each pet.
- Name (string): The name of the pet.
- Age (int): The age of the pet.
- Breed (string): The breed of the pet.
- Type (string): Type of pet (e.g., "Dog," "Cat").
- AvailableForAdoption (bit): Indicates whether the pet is available for adoption (0 for not available, 1 for available).

Table: Shelters
Attributes:

- ShelterID (Primary Key, int): Unique identifier for each shelter.
- Name (string): The name of the shelter.
- Location (string): The location or address of the shelter.

Table: Donations
Attributes:

- DonationID (Primary Key, int): Unique identifier for each donation.
- DonorName (string): The name of the donor.
- DonationType (string): Type of donation (e.g., "Cash," "Item").
- DonationAmount (decimal): The amount donated (for cash donations).
- DonationItem (string): The type of item donated (for item donations).
- DonationDate (datetime): Date and time of the donation.

Table: AdoptionEvents
Attributes:

- EventID (Primary Key, int): Unique identifier for each adoption event.
- EventName (string): The name or title of the event.
- EventDate (datetime): Date and time of the event.
- Location (string): The location or venue of the event.

Table: Participants
Attributes:

- ParticipantID (Primary Key, int): Unique identifier for each participant.
- ParticipantName (string): The name of the participant (shelter or adopter).
- ParticipantType (string): Type of participant (e.g., "Shelter," "Adopter").
- EventID (Foreign Key, int): References the EventID of the associated adoption event (if applicable).

Tasks:

1. Provide a SQL script that initializes the database for the Pet Adoption Platform ”PetPals”.
2. Create tables for pets, shelters, donations, adoption events, and participants.
3. Define appropriate primary keys, foreign keys, and constraints.
4. Ensure the script handles potential errors, such as if the database or tables already exist.
5. Write an SQL query that retrieves a list of available pets (those marked as available for adoption) from the "Pets" table. Include the pet's name, age, breed, and type in the result set. Ensure that the query filters out pets that are not available for adoption.
6. Write an SQL query that retrieves the names of participants (shelters and adopters) registered for a specific adoption event. Use a parameter to specify the event ID. Ensure that the query joins the necessary tables to retrieve the participant names and types.
7. Create a stored procedure in SQL that allows a shelter to update its information (name and location) in the "Shelters" table. Use parameters to pass the shelter ID and the new information. Ensure that the procedure performs the update and handles potential errors, such as an invalid shelter ID.
8. Write an SQL query that calculates and retrieves the total donation amount for each shelter (by shelter name) from the "Donations" table. The result should include the shelter name and the total donation amount. Ensure that the query handles cases where a shelter has received no donations.
9. Write an SQL query that retrieves the names of pets from the "Pets" table that do not have an owner (i.e., where "OwnerID" is null). Include the pet's name, age, breed, and type in the result set.
10. Write an SQL query that retrieves the total donation amount for each month and year (e.g., January 2023) from the "Donations" table. The result should include the month-year and the corresponding total donation amount. Ensure that the query handles cases where no donations were made in a specific month-year.
11. Retrieve a list of distinct breeds for all pets that are either aged between 1 and 3 years or older than 5 years.
12. Retrieve a list of pets and their respective shelters where the pets are currently available for adoption.
13. Find the total number of participants in events organized by shelters located in specific city. Example: City=Chennai
14. Retrieve a list of unique breeds for pets with ages between 1 and 5 years.
15. Find the pets that have not been adopted by selecting their information from the 'Pet' table.
16. Retrieve the names of all adopted pets along with the adopter's name from the 'Adoption' and 'User' tables.
17. Retrieve a list of all shelters along with the count of pets currently available for adoption in each shelter.
18. Find pairs of pets from the same shelter that have the same breed.
19. List all possible combinations of shelters and adoption events.
20. Determine the shelter that has the highest number of adopted pets.

Queries for the given task

1. Create database PetPals; or create database petpals;
2. (a) create table pets (petid int, name varchar (20), age int (2), breed varchar (20), type varchar (10), avail_for_adop int (1));
   (b) create table shelters (shelterid int,name varchar(30),location varchar(50));
   (c) create table donations (dona_id int primary key,donor_name varchar(20),dona_type varchar(10),dona_amt double(8,2),dona_item varchar(20),dona_date datetime);
   (d) create table adoption_events(event_id int primary key,event_name varchar(30),event_date datetime,location varchar(20));
   (e) create table participants (parti_id int,parti_name varchar(20),parti_type varchar(20),event_id int,foreign key(event_id) references adoption_events(ev ent_id));
3. Primary keys: petid, shelterid, dona_id, event_id, parti_id,ownerid
   Foreign keys: event_id,sheltered,ownerid
   Constraints:
4. (i) create database pet_pals;
   ERROR 1007 (HY000): Can't create database 'pet_pals'; database exists
   (ii) create table pets(petid int);
   ERROR 1050 (42S01): Table 'pets' already exists
   (iii) create table donations(dona_id int);
   ERROR 1050 (42S01): Table 'donations' already exists
5. select name,age,breed,type from pets where avail_for_adop=1;

name	age	breed	type
Leo	1	Persian	cat
Oreo	1	shih-tzu	dog
murphy	2	Maine coon	cat
lika	1	parrot	bird

6. select p.parti_name,p.parti_type from participants p inner join adoption_events a where p.event_id=a.event_id;

parti_name	parti_type
dinesh	adopt
trinadh	adopt
Rama	adopt
Manoj	adopt
karthik	shelter
siddhu	shelter

7. delimiter $$
   mysql> create procedure updateSheltersTable(in sh_id int,in sh_name varchar(20), in sh_loc varchar(20))
   begin
   update shelters set name=sh_name,location=sh_loc
   where shelterid=sh_id;
   end$$

   Query OK, 0 rows affected (0.01 sec)

```
delimiter ;
call updateSheltersTable(2008,'furry shop','pune');
Query OK, 1 row affected (0.02 sec)

delimiter ;
select * from shelters;
```

```
+-----------+---------------+------------+
| shelterid | name          | location   |
+-----------+---------------+------------+
|      2001 | animal heaven | hyderabad  |
|      2002 | furry         | banglore   |
|      2003 | furry haven   | vijayawada |
|      2004 | tailwag       | chennai    |
|      2005 | clawsome      | pune       |
|      2006 | purrfecthome  | hyderabad  |
|      2007 | barkzone      | hyderabad  |
|      2008 | furry shop    | pune       |
+-----------+---------------+------------+
8 rows in set (0.00 sec)
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8. select s.name,sum(d.dona_amt) as total_amount from donations d inner join shelters s on d.shelterid=s.shelterid group by s.shelterid;

name	Total_amount
furry	1500.00
furryhaven	5000.00
tailwag	9000.00

9. select p.name,p.age,p.breed,p.type from pets p where ownerid is null;

name	age	breed	Type
Leo	1	Persian	Cat
Murphy	2	Maine coon	Cat
lika	1	Parrot	Bird

10. select concat(monthname(dona_date),' ',year(dona_date)) as month_year,coalesce(sum(dona_amt),0) as total_dona_amt
from donations
group by year(dona_date),month(dona_date),concat(monthname(dona_date),' ',year(dona_date))
order by year
(dona_date),month(dona_date);

Month_year	Total_dona_amt
January 2024	1500.00
February 2024	14000.00

11. select distinct breed as unique_breed from pets where age between 1 and 3 or age>5;

Unique_breed
Shih-tzu

Persian
Maine coon
Labrador
parrot

12. select p.name,p.breed,p.type,s.name as shelter_name from pets p inner join shelters s on p.shelterid=s.shelterid where p.avail_for_adop=1;

name	breed	type	Shelter_name
oreo	Shih-tzu	dog	Animal heaven
murphy	Maine coon	cat	tailwag
lika	parrot	bird	Animal heaven

13. select count(p.parti_id) as total_participants from participants p join adoption_events e on p.event_id = e.event_id join shelters s on e.shelterid = s.shelterid where s.location = 'vijayawada';

Total_participants
2

14. select distinct breed as unique_breed from pets where age between 1 and 5;

Unique_breed
Shih-tzu
Golden retriever
Persian
Maine coon
parrot

15. select petid,name,age,breed,type from pets where avail_for_adop=0;

petid	name	age	breed	type
1001	rocky	2	Shih-tzu	Dog
1002	riggie	4	Golden retriever	Dog
1006	oozy	7	labrador	dog

16. select p.name,pt.parti_name as adopter_name from pets p join adoption_events ae on p.event_id=ae.event_id
join participants pt on pt.event_id=ae.event_id where p.avail_for_adop=0 and pt.parti_type='adopt';

name	Adopter_name
rocky	Manoj
riggie	Dinesh
oozy	krishna

17. select s.name as shelter_name,s.location as shelter_location,count(p.avail_for_adop) as count_of_pets_avail from pets p join shelters s on p.shelterid=s.shelterid where p.avail_for_adop=1 group by s.shelterid;

Shelter_name	Shelter_lcation	Count_of_pets_avail
furry	banglore	1

Animal heaven	Hyderabad	2
Tailwag	chennai	1

18. select p1.name as pet_name,s.name as shelter_name from pets p1
join pets p2 on p1.shelterid=p2.shelterid and p1.breed=p2.breed and p1.petid!=p2.petid
join shelters s on p1.shelterid=s.shelterid
where p1.shelterid is not null and p2.shelterid is not null;

Pet_name	Shelter_name
rocky	Animal heaven
oreo	Animal heaven
riggie	Furry haven
sandy	Furry haven

19. select s.shelterid,s.name,s.location,ae.event_id,ae.event_name,ae.event_date,ae.location as event_loc from shelters s cross join adoption_events ae;

shelterid	name	location	event_id	event_name	event_date	event_loc
2001	animal heaven	hyderabad	4004	pawpalooza	2024-04-10 18:45:00	Banglore
2001	animal heaven	hyderabad	4003	tailtacular	2024-04-21 16:30:00	Hyderabad
2001	animal heaven	hyderabad	4002	purr party	2024-03-21 10:30:00	Vijayawada
2001	animal heaven	hyderabad	4001	furr fest	2024-03-11 11:00:00	Vijayawada
2002	furry	banglore	4004	pawpalooza	2024-04-10 18:45:00	Banglore
2002	furry	banglore	4003	tailtacular	2024-04-21 16:30:00	Hyderabad
2002	furry	banglore	4002	purr party	2024-03-21 10:30:00	Vijayawada
2002	furry	banglore	4001	furr fest	2024-03-11 11:00:00	Vijayawada
2003	furry haven	vijayawada	4004	pawpalooza	2024-04-10 18:45:00	Banglore
2003	furry haven	vijayawada	4003	tailtacular	2024-04-21 16:30:00	Hyderabad
2003	furry haven	vijayawada	4002	purr party	2024-03-21 10:30:00	Vijayawada
2003	furry haven	vijayawada	4001	furr fest	2024-03-11 11:00:00	Vijayawada
2004	tailwag	chennai	4004	pawpalooza	2024-04-10 18:45:00	Banglore
2004	tailwag	chennai	4003	tailtacular	2024-04-21 16:30:00	Hyderabad
2004	tailwag	chennai	4002	purr party	2024-03-21 10:30:00	Vijayawada
2004	tailwag	chennai	4001	furr fest	2024-03-11 11:00:00	Vijayawada
2005	clawsome	pune	4004	pawpalooza	2024-04-10 18:45:00	Banglore
2005	clawsome	pune	4003	tailtacular	2024-04-21 16:30:00	Hyderabad
2005	clawsome	pune	4002	purr party	2024-03-21 10:30:00	Vijayawada
2005	clawsome	pune	4001	furr fest	2024-03-11 11:00:00	Vijayawada
2006	purrfecthome	hyderabad	4004	pawpalooza	2024-04-10 18:45:00	Banglore
2006	purrfecthome	hyderabad	4003	tailtacular	2024-04-21 16:30:00	Hyderabad
2006	purrfecthome	hyderabad	4002	purr party	2024-03-21 10:30:00	Vijayawada
2006	purrfecthome	hyderabad	4001	furr fest	2024-03-11 11:00:00	Vijayawada
2007	barkzone	hyderabad	4004	pawpalooza	2024-04-10 18:45:00	Banglore
2007	barkzone	hyderabad	4003	tailtacular	2024-04-21 16:30:00	Hyderabad
2007	barkzone	hyderabad	4002	purr party	2024-03-21 10:30:00	Vijayawada
2007	barkzone	hyderabad	4001	furr fest	2024-03-11 11:00:00	Vijayawada
2008	purrista	vijayawada	4004	pawpalooza	2024-04-10 18:45:00	Banglore
2008	purrista	vijayawada	4003	tailtacular	2024-04-21 16:30:00	Hyderabad
2008	purrista	vijayawada	4002	purr party	2024-03-21 10:30:00	Vijayawada
2008	purrista	vijayawada	4001	furr fest	2024-03-11 11:00:00	Vijayawada

32 rows in set (0.00 sec)

20. select s.shelterid, s.name as shelter_name, count(p.petid) as adopted_pets_count from shelters s join pets p on s.shelterid = p.shelterid where p.avail_for_adop = 1 group by s.shelterid, s.name order by adopted_pets_count desc limit 1;

shelterid	Shelter_name	Adopted_pets_count
2002	Animal heaven	2