

SQL Coding Challenge – PetPals

Tasks:

1. Provide a SQL script that initializes the database for the Pet Adoption Platform "PetPals".

```
mysql> Create database PetPals;
Query OK, 1 row affected (0.01 sec)

mysql> use PetPals;
Database changed
```

2. Create tables for pets, shelters, donations, adoption events, and participants. Define appropriate primary keys, foreign keys, and constraints. Ensure the script handles potential errors, such as if the database or tables already exist.

Pets:

```
mysql> CREATE TABLE IF NOT EXISTS Pets (
->   PetID INT PRIMARY KEY,
->   Name VARCHAR(50),
->   Age INT,
->   Breed VARCHAR(50),
->   Type VARCHAR(50),
->   AvailableForAdoption BIT
-> );
Query OK, 0 rows affected (0.05 sec)

mysql> INSERT INTO Pets (PetID, Name, Age, Breed, Type, AvailableForAdoption)
-> VALUES
->   (1, 'Max', 3, 'Golden Retriever', 'Dog', 1),
->   (2, 'Luna', 2, 'Siamese', 'Cat', 1),
->   (3, 'Rocky', 5, 'German Shepherd', 'Dog', 0),
->   (4, 'Simba', 1, 'Persian', 'Cat', 1),
->   (5, 'Bella', 4, 'Labrador', 'Dog', 1),
->   (6, 'Oliver', 2, 'Beagle', 'Dog', 1),
->   (7, 'Chloe', 3, 'Ragdoll', 'Cat', 0),
->   (8, 'Cooper', 6, 'Bulldog', 'Dog', 1),
->   (9, 'Milo', 2, 'Maine Coon', 'Cat', 1),
->   (10, 'Daisy', 1, 'Poodle', 'Dog', 0);
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

Shelters:

```
mysql> CREATE TABLE IF NOT EXISTS Shelters (
->   ShelterID INT PRIMARY KEY,
->   Name VARCHAR(50),
->   Location VARCHAR(100)
-> );
Query OK, 0 rows affected (0.02 sec)

mysql> INSERT INTO Shelters (ShelterID, Name, Location)
-> VALUES
->   (1, 'Paws Haven', '123 Main St, Cityville'),
->   (2, 'Safe Haven Shelter', '456 Oak Ave, Townsville'),
->   (3, 'Furry Friends Shelter', '789 Elm St, Villagetown'),
->   (4, 'Happy Tails Rescue', '101 Pine St, Hamletville'),
->   (5, 'Whisker Haven', '555 Maple Ave, Countryside'),
->   (6, 'Heavenly Paws Shelter', '888 Cedar St, Suburbia'),
->   (7, 'Paws and Claws Sanctuary', '777 Birch Ave, Mountainville'),
->   (8, 'Forever Friends Shelter', '222 Spruce St, Lakeside'),
->   (9, 'Rescue Me Shelter', '333 Oak St, Riverside'),
->   (10, 'Furry Companions Shelter', '444 Walnut Ave, Parktown');
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

Donations:

```
mysql> CREATE TABLE IF NOT EXISTS Donations (
->     DonationID INT PRIMARY KEY,
->     DonorName VARCHAR(50),
->     DonationType VARCHAR(50),
->     DonationAmount DECIMAL(10, 2),
->     DonationItem VARCHAR(50),
->     DonationDate DATETIME
-> );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> INSERT INTO Donations (DonationID, DonorName, DonationType, DonationAmount, DonationItem, DonationDate)
-> VALUES
-> (1, 'John Doe', 'Cash', 100.00, NULL, '2023-01-15 09:30:00'),
-> (2, 'Jane Smith', 'Item', NULL, 'Blankets', '2023-02-20 14:45:00'),
-> (3, 'Alice Johnson', 'Cash', 50.00, NULL, '2023-03-10 11:20:00'),
-> (4, 'Robert Brown', 'Item', NULL, 'Pet Food', '2023-04-05 16:00:00'),
-> (5, 'Emily Wilson', 'Cash', 75.00, NULL, '2023-05-12 13:10:00'),
-> (6, 'David Lee', 'Item', NULL, 'Toys', '2023-06-18 10:00:00'),
-> (7, 'Sophia Garcia', 'Cash', 120.00, NULL, '2023-07-22 15:30:00'),
-> (8, 'Michael Martinez', 'Item', NULL, 'Leashes', '2023-08-30 12:20:00'),
-> (9, 'Olivia Rodriguez', 'Cash', 200.00, NULL, '2023-09-14 09:00:00'),
-> (10, 'Daniel Taylor', 'Item', NULL, 'Scratching Posts', '2023-10-25 17:45:00');
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

Adoption Events:

```
mysql> CREATE TABLE IF NOT EXISTS AdoptionEvents (
->     EventID INT PRIMARY KEY,
->     EventName VARCHAR(50),
->     EventDate DATETIME,
->     Location VARCHAR(100)
-> );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> INSERT INTO AdoptionEvents (EventID, EventName, EventDate, Location)
-> VALUES
-> (1, 'Furry Friends Adoption Day', '2023-01-28 10:00:00', 'City Park'),
-> (2, 'Paws and Claws Meet & Greet', '2023-02-15 13:30:00', 'Community Center'),
-> (3, 'Happy Tails Adoption Fair', '2023-03-05 11:00:00', 'Fairgrounds'),
-> (4, 'Whisker Wonderland Adoption Event', '2023-04-10 12:00:00', 'Shopping Mall'),
-> (5, 'Forever Homes Pet Expo', '2023-05-20 09:00:00', 'Convention Center'),
-> (6, 'Rescue Rally Adoption Day', '2023-06-08 10:30:00', 'Park Pavilion'),
-> (7, 'Furry Companions Mega Adoption Event', '2023-07-17 14:00:00', 'Stadium'),
-> (8, 'Adopt-a-Palooza', '2023-08-25 11:00:00', 'Town Square'),
-> (9, 'Pawsitive Vibes Adoption Festival', '2023-09-30 10:00:00', 'Beachfront'),
-> (10, 'Home for the Holidays Adoption Drive', '2023-10-12 12:30:00', 'Pet Store');
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

Participants:

```
mysql> CREATE TABLE IF NOT EXISTS Participants (
->     ParticipantID INT PRIMARY KEY,
->     ParticipantName VARCHAR(50),
->     ParticipantType VARCHAR(50),
->     EventID INT,
->     FOREIGN KEY (EventID) REFERENCES AdoptionEvents(EventID)
-> );
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> INSERT INTO Participants (ParticipantID, ParticipantName, ParticipantType, EventID)
-> VALUES
-> (1, 'Paws Haven', 'Shelter', NULL),
-> (2, 'John Anderson', 'Adopter', 1),
-> (3, 'Safe Haven Shelter', 'Shelter', NULL),
-> (4, 'Emma Johnson', 'Adopter', 3),
-> (5, 'Furry Friends Shelter', 'Shelter', NULL),
-> (6, 'Sophia Garcia', 'Adopter', 5),
-> (7, 'Happy Tails Rescue', 'Shelter', NULL),
-> (8, 'Daniel Taylor', 'Adopter', 7),
-> (9, 'Whisker Haven', 'Shelter', NULL),
-> (10, 'Olivia Rodriguez', 'Adopter', 9);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

- 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.

```
mysql> SELECT Name, Age, Breed, Type
-> FROM Pets
-> WHERE AvailableForAdoption = 1;
```

Name	Age	Breed	Type
Max	3	Golden Retriever	Dog
Luna	2	Siamese	Cat
Simba	1	Persian	Cat
Bella	4	Labrador	Dog
Oliver	2	Beagle	Dog
Cooper	6	Bulldog	Dog
Milo	2	Maine Coon	Cat

```
7 rows in set (0.00 sec)
```

- 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.

```
mysql> SELECT p.ParticipantName
-> FROM Participants p
-> INNER JOIN AdoptionEvents ae ON p.EventID = ae.EventID
-> WHERE ae.EventID = 1;
```

ParticipantName
John Anderson

```
1 row in set (0.00 sec)
```

- 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.

```
mysql> DELIMITER //
mysql> CREATE PROCEDURE UpdateShelterInfo(
->     IN ShelterID INT,
->     IN NewName VARCHAR(50),
->     IN NewLocation VARCHAR(100)
-> )
-> BEGIN
->     UPDATE Shelters
->     SET Name = Vishal, Location = Mumbai
->     WHERE ShelterID = 10;
-> END //
```

```
Query OK, 0 rows affected (0.01 sec)
```

6. 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.

```
mysql> SELECT s.Name AS ShelterName, COALESCE(SUM(d.DonationAmount), 0) AS TotalDonationAmount
-> FROM Shelters s
-> JOIN Donations d ON s.ShelterID = d.ShelterID
-> GROUP BY s.Name;
```

ShelterName	TotalDonationAmount
Furry Companions Shelter	545.00
Rescue Me Shelter	545.00
Forever Friends Shelter	545.00
Paws and Claws Sanctuary	545.00
Heavenly Paws Shelter	545.00
Whisker Haven	545.00
Happy Tails Rescue	545.00
Furry Friends Shelter	545.00
Safe Haven Shelter	545.00
Paws Haven	545.00

10 rows in set (0.00 sec)

7. 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.

```
mysql> select name,age,breed,type from pets where AvailableForAdoption = true;
```

name	age	breed	type
Max	3	Golden Retriever	Dog
Luna	2	Siamese	Cat
Simba	1	Persian	Cat
Bella	4	Labrador	Dog
Oliver	2	Beagle	Dog
Cooper	6	Bulldog	Dog
Milo	2	Maine Coon	Cat

7 rows in set (0.00 sec)

8. 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.

```
mysql> select
-> FORMAT(donationDate, 'yyyy-MM') AS MonthYear,
-> COALESCE(SUM(donationAmount), 0) AS TotalDonationAmount
-> FROM
-> donations
-> GROUP BY
-> FORMAT(donationDate, 'yyyy-MM');
```

MonthYear	TotalDonationAmount
20,230,115,093,000	100.00
20,230,220,144,500	0.00
20,230,310,112,000	50.00
20,230,405,160,000	0.00
20,230,512,131,000	75.00
20,230,618,100,000	0.00
20,230,722,153,000	120.00
20,230,830,122,000	0.00
20,230,914,090,000	200.00
20,231,025,174,500	0.00

10 rows in set, 20 warnings (0.00 sec)

9. Retrieve a list of distinct breeds for all pets that are either aged between 1 and 3 years or older than 5 years.

```
mysql> SELECT DISTINCT Breed
-> FROM Pets
-> WHERE (Age BETWEEN 1 AND 3) OR (Age > 5);
+-----+
| Breed |
+-----+
| Golden Retriever |
| Siamese |
| Persian |
| Beagle |
| Ragdoll |
| Bulldog |
| Maine Coon |
| Poodle |
+-----+
8 rows in set (0.00 sec)
```

10. Retrieve a list of pets and their respective shelters where the pets are currently available for adoption.

```
mysql> SELECT p.Name AS PetName, p.Age, p.Breed, p.Type, s.Name AS ShelterName
-> FROM Pets p
-> JOIN Shelters s ON p.ShelterID = s.ShelterID
-> WHERE p.AvailableForAdoption = 1;
Empty set (0.00 sec)
```

11. Find the total number of participants in events organized by shelters located in specific city.
Example: City=Chennai

```
mysql> SELECT COUNT(p.ParticipantID) AS TotalParticipants
-> FROM Participants p
-> JOIN AdoptionEvents ae ON p.EventID = ae.EventID
-> JOIN Shelters s ON ae.Location = s.Location
-> WHERE s.Location = 'Chennai' AND p.ParticipantType = 'Shelter';
+-----+
| TotalParticipants |
+-----+
| 0 |
+-----+
1 row in set (0.00 sec)
```

12. Retrieve a list of unique breeds for pets with ages between 1 and 5 years.

```
mysql> SELECT DISTINCT Breed
-> FROM Pets
-> WHERE Age BETWEEN 1 AND 5;
+-----+
| Breed |
+-----+
| Golden Retriever |
| Siamese |
| German Shepherd |
| Persian |
| Labrador |
| Beagle |
| Ragdoll |
| Maine Coon |
| Poodle |
+-----+
9 rows in set (0.00 sec)
```

13. Find the pets that have not been adopted by selecting their information from the 'Pet' table.

```
mysql> select name,age,breed,type from pets where AvailableForAdoption = false;
+-----+-----+-----+-----+
| name | age | breed          | type |
+-----+-----+-----+-----+
| Rocky | 5   | German Shepherd | Dog  |
| Chloe | 3   | Ragdoll         | Cat  |
| Daisy | 1   | Poodle          | Dog  |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

14. Retrieve the names of all adopted pets along with the adopter's name from the 'Adoption' and 'User' tables.

```
mysql> SELECT p.name AS PetName,par.participantName AS AdopterName
-> FROM pets p
-> JOIN participants par ON p.PetID = par.participantId
-> WHERE par.participantType = 'Adopter';
+-----+-----+
| PetName | AdopterName |
+-----+-----+
| Luna    | John Anderson |
| Simba   | Emma Johnson |
| Oliver  | Sophia Garcia |
| Cooper  | Daniel Taylor |
| Daisy   | Olivia Rodriguez |
+-----+-----+
5 rows in set (0.00 sec)
```

15. Retrieve a list of all shelters along with the count of pets currently available for adoption in each shelter.

```
mysql> SELECT s.Name AS ShelterName, COUNT(p.PetID) AS PetsAvailableForAdoption
-> FROM Shelters s
-> LEFT JOIN Pets p ON s.ShelterID = p.ShelterID AND p.AvailableForAdoption = 1
-> GROUP BY s.Name;
+-----+-----+
| ShelterName | PetsAvailableForAdoption |
+-----+-----+
| Paws Haven | 0 |
| Safe Haven Shelter | 0 |
| Furry Friends Shelter | 0 |
| Happy Tails Rescue | 0 |
| Whisker Haven | 0 |
| Heavenly Paws Shelter | 0 |
| Paws and Claws Sanctuary | 0 |
| Forever Friends Shelter | 0 |
| Rescue Me Shelter | 0 |
| Furry Companions Shelter | 0 |
+-----+-----+
10 rows in set (0.01 sec)
```

16. Find pairs of pets from the same shelter that have the same breed.

```
mysql> SELECT p1.PetID AS Pet1ID, p1.Name AS Pet1Name, p1.Breed AS Breed,
-> p2.PetID AS Pet2ID, p2.Name AS Pet2Name
-> FROM Pets p1
-> INNER JOIN Pets p2 ON p1.ShelterID = p2.ShelterID
-> AND p1.Breed = p2.Breed
-> AND p1.PetID < p2.PetID;
Empty set (0.00 sec)
```

17. List all possible combinations of shelters and adoption events.

```
mysql> SELECT s.Name AS ShelterName, ae.EventName
-> FROM Shelters s
-> CROSS JOIN AdoptionEvents ae;
```

ShelterName	EventName
Furry Companions Shelter	Furry Friends Adoption Day
Rescue Me Shelter	Furry Friends Adoption Day
Forever Friends Shelter	Furry Friends Adoption Day
Paws and Claws Sanctuary	Furry Friends Adoption Day
Heavenly Paws Shelter	Furry Friends Adoption Day
Whisker Haven	Furry Friends Adoption Day
Happy Tails Rescue	Furry Friends Adoption Day
Furry Friends Shelter	Furry Friends Adoption Day
Safe Haven Shelter	Furry Friends Adoption Day
Paws Haven	Furry Friends Adoption Day
Furry Companions Shelter	Paws and Claws Meet & Greet
Rescue Me Shelter	Paws and Claws Meet & Greet
Forever Friends Shelter	Paws and Claws Meet & Greet
Paws and Claws Sanctuary	Paws and Claws Meet & Greet
Heavenly Paws Shelter	Paws and Claws Meet & Greet
Whisker Haven	Paws and Claws Meet & Greet
Happy Tails Rescue	Paws and Claws Meet & Greet
Furry Friends Shelter	Paws and Claws Meet & Greet
Safe Haven Shelter	Paws and Claws Meet & Greet
Paws Haven	Paws and Claws Meet & Greet
Furry Companions Shelter	Happy Tails Adoption Fair
Rescue Me Shelter	Happy Tails Adoption Fair
Forever Friends Shelter	Happy Tails Adoption Fair
Paws and Claws Sanctuary	Happy Tails Adoption Fair
Heavenly Paws Shelter	Happy Tails Adoption Fair
Whisker Haven	Happy Tails Adoption Fair
Happy Tails Rescue	Happy Tails Adoption Fair
Furry Friends Shelter	Happy Tails Adoption Fair
Safe Haven Shelter	Happy Tails Adoption Fair
Paws Haven	Happy Tails Adoption Fair
Furry Companions Shelter	Whisker Wonderland Adoption Event
Rescue Me Shelter	Whisker Wonderland Adoption Event
Forever Friends Shelter	Whisker Wonderland Adoption Event
Paws and Claws Sanctuary	Whisker Wonderland Adoption Event
Heavenly Paws Shelter	Whisker Wonderland Adoption Event
Whisker Haven	Whisker Wonderland Adoption Event
Happy Tails Rescue	Whisker Wonderland Adoption Event
Furry Friends Shelter	Whisker Wonderland Adoption Event
Safe Haven Shelter	Whisker Wonderland Adoption Event
Paws Haven	Whisker Wonderland Adoption Event

Paws Haven	Whisker Wonderland Adoption Event
Furry Companions Shelter	Forever Homes Pet Expo
Rescue Me Shelter	Forever Homes Pet Expo
Forever Friends Shelter	Forever Homes Pet Expo
Paws and Claws Sanctuary	Forever Homes Pet Expo
Heavenly Paws Shelter	Forever Homes Pet Expo
Whisker Haven	Forever Homes Pet Expo
Happy Tails Rescue	Forever Homes Pet Expo
Furry Friends Shelter	Forever Homes Pet Expo
Safe Haven Shelter	Forever Homes Pet Expo
Paws Haven	Forever Homes Pet Expo
Furry Companions Shelter	Rescue Rally Adoption Day
Rescue Me Shelter	Rescue Rally Adoption Day
Forever Friends Shelter	Rescue Rally Adoption Day
Paws and Claws Sanctuary	Rescue Rally Adoption Day
Heavenly Paws Shelter	Rescue Rally Adoption Day
Whisker Haven	Rescue Rally Adoption Day
Happy Tails Rescue	Rescue Rally Adoption Day
Furry Friends Shelter	Rescue Rally Adoption Day
Safe Haven Shelter	Rescue Rally Adoption Day
Paws Haven	Rescue Rally Adoption Day
Furry Companions Shelter	Furry Companions Mega Adoption Event
Rescue Me Shelter	Furry Companions Mega Adoption Event
Forever Friends Shelter	Furry Companions Mega Adoption Event
Paws and Claws Sanctuary	Furry Companions Mega Adoption Event
Heavenly Paws Shelter	Furry Companions Mega Adoption Event
Whisker Haven	Furry Companions Mega Adoption Event
Happy Tails Rescue	Furry Companions Mega Adoption Event
Furry Friends Shelter	Furry Companions Mega Adoption Event
Safe Haven Shelter	Furry Companions Mega Adoption Event
Paws Haven	Furry Companions Mega Adoption Event
Furry Companions Shelter	Adopt-a-Palooza
Rescue Me Shelter	Adopt-a-Palooza
Forever Friends Shelter	Adopt-a-Palooza
Paws and Claws Sanctuary	Adopt-a-Palooza
Heavenly Paws Shelter	Adopt-a-Palooza
Whisker Haven	Adopt-a-Palooza
Happy Tails Rescue	Adopt-a-Palooza
Furry Friends Shelter	Adopt-a-Palooza
Safe Haven Shelter	Adopt-a-Palooza
Paws Haven	Adopt-a-Palooza
Furry Companions Shelter	Pawsitive Vibes Adoption Festival
Rescue Me Shelter	Pawsitive Vibes Adoption Festival
Forever Friends Shelter	Pawsitive Vibes Adoption Festival
Paws and Claws Sanctuary	Pawsitive Vibes Adoption Festival
Heavenly Paws Shelter	Pawsitive Vibes Adoption Festival
Whisker Haven	Pawsitive Vibes Adoption Festival
Happy Tails Rescue	Pawsitive Vibes Adoption Festival
Furry Friends Shelter	Pawsitive Vibes Adoption Festival
Safe Haven Shelter	Pawsitive Vibes Adoption Festival
Paws Haven	Pawsitive Vibes Adoption Festival

Paws Haven	Pawsitive Vibes Adoption Festival
Furry Companions Shelter	Home for the Holidays Adoption Drive
Rescue Me Shelter	Home for the Holidays Adoption Drive
Forever Friends Shelter	Home for the Holidays Adoption Drive
Paws and Claws Sanctuary	Home for the Holidays Adoption Drive
Heavenly Paws Shelter	Home for the Holidays Adoption Drive
Whisker Haven	Home for the Holidays Adoption Drive
Happy Tails Rescue	Home for the Holidays Adoption Drive
Furry Friends Shelter	Home for the Holidays Adoption Drive
Safe Haven Shelter	Home for the Holidays Adoption Drive
Paws Haven	Home for the Holidays Adoption Drive

100 rows in set (0.01 sec)

18. Determine the shelter that has the highest number of adopted pets.

```
mysql> SELECT s.Name AS ShelterName, COUNT(p.PetID) AS AdoptedPetsCount
-> FROM Shelters s
-> JOIN Pets p ON s.ShelterID = p.ShelterID
-> WHERE p.AvailableForAdoption = 0
-> GROUP BY s.Name
-> ORDER BY AdoptedPetsCount DESC
-> LIMIT 1;
Empty set (0.00 sec)
```