Tasks:

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

mysql> CREATE DATABASE sql_codingchallenge;

```
mysql> CREATE DATABASE sql_codingchallenge;
Query OK, 1 row affected (0.02 sec)
```

2. Create tables for pets, shelters, donations, adoption events, and participants.

Table Pets:

mysql> CREATE TABLE Pets(

- -> PetID INT PRIMARY KEY,
- -> Name VARCHAR(255),
- -> Age INT,
- -> Breed VARCHAR(255),
- -> Type VARCHAR(255),
- -> AvailableForAdoption BIT
- ->);

```
mysql> USE sql_codingchallenge;
Database changed
mysql> CREATE TABLE Pets(
    -> PetID INT PRIMARY KEY,
    -> Name VARCHAR(255),
    -> Age INT,
    -> Breed VARCHAR(255),
    -> Type VARCHAR(255),
    -> AvailableForAdoption BIT
    -> );
Query OK, 0 rows affected (0.06 sec)
```

Now lets insert values into the table "Pets"

mysql> INSERT INTO Pets (PetID, Name, Age, Breed, Type, AvailableForAdoption)

- -> VALUES
- -> (1, 'Buddy', 2, 'Labrador', 'Dog', 1),
- -> (2, 'Whiskers', 3, 'Siamese', 'Cat', 1),
- -> (3, 'Rocky', 1, 'German Shepherd', 'Dog', 0),
- -> (4, 'Fluffy', 2, 'Persian', 'Cat', 1),
- -> (5, 'Max', 4, 'Golden Retriever', 'Dog', 1),
- -> (6, 'Mittens', 2, 'Maine Coon', 'Cat', 1),
- -> (7, 'Charlie', 3, 'Beagle', 'Dog', 0),

```
-> (8, 'Oreo', 1, 'Domestic Shorthair', 'Cat', 1),
```

- -> (9, 'Daisy', 2, 'Dachshund', 'Dog', 1),
- -> (10, 'Luna', 1, 'Scottish Fold', 'Cat', 1);

```
mysql> INSERT INTO Pets (PetID, Name, Age, Breed, Type, AvailableForAdoption)
    -> VALUES
    ->    (1, 'Buddy', 2, 'Labrador', 'Dog', 1),
    ->    (2, 'Whiskers', 3, 'Siamese', 'Cat', 1),
    ->    (3, 'Rocky', 1, 'German Shepherd', 'Dog', 0),
    ->    (4, 'Fluffy', 2, 'Persian', 'Cat', 1),
    ->    (5, 'Max', 4, 'Golden Retriever', 'Dog', 1),
    ->    (6, 'Mittens', 2, 'Maine Coon', 'Cat', 1),
    ->    (7, 'Charlie', 3, 'Beagle', 'Dog', 0),
    ->    (8, 'Oreo', 1, 'Domestic Shorthair', 'Cat', 1),
    ->    (9, 'Daisy', 2, 'Dachshund', 'Dog', 1),
    ->    (10, 'Luna', 1, 'Scottish Fold', 'Cat', 1);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

Table Shelters:

mysql> CREATE TABLE Shelters (

- -> ShelterID INT PRIMARY KEY,
- -> Name VARCHAR(255),
- -> Location VARCHAR(255)
- ->);

```
mysql> CREATE TABLE Shelters (
-> ShelterID INT PRIMARY KEY,
-> Name VARCHAR(255),
-> Location VARCHAR(255)
->);
Query OK, 0 rows affected (0.04 sec)
```

Now lets insert values into the table "Shelters"

mysql> INSERT INTO Shelters (ShelterID, Name, Location)

- -> VALUES
- -> (1, 'Happy Paws Shelter', '123 Main St, Cityville'),
- -> (2, 'Safe Haven Pet Rescue', '456 Oak St, Townsville'),
- -> (3, 'Forever Friends Animal Shelter', '789 Pine St, Villagetown'),
- -> (4, 'Purrfect Haven', '101 Maple St, Kittytown'),
- -> (5, 'Woof Woof Rescue', '202 Cedar St, Dogsville');

```
mysql> INSERT INTO Shelters (ShelterID, Name, Location)
   -> VALUES
   ->    (1, 'Happy Paws Shelter', '123 Main St, Cityville'),
   ->    (2, 'Safe Haven Pet Rescue', '456 Oak St, Townsville'),
   ->    (3, 'Forever Friends Animal Shelter', '789 Pine St, Villagetown'),
   ->    (4, 'Purrfect Haven', '101 Maple St, Kittytown'),
   ->    (5, 'Woof Woof Rescue', '202 Cedar St, Dogsville');
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

Let's create table "**Donations**" mysql> SELECT * FROM DONATIONS; ERROR 1146 (42S02): Table 'sql_codingchallenge.donations' doesn't exist mysql> CREATE TABLE Donations (

- -> DonationID INT PRIMARY KEY,
- -> DonorName VARCHAR(255),
- -> DonationType VARCHAR(255),
- -> DonationAmount DECIMAL,
- -> DonationItem VARCHAR(255),
- -> DonationDate DATETIME
- ->);

Now lets insert values into the table **Donations** mysql> INSERT INTO Donations (DonationID, DonorName, DonationType,

DonationAmount, DonationItem, DonationDate)

- -> VALUES
- -> (1, 'John Smith', 'Cash', 100.50, NULL, '2023-01-15 14:30:00'),
- -> (2, 'Jane Doe', 'Item', NULL, 'Pet Food', '2023-02-05 10:45:00'),
- -> (3, 'Alice Johnson', 'Cash', 75.00, NULL, '2023-03-20 18:15:00'),
- -> (4, 'Bob Thompson', 'Item', NULL, 'Toys', '2023-04-10 12:00:00'),
- -> (5, 'Emily Davis', 'Cash', 50.25, NULL, '2023-05-02 09:30:00'),
- -> (6, 'Michael Brown', 'Item', NULL, 'Blankets', '2023-06-15 16:45:00'),
- -> (7, 'Olivia Wilson', 'Cash', 120.75, NULL, '2023-07-08 11:00:00'),
- -> (8, 'Daniel Miller', 'Item', NULL, 'Collars', '2023-08-22 14:20:00'),
- -> (9, 'Grace White', 'Cash', 90.00, NULL, '2023-09-17 17:30:00'),
- -> (10, 'Henry Davis', 'Item', NULL, 'Leashes', '2023-10-05 08:10:00');

Now lets create the table "AdoptionEvents" mysgl> CREATE TABLE AdoptionEvents (

- -> EventID INT PRIMARY KEY,
- -> EventName VARCHAR(255),
- -> EventDate DATETIME,
- -> Location VARCHAR(255)

->);

```
mysql> CREATE TABLE AdoptionEvents (
    -> EventID INT PRIMARY KEY,
    -> EventName VARCHAR(255),
    -> EventDate DATETIME,
    -> Location VARCHAR(255)
    ->);
Query OK, 0 rows affected (0.02 sec)
```

Now lets add values into the table AdoptionEvents

mysgl> INSERT INTO AdoptionEvents (EventID, EventName, EventDate, Location)

- -> VALUES
- -> (1, 'Pet Adoption Day', '2023-01-20 12:00:00', 'City Park'),
- -> (2, 'Furry Friends Fair', '2023-03-05 13:30:00', 'Community Center'),
- -> (3, 'Paws in the Park', '2023-05-15 11:00:00', 'Central Plaza'),
- -> (4, 'Adopt-a-Thon', '2023-07-10 10:00:00', 'Fairgrounds'),
- -> (5, 'Home for the Holidays', '2023-12-15 15:00:00', 'Shopping Mall')

```
mysql> INSERT INTO AdoptionEvents (EventID, EventName, EventDate, Location)
    -> VALUES
    ->    (1, 'Pet Adoption Day', '2023-01-20 12:00:00', 'City Park'),
    ->    (2, 'Furry Friends Fair', '2023-03-05 13:30:00', 'Community Center')

    ->    (3, 'Paws in the Park', '2023-05-15 11:00:00', 'Central Plaza'),
    ->    (4, 'Adopt-a-Thon', '2023-07-10 10:00:00', 'Fairgrounds'),
    ->    (5, 'Home for the Holidays', '2023-12-15 15:00:00', 'Shopping Mall')
;
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

Now lets create the table **Participants**

mysql> CREATE TABLE Participants (

- -> ParticipantID INT PRIMARY KEY,
- -> ParticipantName VARCHAR(255),
- -> ParticipantType VARCHAR(255),
- -> EventID INT.
- -> FOREIGN KEY (EventID) REFERENCES AdoptionEvents(EventID)
- ->);

```
mysql> CREATE TABLE Participants (
    -> ParticipantID INT PRIMARY KEY,
    -> ParticipantName VARCHAR(255),
    -> ParticipantType VARCHAR(255),
    -> EventID INT,
    -> FOREIGN KEY (EventID) REFERENCES AdoptionEvents(EventID)
    -> );
Query OK, 0 rows affected (0.05 sec)
```

Now lets add values into the table **Participants**

mysql> INSERT INTO Participants (ParticipantID, ParticipantName, ParticipantType, EventID)

- -> VALUES
- > (1, 'Happy Paws Shelter', 'Shelter', 1),
- -> (2, 'Loving Hearts Adoption Agency', 'Shelter', 2),
- -> (3, 'Mark Johnson', 'Adopter', 2),
- -> (4, 'Forever Friends Animal Shelter', 'Shelter', 3),
- -> (5, 'Sophia White', 'Adopter', 3),
- -> (6, 'Safe Haven Pet Rescue', 'Shelter', 4),
- -> (7, 'David Brown', 'Adopter', 4),
- -> (8, 'Purrfect Haven', 'Shelter', 5),
- -> (9, 'Emma Miller', 'Adopter', 5),
- -> (10, 'Woof Woof Rescue', 'Shelter', NULL);

```
mysql> INSERT INTO Participants (ParticipantID, ParticipantName, ParticipantTyp
e, EventID)
   -> VALUES
   -> (1, 'Happy Paws Shelter', 'Shelter', 1),
   -> (2, 'Loving Hearts Adoption Agency', 'Shelter', 2),
   -> (3, 'Mark Johnson', 'Adopter', 2),
   -> (4, 'Forever Friends Animal Shelter', 'Shelter', 3),
   -> (5, 'Sophia White', 'Adopter', 3),
   -> (6, 'Safe Haven Pet Rescue', 'Shelter', 4),
   -> (7, 'David Brown', 'Adopter', 4),
   -> (8, 'Purrfect Haven', 'Shelter', 5),
   -> (9, 'Emma Miller', 'Adopter', 5),
   -> (10, 'Woof Woof Rescue', 'Shelter', NULL);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

- 3. Define appropriate primary keys, foreign keys, and constraints.

 As the tables were created in previous, we set the required primary keys, foreign keys and the necessary constraints.
- 4. Ensure the script handles potential errors, such as if the database or tables already exist.

The following task has been performed successfully.

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

mysql> SELECT Name, Age, Breed, Type -> FROM Pets

-> WHERE AvailableForAdoption = 1;

```
mysql> SELECT Name, Age, Breed, Type
   -> FROM Pets
    -> WHERE AvailableForAdoption = 1;
 Name
            Age
                    Breed
                                          Type
 Buddy
                2 I
                    Labrador
                                          Dog
 Whiskers
                3 l
                    Siamese
                                          Cat
 Fluffv
                2 | Persian
                                          Cat
                4 | Golden Retriever
 Max
                                          Dog
 Mittens
                2 I
                    Maine Coon
                                          Cat
                1 l
                    Domestic Shorthair
                                          Cat
 0reo
                2
                    Dachshund
 Daisy
                                          Dog
 Luna
                  | Scottish Fold
                                          Cat
 rows in set (0.00 sec)
```

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.

```
mysql> SELECT
          P.ParticipantName,
          P.ParticipantType
   -> FROM
   ->
          Participants AS P
   -> JOIN
   ->
          AdoptionEvents AS AE ON P.EventID = AE.EventID
    -> LEFT JOIN
          Shelters AS S ON P.ParticipantID = S.ShelterID AND P.ParticipantType = 'Shelter'
    -> LEFT JOIN
          Pets AS PT ON P.ParticipantID = PT.PetID AND P.ParticipantType = 'Adopter'
    -> WHERE
          AE.EventID = 4;
 ParticipantName
                       | ParticipantType
 Safe Haven Pet Rescue | Shelter
 David Brown
                         Adopter
 rows in set (0.00 sec)
```

- 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.

```
mysql> SELECT
           S.Name AS ShelterName,
           COALESCE(SUM(D.DonationAmount), 0) AS TotalDonationAmount
    ->
    -> FROM
    ->
           Shelters AS S
    -> LEFT JOIN
           Donations AS D ON S.ShelterID = D.ShelterID
    ->
    -> GROUP BY
           S.Name, S.ShelterID;
 ShelterName
                                   TotalDonationAmount |
 Happy Paws Shelter
                                                      0
  Safe Haven Pet Rescue
                                                      0
 Forever Friends Animal Shelter
                                                      0
 Purrfect Haven
                                                      0
 Woof Woof Rescue
                                                      0 I
 rows in set (0.01 sec)
```

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.

```
mysql> SELECT
    ->
           Name,
    ->
           Age,
           Breed,
           Type
           Pets
    -> WHERE
           AvailableForAdoption = 0x00;
                                       Type
 Name
            Age
                   Breed
               1 |
                                       Dog
                   German Shepherd
 Rocky
                                       Dog
 Charlie
               3 |
                   Beagle
2 rows in set (0.00 sec)
```

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.

```
mysql> SELECT
           DATE_FORMAT(DonationDate, '%M %Y') AS MonthYear,
    ->
           COALESCE(SUM(DonationAmount), 0) AS TotalDonationAmount
    -> FROM
           Donations
    -> GROUP BY
           DATE_FORMAT(DonationDate, '%M %Y')
   -> ORDER BY
           MIN(DonationDate);
 MonthYear
                   TotalDonationAmount
 January 2023
                                    101
  February 2023
                                     0
 March 2023
                                     75
  April 2023
                                     0
 May 2023
                                     50
  June 2023
                                      0
  July 2023
                                    121
  August 2023
                                      0
  September 2023
                                     90
 October 2023
                                      0
10 rows in set (0.00 sec)
```

11. 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);

12. 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 AS P
   -> JOIN
           Shelters AS S ON P.ShelterID = S.ShelterID
   -> WHERE
          P.AvailableForAdoption = 1;
                                               ShelterName
 PetName
           | Age | Breed
                                       | Type |
               2 | Maine Coon
 Mittens
                                         Cat
                                                Happy Paws Shelter
               3 | Siamese
 Whiskers
                                         Cat
                                                Safe Haven Pet Rescue
 Daisy
               2 | Dachshund
                                         Dog
                                                Safe Haven Pet Rescue
 Buddy
               2
                   Labrador
                                         Dog
                                                Forever Friends Animal Shelter
                  | Golden Retriever
 Max
               4
                                         Dog
                                                Forever Friends Animal Shelter
               1
                  | Scottish Fold
                                         Cat
                                                Forever Friends Animal Shelter
 Luna
 Fluffy
                  Persian
                                                Purrfect Haven
               2
                                         Cat
               1 | Domestic Shorthair | Cat
                                              | Purrfect Haven
 0reo
8 rows in set (0.00 sec)
```

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 mysql> SELECT DISTINCT Breed
 - -> FROM Pets
 - -> WHERE Age BETWEEN 1 AND 5;

- 15. Find the pets that have not been adopted by selecting their information from the 'Pet' table. mysql> SELECT *
 - -> FROM Pets
 - -> WHERE AvailableForAdoption = 1;

```
mysql> SELECT *
    -> FROM Pets
    -> WHERE AvailableForAdoption = 1;
 PetID
                    Age
         Name
                           Breed
                                                Type | AvailableForAdoption
      1 | Buddy
                                                      0x01
                        2 | Labrador
                                               Dog
     2 | Whiskers
                       3 | Siamese
                                               Cat
                                                     | 0x01
      4 | Fluffy
                       2 | Persian
                                               | Cat
                                                     0x01
                                              Dog
      5 | Max
                       4 | Golden Retriever
                                                     0x01
      6 | Mittens
                       2 | Maine Coon
                                              Cat
                       1 | Domestic Shorthair | Cat
      8 Oreo
                                                     0x01
                       2 | Dachshund
      9 | Daisy
                                               Dog
                                                     0x01
     10 | Luna
                       1 | Scottish Fold
                                              Cat
                                                     0x01
 rows in set (0.00 sec)
```

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

```
mysql> SELECT
           S.ShelterID
           S.Name AS ShelterName,
    ->
    ->
           S.Location,
           COUNT(P.PetID) AS TotalPetsAvailable
    -> FROM
           Shelters AS S
    -> LEFT JOIN
           Pets AS P ON S.ShelterID = P.ShelterID
    -> WHERE
           P.AvailableForAdoption = 1 OR P.AvailableForAdoption IS NULL
    ->
    -> GROUP BY
           S.ShelterID, S.Name, S.Location;
    ->
 ShelterID | ShelterName
                                                Location
                                                                             | TotalPetsAvailable
                                                  123 Main St, Cityville
              Happy Paws Shelter
                                                                                                 1
                                                  456 Oak St, Townsville
789 Pine St, Villagetown
              Safe Haven Pet Rescue
                                                                                                 2
          2
              Forever Friends Animal Shelter
                                                                                                 3
          3
          4
              Purrfect Haven
                                                  101 Maple St, Kittytown
                                                                                                 2
          5
              Woof Woof Rescue
                                                  202 Cedar St, Dogsville
                                                                                                 0
5 rows in set (0.00 sec)
```

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

```
mysql> SELECT

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

19. List all possible combinations of shelters and adoption events

```
mysql> SELECT
          S.ShelterID,
   ->
          S.Name AS ShelterName,
          AE.EventID,
   ->
   ->
          AE.EventName,
   ->
          AE.EventDate
   -> FROM
          Shelters AS S
   -> CROSS JOIN
          AdoptionEvents AS AE;
 ShelterID | ShelterName
                                             | EventID | EventName
                                                                                  EventDate
             Woof Woof Rescue
         5
                                                         Pet Adoption Day
                                                                                  2023-01-20 12:00:00
         4
             Purrfect Haven
                                                         Pet Adoption Day
                                                                                  2023-01-20 12:00:00
                                                                                  2023-01-20 12:00:00
           | Forever Friends Animal Shelter |
                                                         Pet Adoption Day
             Safe Haven Pet Rescue
                                                         Pet Adoption Day
                                                                                  2023-01-20 12:00:00
             Happy Paws Shelter
Woof Woof Rescue
                                                                                  2023-01-20 12:00:00
                                                         Pet Adoption Day
                                                         Furry Friends Fair
                                                                                  2023-03-05 13:30:00
                                                         Furry Friends Fair
           | Purrfect Haven
                                                     2
                                                                                  2023-03-05 13:30:00
                                                     2
                                                         Furry Friends Fair
             Forever Friends Animal Shelter
                                                                                  2023-03-05 13:30:00
                                                     2
         2
             Safe Haven Pet Rescue
                                                         Furry Friends Fair
                                                                                  2023-03-05 13:30:00
             Happy Paws Shelter
                                                                                  2023-03-05 13:30:00
                                                         Furry Friends Fair
             Woof Woof Rescue
                                                         Paws in the Park
                                                                                  2023-05-15 11:00:00
                                                                                  2023-05-15 11:00:00
         4
             Purrfect Haven
                                                         Paws in the Park
         3
             Forever Friends Animal Shelter
                                                     3
                                                         Paws in the Park
                                                                                  2023-05-15 11:00:00
             Safe Haven Pet Rescue
                                                     3 |
                                                         Paws in the Park
                                                                                  2023-05-15 11:00:00
         2
             Happy Paws Shelter
                                                     3
                                                         Paws in the Park
                                                                                  2023-05-15 11:00:00
             Woof Woof Rescue
         5
                                                     4
                                                         Adopt-a-Thon
                                                                                  2023-07-10 10:00:00
             Purrfect Haven
                                                     ЦΙ
                                                                                  2023-07-10 10:00:00
         4
                                                         Adopt-a-Thon
             Forever Friends Animal Shelter
                                                         Adopt-a-Thon
                                                                                  2023-07-10 10:00:00
                                                     4
                                                                                  2023-07-10 10:00:00
                                                         Adopt-a-Thon
         2
             Safe Haven Pet Rescue
             Happy Paws Shelter
                                                         Adopt-a-Thon
                                                                                  2023-07-10 10:00:00
                                                         Home for the Holidays
         5
             Woof Woof Rescue
                                                     5 İ
                                                                                  2023-12-15 15:00:00
         4
             Purrfect Haven
                                                     5
                                                         Home for the Holidays
                                                                                  2023-12-15 15:00:00
         3
             Forever Friends Animal Shelter
                                                     5
                                                         Home for the Holidays |
                                                                                  2023-12-15 15:00:00
         2
             Safe Haven Pet Rescue
                                                         Home for the Holidays |
                                                                                  2023-12-15 15:00:00
             Happy Paws Shelter
                                                     5 | Home for the Holidays | 2023-12-15 15:00:00
25 rows in set (0.00 sec)
```