Coding Challenges -1
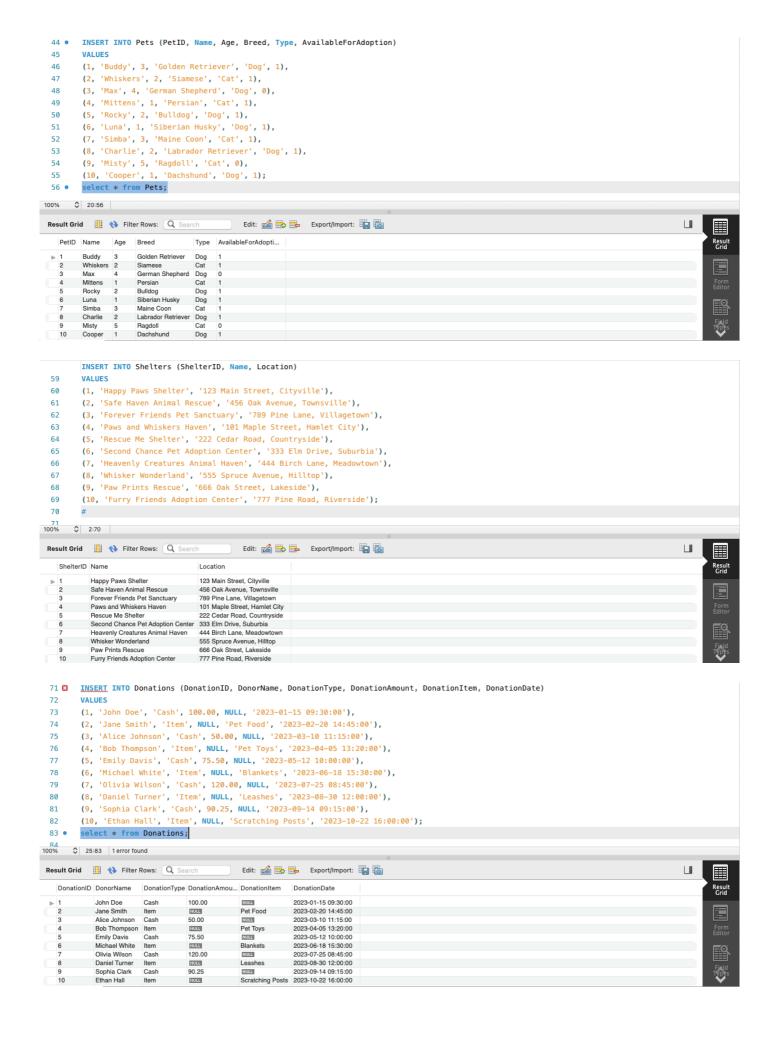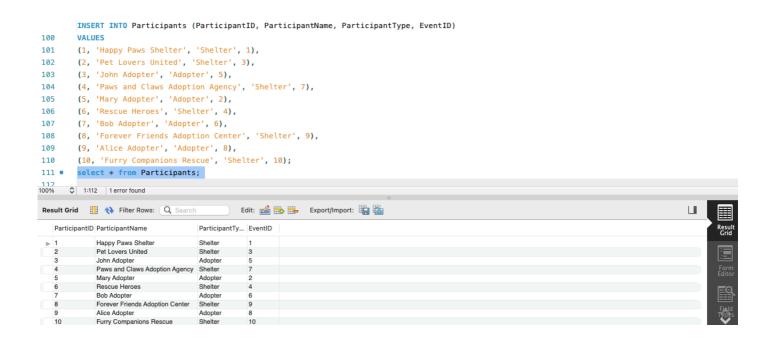
PetPals, The Pet Adoption Platform

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

```
1 •    create database if not exists PetPals;
2 •    use 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.

```
4 •⊝ CREATE TABLE if not exists Pets (
5        PetID INT PRIMARY KEY,
6        Name VARCHAR(255),
7        Age INT,
8        Breed VARCHAR(255),
9        Type VARCHAR(50),
10       AvailableForAdoption BIT
11    );

14 •⊝ CREATE TABLE if not exists Shelters (
15       ShelterID INT PRIMARY KEY,
16       Name VARCHAR(255),
17       Location VARCHAR(255)
18    );

20 •⊝ CREATE TABLE if not exists Donations (
21       DonationID INT PRIMARY KEY,
22       DonorName VARCHAR(255),
23       DonationType VARCHAR(50),
24       DonationAmount DECIMAL(10, 2),
25       DonationItem VARCHAR(255),
26       DonationDate DATETIME
27    );

29 •⊝ CREATE TABLE if not exists AdoptionEvents (
30       EventID INT PRIMARY KEY,
31       EventName VARCHAR(255),
32       EventDate DATETIME,
33       Location VARCHAR(255)
34    );
35 •⊝ CREATE TABLE if not exists Participants (
36       ParticipantID INT PRIMARY KEY,
37       ParticipantName VARCHAR(255),
38       ParticipantType VARCHAR(50),
39       EventID INT,
40       FOREIGN KEY (EventID) REFERENCES AdoptionEvents(EventID)
41    );
```
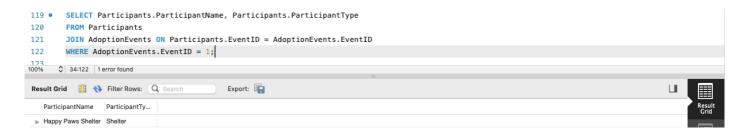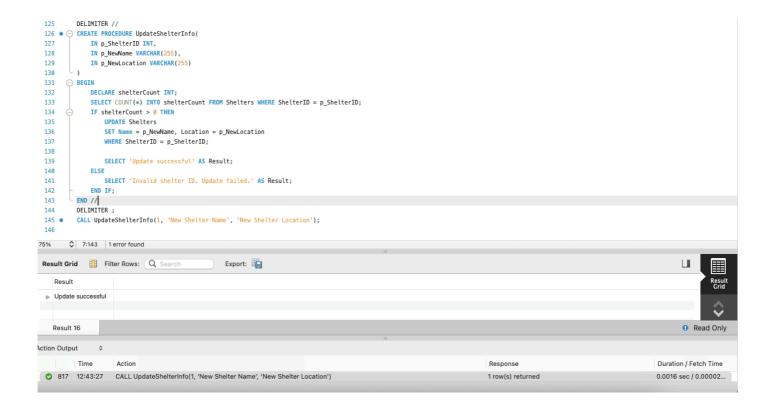
```
44 •  INSERT INTO Pets (PetID, Name, Age, Breed, Type, AvailableForAdoption)
45     VALUES
46     (1, 'Buddy', 3, 'Golden Retriever', 'Dog', 1),
47     (2, 'Whiskers', 2, 'Siamese', 'Cat', 1),
48     (3, 'Max', 4, 'German Shepherd', 'Dog', 0),
49     (4, 'Mittens', 1, 'Persian', 'Cat', 1),
50     (5, 'Rocky', 2, 'Bulldog', 'Dog', 1),
51     (6, 'Luna', 1, 'Siberian Husky', 'Dog', 1),
52     (7, 'Simba', 3, 'Maine Coon', 'Cat', 1),
53     (8, 'Charlie', 2, 'Labrador Retriever', 'Dog', 1),
54     (9, 'Misty', 5, 'Ragdoll', 'Cat', 0),
55     (10, 'Cooper', 1, 'Dachshund', 'Dog', 1);
56 •  select * from Pets;
```

100% | 20:56

Result Grid | Filter Rows: Search | Edit: | Export/Import:

PetID	Name	Age	Breed	Type	AvailableForAdopti...
1	Buddy	3	Golden Retriever	Dog	1
2	Whiskers	2	Siamese	Cat	1
3	Max	4	German Shepherd	Dog	0
4	Mittens	1	Persian	Cat	1
5	Rocky	2	Bulldog	Dog	1
6	Luna	1	Siberian Husky	Dog	1
7	Simba	3	Maine Coon	Cat	1
8	Charlie	2	Labrador Retriever	Dog	1
9	Misty	5	Ragdoll	Cat	0
10	Cooper	1	Dachshund	Dog	1

```
       INSERT INTO Shelters (ShelterID, Name, Location)
59     VALUES
60     (1, 'Happy Paws Shelter', '123 Main Street, Cityville'),
61     (2, 'Safe Haven Animal Rescue', '456 Oak Avenue, Townsville'),
62     (3, 'Forever Friends Pet Sanctuary', '789 Pine Lane, Villagetown'),
63     (4, 'Paws and Whiskers Haven', '101 Maple Street, Hamlet City'),
64     (5, 'Rescue Me Shelter', '222 Cedar Road, Countryside'),
65     (6, 'Second Chance Pet Adoption Center', '333 Elm Drive, Suburbia'),
66     (7, 'Heavenly Creatures Animal Haven', '444 Birch Lane, Meadowtown'),
67     (8, 'Whisker Wonderland', '555 Spruce Avenue, Hilltop'),
68     (9, 'Paw Prints Rescue', '666 Oak Street, Lakeside'),
69     (10, 'Furry Friends Adoption Center', '777 Pine Road, Riverside');
70     #
71
```

100% | 2:70

Result Grid | Filter Rows: Search | Edit: | Export/Import:

ShelterID	Name	Location
1	Happy Paws Shelter	123 Main Street, Cityville
2	Safe Haven Animal Rescue	456 Oak Avenue, Townsville
3	Forever Friends Pet Sanctuary	789 Pine Lane, Villagetown
4	Paws and Whiskers Haven	101 Maple Street, Hamlet City
5	Rescue Me Shelter	222 Cedar Road, Countryside
6	Second Chance Pet Adoption Center	333 Elm Drive, Suburbia
7	Heavenly Creatures Animal Haven	444 Birch Lane, Meadowtown
8	Whisker Wonderland	555 Spruce Avenue, Hilltop
9	Paw Prints Rescue	666 Oak Street, Lakeside
10	Furry Friends Adoption Center	777 Pine Road, Riverside

```
71 ❌ INSERT INTO Donations (DonationID, DonorName, DonationType, DonationAmount, DonationItem, DonationDate)
72     VALUES
73     (1, 'John Doe', 'Cash', 100.00, NULL, '2023-01-15 09:30:00'),
74     (2, 'Jane Smith', 'Item', NULL, 'Pet Food', '2023-02-20 14:45:00'),
75     (3, 'Alice Johnson', 'Cash', 50.00, NULL, '2023-03-10 11:15:00'),
76     (4, 'Bob Thompson', 'Item', NULL, 'Pet Toys', '2023-04-05 13:20:00'),
77     (5, 'Emily Davis', 'Cash', 75.50, NULL, '2023-05-12 10:00:00'),
78     (6, 'Michael White', 'Item', NULL, 'Blankets', '2023-06-18 15:30:00'),
79     (7, 'Olivia Wilson', 'Cash', 120.00, NULL, '2023-07-25 08:45:00'),
80     (8, 'Daniel Turner', 'Item', NULL, 'Leashes', '2023-08-30 12:00:00'),
81     (9, 'Sophia Clark', 'Cash', 90.25, NULL, '2023-09-14 09:15:00'),
82     (10, 'Ethan Hall', 'Item', NULL, 'Scratching Posts', '2023-10-22 16:00:00');
83 •  select * from Donations;
84
```

100% | 25:83 | 1 error found

Result Grid | Filter Rows: Search | Edit: | Export/Import:

DonationID	DonorName	DonationType	DonationAmou...	DonationItem	DonationDate
1	John Doe	Cash	100.00	NULL	2023-01-15 09:30:00
2	Jane Smith	Item	NULL	Pet Food	2023-02-20 14:45:00
3	Alice Johnson	Cash	50.00	NULL	2023-03-10 11:15:00
4	Bob Thompson	Item	NULL	Pet Toys	2023-04-05 13:20:00
5	Emily Davis	Cash	75.50	NULL	2023-05-12 10:00:00
6	Michael White	Item	NULL	Blankets	2023-06-18 15:30:00
7	Olivia Wilson	Cash	120.00	NULL	2023-07-25 08:45:00
8	Daniel Turner	Item	NULL	Leashes	2023-08-30 12:00:00
9	Sophia Clark	Cash	90.25	NULL	2023-09-14 09:15:00
10	Ethan Hall	Item	NULL	Scratching Posts	2023-10-22 16:00:00

```
       INSERT INTO Participants (ParticipantID, ParticipantName, ParticipantType, EventID)
100    VALUES
101    (1, 'Happy Paws Shelter', 'Shelter', 1),
102    (2, 'Pet Lovers United', 'Shelter', 3),
103    (3, 'John Adopter', 'Adopter', 5),
104    (4, 'Paws and Claws Adoption Agency', 'Shelter', 7),
105    (5, 'Mary Adopter', 'Adopter', 2),
106    (6, 'Rescue Heroes', 'Shelter', 4),
107    (7, 'Bob Adopter', 'Adopter', 6),
108    (8, 'Forever Friends Adoption Center', 'Shelter', 9),
109    (9, 'Alice Adopter', 'Adopter', 8),
110    (10, 'Furry Companions Rescue', 'Shelter', 10);
111 •  select * from Participants;
112
100%    ◇  1:112    1 error found
```

Result Grid | Filter Rows: Search | Edit: | Export/Import:

ParticipantID	ParticipantName	ParticipantTy...	EventID
1	Happy Paws Shelter	Shelter	1
2	Pet Lovers United	Shelter	3
3	John Adopter	Adopter	5
4	Paws and Claws Adoption Agency	Shelter	7
5	Mary Adopter	Adopter	2
6	Rescue Heroes	Shelter	4
7	Bob Adopter	Adopter	6
8	Forever Friends Adoption Center	Shelter	9
9	Alice Adopter	Adopter	8
10	Furry Companions Rescue	Shelter	10

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.
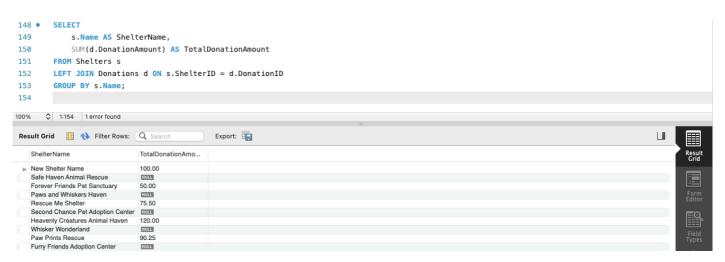
```
114 •  SELECT Name, Age, Breed, Type
115    FROM Pets
116    WHERE AvailableForAdoption = 1;
117
100%    ◇  1:117    1 error found
```

Result Grid | Filter Rows: Search | Export:

Name	Age	Breed	Type
Buddy	3	Golden Retriever	Dog
Whiskers	2	Siamese	Cat
Mittens	1	Persian	Cat
Rocky	2	Bulldog	Dog
Luna	1	Siberian Husky	Dog
Simba	3	Maine Coon	Cat
Charlie	2	Labrador Retriever	Dog
Cooper	1	Dachshund	Dog

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.

```
119 •  SELECT Participants.ParticipantName, Participants.ParticipantType
120    FROM Participants
121    JOIN AdoptionEvents ON Participants.EventID = AdoptionEvents.EventID
122    WHERE AdoptionEvents.EventID = 1;
123
100%    ◇  34:122    1 error found
```

Result Grid | Filter Rows: Search | Export:

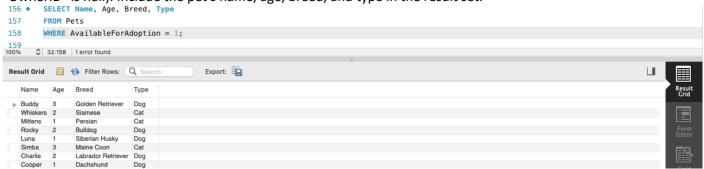| ParticipantName	ParticipantTy...
Happy Paws Shelter	Shelter

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.
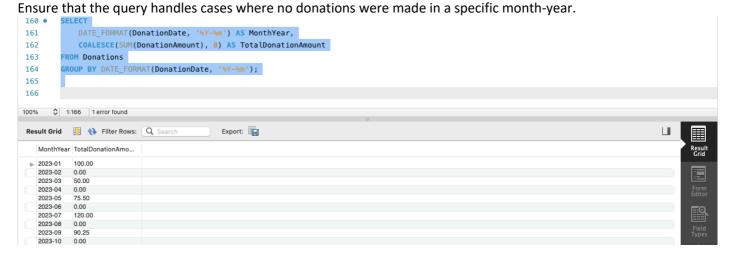
```
125    DELIMITER //
126  ● ⊖ CREATE PROCEDURE UpdateShelterInfo(
127        IN p_ShelterID INT,
128        IN p_NewName VARCHAR(255),
129        IN p_NewLocation VARCHAR(255)
130      )
131    ⊖ BEGIN
132        DECLARE shelterCount INT;
133        SELECT COUNT(*) INTO shelterCount FROM Shelters WHERE ShelterID = p_ShelterID;
134    ⊖   IF shelterCount > 0 THEN
135            UPDATE Shelters
136            SET Name = p_NewName, Location = p_NewLocation
137            WHERE ShelterID = p_ShelterID;
138
139            SELECT 'Update successful' AS Result;
140        ELSE
141            SELECT 'Invalid shelter ID. Update failed.' AS Result;
142        END IF;
143    END //
144    DELIMITER ;
145  ● CALL UpdateShelterInfo(1, 'New Shelter Name', 'New Shelter Location');
146
```

75%   7:143   1 error found

Result Grid | Filter Rows: Q Search   Export:

Result
► Update successful

Result 16   ● Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
● 817	12:43:27	CALL UpdateShelterInfo(1, 'New Shelter Name', 'New Shelter Location')	1 row(s) returned	0.0016 sec / 0.00002...

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.

```
148  ● SELECT
149        s.Name AS ShelterName,
150        SUM(d.DonationAmount) AS TotalDonationAmount
151    FROM Shelters s
152    LEFT JOIN Donations d ON s.ShelterID = d.DonationID
153    GROUP BY s.Name;
154
```

100%   1:154   1 error found

Result Grid | Filter Rows: Q Search   Export:

ShelterName	TotalDonationAmo...
► New Shelter Name	100.00
Safe Haven Animal Rescue	NULL
Forever Friends Pet Sanctuary	50.00
Paws and Whiskers Haven	NULL
Rescue Me Shelter	75.50
Second Chance Pet Adoption Center	NULL
Heavenly Creatures Animal Haven	120.00
Whisker Wonderland	NULL
Paw Prints Rescue	90.25
Furry Friends Adoption Center	NULL

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.

```
156  ● SELECT Name, Age, Breed, Type
157    FROM Pets
158    WHERE AvailableForAdoption = 1;
159
```

100%   32:158   1 error found

Result Grid | Filter Rows: Q Search   Export:

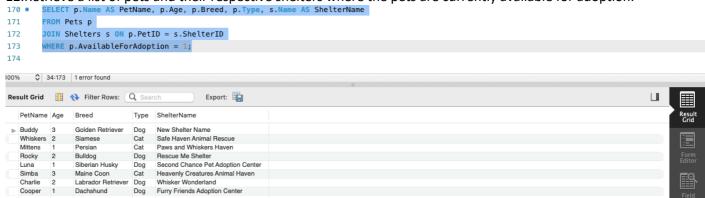| Name	Age	Breed	Type
► Buddy	3	Golden Retriever	Dog
Whiskers	2	Siamese	Cat
Mittens	1	Persian	Cat
Rocky	2	Bulldog	Dog
Luna	1	Siberian Husky	Dog
Simba	3	Maine Coon	Cat
Charlie	2	Labrador Retriever	Dog
Cooper	1	Dachshund	Dog

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.

```sql
160 ●  SELECT
161         DATE_FORMAT(DonationDate, '%Y-%m') AS MonthYear,
162         COALESCE(SUM(DonationAmount), 0) AS TotalDonationAmount
163     FROM Donations
164     GROUP BY DATE_FORMAT(DonationDate, '%Y-%m');
165
166
```

100%   1:166   1 error found

Result Grid | Filter Rows: Q Search | Export:

MonthYear	TotalDonationAmo...
2023-01	100.00
2023-02	0.00
2023-03	50.00
2023-04	0.00
2023-05	75.50
2023-06	0.00
2023-07	120.00
2023-08	0.00
2023-09	90.25
2023-10	0.00

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

```sql
166 ●  SELECT DISTINCT Breed
167     FROM Pets
168     WHERE (Age BETWEEN 1 AND 3) OR (Age > 5);
169
```

100%   1:169   1 error found

Result Grid | Filter Rows: Q Search | Export:

Breed
Golden Retriever
Siamese
Persian
Bulldog
Siberian Husky
Maine Coon
Labrador Retriever
Dachshund

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

```sql
170 ●  SELECT p.Name AS PetName, p.Age, p.Breed, p.Type, s.Name AS ShelterName
171     FROM Pets p
172     JOIN Shelters s ON p.PetID = s.ShelterID
173     WHERE p.AvailableForAdoption = 1;
174
```

100%   34:173   1 error found

Result Grid | Filter Rows: Q Search | Export:

PetName	Age	Breed	Type	ShelterName
Buddy	3	Golden Retriever	Dog	New Shelter Name
Whiskers	2	Siamese	Cat	Safe Haven Animal Rescue
Mittens	1	Persian	Cat	Paws and Whiskers Haven
Rocky	2	Bulldog	Dog	Rescue Me Shelter
Luna	1	Siberian Husky	Dog	Second Chance Pet Adoption Center
Simba	3	Maine Coon	Cat	Heavenly Creatures Animal Haven
Charlie	2	Labrador Retriever	Dog	Whisker Wonderland
Cooper	1	Dachshund	Dog	Furry Friends Adoption Center

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

```sql
238 ●  SELECT
239         COUNT(DISTINCT p.ParticipantID) AS TotalParticipants
240     FROM Participants p
241     JOIN AdoptionEvents e ON p.EventID = e.EventID
242     JOIN Shelters s ON e.ShelterID = s.ShelterID
243     WHERE s.Location = 'Hamlet City';
```
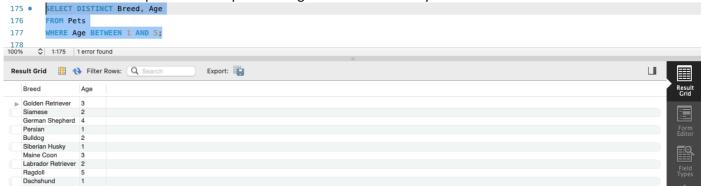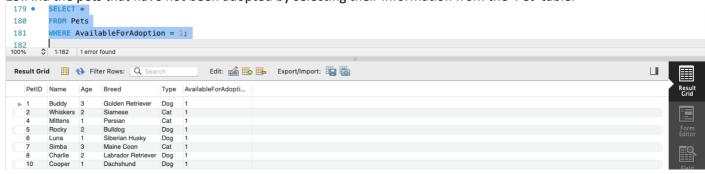
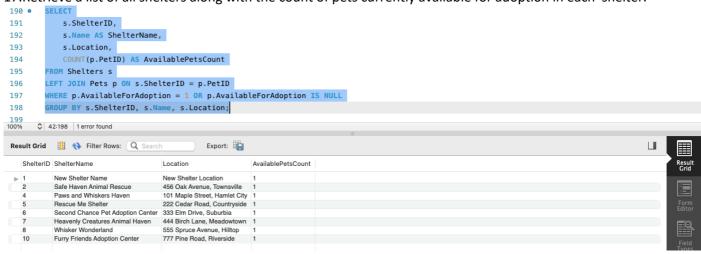## 14. Retrieve a list of unique breeds for pets with ages between 1 and 5 years.

```
175 •  SELECT DISTINCT Breed, Age
176     FROM Pets
177     WHERE Age BETWEEN 1 AND 5;
178
```
100%   1:175   1 error found

Result Grid   Filter Rows: Search   Export:

Breed	Age
Golden Retriever	3
Siamese	2
German Shepherd	4
Persian	1
Bulldog	2
Siberian Husky	1
Maine Coon	3
Labrador Retriever	2
Ragdoll	5
Dachshund	1

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

```
179 •  SELECT *
180     FROM Pets
181     WHERE AvailableForAdoption = 1;
182
```
100%   1:182   1 error found

Result Grid   Filter Rows: Search   Edit: Export/Import:

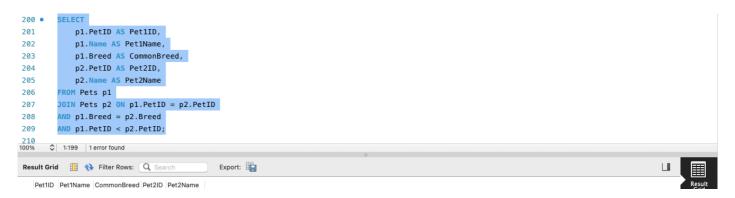| PetID	Name	Age	Breed	Type	AvailableForAdopti...
1	Buddy	3	Golden Retriever	Dog	1
2	Whiskers	2	Siamese	Cat	1
4	Mittens	1	Persian	Cat	1
5	Rocky	2	Bulldog	Dog	1
6	Luna	1	Siberian Husky	Dog	1
7	Simba	3	Maine Coon	Cat	1
8	Charlie	2	Labrador Retriever	Dog	1
10	Cooper	1	Dachshund	Dog	1

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

```
183 •  SELECT
184        p.Name AS PetName,
185        u.ParticipantName AS AdopterName
186     FROM Participants u
187     JOIN AdoptionEvents e ON u.EventID = e.EventID
188     JOIN Pets p ON u.PetID = p.PetID;
```

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

```
190 •  SELECT
191        s.ShelterID,
192        s.Name AS ShelterName,
193        s.Location,
194        COUNT(p.PetID) AS AvailablePetsCount
195     FROM Shelters s
196     LEFT JOIN Pets p ON s.ShelterID = p.PetID
197     WHERE p.AvailableForAdoption = 1 OR p.AvailableForAdoption IS NULL
198     GROUP BY s.ShelterID, s.Name, s.Location;
199
```
100%   42:198   1 error found

Result Grid   Filter Rows: Search   Export:

ShelterID	ShelterName	Location	AvailablePetsCount
1	New Shelter Name	New Shelter Location	1
2	Safe Haven Animal Rescue	456 Oak Avenue, Townsville	1
4	Paws and Whiskers Haven	101 Maple Street, Hamlet City	1
5	Rescue Me Shelter	222 Cedar Road, Countryside	1
6	Second Chance Pet Adoption Center	333 Elm Drive, Suburbia	1
7	Heavenly Creatures Animal Haven	444 Birch Lane, Meadowtown	1
8	Whisker Wonderland	555 Spruce Avenue, Hilltop	1
10	Furry Friends Adoption Center	777 Pine Road, Riverside	1

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

```sql
200 •  SELECT
201        p1.PetID AS Pet1ID,
202        p1.Name AS Pet1Name,
203        p1.Breed AS CommonBreed,
204        p2.PetID AS Pet2ID,
205        p2.Name AS Pet2Name
206    FROM Pets p1
207    JOIN Pets p2 ON p1.PetID = p2.PetID
208    AND p1.Breed = p2.Breed
209    AND p1.PetID < p2.PetID;
210
```
100%   ◇ 1:199   1 error found

Result Grid | ⊞ ↔ Filter Rows: 🔍 Search   Export: 🗒

Pet1ID Pet1Name CommonBreed Pet2ID Pet2Name

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

```sql
211 •  SELECT s.ShelterID, s.Name, e.EventID, e.EventName, e.EventDate, e.Location
212    FROM Shelters s
213    CROSS JOIN AdoptionEvents e;
214
```
100%   ◇ 29:213   1 error found

Result Grid | ⊞ ↔ Filter Rows: 🔍 Search   Export: 🗒

ShelterID	Name	EventID	EventName	EventDate	Location
▶ 10	Furry Friends Adoption Center	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
9	Paw Prints Rescue	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
8	Whisker Wonderland	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
7	Heavenly Creatures Animal Haven	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
6	Second Chance Pet Adoption Center	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
5	Rescue Me Shelter	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
4	Paws and Whiskers Haven	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
3	Forever Friends Pet Sanctuary	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
2	Safe Haven Animal Rescue	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
1	New Shelter Name	1	Pet Adoption Fair	2023-01-28 10:00:00	City Park Pavilion
10	Furry Friends Adoption Center	2	Furry Friends E…	2023-02-15 13:30:00	Community Center
9	Paw Prints Rescue	2	Furry Friends E…	2023-02-15 13:30:00	Community Center

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

```sql
215 •  SELECT
216        s.ShelterID,
217        s.Name AS ShelterName,
218        COUNT(p.PetID) AS AdoptedPetsCount
219    FROM Shelters s
220    LEFT JOIN Pets p ON s.ShelterID = p.ShelterID
221    LEFT JOIN Participants u ON u.PetID = p.PetID
222    GROUP BY s.ShelterID, s.Name
223    ORDER BY AdoptedPetsCount DESC
224    LIMIT 1;
```