Coding Challenges - PetPals, The Pet Adoption Platform

1. **Initialize the database:**

```
CREATE DATABASE PetAdoptionDB;
USE PetAdoptionDB;
```

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

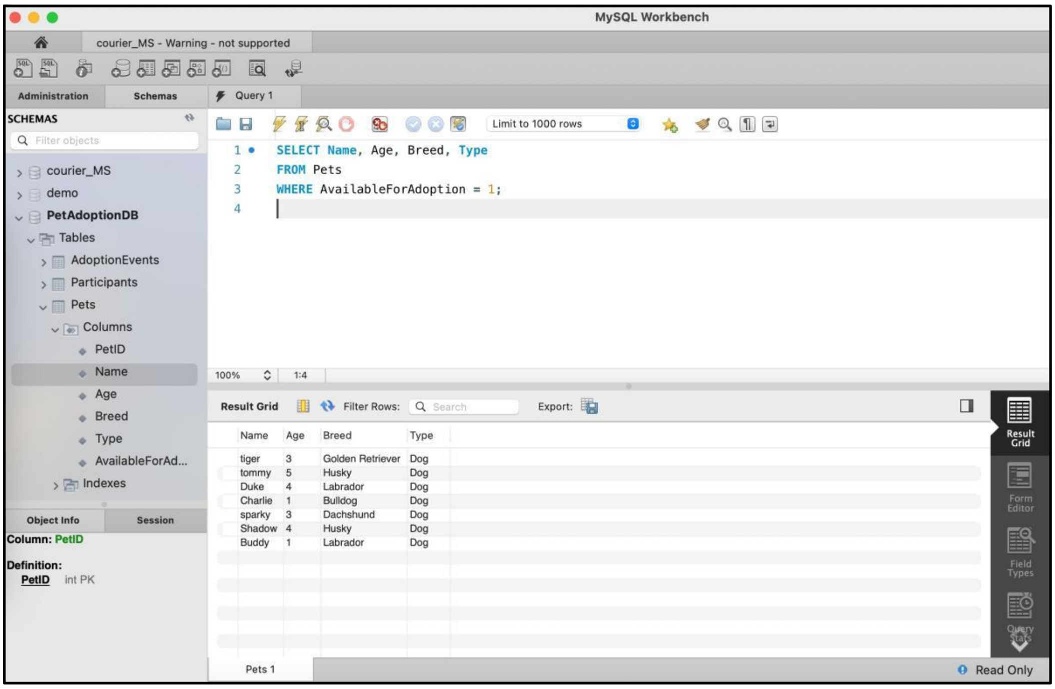
```
CREATE TABLE IF NOT EXISTS Pets (
   PetID INT PRIMARY KEY,
   Name VARCHAR(255),
   Age INT,
   Breed VARCHAR(255),
   Type VARCHAR(50),
   AvailableForAdoption BIT
);


CREATE TABLE IF NOT EXISTS Shelters (
   ShelterID INT PRIMARY KEY,
   Name VARCHAR(255),
   Location VARCHAR(255)
);

CREATE TABLE IF NOT EXISTS Donations (
   DonationID INT PRIMARY KEY,
   DonorName VARCHAR(255),
   DonationType VARCHAR(50),
   DonationAmount DECIMAL(10, 2),
   DonationItem VARCHAR(255),
   DonationDate DATETIME
);

CREATE TABLE IF NOT EXISTS AdoptionEvents (
   EventID INT PRIMARY KEY,
   EventName VARCHAR(255),
   EventDate DATETIME,
   Location VARCHAR(255)
);

CREATE TABLE IF NOT EXISTS Participants (
   ParticipantID INT PRIMARY KEY,
   ParticipantName VARCHAR(255),
   ParticipantType VARCHAR(50),
   EventID INT,
   FOREIGN KEY (EventID) REFERENCES AdoptionEvents(EventID)
);
```

3. **Define appropriate primary keys, foreign keys, and constraints:**
   Done in the table creation.

4. **Handle potential errors:**
   Used IF NOT EXISTS clause in table creation queries.

5. **Retrieve a list of available pets:**

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



Column: PetID

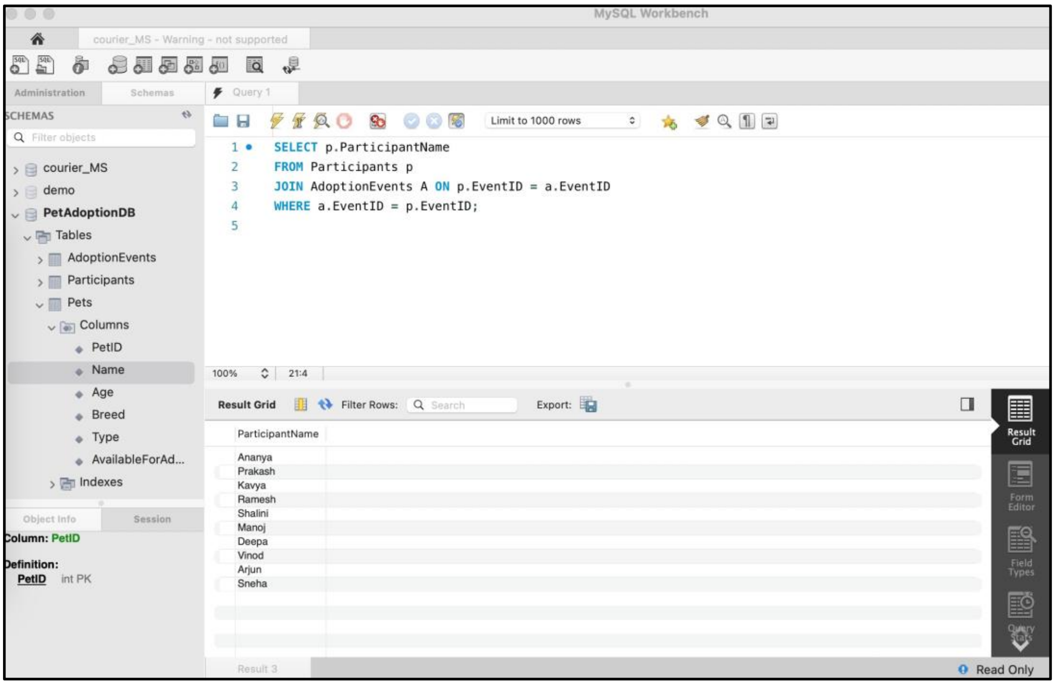
Definition:
PetID int PK

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

Name	Age	Breed	Type
tiger	3	Golden Retriever	Dog
tommy	5	Husky	Dog
Duke	4	Labrador	Dog
Charlie	1	Bulldog	Dog
sparky	3	Dachshund	Dog
Shadow	4	Husky	Dog
Buddy	1	Labrador	Dog

6. Retrieve names of participants for a specific adoption event:

```
SELECTp.ParticipantName
FROM Participants p
JOIN AdoptionEvents A ON p.EventID = a.EventID
WHERE a.EventID = p.EventID;
```



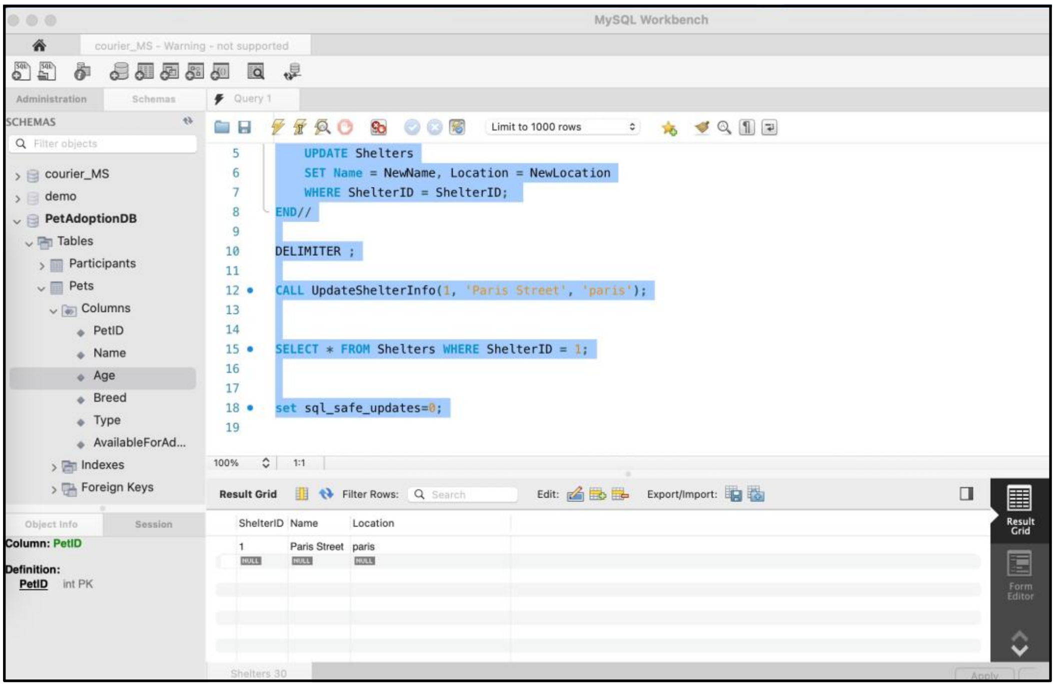
```
SELECT p.ParticipantName
FROM Participants p
JOIN AdoptionEvents A ON p.EventID = a.EventID
WHERE a.EventID = p.EventID;
```

```
ParticipantName
Ananya
Prakash
Kavya
Ramesh
Shalini
Manoj
Deepa
Vinod
Arjun
Sneha
```

7.Create a stored procedure for shelter information update:

```
DELIMITER //

CREATE PROCEDURE UpdateShelterInfo(IN ShelterID INT, IN NewName
VARCHAR(255), IN NewLocation VARCHAR(255))
BEGIN
   UPDATE Shelters
   SET Name = NewName, Location = NewLocation
   WHERE ShelterID = ShelterID;
END//

DELIMITER ;

CALL UpdateShelterInfo(1, 'Paris Street', 'paris');


SELECT * FROM Shelters WHERE ShelterID = 1;
```

Set sql_safe_updates=0;

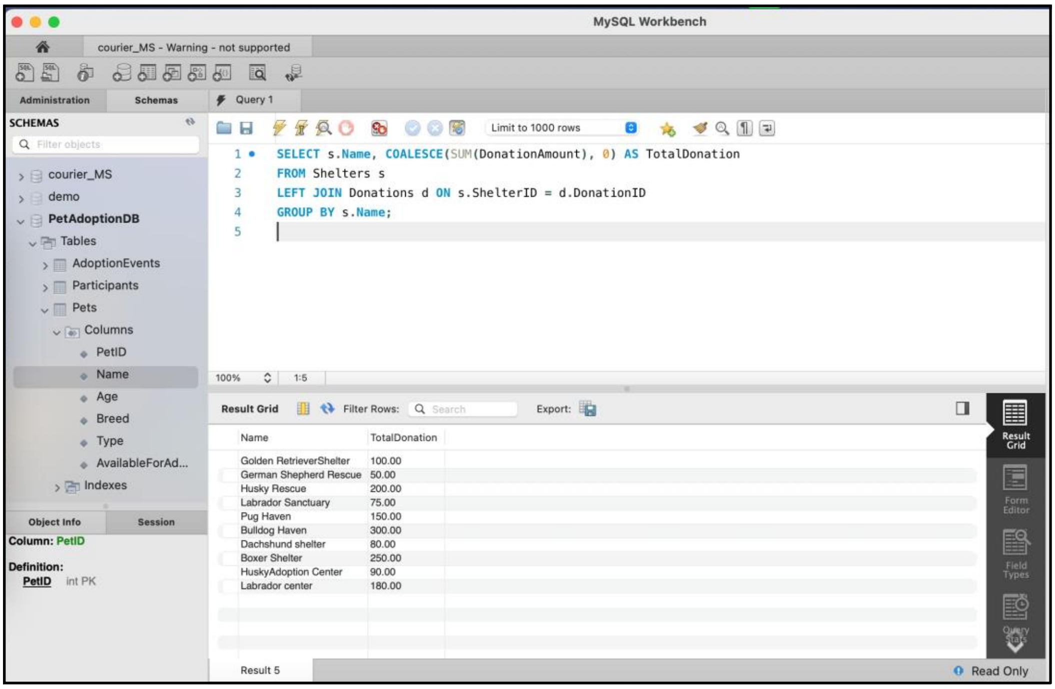


```
    UPDATE Shelters
    SET Name = NewName, Location = NewLocation
    WHERE ShelterID = ShelterID;
END//

DELIMITER ;

CALL UpdateShelterInfo(1, 'Paris Street', 'paris');


SELECT * FROM Shelters WHERE ShelterID = 1;


set sql_safe_updates=0;
```

ShelterID	Name	Location
1	Paris Street	paris
NULL	NULL	NULL

8. Calculate total donation amount for each shelter

SELECT s.Name, COALESCE(SUM(DonationAmount), 0) AS TotalDonation
FROM Shelters s
LEFT JOIN Donations d ON s.ShelterID = d.DonationID
GROUP BY s.Name;



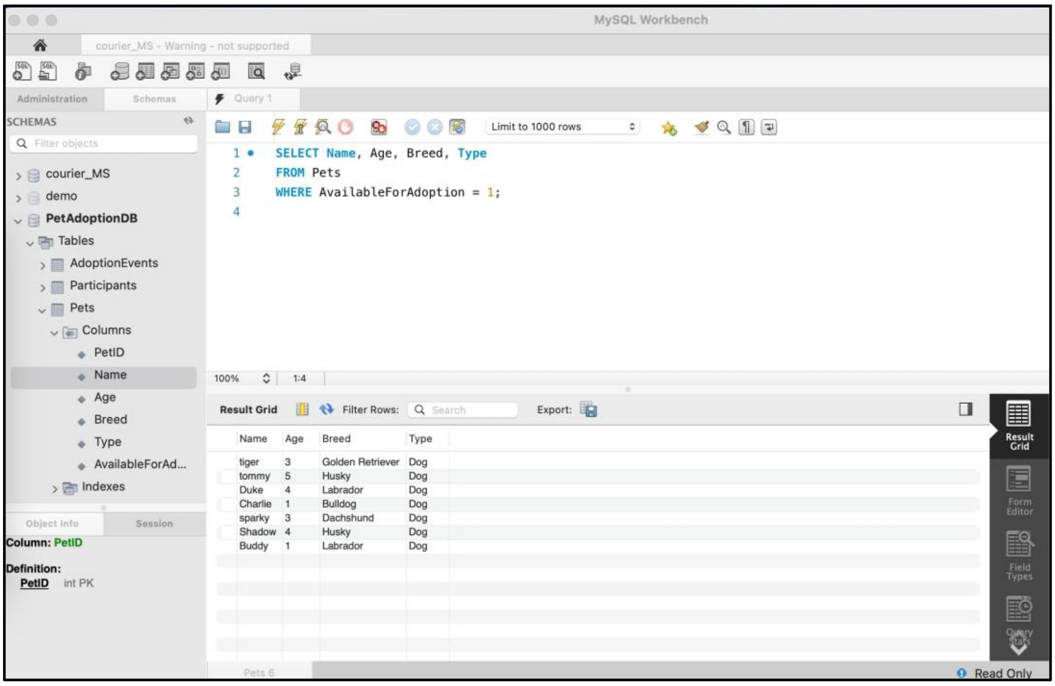
```
SELECT s.Name, COALESCE(SUM(DonationAmount), 0) AS TotalDonation
FROM Shelters s
LEFT JOIN Donations d ON s.ShelterID = d.DonationID
GROUP BY s.Name;
```

Name	TotalDonation
Golden RetrieverShelter	100.00
German Shepherd Rescue	50.00
Husky Rescue	200.00
Labrador Sanctuary	75.00
Pug Haven	150.00
Bulldog Haven	300.00
Dachshund shelter	80.00
Boxer Shelter	250.00
HuskyAdoption Center	90.00
Labrador center	180.00

9. Retrieve names of pets without an owner:

SELECT Name, Age, Breed, Type
FROM Pets

WHERE AvailableForAdoption = 1;

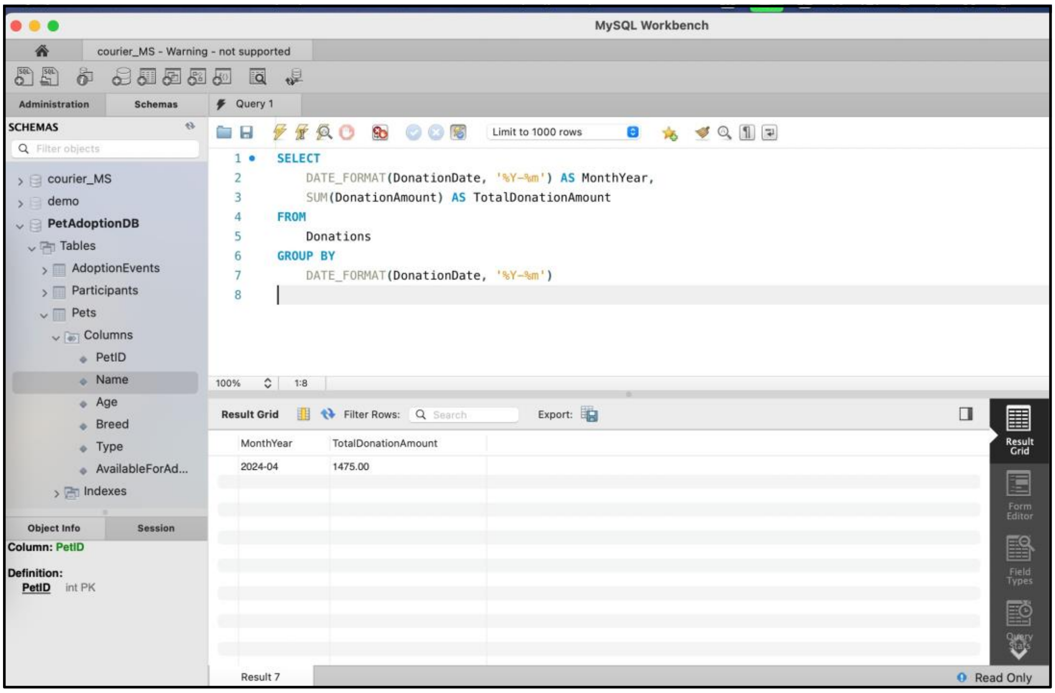


```
SELECT Name, Age, Breed, Type
FROM Pets
WHERE AvailableForAdoption = 1;
```

Name	Age	Breed	Type
tiger	3	Golden Retriever	Dog
tommy	5	Husky	Dog
Duke	4	Labrador	Dog
Charlie	1	Bulldog	Dog
sparky	3	Dachshund	Dog
Shadow	4	Husky	Dog
Buddy	1	Labrador	Dog

10. **Retrieve total donation amount for each month and year:**

```
SELECT
    DATE_FORMAT(DonationDate, '%Y-%m') AS MonthYear,
    SUM(DonationAmount) AS TotalDonationAmount
FROM
    Donations
GROUP BY
    DATE_FORMAT(DonationDate,  '%Y-%m')
```



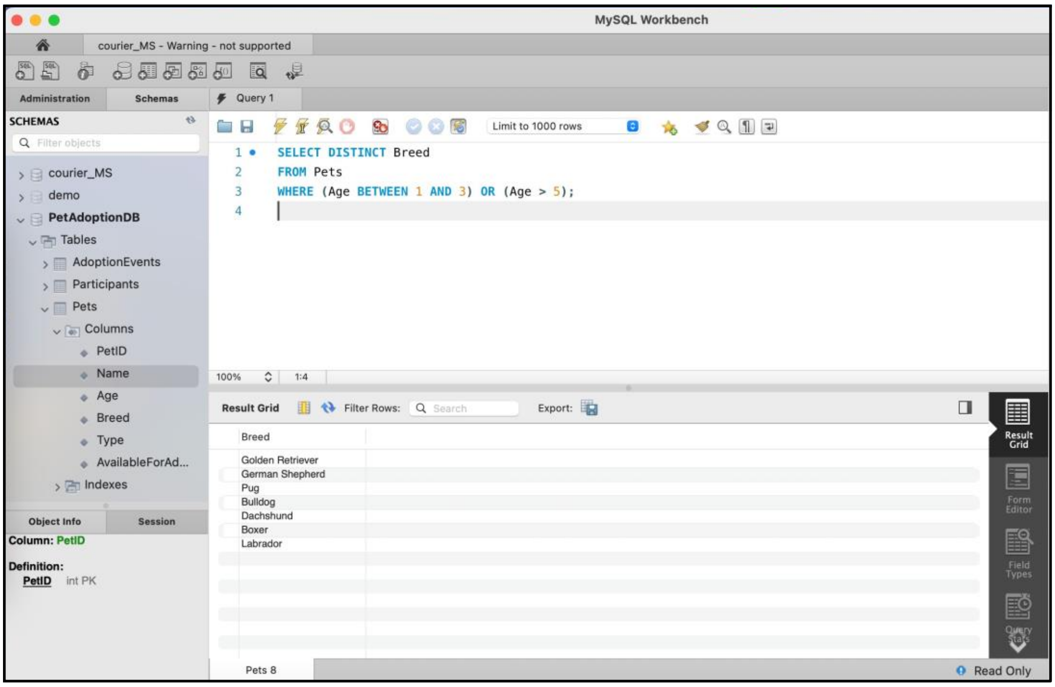
```
SELECT
    DATE_FORMAT(DonationDate, '%Y-%m') AS MonthYear,
    SUM(DonationAmount) AS TotalDonationAmount
FROM
    Donations
GROUP BY
    DATE_FORMAT(DonationDate, '%Y-%m')
```

MonthYear	TotalDonationAmount
2024-04	1475.00

1.

11. **Retrieve a list of distinct breeds for pets aged between 1 and 3 years or older than 5 years:**

```
SELECT DISTINCT Breed
FROM Pets
WHERE (Age BETWEEN 1 AND 3) OR (Age > 5);
```



Column: PetID

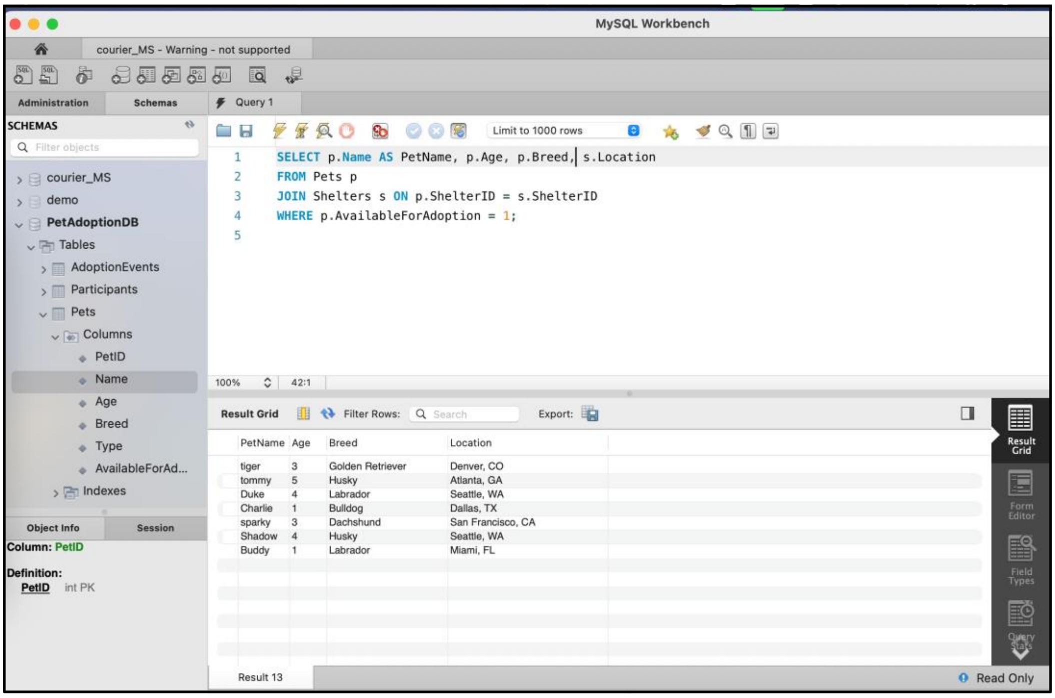
Definition:
PetID int PK

```
SELECT DISTINCT Breed
FROM Pets
WHERE (Age BETWEEN 1 AND 3) OR (Age > 5);
```

Breed
Golden Retriever
German Shepherd
Pug
Bulldog
Dachshund
Boxer
Labrador

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

```
SELECT p.Name AS PetName, p.Age, p.Breed, s.Location
FROM Pets p
JOIN Shelters s ON p.ShelterID = s.ShelterID
WHERE p.AvailableForAdoption = 1;
```



```
SELECT p.Name AS PetName, p.Age, p.Breed, s.Location
FROM Pets p
JOIN Shelters s ON p.ShelterID = s.ShelterID
WHERE p.AvailableForAdoption = 1;
```

PetName	Age	Breed	Location
tiger	3	Golden Retriever	Denver, CO
tommy	5	Husky	Atlanta, GA
Duke	4	Labrador	Seattle, WA
Charlie	1	Bulldog	Dallas, TX
sparky	3	Dachshund	San Francisco, CA
Shadow	4	Husky	Seattle, WA
Buddy	1	Labrador	Miami, FL

Result 13

13. Find the total number of participants in events organized by shelters located in a specific city (e.g., Chennai):

SELECT COUNT(*) AS Count

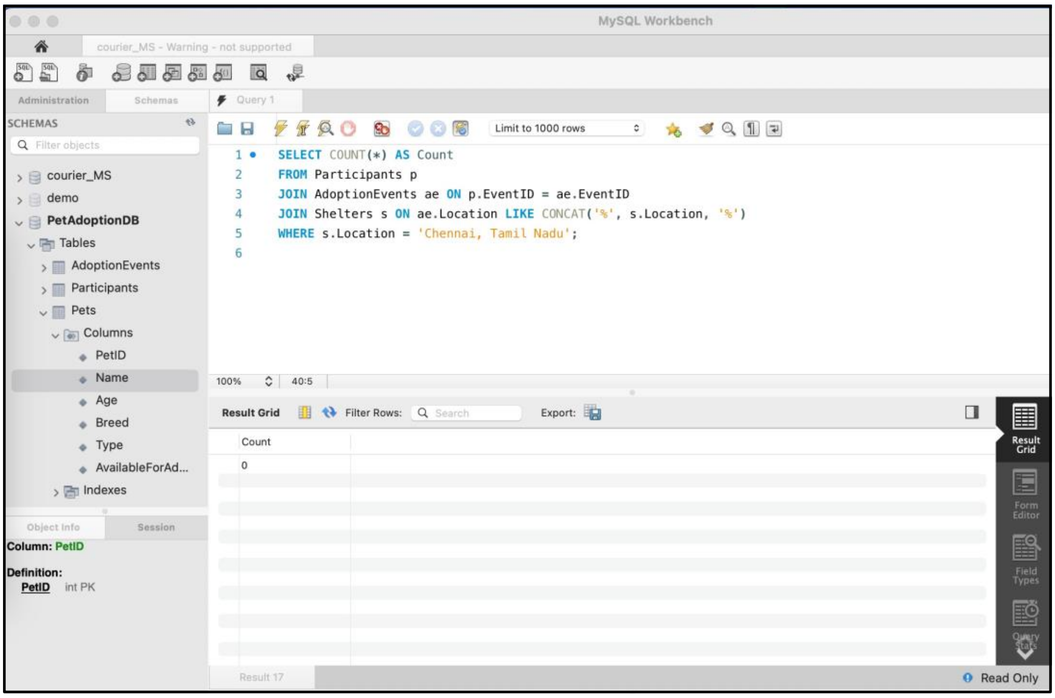
FROM Participants p

JOIN AdoptionEvents ae ON p.EventID = ae.EventID

JOIN Shelters s ON ae.Location LIKE CONCAT('%', s.Location, '%')

WHERE s.Location = 'Chennai, Tamil Nadu';

1.



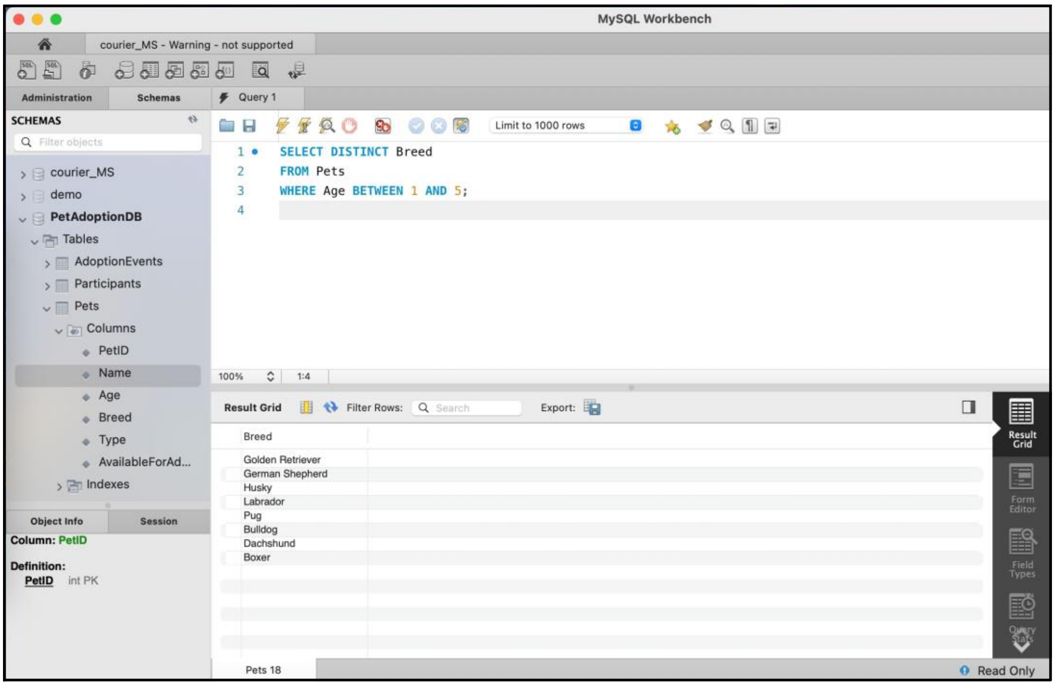
```
SELECT COUNT(*) AS Count
FROM Participants p
JOIN AdoptionEvents ae ON p.EventID = ae.EventID
JOIN Shelters s ON ae.Location LIKE CONCAT('%', s.Location, '%')
WHERE s.Location = 'Chennai, Tamil Nadu';
```

Count
0

Result 17

14. **Retrieve a list of unique breeds for pets aged between 1 and 5 years:**

```
SELECT DISTINCT Breed
FROM Pets
WHERE Age BETWEEN 1 AND 5;
```

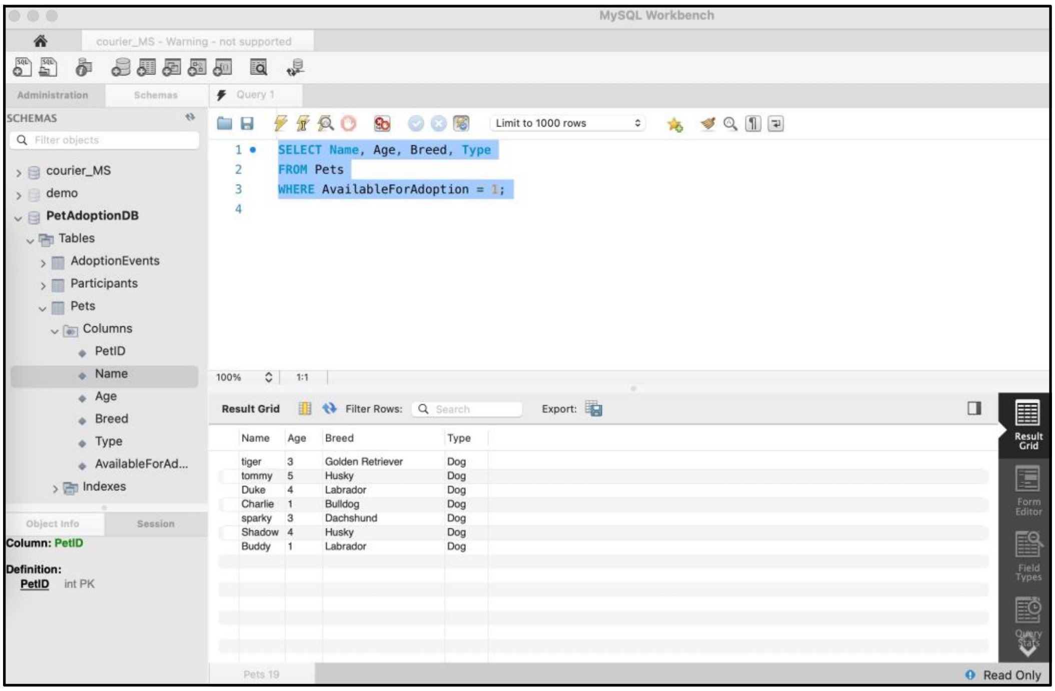


```
SELECT DISTINCT Breed
FROM Pets
WHERE Age BETWEEN 1 AND 5;
```

```
Breed
Golden Retriever
German Shepherd
Husky
Labrador
Pug
Bulldog
Dachshund
Boxer
```

15. **Find pets that have not been adopted (do not have an owner):**

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

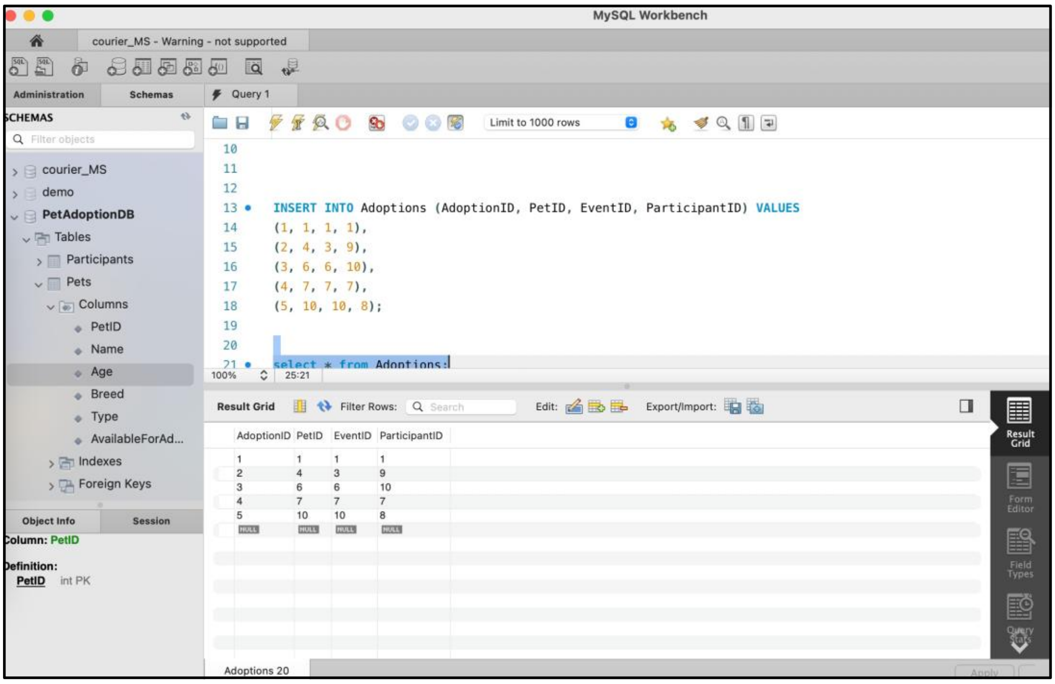


```
SELECT Name, Age, Breed, Type
FROM Pets
WHERE AvailableForAdoption = 1;
```

Name	Age	Breed	Type
tiger	3	Golden Retriever	Dog
tommy	5	Husky	Dog
Duke	4	Labrador	Dog
Charlie	1	Bulldog	Dog
sparky	3	Dachshund	Dog
Shadow	4	Husky	Dog
Buddy	1	Labrador	Dog

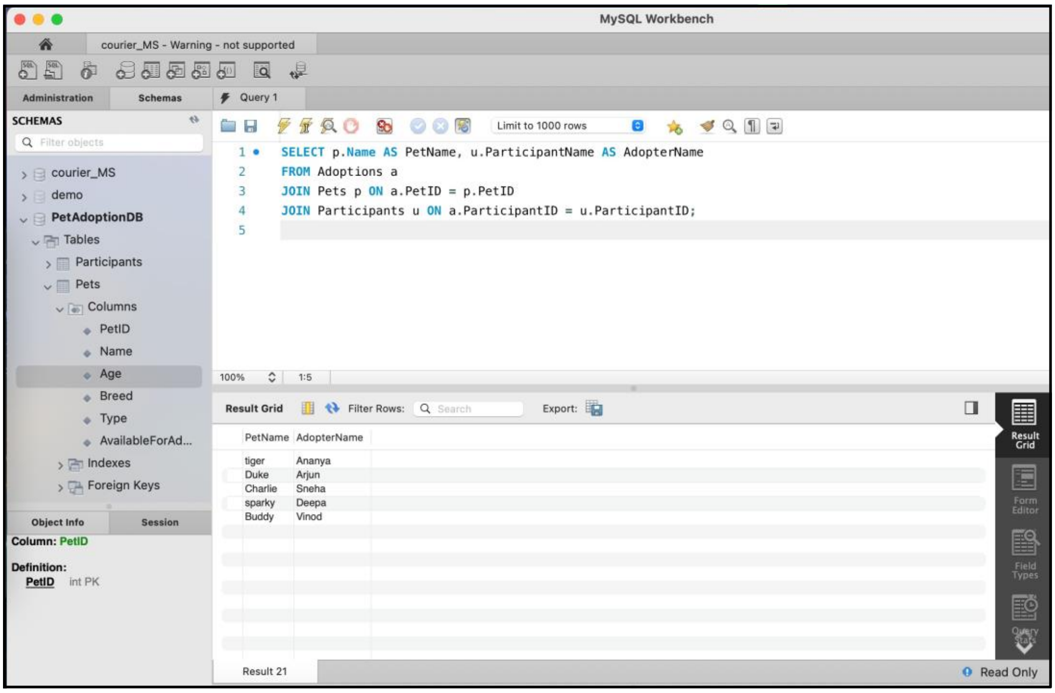
16. Retrieve the names of all adopted pets along with the adopter's name

```
SELECT p.Name AS PetName, u.ParticipantName AS AdopterName
FROM Adoptions a
JOIN Pets p ON a.PetID = p.PetID
JOIN Participants u ON a.ParticipantID = u.ParticipantID;
```



```
INSERT INTO Adoptions (AdoptionID, PetID, EventID, ParticipantID) VALUES
(1, 1, 1, 1),
(2, 4, 3, 9),
(3, 6, 6, 10),
(4, 7, 7, 7),
(5, 10, 10, 8);


select * from Adoptions;
```

AdoptionID	PetID	EventID	ParticipantID
1	1	1	1
2	4	3	9
3	6	6	10
4	7	7	7
5	10	10	8
NULL	NULL	NULL	NULL



```
SELECT p.Name AS PetName, u.ParticipantName AS AdopterName
FROM Adoptions a
JOIN Pets p ON a.PetID = p.PetID
JOIN Participants u ON a.ParticipantID = u.ParticipantID;
```

PetName	AdopterName
tiger	Ananya
Duke	Arjun
Charlie	Sneha
sparky	Deepa
Buddy	Vinod

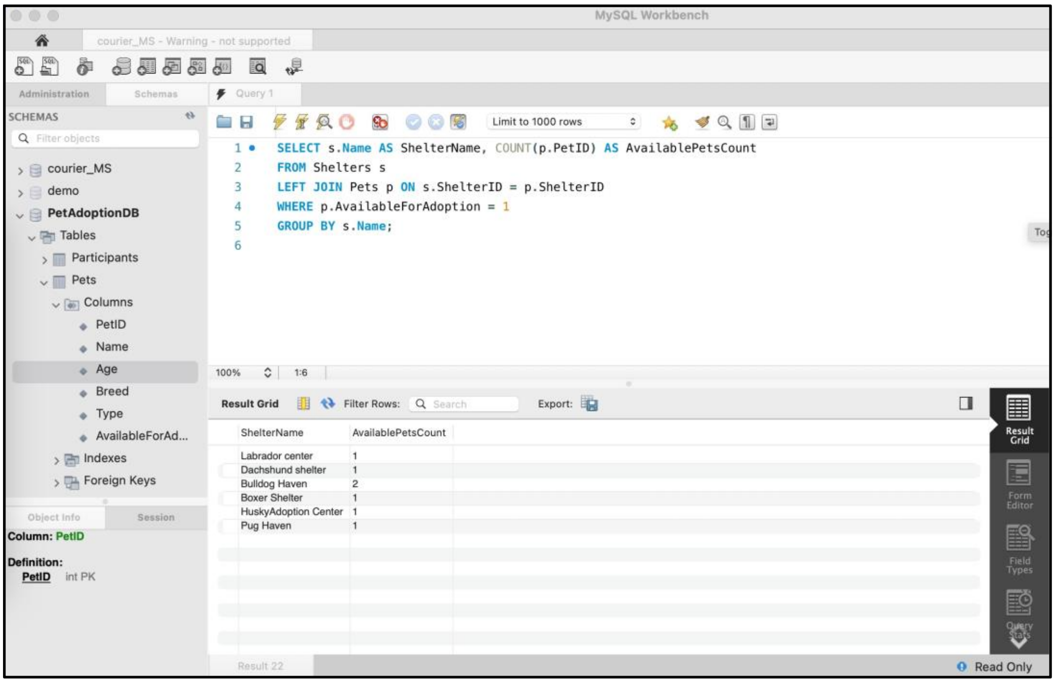
Column: PetID

Definition:
PetID int PK

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

SELECT s.Name AS ShelterName, COUNT(p.PetID) AS AvailablePetsCount
FROM Shelters s
LEFT JOIN Pets p ON s.ShelterID = p.ShelterID
WHERE p.AvailableForAdoption = 1
GROUP BY s.Name;

1.



```
SELECT s.Name AS ShelterName, COUNT(p.PetID) AS AvailablePetsCount
FROM Shelters s
LEFT JOIN Pets p ON s.ShelterID = p.ShelterID
WHERE p.AvailableForAdoption = 1
GROUP BY s.Name;
```

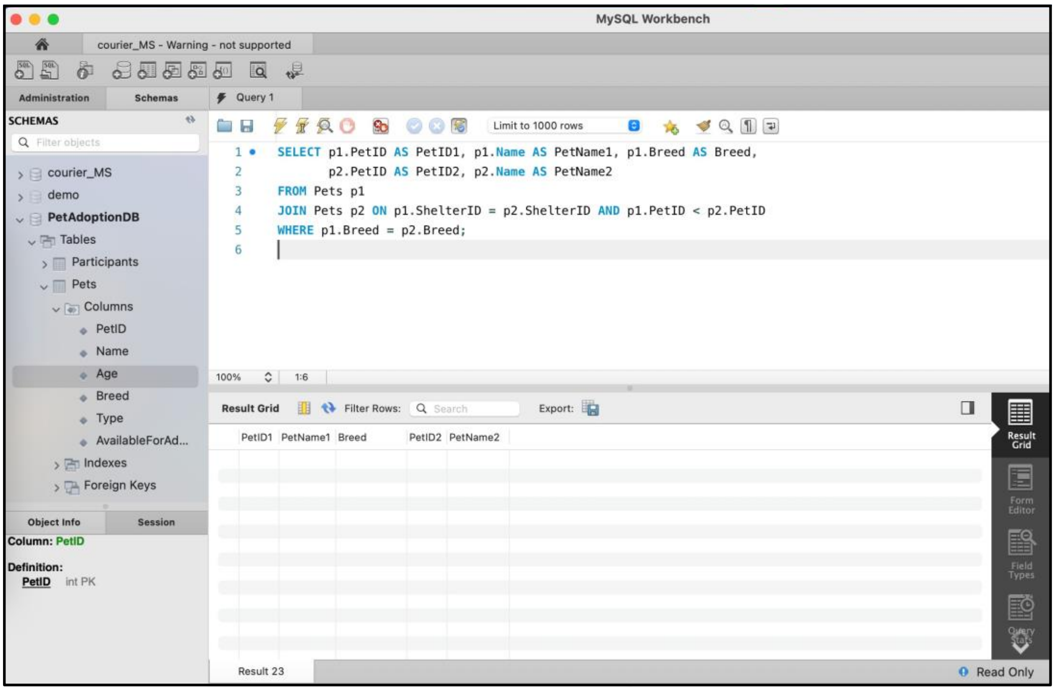
ShelterName	AvailablePetsCount
Labrador center	1
Dachshund shelter	1
Bulldog Haven	2
Boxer Shelter	1
HuskyAdoption Center	1
Pug Haven	1

Column: PetID

Definition:
PetID int PK

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

```
SELECT p1.PetID AS PetID1, p1.Name AS PetName1, p1.Breed AS Breed,
    p2.PetID AS PetID2, p2.Name AS PetName2
FROM Pets p1
JOIN Pets p2 ON p1.ShelterID = p2.ShelterID AND p1.PetID < p2.PetID
WHERE p1.Breed = p2.Breed;
```



```
SELECT p1.PetID AS PetID1, p1.Name AS PetName1, p1.Breed AS Breed,
       p2.PetID AS PetID2, p2.Name AS PetName2
FROM Pets p1
JOIN Pets p2 ON p1.ShelterID = p2.ShelterID AND p1.PetID < p2.PetID
WHERE p1.Breed = p2.Breed;
```

Column: PetID

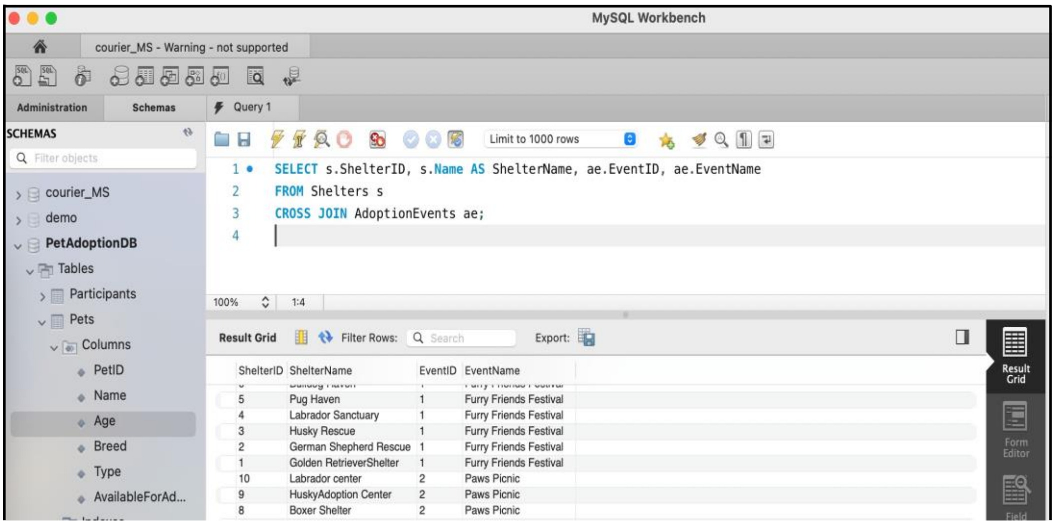
Definition:
PetID int PK

PetID1	PetName1	Breed	PetID2	PetName2

Result 23

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

SELECT s.ShelterID, s.Name AS ShelterName, ae.EventID, ae.EventName
FROM Shelters s
CROSS JOIN AdoptionEvents ae;

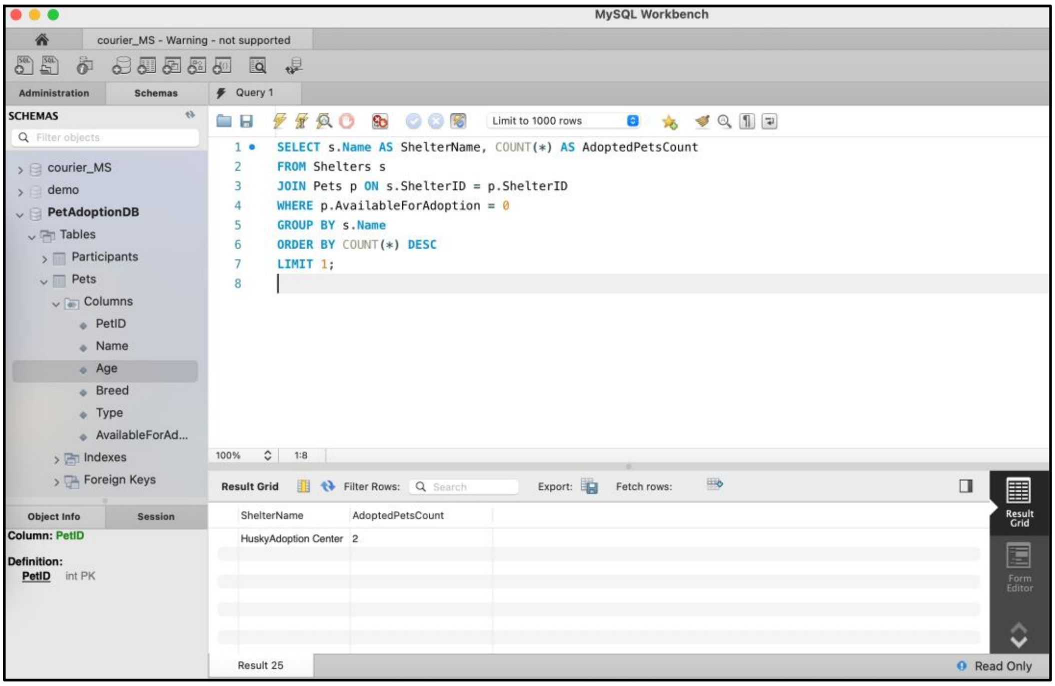


```
SELECT s.ShelterID, s.Name AS ShelterName, ae.EventID, ae.EventName
FROM Shelters s
CROSS JOIN AdoptionEvents ae;
```

ShelterID	ShelterName	EventID	EventName
6	Bulldog Haven	1	Furry Friends Festival
5	Pug Haven	1	Furry Friends Festival
4	Labrador Sanctuary	1	Furry Friends Festival
3	Husky Rescue	1	Furry Friends Festival
2	German Shepherd Rescue	1	Furry Friends Festival
1	Golden RetrieverShelter	1	Furry Friends Festival
10	Labrador center	2	Paws Picnic
9	HuskyAdoption Center	2	Paws Picnic
8	Boxer Shelter	2	Paws Picnic

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

```
SELECT s.Name AS ShelterName, COUNT(*) AS AdoptedPetsCount
FROM Shelters s
JOIN Pets p ON s.ShelterID = p.ShelterID
WHERE p.AvailableForAdoption = 0
GROUP BY s.Name
ORDER BY COUNT(*) DESC
LIMIT 1;
```



```
SELECT s.Name AS ShelterName, COUNT(*) AS AdoptedPetsCount
FROM Shelters s
JOIN Pets p ON s.ShelterID = p.ShelterID
WHERE p.AvailableForAdoption = 0
GROUP BY s.Name
ORDER BY COUNT(*) DESC
LIMIT 1;
```

ShelterName	AdoptedPetsCount
HuskyAdoption Center	2