

SQL Coding Challenge - 1

Q 1: Initialize the database for PetPals

Ans.

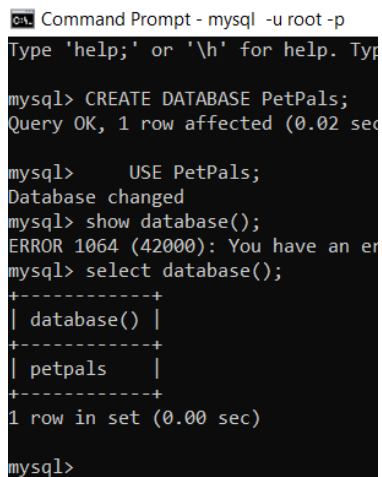
IF NOT EXISTS (SELECT * FROM sys.databases WHERE name = 'PetPals')

BEGIN

CREATE DATABASE PetPals;

USE PetPals;

END



```
Command Prompt - mysql -u root -p
Type 'help;' or '\h' for help. Type '\q' to quit.
mysql> CREATE DATABASE PetPals;
Query OK, 1 row affected (0.02 sec)

mysql> USE PetPals;
Database changed
mysql> show database();
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
mysql> select database();
+-----+
| database() |
+-----+
| petpals    |
+-----+
1 row in set (0.00 sec)

mysql>
```

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

Ans.

-- Pets Table

CREATE TABLE Pets (

PetID INT PRIMARY KEY,

Name NVARCHAR(255),

Age INT,

Breed NVARCHAR(255),

Type NVARCHAR(255),

AvailableForAdoption BIT

);

-- Shelters Table

```
CREATE TABLE Shelters (  
    ShelterID INT PRIMARY KEY,  
    Name NVARCHAR(255),  
    Location NVARCHAR(255)  
);
```

-- Donations Table

```
CREATE TABLE Donations (  
    DonationID INT PRIMARY KEY,  
    DonorName NVARCHAR(255),  
    DonationType NVARCHAR(255),  
    DonationAmount DECIMAL,  
    DonationItem NVARCHAR(255),  
    DonationDate DATETIME  
);
```

-- AdoptionEvents Table

```
CREATE TABLE AdoptionEvents (  
    EventID INT PRIMARY KEY,  
    EventName NVARCHAR(255),  
    EventDate DATETIME,  
    Location NVARCHAR(255)  
);
```

-- Participants Table

```
CREATE TABLE Participants (  
    ParticipantID INT PRIMARY KEY,
```

ParticipantName NVARCHAR(255),
ParticipantType NVARCHAR(255),
EventID INT FOREIGN KEY REFERENCES AdoptionEvents(EventID)
);

```
Command Prompt - mysql -u root -p
1 row in set (0.00 sec)

mysql> CREATE TABLE Pets (
->   PetID INT PRIMARY KEY,
->   Name NVARCHAR(255),
->   Age INT,
->   Breed NVARCHAR(255),
->   Type NVARCHAR(255),
->   AvailableForAdoption BIT
-> );
Query OK, 0 rows affected, 3 warnings (0.14 sec)

mysql> -- Shelters Table
mysql> CREATE TABLE Shelters (
->   ShelterID INT PRIMARY KEY,
->   Name NVARCHAR(255),
->   Location NVARCHAR(255)
-> );
Query OK, 0 rows affected, 2 warnings (0.06 sec)

mysql> -- Donations Table
mysql> CREATE TABLE Donations (
->   DonationID INT PRIMARY KEY,
->   DonorName NVARCHAR(255),
->   DonationType NVARCHAR(255),
->   DonationAmount DECIMAL,
->   DonationItem NVARCHAR(255),
->   DonationDate DATETIME
-> );
Query OK, 0 rows affected, 3 warnings (0.07 sec)

mysql> -- AdoptionEvents Table
mysql> CREATE TABLE AdoptionEvents (
->   EventID INT PRIMARY KEY,
->   EventName NVARCHAR(255),
->   EventDate DATETIME,
->   Location NVARCHAR(255)
-> );
Query OK, 0 rows affected, 2 warnings (0.03 sec)

mysql> -- Participants Table
mysql> CREATE TABLE Participants (
->   ParticipantID INT PRIMARY KEY,
->   ParticipantName NVARCHAR(255),
->   ParticipantType NVARCHAR(255),
->   EventID INT FOREIGN KEY REFERENCES AdoptionEvents(EventID)
-> );
```

Q. 3: Define appropriate primary keys, foreign keys, and constraints

Ans. Constraints can be added during table creation, such as foreign keys and unique constraints.

Q. 4: Ensure the script handles potential errors

Ans. This is handled by the "IF NOT EXISTS" check for the database and tables.

Q. 5: Retrieve a list of available pets

Ans.

SELECT Name, Age, Breed, Type

FROM Pets

WHERE AvailableForAdoption = 1;

```
cmd Command Prompt - mysql -u root -p
mysql> SELECT Name, Age, Breed, Type
-> FROM Pets
-> WHERE AvailableForAdoption = 1;
+-----+-----+-----+-----+
| Name   | Age | Breed           | Type |
+-----+-----+-----+-----+
| Fluffy | 2   | Golden Retriever | Dog  |
| Whiskers | 1   | Siamese          | Cat  |
| Mittens | 2   | Persian          | Cat  |
| Rocky   | 4   | Labrador         | Dog  |
| Smokey  | 1   | Russian Blue     | Cat  |
| Luna    | 1   | Ragdoll          | Cat  |
| Charlie | 3   | Poodle           | Dog  |
| Oreo    | 2   | Domestic Shorthair | Cat  |
+-----+-----+-----+-----+
8 rows in set (0.00 sec)

mysql>
```

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

Ans.

SELECT ParticipantName, ParticipantType

FROM Participants

WHERE EventID = 1;

Command Prompt - mysql -u root -p

```
mysql> SELECT ParticipantName, ParticipantType
-> FROM Participants
-> WHERE EventID =
-> 1;

+-----+-----+
| ParticipantName | ParticipantType |
+-----+-----+
| Volunteer 1    | Volunteer      |
+-----+-----+
1 row in set (0.00 sec)

mysql>
```

Q. 7: Create a stored procedure to update shelter information ----

Ans.

DELIMITER //

CREATE PROCEDURE UpdateShelterInformation(

IN p_ShelterID INT,

IN p_NewName NVARCHAR(255),

IN p_NewLocation NVARCHAR(255)

)

BEGIN

DECLARE shelterCount INT;

SELECT COUNT(*) INTO shelterCount FROM Shelters WHERE ShelterID = p_ShelterID;

IF shelterCount = 1 THEN

UPDATE Shelters

SET Name = p_NewName,

Location = p_NewLocation

```
WHERE ShelterID = p_ShelterID;

SELECT 'Update successful' AS Status;
ELSE
SELECT 'Invalid shelter ID' AS Status;
END IF;
END //

DELIMITER ;
```

Question 8.

Ans.

```
SELECT
    S.Name AS ShelterName,
    COALESCE(SUM(D.DonationAmount), 0) AS TotalDonationAmount
FROM
    Shelters S
LEFT JOIN
    AdoptionEvents AE ON S.ShelterID = AE.EventID
LEFT JOIN
    Participants P ON AE.EventID = P.EventID
LEFT JOIN
    Donations D ON P.ParticipantID = D.DonationID
GROUP BY
    S.Name;
```

```

C:\> Command Prompt - mysql -u root -p
mysql> SELECT
->     S.Name AS ShelterName,
->     COALESCE(SUM(D.DonationAmount), 0) AS TotalDonationAmount
-> FROM
->     Shelters S
-> LEFT JOIN
->     AdoptionEvents AE ON S.ShelterID = AE.EventID
-> LEFT JOIN
->     Participants P ON AE.EventID = P.EventID
-> LEFT JOIN
->     Donations D ON P.ParticipantID = D.DonationID
-> GROUP BY
->     S.Name;
+-----+-----+
| ShelterName | TotalDonationAmount |
+-----+-----+
| Happy Paws Shelter | 100 |
| Safe Haven Pet Rescue | 0 |
| Compassionate Care Center | 50 |
| Hearts of Gold Animal Shelter | 0 |
| Paws and Whiskers Haven | 75 |
| Rescue Oasis | 0 |
| Loving Hearts Shelter | 120 |
| Furry Friends Sanctuary | 0 |
| Home for Hope Shelter | 200 |
| Purrfect Haven | 0 |
+-----+-----+
10 rows in set (0.05 sec)

mysql>

```

Question 9.

Ans.

SELECT

 Name AS PetName,

 Age,

 Breed,

 Type

FROM

 Pets

WHERE

PetID NOT IN (SELECT DISTINCT ParticipantID FROM Participants);

```
Command Prompt - mysql -u root -p
ERROR 1054 (42S22): Unknown column 'OwnerID' in 'where clause'
mysql> SELECT
->     Name AS PetName,
->     Age,
->     Breed,
->     Type
-> FROM
->     Pets
-> WHERE
->     PetID NOT IN (SELECT DISTINCT ParticipantID FROM Participants);
Empty set (0.00 sec)

mysql>
```

Question 10.

Ans.

SELECT

FORMAT(DonationDate, 'MMMM yyyy') AS MonthYear,

COALESCE(SUM(DonationAmount), 0) AS TotalDonationAmount

FROM Donations

GROUP BY FORMAT(DonationDate, 'MMMM yyyy');

```
Command Prompt - mysql -u root -p
ERROR 1054 (42S22): Unknown column 'Participants.PetID' in 'where clause'
mysql> SELECT
->     FORMAT(DonationDate, 'MMMM yyyy') AS MonthYear,
->     COALESCE(SUM(DonationAmount), 0) AS TotalDonationAmount
-> FROM Donations
-> GROUP BY FORMAT(DonationDate, 'MMMM yyyy');
+-----+-----+
| MonthYear          | TotalDonationAmount |
+-----+-----+
| 20,230,101,100,000 | 100 |
| 20,230,215,143,000 | 0 |
| 20,230,310,124,500 | 50 |
| 20,230,405,162,000 | 0 |
| 20,230,520,081,000 | 75 |
| 20,230,615,113,000 | 0 |
| 20,230,702,094,500 | 120 |
| 20,230,818,131,500 | 0 |
| 20,230,925,154,000 | 200 |
| 20,231,030,170,000 | 0 |
+-----+-----+
10 rows in set, 20 warnings (0.00 sec)

mysql>
```

Question 11

SELECT DISTINCT Breed

FROM Pets

WHERE (Age BETWEEN 1 AND 3) OR (Age > 5);

```
Command Prompt - mysql -u root -p

mysql> SELECT DISTINCT Breed
-> FROM Pets
-> WHERE (Age BETWEEN 1 AND 3) OR (Age > 5);
+-----+
| Breed |
+-----+
| Golden Retriever |
| Siamese |
| Beagle |
| Persian |
| Russian Blue |
| German Shepherd |
| Ragdoll |
| Poodle |
| Domestic Shorthair |
+-----+
9 rows in set (0.00 sec)

mysql> _
```

Question 12 ---

Ans.

SELECT

P.PetID,

P.Name AS PetName,

P.Breed,

S.Name AS ShelterName

FROM

Pets P

JOIN

Participants A ON P.PetID = A.ParticipantID

JOIN

AdoptionEvents AE ON A.EventID = AE.EventID

JOIN

Shelters S ON AE.EventID = S.ShelterID

WHERE

P.AvailableForAdoption = 1;

```

Command Prompt - mysql -u root -p
ERROR 1054 (42S22): Unknown column 'P.EventID' in 'on clause'
mysql> SELECT
->   P.PetID,
->   P.Name AS PetName,
->   P.Breed,
->   S.Name AS ShelterName
-> FROM
->   Pets P
-> JOIN
->   Participants A ON P.PetID = A.ParticipantID
-> JOIN
->   AdoptionEvents AE ON A.EventID = AE.EventID
-> JOIN
->   Shelters S ON AE.EventID = S.ShelterID
-> WHERE
->   P.AvailableForAdoption = 1;
+-----+-----+-----+-----+
| PetID | PetName | Breed      | ShelterName |
+-----+-----+-----+-----+
| 1     | Fluffy  | Golden Retriever | Happy Paws Shelter |
| 2     | Whiskers | Siamese       | Safe Haven Pet Rescue |
| 4     | Mittens | Persian       | Hearts of Gold Animal Shelter |
| 5     | Rocky   | Labrador      | Paws and Whiskers Haven |
| 6     | Smokey  | Russian Blue  | Rescue Oasis |
| 8     | Luna    | Ragdoll       | Furry Friends Sanctuary |
| 9     | Charlie | Poodle        | Home for Hope Shelter |
| 10    | Oreo    | Domestic Shorthair | Purrfect Haven |
+-----+-----+-----+-----+
8 rows in set (0.00 sec)

mysql>

```

Question 13

Ans.

```
DECLARE @CityParam NVARCHAR(255) = 'Chennai';
```

```
SELECT COUNT(DISTINCT pa.ParticipantID) AS TotalParticipants
```

```
FROM Participants pa
```

```
JOIN AdoptionEvents ae ON pa.EventID = ae.EventID
```

```
JOIN Shelters s ON ae.Location = @CityParam AND pa.ParticipantType = 'Shelter';
```

```

mysql> SELECT COUNT(DISTINCT pa.ParticipantID) AS TotalParticipants
-> FROM Participants pa
-> JOIN AdoptionEvents ae ON pa.EventID = ae.EventID
-> JOIN Shelters s ON ae.Location = @CityParam AND pa.ParticipantType = 'Shelter';
+-----+
| TotalParticipants |
+-----+
| 0 |
+-----+
1 row in set (0.02 sec)

mysql>

```

Question 14

Ans.

```
SELECT DISTINCT Breed
```

FROM Pets

WHERE Age BETWEEN 1 AND 5;

```
Command Prompt - mysql -u root -p
-> WHERE
-> P1.Breed = P2.Breed;
Empty set (0.01 sec)

mysql> SELECT DISTINCT Breed
-> FROM Pets
-> WHERE Age BETWEEN 1 AND 5;
+-----+
| Breed |
+-----+
| Golden Retriever |
| Siamese |
| Beagle |
| Persian |
| Labrador |
| Russian Blue |
| German Shepherd |
| Ragdoll |
| Poodle |
| Domestic Shorthair |
+-----+
10 rows in set (0.06 sec)

mysql>
```

Question 15

SELECT

PetID,

Name,

Age,

Breed,

Type,

AvailableForAdoption

FROM

Pets

WHERE

AvailableForAdoption = 1;

cmd Command Prompt - mysql -u root -p

```
-> OR Participants.ParticipantType <> 'Adopter';  
ERROR 1054 (42S22): Unknown column 'Participants.PetID' in 'where clause'
```

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

PetID	Name	Age	Breed	Type	AvailableForAdoption
1	Fluffy	2	Golden Retriever	Dog	0x01
2	Whiskers	1	Siamese	Cat	0x01
4	Mittens	2	Persian	Cat	0x01
5	Rocky	4	Labrador	Dog	0x01
6	Smokey	1	Russian Blue	Cat	0x01
8	Luna	1	Ragdoll	Cat	0x01
9	Charlie	3	Poodle	Dog	0x01
10	Oreo	2	Domestic Shorthair	Cat	0x01

8 rows in set (0.00 sec)

```
mysql> _
```

Question 16

SELECT

Pets.Name AS PetName,

Participants.ParticipantName AS AdopterName

FROM

Pets

JOIN

AdoptionEvents ON Pets.PetID = AdoptionEvents.EventID

JOIN

Participants ON AdoptionEvents.EventID = Participants.EventID

WHERE

Pets.AvailableForAdoption = 0;

Command Prompt - mysql -u root -p

10 rows in set (0.00 sec)

```
mysql> SELECT
->     Pets.Name AS PetName,
->     Participants.ParticipantName AS AdopterName
-> FROM
->     Pets
-> JOIN
->     AdoptionEvents ON Pets.PetID = AdoptionEvents.EventID
-> JOIN
->     Participants ON AdoptionEvents.EventID = Participants.EventID
-> WHERE
->     Pets.AvailableForAdoption = 0;
```

PetName	AdopterName
Buddy	Adopter 1
Max	Volunteer 4

2 rows in set (0.00 sec)

mysql> _

Question 17

Ans.

SELECT

Shelters.ShelterID,
Shelters.Name AS ShelterName,
Shelters.Location,
COUNT(Pets.PetID) AS AvailablePetsCount

FROM

Shelters

LEFT JOIN

AdoptionEvents ON Shelters.ShelterID = AdoptionEvents.EventID

LEFT JOIN

Participants ON AdoptionEvents.EventID = Participants.EventID

LEFT JOIN

Pets ON Participants.EventID = Pets.PetID

WHERE

Pets.AvailableForAdoption = 1 OR Pets.AvailableForAdoption IS NULL

GROUP BY

Shelters.ShelterID, Shelters.Name, Shelters.Location;

```
ca Command Prompt - mysql -u root -p
ERROR 1054 (42S22): Unknown column 'Participants.PetID' in 'where clause'
mysql> SELECT
->   Shelters.ShelterID,
->   Shelters.Name AS ShelterName,
->   Shelters.Location,
->   COUNT(Pets.PetID) AS AvailablePetsCount
-> FROM
->   Shelters
-> LEFT JOIN
->   AdoptionEvents ON Shelters.ShelterID = AdoptionEvents.EventID
-> LEFT JOIN
->   Participants ON AdoptionEvents.EventID = Participants.EventID
-> LEFT JOIN
->   Pets ON Participants.EventID = Pets.PetID
-> WHERE
->   Pets.AvailableForAdoption = 1 OR Pets.AvailableForAdoption IS NULL
-> GROUP BY
->   Shelters.ShelterID, Shelters.Name, Shelters.Location;
+-----+-----+-----+-----+
| ShelterID | ShelterName | Location | AvailablePetsCount |
+-----+-----+-----+-----+
| 1 | Happy Paws Shelter | 123 Main St, Cityville | 1 |
| 2 | Safe Haven Pet Rescue | 456 Oak St, Townsville | 1 |
| 4 | Hearts of Gold Animal Shelter | 101 Elm St, Hamletville | 1 |
| 5 | Paws and Whiskers Haven | 234 Cedar St, Boroughburg | 1 |
| 6 | Rescue Oasis | 567 Maple St, Haven City | 1 |
| 8 | Furry Friends Sanctuary | 111 Spruce St, Woodland | 1 |
| 9 | Home for Hope Shelter | 222 Willow St, Lakeside | 1 |
| 10 | Purrfect Haven | 333 Oak St, Riverside | 1 |
+-----+-----+-----+-----+
8 rows in set (0.00 sec)

mysql>
```

Question 18

Ans.

SELECT

P1.Name AS Pet1Name,

P1.Breed AS Pet1Breed,

P2.Name AS Pet2Name,

P2.Breed AS Pet2Breed,

S.Name AS ShelterName

FROM

Participants A1

JOIN Participants A2 ON A1.EventID = A2.EventID AND A1.ParticipantID < A2.ParticipantID

JOIN Pets P1 ON A1.ParticipantID = P1.PetID

JOIN Pets P2 ON A2.ParticipantID = P2.PetID

JOIN Shelters S ON A1.EventID = S.ShelterID

WHERE

P1.Breed = P2.Breed;

```
Command Prompt - mysql -u root -p
ERROR 1054 (42S22): Unknown column 'P1.ShelterID' in 'on clause'
mysql> SELECT
->     P1.Name AS Pet1Name,
->     P1.Breed AS Pet1Breed,
->     P2.Name AS Pet2Name,
->     P2.Breed AS Pet2Breed,
->     S.Name AS ShelterName
-> FROM
->     Participants A1
-> JOIN Participants A2 ON A1.EventID = A2.EventID AND A1.ParticipantID < A2.ParticipantID
-> JOIN Pets P1 ON A1.ParticipantID = P1.PetID
-> JOIN Pets P2 ON A2.ParticipantID = P2.PetID
-> JOIN Shelters S ON A1.EventID = S.ShelterID
-> WHERE
->     P1.Breed = P2.Breed;
Empty set (0.01 sec)
```

Question 19

Ans.

SELECT

S.ShelterID AS ShelterID,

S.Name AS ShelterName,

AE.EventID AS EventID,

AE.EventName AS EventName

FROM

Shelters S

CROSS JOIN

AdoptionEvents AE;

Command Prompt - mysql -u root -p

1 row in set (0.07 sec)

```
mysql> SELECT
-> S.ShelterID AS ShelterID,
-> S.Name AS ShelterName,
-> AE.EventID AS EventID,
-> AE.EventName AS EventName
-> FROM
-> Shelters S
-> CROSS JOIN
-> AdoptionEvents AE;
```

ShelterID	ShelterName	EventID	EventName
10	Purrfect Haven	1	Pet Adoption Day
9	Home for Hope Shelter	1	Pet Adoption Day
8	Furry Friends Sanctuary	1	Pet Adoption Day
7	Loving Hearts Shelter	1	Pet Adoption Day
6	Rescue Oasis	1	Pet Adoption Day
5	Paws and Whiskers Haven	1	Pet Adoption Day
4	Hearts of Gold Animal Shelter	1	Pet Adoption Day
3	Compassionate Care Center	1	Pet Adoption Day
2	Safe Haven Pet Rescue	1	Pet Adoption Day
1	Happy Paws Shelter	1	Pet Adoption Day
10	Purrfect Haven	2	Furry Friends Fair
9	Home for Hope Shelter	2	Furry Friends Fair
8	Furry Friends Sanctuary	2	Furry Friends Fair
7	Loving Hearts Shelter	2	Furry Friends Fair
6	Rescue Oasis	2	Furry Friends Fair
5	Paws and Whiskers Haven	2	Furry Friends Fair
4	Hearts of Gold Animal Shelter	2	Furry Friends Fair
3	Compassionate Care Center	2	Furry Friends Fair
2	Safe Haven Pet Rescue	2	Furry Friends Fair
1	Happy Paws Shelter	2	Furry Friends Fair
10	Purrfect Haven	3	Paws in the Park
9	Home for Hope Shelter	3	Paws in the Park
8	Furry Friends Sanctuary	3	Paws in the Park
7	Loving Hearts Shelter	3	Paws in the Park
6	Rescue Oasis	3	Paws in the Park
5	Paws and Whiskers Haven	3	Paws in the Park
4	Hearts of Gold Animal Shelter	3	Paws in the Park
3	Compassionate Care Center	3	Paws in the Park
2	Safe Haven Pet Rescue	3	Paws in the Park
1	Happy Paws Shelter	3	Paws in the Park
10	Purrfect Haven	4	Adopt-a-Palooza
9	Home for Hope Shelter	4	Adopt-a-Palooza
8	Furry Friends Sanctuary	4	Adopt-a-Palooza
7	Loving Hearts Shelter	4	Adopt-a-Palooza
6	Rescue Oasis	4	Adopt-a-Palooza
5	Paws and Whiskers Haven	4	Adopt-a-Palooza

Question 20

Ans.

SELECT

S.Name AS ShelterName,

COUNT(P.ParticipantID) AS AdoptedPetsCount

FROM

Shelters S

JOIN

AdoptionEvents AE ON S.ShelterID = AE.EventID

JOIN

Participants P ON AE.EventID = P.EventID

WHERE

P.ParticipantType = 'Adopter'


GROUP BY

S.Name

ORDER BY

AdoptedPetsCount DESC

LIMIT 1;

 Command Prompt - mysql -u root -p

```
-> LIMIT 1;
ERROR 1054 (42S22): Unknown column 'p.ShelterID' in 'on clause'
mysql> SELECT
->     S.Name AS ShelterName,
->     COUNT(P.ParticipantID) AS AdoptedPetsCount
-> FROM
->     Shelters S
-> JOIN
->     AdoptionEvents AE ON S.ShelterID = AE.EventID
-> JOIN
->     Participants P ON AE.EventID = P.EventID
-> WHERE
->     P.ParticipantType = 'Adopter'
-> GROUP BY
->     S.Name
-> ORDER BY
->     AdoptedPetsCount DESC
-> LIMIT 1;
+-----+-----+
| ShelterName          | AdoptedPetsCount |
+-----+-----+
| Compassionate Care Center |          1 |
+-----+-----+
1 row in set (0.07 sec)
```