Assessments -2

Coding Challenges - PatPals, The Pet Adoption Platform

1) Provide a SQL script that initialises the database for the Pet Adoption platform "Petpals".

```
mysql> CREATE DATABASE Petpals;
Query OK, 1 row affected (0.03 sec)
```

2) Define the schema for the Customers , Products ,Orders,OrderDetails and Inventory tables based on the provided schema.

Pets
```
mysql>  CREATE TABLE Pets(
    ->  PetID INT PRIMARY KEY,
    ->  Name VARCHAR(25),
    -> Age INT,
    -> Breed VARCHAR(10),
    -> Type VARCHAR(15),
    -> AvailableForAdoption BIT
    -> );
```

Shelters
```
mysql> CREATE TABLE  Shelters(
    -> ShelterID INT PRIMARY KEY,
    -> Name VARCHAR(20),
    -> Location VARCHAR(50)
    -> );
```

Donations
```
mysql> CREATE TABLE Donations(
    -> DonationID INT PRIMARY KEY,
    -> DonorName VARCHAR(25),
    -> DonationType VARCHAR(15),
    -> DonationAmount DECIMAL,
    -> DonationItem VARCHAR(50),
    -> DonationDate DATETIME
    -> );
```

AdoptionEvents
```
mysql> CREATE TABLE AdoptionEvents(
    -> EventID INT PRIMARY KEY ,
    -> EventName VARCHAR(50),
    -> EventDate DATETIME,
    -> Location VARCHAR(50)
    -> );
```

Participants

```
mysql> CREATE TABLE  Participants(
    -> ParticipantsID INT PRIMARY KEY,
    -> ParticipantName VARCHAR(25),
    -> ParticipantType VARCHAR(10),
    -> EventID INT,
    -> FOREIGN KEY(EventID) REFERENCES AdoptionEvents(EventID)
    -> );
```

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

Primary key

TABLE_NAME	CONSTRAINT_NAME
donations	PRIMARY
adoptionevents	PRIMARY
participants	PRIMARY
pets	PRIMARY
shelters	PRIMARY

Foreign key

TABLE_NAME	CONSTRAINT_NAME
participants	participants_ibfk_1

4) 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 that are not available for adoption

Name	Age	breed	Type
Buddy	3	Labrador	Dog
Whiskers	5	Siamese	Cat
Mittens	4	Persian	Cat
Max	1	German Shepherd	Dog
Charlie	4	Poodle	Dog
Luna	3	Ragdoll	Cat
Bailey	2	Golden Retriever	Dog

5) Write an SQL query that retrieves the names of participants (shelters and adopters) registered for specific adoption events. Use a parameter to specify the event ID, Ensure that the query Join the necessary tables to retrieve the participant names and types.

```
+-------------------+-----------------+------------------------------+
| ParticipantName   | participantType | EventName                    |
+-------------------+-----------------+------------------------------+
| John Smith        | Shelter         | Furry Friends Adoption Fair  |
| Emma Johnson      | Shelter         | Furry Friends Adoption Fair  |
| Michael Brown     | Adopter         | Furry Friends Adoption Fair  |
| Sarah Wilson      | Shelter         | Paws for Love Adoption Event |
| Olivia Martinez   | Adopter         | Paws for Love Adoption Event |
| Daniel Anderson   | Shelter         | Pets Galore Adoption Day     |
| Sophia Garcia     | Adopter         | Pets Galore Adoption Day     |
| Emily Davis       | Shelter         | Rescue Me Expo               |
| Noah Thompson     | Sheltor         | Rescue Me Expo               |
| Ava Miller        | Shelter         | Homeless Pets Adoption Drive |
+-------------------+-----------------+------------------------------+
```

6)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> CREATE PROCEDURE UpdateShelterInfo (
    ->     IN Shelter_ID INT,
    ->     IN New_Shelter_Name VARCHAR(255),
    ->     IN New_Shelter_Location VARCHAR(255)
    -> )
    -> BEGIN
    ->     DECLARE shelterCount INT;
    ->
    ->     SELECT COUNT(*)
    ->     INTO shelterCount
    ->     FROM Shelters
    ->     WHERE ShelterID = Shelter_ID;
    ->
    ->     IF shelterCount > 0 THEN
    ->         UPDATE Shelters
    ->         SET Name = New_Shelter_Name, Location = New_Shelter_Location
    ->         WHERE ShelterID = Shelter_ID;
    ->
    ->         SELECT 'Shelter information updated successfully' AS Message;
    ->     ELSE
    ->         SELECT 'Invalid shelter ID. Update failed.' AS Message;
    ->     END IF;
    -> END //
```

7) 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.

```
+-------+-------+------------------+------+
| Name  | Age   | Breed            | Type |
+-------+-------+------------------+------+
| Max   |     1 | German Shepherd  | Dog  |
+-------+-------+------------------+------+
```

8)Write an SQL query that retrieves the total donation amount for each month and year (e.g.,5. 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 special month - year

```
+-------+------+----------------+
| month | year | DonationAmount |
+-------+------+----------------+
|     1 | 2023 |            101 |
|     2 | 2023 |            251 |
|     3 | 2023 |             75 |
|     4 | 2023 |            500 |
|     5 | 2023 |            150 |
|     6 | 2023 |            301 |
|     7 | 2023 |            200 |
|     8 | 2023 |           1001 |
|     9 | 2023 |             81 |
|    10 | 2023 |            400 |
+-------+------+----------------+
```

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

```
+-------+------+----------------+
| month | year | DonationAmount |
+-------+------+----------------+
|     1 | 2023 |            101 |
|     2 | 2023 |            251 |
|     3 | 2023 |             75 |
|     4 | 2023 |            500 |
|     5 | 2023 |            150 |
|     6 | 2023 |            301 |
|     7 | 2023 |            200 |
|     8 | 2023 |           1001 |
|     9 | 2023 |             81 |
|    10 | 2023 |            400 |
+-------+------+----------------+
```

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

```
mysql> select p.Name ,  p.Type ,  s.Location location
    -> from pets p , shelters s where p.AvailableForAdoption  = 'True';
+--------+------+-----------------------------+
| Name   | Type | location                    |
+--------+------+-----------------------------+
| Simba  | Cat  | 123 Main Street, City A     |
| Oreo   | Cat  | 123 Main Street, City A     |
| Rocky  | Dog  | 123 Main Street, City A     |
| Simba  | Cat  | 456 Elm Street, City B      |
| Oreo   | Cat  | 456 Elm Street, City B      |
| Rocky  | Dog  | 456 Elm Street, City B      |
| Simba  | Cat  | 789 Oak Avenue, City C      |
| Oreo   | Cat  | 789 Oak Avenue, City C      |
| Rocky  | Dog  | 789 Oak Avenue, City C      |
| Simba  | Cat  | 321 Maple Lane, City D      |
| Oreo   | Cat  | 321 Maple Lane, City D      |
| Rocky  | Dog  | 321 Maple Lane, City D      |
| Simba  | Cat  | 555 Pine Street, City E     |
| Oreo   | Cat  | 555 Pine Street, City E     |
| Rocky  | Dog  | 555 Pine Street, City E     |
| Simba  | Cat  | 888 Cedar Road, City F      |
| Oreo   | Cat  | 888 Cedar Road, City F      |
```

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

```
mysql> SELECT COUNT(DISTINCT P.ParticipantsID) 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 |
+-------------------+
```

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

```
+-----------------+
| Breed           |
+-----------------+
| Labrador        |
| Siamese         |
| Bulldog         |
| Persian         |
| German Shepherd |
| Maine Coon      |
| Poodle          |
| Ragdoll         |
| Golden Retriever|
| Siberian        |
+-----------------+
```

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

```
 PetID | Name | Age  | breed           | Type | AvailableForAdoption                  | ownerId
-------+------+------+-----------------+------+---------------------------------------+--------
     5 | Max  |    1 | German Shepherd | Dog  | 0x01                                  |   NULL
-------+------+------+-----------------+------+---------------------------------------+--------
```

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

USER table

```
mysql> create  table user(   user_id int primary key,   user_name varchar(244));
```

Adopter table

```
mysql> create table Adoption(   user_id int ,   pet_name varchar(255),   foreign key(user_id) references user(user_id));
```

```
 Adopter name    | pet name
-----------------+-----------
 Ravi kumar      | DOG
 Aastha singh    | DOG
 Ajay sharma     | CAT
 Amina khan      | DOG
 chanchal dodke  | DOG
-----------------+-----------
```

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

```
+-------------------------+-------------------+
| ShelterName             | AvailablePetsCount |
+-------------------------+-------------------+
| Happy Paws Shelter      |                 1 |
| Second Chance Shelter   |                 1 |
| Furry Friends Haven     |                 1 |
| Rescue Me Shelter       |                 1 |
| Homeless Pets Sanctuary |                 1 |
| Kindness Animal Shelter |                 1 |
| Forever Friends Center  |                 1 |
| Hearts of Gold Shelter  |                 0 |
+-------------------------+-------------------+
```

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

```
mysql> SELECT A.PetID AS PetID1, A.Breed AS Breed, B.PetID AS PetID2
    -> FROM Pets A
    -> JOIN Pets B ON A.ShelterID = B.ShelterID AND A.Breed = B.Breed AND A.PetID < B.PetID;
mpty set (0.01 sec)
```

17) List all possible combinations of shelters and adoption events.(limit 20)

```
+-----------+-----------------------+---------+-----------------------------+
| ShelterID | ShelterName           | EventID | EventName                   |
+-----------+-----------------------+---------+-----------------------------+
|       200 | Hearts of Gold Shelter |     301 | Furry Friends Adoption Fair |
|       109 | Forever Friends Center |     301 | Furry Friends Adoption Fair |
|       108 | Kindness Animal Shelter |    301 | Furry Friends Adoption Fair |
|       107 | Homeless Pets Sanctuary |    301 | Furry Friends Adoption Fair |
|       106 | Safe Haven Animal Rescue |   301 | Furry Friends Adoption Fair |
|       105 | Rescue Me Shelter      |     301 | Furry Friends Adoption Fair |
|       104 | Furry Friends Haven    |     301 | Furry Friends Adoption Fair |
|       103 | Paws and Claws Rescue  |     301 | Furry Friends Adoption Fair |
|       102 | Second Chance Shelter  |     301 | Furry Friends Adoption Fair |
|       101 | Happy Paws Shelter     |     301 | Furry Friends Adoption Fair |
|       200 | Hearts of Gold Shelter |     302 | Paws for Love Adoption Event |
|       109 | Forever Friends Center |     302 | Paws for Love Adoption Event |
|       108 | Kindness Animal Shelter |    302 | Paws for Love Adoption Event |
|       107 | Homeless Pets Sanctuary |    302 | Paws for Love Adoption Event |
|       106 | Safe Haven Animal Rescue |   302 | Paws for Love Adoption Event |
|       105 | Rescue Me Shelter      |     302 | Paws for Love Adoption Event |
|       104 | Furry Friends Haven    |     302 | Paws for Love Adoption Event |
|       103 | Paws and Claws Rescue  |     302 | Paws for Love Adoption Event |
|       102 | Second Chance Shelter  |     302 | Paws for Love Adoption Event |
|       101 | Happy Paws Shelter     |     302 | Paws for Love Adoption Event |
+-----------+-----------------------+---------+-----------------------------+
```

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

```
+---------------------+------------------+
| ShelterName         | AdoptedPetsCount |
+---------------------+------------------+
| Happy Paws Shelter  |                1 |
+---------------------+------------------+
```