Pet Adoption Agency

Problem:
A pet adoption agency needs assistance in managing and analyzing their data efficiently. They have provided you with a database schema containing tables related to pets, adopters, and adoption transactions. Your task is to formulate SQL queries to solve various challenges faced by the agency.

Database Schema:

Pets Table:

- pet_id (Primary Key)
- pet_name
- pet_type
- age
- available_for_adoption (Boolean)

Pet Parents Table:

- PetParent_id (Primary Key)
- name
- contact_number
- email

Adoptions Table:

- adoption_id (Primary Key)
- pet_id (Foreign Key referencing Pets Table)
- PetParent_id (Foreign Key referencing PetParents Table)
- adoption_date
- adoption_fee

Questions to Solve:

1. Retrieve the names and types of all pets available for adoption.
2. Find the total number of pets currently available for adoption.
3. List the names and contact numbers of adopters who have adopted pets.
4. Calculate the average age of all pets in the agency.
5. Identify the pets that have not yet been adopted.
6. Retrieve the names of adopters who adopted pets in the last month.
7. Find the total adoption fees collected by the agency.
8. List the pet types along with the average age of pets for each type.
9. Identify the adopter who has adopted the maximum number of pets.
10. Retrieve the details of pets adopted by a specific adopter.
11. Find the most common pet type among the adopted pets.
12. Calculate the total adoption fees collected per pet type.
13. List the names of adopters who adopted pets at an age greater than or equal 5.
14. Identify the pets that have been available for adoption for the longest duration.
15. Retrieve the adoption transactions along with the adopter and pet details.

1.Database Creation

```sql
--Creates the Table that stores the information on all the pets.
CREATE Table  Pets(
Pet_ID INT PRIMARY KEY,
Pet_Name  VARCHAR(20),
Pet_Type VARCHAR(20),
Pet_Age INT,
Avaialable BIT
)
```

```sql

--Creates the table that stores all the pet parent information.
CREATE TABLE Pet_Parents(
  Parent_ID int PRIMARY KEY,
  Parent_Name VARCHAR(30),
  Contact_Number VARCHAR(15),
  Email VARCHAR(20)
)
```

```sql
-- Creates the table that stores all information on the adoptions.
Create Table Adoptions(
  Adoption_ID Int PRIMARY KEY,
  Adoption_Date DATE,
  Adoption_Fee DECIMAL,
   Pet_ID INT,
   Parent_ID INT,
  FOREIGN KEY (Pet_ID) REFERENCES Pets(Pet_ID),
  FOREIGN KEY (Parent_ID) REFERENCES Pet_Parents(Parent_ID)
)
```

- Populating the Tables with Data

```sql
-- Adds all pet data to the Pets Table
INSERT INTO Pets
VALUES
(101,'Mark','Dog',2,1),
(102,'Peaches','Rabbit',4,0),
(103,'Lola','Cat',3,1),
(104,'Mario','Dog',10,1),
(105,'Dawn','Duck',2,0),
(106,'Mick','Cat',1,1),
(107,'Fran','Frog',1,0),
(108,'Penny','Dog',5,0),
(109,'Anna','Cat',3,0),
(110,'Sunny','Fish',1,1);
```

Results Messages

	Pet_ID	Pet_Name	Pet_Type	Pet_Age	Avialable
1	101	Mark	Dog	2	1
2	102	Peaches	Rabbit	4	0
3	103	Lola	Cat	3	1
4	104	Mario	Dog	10	1
5	105	Dawn	Duck	2	0
6	106	Mick	Cat	1	1
7	107	Fran	Frog	1	0
8	108	Penny	Dog	5	0
9	109	Anna	Cat	3	0
10	110	Sunny	Fish	1	1

```sql
-- Adds the information on the people who adopted an animal
INSERT INTO Pet_Parents (Parent_ID,Parent_Name,Contact_Number,Email)
VALUES
(1001,'Lewis Hamilton','123-888-4018','LHam@gmail.com'),
(1002,'Max Verstappen','123-668-9876','Mver12@hotmail.com'),
(1003,'Lando Norris','543-663-8811','NorLan@outlook.com'),
(1004,'George Russell','345-885-1123','Rusell81@hotmail.com'),
(1005,'Oscar Piastri','987-990-6632','OscarPi22@gmail.com'),
(1006,'Charles Leclerc','765-990-5544','CharlesL12@hotmail.com'),
(1007,'Lance Stroll','445-998-9855','Stroll.La@gmail.com');
```

Results Messages

	Parent_ID	Parent_Name	Contact_Number	Email
1	1001	Lewis Hamilton	123-888-4018	LHam@gmail.com
2	1002	Max Verstappen	123-668-9876	Mver12@hotmail.com
3	1003	Lando Norris	543-663-8811	NorLan@outlook.com
4	1004	George Russell	345-885-1123	Rusell81@hotmail.com
5	1005	Oscar Piastri	987-990-6632	OscarPi22@gmail.com
6	1006	Charles Leclerc	765-990-5544	CharlesL12@hotmail.com
7	1007	Lance Stroll	445-998-9855	Stroll.La@gmail.com

```sql
-- Adds the adoption infromation of a pet to the Adoptions Table
INSERT INTO Adoptions (Adoption_ID,Adoption_Date,Adoption_Fee,Pet_ID,Parent_ID)
VALUES
(1133, '2021-01-23', 200.00, 105, 1003),
(1134, '2021-01-30', 50.69, 102, 1005),
(1135, '2022-02-02', 150.10, 108, 1001),
(1136, '2022-02-25', 210.10, 107, 1004),
(1137, '2023-04-18', 100.00, 109, 1007);
```

Results Messages

	Adoption_ID	Adoption_Date	Adoption_Fee	Pet_ID	Parent_ID
1	1133	2021-01-23	200	105	1003
2	1134	2021-01-30	51	102	1005
3	1135	2022-02-02	150	108	1001
4	1136	2022-02-25	210	107	1004
5	1137	2023-04-18	100	109	1007

2.Solutions to Questions

```sql
--Question 1: Retrieve the names and types of all pets available for adoption.
SELECT Pet_Name, Pet_Type
 FROM Pets
WHERE Avialable = 1;
```

Results Messages

	Pet_Name	Pet_Type
1	Mark	Dog
2	Lola	Cat
3	Mario	Dog
4	Mick	Cat
5	Sunny	Fish

```sql
--Question 2: Find the total number of pets currently available for adoption.
SELECT COUNT(*)
FROM Pets
WHERE Avialable= 1;
```

	(No column name)
1	5

```sql
--Question 2: Find the total number of pets currently avialable for adoption. Here I renamed to column to PetsAvialable
SELECT COUNT(*) AS PetsAvialable
FROM Pets
WHERE Avialable= 1;
```

	PetsAvialable
1	5

```sql
--Question 3: List the names and contact numbers of adopters who have adopted pets
SELECT Pet_Parents.Parent_Name, Pet_Parents.Contact_Number
FROM Pet_Parents
JOIN Adoptions ON Pet_Parents.Parent_ID = Adoptions.Parent_ID;
```

	Parent_Name	Contact_Number
1	Lando Norris	543-663-8811
2	Oscar Piastri	987-990-6632
3	Lewis Hamilton	123-888-4018
4	George Russell	345-885-1123
5	Lance Stroll	445-998-9855

```sql
--Question 4: Calculate the average age of all pets in the agency.
Select AVG(Pet_Age)
FROM Pets
```

	(No column name)
1	3

```sql
--Question 4: Calculate the average age of all pets in the agency. I have changed the name of the result column to AvgAge
Select AVG(Pet_Age) AS AvgAge
FROM Pets
```

Results Messages

	AvgAge
1	3

```sql
--  Question 5: Identify the pets that have not yet been adopted.
SELECT Pet_ID, Pet_Name, Pet_Age,Pet_Type
FROM Pets
WHERE Avialable = 0;
```

Results Messages

	Pet_ID	Pet_Name	Pet_Age	Pet_Type
1	102	Peaches	4	Rabbit
2	105	Dawn	2	Duck
3	107	Fran	1	Frog
4	108	Penny	5	Dog
5	109	Anna	3	Cat

```sql
--Question 6: Retrieve the names of adopters who adopted pets in the last month.
SELECT Pet_Parents.Parent_Name
FROM Pet_Parents
JOIN Adoptions ON Pet_Parents.Parent_ID = Adoptions.Parent_ID
WHERE MONTH(Adoption_Date) = MONTH(GETDATE()) AND YEAR(Adoption_Date) = YEAR(GETDATE());
```

Results Messages

	Parent_Name
1	Lance Stroll

- For this question, i used the update function to change the adoption dates of the pets that were adopted

```
-- Update Adoption_Date based on Adoption_ID
UPDATE Adoptions
SET Adoption_Date =
    CASE
        WHEN Adoption_ID = 1133 THEN '2023-12-01'
        WHEN Adoption_ID = 1134 THEN '2023-11-05'
        WHEN Adoption_ID = 1135 THEN '2023-10-21'
        WHEN Adoption_ID = 1136 THEN '2023-09-11'
         WHEN Adoption_ID = 1137 THEN '2024-01-01'
        -- Add more cases as needed
        ELSE Adoption_Date -- Keep the original date for other records
    END;
```

	Adoption_ID	Adoption_Date	Adoption_Fee	Pet_ID	Parent_ID
1	1133	2023-12-01	200	105	1003
2	1134	2023-11-05	51	102	1005
3	1135	2023-10-21	150	108	1001
4	1136	2023-09-11	210	107	1004
5	1137	2024-01-01	100	109	1007

```
--Question 7: Find the total adoption fees collected by the agency.
SELECT SUM(Adoption_Fee) AS TotalFees
FROM Adoptions
```

Results Messages

	TotalFees
1	711

```sql
--Question 8: List the pet types along with the average age of pets for each type.
SELECT Pet_Type, AVG(Pet_Age) AS AverageAge
From Pets
GROUP BY Pet_Type
```

Results Messages

	Pet_Type	AverageAge
1	Cat	2
2	Dog	5
3	Duck	2
4	Fish	1
5	Frog	1
6	Rabbit	4

```sql
--Question 9: Identify the adopter who has adopted the maximum number of pets.
SELECT TOP 1 Parent_Name, COUNT(*) AS Total_Adoptions
FROM Pet_Parents
JOIN Adoptions ON Pet_Parents.Parent_ID = Adoptions.Parent_ID
GROUP BY Pet_Parents.Parent_ID, Parent_Name
--Since everyone only adopted one pet, and Lewis Hamilton was the first name in the table,he is shown as the person who adopted the most pets
```

Results Messages

	Parent_Name	Total_Adoptions
1	Lewis Hamilton	1

```sql
--Question 10: Retrieve the details of pets adopted by a specific adopter.
SELECT Pets.Pet_Name,Pets.Pet_ID,Pets.Pet_Age,Pets.Pet_Type
From Pets
JOIN Adoptions ON Pets.Pet_ID = Adoptions.Pet_ID
JOIN Pet_Parents ON Pet_Parents.Parent_ID = Adoptions.Parent_ID
WHERE Pet_Parents.Parent_Name = 'George Russell'
```

Results Messages

	Pet_Name	Pet_ID	Pet_Age	Pet_Type
1	Fran	107	1	Frog

```sql
--Question 11: Find the most common pet type among the adopted pets.
SELECT TOP 1 Pet_Type, COUNT(*) AS Most_Adopted
From Adoptions
JOIN Pets on Adoptions.Pet_ID = Pets.Pet_ID
GROUP BY Pet_Type
ORDER BY Most_Adopted DESC;
--Since each type of pet was only adopted once and dog was first on the list, it will show up as the pet that is adopted the most
```

Results Messages

	Pet_Type	Most_Adopted
1	Dog	1

```sql
--Question 12: Calculate the total adoption fees collected per pet type.
SELECT Pet_Type, SUM(Adoption_Fee) As Pet_Adoption_Fees
FROM Adoptions
JOIN Pets ON Adoptions.Pet_ID = Pets.Pet_ID
GROUP BY Pet_Type
```

Results Messages

	Pet_Type	Pet_Adoption_Fees
1	Cat	100
2	Dog	150
3	Duck	200
4	Frog	210
5	Rabbit	51

```sql
--Question 13: List the names of adopters who adopted pets at an age greater than or equal to 5.
SELECT Parent_Name
FROM Pet_Parents
JOIN Adoptions on Pet_Parents.Parent_ID = Adoptions.Parent_ID
JOIN Pets on Adoptions.Pet_ID = Pets.Pet_ID
WHERE Pet_Age >= 5
```

Results Messages

	Parent_Name
1	Lewis Hamilton

```sql
--Question 14: Identify the pets that have been available for adoption for the longest duration.
SELECT Pet_Name,DATEDIFF(DAY,Adoption_Date,GETDATE()) As Days_Available
FROM Pets
JOIN Adoptions on Pets.Pet_ID = Adoptions.Pet_ID
ORDER BY Days_Available DESC
```

Results Messages

	Pet_Name	Days_Available
1	Fran	156
2	Penny	116
3	Peaches	101
4	Dawn	75
5	Anna	44

```sql
--Question 15: Retrieve the adoption transactions along with the adopter and pet details.
SELECT Adoptions.*, Pet_Parents.*,Pets.*
FROM Adoptions
JOIN Pet_Parents on Adoptions.Parent_ID = Pet_Parents.Parent_ID
JOIN Pets on Adoptions.Pet_ID = Pets.Pet_ID
```

Results Messages

	Adoption_ID	Adoption_Date	Adoption_Fee	Pet_ID	Parent_ID	Parent_ID
1	1133	2023-12-01	200	105	1003	1003
2	1134	2023-11-05	51	102	1005	1005
3	1135	2023-10-21	150	108	1001	1001
4	1136	2023-09-11	210	107	1004	1004
5	1137	2024-01-01	100	109	1007	1007

Parent_Name	Contact_Number	Email	Pet_ID	Pet_Name	Pet_Type	Pet_Age	Avialable
Lando Norris	543-663-8811	NorLan@outlook.com	105	Dawn	Duck	2	0
Oscar Piastri	987-990-6632	OscarPi22@gmail.com	102	Peaches	Rabbit	4	0
Lewis Hamilton	123-888-4018	LHam@gmail.com	108	Penny	Dog	5	0
George Russell	345-885-1123	Rusell81@hotmail.com	107	Fran	Frog	1	0
Lance Stroll	445-998-9855	Stroll.La@gmail.com	109	Anna	Cat	3	0