Sonia Shah
CSC423
Project Part 3

https://github.com/ssoniashahh/FinalProjectCSC423/

Translate the logical data model for the Oracle Enterprise DBMS.

a) Develop SQL code to create the entire database schema, reflecting the constraints identified in previous steps.

```
CREATE TABLE Clinic (
    clinicNo int NOT NULL primary key CHECK (clinicNo > 0),
    name varchar(255),
    address varchar(255) NOT NULL,
    telNo varchar(10) NOT NULL CHECK(length(telNo) == 10)
    );

CREATE TABLE Staff (
    staffNo int NOT NULL primary key CHECK (staffNo > 0),
    name varchar(255),
    address varchar(255),
    telNo varchar(10) CHECK(length(telNo) == 10),
    DOB date CHECK (DOB <= '2004-1-1'),
    position varchar(255),
    salary int CHECK (salary >= 0),
    clinicNo int,
    FOREIGN KEY (clinicNo) REFERENCES Clinic(clinicNo)
    );

CREATE TABLE Owner (
    ownerNo int NOT NULL primary key CHECK (ownerNo > 0),
    name varchar(255),
    address varchar(255),
    telNo varchar(10) CHECK(length(telNo) == 10),
    clinicNo int,
    FOREIGN KEY (clinicNo) REFERENCES Clinic(clinicNo)
    );
```

```
CREATE TABLE Pet (
	petNo int NOT NULL primary key CHECK (petNo > 0),
	name varchar(255),
	DOB date,
	species varchar(255),
	breed varchar(255),
	color varchar(255),
	ownerNo int,
	clinicNo int,
	FOREIGN KEY (ownerNo) REFERENCES Owner(ownerNo),
	FOREIGN KEY (clinicNo) REFERENCES Clinic(clinicNo)
	);

CREATE TABLE Examination (
	examNo int NOT NULL primary key,
	complaint varchar(255),
	description varchar(255),
	examDate date,
	action varchar(255),
	petNo int,
	staffNo int,
	FOREIGN KEY (petNo) REFERENCES Pet(petNo),
	FOREIGN KEY (staffNo) REFERENCES Staff(staffNo)
	);
```

b) Create at least 5 tuples for each relation in your database.

```
clinics = [(11, 'Lake Highland', '653 S Ventura Avenue', '1112223333'),
	(12, 'Trinity', '888 Peanut Street', '2223334444'),
	(13, 'Bishop Moore', '63 E 53rd Street', '3334445555'),
	(14, 'Edgewater', '345 Carter Trail', '4445556666'),
	(15, 'AdventHealth', '7678 Yeehaw Junction', '5556667777')]
cursor.executemany('INSERT INTO Clinic VALUES(?,?,?,?);', clinics)
```

```
   clinicNo           name               address       telNo
0        11  Lake Highland  653 S Ventura Avenue  1112223333
1        12        Trinity     888 Peanut Street  2223334444
2        13   Bishop Moore      63 E 53rd Street  3334445555
3        14      Edgewater      345 Carter Trail  4445556666
4        15   AdventHealth  7678 Yeehaw Junction  5556667777
Index(['clinicNo', 'name', 'address', 'telNo'], dtype='object')
```

```
staff = [(16, 'Bart', '6655 W Manor Drive', '9875726490', '1987-10-23', 'Manager', 10000, 11),
        (18, 'Isa', '923 Sugarplum Trail', '9265820271', '1998-12-12', 'Vet', 20000, 11),
        (21, 'Gerald', '8913 Phillips Avenue', '5679209976', '1994-12-24', 'Vet', 30000, 11),
        (23, 'Vanessa', '9251 Point Rowe Drive', '8764561234', '2001-8-12', 'Nurse', 40000, 11),
        (17, 'Veronica', '10713 Factorial Park Drive', '9098874444', '1994-2-12', 'Receptionist',
50000, 11)]
cursor.executemany('INSERT INTO Staff VALUES(?,?,?,?,?,?,?,?)', staff)
```

```
   staffNo      name  ... salary clinicNo
0       16      Bart  ...  10000       11
1       18       Isa  ...  20000       11
2       21    Gerald  ...  30000       11
3       23   Vanessa  ...  40000       11
4       17  Veronica  ...  50000       11
```

```
owners = [(1, 'Martha', '123 SW Diane Avenue', '9352340000', 11),
        (2, 'Ron', '1251 N 7th Street', '1234567890', 11),
        (3, 'Julia', '619 Mills Drive', '7775564325', 11),
        (4, 'Samantha', '901 N Highland Avenue', '9998887777', 11),
        (5, 'Victor', '1635 N 3rd Street', '6665559922', 11)]
cursor.executemany('INSERT INTO Owner VALUES(?,?,?,?,?)', owners)
```

```
   ownerNo      name               address       telNo  clinicNo
0        1    Martha    123 SW Diane Avenue  9352340000        11
1        2       Ron      1251 N 7th Street  1234567890        11
2        3     Julia        619 Mills Drive  7775564325        11
3        4  Samantha  901 N Highland Avenue  9998887777        11
4        5    Victor      1635 N 3rd Street  6665559922        11
Index(['ownerNo', 'name', 'address', 'telNo', 'clinicNo'], dtype='object')
```

```
pets = [(6, 'Magic', '2012-11-7', 'Dog', 'Bichon', 'White', 2, 11),
        (7, 'Siddhu', '2017-12-11', 'Dog', 'Bichon', 'White', 5, 11),
        (8, 'Hari', '2020-10-19', 'Dog', 'Golden Doodle', 'White', 3, 11),
        (9, 'Janki', '2002-4-1', 'Monkey', 'Indian', 'Brown', 4, 11),
        (10, 'Aarav', '2003-11-4', 'Snake', 'Python', 'Red', 1, 11)]
cursor.executemany('INSERT INTO Pet VALUES(?,?,?,?,?,?,?,?);', pets)
```

```
   petNo    name         DOB species          breed  color  ownerNo  clinicNo
0      6   Magic   2012-11-7     Dog         Bichon  White        2        11
1      7  Siddhu  2017-12-11     Dog         Bichon  White        5        11
2      8    Hari  2020-10-19     Dog  Golden Doodle  White        3        11
3      9   Janki    2002-4-1  Monkey         Indian  Brown        4        11
4     10   Aarav   2003-11-4   Snake         Python    Red        1        11
Index(['petNo', 'name', 'DOB', 'species', 'breed', 'color', 'ownerNo',
       'clinicNo'],
```

```
exams = [(1, 'Broken Bone', 'Leg is broken', '2022-12-6', 'Adjust bone', 6, 18),
        (2, 'Allergies', 'Allergies bad when outside', '2022-12-6', 'Medication', 7, 21),
        (3, 'Broken Bone', 'Leg is broken', '2022-12-6', 'Adjust bone', 8, 18),
        (4, 'Rash', 'Rash on hip', '2022-12-6', 'Ointment Cream', 9, 21),
        (5, 'Tooth broken', 'Upper tooth is broken', '2022-12-6', 'Medication', 10, 18)]
cursor.executemany('INSERT INTO Examination VALUES(?,?,?,?,?,?,?);', exams)
```

```
   examNo     complaint  ... petNo staffNo
0       1   Broken Bone  ...     6      18
1       2     Allergies  ...     7      21
2       3   Broken Bone  ...     8      18
3       4          Rash  ...     9      21
4       5  Tooth broken  ...    10      18
```

c) Develop 5 SQL queries using embedded SQL (see Python tutorial).

i) List the staffNo of those who earn a salary of more than $20,000.

```
SELECT s.staffNo, s.salary
  FROM staff s
  WHERE s.salary > 20000;
```

```
   staffNo  salary
0       21   30000
1       23   40000
2       17   50000
Index(['staffNo', 'salary'], dtype='object')
```

ii) List the petNo of those pets who had an examination done for allergies.

```
SELECT p.petNo, e.complaint
  FROM examination e, pet p
  WHERE p.petNo = e.petNo and e.complaint LIKE 'Allergies';
```

```
   petNo  complaint
0      7  Allergies
Index(['petNo', 'complaint'], dtype='object')
```

iii) How many examinations were performed on 12/06/2022?

```
SELECT COUNT(e.examNo), e.examDate
  FROM examination e
  WHERE examDate = '2022-12-6';
```

```
   COUNT(e.examNo)   examDate
0                5  2022-12-6
Index(['COUNT(e.examNo)', 'examDate'], dtype='object')
```

iv) What is the ownerNo of the pet with petNo 6?

```
SELECT p.petNo, p.ownerNo
  FROM pet p
  WHERE p.petNo = 6;
```

```
   petNo  ownerNo
0      6        2
Index(['petNo', 'ownerNo'], dtype='object')
```

v) How many staff members does clinic 11 have?

```
SELECT COUNT(s.clinicNo)
  FROM staff s, clinic c
  WHERE c.clinicNo = s.clinicNo and s.clinicNo = 11;
```

```
   COUNT(s.clinicNo)
0                  5
Index(['COUNT(s.clinicNo)'], dtype='object')
```

d) Upload all the code and documentation to GitHub.
   i) https://github.com/ssoniashahh/FinalProjectCSC423/