Name: Ching Kung Lin Class: CS331 Date: 3/25 Assignment number: 2

Name: Ching Kung Lin

Analysis of NYC Dog Licenses

Objective

- **Install Oracle on your computer**
- **Practice getting started with Oracle by using the SQL Create Table and Select operations.**
- **Analyze dog licenses issued by New York City between 2014 and 2019.**
- **Create searches and output using SQL**

1. Create a new primary key column for the dog's table. Show the SQL to implement.

```
create table nyc_dog
(ANIMAL_ID NUMBER PRIMARY KEY,
ANIMAL_NAME VARCHAR(255) ,
ANIMAL_GENDER VARCHAR(255) ,
ANIMAL_MONTH_BIRTH Number ,
BREED_NAME VARCHAR(255) ,
ZIPCODE VARCHAR(255) ,
LICENSE_ISSUED_DATE Date ,
LICENSE_EXPIRE_DATE Date );
```

2. Populate the primary key with unique values. Show the SQL to implement.

```
CREATE SEQUENCE AMIMAL_id_seq;
CREATE TRIGGER ANIMAL_ID_PLUS
BEFORE INSERT ON NYC_DOG
FOR EACH ROW
BEGIN
  SELECT AMIMAL_id_seq.nextval
  INTO :new.ANIMAL_ID
  FROM dual;
END;
```

3. Identify the most popular dog names for licenses issued in 2019. Display the animal's name and number of licenses. Display the most popular dog name first.

```
SELECT animal_name, COUNT(1) "number of licenses"
FROM nyc_dog
WHERE license_expire_date >= TO_DATE('01-JAN-19', 'DD-MM-YY') AND
license_expire_date <= TO_DATE('31-DEC-19', 'DD-MM-YY')
GROUP BY animal_name
ORDER BY 2 DESC
```

```
ANIMAL_NAME    number of licenses
UNKNOWN        992
BELLA          912
```

```
MAX             835
CHARLIE         691
COCO            608
```

4. Identify the most popular male dog names for licenses issued in 2019. Display the animal's name and number of licenses. Display the most popular male dog name first.

```
SELECT animal_name, COUNT(1) "number of licenses"
FROM nyc_dog
WHERE license_expire_date >= TO_DATE('01-JAN-19', 'DD-MM-YY') AND
license_expire_date <= TO_DATE('31-DEC-19', 'DD-MM-YY')
      AND animal_gender = 'M'
GROUP BY animal_name
ORDER BY 2 DESC
```

```
ANIMAL_NAME    number of licenses
MAX             825
CHARLIE         592
UNKNOWN         582
ROCKY           550
BUDDY           449
```

5. Identify the most popular female dog names for licenses issued in 2019. Display the animal's name and number of licenses. Display the most popular female dog name first.

```
SELECT animal_name, COUNT(1) "number of licenses"
FROM nyc_dog
WHERE license_expire_date >= TO_DATE('01-JAN-19', 'DD-MM-YY') AND
license_expire_date <= TO_DATE('31-DEC-19', 'DD-MM-YY')
      AND animal_gender = 'F'
GROUP BY animal_name
ORDER BY 2 DESC
```

```
ANIMAL_NAME    number of licenses
BELLA           907
LOLA            551
LUNA            526
LUCY            497
DAISY           458
```

6. Identify the number of poodles by borough for licenses issued in 2019. Display the breed, borough and number of dogs.

```
SELECT zipcode, COUNT(1)"number of poodles"
FROM nyc_dog
WHERE BREED_NAME LIKE 'Poodle' AND license_expire_date >=
TO_DATE('01-JAN-19', 'DD-MM-YY') AND license_expire_date <=
TO_DATE('31-DEC-19', 'DD-MM-YY')
```

```
GROUP BY zipcode
ORDER BY 1 ASC


ZIPCODE   number of poodles
10001               8
10002               3
10003               6
10004               2
10005               1
```

7. Identify the most popular breeds near Queens College for licenses issued in 2019. Display the breed and number of dogs. Display the most popular breed first.

```
SELECT breed_name, COUNT(1)"popular breeds near Queens College"
FROM nyc_dog
WHERE license_expire_date >= TO_DATE('01-JAN-19', 'DD-MM-YY') AND
license_expire_date <= TO_DATE('31-DEC-19', 'DD-MM-YY')
      AND ZIPCODE = '11367'
GROUP BY breed_name
ORDER BY 2 DESC

BREED_NAME     popular breeds near Queens College
Unknown             42
Yorkshire Terrier   24
Shih Tzu            19
Shiba Inu           14
Pomeranian          13
```

8. Identify the oldest dogs. Display the animal's name, gender, breed, zipcode, and borough. Display the oldest dog first.

```
SELECT animal_name,animal_gender,breed_name,zipcode
FROM nyc_dog
ORDER BY animal_month_birth ASC

ANIMAL_NAME    ANIMAL_GENDER  BREED_NAME                    ZIPCODE
MOTEK               M         Cavalier King Charles Spaniel 10024
BONNIE              F         Schnauzer, Miniature          11354
NINA                F         Chihuahua                     11354
LENNY               M         Miniature Schnauzer           11205
BODHI               M         French Bulldog                11103
```

Name: Ching Kung Lin Class: CS331 Date: 3/25 Assignment number: 2

9. Identify the zipcodes with the most dogs for licenses issued in 2019. Display the zipcode, borough and number of dogs. Display the most popular zipcode first. Where is this zipcode? Include a picture from Google Maps.

```
SELECT ZIPCODE, COUNT(1)"NUMBER OF DOGS"
FROM nyc_dog
WHERE license_expire_date >= TO_DATE('01-JAN-19', 'DD-MM-YY') AND
license_expire_date <= TO_DATE('31-DEC-19', 'DD-MM-YY')
GROUP BY ZIPCODE
ORDER BY 2 DESC
```

ZIPCODE	NUMBER OF DOGS
10025	1863
10023	1457
10024	1449
11201	1425
10009	1387

10025 - GREAT NECK

10. Perform an analysis of your own choosing.

Name: Ching Kung Lin Class: CS331 Date: 3/25 Assignment number: 2

OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST
SELECT STATEMENT			81195	822
SORT		ORDER BY	81195	822
HASH		GROUP BY	81195	822
FILTER				
Filter Predicates				
TO_DATE('31-DEC-19','DD-MM-YY')>=TO_DATE('01-JAN-19','DD-MM-YY')				
TABLE ACCESS	NYC_DOG	FULL	81195	811
Filter Predicates				
AND				
LICENSE_EXPIRE_DATE>=TO_DATE('01-JAN-19','DD-MM-YY')				
LICENSE_EXPIRE_DATE<=TO_DATE('31-DEC-19','DD-MM-YY')				
Other XML				
{info}				
info type="db_version"				
18.0.0.0				
info type="parse_schema"				
"SYSTEM"				
info type="dynamic_sampling" note="y"				
info type="plan_hash_full"				
2935954389				
info type="plan_hash"				
3753312906				
info type="plan_hash_2"				
2935954389				
{hint}				
USE_HASH_AGGREGATION(@"SEL$1")				
FULL(@"SEL$1" "NYC_DOG"@"SEL$1")				
OUTLINE_LEAF(@"SEL$1")				
ALL_ROWS				
DB_VERSION('18.1.0')				
OPTIMIZER_FEATURES_ENABLE('18.1.0')				
IGNORE_OPTIM_EMBEDDED_HINTS				

11. Display the structure of ALL tables using SQL Describe.

```
Name                  Null?    Type
--------------------- -------- -------------
ANIMAL_ID             NOT NULL NUMBER
ANIMAL_NAME                    VARCHAR2(255)
ANIMAL_GENDER                  VARCHAR2(255)
ANIMAL_MONTH_BIRTH             NUMBER
BREED_NAME                     VARCHAR2(255)
ZIPCODE                        VARCHAR2(255)
LICENSE_ISSUED_DATE            DATE
LICENSE_EXPIRE_DATE            DATE

Name     Null? Type
-------- ----- ------------
ZIPCODE        VARCHAR2(10)
CITY           VARCHAR2(50)
COUNTY         VARCHAR2(50)
ZIP_TYPE       VARCHAR2(50)
```

12. Display the version of Oracle. Enter:
SELECT *
FROM v$version;

```
Oracle Database 18c Express Edition Release 18.0.0.0.0 - Production
     "Oracle Database 18c Express Edition Release 18.0.0.0.0 -
Production
Version 18.4.0.0.0" Oracle Database 18c Express Edition Release
18.0.0.0.0 - Production  0
```

Name: Ching Kung Lin Class: CS331 Date: 3/25 Assignment number: 2