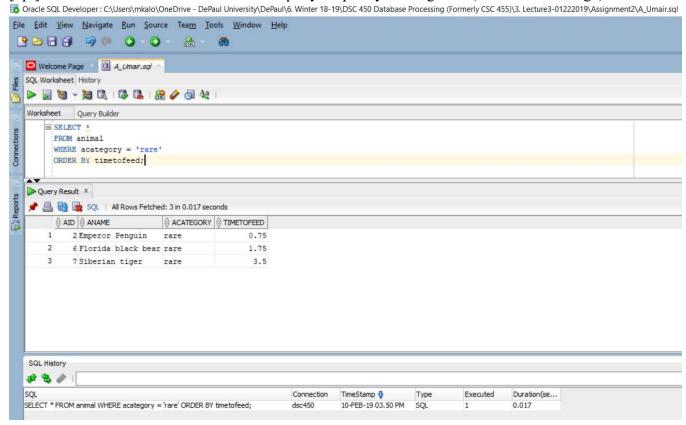# DSC 450 Winter Assignment-2
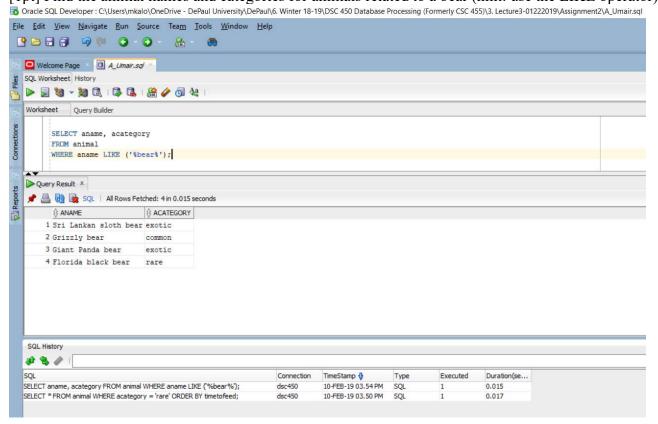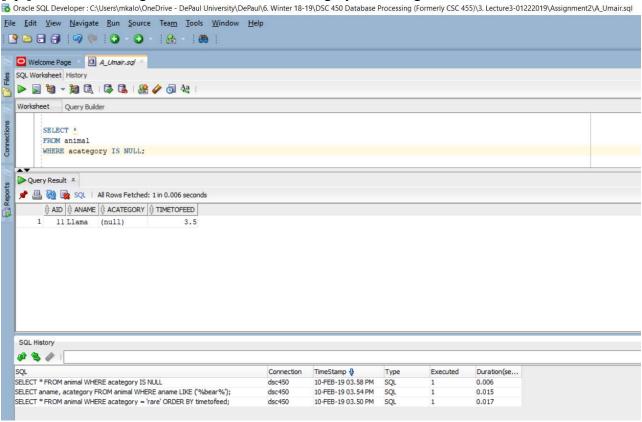## Name: Umair Chaanda
Part: 1

1. [1pt] Find all the rare animals and sort the query output by feeding time (from small to large).

2. [1pt] Find the animal names and categories for animals related to a bear (hint: use the LIKE operator).

3. [1pt] Return the listings for all animals whose category is missing in the database.

4. [1pt] Find the rarity rating of all animals that require between 1 and 2.5 hours to be fed.

```
SELECT *
FROM animal
WHERE timetofeed BETWEEN 1 AND 2.5;
```

Query Result ×

All Rows Fetched: 4 in 0.025 seconds

	AID	ANAME	ACATEGORY	TIMETOFEED
1	3	Sri Lankan sloth bear	exotic	2.5
2	5	Giant Panda bear	exotic	1.5
3	6	Florida black bear	rare	1.75
4	9	South China tiger	exotic	2.25

SQL History

SQL	Connection	TimeStamp	Type	Executed	Duration(seconds)
SELECT * FROM animal WHERE timetofeed BETWEEN 1 AND 2.5;	dsc450	10-FEB-19 03.59 PM	SQL	1	0.025
SELECT * FROM animal WHERE acategory IS NULL	dsc450	10-FEB-19 03.58 PM	SQL	1	0.006
SELECT aname, acategory FROM animal WHERE aname LIKE ('%bear%');	dsc450	10-FEB-19 03.54 PM	SQL	1	0.015
SELECT * FROM animal WHERE acategory = 'rare' ORDER BY timetofeed;	dsc450	10-FEB-19 03.50 PM	SQL	1	0.017

5. [1pt] Find the names of the animals that are related to the tiger and are not common.

```
SELECT aname, acategory
FROM animal
WHERE aname LIKE ('%tiger%')
AND acategory != 'common';
```

Query Result ×

All Rows Fetched: 2 in 0.029 seconds

	ANAME	ACATEGORY
1	Siberian tiger	rare
2	South China tiger	exotic

SQL History

SQL	Connection	TimeStamp	Type	Executed	Duration(seconds)
SELECT aname, acategory FROM animal WHERE aname LIKE ('%tiger%') AND acategory != 'common';	dsc450	10-FEB-19 04.01 PM	SQL	1	0.029
SELECT * FROM animal WHERE timetofeed BETWEEN 1 AND 2.5;	dsc450	10-FEB-19 03.59 PM	SQL	1	0.025
SELECT * FROM animal WHERE acategory IS NULL	dsc450	10-FEB-19 03.58 PM	SQL	1	0.006
SELECT aname, acategory FROM animal WHERE aname LIKE ('%bear%');	dsc450	10-FEB-19 03.54 PM	SQL	1	0.015
SELECT * FROM animal WHERE acategory = 'rare' ORDER BY timetofeed;	dsc450	10-FEB-19 03.50 PM	SQL	1	0.017

6. [1pt] Find the names of the animals that are <u>not</u> related to the tiger.

File   Edit   View   Navigate   Run   Source   Team   Tools   Window   Help

Welcome Page   A_Umair.sql

SQL Worksheet   History

Worksheet   Query Builder

```
SELECT aname
FROM animal
WHERE aname NOT LIKE ('%tiger%');
```

Query Result x

SQL   All Rows Fetched: 8 in 0.018 seconds

	ANAME
1	Galapagos Penguin
2	Emperor Penguin
3	Sri Lankan sloth bear
4	Grizzly bear
5	Giant Panda bear
6	Florida black bear
7	Alpaca
8	Llama

SQL History

SQL	Connection	TimeStamp	Type	Executed	Duration(seconds)
SELECT aname FROM animal WHERE aname NOT LIKE ('%tiger%');	dsc450	10-FEB-19 04.03 PM	SQL	1	0.018
SELECT aname, acategory FROM animal WHERE aname LIKE ('%tiger%') AND acategory != 'common';	dsc450	10-FEB-19 04.01 PM	SQL	1	0.029
SELECT * FROM animal WHERE timetofeed BETWEEN 1 AND 2.5;	dsc450	10-FEB-19 03.59 PM	SQL	1	0.025
SELECT * FROM animal WHERE acategory IS NULL	dsc450	10-FEB-19 03.58 PM	SQL	1	0.006
SELECT aname, acategory FROM animal WHERE aname LIKE ('%bear%');	dsc450	10-FEB-19 03.54 PM	SQL	1	0.015
SELECT * FROM animal WHERE acategory = 'rare' ORDER BY timetofeed;	dsc450	10-FEB-19 03.50 PM	SQL	1	0.017

7. [1pt] Find the minimum and maximum feeding time amongst all the animals in the zoo.

File   Edit   View   Navigate   Run   Source   Team   Tools   Window   Help

Welcome Page   A_Umair.sql

SQL Worksheet   History

Worksheet   Query Builder

```
SELECT min(timetofeed) AS minimum, max(timetofeed) AS maximum
FROM animal;
```

Query Result x

SQL   All Rows Fetched: 1 in 0.084 seconds

	MINIMUM	MAXIMUM
1	0.25	3.5

SQL History

SQL	Connection	TimeStamp	Type	Executed	Duration(seconds)
SELECT min(timetofeed) AS minimum, max(timetofeed) AS maximum FROM animal;	dsc450	10-FEB-19 04.04 PM	SQL	1	0.084
SELECT aname FROM animal WHERE aname NOT LIKE ('%tiger%');	dsc450	10-FEB-19 04.03 PM	SQL	1	0.018
SELECT aname, acategory FROM animal WHERE aname LIKE ('%tiger%') AND acategory != 'common';	dsc450	10-FEB-19 04.01 PM	SQL	1	0.029
SELECT * FROM animal WHERE timetofeed BETWEEN 1 AND 2.5;	dsc450	10-FEB-19 03.59 PM	SQL	1	0.025
SELECT * FROM animal WHERE acategory IS NULL	dsc450	10-FEB-19 03.58 PM	SQL	1	0.006
SELECT aname, acategory FROM animal WHERE aname LIKE ('%bear%');	dsc450	10-FEB-19 03.54 PM	SQL	1	0.015
SELECT * FROM animal WHERE acategory = 'rare' ORDER BY timetofeed;	dsc450	10-FEB-19 03.50 PM	SQL	1	0.017

8. [3pt] Find the average feeding time for all of the rare animals.

Oracle SQL Developer : C:\Users\mkalo\OneDrive - DePaul University\DePaul\6. Winter 18-19\DSC 450 Database Processing (Formerly CSC 455)\3. Lecture3-01222019\Assignment2\A_Umair.sql

```sql
SELECT avg(timetofeed) AS avg_feed_time_rare
FROM animal
WHERE acategory = 'rare';
```

Query Result ×

All Rows Fetched: 1 in 0.043 seconds

	AVG_FEED_TIME_RARE
1	2

SQL History

SQL	Connection	TimeStamp	Type	Executed	Duration(seconds)
SELECT avg(timetofeed) AS avg_feed_time_rare FROM animal WHERE acategory = 'rare';	dsc450	10-FEB-19 04.06 PM	SQL	1	0.043
SELECT min(timetofeed) AS minimum, max(timetofeed) AS maximum FROM animal;	dsc450	10-FEB-19 04.04 PM	SQL	1	0.084
SELECT aname FROM animal WHERE aname NOT LIKE ('%tiger%');	dsc450	10-FEB-19 04.03 PM	SQL	1	0.018
SELECT aname, acategory FROM animal WHERE aname LIKE ('%tiger%') AND acategory != 'common';	dsc450	10-FEB-19 04.01 PM	SQL	1	0.029
SELECT * FROM animal WHERE timetofeed BETWEEN 1 AND 2.5;	dsc450	10-FEB-19 03.59 PM	SQL	1	0.025
SELECT * FROM animal WHERE acategory IS NULL	dsc450	10-FEB-19 03.58 PM	SQL	1	0.006
SELECT aname, acategory FROM animal WHERE aname LIKE ('%bear%');	dsc450	10-FEB-19 03.54 PM	SQL	1	0.015
SELECT * FROM animal WHERE acategory = 'rare' ORDER BY timetofeed;	dsc450	10-FEB-19 03.50 PM	SQL	1	0.017

9. [5pt] List zookeepers earning the least while feeding animals.


```sql
SELECT zname, MIN(earning)
FROM
    (SELECT zookeeper.zname, (zookeeper.hourlyrate*animal.timetofeed) AS earning
        FROM animal
        INNER JOIN handles
        JOIN zookeeper
        ON handles.zookeepid = zookeeper.zid
        ON animal.aid = handles.animalid
    )
GROUP BY zname;
```

Query Result ×

All Rows Fetched: 3 in 0.022 seconds

	ZNAME	MIN(EARNING)
1	Tina Fey	525
2	Jim Carrey	125
3	Rob Schneider	62.5

SQL History

SQL	Connection	TimeStamp	Type	Executed	Duration(seconds)
SELECT zname, MIN(earning) FROM (SELECT zookeeper.zname, (zookeeper.hourlyrate*animal.timetofe...	dsc450	10-FEB-19 04.07 PM	SQL	1	0.022
SELECT avg(timetofeed) AS avg_feed_time_rare FROM animal WHERE acategory = 'rare';	dsc450	10-FEB-19 04.06 PM	SQL	1	0.043
SELECT min(timetofeed) AS minimum, max(timetofeed) AS maximum FROM animal;	dsc450	10-FEB-19 04.04 PM	SQL	1	0.084
SELECT aname FROM animal WHERE aname NOT LIKE ('%tiger%');	dsc450	10-FEB-19 04.03 PM	SQL	1	0.018
SELECT aname, acategory FROM animal WHERE aname LIKE ('%tiger%') AND acategory != 'common';	dsc450	10-FEB-19 04.01 PM	SQL	1	0.029
SELECT * FROM animal WHERE timetofeed BETWEEN 1 AND 2.5;	dsc450	10-FEB-19 03.59 PM	SQL	1	0.025
SELECT * FROM animal WHERE acategory IS NULL	dsc450	10-FEB-19 03.58 PM	SQL	1	0.006
SELECT aname, acategory FROM animal WHERE aname LIKE ('%bear%');	dsc450	10-FEB-19 03.54 PM	SQL	1	0.015
SELECT * FROM animal WHERE acategory = 'rare' ORDER BY timetofeed;	dsc450	10-FEB-19 03.50 PM	SQL	1	0.017

10. [5pt] Name zookeepers handling at least 4 animals.

SQL Worksheet in Oracle SQL Developer:

```sql
SELECT zname, zookeepid
FROM zookeeper
INNER JOIN handles
ON zookeeper.zid=handles.zookeepid
GROUP BY zname, zookeepid
HAVING count(zookeepid) >=4;
```

Query Result — All Rows Fetched: 1 in 0.004 seconds

ZNAME	ZOOKEEPID
1 Rob Schneider	3

SQL History

SQL	Connection	TimeStamp	Type	Executed	Duration(seconds)
SELECT zname, zookeepidFROM zookeeper INNER JOIN handlesON zookeeper.zid=handles.zookeepidGRO...	dsc450	10-FEB-19 04.09 PM	SQL	1	0.004
SELECT zname, MIN(earning) FROM (SELECT zookeeper.zname, (zookeeper.hourlyrate*animal.timetofe...	dsc450	10-FEB-19 04.07 PM	SQL	1	0.022
SELECT avg(timetofeed) AS avg_feed_time_rare FROM animal WHERE acategory = 'rare';	dsc450	10-FEB-19 04.06 PM	SQL	1	0.043
SELECT min(timetofeed) AS minimum, max(timetofeed) AS maximum FROM animal;	dsc450	10-FEB-19 04.04 PM	SQL	1	0.084
SELECT aname FROM animal WHERE aname NOT LIKE ('%tiger%');	dsc450	10-FEB-19 04.03 PM	SQL	1	0.018
SELECT aname, acategory FROM animal WHERE aname LIKE ('%tiger%') AND acategory != 'common';	dsc450	10-FEB-19 04.01 PM	SQL	1	0.029
SELECT * FROM animal WHERE timetofeed BETWEEN 1 AND 2.5;	dsc450	10-FEB-19 03.59 PM	SQL	1	0.025
SELECT * FROM animal WHERE acategory IS NULL	dsc450	10-FEB-19 03.58 PM	SQL	1	0.006
SELECT aname, acategory FROM animal WHERE aname LIKE ('%bear%');	dsc450	10-FEB-19 03.54 PM	SQL	1	0.015
SELECT * FROM animal WHERE acategory = 'rare' ORDER BY timetofeed;	dsc450	10-FEB-19 03.50 PM	SQL	1	0.017