SEMESTER PROJECT

Subject area: ***Zoo Database***

Implementation:

The database design should be implemented using VISIO or similar diagraming program, APEX or NCC's oracle database. Use the attached spreadsheet *"zoo.xlsx"* for all diagram creation and DDL and DML.

The deliverables include:

1. Normalization Diagram (20%) Create a 1NF, 2NF and 3NF diagram from the spreadsheet *"zoo.xlsx"*. A 2NF diagram may not be needed.

Please see the PDF diagram attached in the 1NF_Files and 3NF_Files folders

2. E-R diagram (20%) Create an EERD from the spreadsheet *"zoo.xlsx"* and the Normalization Diagram in step 1. use the following business rules:
   - Employees are either Volunteers or Paid Employees but not both.
   - A Paid Employee is either a Contractor or works directly for the zoo, but can't be both.
   - Everyone is assigned a department, and assigned to a building or enclosure.

Please see the PDF diagram attached in the Q2_EERD_Files folder

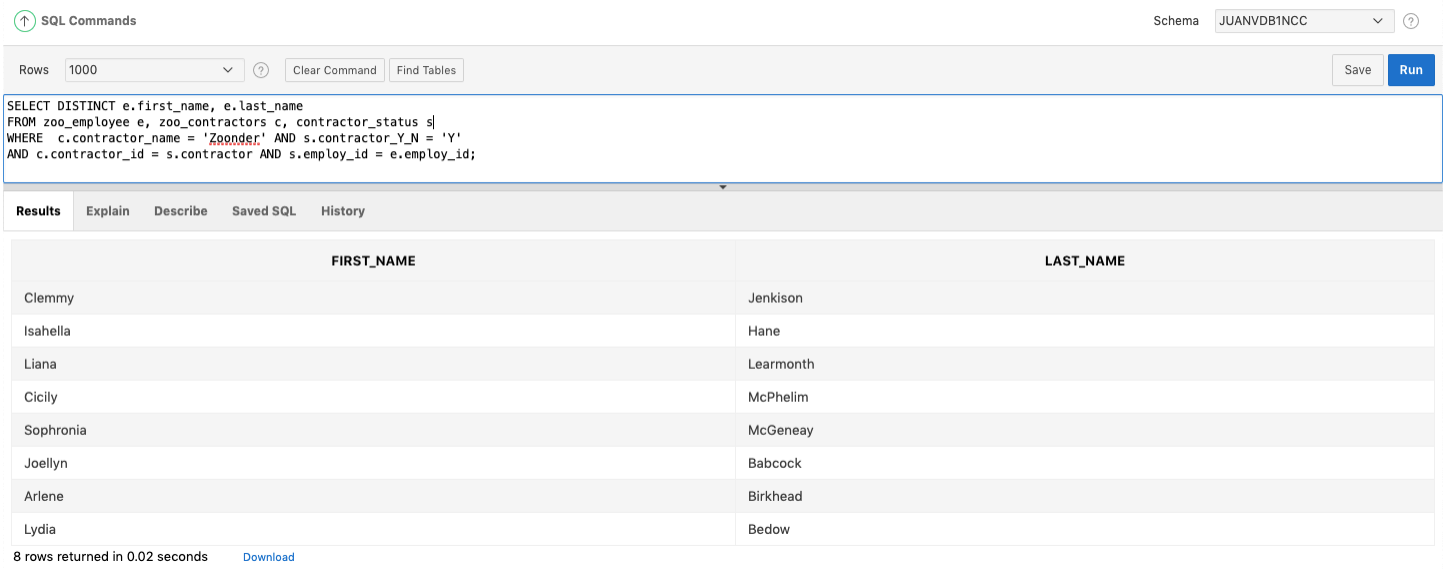
3. Data Definition Language (DDL)/Data Manipulation Language (DML) (20%):
   - CREATE TABLE and INSERT INTO statements.

Please see the SQL files in the Q3_ZOO_PRIMARY_TABLES & Q3_ZOO_ADD_TABLES files

4. SQL reports (40%) SQL code and copies of the output for each of the following situations:

1. List the first name and last name of all employees that work for the contractor Zoonder.

```
SELECT DISTINCT e.first_name, e.last_name
FROM zoo_employee e, zoo_contractors c, contractor_status s
WHERE  c.contractor_name = 'Zoonder' AND s.contractor_Y_N = 'Y'
AND c.contractor_id = s.contractor AND s.employ_id = e.employ_id;
```

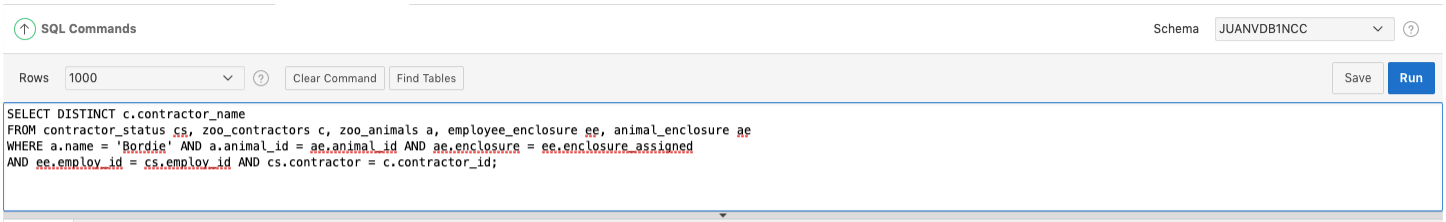


FIRST_NAME	LAST_NAME
Clemmy	Jenkison
Isahella	Hane
Liana	Learmonth
Cicily	McPhelim
Sophronia	McGeneay
Joellyn	Babcock
Arlene	Birkhead
Lydia	Bedow

8 rows returned in 0.02 seconds Download

2. Who is the veterinarian (contractor) that cares for Bordie?

```
SELECT DISTINCT c.contractor_name
FROM contractor_status cs, zoo_contractors c, zoo_animals a, employee_enclosure ee, animal_enclosure ae
WHERE a.name = 'Bordie' AND a.animal_id = ae.animal_id AND ae.enclosure = ee.enclosure_assigned
AND ee.employ_id = cs.employ_id AND cs.contractor = c.contractor_id;
```

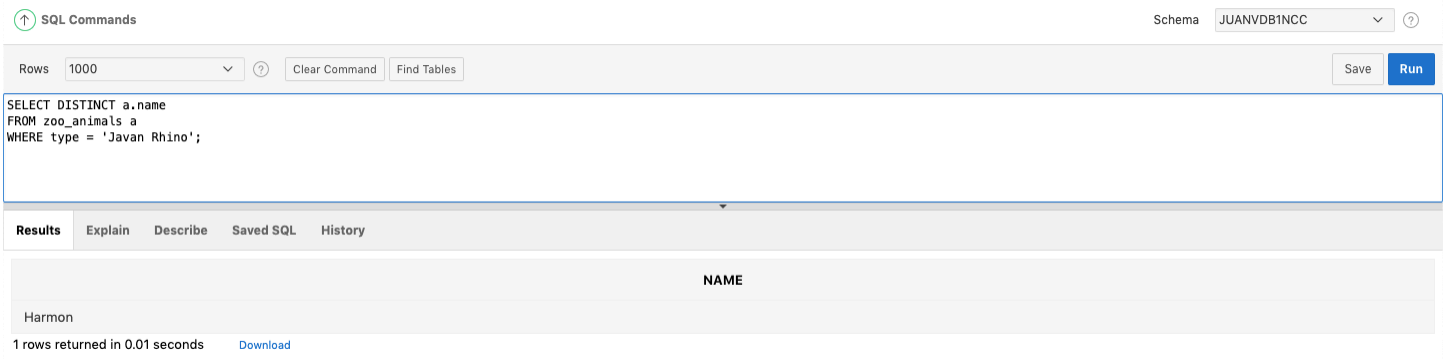


CONTRACTOR_NAME
Fliptune
Thoughtstorm

2 rows returned in 0.22 seconds Download

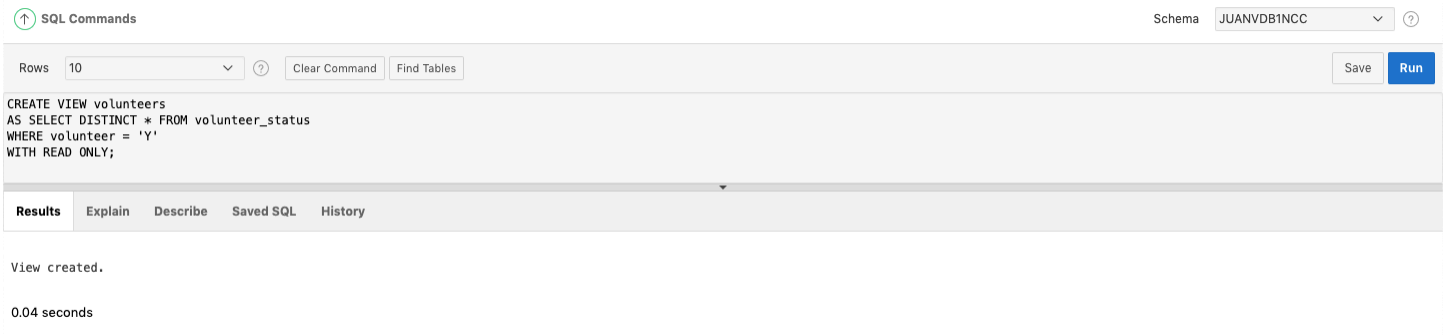
3. What is the name of the only Javan Rhino?

```
SELECT DISTINCT a.name
FROM zoo_animals a
WHERE type = 'Javan Rhino';
```



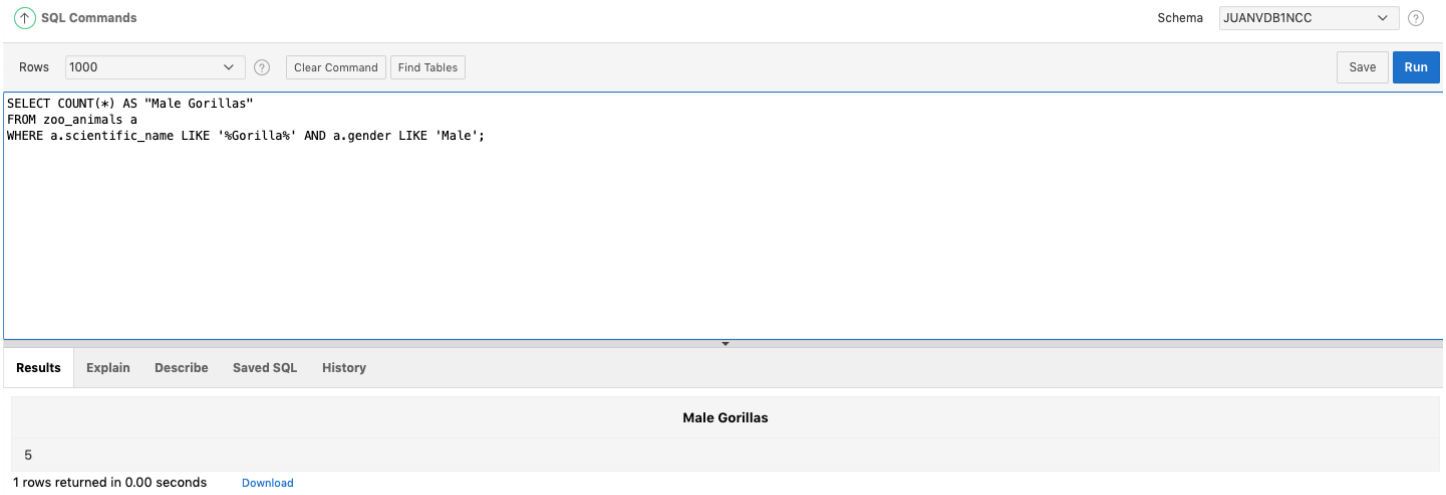
4. Create a view of all the volunteers.

```
CREATE VIEW volunteers
AS SELECT DISTINCT * FROM volunteer_status
WHERE volunteer = 'Y'
WITH READ ONLY;
```



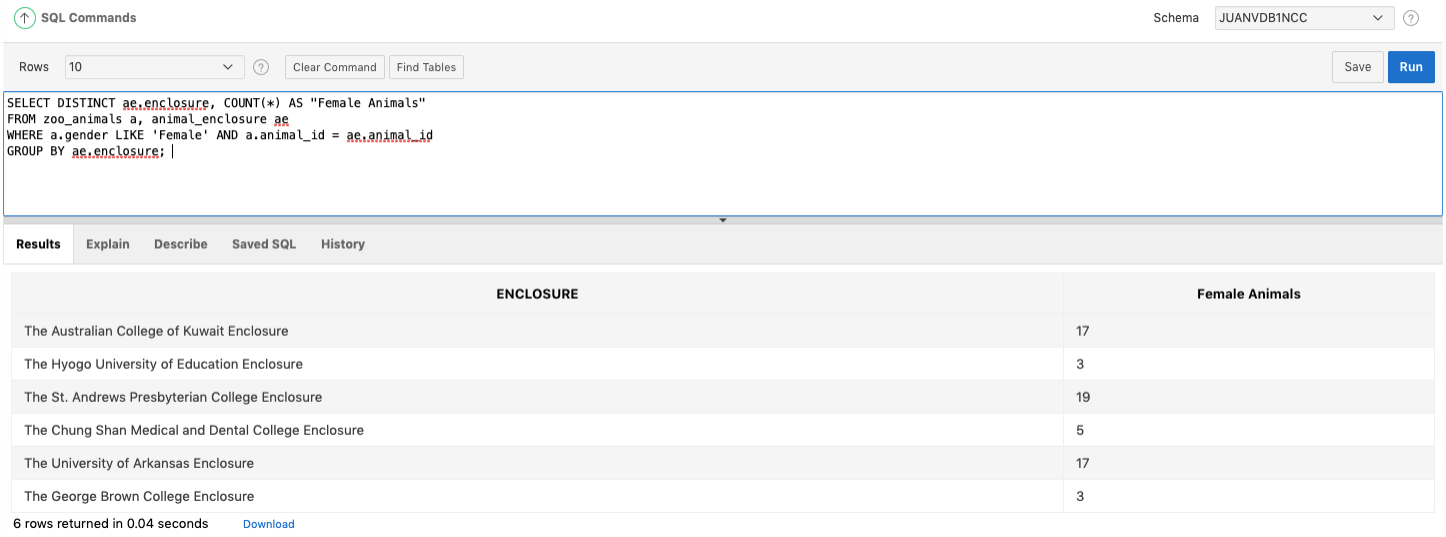
5. How many male gorillas are there?

```
SELECT COUNT(*) AS "Male Gorillas"
FROM zoo_animals a
WHERE a.scientific_name LIKE '%Gorilla%' AND a.gender LIKE 'Male';
```



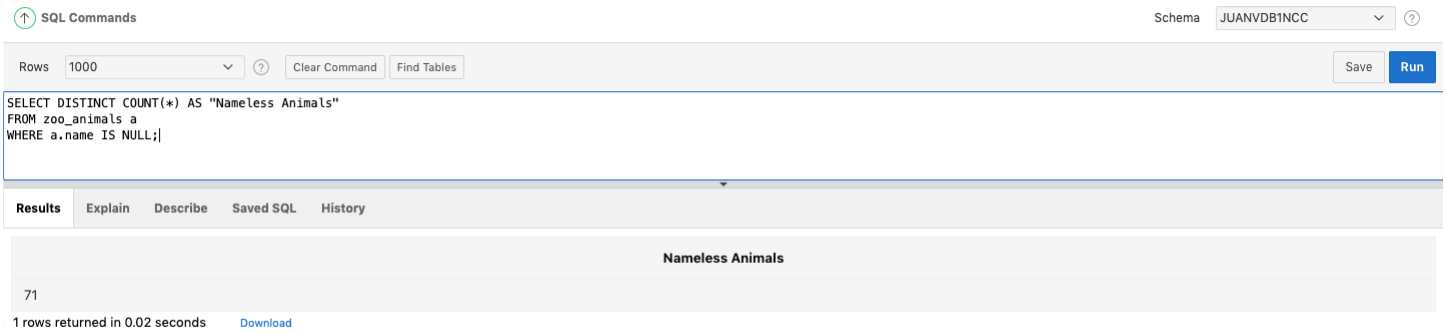
6. List the name of the enclosure and the number of female animals in each.

```
SELECT DISTINCT ae.enclosure, COUNT(*) AS "Female Animals"
FROM zoo_animals a, animal_enclosure ae
WHERE a.gender LIKE 'Female' AND a.animal_id = ae.animal_id
GROUP BY ae.enclosure;
```



7. How many animals do not have names?

```
SELECT DISTINCT COUNT(*) AS "Nameless Animals"
FROM zoo_animals a
WHERE a.name IS NULL;
```



8. List the employee that lives in California and works as a contractor for Zoonder?

```
SELECT DISTINCT e.employ_id, e.first_name, e.last_name
FROM zoo_employee e, zoo_contractors c, contractor_status cs
WHERE c.contractor_name = 'Zoonder' AND c.contractor_id = cs.contractor
AND cs.contractor_y_n = 'Y' AND cs.employ_id = e.employ_id AND e.state = 'California';
```