**CS 550 – Project** Smitha J Desai

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**SQL Queries**

1)List the cabins that contain animals that eat some other animal in that cabin.

Select C.sname , C.cabinnum

From Cabin C

Where EXISTS (Select \*

From PreysOn P

Where EXISTS(Select A.sname, A.cabinnum

From Animal A

Where A.aname = P.predatorname AND C.sname = A.sname AND C.cabinnum = A.cabinnum

INTERSECT

Select A.sname, A.cabinnum

From Animal A

Where A.aname = P.preyname AND C.sname = A.sname AND C.cabinnum = A.cabinnum));

2) List the pairs of animals that eat each other.

Select P1.preyname, P1.predatorname

From PreysOn P1, PreysOn P2

Where P1.preyname = P2.predatorname

AND P2.preyname = P1.predatorname

Group By P1.preyname, P1.predatorname

Having P1.preyname >= P1.predatorname;

3) List the cabins that are over capacity (i.e., too many animals).

Select C.sname, C.cabinnum

From Cabin C

Where C.capacity < (Select COUNT(A.aname)

From Animal A

Where A.sname = C.sname AND A.cabinnum = C.cabinnum);

4) List the percent of carnivores and non-carnivores for each ship.

Select S.sname, (((Select COUNT(\*) From Animal A1 Where A1.sname = S.sname AND A1.iscarn = 'T')\*100)

/(Select COUNT(\*) From Animal A2 Where A2.sname = S.sname)) As Percentage\_Carnivore,

(((Select COUNT(\*) From Animal A3 Where A3.sname = S.sname AND A3.iscarn = 'F')\*100)

/(Select COUNT(\*) From Animal A4 Where A4.sname = S.sname)) As Percentage\_NonCarnivore

From Ship S, Animal A

Where S.sname = A.sname

Group By S.sname;

5) List the dieticians involved with banana menus.  (That is, they approved any food appearing on a menu which has a food named �banana�).

Select dietician

From OnMenu

Where fname = 'banana';

6) List the cabins, and the foods eaten by the animals in that cabin.

If a cabin is empty, list it anyhow.

Select C.sname, C.cabinnum, O.fname

From Cabin C Left Outer Join Animal A on C.sname = A.sname AND A.cabinnum = C.cabinnum

Left Outer Join Eats E on E.aname = A.aname Left Outer Join OnMenu O on O.menuid = E.menuid

Order By C.sname, C.cabinnum;

7) Find a heaviest bird without using an aggregation function such as MAX.

Select A.aname

From Animal A

Where A.type = 'bird' AND A.weight >= ALL(Select A1.weight

From Animal A1

Where A1.type='bird');

8) Which ships have at least one animal in all cabins?

Select S.sname

From Ship S

Where S.sname Not In (Select C.sname

From Cabin C

Where C.sname = S.sname AND Not Exists (Select \*

From Animal A

Where A.sname = C.sname AND C.cabinnum = A.cabinnum));

9) List the animal type with the lowest average weight, and the animals in that type.

Select A.type, A.aname

From Animal A

Where (Select AVG(A1.weight)

From Animal A1

Where A.type = A1.type) <= All (Select AVG(A2.weight)

From Animal A2

Group By A2.type)

Group By A.type, A.aname;

10) List animals who have fewer calories in their breakfast than the number of animals on their ship.

Select A.aname

From Animal A, Eats E, OnMenu O, Food F

Where A.aname = E.aname AND E.mealtype = 'breakfast' AND E.menuid = O.menuid AND O.fname = F.fname

group by A.aname, A.sname

Having sum(F.calories) < (Select COUNT(A1.aname)

From Animal A1

Where A1.sname = A.sname);