-- Q1. You are given four datasets pets.csv, owners.csv, proceduredetails.csv,

-- proedurehistory.csv. Upload all of them in your SQL server. Find the primary key

-- in each of the tables and write a query to: (Hint: Use joins)

**Q1. Extract information on pet names along with their owner names in the**

**same table.**

# Answer Q1.a

SELECT p.Name, Concat\_ws(' ',o.Name,o.Surname) AS Owner\_Name

FROM Pets AS p

INNER JOIN Owners AS o ON p.OwnerID = o.OwnerID

-- b) Extract information for those pets whose owners live in either “Grand

-- Rapids” or “Southfield”.

# Answer Q1.b

SELECT p.Name, Concat\_ws(' ',o.Name,o.Surname) AS Owner\_Name, o.City As City

FROM Pets AS p

INNER JOIN Owners AS o ON p.OwnerID = o.OwnerID

WHERE o.City = 'Grand Rapids' OR o.City = 'Southfield'

-- c) Find the pet’s information which had a procedure performed

SELECT p.PetID, p.Name, p.Kind, ph.Date, ph.ProcedureType

FROM pets AS p

INNER JOIN ProceduresHistory AS ph ON p.PetID = ph.PetID

SELECT p.PetID,ph.ProcedureSubCode

FROM pets AS p

Inner JOIN ProceduresHistory as ph ON p.PetID = ph.PetID

-- d) Extract information on pet ids along with a description of the procedure

-- performed on them

SELECT r.PetID,pd.\*

FROM (SELECT p.PetID,ph.ProcedureSubCode AS psc

FROM pets AS p

Inner JOIN ProceduresHistory as ph ON p.PetID = ph.PetID) AS r

INNER JOIN ProceduresDetails as pd ON r.psc = pd.ProcedureSubCode

-- e) Same as d but only keep those pet ids which are present in pets.csv

SELECT r.PetID,pd.\*

FROM (SELECT p.PetID,ph.ProcedureSubCode AS psc

FROM pets AS p

Inner JOIN ProceduresHistory as ph ON p.PetID = ph.PetID) AS r

INNER JOIN ProceduresDetails as pd ON r.psc = pd.ProcedureSubCode

-- f) Find the sum of the price incurred on each pet’s procedure.

SELECT y.PetID,Concat(SUM(Price),' ','Rs.') AS Total\_Incurred

FROM (SELECT ph.PetID,ph.ProcedureSubCode,pd.Price

FROM ProceduresHistory as ph

INNER JOIN ProceduresDetails as pd ON ph.ProcedureSubCode = pd.ProcedureSubCode

) AS y

GROUP BY y.PetID

-- g) Same as f but only consider those pet’s whose names start with ‘C’

SELECT l.\*,pt.Name

FROM (SELECT y.PetID,Concat(SUM(Price),' ','Rs.') AS Total\_Incurred

FROM (SELECT ph.PetID,ph.ProcedureSubCode,pd.Price

FROM ProceduresHistory as ph

INNER JOIN ProceduresDetails as pd ON ph.ProcedureSubCode = pd.ProcedureSubCode

) AS y

GROUP BY y.PetID) AS l

INNER JOIN pets as pt ON l.PetID = pt.PetID

WHERE pt.Name Like 'C%'

-- h) Same as f but only consider those pet’s whose owner’s name starts with

-- ‘T’

SELECT l.\*,pt.Name,ow.Name AS Owner\_Name

FROM (SELECT y.PetID,Concat(SUM(Price),' ','Rs.') AS Total\_Incurred

FROM (SELECT ph.PetID,ph.ProcedureSubCode,pd.Price

FROM ProceduresHistory as ph

INNER JOIN ProceduresDetails as pd ON ph.ProcedureSubCode = pd.ProcedureSubCode

) AS y

GROUP BY y.PetID) AS l

INNER JOIN pets as pt ON l.PetID = pt.PetID

INNER JOIN owners as ow ON pt.OwnerID = ow.OwnerID

Where ow.Name Like 'T%'

-- i) Find the owner names who own more than 1 pet

SELECT \* FROM Owners

SELECT d.OwnerID,o.Name,d.NnumberOfPetsOwned

FROM (SELECT p.OwnerID,COUNT(p.OwnerID) as NnumberOfPetsOwned

FROM pets as p

GROUP BY p.OwnerID) as d

INNER JOIN owners as o ON d.OwnerID = o.OwnerID

-- j) Find the count of procedures performed on each pet who are Dogs

SELECT p.OwnerID,p.Name ,l.pId as petOwns

FROM (SELECT COUNT(petID) as pId,petID

FROM ProceduresHistory

Group By PetID ) as l

INNER JOIN pets as p ON l.petID = p.PetID

-- k) Find the average price incurred by each owner for their pet’s procedure

SELECT p.OwnerID,p.Name ,l.pId as petOwns

FROM (SELECT COUNT(petID) as pId,petID

FROM ProceduresHistory

Group By PetID ) as l

INNER JOIN pets as p ON l.petID = p.PetID

**Q2. What is the difference between a natural join and a cross join?**

Answer 2 :

1. Natural Join joins two tables based on same attribute name and datatypes. And Cross Join will produce cross or cartesian product of two tables .
2. Syntax :

Natural Join Syntax:  
SELECT \* FROM table1 NATURAL JOIN table2;

Cross Join Syntax:  
SELECT \* FROM table1 CROSS JOIN table2;

**Q3. What is the difference between a natural join and inner join?**

Answer 3 :

1. Natural Join joins two tables based on same attribute name and datatypes. And Inner Join , returns Only that value which Have Same attribute with in that column Where we joining
2. Syntax :

Natural Join Syntax:  
SELECT \* FROM table1 NATURAL JOIN table2;

Cross Join Syntax:  
SELECT \* FROM table1 INNER JOIN table2 ON table1.column = table2.column;

**Q4. Determine the no. of records that we will get when you perform**

DROP TABLE table2

CREATE TABLE table1(

A int,

B varchar(5)

)

CREATE TABLE table2(

A int,

C varchar(5)

)

INSERT INTO table1

VALUES (1,'B1'),

(1,'B2'),

(1,'B3'),

(3,'B4'),

(3,'B5'),

(5,'B6'),

(5,'B7'),

(5,'B8'),

(5,'B9')

INSERT INTO table2

VALUES (1,'C1'),

(1,'C2'),

(2,'C3'),

(3,'C4'),

(3,'C5'),

(3,'C6'),

(4,'C7'),

(4,'C8'),

(5,'C9')