**PROJECT**

**Database schema:**

Diagram, schematic

Description automatically generated

**Problem Statement 1:** A company needs to set up 3 new pharmacies, they have come up with an idea that the pharmacy can be set up in cities where the pharmacy-to-prescription ratio is the lowest and the number of prescriptions should exceed 100. Assist the company to identify those cities where the pharmacy can be set up.

WITH citywise\_cnt AS

(SELECT a.city, COUNT(DISTINCT pm.pharmacyid) AS pharmacy\_cnt, COUNT(prescriptionid) AS prescription\_cnt

FROM pharmacy pm

INNER JOIN address a USING(addressid)

INNER JOIN prescription ps USING(pharmacyid)

GROUP BY a.city)

SELECT \*, (pharmacy\_cnt / prescription\_cnt) AS pharmacy\_to\_prescription

FROM citywise\_cnt

WHERE prescription\_cnt > 100

ORDER BY pharmacy\_to\_prescription

LIMIT 3;

**Problem Statement 2:** The State of Alabama (AL) is trying to manage its healthcare resources more efficiently. For each city in their state, they need to identify the disease for which the maximum number of patients have gone for treatment. Assist the state for this purpose.

Note: The state of Alabama is represented as AL in Address Table.

WITH ct\_wise\_pnt\_cnt AS

(SELECT a.city, d.diseasename, COUNT(DISTINCT pt.patientid) AS patient\_cnt

FROM person pn

INNER JOIN patient pt ON pn.personid = pt.patientid

INNER JOIN address a USING(addressid)

INNER JOIN treatment t USING(patientid)

INNER JOIN disease d USING(diseaseid)

WHERE a.state = 'AL'

GROUP BY a.city, d.diseasename)

SELECT \*

FROM ct\_wise\_pnt\_cnt out\_tbl

WHERE patient\_cnt = (SELECT MAX(patient\_cnt)

FROM ct\_wise\_pnt\_cnt

WHERE city= out\_tbl.city);

**Problem Statement 3:** The healthcare department needs a report about insurance plans. The report is required to include the insurance plan, which was claimed the most and least for each disease. Assist to create such a report.

*# APPROACH 1*

WITH in\_pln\_cnt AS

(SELECT d.diseasename, ip.planname, COUNT(\*) AS count

FROM disease d

INNER JOIN treatment t USING(diseaseid)

INNER JOIN claim c USING(claimid)

INNER JOIN insuranceplan ip USING(uin)

GROUP BY d.diseasename, ip.planname)

SELECT \*

FROM in\_pln\_cnt out\_tbl

WHERE count = (SELECT MAX(count) FROM in\_pln\_cnt WHERE diseasename = out\_tbl.diseasename)

OR

count = (SELECT MIN(count) FROM in\_pln\_cnt WHERE diseasename = out\_tbl.diseasename)

ORDER BY diseasename, count;

*# APPROACH 2*

WITH in\_pln\_cnt AS

(SELECT d.diseasename, ip.planname, COUNT(\*) AS count

FROM disease d

INNER JOIN treatment t USING(diseaseid)

INNER JOIN claim c USING(claimid)

INNER JOIN insuranceplan ip USING(uin)

GROUP BY d.diseasename, ip.planname),

in\_pln\_cnt\_dense\_ranked AS

(SELECT \*,

DENSE\_RANK() OVER(PARTITION BY diseasename ORDER BY count DESC) AS dense\_rank\_desc,

DENSE\_RANK() OVER(PARTITION BY diseasename ORDER BY count) AS dense\_rank\_asc

FROM in\_pln\_cnt)

SELECT diseasename, planname, count

FROM in\_pln\_cnt\_dense\_ranked

WHERE dense\_rank\_desc = 1 OR dense\_rank\_asc = 1;

**Problem Statement 4:** The Healthcare department wants to know which disease is most likely to infect multiple people in the same household. For each disease find the number of households that has more than one patient with the same disease.

Note: 2 people are considered to be in the same household if they have the same address.

WITH add\_pnt\_cnt AS

( SELECT d.diseasename, psn.addressid, COUNT(DISTINCT psn.personid) AS pnt\_cnt

FROM disease d

INNER JOIN treatment t USING(diseaseid)

INNER JOIN patient pnt USING(patientid)

INNER JOIN person psn ON pnt.patientid = psn.personid

GROUP BY d.diseasename, psn.addressid )

SELECT diseasename, COUNT(\*) AS address\_cnt

FROM add\_pnt\_cnt

WHERE pnt\_cnt > 1

GROUP BY diseasename;

**Problem Statement 5:**  An Insurance company wants a state wise report of the treatments to claim ratio between 1st April 2021 and 31st March 2022 (days both included). Assist them to create such a report.

SELECT a.state, COUNT(t.treatmentid) AS treatment\_cnt, COUNT(t.claimid) AS claim\_cnt, COUNT(t.treatmentid)/COUNT(t.claimid) AS ratio

FROM address a

INNER JOIN person psn USING(addressid)

INNER JOIN patient pnt ON psn.personid = pnt.patientid

INNER JOIN treatment t USING(patientid)

WHERE t.date BETWEEN '2021-04-01' AND '2022-03-31'

GROUP BY a.state

ORDER BY ratio;