**PROJECT**

**Database schema:**

Diagram, schematic

Description automatically generated

**Problem Statement 1:**  Some complaints have been lodged by patients that they have been prescribed hospital-exclusive medicine that they can’t find elsewhere and facing problems due to that. Joshua, from the pharmacy management, wants to get a report of which pharmacies have prescribed hospital-exclusive medicines the most in the years 2021 and 2022. Assist Joshua to generate the report so that the pharmacies who prescribe hospital-exclusive medicine more often are advised to avoid such practice if possible.

SELECT ph.pharmacyname, COUNT(\*) AS count

FROM prescription pc

INNER JOIN treatment t USING(treatmentid)

INNER JOIN pharmacy ph USING(pharmacyid)

INNER JOIN contain c USING(prescriptionid)

INNER JOIN medicine m USING(medicineid)

WHERE YEAR(t.date) IN (2021,2022)

AND m.hospitalexclusive = 'S'

GROUP BY ph.pharmacyname

ORDER BY count DESC;

**Problem Statement 2:** Insurance companies want to assess the performance of their insurance plans. Generate a report that shows each insurance plan, the company that issues the plan, and the number of treatments the plan was claimed for.

SELECT ic.companyname, ip.planname, COUNT(t.treatmentid) AS treatment\_cnt

FROM insurancecompany ic

INNER JOIN insuranceplan ip USING(companyid)

INNER JOIN claim c USING(uin)

INNER JOIN treatment t USING(claimid)

GROUP BY ic.companyname, ip.planname

ORDER BY companyname, treatment\_cnt;

**Problem Statement 3:** Insurance companies want to assess the performance of their insurance plans. Generate a report that shows each insurance company's name with their most and least claimed insurance plans.

# APPROACH 1

WITH plan\_cnt AS

(SELECT ic.companyname, ip.planname, COUNT(t.treatmentid) AS treatment\_cnt

FROM insurancecompany ic

INNER JOIN insuranceplan ip USING(companyid)

INNER JOIN claim c USING(uin)

INNER JOIN treatment t USING(claimid)

GROUP BY ic.companyname, ip.planname

ORDER BY companyname, treatment\_cnt),

most\_claimed\_pln AS

(SELECT companyname, planname

FROM plan\_cnt out\_tbl

WHERE treatment\_cnt = (SELECT MAX(treatment\_cnt) FROM plan\_cnt WHERE companyname = out\_tbl.companyname)

ORDER BY companyname),

least\_claimed\_pln AS

(SELECT companyname, planname

FROM plan\_cnt out\_tbl

WHERE treatment\_cnt = (SELECT MIN(treatment\_cnt) FROM plan\_cnt WHERE companyname = out\_tbl.companyname)

ORDER BY companyname)

SELECT mcp.companyname, mcp.planname AS 'most claimed plan', lcp.planname AS 'least claimed plan'

FROM most\_claimed\_pln mcp

INNER JOIN least\_claimed\_pln lcp USING(companyname)

ORDER BY companyname;

# APPROACH 2

WITH plan\_cnt AS

(SELECT ic.companyname, ip.planname, COUNT(t.treatmentid) AS treatment\_cnt

FROM insurancecompany ic

INNER JOIN insuranceplan ip USING(companyid)

INNER JOIN claim c USING(uin)

INNER JOIN treatment t USING(claimid)

GROUP BY ic.companyname, ip.planname

ORDER BY companyname, treatment\_cnt),

plan\_cnt\_row\_num AS

(SELECT \*,

ROW\_NUMBER() OVER(PARTITION BY companyname ORDER BY treatment\_cnt ASC) AS row\_num\_asc,

ROW\_NUMBER() OVER(PARTITION BY companyname ORDER BY treatment\_cnt DESC) AS row\_num\_desc

FROM plan\_cnt)

SELECT companyname,

planname,

treatment\_cnt

FROM plan\_cnt\_row\_num

WHERE row\_num\_asc = 1 OR row\_num\_desc = 1;

**Problem Statement 4:**  The healthcare department wants a state-wise health report to assess which state requires more attention in the healthcare sector. Generate a report for them that shows the state name, number of registered people in the state, number of registered patients in the state, and the people-to-patient ratio. sort the data by people-to-patient ratio.

WITH states AS

(SELECT DISTINCT state

FROM address

),

st\_wise\_psn\_cnt AS

(SELECT a.state, COUNT(p.personid) AS count

FROM person p

INNER JOIN address a USING(addressid)

GROUP BY a.state

),

st\_wise\_psn\_cnt\_inc\_zero AS

( SELECT \*

FROM st\_wise\_psn\_cnt

UNION

SELECT state, 0 AS count

FROM states

LEFT JOIN st\_wise\_psn\_cnt USING(state)

WHERE count IS NULL

),

st\_wise\_pnt\_cnt AS

(SELECT a.state, COUNT(pt.patientid) AS count

FROM patient pt

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

INNER JOIN address a USING(addressid)

GROUP BY a.state

),

st\_wise\_pnt\_cnt\_inc\_zero AS

( SELECT \*

FROM st\_wise\_pnt\_cnt

UNION

SELECT state, 0 AS count

FROM states

LEFT JOIN st\_wise\_pnt\_cnt USING(state)

WHERE count IS NULL

)

SELECT psn.state, psn.count AS person\_cnt, pnt.count AS patient\_count, psn.count / pnt.count AS ratio

FROM st\_wise\_psn\_cnt\_inc\_zero psn

INNER JOIN st\_wise\_pnt\_cnt\_inc\_zero pnt USING(state)

ORDER BY ratio DESC;

**Problem Statement 5:**  Jhonny, from the finance department of Arizona(AZ), has requested a report that lists the total quantity of medicine each pharmacy in his state has prescribed that falls under **Tax criteria I** for treatments that took place in 2021. Assist Jhonny in generating the report.

SELECT pcy.pharmacyname, SUM(c.quantity) AS quantity

FROM pharmacy pcy

INNER JOIN address a USING(addressid)

INNER JOIN prescription ptn USING(pharmacyid)

INNER JOIN treatment t USING(treatmentid)

INNER JOIN contain c USING(prescriptionid)

INNER JOIN medicine m USING(medicineid)

WHERE m.taxCriteria = 'I'

AND YEAR(t.date) = 2021

AND a.state = 'AZ'

GROUP BY pcy.pharmacyname

ORDER BY quantity;